

From: DNV Input
Sent: June 12, 2026 8:56 AM
To: Info Package
Cc: DNV Input; Yan Zeng
Subject: FW: Liquid Chlorine - Realities of the Fatality Consequence

From: [REDACTED]
Sent: June 11, 2026 5:21 AM
To: Mayor's Office DNV <mayor@dnv.org>; James Hanson <hansonj@dnv.org>; Jordan Back <backj@dnv.org>; Betty Forbes <forbesb@dnv.org>; Herman Mah <mahh@dnv.org>; Lisa Muri <muril@dnv.org>; Catherine Pope <popec@dnv.org>
Subject: Liquid Chlorine - Realities of the Fatality Consequence

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Hello Mr. Mayor & DNV Councilors,

My email concerns the Chemtrade Re-Zoning Application. I will be direct, as your time is valuable.

It is important that you consider the fatality risk that Liquid Chlorine poses to your citizens. This should be part of the context for your upcoming decision.

The impacts of a **Liquid Chlorine Rail Car release have already been extensively studied** and documented. The findings from these studies have been consistently supported.

Between 2001 and 2009, various US government agencies proactively studied the fatality impacts of Liquid Chlorine Rail Car releases within the United States. These studies were extensive and followed best practices.

The findings were simple. The consequences of a Liquid Chlorine Rail Car release are severe for citizen populations. **The studies found extremely high citizen fatality rates, regardless of any emergency management provision or emergency response** resources available; no response action had a meaningful effect on fatality rates.

One of the cities studied was Washington, DC - an area provided with these emergency preparedness & response resources:

- 147 Full-Time Emergency Managers
- 330 On-Duty Firefighters
- 70 On-Duty Paramedics
- 200 On-Duty Police Officers
- 10,000 Army Servicemen
- 3,400 National Guardsmen

It was concluded that:

- Washington, D.C., has access to a massive emergency response force.
- Washington, D.C., has an extensive emergency preparedness and management ability.
- Washington, D.C. would **not** be able to provide emergency preparedness or emergency response sufficient to prevent 17,500 Citizen Fatalities and 100,000 Hospitalizations as a result of a Liquid Chlorine Rail Car release within the city limits.

With this knowledge, the Council must understand that, for the population present within the DNV, the **up to 2,000 fatalities and 10,000 hospitalizations modelled will not be meaningfully reduced** by any Fire Department, First Responder, or Emergency Management action.

These ~2,000 fatalities would occur, and this preventable loss would define DNV for decades, and incur significant financial hardships which could be ruinous to the District and many of its businesses. **Expecting DNV emergency resources to be more impactful than those in Washington, D.C., is neither reasonable nor defensible.**

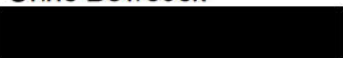
With this knowledge, if you proceed in allowing the continued presence of Liquid Chlorine Rail Car shipping within the DNV, you are thrust with the responsibility to transparently communicate these fatality consequences to the citizens and their families.

Alternatively, removing the Liquid Chlorine risk, as was done in Washington, D.C., will allow the DNV to significantly reduce its liability and "actually" make the DNV safer.

As always, I will make myself available to you should you require more information.

Respectfully,

Chris Bowcock



From: Thomas, Kelly <KThomas@BakerRisk.com>
Sent: June 12, 2026 9:31 AM
To: DNV Input
Cc: Ritchey, Bryan; Jonsson, Amy
Subject: Submitted for Public Record for June 16 Hearing (BakerRisk)
Attachments: 2026 DNV Hearing Slides (BakerRisk).pptx; Thomas (Kelly) Resume Profile.pdf

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To Whom It May Concern,

My name is Kelly Thomas, and I work at BakerRisk (www.BakerRisk.com). This email is to transmit a PowerPoint file (4 slides) to be part of the public record for the June 16 hearing regarding Chemtrade. I have also included my resume as an attachment to this email.

Regards,
Kelly

J. Kelly Thomas, PhD
Vice President & Blast Effects Section Manager | [BakerRisk](http://www.BakerRisk.com)

KThomas@BakerRisk.com | (210) 721-7255 |
3330 Oakwell Ct., Suite 100, San Antonio, Texas 78218

**BETTER RISK MANAGEMENT
STARTS HERE**



DNV COUNCIL HEARING

J. Kelly Thomas, Ph.D.

- **Chlorine release from railcars stored in railyard could be caused by a collision, impact, or mechanical failure**
 - Up to 32 full rail cars may be in the railyard
 - Empty rail car could have residual inventory, but expect that release would be gas-phase, and hence not a significant risk contributor
 - Railcar derailment often does not result in a release
 - Derailment history (2015 – 2024) indicates material released from damaged or derailed car carrying hazardous material in approximately 2% of incidents
 - *US Department of Transportation study:* <https://data.transportation.gov/stories/s/v2un-y5se>
 - Hazardous material railcars are inspected regularly for mechanical issues.
 - Chlorine railcars have connections only on car top, guarded by a protective dome
 - Release rate employed in QRA did not credit enhanced safety features required in newer rail cars



- **Plant process structures designed per 2024 British Columbia Building Code**
 - Seismic event with frequency once per 2,500 years
 - Seismic failure generally associated with piping, and is addressed through design, engineering, and a thorough inspection program
 - Piping and equipment handling liquid chlorine housed within building built to BC Building Code
 - Selected chlorine piping is double walled, with purge and gas detection in annular space between inner and outer pipe
 - Additional layer of protection to be provided by automatic isolation valves
- **Expected impact on railcars**
 - Require greater than design basis earthquake to displace railcar
 - Railcar displacement similar to a low-speed derailment, which has a low probability of causing a release
 - Access opening only on top of rail car, guarded by a protective dome
 - Historical data indicates low likelihood of material release





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J. KELLY THOMAS, Ph.D.

**Vice President/Director of Blast Effects
Senior Principal Consultant**

B.S., Nuclear Engineering, Texas A&M University

M.S., Nuclear Engineering, Texas A&M University

Ph.D., Nuclear Engineering, Texas A&M University

Areas of Practice

Dr. Thomas' primary technical focus is on the development and application of empirical, analytical, and numerical models for the characterization of flammability and explosion phenomena. He also actively participates in the investigation of accidental industrial explosions, explosion consequence assessments, and testing. He has led explosion consequence assessments for refineries, chemical processing plants, offshore oil production platforms, other industrial facilities, and U.S. Department of Energy (DOE) sites. Dr. Thomas has been involved with testing projects that include large-scale vapor cloud explosions, vented deflagrations, response of equipment to internal explosions, and gas mixing within enclosures. Dr. Thomas has numerous publications and conference presentations related to these topics.

Experience

- Active in the development of explosion blast load prediction methods (vapor cloud explosions, vented deflagrations, bursting pressure vessels, and dust explosions), including the potential for deflagration-to-detonation transition (DDT). Dr. Thomas also developed numerous methods to calculate the potential for and consequences of gas-phase explosions involving radioactive liquid waste storage transport and processing facilities (flammability criteria, peak deflagration pressure, deflagration source terms, potential for detonation, combustible gas transport, and mixing in storage tanks and process vessels).
- Actively engaged in the investigation of accidental explosions at industrial facilities. Dr. Thomas's experience in this area includes field work, supporting analysis and testing, cause and origin investigation, root cause analysis, and litigation support.
- Developed and taught courses on explosion blast load prediction and explosion source term modeling. Served on several expert panels examining flammable gas issues at the DOE Hanford site, served on a panel that defined methodologies for explosion-related phenomena to be used within the DOE complex, and wrote the explosion phenomena section for the DOE Savannah River Site methodology manual. Serves on the NFPA Explosion Protection Systems Committee.
- While at Savannah River, Dr. Thomas developed specifications for waste tank backup inerting and waste drum purge venting systems; developed operating parameter envelopes used to govern startup and test operations, and participated in the development of plant control and safety strategies, for radioactive liquid waste processing facilities; and participated in the development of vessel ventilation and purge system design modifications to enhance plant safety. He also participated in hazard and risk evaluations for radioactive liquid waste storage, transport and processing facilities, and for hydrogen-powered bus and mining vehicles. Dr. Thomas has also managed and participated in projects at Savannah River dealing with the behavior of nuclear reactor materials and reactor systems integrity analysis, including: response of reactor core components to severe accidents, oxidation and emittance of reactor materials, irradiated steel mechanical properties, and reactor system structural integrity.
- Led a nuclear fuels and materials research group at Texas A&M prior to beginning work in the safety analysis area. Led projects dealing with: fuel element thermal and mechanical analysis, space reactor design, development of a nitride fuels irradiation performance data base and associated correlations, validation and verification of fuel performance models and codes, space reactor material property correlations, and radioisotopic space power system design.

Professional Chronology

Texas A&M University (Research Assistant 1984-86; Research Associate 1986-90); Westinghouse Savannah River Company (Senior Engineer 1990-95; Principal Engineer 1995-98); Westinghouse Safety Management Solutions (Principal Engineer 1998-99); Baker Engineering and Risk Consultants, Inc. (Senior Consultant 1999-2000; Senior Principal Consultant/Manager 2000-present).



J. KELLY THOMAS, Ph.D.

**Vice President/Director of Blast Effects
Senior Principal Consultant**

Professional Registrations/Certifications

Certified Fire and Explosion Investigator (CFEI)

Professional Memberships

American Institute of Chemical Engineers (AIChE); National Fire Protection Association (NFPA); National Association of Fire Investigators (NAFI)

Committee Memberships

National Fire Protection Association Explosion Protection Systems Committee, Primary (NFPA 67, NFPA 68, and NFPA 69); Hydrogen Safety Panel (American Institute of Chemical Engineers, Center for Hydrogen Safety)

From: Tabbert-Friendship, Jillian <Jillian.Tabbert-Friendship@portvancouver.com>
Sent: June 12, 2026 10:30 AM
To: DNV Input
Cc: Natland, Jennifer; Horsford, Naomi
Subject: Submission – VFPA response letter – Bylaw 8778
Attachments: 2026-06-12 VFPA response letter - Chemtrade - final.pdf

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Hello,

Please find a letter submission for the public hearing on Bylaw 8778 in response to questions raised in the District of North Vancouver's correspondence of June 1, 2026, and June 9, 2026.

Thank you,

Jillian

Jillian Tabbert-Friendship (She/Her)
Executive Assistant – Executive Support Team



**PORT of
vancouver**

Vancouver Fraser
Port Authority

Canada

Vancouver Fraser Port Authority
100 The Pointe, 999 Canada Place
Vancouver, B.C. Canada V6C 3T4

C: 236.838.3731 portvancouver.com

The Vancouver Fraser Port Authority's Vancouver offices sit on the traditional territory of the xʷməθkʷəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səliłwətaʔ (Tsleil-Waututh) Nations.





**PORT of
vancouver**

**Vancouver Fraser
Port Authority**

June 12, 2026

Mayor and Council
District of North Vancouver
355 West Queens Road
North Vancouver, British Columbia
V7N 4N5

Re: Response to questions – Public Hearing on Bylaw 8778 for 100 Amherst Avenue

Dear Mayor and Council:

I am writing in response to questions raised in the District of North Vancouver's correspondence of June 1, 2026, and June 9, 2026, in relation to Chemtrade Electrochem Inc.'s (Chemtrade) rezoning application with the District of North Vancouver (the District) to enable redevelopment of their facility on Amherst Avenue.

As communicated in our letter of September 23, 2025, to Mayor and Council, Chemtrade has been a responsible tenant of the Vancouver Fraser Port Authority (VFPA) at this location for several decades. Over that time, they have made significant investments in continuous improvement for safety at their facility, meeting or exceeding the high standards of their industry. We also recognize that Chemtrade's operations play an integral role in securing Western Canada's safe drinking water supply.

Our current lease with Chemtrade expires in June 2032, and requires the facility to cease the "receipt, manufacture, storage and distribution of liquid chlorine" on or before July 1, 2030 (the liquid chlorine restrictions). This requirement was included in the lease, in part, to address community concerns raised in 2006, when Chemtrade's predecessor, Canexus Chemicals Canada Limited Partnership, applied to VFPA for an upgrade and expansion of the production capability of their facility. The lease explicitly does not restrict the "receipt, manufacture, storage and distribution of chlor-alkali products" other than liquid chlorine.

Last year, we executed a Letter of Intent with Chemtrade to enable an extension of their lease term, subject to the District's approval of Chemtrade's rezoning application. Should the rezoning application be approved, VFPA intends to extend Chemtrade's lease to coincide with the expected period their facility will be in operation, up to a period of 20 years commencing from an expected renewal date in 2026. This extension would enable Chemtrade to continue to carry out the uses permitted after July 1, 2030, under the current lease, once the liquid chlorine restrictions come into effect.

Under our enabling legislation as well as the VFPA land use plan, manufacturing activities, as a primary land use, are generally not intended for the federal lands we manage within the Burrard Inlet area. However, manufacturing activities that predate this regulatory framework may continue indefinitely. Our implementation of the liquid chlorine restrictions, while enabling other manufacturing uses to continue within Chemtrade's leased premises, is consistent with this intent as well as the commitments we made to the community in 2006.

... / 2

As your staff have requested, a VFPA representative will attend the upcoming public hearing, online, and be available to answer any related questions. Please don't hesitate to contact us should you have any questions in the meantime.

Sincerely,

A handwritten signature in black ink, appearing to read 'Natland', written in a cursive style.

Jennifer Natland
Vice President, Properties and Development
Vancouver Fraser Port Authority

From: DNV Input
Sent: June 12, 2026 11:46 AM
To: Yan Zeng
Cc: DNV Input
Subject: FW: Support Letter for Chemtrade North Vancouver
Attachments: Chemtrade Support Letter.pdf

From: Dumont, Isabelle <Isabelle.Dumont@domtar.com>
Sent: June 12, 2026 8:17 AM
To: Mayor and Council - DNV <council@dnv.org>
Subject: Support Letter for Chemtrade North Vancouver

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Good morning,
Please find attached a letter for the support of the Chemtrade's operations in North Vancouver.

Regards,

Isabelle Dumont



Isabelle Dumont | Senior Category Manager

Chef de catégorie principal, Approvisionnement en produits chimiques en vrac

C: 873.664.2449

395, boul. De Maisonneuve Ouest

Montreal, QC H3A 1L6 Canada

domtar.com

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Domtar Corporation
395, boul. De Maisonneuve Ouest
Montreal, QC H3A1L6

June 9, 2026

Subject: Support for Continued Operations of Chemtrade North Vancouver Facility

Dear Members of North Vancouver Council,

I am writing on behalf of Domtar to express our strong support for the continued operation of Chemtrade's chlor-alkali production facility in North Vancouver.

Domtar operates pulp and paper mills in Howe Sound, Skookumchuck and Port Alberni in British Columbia, and relies on a stable and reliable supply of caustic soda, a critical input for our manufacturing processes. A significant portion of this supply is sourced directly from the Chemtrade North Vancouver facility.

The availability of this local production capacity provides several important benefits:

- Supply chain reliability: Proximity to the plant ensures consistent and timely deliveries, reducing the risk of operational disruptions.
- Reduced environmental footprint: Local sourcing significantly minimizes transportation distances compared to overseas supply, leading to lower greenhouse gas emissions.
- Economic resilience: Maintaining regional chemical production capacity strengthens British Columbia's industrial ecosystem and supports local jobs.
- Cost stability: Local supply helps mitigate exposure to global market volatility and logistical disruptions.

If this facility were to cease operations, Domtar would be forced to source caustic soda from international suppliers, primarily in Asia or from the US Gulf. This would introduce increased supply chain risk due to long transit times and port dependencies, higher transportation costs and emissions and greater exposure to global price volatility and geopolitical factors.

In short, the Chemtrade North Vancouver facility plays a strategic role in supporting the competitiveness and sustainability of downstream manufacturing operations in the region. We respectfully encourage the Council to consider the implication of a closure on the Pulp and Paper Operations in BC.

Thank you for your consideration.

Martin Benoit
Sr. Director, Direct Materials and Energy Procurement

A handwritten signature in blue ink, appearing to read "M Benoit".

From: Peter Teevan [REDACTED]
Sent: June 15, 2026 9:15 AM
To: Dan Milburn
Cc: Mayor and Council - DNV; DNV Input
Subject: Re: Question for Port Authority

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Good morning Mr. Milburn,

I am sure you will recall my communication of June 3rd, below, where I asked that The District seek clarification from The Port Authority on their position on Liquid Chlorine and Chlorine (gas) production on their lands.

To date I have not received acknowledgment from your department of my letter, nor that it was undertaken to seek this information from The Port Authority, and much less whether they replied?

I have searched the voluminous "additional information", and "public input files 1-4" and cannot see anything there either.

We are now under 36 hours from the opening of the new public hearing - and my belief is that this would be a key piece of information that speaks not only to the heart of risks that we might face - but also to the forthrightness of the Applicant.

Would you please be so kind as to respond and hopefully provide some clarity on this matter?

Sincerely,

Peter Teevan
Sent from my iPad

> On Jun 3, 2026, at 1:28 PM, Peter Teevan [REDACTED] wrote:

>

>

> Dear Mr. Milburn,

>

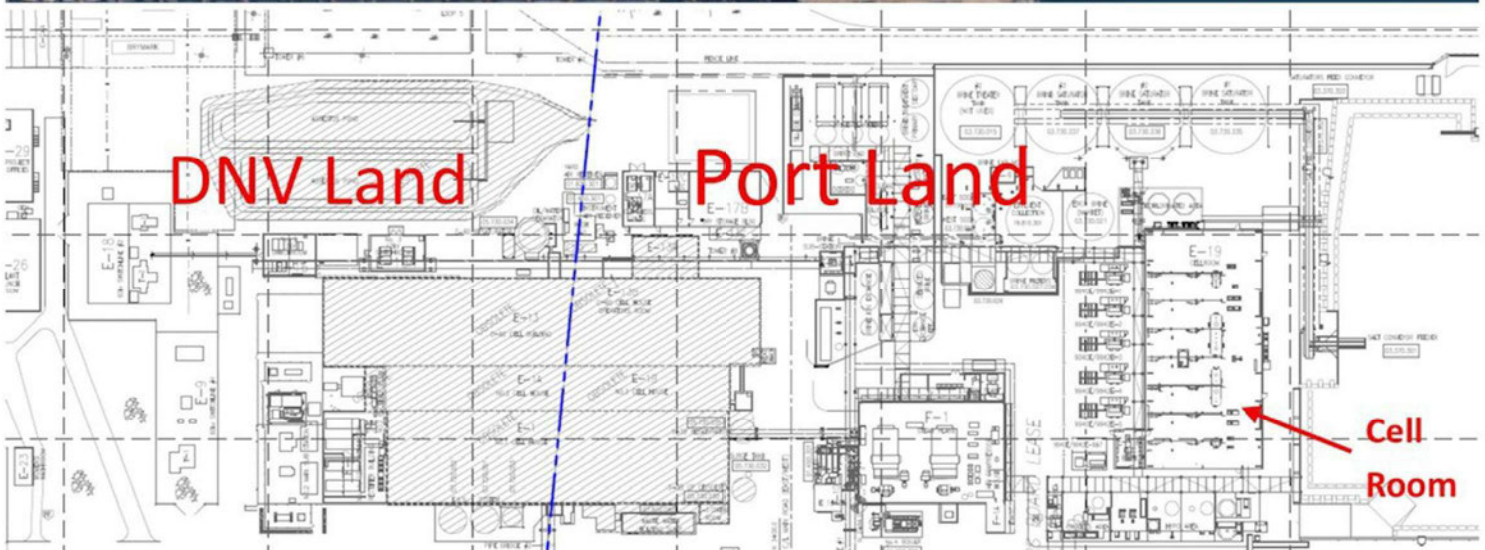
> I am writing to you to ask that the District seek clarification in writing from the Port Metro Vancouver Authority on the matter that I am about to describe. I write to you now hoping to give time to get a response in time for the returning Public Hearing on the 100 Amherst application commencing on June 16th.

>

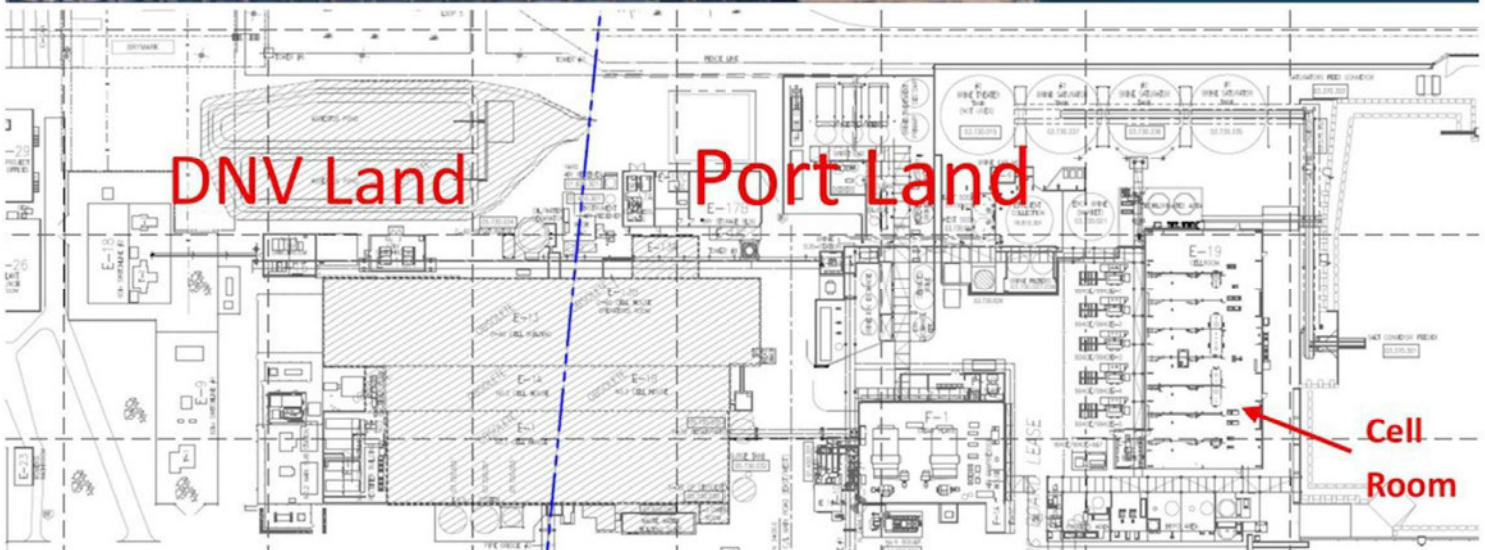
> You may recall that during the first public hearing a question was asked (and I am paraphrasing here): "is the Port asking Chemtrade to move off Port Lands in order to shift liability for a hazardous substance?". And the response given was along the lines of "no The Port is not concerned about liability or liquid chlorine - they simply want to ensure the Port Metro Vancouver properties are used for trade and not manufacturing or production".

>

> Now here I will cite a graphic image which is from page 51 of 60 from the document "8.3 Bylaw 8778 - Text Amendment Rezoning - 100 Amherst Avenue (Chemtrade)".



- >
- >
- > The legend for this image clearly shows that buildings coloured in orange are to remain on Port Lands, while buildings in blue will be located on Chemtrade (DNV Fee Simple) lands.
- >
- > I have come to learn that the Cell House/Room (and the dryer) are the core or "heart" of production - this is where the brine pool goes through the electrolysis process that separates out the caustic, hydrogen and chlorine gas.
- >
- >



- >
- >
- > So clearly, Chemtrade intends for production to remain on Port Lands, with the only change being that liquid chlorine will move off Port Lands and into our District.
- >
- > Please seek clarification on this issue from the Port - are they aware that the "heart of production" will be remaining on their lands? If yes, why is it only liquid chlorine that the Port Authority wants moved off their lands?
- >
- > I trust that Mayor and Council will communicate with you directly if there are other questions they wish to be answered.
- >
- > Certainly this question will be asked before the end of the next public hearing. Perhaps Port Metro Vancouver officials can be present at the public hearing as a key party to this issue?
- >
- > I ask, through you, that the District ask the Port for clarification in writing on this key issue.
- >
- > Very sincerely,
- >
- > Peter Teevan
- >

From: DNV Input
Sent: June 15, 2026 10:10 AM
To: Yan Zeng
Cc: DNV Input
Subject: FW: Opinion: You have been the targets of disinformation...

From: Peter Teevar [REDACTED]
Sent: June 13, 2026 4:31 PM
To: Mayor and Council - DNV <council@dnv.org>
Subject: Opinion: You have been the targets of disinformation...

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Council,

This coming Tuesday, I plan to speak before you and put forward my opinion that you have been the targets of a disinformation campaign.

In my 5 minutes, I will do my best to articulate how the Applicants for 100 Amherst have put forward multiple narratives (or "spins", "claims") you choose your favourite term.

I won't have time in 5 minutes to present you will all the evidence for all the (now proven false) narratives - but here is just one of them.

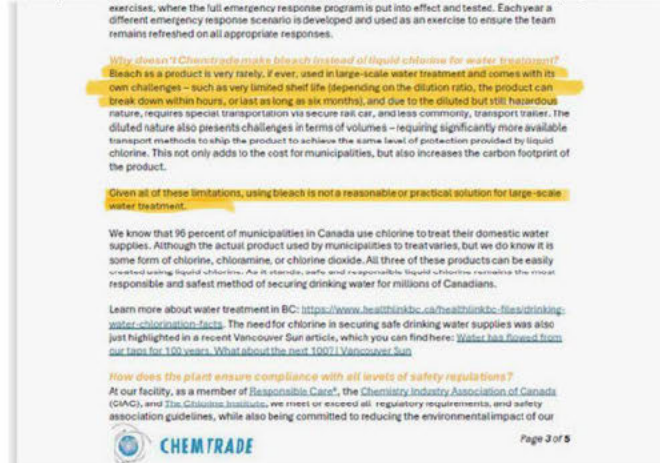
Follow the timeline here with me please...

Leading up to the first public hearing, the narrative was that "Chemtrade produces 70% of the chlorine used in Western Canada's drinking water (use 40%, 60%, 70%, whichever claim you want)..and that THEIR liquid chlorine is essential to our drinking water safety".

Then, during the Feb 24th public hearing, testimonies are offered that:

- 1) it is bleach, NOT pure chlorine that is used in municipal water sterilization.
- 2) Over 90% of the Applicant's produced chlorine gets shipped to the USA.

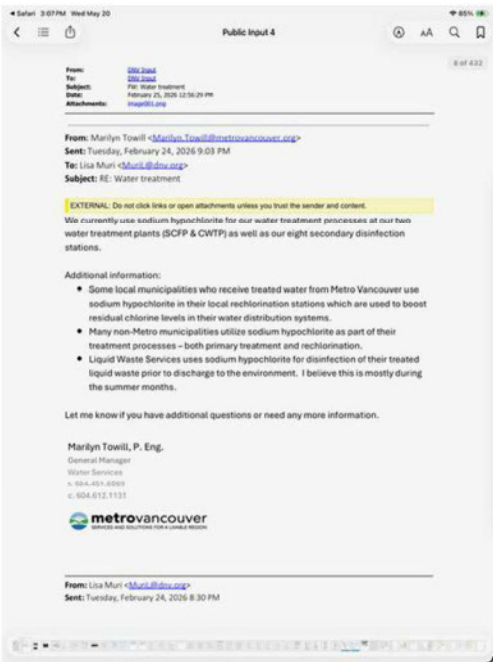
So, as part of the public hearing, the Applicant responded in writing, with this (page 445 of 717 of the Additional Information file).



So, they refuted the claim...

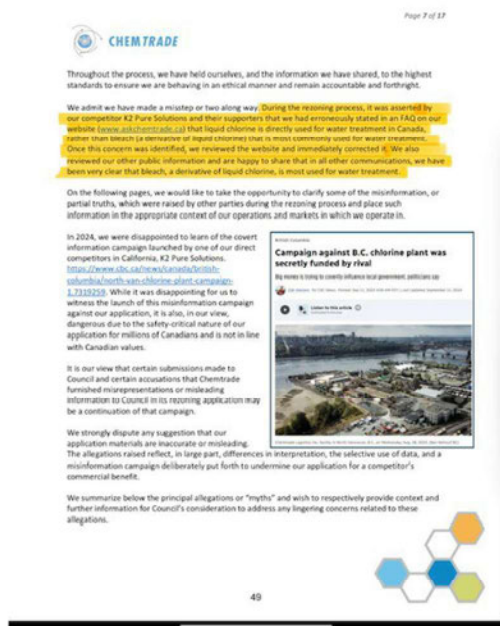
But meanwhile, Councillor Muri, sends off an email to the General Manager of Water Services at Metro Vancouver (8:30pm Feb 24) and gets a reply within 30 minutes:



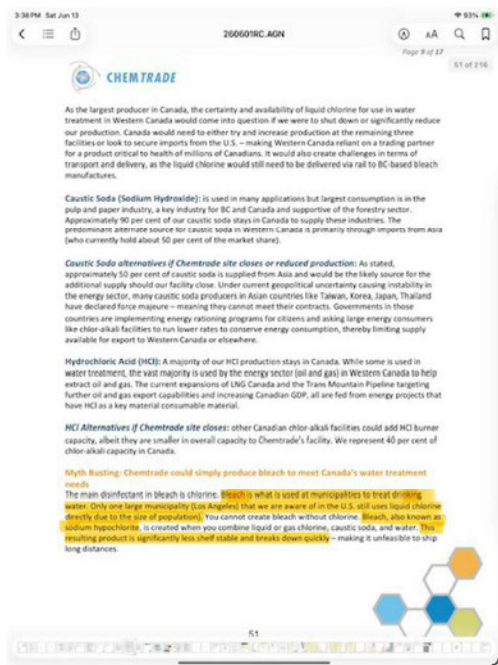


For the record: Sodium Hypochlorite is bleach.

THEN, almost as if by magic, a startling admission comes to you AFTER your decision to reconsider the Application and your original April 13th decision:
 This from page 49 of 216 of your June 1st agenda package...



So then the storey changes..and becomes this:
 (Page 51 of 216 of the June 1st agenda package).



So me, I see that "qualitative" word "quickly", and I ask "what does quickly mean exactly?" And I get back the following answer:



how long before bleach breaks down

◆ AI Overview

Household bleach typically begins to degrade after **about 6 months** from its manufacturing date. It breaks down into water, salt, and oxygen, losing roughly 20% of its effectiveness per year.  Clorox +3

The exact timeline depends on its state:

- **In the original bottle:** It remains potent for 6 to 12 months. After one year, it loses too much active ingredient (sodium hypochlorite) to safely disinfect.
- **Diluted with water:** A mixed bleach solution degrades extremely fast and loses most of its disinfecting power within **24 hours**.
- **Factors that speed up breakdown:** Heat, direct sunlight, and exposure to air.  Reddit · r/chemistry +5

How to check if your bleach is still good:

Because bleach does not have an expiration date (only a manufacturing code), check by smelling it—if it has a strong, pungent chlorine scent, it is still active. You can also verify the production code on the bottle using the [Clorox Manufacture Date Guide](#) to see if it is older than 6 months.  Reddit · r/YouShouldKnow +2

If you are checking to see if a specific bottle is expired, or if you need help calculating a proper daily dilution for a cleaning task, tell me:

Now me... call me naive, but I somehow think we can get a truck or railcar pretty much anywhere in Western Canada within SIX MONTHS. And even though I have relatives and friends in California, I sincerely hope my local municipal Council doesn't think "risk for us" is justified by "timely shipments to California, USA".

Now I get it, we aren't exactly talking about "household bleach" here... but to me, it feels like we aren't getting all the facts.

And please feel free to also call me naive if I think it's a pretty serious transgression to GIVE FALSE TESTIMONY BEFORE A PUBLIC HEARING? Especially if one is A) an expert and B) the Applicant.

Perhaps a layperson can be given grace for the occasional mistake as they are on a steep learning curve.

But alas! Let me render the closing submission in this opinion offered to you... here again is the Applicant... AFTER their May 15th admissions, which became part of the June 1st agenda package... they put the following out in their June 2nd Community Newsletter!

Why are we applying for a rezoning? Securing safe drinking water for millions of Canadians and supporting critical Canadian industries

We are Canada's largest producer of liquid chlorine. Our liquid chlorine is used by over 70 per cent of the municipalities right here in BC and in Alberta to treat municipal water supplies. We have a critical role to play in securing your safe drinking water, and with this in mind, we need to secure our long-term ability to operate.

But did you know that the other products we produce - caustic soda and hydrochloric acid - are a critical link in the supply chain for many Canadian industries, too? These industries play a significant role in supporting Canadian economic independence such as the energy sector, pulp and paper, technology and innovation and manufacturing.

Since 2010, over \$500 million has been invested in the facility to ensure safe and responsible operations, and we continue to have ongoing conversations on achieving best available technologies at our facility. As part of our rezoning application, we are committing to further improvements, which would help reduce potential risk to the community to at, or near, our property line.

The facility itself has been safely operating since 1957, but due to a bylaw passed in 1984, our facility has been operating as a legal non-conformity since that time and has been grandfathered up until this point.

As part of our efforts to secure long-term operations, we are proposing several major capital improvements at our site that will not only increase safety but also reduce risk to the community, such as building an enclosure around the rail loading area equipped with air scrubbing technology, and the installation of seismic sensors. To move forward with construction, we need a development permit from the District of North Vancouver. This will trigger the need for rezoning to allow for the production of chlorine at our facility.

To confirm, we are not increasing our output of liquid chlorine. In fact, once the improvements are completed, we will be moving to a "produce and ship" model, effectively removing almost all on-site storage of liquid chlorine. The application is to ensure we are correctly zoned so we can continue operations and move forward with planned safety and risk reduction projects.

Ways to contact us

- Visit www.AskChemtrade.ca to submit questions, find information, and send a message
- Reach out directly to Amy Jonsson at ajonsson@chemtradelogistics.com
- Visit our Facebook page (<https://www.facebook.com/chemtradebc>) and send us a message



CHEMTRADE

Page 2 of 2

Doesn't it seem like we are back where we started? Or are we seeing one message for neophytes and a different one for people who ask critical thinking questions and check facts?

In my opinion, our local MLA took the bait. As did several Provincial Ministers. Because they didn't think critically or ask more questions.

You don't need to be like them.

You don't need to accept what I believe to be disinformation.

You have the opportunity to be smarter and better.

Who, through this process, has NOT changed their story?

Now this here, was ONE of the narratives you have been "offered".

On Tuesday I will detail SIX narratives that you have been subjected to.

I can dispel or expose them all in similar fashion to this.

Please feel free to ask me about my testimony - I can offer details on each of those six narratives - just not all in 5 minutes.

Best Regards,

Peter Teevan

Sent from my iPad

From: DNV Input
Sent: June 15, 2026 10:11 AM
To: Yan Zeng
Cc: DNV Input
Subject: FW: Chemtrade rezoning - opposition

From: Alex Jamieson [REDACTED]
Sent: June 13, 2026 5:55 PM
To: Mayor's Office DNV <mayor@dnv.org>; Jordan Back <backj@dnv.org>; Catherine Pope <popec@dnv.org>; Betty Forbes <forbesb@dnv.org>; James Hanson <hansonj@dnv.org>; Herman Mah <mahh@dnv.org>; Lisa Muri <muril@dnv.org>; Mayor and Council - DNV <council@dnv.org>
Subject: Re: Chemtrade rezoning - opposition

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Council:

As a retired [REDACTED] I am writing to Council simply to state that it is poor land use planning to zone a property for a chlorine plant in a populated area, period. The Chemtrade Chlorine plant is a legal non-conforming use which the District should work towards phasing out, by whatever means. By denying it ability to expand on another site, you will be giving Chemtrade notice to start looking to move to a less populated area. Council has legal authority over land use, and people need to be protected from production, storage, and transportation of a lethal and caustic gas.

As someone who loves north Van, our forests, waters and people, waters, I feel afraid and sad regarding human suffering which a chlorine accident could bring. In addition, I feel a need to "speak for the trees" which could be killed or terribly disfigured by chlorine gas. Deep in my heart I feel for residents and all of nature right next door in Maplewood Flats. I can feel the pain that they feel.

I have looked at MIAAC standards and Chemtrade's own "Responsible Care Ethic" and ISO 14001 guidelines and find that calculating a safe separation of human habitation from Hazardous Materials plants is a complex calculation. It depends on the size of storage tanks, and scrubbers if it is stored indoors, or if it is immediately transported off-site, and other factors.

As a [REDACTED], I can only go by the worst-case scenarios of a spill on-site or a rail accident in windy conditions, which means the site would need to be separated by "kilometres" from populated areas. I know that Chemtrade has plants in less populated areas, such as Prince George.

Please use your power to end this dangerous situation. Do not rezone to allow Chemtrade to continue.

Alex Jamieson, [REDACTED]



From: DNV Input
Sent: June 15, 2026 10:11 AM
To: DNV Input
Subject: FW: Opinion: You have been the targets of disinformation.. (revised for easier reading)
Attachments: June 13 Letter to Council P Teevan 100 Amherst Narrative.pdf

From: Peter Teevan [REDACTED]
Sent: June 13, 2026 9:53 PM
To: Mayor and Council - DNV <council@dnv.org>
Cc: pteevan [REDACTED]
Subject: Opinion: You have been the targets of disinformation.. (revised for easier reading)

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Council,

I sent this earlier but then realized it might be difficult to read on some devices - so I put it into a PDF - please see attached.

Peter Teevan

From: Peter Teevan [REDACTED]

Date: June 13, 2026 at 4:31:07 PM PDT

To: DNV Mayor and Council <Council@dnv.org>

Subject: Opinion: You have been the targets of disinformation...

Dear Mayor and Council,

This coming Tuesday, I plan to speak before you and put forward my opinion that you have been the targets of a disinformation campaign.

In my 5 minutes, I will do my best to articulate how the Applicants for 100 Amherst have put forward multiple narratives (or “spins”, “claims”) you choose your favourite term.

I won’t have time in 5 minutes to present you will all the evidence for all the (now proven false) narratives - but here is just one of them.

Follow the timeline here with me please...

Leading up to the first public hearing, the narrative was that “Chemtrade produces 70% of the chlorine used in Western Canada’s drinking water (use 40%, 60%, 70%, whichever claim you want”..and that THEIR liquid chlorine is essential to our drinking water safety”.

Then, during the Feb 24th public hearing, testimonies are offered that:

- 1) it is bleach, NOT pure chlorine that is used in municipal water sterilization.
- 2) Over 90% of the Applicant’s produced chlorine gets shipped to the USA.

So, as part of the public hearing, the Applicant responded in writing, with this (page 445 of 717 of the Additional Information file).

exercises, where the full emergency response program is put into effect and tested. Each year a different emergency response scenario is developed and used as an exercise to ensure the team remains refreshed on all appropriate responses.

Why doesn't Chemtrade make bleach instead of liquid chlorine for water treatment?

Bleach as a product is very rarely, if ever, used in large-scale water treatment and comes with its own challenges – such as very limited shelf life (depending on the dilution ratio, the product can break down within hours, or last as long as six months), and due to the diluted but still hazardous nature, requires special transportation via secure rail car, and less commonly, transport trailer. The diluted nature also presents challenges in terms of volumes – requiring significantly more available transport methods to ship the product to achieve the same level of protection provided by liquid chlorine. This not only adds to the cost for municipalities, but also increases the carbon footprint of the product.

Given all of these limitations, using bleach is not a reasonable or practical solution for large-scale water treatment.

We know that 96 percent of municipalities in Canada use chlorine to treat their domestic water supplies. Although the actual product used by municipalities to treat varies, but we do know it is some form of chlorine, chloramine, or chlorine dioxide. All three of these products can be easily created using liquid chlorine. As it stands, safe and responsible liquid chlorine remains the most responsible and safest method of securing drinking water for millions of Canadians.

Learn more about water treatment in BC: <https://www.healthlinkbc.ca/healthlinkbc/files/drinking-water-chlorination-facts>. The need for chlorine in securing safe drinking water supplies was also just highlighted in a recent Vancouver Sun article, which you can find here: [Water has flowed from our taps for 100 years. What about the next 100? | Vancouver Sun](#)

How does the plant ensure compliance with all levels of safety regulations?

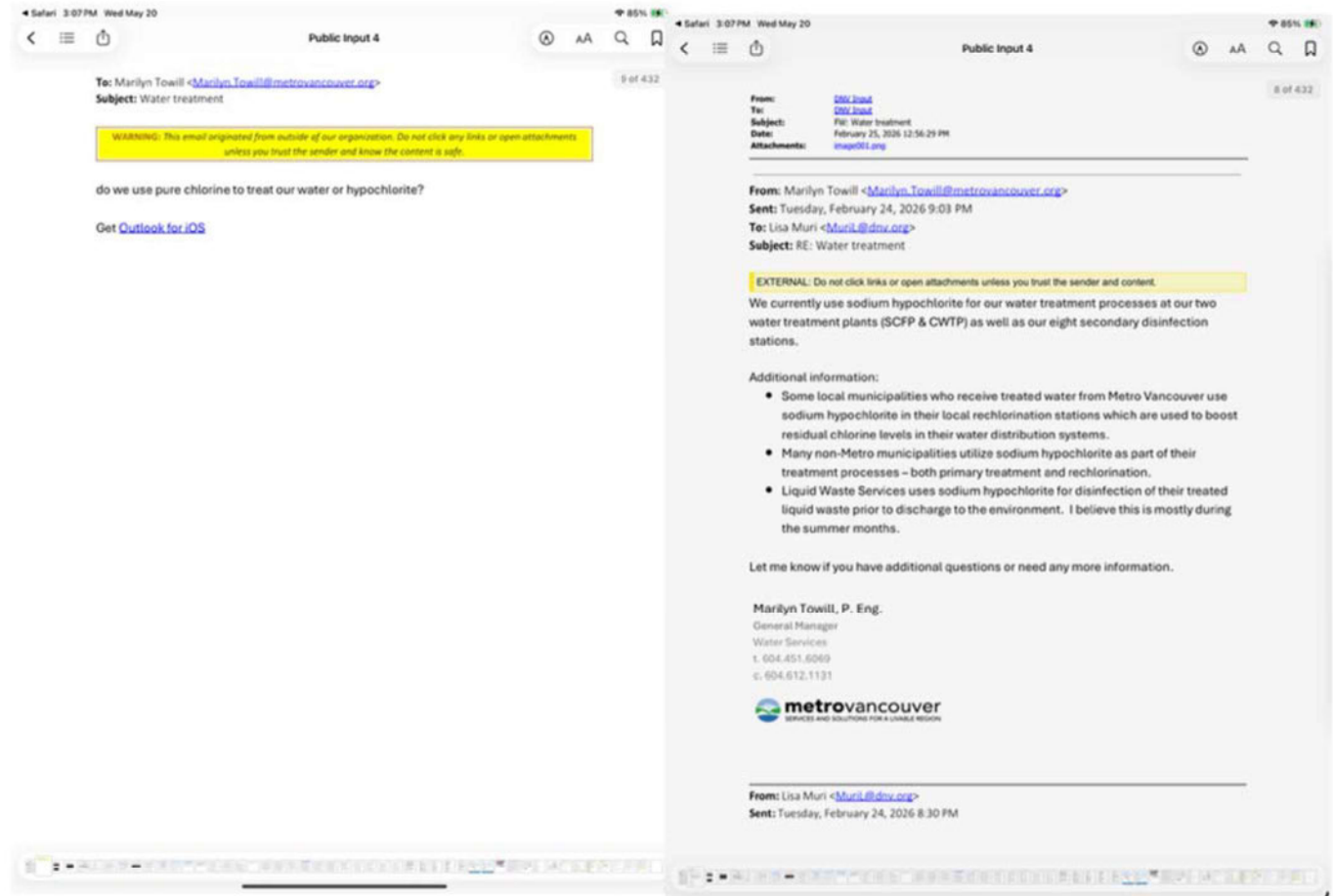
At our facility, as a member of Responsible Care®, the Chemistry Industry Association of Canada (CIAC), and The Chlorine Institute, we meet or exceed all regulatory requirements, and safety association guidelines, while also being committed to reducing the environmental impact of our



CHEMTRADE

So, they refuted the claim...

But meanwhile, Councillor Muri, sends off an email to the General Manager of Water Services at Metro Vancouver (8:30pm Feb 24) and gets a reply within 30 minutes:



For the record: Sodium Hypochlorite is bleach.

THEN, almost as if by magic, a startling admission comes to you AFTER your decision to reconsider the Application and your original April 13th decision:

This from page 49 of 216 of your June 1st agenda package...



Page 7 of 17

Throughout the process, we have held ourselves, and the information we have shared, to the highest standards to ensure we are behaving in an ethical manner and remain accountable and forthright.

We admit we have made a misstep or two along way. During the rezoning process, it was asserted by our competitor K2 Pure Solutions and their supporters that we had erroneously stated in an FAQ on our website (www.askchemtrade.ca) that liquid chlorine is directly used for water treatment in Canada, rather than bleach (a derivative of liquid chlorine) that is most commonly used for water treatment. Once this concern was identified, we reviewed the website and immediately corrected it. We also reviewed our other public information and are happy to share that in all other communications, we have been very clear that bleach, a derivative of liquid chlorine, is most used for water treatment.

On the following pages, we would like to take the opportunity to clarify some of the misinformation, or partial truths, which were raised by other parties during the rezoning process and place such information in the appropriate context of our operations and markets in which we operate in.

In 2024, we were disappointed to learn of the covert information campaign launched by one of our direct competitors in California, K2 Pure Solutions, <https://www.cbc.ca/news/canada/british-columbia/north-van-chlorine-plant-campaign-1.7319259>. While it was disappointing for us to witness the launch of this misinformation campaign against our application, it is also, in our view, dangerous due to the safety-critical nature of our application for millions of Canadians and is not in line with Canadian values.

It is our view that certain submissions made to Council and certain accusations that Chemtrade furnished misrepresentations or misleading information to Council in its rezoning application may be a continuation of that campaign.

We strongly dispute any suggestion that our application materials are inaccurate or misleading. The allegations raised reflect, in large part, differences in interpretation, the selective use of data, and a misinformation campaign deliberately put forth to undermine our application for a competitor's commercial benefit.

We summarize below the principal allegations or "myths" and wish to respectively provide context and further information for Council's consideration to address any lingering concerns related to these allegations.

British Columbia

Campaign against B.C. chlorine plant was secretly funded by rival

Big money is trying to covertly influence local government, politicians say

2:06 Minutes for CBC News, Accessed Sep 11, 2024 10:08 AM PST (last updated September 11, 2024)

Listen to this article



Chemtrade chlorine gas facility in North Vancouver, B.C., in Westhills, Aug. 18, 2024. (Ben Nelms/CBC)



So then the storey changes..and becomes this:

(Page 51 of 216 of the June 1st agenda package).



As the largest producer in Canada, the certainty and availability of liquid chlorine for use in water treatment in Western Canada would come into question if we were to shut down or significantly reduce our production. Canada would need to either try and increase production at the remaining three facilities or look to secure imports from the U.S. – making Western Canada reliant on a trading partner for a product critical to health of millions of Canadians. It would also create challenges in terms of transport and delivery, as the liquid chlorine would still need to be delivered via rail to BC-based bleach manufactures.

Caustic Soda (Sodium Hydroxide): is used in many applications but largest consumption is in the pulp and paper industry, a key industry for BC and Canada and supportive of the forestry sector. Approximately 90 per cent of our caustic soda stays in Canada to supply these industries. The predominant alternate source for caustic soda in Western Canada is primarily through imports from Asia (who currently hold about 50 per cent of the market share).

Caustic Soda alternatives if Chemtrade site closes or reduced production: As stated, approximately 50 per cent of caustic soda is supplied from Asia and would be the likely source for the additional supply should our facility close. Under current geopolitical uncertainty causing instability in the energy sector, many caustic soda producers in Asian countries like Taiwan, Korea, Japan, Thailand have declared force majeure – meaning they cannot meet their contracts. Governments in those countries are implementing energy rationing programs for citizens and asking large energy consumers like chlor-alkali facilities to run lower rates to conserve energy consumption, thereby limiting supply available for export to Western Canada or elsewhere.

Hydrochloric Acid (HCl): A majority of our HCl production stays in Canada. While some is used in water treatment, the vast majority is used by the energy sector (oil and gas) in Western Canada to help extract oil and gas. The current expansions of LNG Canada and the Trans Mountain Pipeline targeting further oil and gas export capabilities and increasing Canadian GDP, all are fed from energy projects that have HCl as a key material consumable material.

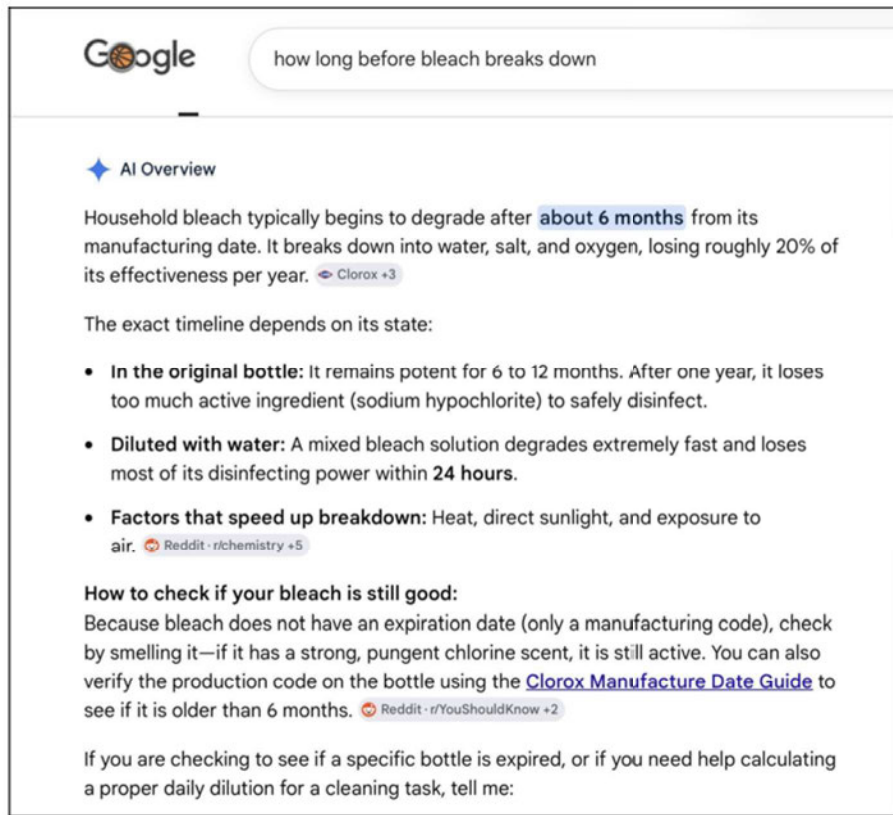
HCl Alternatives if Chemtrade site closes: other Canadian chlor-alkali facilities could add HCl burner capacity, albeit they are smaller in overall capacity to Chemtrade's facility. We represent 40 per cent of chlor-alkali capacity in Canada.

Myth Busting: Chemtrade could simply produce bleach to meet Canada's water treatment needs

The main disinfectant in bleach is chlorine. Bleach is what is used at municipalities to treat drinking water. Only one large municipality (Los Angeles) that we are aware of in the U.S. still uses liquid chlorine directly due to the size of population. You cannot create bleach without chlorine. Bleach, also known as sodium hypochlorite, is created when you combine liquid or gas chlorine, caustic soda, and water. This resulting product is significantly less shelf stable and breaks down quickly – making it unfeasible to ship long distances.



So me, I see that “qualitative” word “quickly”, and I ask “what does quickly mean exactly?” And I get back the following answer:



The screenshot shows a Google search interface with the query "how long before bleach breaks down". The search results include an "AI Overview" section. The text in the overview states: "Household bleach typically begins to degrade after **about 6 months** from its manufacturing date. It breaks down into water, salt, and oxygen, losing roughly 20% of its effectiveness per year." Below this, it says "The exact timeline depends on its state:" followed by a bulleted list. The list items are: "In the original bottle: It remains potent for 6 to 12 months. After one year, it loses too much active ingredient (sodium hypochlorite) to safely disinfect.", "Diluted with water: A mixed bleach solution degrades extremely fast and loses most of its disinfecting power within **24 hours**.", and "Factors that speed up breakdown: Heat, direct sunlight, and exposure to air." Below the list, there is a section titled "How to check if your bleach is still good:" which explains that bleach does not have an expiration date and provides instructions on how to check its potency by smell and production code. At the bottom, it asks if the user needs help calculating a proper daily dilution.

Google

how long before bleach breaks down

AI Overview

Household bleach typically begins to degrade after **about 6 months** from its manufacturing date. It breaks down into water, salt, and oxygen, losing roughly 20% of its effectiveness per year. [Clorox +3](#)

The exact timeline depends on its state:

- **In the original bottle:** It remains potent for 6 to 12 months. After one year, it loses too much active ingredient (sodium hypochlorite) to safely disinfect.
- **Diluted with water:** A mixed bleach solution degrades extremely fast and loses most of its disinfecting power within **24 hours**.
- **Factors that speed up breakdown:** Heat, direct sunlight, and exposure to air. [Reddit · r/chemistry +5](#)

How to check if your bleach is still good:
Because bleach does not have an expiration date (only a manufacturing code), check by smelling it—if it has a strong, pungent chlorine scent, it is still active. You can also verify the production code on the bottle using the [Clorox Manufacture Date Guide](#) to see if it is older than 6 months. [Reddit · r/YouShouldKnow +2](#)

If you are checking to see if a specific bottle is expired, or if you need help calculating a proper daily dilution for a cleaning task, tell me:

Now me... call me naive, but I somehow think we can get a truck or railcar pretty much anywhere in Western Canada within SIX MONTHS. And even though I have relatives and friends in California, I sincerely hope my local municipal Council doesn't think "risk for us" is justified by "timely shipments to California, USA".

Now I get it, we aren't exactly talking about "household bleach" here... but to me, it feels like we aren't getting all the facts.

And please feel free to also call me naive if I think it's a pretty serious transgression to GIVE FALSE TESTIMONY BEFORE A PUBLIC HEARING? Especially if one is A) an expert and B) the Applicant.

Perhaps a layperson can be given grace for the occasional mistake as they are on a steep learning curve.

But alas! Let me render the closing submission in this opinion offered to you... here again is the Applicant... AFTER their May 15th admissions, which became part of the June 1st agenda package... they put the following out in their June 2nd Community Newsletter!

Why are we applying for a rezoning? Securing safe drinking water for millions of Canadians and supporting critical Canadian industries

We are Canada's largest producer of liquid chlorine. Our liquid chlorine is used by over 70 per cent of the municipalities right here in BC and in Alberta to treat municipal water supplies. We have a critical role to play in securing your safe drinking water, and with this in mind, we need to secure our long-term ability to operate.

But did you know that the other products we produce – caustic soda and hydrochloric acid – are a critical link in the supply chain for many Canadian industries, too? These industries play a significant role in supporting Canadian economic independence such as the energy sector, pulp and paper, technology and innovation and manufacturing.

Since 2010, over \$500 million has been invested in the facility to ensure safe and responsible operations, and we continue to have ongoing conversations on achieving best available technologies at our facility. As part of our rezoning application, we are committing to further improvements, which would help reduce potential risk to the community to at, or near, our property line.

The facility itself has been safely operating since 1957, but due to a bylaw passed in 1984, our facility has been operating as a legal non-conformity since that time and has been grandfathered up until this point.

As part of our efforts to secure long-term operations, we are proposing several major capital improvements at our site that will not only increase safety but also reduce risk to the community, such as building an enclosure around the rail loading area equipped with air scrubbing technology, and the installation of seismic sensors. *To move forward with construction, we need a development permit from the District of North Vancouver. This will trigger the need for rezoning to allow for the production of chlorine at our facility.*

To confirm, we are not increasing our output of liquid chlorine. In fact, once the improvements are completed, we will be moving to a "produce and ship" model, effectively removing almost all on-site storage of liquid chlorine. The application is to ensure we are correctly zoned so we can continue operations and move forward with planned safety and risk reduction projects.

Ways to contact us

- Visit www.AskChemtrade.ca to submit questions, find information, and send a message
- Reach out directly to Amy Jonsson at ajonsson@chemtradelogistics.com
- Visit our Facebook page (<https://www.facebook.com/chemtrade>) and send us a message



CHEMTRADE

Doesn't it seem like we are back where we started? Or are we seeing one message for neophytes and a different one for people who ask critical thinking questions and check facts?

In my opinion, our local MLA took the bait. As did several Provincial Ministers. Because they didn't think critically or ask more questions.

You don't need to be like them.

You don't need to accept what I believe to be disinformation.

You have the opportunity to be smarter and better.

Who, through this process, has NOT changed their story?

Now this here, was ONE of the narratives you have been “offered”.

On Tuesday I will detail SIX narratives that you have been subjected to.

I can dispel or expose them all in similar fashion to this.

Please feel free to ask me about my testimony - I can offer details on each of those six narratives - just not all in 5 minutes.

Best Regards,

Peter Teevan

From: Marcia Stephenson [REDACTED]
Sent: June 15, 2026 11:24 AM
To: DNV Input
Subject: Letter re Public Hearing June 16 Bylaw 8778

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

TO: Mayor and Councillors of the District of North Vancouver

RE: Public Hearing on Bylaw 8778, proposed amendments to the Zoning Bylaw, to permit the manufacturing, processing, liquefaction, handling, storage, loading and shipping of chlorine, on the lands located at 100 Amherst Avenue

We are homeowners in Lynn Valley, living within the margin of a 4-kilometre radius of potential risk from an escape of deadly chlorine gas at the Chemtrade plant. As concerned voters, we urge Mayor and Council to vote against the proposed Bylaw 8778, amendments to the Zoning bylaws which would permit the manufacturing, processing, liquefaction, handling, storage, loading and shipping of chlorine at the Chemtrade facility located at 100 Amherst Avenue. After reading the Council meeting minutes and reports related to this bylaw change, we've concluded that this facility is much too hazardous to continue operating in a densified urban area.

Our reasons for reaching this conclusion are summarized below:

The fact that the Vancouver Fraser Port Authority will prohibit the production of liquid chlorine by Chemtrade on land under VFPA jurisdiction beyond 2030 should be a red flag to our municipal representatives, who are charged with protecting the safety of the citizens who elect them. We should not be weakening our civic environmental safety regulations to allow expansion by a private corporation whose federal lease is expiring. When this plant was first opened by the former Hooker Chemical in 1957, the pulp mills of BC were booming, requiring a supply of bleaching compounds to turn forest industry wood waste into paper. As the population of North Vancouver District was only 26,000 that year, we surmise that a comparatively isolated location near the harbour and rail systems must have seemed an ideal spot for manufacturing chlorine products. The Ironworkers' Memorial Bridge and highway over it were still under construction. But none of these historical conditions holds true today. BC forestry and wood fibre processing are in decline, bridge traffic backs up for hours each day near the plant, and DNV population has quadrupled. Our OCP calls for continued residential densification in the nearby Lynn Creek and Maplewood areas. The Chemtrade plant is an anachronism from an extractive era, a hazardous operation that should be relocated far away from an urban area. The company should save the money it has promised to spend on upgraded security measures and redirect those funds to build a new plant elsewhere.

Across the Inlet, the City of Burnaby has cited a risk assessment that estimated a chlorine release from a rail car could kill over 2,000 people. On average, four liquid chlorine rail cars per day associated with Chemtrade's activities are moving along local tracks. We remind Council that in June 2022, a cloud of toxic chlorine gas leaked by equipment failure was released over the port of Aqaba, Jordan, killing thirteen people and injuring more than 265. While we may reassure ourselves that official investigative findings of "*deficiency and negligence in safety protocols for dealing with hazardous materials*" are rare in North America, accidents do happen. Because of a chemical tank overheating at an aerospace factory on May 21 of this year, 50,000 people in Orange County, California were forced to evacuate their homes for days while fire crews risked their lives responding to a potential boiling liquid expanding vapor explosion (BLEVE) at the plant where safety systems had failed. Five days later, on May 26, eleven people died and many others injured after an implosion of a massive tank of caustic chemicals at a pulp and paper mill in Longview, Washington. State and federal agency investigations are still underway at the sites as we write.

Chemtrade's presentation for the April 14 meeting included technical reports from consultants who calculate risk, attempting to reassure a skeptical public with probability figures predicting that accidents would be rare. The company cited their investment in newer, more reliable technology and upgraded processing safeguards. I respect the expertise of these consultants and credit Chemtrade for their conversion to more modern equipment. But there is no such thing as a risk of zero. We need only recall the tragic accident at the Cleveland Dam in 2020, resulting in the deaths of 2 North Vancouver residents and the emergency evacuation of others. The investigation by Metro Vancouver concluded that a primary contributing factor was human error related to

programming of the spillway gate control system.

While some have argued against closing a facility that supplies a form of chlorine used in water purification, it's our understanding that Chemtrade's products do not treat the drinking water flowing in Metro Vancouver pipes. A process involving ultraviolet light and ozone is used instead, along with one form of chlorine applied to reduce bacterial buildup in pipes. The lead-up to the VFPort Authority closure deadline would give this company time to scout new sites for manufacturing a product used in other parts of Canada. Chemtrade refuses to disclose their customer list or the countries they ship to, citing trade secrets they prefer to keep shielded from competitors. Perhaps one of those mystery customers could recommend a site for a new plant in a more suitable location.

Some speakers on April 14th cited the negative economic impact on local employment and tax revenue as a reason to exempt Chemtrade from DNV's prohibition on hazardous manufacturing operations. We maintain that the potential risk to human health and safety is too high a price to pay for 120 jobs in this risky business. That very risk factor may have a negative impact on investment and employment in other enterprises in the Maplewood area, newly alerted to the potential jeopardy of permitting Chemtrade operations to expand in their neighbourhood. As homeowners in either the City or District of North Vancouver for [REDACTED] years, we are acutely aware of the forces causing fiscal strain on local government, resulting in rising taxes. Our children and their young families live here too, caught up in a cost-of-living crunch that our generation of retirees did not have to face. But we refuse to barter away their safety for the promised payoff of tax dollars from Chemtrade or a successor company. It's our understanding that once we ease the restriction on hazardous activity at this site, it must remain legally open to such operations in perpetuity. Let's not cross that line. The promise of a future closure date, long after members of the current Council may have retired, is not reassuring.

An evacuation plan involving North Shore Emergency Management and North Shore Fire & Rescue Services was cited at the April 14 meeting. A disaster management system would be co-ordinated by CHLOREP, a cross-border industry association of Canadian and US companies. Is cross-border cooperation still viable in 2026, given the current political climate? Shelter-in-place orders and the Alertable phone app were mentioned as components of this strategy. As residents of a condominium in Lynn Valley, we were shocked and saddened to witness the nearby fire at the Silverlynn senior apartment complex just over a year ago in May 2025. All three North Shore municipal fire departments were required to deploy crews and specialized vehicles to the scene for over 24 hours, with firefighters aiming high-pressure water nozzles from ladder trucks equipped with aerial "buckets." What if an incident at Chemtrade had spiraled out of control simultaneously, perhaps during an earthquake? Where would excess manpower and equipment have come from? The shelter-in-place order is not reassuring either. While we keep a small stockpile of canned food and water in our unit, air circulation and temperature control in a multi-storey building are vital to our survival as seniors, especially during heat domes. What happens when air intake and cooling systems are shut down for hours to reduce exposure to toxic fumes or smoke? Or Metro Van Stage 3 water restrictions reduce the supply of water needed to cool down an overheated tank for hours on end?

Lastly, the terrorism factor. In 2009, Canexus (former operator of the plant acquired by Chemtrade in 2017) planned to relocate roughly 50 rail cars carrying toxic chlorine gas to train tracks in a small town in Washington. The scheme, which was met with opposition on both sides of the border, was part of a regional security plan to prevent accidents or potential terrorist targeting of hazardous materials in locations near venues of the 2010 Vancouver Olympics. Canexus made the decision to shut down its North Vancouver operations for over a month, timing this work stoppage to overlap with the Olympics. With both international and domestic terrorism on the rise since 2010, along with new threats from drones, weaponized vehicles, AI system malfunction, and ransom threats from computer hackers, why have we heard nothing about safety preparations for sites such as Chemtrade during the current FIFA competition? Perhaps the silence is part of risk management.

Please vote to protect the safety of citizens who elected you,

James and Marcia Stephenson

[REDACTED]

From: Jenelle Saskiw <JSaskiw@railcan.ca>

Sent: Monday, June 15, 2026 10:47 AM

To: Herman Mah <mahh@dnv.org>

Subject: Additional information

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Herman here is some additional information I was able to find. I hope these help

Here is my best attempt to answer those questions.

- Number of tank cars that are loaded with hazardous material in Canada on an annual basis and compare that to the number of derailments (i.e. a relative measure of safety)

- RAC tracks the number of railcars containing dangerous goods that are transported each year. Over the past 5 years of data (2020-2024), Canadian railways have transported an average of 550,000 carloads containing dangerous goods each year. Each year, there are approximately 3 accidents with a product release (averaging a total of 10 cars across the three accidents). This means that less than 0.002% of dangerous goods carloads that are transported by rail release product in an accident (or that more than 99.998% don't have a release).

- Number of tanks cars loaded in the lower mainland on annual basis (i.e. give a sense of volume that is safely transported in our community)

- RAC does not have data at the geographic level. Statistics Canada provides publicly available data on a province basis (<https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=2310006201>), however, a lot of those cars will be going to Prince Rupert, not the lower mainland.

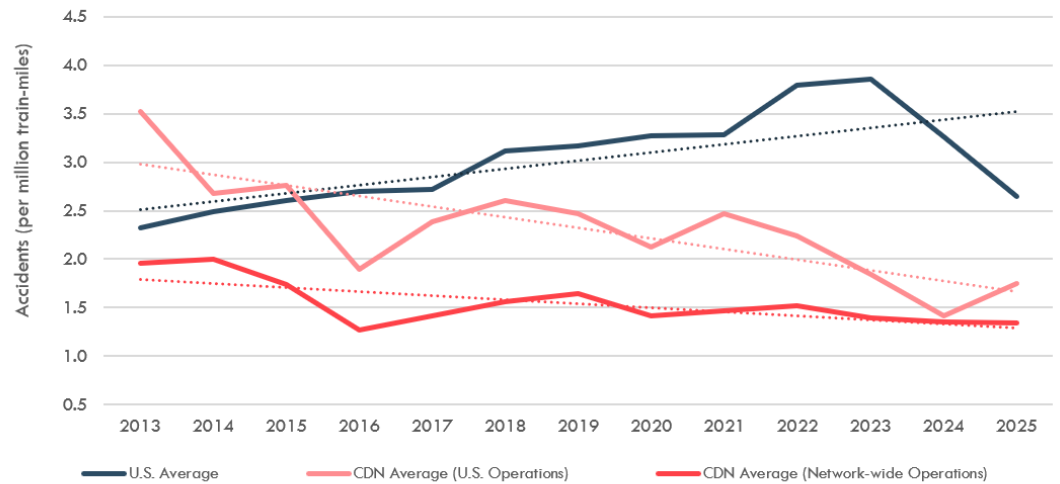
- Has the average length of trains changed in the past 10 years (are shorter trains safer?)

- Over the past 10 years (2015 to 2024), average train length has increased by about 10%. Average number of cars increased from 102 to 112 cars, and average weight increased from about 8,000 to about 9,000 short tons. RAC does not track accident rates by train length. RAC's headline safety rate for the freight sector is based on a tonnage denominator, as opposed to train miles. Per tonne moved, Canada's freight accident rate improved by 16.3% over the past decade, while the number of dangerous goods accidents per dangerous good carload improved by 35.4%.

- Relative to US, does Canada have a better safety record? (trying to address if the unfortunate accident that on Feb 3, 2023 is less likely to occur in Canada because there are stricter safety standards in Canada) If so, do you have stats to support that position?

- The U.S. Federal Railroad Administration's train accident rate data show that the Canadian railways (CN and CPKC, combined) average about half as many accidents as the U.S. railways (BNSF, UP, CSX, and NS, combined).

FRA train accident frequency 2013 – 2025



Source: Railway Association of Canada analysis based on data from the Federal Railroad Administration (FRA) and CN, CP, and CPKC annual reports.

Note: U.S. Average is a simple average of BNSF, CSX, NS, and UP. CDN Average (U.S. Operations) uses FRA-reported data for CN and CPKC. CDN Average (Network-wide Operations) includes data for CN and CP (2013-2022) and CPKC (2023-2025).

Jenelle Saskiw

Project Manager, Proximity Initiative | Directrice de projet, Initiative de voisinage

+1 (780)214-0757 [railcan.ca](https://www.railcan.ca) [Twitter](#) [Facebook](#) [LinkedIn](#)



Railway Association
of Canada

Association des chemins
de fer du Canada

RAC analysis of data from <https://www.tsb.gc.ca/eng/stats/rail/index.html>

SAFETY FIRST

THE CANADIAN RAILWAY GUARANTEE



Our members take rail safety seriously – in fact it's their number one priority. Canadian railways are among the safest in the world – something we are extremely proud of. Our members follow strict guidelines to ensure that Canadians who work in rail or who live near rail are always protected. These steps include training first responders on dangerous good transportation, investing in infrastructure, operating the newest safety technology and so much more.



- Over the past 10 years, the freight rail sector's accident rate improved by 16.3%, and the dangerous goods accident rate improved by 35.4% - a testament to our members' commitment to safety.



- In the past decade, Canada's railways have invested \$35.5 billion into their networks to improve safety, resiliency, and network fluidity. A strong infrastructure means a strong safety culture.



- Operation Lifesaver Canada is on a mission to get to zero: zero rail-related incidents, zero injuries and zero deaths. Since our founding in 1981, incidents are down roughly 80 per cent. But there is still more work to be done. The key: public education. Because we all have a role to play to get to zero. Every year, OL Canada outreaches to tens of thousands of people at events from coast to coast in a bid to save lives.



- Since 1999, RAC's Dangerous Goods Team has played a leadership role in the TRANSCAER® program by hosting, planning, and actively participating in events nationwide. RAC partners with communities across Canada to deliver training to first responders and other personnel focused on the safe transportation of dangerous goods.



- Did you know? RAC has a dedicated team of experts in charge of car-loading rules who inspect carloads in railway yards and customer facilities throughout the year. They also conduct training classes for shippers and railway personnel to ensure safe loading rules and regulations are properly understood and followed.



- 2014 saw the launch of the AskRail™ mobile app. This free app provides nearly tens of thousands of first responders with access to accurate, timely data about what type of hazardous materials a railcar is carrying so they can make an informed decision about how to respond to a rail emergency.



- Each year, millions of passengers travel safely on Canada's railways, thanks to strict regulations and the continuous hard work from our members.



- Did you know that rail is the most #sustainable way to move goods from coast to coast to coast in Canada? That's right – with such a vast country, rail is not only green, but also the safest way to move goods such as grain, medicine and even hazardous goods such as gasoline or essential chemicals.



- Over 99.99 per cent of dangerous goods carloads moved by train reach their destination without a release caused by an accident.



From: [REDACTED]
Sent: June 16, 2026 9:54 AM
To: DNV Input
Subject: FW: Chemtrade project - process of communication with community

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I'll attend the meeting tonight but I'm not a fan of public speaking nor am I that familiar with the processes around all this, other than to see strict rules everywhere about "no public submission accepted after meeting ends". As an fyi, below is an email that I sent the day after the last council meeting to the mayor and to the email who was listed online as being in charge of the project.

I do have concern with liquid chlorine continuing to be produced and transported here, not to mention travelling through densely populated areas after it leaves here. I do not support granting an extension to the 2026 end date that was previously negotiated and given to us at the time to reassure I think almost 20 years ago when that decision was announced.

Cathy

From: [REDACTED]
Sent: Tuesday, April 14, 2026 10:11 PM
To: 'fallaha@dnv.org' <fallaha@dnv.org>; 'Mike Little, Mayor' <LittleM@dnv.org>
Subject: Chemtrade project - process of communication with community

Hi Ms Afrooz and Mayor Little,
My name is Cathy Brydon and I live at [REDACTED] Dollarton Highway. I just wanted to write an email to express how closely in the last week or so I had been following last night's decision about Chemtrade and my impressions of the process as an interested citizen (but admittedly just a medium level of involvement). I'll describe my experiences with this over the past years.

We bought our house back in [REDACTED] and like most residents, although I knew there was an industrial area nearby, I had zero idea that there was a plant that could be harmful to human health in the case of an accident. I attended some of the Maplewood Community Association events to meet folks in community and was surprised to see that development in most of Maplewood had been affected for years by the density rule circles around that plant. Despite the fact that the plant was "there first" it didn't seem right that an entire community for such a large area all around was affected long term by that plant.

In approximately 2005(?) when the public hearings about plant modernization were happening and I think hosted by the Port of Vancouver I attended those and expressed opposition to the project. In the end the project was passed and when I looked back on the time I had spent trying to understand and provide feedback, I felt that meetings were a tickbox for them and that in retrospect my input was never going to make any difference – that project was going ahead regardless and it's fate had depended on factors a scale larger than my input. It felt like decades away, but at least the assurance that by 2030 there would no longer be liquid chlorine meant that the risks would hopefully shrink in the long term and that the company would work towards phasing away from that. Plus the modernizations did reduce the size of the MIAC circles enough that part of the Maplewood village plan could take place. And I was glad for the jobs the plant represented, including families of some kids that my kids went to school with.

Somewhere in those years I learned that Nexen had made a very large donation to the all-weather field at Windsor, which I felt was a fitting and very useful thing for the company to contribute to something used by the public in this community given the ongoing effect it had on ability for Maplewood to plan its village center, the risks, etc. That field is something our family used throughout all our elementary and high school years.

I attended CAP meetings for many years and enjoyed the group there that included representatives from all the companies, who provided their safety reports, etc. It was nice to see the jobs and work happening there and every single one of the company representatives were extremely nice, capable and honest and the operations seemed very well run. I enjoyed the tone of that group that was informational, not adversarial.

Somewhere along the way Nexen got bought by another company and changed its name to Chemtrade. I felt a bit worried about whether the safety processes continue to be as robust but over the years whatever I saw from them seemed that it was well run. Over the years I'm always amazed how literally no one who lives here has any idea that one site in that industrial area represents a higher risk. The scenarios that worry me the most are a terrorist attack or an earthquake and our family always 'jokes' about if something really bad happens "head uphill" – to escape chlorine or wave. I still have no idea whether sheltering in place would be more effective than walking uphill but hopefully a magic emergency management text to my postal code or a loudspeaker somewhere would advise me.

When these information meetings came up in Oct 2025, I thought "uggh, not again. I know that last time I promised myself not to spend a bunch of time that I don't have to get informed when this is something that really I have zero control over anyways". We did go to the information meeting and it was nice to hear from some of the workers at the plant, think about the jobs it provides, and try to understand more about where the chlorine gets used. After the meeting I repeated my impressions from years earlier – don't let yourself delve into this, it looks like we have input but really these things get decided by forces larger than us anyways.

Then about a week ago I ended up listening to the Burnaby council meeting about this project and there were several pretty key points that I was surprised I had not known about before:

- I had no idea that this project involved Chemtrade moving its production to a different part of its site – ie. moving from Vancouver Port Land to DNV land. The fact that I'd taken that much time to be informed and heard all the information about "the risk will be decreased enough that the MIAC circle can move to the almost the border of the Chemtrade property" left me feeling a bit misled if it's true that the plant would in essence be rebuilt on DNV property.
- I was surprised at the statement in the Burnaby meeting that many railcars would potentially be stored outdoors with full chlorine tanks, and I assume that is not true. Definitely that's not the impression that was given by the information meeting where the focus was on a building to contain any potential gas.
- The public meetings I went to had lots of visuals of nice clear water and appeal to supporting Canada by ensuring that we are self sufficient with our ability to supply chlorine for drinking water. I do think that a lot of context was missing and that there was a high degree of spin happening there.
- I had ZERO IDEA that if this decision was passed, that the land would then permanently be able to be used for that purpose(?) Unless I'm remembering incorrectly, the meeting only had statements by the company and by the consultant they hired. I don't remember context from the DNV or anyone else(?)

I saw that "legally no feedback can be submitted anymore" and realized that even as someone more informed than most of my neighbours, I'd had really no idea about the drivers for this or its future impact. I had shown up at a meeting and basically been counted as "well she didn't write any letters so she must be fine with it". I guess it's up to me to be more proactive, but I'd like to have had a clearer picture of the context around this project. Luckily, the people actually voting on this have the responsibility to delve much deeper and I know they consider this from a community planning viewpoint, hopefully thinking decades ahead.

Anyways, the reason for my rather rambling email is to verbalize one layperson citizen's experience receiving information. I am a relatively middle-minded person who values industry and jobs, of course safety and the environment as well.

I feel very thankful/relieved that DNV has voted not to rezone that parcel of land. I hope that if there are future decisions to be taken that there will be more opportunities for input. And personally I am very happy if other municipalities are asking safety questions and if industry is providing information about how this type of production is evolving in other places. Just because this risk has been there all along doesn't mean that it makes sense to continue it.

Cathy Brydon
[REDACTED]

From: Maron, Christina <CMaron@epcor.com> on behalf of Mannarino, Frank <FMannarino@epcor.com>
Sent: June 16, 2026 10:08 AM
To: Mayor's Office DNV; DNV Input
Cc: alrobinson@chemtradelogistics.com
Subject: EPCOR Letter of Support for Chemtrade
Attachments: Epcor Letter Of Support For Chemtrade.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Good morning,

As we are unable to attend the public hearing, we wanted to provide this letter in support of Chemtrade.

Frank

Frank Mannarino
Executive Vice President | Water Services
Phone: (780) 412-7664 | Email: fmannarino@epcor.com
[9469 Rosedale Road NW](#), Edmonton AB
T5K 0A5 Canada
epcor.com



PROVIDING MORE

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9469 Rossdale Road NW,
Edmonton, AB
T5K 0A5 Canada

June 16, 2026

His Worship Mayor Mike Little
District of North Vancouver
355 West Queens Road
North Vancouver, BC V7N 4N5
mayor@dnv.org , input@dnv.org

Dear Mayor Little and Council,

We are writing today on behalf of EPCOR, a utility company headquartered in Edmonton, Alberta, to express our concerns regarding the future of domestic caustic soda supply in Western Canada which is critical for treating drinking water to ensure that it is safe for consumption.

EPCOR uses caustic soda to treat the drinking water that we supply to almost one third of all Albertans in more than 93 communities in the greater Edmonton area. We were notified that the supply may be negatively impacted due a vote by the District of North Vancouver council to reject Chemtrade's rezoning application. This calls into question the future of the facility, risking access to caustic soda.

EPCOR has historically sourced its caustic soda from Chemtrade, the only significant domestic producer in Western Canada. Maintaining and strengthening domestic production capacity is essential to ensuring the resilience of Canada's water treatment supply chain. Losing Chemtrade's facility would reduce regional self-sufficiency and increase reliance on foreign suppliers for materials that are fundamental to public health.

A reduction in domestic supply would also create supply-and-demand pressures that could lead to increased costs. These higher costs would ultimately result in higher rates for customers at a time when affordability remains top-of-mind for Canadians. Increasing Canada's dependence on offshore suppliers for critical materials is not a prudent long-term strategy. Protecting domestic production is vital to strengthening the resiliency of our supply chains.

We are writing to express support for Chemtrade and to respectfully ask the District of North Vancouver to support Chemtrade's continued operations.

Frank Mannarino

A handwritten signature in blue ink that reads "F. Mannarino".

Senior Vice President EPCOR Water Services

Cc: Alan Robinson, Group Vice-President, Commercial, Chemtrade

From: Info Package
Sent: June 16, 2026 11:48 AM
To: DNV Input
Subject: FW: Letter from the Honourable Ravi Kahlon (Ref: 171420)
Attachments: 171420 Signed.pdf

From: JEG Minister JEG:EX <JEDI.Minister@gov.bc.ca>
Sent: June 11, 2026 3:26 PM
To: Mayor and Council - DNV <council@dnv.org>
Subject: Letter from the Honourable Ravi Kahlon (Ref: 171420)

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Please find attached a letter from the Honourable Ravi Kahlon, Minister of Jobs and Economic Growth.

Thank you,

Office of the Minister
Ministry of Jobs and Economic Growth



Ref: 171420

June 11, 2026

Mayor and Council
District of North Vancouver
Email: council@dnv.org

Dear Mayor and Council:

RE: Chemtrade – DNV Rezoning Application and Facility Modernization (Reconsideration)

The District of North Vancouver (DNV) Council's decision to support reconsideration of Chemtrade's rezoning application for safety upgrades to its North Vancouver chlor-alkali facility (the facility) is welcome. This letter provides the Province's input as part of Council's public hearing process, given the provincial considerations associated with the Chemtrade facility.

Chemtrade's facility has operated safely since 1957 and is a major component of British Columbia's (BC) industrial and economic infrastructure. The facility produces multiple industrial products, including chlorine for drinking water treatment and caustic soda and hydrochloric acid for industries such as pulp and paper and energy. Their integrated production means operations cannot be scaled back in the short term without affecting the facility's economic viability.

These chemicals are not readily substitutable. The facility accounts for approximately 40 percent of Canada's chlor-alkali capacity and supplies chlorine for water treatment across approximately 70 percent of BC and Alberta. Disruption would materially affect local supply chains for critical inputs and pose risks to essential services, businesses, and the public.

The Province recognizes that safety is central to Council's deliberations. Chemtrade has advanced a proposed framework that reflects Council's direction. Under the framework, Chemtrade would operate within a defined, time-limited horizon that provides a structured basis for continued safe operation, ongoing improvements, and planning over time. This approach supports an orderly path forward, rather than creating the risk of prematurely stranding significant industrial investment.

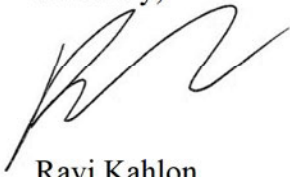
.../2

Mayor and Council, District of North Vancouver
Page 2

As Council proceeds to public hearing, the Province emphasizes the strategic importance of Chemtrade's proposal for continued chlorine production in accordance with its proposed framework. This is supported by the facility's long-standing safety record and the rigorous regulatory framework governing its operations within an established heavy industrial area.

Thank you.

Sincerely,

A handwritten signature in black ink, appearing to be 'Ravi Kahlon', written in a cursive style.

Ravi Kahlon
Minister

From: Info Package
Sent: June 16, 2026 11:49 AM
To: DNV Input
Subject: FW: Ministry of Jobs and Economic Growth- Investment Division | 171467 JEG DNV Rail Safety
Attachments: 171467 ADM_Pawlowski_Letter_JEG DNV Rail Safety.pdf; 2026-06-10 - Response to Province of BC (MIO) on Transport of Chlorine.pdf

From: Hong, Kelsey JEG:EX <Kelsey.Hong@gov.bc.ca>
Sent: June 12, 2026 11:56 AM
To: Mayor and Council - DNV <council@dnv.org>
Cc: Sawchuk, Richard JEG:EX <Richard.Sawchuk@gov.bc.ca>
Subject: FW: Ministry of Jobs and Economic Growth- Investment Division | 171467 JEG DNV Rail Safety

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Hello,

Please see email below and attached documents obo ADM Paul Pawlowski.

Thank you,
-Kelsey

Kelsey Hong, CPHR Candidate
A/Executive Operations Manager | Assistant Deputy Minister's Office-Investment Division
Ministry of Jobs and Economic Growth
T: (778) 405-6488 | E: kelsey.hong@gov.bc.ca
1810 Blanshard Street, Victoria BC V8T 4J1



Where ideas work



Respectfully acknowledging that I work on the traditional territories of the Lekwungun-speaking people.

From: Hong, Kelsey JEG:EX
Sent: June 12, 2026 11:25 AM
To: council@dnv.ca
Cc: Sawchuk, Richard JEG:EX <Richard.Sawchuk@gov.bc.ca>; Pawlowski, Paul JEG:EX <Paul.Pawlowski@gov.bc.ca>
Subject: Ministry of Jobs and Economic Growth- Investment Division | 171467 JEG DNV Rail Safety

RE: Chemtrade Rezoning Application – Transport Canada Information on the Transportation of Dangerous Goods, Including Chlorine

To Mayor and Council;

Please see attached letter on behalf of ADM, Paul Pawlowski. Included is a letter from Transport Canada as supporting document.

Kind Regards,
-Kelsey

Kelsey Hong, CPHR Candidate

A/Executive Operations Manager | Assistant Deputy Minister's Office-Investment Division

Ministry of Jobs and Economic Growth

T: (778) 405-6488 | E: kelsey.hong@gov.bc.ca

1810 Blanshard Street, Victoria BC V8T 4J1



Where ideas work



Respectfully acknowledging that I work on the traditional territories of the Lekwungun-speaking people.



Ref:171467

June 10, 2026

Mayor and Council
District of North Vancouver (DNV)
Email: council@dnv.ca

Chemtrade Rezoning Application – Transport Canada Information on the Transportation of Dangerous Goods, Including Chlorine

Dear Mayor and Council:

As Council prepares for the June 16 public hearing on Chemtrade's rezoning application, I am providing correspondence from Transport Canada, shared with the Province in relation to this matter, regarding the federal role in regulating the transportation of dangerous goods, including chlorine.

The attached letter outlines the federal regulatory framework governing the transportation of chlorine under the *Transportation of Dangerous Goods Act* and associated regulations. This includes requirements related to containment, handling, and emergency preparedness, as well as Transport Canada's role in inspection, compliance monitoring, and enforcement to ensure these requirements are met.

Please find Transport Canada's correspondence attached.

Sincerely,

Paul Pawlowski
Assistant Deputy Minister



Transport
Canada

Transports
Canada

Transport Canada, Surface, Western and Yukon Region
2010 – 7445 132 Street
Surrey, BC V3W 1J8

June 10, 2026

Ministry of Jobs and Economic Growth (JEG)
Government of British Columbia
Suite 730 – 999 Canada Place
Vancouver, BC V6C 3E1

Attention: Richard Sawchuk, Executive Project Director – Major Investments Office (MIO)

Dear Richard,

Re: Regulatory regime and oversight for dangerous goods transport by rail

Thank you for your correspondence of May 7, 2026, regarding Transport Canada's regulatory oversight role in the transportation of dangerous goods by rail, specifically for liquid chlorine. On behalf of Transport Canada Surface branch, I am pleased to provide you with the following information and resources.

Transport Canada's priority is to provide Canadians with a safe, secure, and efficient transportation system, and we are committed to protecting the safety and security of Canadians living and working along rail lines.

Goods classified as dangerous are part of everyday life, from health care and manufacturing to home comfort. The Common Carrier Obligation in the *Canada Transportation Act*, says that railways must transport these dangerous goods. With 46,000 kilometres of track across the country, the rail transport industry is an important part of how these products reach communities throughout Canada.

The department is responsible for the oversight of railway safety and regulating the transportation of dangerous goods by all modes under the *Railway Safety Act* (RSA) and the *Transportation of Dangerous Goods Act, 1992* (TDG Act). Both Acts were designed to promote public safety, and protection of property and the environment in railway operations and during the transportation of dangerous goods.

Transport Canada monitors the transportation of dangerous goods and rail safety from manufacturer location to the point of delivery through a comprehensive oversight, monitoring, and inspection program. All along the journey, the individuals handling

dangerous goods must be trained to understand the goods they are transporting, the regulations, and how to handle emergencies. Where our inspectors identify non-compliance, Transport Canada has a range of enforcement tools available to require corrective action.

The *Transportation of Dangerous Goods Regulations* and standards require dangerous goods to be transported in a means of containment designed, constructed, filled, closed, secured, and maintained so that under normal conditions of transport, including handling, there will be no release of the dangerous goods that could endanger public safety.

The TDG Act also requires shippers, importers and carriers of certain higher-risk dangerous goods, including UN1017 CHLORINE, to have an approved Emergency Response Assistance Plan to assist emergency responders in the event of a release or anticipated release while they are in transport.

Safety in the transportation of dangerous goods is a shared responsibility from all parties involved, including railways, shippers, importers, and facility operators. Transport Canada's regulatory oversight role is designed to verify compliance with all the rules and regulations.

Transport Canada does not determine specific routes used to move dangerous goods by road or rail. Rail routing decisions are operational matters made by railway companies. For road transport, routing decisions are determined by the Province of British Columbia and the applicable municipal or road authority.

UN1017 CHLORINE is transported in TC-105 or DOT-105 tank cars. CAN-CGSB 43.147, the new standard being adopted, has updated requirements for tank cars in toxic by inhalation standards. The tank cars used to transport the dangerous goods produced at the Chemtrade facility must be designed, built, and maintained to Transport Canada standards, and only Transport Canada-approved facilities are authorized to conduct work on them. These facilities are inspected by Transport Canada inspectors.

At the Chemtrade facility specifically, Transport Canada's oversight role is limited to the transportation of dangerous goods activities at the site, across the range of products it produces and handles. Our inspectors verify that loading and unloading procedures are carried out properly, that all means of containment are correctly and accurately labelled, and that the individuals handling the dangerous goods hold valid training certificates confirming they are qualified to transfer the products safely and respond appropriately in an emergency. Our inspectors inspect this facility on an annual basis, to ensure compliance with Transport Canada standards.

Designated emergency response officials can access a range of tools and resources to support incident response, including Transport Canada's Protective Direction 36, CANUTEC,

the Emergency Response Assistance Plan, and the You Are Not Alone guide for first responders, as well as industry-led resources such as AskRail and TRANSCAER.

- [Protective Direction 36](#) requires railway operators to share appropriate dangerous goods information with municipalities and first responders about dangerous goods traversing through their communities via rail to improve emergency planning, risk assessments, and planning for First Responders in the event of an incident.
- [CANUTEC](#) is the Canadian Transport Emergency Centre, which provides 24/7 bilingual scientific and technical advice to first responders dealing with dangerous goods incidents, and can be reached immediately during an emergency.
- An [emergency response assistance plan \(ERAP\)](#) describes what to do in the event of a release or anticipated release of certain higher-risk dangerous goods while they are in transport.
- [You're Not Alone](#) guide helps communities prepare for potential rail incidents involving the transportation of dangerous goods such as crude oil, diesel fuel or gasoline (flammable liquids).
- [AskRail](#) is a safety tool that gives emergency responders immediate access to accurate and timely data about railcar contents so they can make informed decisions in the event of a rail emergency.
- [Transportation Community Awareness and Emergency Response, or TRANSCAER](#), is a national outreach effort to help communities prepare for and respond to hazardous material transportation incidents. They offer free training courses led by industry experts who volunteer their time and come from a variety of industry sectors, including chemical manufacturing, transportation, distribution, emergency response, and government.

Together, these resources help local first responders ensure they have the appropriate tools and training to respond to the different products moving through their community.

It may also be helpful to bring to your attention the [Rules Respecting Key Train and Key Routes](#). Of note, the Rules state that within Census Metropolitan Areas (i.e. at least 50,000 persons), Key Trains are not permitted to exceed a maximum operating speed of 35 miles per hour.

Lastly, to learn more about how dangerous goods move safely across Canada's rail network, you may also wish to view Transport Canada's educational video, *Journey by Rail*, available in both [English](#) and [French](#).

Should you have further questions, you are welcome to contact me directly at Michael.McNeely@tc.gc.ca. If the District of North Vancouver has an interest in learning more about Transport Canada's role in rail safety and the transportation of dangerous goods, please do not hesitate to pass my name and contact information along.

Thank you again for writing to Transport Canada.

Sincerely,

Mike McNeely

Regional Director, Surface, Western and Yukon Region
Transport Canada

Cc : Richard Sawchuk, British Columbia Ministry of Jobs and Economic Growth

From: Petterson, Kris <kpetterson@chemtradelogistics.com>
Sent: June 16, 2026 12:03 PM
To: Signup; DNV Input
Subject: Public Hearing June 16 2026 Kris Petterson
Attachments: Kris Petterson - Public Hearing Bylaw8778 June 16 2026.pdf

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Hello,

I would like to speak to Mayor & Council tonight, June 16th at the public hearing regarding District of North Vancouver Bylaw 8778. I will be reading the attached written statement.

Thanks,
Kris.

Kris Petterson

Operations Manager, North Vancouver

kpetterson@chemtradelogistics.com | Office: (604) 924-2804 | Mobile: (604) 376-7041

www.chemtradelogistics.com



CHEMTRADE

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Thank you Mayor Little & Council for the opportunity to speak today.

My name is Kris Petterson. I am the Operations Manager at the Chemtrade North Vancouver Chlor-Alkali Facility, and a Professional Engineer registered with Engineers and Geoscientists BC (EGBC). I have professional responsibility for safe, reliable operation at the facility at 100 Amherst.

I came to North Vancouver six years ago because I saw an opportunity to apply my engineering education and industrial experience in a community that offers an **exceptional** quality of life. My family and I love what the North Shore has to offer. We enjoy Kayaking in Deep Cove, rock climbing at Lynn, skiing at Seymore, and biking at Fromme. We hope to make the North Shore our long-term home.

I have grown up around heavy industry; I've designed/executed engineering projects in Canada's largest processing plants, and it is interesting & rewarding work. Like others at the plant, I count myself lucky to have this work in such an ideal part of Canada.

Tonight I am speaking on behalf of the employees at the facility who support the proposed rezoning and safety improvements. I stand here together with the unionized workers as well, represented by my colleague Chris Poskitt.

There are approximately 120 full-time employees at our site and many long-term seconded engineers & contactors. Many live in North Vancouver and the surrounding communities. They coach local sports teams, volunteer, raise families, shop locally, and contribute to the community in countless ways.

The people who work at the facility care deeply about safety because they are the first people affected by it. We work there every day. We have a direct personal interest in ensuring that risks are mitigated wherever possible.

That is why these proposed improvements are important to us. I am personally grateful to be involved in the efforts to keep the plant safe not only on a day-to-day level, but also with the privilege to speak at this hearing, requesting such an improvement to the community.

The proposal before Council is fundamentally a safety project; it is an investment intended to reduce risk, improve resilience, and strengthen the long-term future of the facility.

Thank you.

From: Daniel Thompson [REDACTED]
Sent: June 16, 2026 12:11 PM
To: DNV Input
Subject: Speaking at the District of North Vancouver Bylaw 8778
Attachments: DAT Resume.docx; Planned Comments District of North Vancouver Bylaw 8778.docx

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

My name is Dan Thompson and I wish to speak at the Public Hearing tonight, June 16 regarding District of North Vancouver Bylaw 8778, and that you would also like to submit your attached information in advance of the hearing..

Dan Thompson, P.E. LLC[REDACTED] SW 40thTowanda, KS [REDACTED]
[REDACTED]
[REDACTED]**TO: Blair Hetherington****FROM: Dan Thompson****DATE: June 15, 2026****SUBJECT: My Statement to be Shared at the North Vancouver, BC Hearing**

My name is Dan Thompson, and I have been a licensed Mechanical Engineer for over 35 years. I have worked in the Chlor-Alkali (Chlorine Production) industry for over 40 years. I have been involved with chlorine storage, transportation, and emergency response for over 28 years. I have been providing engineering services to the Chlor-Alkali industry as an independent consultant for over 10 years. I have been a member of the Chlorine Institute Trade Association for over 28 years and have held leadership roles with the organization including the chair of the Emergency Response Issue Team. I have been involved in training the elite chlorine response teams that make up the Chlorine Institute's Mutual Aid Chlorine Program known as CHLOREP for over 26 years. I have participated in the review and initial issuance of a number of their Guidance Pamphlets and often review client's compliance with these pamphlets which are considered "engineering best practices".

Over the last 40 years I have seen substantial improvement in the equipment, practices and tactics involved in chlorine storage and transportation. The chlorine tank storage design and maintenance practices have improved considerably to the point that any tank performance issues are extremely rare. Compared to other hazardous materials design requirements, chlorine tanks have some of the most rigorous design and testing and maintenance requirements. Chlorine, as produced, is non-corrosive and I have inspected the interior of storage tanks that were over 60 years old, and they still looked nearly new.

Chlorine tank car design, testing and maintenance requirements are virtually the same as those required for the storage tanks. They are extremely robust cars and are actually overdesigned for the commodity they carry from an allowable stress loading perspective. The cars are designed for a minimum of 500psig and yet have a relief valve to prevent the lading from exceeding 375psig. Newer cars are typically designed to 600psig to help resist puncture in case of rail derailments but are still protected from exceeding 375psig.

Chlorine storage tanks and railcar valves and relief devices have been substantially improved over time due to improved materials and design. Tank car valves were initially removed and rebuilt on every trip to ensure proper operation. The design changes to soft seated modern materials have allowed the valves to remain safely in operation between required tank car requalification timeframes. In service valve mechanical issues are extremely rare and even if a problem occurs there are capping kits available to secure the problem device until the car can be emptied and the problem can be resolved.

I have personally been involved in emergency response training held at the Vancouver site. This included training of emergency response contractors as a part of the CHLOREP network that I alluded to earlier. Training for first responders offered through the TRANSCAER partnership with the Chlorine Institute has also been offered on this site and was fully supported by site personnel. I have worked with site personnel for many years and consider them to be active participants in fulfilling the product stewardship exemplified by Chlorine Institute members.

By the site's commitment to following the guiding principles of the Chlorine Institute and active participation in furthering the safety of the chlorine industry their continued operation in providing the essential chlorine products is a positive outcome for the community.

From: Robyn Kinsley <Robyn.Kinsley@CL2.com>
Sent: June 16, 2026 1:25 PM
To: Signup
Cc: DNV Input
Subject: Speaker Registration: June 16, 2026, District of North Vancouver Bylaw 8778 Public Hearing
Attachments: 2026-06-16 - N Van Public Hearing Bylaw 8778 - Chlorine Institute Written Testimony with Attachment.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Good afternoon,

My name is Robyn Kinsley from The Chlorine Institute. I am requesting to speak during tonight's District of North Vancouver public hearing that will be discussing Bylaw 8778. Attached is my written testimony, which includes Power Point slides that I intend to present during my various opportunities to speak.

Thank you,

Robyn Kinsley

Vice President, Transportation, Emergency Preparedness, & Regulatory Affairs

Arlington, VA

703.894.4123

rkinsley@CL2.com

www.chlorineinstitute.org



[Register Here](#)



THE CHLORINE INSTITUTE
1300 Wilson Blvd., Suite 525, Arlington, VA 22209
Tel 703-894-4140
www.chlorineinstitute.org

June 16, 2026

To: The Honorable North Vancouver Mayor, Mr. Mike Little
Councillor Mr. Jordan Back
Councillor Ms. Betty Forbes
Councillor Mr. James Hanson
Councillor Mr. Herman Mah
Councillor Ms. Lisa Muri
Councillor Ms. Catherine Pope

Re: North American Chlorine Emergency Response

Mayor Lewis and Councillors,

Thank you for providing me the opportunity to speak again on behalf of the North American chlorine industry during the June 16, 2026, public meeting, as well as submitting this written testimony. My name is Robyn Kinsley, and I am the Vice President of Transportation, Emergency Preparedness, and Regulatory Affairs at The Chlorine Institute. I have a bachelor's degree in chemical engineering and a master's degree in business. I have been with The Chlorine Institute since 2007 and have been the staff lead on transportation and emergency preparedness issues for the last 16 years.

The focus of this testimony is how our industry prepares for and responds to chlorine emergencies. The attachment to this testimony includes slides that I will present during the public meeting which provide context for my testimony.

Introduction

The Chlorine Institute ("CI" or "the Institute") is a 206-member, not-for-profit trade association established in 1924. We exist to support the chlor-alkali industry in advancing safe, secure, environmentally compatible, and sustainable production, distribution, and use of chlorine and our other mission chemicals.¹ The Institute's North American Producer members account for over 90% of chlorine production capacity in the U.S., Canada, and Mexico, and 100% of chlorine re-packagers. The Institute focuses on developing and sharing safety information, training, and best practices for the chlor-alkali industry. CI's members represent the complete value chain of chlorine, from producers to re-packagers, distributors, and users, as well as equipment and service providers that serve the industry.

CI achieves its mission by:

- Developing technical and safety-related publications that include industry best practices;
- Promoting science-based safety and security regulations for fixed facilities, transportation, and emergency response;

¹ CI's mission chemicals: chlorine, sodium hydroxide (caustic soda) and potassium hydroxide (caustic potash), sodium hypochlorite (bleach), the distribution of vinyl chloride monomer (VCM), and the distribution and use of hydrogen chloride (HCl).

- Benchmarking safety performance across the industry and sharing best practices among members; and
- Through CHLOREP and TRANSCAER®, providing expertise and training for the industry and first responders to manage chlorine incidents.

Every year, CI requires its members that handle chlorine to sign a safety and security commitment to certify their use of CI's applicable pamphlets, commit to report relevant incidents when they occur, commit to sharing performance data, and, for those that distribute chlorine, commit to providing a CHLOREP Response Team. All of CI's efforts are collectively targeted to prevent releases and injuries involving mission chemicals, and in the rare event an incident occurs, to provide a safety net through CHLOREP that minimizes the impacts of a release.

What is CHLOREP?

CHLOREP stands for the Chlorine Emergency Plan, which was formally established in 1972 as a 24/7 emergency response mutual aid network that:

- Prepares and educates its participants to assure effective emergency response through preparedness, prevention, and mitigation of chlorine incidents; and
- Ensures timely and professional response to chlorine incidents.

The scope of CHLOREP is responding to chlorine emergencies in transportation and at small chlorine user facilities.

The network is supported by 86 CHLOREP Teams from 25 member companies which capture chlorine producers that ship chlorine and chlorine re-packagers, as required by CI's safety and security commitment, as well as some industrial chlorine user members that choose to participate. The network is also supported by 15 hazmat emergency response contractor companies that CI verifies meet stringent industry requirements for chlorine response capabilities. CI supports CHLOREP and its participants, along with industry and regulatory partners, by providing annual CHLOREP Team Training, which is a 40-hour program that includes classroom lectures, hands-on skills practice, and hands-on scenario-based exercises. In addition to annual training, CI provides Advanced CHLOREP Training every three years that focuses on skills to mitigate a breached chlorine railcar, as well as 2-day CHLOREP training events in eastern and western Canada in alternating years. This additional training is targeted primarily for CHLOREP Contractors, but other interested CHLOREP, industry, and first responder stakeholders are also invited to participate.

CI geographically organizes the CHLOREP network into sectors throughout North America (as seen in page 12 of the attached). Each sector has one designated Primary CHLOREP Team with multiple Secondary CHLOREP Teams for additional support. One of the key marks of the CHLOREP network operating so successfully is that CHLOREP Teams will respond to an emergency when called upon regardless if they are the shipper or owner of the chlorine package. CHLOREP response is activated by the predominant North American 24/7 emergency call centers – CHEMTREC, CANUTEC, and SETIQ.

The majority of CHLOREP Activations are funneled through CHEMTREC, which is based in the U.S. but also accepts international calls. How those activations work is:

- CHEMTREC receives an emergency call involving a chlorine package. The phone number to call CHEMTREC is easy to find – it is typically applied to the chlorine package or included in the shipping papers.
- The CHEMTREC dispatcher informs the caller that CHLOREP will be activated, and the dispatcher immediately calls the designated Primary CHLOREP Team in the sector where the event is occurring. This is the first call made even before notifying the shipper.
- The Primary CHLOREP Team Leader will immediately call the on-site contact to collect additional details about the chlorine incident and determine the appropriate response needs.

CANUTEC operates in a different fashion but still connects the emergency caller to the appropriate CHLOREP Team. The Chlorine Institute continually provides both call centers with up-to-date 24-hour emergency phone numbers and Team Leader contact information for all CHLOREP Teams and Contractors.

When a Primary CHLOREP Team Leader receives a chlorine emergency call, they proceed with a thought process to determine response needs:

- No matter what, the Team Leader provides technical advice by phone and through that determines if the on-site first responders or hazmat team are capable of mitigating the chlorine release.
- If the Team Leader determines on-site assistance is needed, they then determine:
 - Can the Primary Team dispatch for effective assistance in the timeliest manner?
 - Is there a Secondary CHLOREP Team closer to the site that can provide the needed assistance?
 - Is the emergency of a condition that requires assistance from a CHLOREP Contractor?
 - Finally, if the release was mitigated by on-site responders, does a CHLOREP Team need to dispatch to retrieve the chlorine container for product disposal?

Page 16 of the attached presents data that provides context on how often CHLOREP is activated. On average, there were about 20 chlorine calls annually during 2020 through 2025. Approximately 34% of all calls during the 6-year period involved a chlorine railcar. Out of the calls involving chlorine railcars, about 21% involved a chlorine leak (or 7% of all CHLOREP activation calls). During this period, only one call originated from Canada CHLOREP Sector F (British Columbia and Alberta), which did not involve a chlorine leak. The largest amount of chlorine that was released in a single event during that period was 0.024 pounds of gas. This is remarkable considering that the volume of chlorine shipped is just over 18,000 loaded shipments throughout North America.² The data reports reflect that 99.9944% of all chlorine rail shipments reached their destination without incident.

² Data Source: The Association of American Railroads' "Annual Report of Hazardous Materials Transported by Rail, 2024."

As previously noted, CHLOREP Contractors supplement chlorine response needs. Not only does CI verify them as partners in the CHLOREP network, but most chlorine shippers and transportation providers directly contract with some of the CHLOREP Contractors for their own needs outside the network. Under CHLOREP, these contractors are typically called upon if a chlorine emergency is in a remote location or if the leak or damaged container presents a more complex situation and requires advanced capabilities. CI conducts on-site verifications of Level 2 contractors every two years and every four years for Level 3 contractors.

The primary difference in CHLOREP Contractor capabilities is as follows:

- **Level 2 Capabilities**
 - Respond to small chlorine container leaks (150-lb. cylinders and one-ton containers);
 - Respond to minor releases from chlorine tank car valves or pressure relief devices; and
 - Mitigate a chlorine release using a Chlorine Institute Emergency Kit.
- **Level 3 Capabilities**
 - Level 2 capabilities; plus
 - Special handling and field transfer for severely or potentially damaged chlorine bulk containers (cargo tanks and tank cars), which have the potential for high impact consequences to the public and/or environment.

Five of the 15 CHLOREP Contractors are available to assist with chlorine emergencies in British Columbia and Alberta (CHLOREP Sector F).

Chlorine Emergency Equipment

Under the CHLOREP program, The Chlorine Institute has worked with its members to design specialty chlorine emergency response equipment. In the 1960s, after chlorine container valves had been standardized, CI developed emergency kits that can mitigate chlorine leaks from 150-lb cylinders (using the A-Kit), one-ton containers (using the B-Kit), and tank cars and cargo tanks (using the C-Kit). All CHLOREP Teams and Contractors own these kits, as do many first responder departments and hazmat teams. All of CI's training events include hands-on practice applying these kits.

For more complex and significant chlorine railcar incidents, CI designed and tested the chlorine liquid transfer pump in 2000 and 2008. Sometimes a derailed chlorine railcar cannot be moved while still containing product, so a field transfer to another railcar is required. Industry and the public benefit from this pump because it has reduced the time required for transfer from multiple weeks to complete down to a matter of days. This timing is particularly critical when considering what public protective actions might be enacted during the event, such as evacuation or shelter-in-place.

The last major chlorine derailment was in 2005 (Graniteville, SC), so industry has not needed the use of this pump since it was tested. Regardless, it is regularly maintained by and stored at a CHLOREP Level 3 Contractor's facility. It is available to any CI member experiencing a chlorine rail emergency, but it must be operated by an expertly trained CHLOREP Level 3 Contractor. CHLOREP Team

members and contractors are trained on the operation of this pump during CI's CHLOREP Training events.

Chlorine Training for First Responders

To further supplement emergency preparedness for and response to chlorine emergencies, CI conducts training for first responders under the TRANSCAER umbrella, which stands for Transportation Community Awareness & Emergency Response. This is a North American program that:

- Provides in-person and virtual hazmat response training;
- Provides other related training and resources; and
- Coordinates the partnership between railroads, chemical producers, and industry trade groups (such as CI).

Every year, CI offers 4 to 6 in-person events throughout North America. This training is one-day, 8-hour course over two to three days that combines classroom learning and hands-on practice. It is free to attend, with the primary target audience being first responders. We use our CHLOREP Network and industry partners to provide instruction at these events. CI also provides additional training through virtual webinars.

Conclusion

CI's chlorine safety stewardship program is committed to preventing releases but also providing a safety net through CHLOREP in the rare event a chlorine emergency occurs. The Chlorine Institute and CHLOREP have set the standard for hazmat emergency preparedness, response, training, and mitigation. In summary:

- CI members that ship chlorine are required to provide chlorine emergency response teams to support the CHLOREP Network.
- Chlorine emergency response contractors are verified against industry requirements for chlorine emergency response capabilities to support the CHLOREP Network.
- Every year, CI provides multiple opportunities for CHLOREP Teams, Contractors, industry partners, and first responders to train on chlorine emergency response.
- CI has designed our own specialty emergency response equipment and trains industry and first responders on that equipment to ensure the most effective and timeliest response to chlorine incidents.
- Chlorine emergencies are very rare compared to the volume shipped; but in the rare times they do happen, assistance from expert industry responders is only one phone call away.

Thank you again for providing me with the opportunity to share information about the industry's chlorine emergency preparedness and response initiatives. Please feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Robyn S. Kinsley". The signature is fluid and cursive, with the first name "Robyn" and last name "Kinsley" clearly distinguishable.

Robyn S. Kinsley
Vice President, Transportation, Emergency Preparedness, & Regulatory Affairs
Arlington, VA (USA)
703-894-4123
rkinsley@CL2.com

Enc.: PDF Copy of Power Point slides presented during the June 16 public meeting by Robyn Kinsley



The Chlorine Institute: Chlorine Emergency Response

June 16, 2026
North Vancouver District Council Meeting

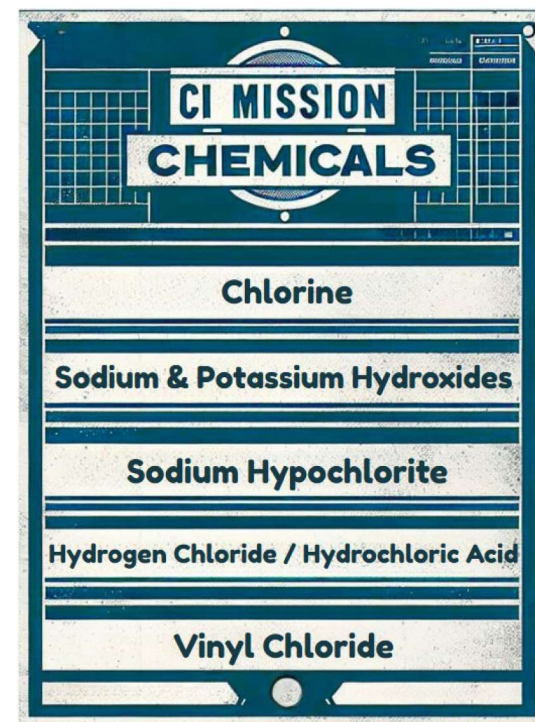
Who is the
Chlorine Institute?



THE CHLORINE INSTITUTE

Who is The Chlorine Institute?

- Non-profit trade association founded in 1924
- Focused on advancing safe, secure, environmentally compatible, and sustainable production, distribution and use of CI mission chemicals
- Widely recognized as the technical and safety voice of the chlor-alkali industry



Who is The Chlorine Institute?

Currently 206 member companies:

Chlorine Producers

Emergency Response Contractors

Chlorine Packagers

Equipment Manufacturers and Suppliers

Bleach Manufacturers

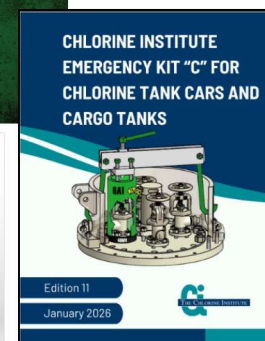
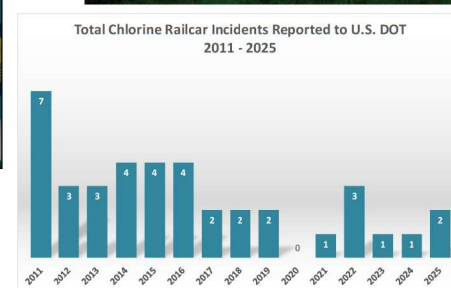
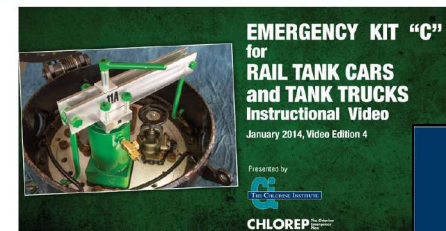
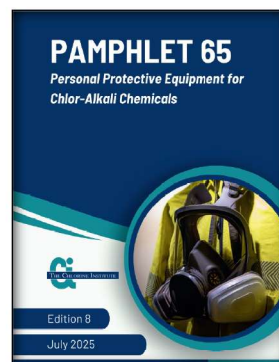
Engineering Firms

Industrial Chlorine End Users

Drinking Water / Wastewater
Treatment Facilities

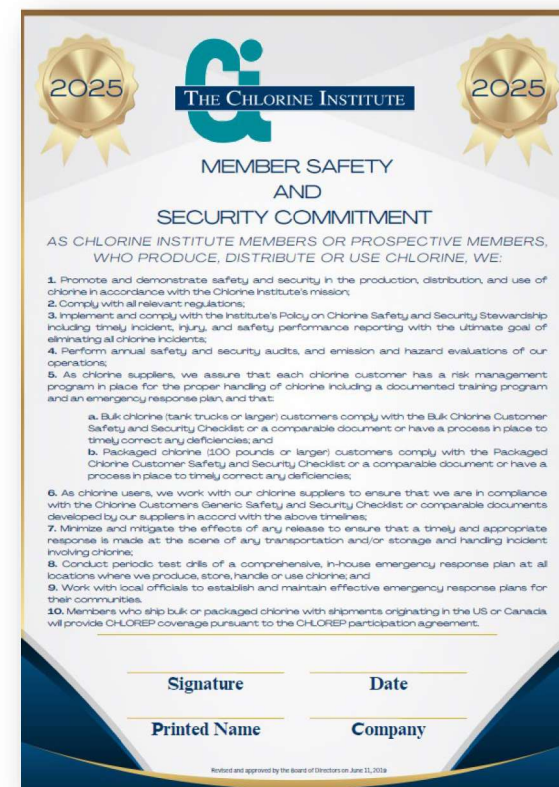
How Do We Achieve Our Mission?

- Develop technical & safety-related publications with industry best practices
- Promote science-based safety and security regulations for fixed facilities, transportation, and emergency response
- Benchmark industry safety performance and share safety and security best practices
- Through CHLOREP and TRANSCAER, provide expertise and training for industry and first responders to manage chlorine incidents



Chlorine Safety Stewardship Program

- Annual implementation of the Member Safety & Security Commitment for all members that handle chlorine
- Annual self-certification on the use of applicable pamphlets, i.e., CI Pamphlet Certification Program
- Commitment to report incidents when they occur
- Commitment to share performance data with industry
- Commitment to provide CHLOREP Response Team



The form is titled "MEMBER SAFETY AND SECURITY COMMITMENT" and is for "AS CHLORINE INSTITUTE MEMBERS OR PROSPECTIVE MEMBERS, WHO PRODUCE, DISTRIBUTE OR USE CHLORINE, WE:". It features a large "Ci" logo at the top center, flanked by two gold medals with "2025" on them. The form contains a list of 10 numbered commitments. At the bottom, there are fields for "Signature", "Date", "Printed Name", and "Company".

2025 **THE CHLORINE INSTITUTE** **2025**

MEMBER SAFETY AND SECURITY COMMITMENT

AS CHLORINE INSTITUTE MEMBERS OR PROSPECTIVE MEMBERS, WHO PRODUCE, DISTRIBUTE OR USE CHLORINE, WE:

1. Promote and demonstrate safety and security in the production, distribution, and use of chlorine in accordance with the Chlorine Institute's mission;
2. Comply with all relevant regulations;
3. Implement and comply with the Institute's Policy on Chlorine Safety and Security Stewardship including timely incident, injury, and safety performance reporting with the ultimate goal of eliminating all chlorine incidents;
4. Perform annual safety and security audits, and emission and hazard evaluations of our operations;
5. As chlorine suppliers, we assure that each chlorine customer has a risk management program in place for the proper handling of chlorine including a documented training program and an emergency response plan, and that:
 - a. Bulk chlorine (tank trucks or larger) customers comply with the Bulk Chlorine Customer Safety and Security Checklist or a comparable document or have a process in place to timely correct any deficiencies; and
 - b. Packaged chlorine (100 pounds or larger) customers comply with the Packaged Chlorine Customer Safety and Security Checklist or a comparable document or have a process in place to timely correct any deficiencies;
6. As chlorine users, we work with our chlorine suppliers to ensure that we are in compliance with the Chlorine Customers Generic Safety and Security Checklist or comparable documents developed by our suppliers in accord with the above timelines;
7. Minimize and mitigate the effects of any release to ensure that a timely and appropriate response is made at the scene of any transportation and/or storage and handling incident involving chlorine;
8. Conduct periodic test drills of a comprehensive, in-house emergency response plan at all locations where we produce, store, handle or use chlorine; and
9. Work with local officials to establish and maintain effective emergency response plans for their communities;
10. Members who ship bulk or packaged chlorine with shipments originating in the US or Canada will provide CHLOREP coverage pursuant to the CHLOREP participation agreement.

Signature _____ Date _____

Printed Name _____ Company _____

Revised and approved by the Board of Directors on June 11, 2019

Chlorine Institute Strategic Plan

The Chlorine Institute exists to support the chlor-alkali industry in advancing safe, secure, environmentally compatible, and sustainable production, distribution, and use of its mission chemicals*.

**CI's mission chemicals: chlorine, sodium and potassium hydroxides, sodium hypochlorite, the distribution of vinyl chloride monomer (VCM), and the distribution and use of hydrogen chloride.*



Health, Environment, Safety and Security Issue Team

Zero releases and injuries at member facilities with a focus on process safety



Transportation Issue Team

Zero releases and injuries



Product Stewardship Issue Team

Zero releases and injuries at user facilities



Emergency Preparedness Issue Team

Minimize the impact of a release

Aim For



Zero

Maintain CHLOREP®
Safety Net

What is
CHLOREP?



THE CHLORINE INSTITUTE

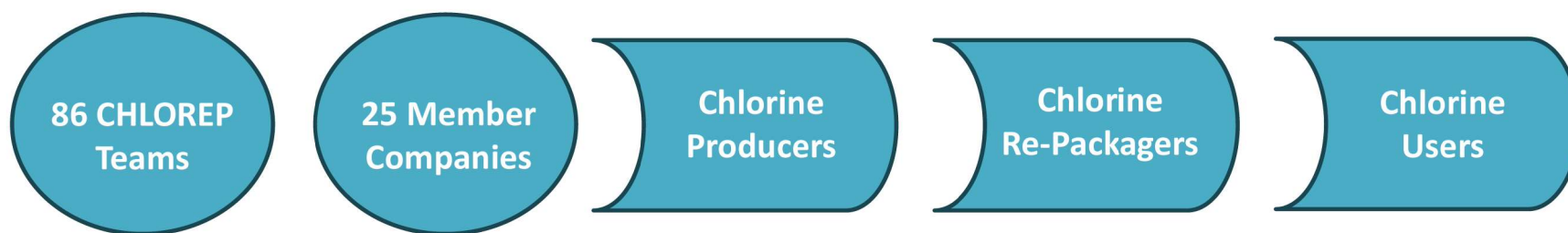
What is CHLOREP?

- The Chlorine Emergency Plan, established in 1972
- A 24/7 emergency response mutual aid network
- Mission:
 - 1) Prepare and educate participants to assure effective emergency response through preparedness, prevention, and mitigation of chlorine incidents
 - 2) Ensure timely and professional response to all chlorine incidents
- Scope: Chlorine emergencies in transportation and at smaller end-user facilities.

CHLOREP The Chlorine
Emergency
Plan

How is CHLOREP Supported?

Industry Responders



Emergency Response Contractors



How is CHLOREP Supported?

40
Hours



Classroom
Hands-On Skills
Scenario Exercises



Annual
CHLOREP Team
Training



CHLOREP Teams &
Contractors



Industry &
Regulatory Partners

Advanced
(Cl₂ Railcar Breach)

Triennial
CHLOREP
Training
(2 days)

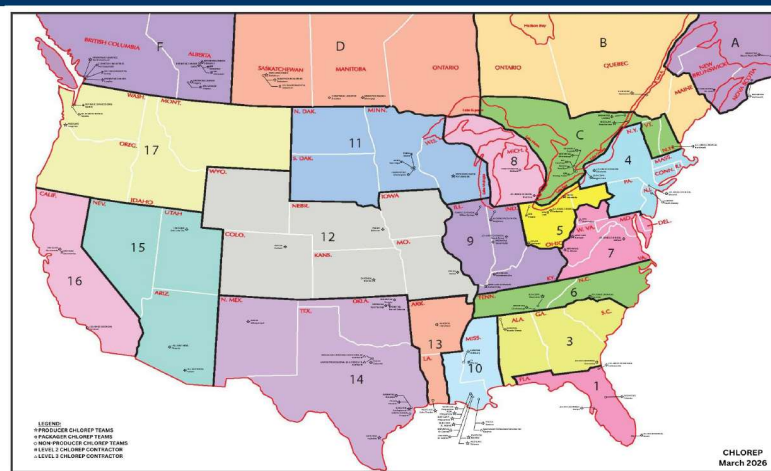
Western
Canada

Eastern
Canada

Aug. 2026
Edmonton, AB



How is CHLOREP Organized?



Primary Team

- One designated team per sector
- Receives initial emergency call for the sector

Secondary Teams

- Additional support teams within each sector
- Typically called upon based on expertise or geography

CHLOREP Teams respond regardless if they are the chlorine shipper or package owner

How is CHLOREP Activated?

Primarily through 24/7 emergency call centers

**In the U.S.
Call CHEMTREC
1-800-424-9300
1-703-527-3887**

Press #1 for all chlorine calls
(Accepts international calls)



**In Canada
Call CANUTEC
1-888-226-8832
1-613-996-6666**



**In Mexico
Call SETIQ
1-800-002-1400
52-55-5559-1588**



CHLOREP Activation - CHEMTREC

- 1) **CHEMTREC receives emergency call**
 - Collects details on chlorine incident
 - Informs caller that CHLOREP assistance will be activated
- 2) **CHEMTREC dispatcher identifies CHLOREP sector and calls designated Primary CHLOREP Team**
 - Emergency phone number and Team contact info provided by CI
 - First call made, even before notifying the shipper
- 3) **Primary Team Leader immediately calls on-site emergency contact**
 - Collect additional details on chlorine incident
 - Determines appropriate response needs



CANUTEC will provide CHLOREP Team contact information and participate in call

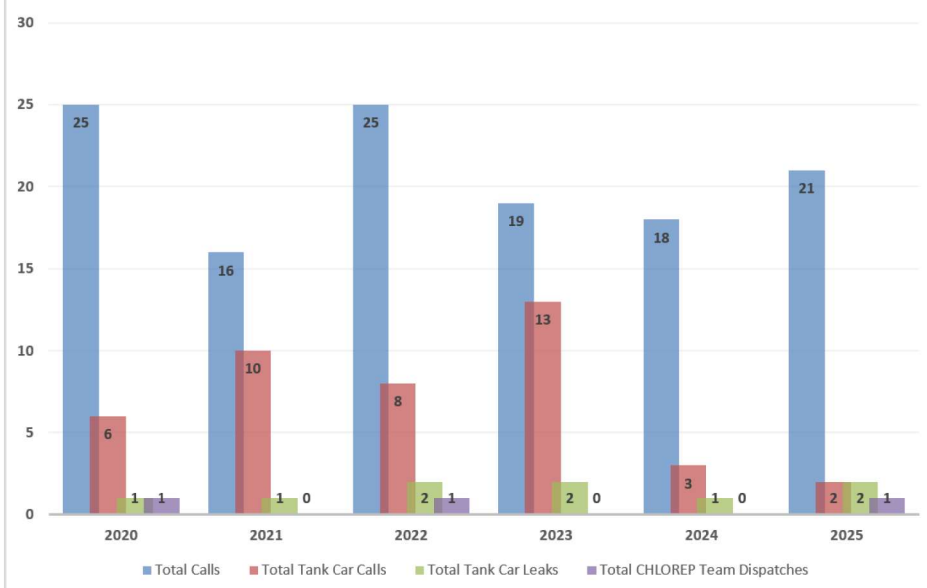
Primary CHLOREP Team Decisions

Determining appropriate response needs:

- 1) Provide technical advice over the phone, as needed
 - Are on-site fire responders or hazmat team capable of mitigating the release?
- 2) Determine if emergency requires on-site assistance
 - Can the Primary Team dispatch for effective assistance in the timeliest manner?
 - Is there a Secondary Team closer that can provide needed assistance?
 - Is the emergency of a condition that requires assistance from CHLOREP Contractor?
 - Was release mitigated and package needs picked up for disposal?

CHLOREP Activation Calls – Tank Cars

CHLOREP Activation Calls - Tank Cars
2020-2025



2024 Chlorine Rail Shipments (Loaded)

U.S.: 14,101
Canada: 2,444
Mexico: 1,460

99.9944%
Chlorine Rail Shipments
Delivered WITHOUT a Leak

Chlorine Tank Car Response Statistics

Total Calls Involving Chlorine Tank Car

34%

Total Calls Reporting Cl₂ Leak

21%

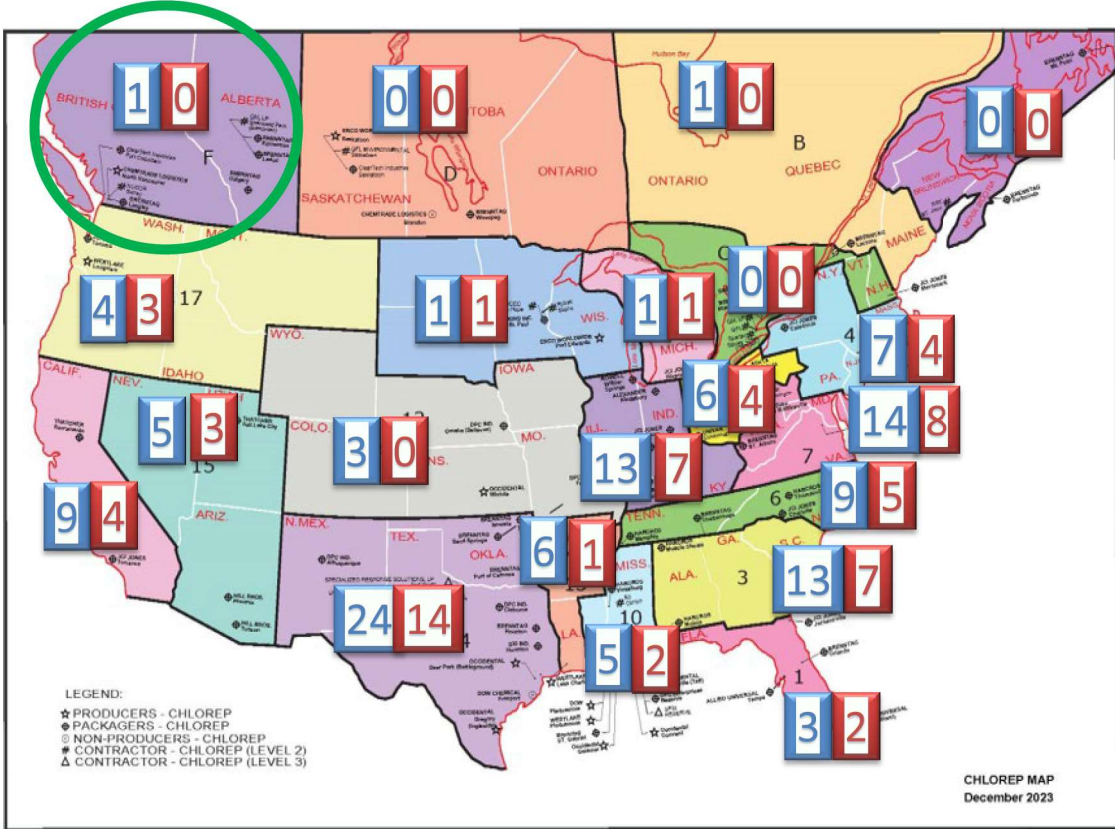
(7% of all calls)

Total Team Dispatches

7%

(2% of all calls)

CHLOREP Activation Calls by Sector (2020-2025)



 = Calls

 = Leaks

CHLOREP Contractors

- Ensure availability of adequate chlorine response capabilities outside the traditional CHLOREP network
- Particularly for remote or complex incidents
- Verified periodically to meet response capabilities:
 - Level 2: Site visit every 2 years
 - Level 3: Site visit every 4 years
 - Annual updates between site visits

CHLOREP Contractor Response Capabilities

Level 2	• Small container leaks (cylinders & ton containers) • Minor release from tank car valve or PRD • Mitigate with chlorine emergency kits	Available in Canada Sector F (British Columbia & Alberta)   
Level 3	• Level 2 capabilities, plus: • Special handling & field transfer capabilities for severely or potentially damaged bulk containers (cargo tanks & tank cars), which have potential for high impact consequence to public/environment	Available to All Sectors   

Chlorine Emergency Response Equipment

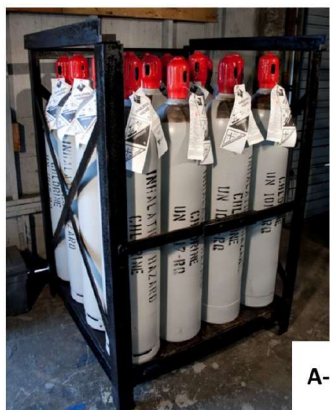


THE CHLORINE INSTITUTE

Standardized Chlorine Emergency Response Equipment

Chlorine Institute Emergency Kits

Developed by chlorine industry in the 1960s



150-lb
Cylinders

1-Ton
Containers



Tank Cars



A-Kit



B-Kit



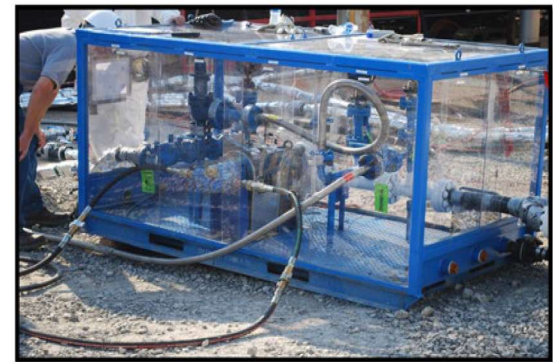
C-Kit



Standardized Chlorine Emergency Response Equipment

Chlorine Liquid Transfer Pump

- For significantly damaged and/or leaking chlorine tank cars involved in a derailment
- If tank car cannot be moved, requires field transfer of chlorine into another tank car
- Time needed to transfer:
 - Historical chlorine derailments – **WEEKS**
 - CI's chlorine liquid transfer pump – **DAYS**
- CI members designed & tested pump in 2000 & 2008 with chlorine product
- Last major chlorine tank car derailment was in 2005 – industry has not needed the pump since it was tested
- Stored at and preventative maintenance conducted annually by Level 3 Contractor
- Available to any CI member and requires use by Level 3 Contractors
- Train on use of pump during CHLOREP Training events



How Does CI Train First Responders?

What is TRANSCAER®?

- Transportation Community Awareness & Emergency Response
- Established in 1986 to assist communities in preparing for potential hazardous materials incidents by:
 - North American program
 - Providing in-person and virtual training
 - Providing training materials
 - Partnering with railroads, chemical producers & industry groups to provide volunteer hazmat instructors
- The Chlorine Institute is a long-time sponsor of TRANSCAER

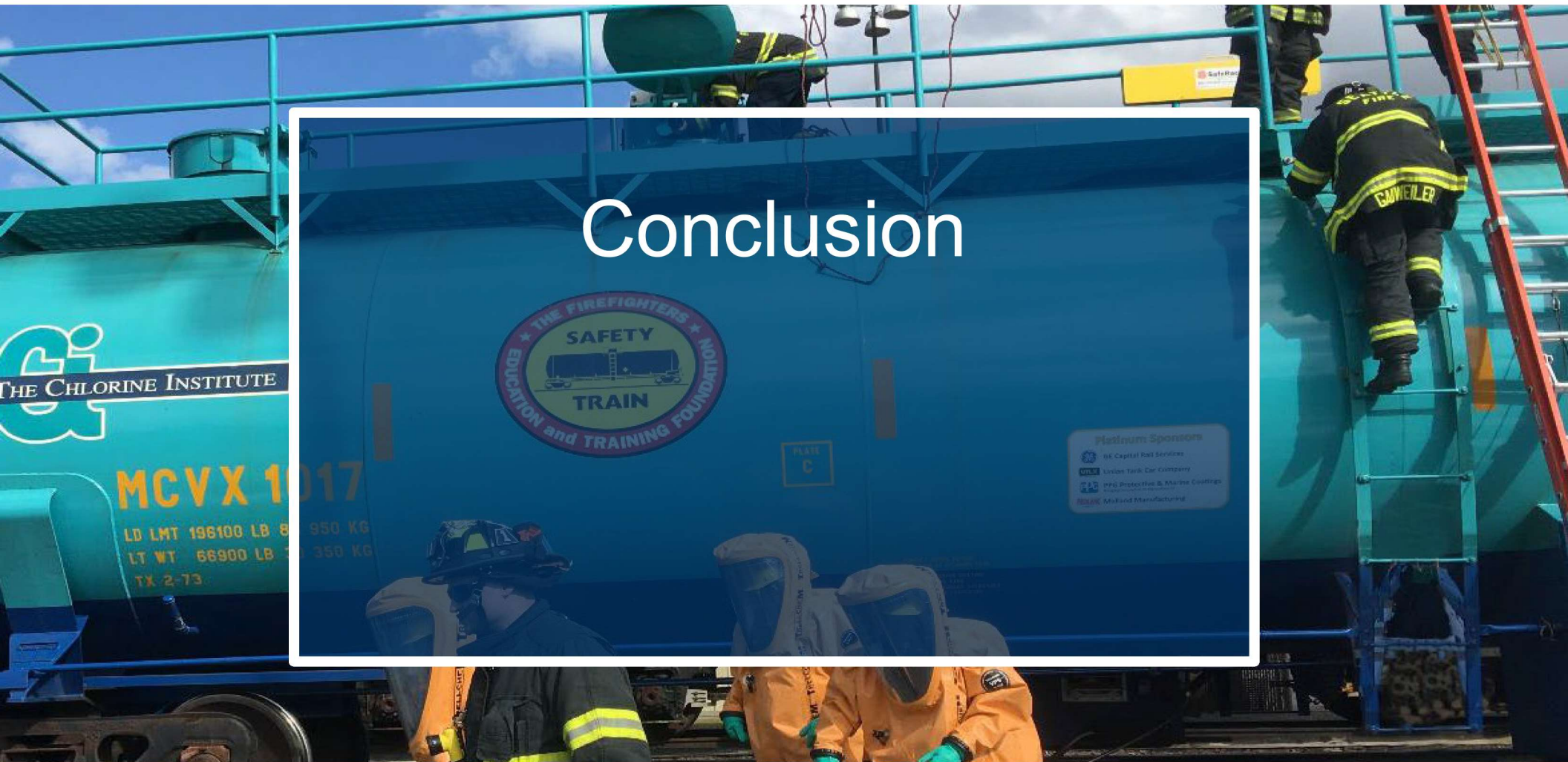


CI's TRANSCAER First Responder Training

- 4-6 events annually throughout U.S., Canada, and Mexico
- FREE one-day, 8-hour event (multiple days per location)
- For local first responders and other interested stakeholders
- Use CHLOREP Team Members, Contractors, & rail partners as instructors
- Classroom: chlorine & mission chemical properties, exposure, and emergency response considerations
- Hands-On: chlorine emergency kit application, tank car walkaround, magnetic patch mitigation
- Additional opportunities through virtual webinars



Conclusion



From: Corrie Kost [REDACTED]
Sent: June 16, 2026 1:58 PM
To: Mayor and Council - DNV; DNV Input
Subject: Agenda item 4 from the attached "Comments on Proposed Canexus Technology conversion Project"
Attachments: MINUTES of the 19mar2007-cm070305-hm.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Your Worship and Members of Council,

The attached is being sent to be part of the historical record on this issue since this information is no longer on the DNV website.

Please make it part of the record for the public hearing of June 16 2026.

Yours truly,
Corrie Kost

[REDACTED]

MINUTES of the Regular Meeting of the Council for The Corporation of the District of North Vancouver held in the Council Chamber of the Municipal Hall, 355 West Queens Road, North Vancouver, B.C. on Monday, March 5, 2007, commencing at 7:00 p.m.

PRESENT:

Mayor: Richard Walton

Councillors: Janice Harris, Robin Hicks, Mike Little, Doug MacKay-Dunn, Lisa Muri, Alan Nixon

Staff: Mr. J. Ridge, Chief Administrative Officer
Ms A. Hilsen, Municipal Clerk
Ms N. Deveaux, Director of Financial Services/Chief Financial Officer
Mr. J. Dioszeghy, Director of Environment, Parks & Engineering Services
Ms M. Eckenfelder, Director of Sustainability, Planning and Building
Ms C. Grant, Manager - [Corporate Planning & Projects](#)
Ms S. Haid, Manager - Sustainable Community Development
Mr. D. Allan, Senior Development Planner
Mr. P. Chapman, Social Planner
Mr. R. Danyluk, Section Manager – Financial Plan and Cost Management
Mr. R. Parr, Municipal Solicitor
Mr. J. Rice, Tourism, Arts and Cultural Development Coordinator
Mr. D. Sewell, Section Manager – Business Services
Ms K. Arscott, Council Clerk

General Matters

Public Input

1. Mr. Tom Young, 2000 Block Dollarton Highway, regarding Item 4.
 - Spoke against the proposed Canexus conversion project commenting that any expansion or conversion is contrary to the Official Community Plan, and against the wishes of the community.
2. Mr. John Walkley, 300 Block Seymour River Place, regarding Item 4.
 - Expressed opposition to the proposed Canexus conversion project.
 - Rejected any expansion of chlorine manufacture and the transportation of chlorine.
 - There is no place for a chlorine plant in perpetuity near the densely-populated area of Maplewood and its environs.
3. Mr. Derek Lunden, 1100 Block Silverwood Crescent, regarding *The Super Cities Walk for Multiple Sclerosis* at Ambleside Park on Sunday April 22, 2007.
 - Invited members of Council and the community to participate in the 10th anniversary of this fundraising event. Further information/on-line registration is available at supercitieswalk.com or at 1-800-268-7582.
3. Mr. David Cook, 900 Block Lytton Street, member of Parks & Natural Environment Advisory Committee representing the Alpine Recreational Reference Group, and Director of the Vancouver Natural History Society.

- Requested that the Vancouver Natural History Society be included in ARRG as a stakeholder.

Delegation

Mr. Peter Thompson, Community Monitoring Advisory Committee, Seymour-Capilano Water Utility Projects, regarding CMAC Report on *2006 Activities and Results* File 01.0360.20/067.000

Email: [Mr. Peter Thompson, February 14, 2007](#)

Mr. Peter Thompson, Community Monitoring Advisory Committee, appeared before Council to present CMAC's *2006 Activities and Results* report on the Seymour-Capilano Water Utility Projects. CMAC is a District of North Vancouver Council appointed committee of community representatives from the Capilano and Seymour areas who provide a community perspective to both the Greater Vancouver Regional District and the District of North Vancouver on current and planned water utility construction projects.

Mr. Thompson indicated that on a project specific basis, CMAC has addressed the following agenda items:

- Seymour-Capilano Filtration Project - Updates and progress
- Seymour Water Main Project/Lower Seymour Conservation Reserve (LSCR) Access Improvements
- Seymour Falls Dam Seismic Upgrade Project.

Mr. Thompson also provided clarification on the *Assessment of Results and Challenges – 2007 to Project End* and invited the public to read the report in its entirety or to view the Council meeting on-line at www.dnv.org March 5, 2007 Regular Council Meeting.

Mayor Walton, on behalf of Council and the community, expressed appreciation to Mr. Thompson for his in-depth presentation.

Moved by Councillor MURI, Seconded by Councillor HARRIS and CARRIED
THAT the delegation of Mr. Peter Thompson, Community Monitoring Advisory Committee, regarding Seymour-Capilano Water Utility Projects, be received.

Minutes

Moved by Councillor MURI, Seconded by Councillor LITTLE and CARRIED
THAT

1. the Minutes of the Regular Council Meeting held February 19, 2007, be ADOPTED;
2. the Minutes of the Special Financial Plan Meeting held February 13, 2007 be ADOPTED;
3. the Minutes of the Council Workshop held February 12, 2007 be RECEIVED; and
4. the Report of the Public Hearing held February 27, 2007 on Bylaw 7646 be RECEIVED.

Release of Special (Closed) Meeting Decisions

February 19, 2007

Municipal Library Board Appointment
THAT

1. *the applications for the vacancy on the Municipal Library Board, as attached to the February 9, 2007 report of the Deputy Municipal Clerk, be received;*
2. *Corporate Policy 1-0360-3, which allows Council seven days to nominate other interested individuals to the committee, be waived;*
3. *Mr. Areef Abraham be appointed to the Municipal Library Board, as a member at-large, for a two-year term ending December 31, 2008, as determined by secret ballot.*

Council Matters

Consent Agenda Items (Items *2, *3, *8, *9, *10, *12)

Moved by Councillor MURI, Seconded by Councillor HARRIS and CARRIED
THAT the recommendations listed within the "Consent Agenda" be approved.

- *2. Bylaw 7646 Rezoning Bylaw 1224 – 1315 East
8th Street, Proposed Subdivision**
File 08.3060.20/034.06
Tracking Number 2007-00034
(to consider a bylaw to allow subdivision of the subject property into two lots)

Report: [Community Planner, December 20, 2006](#)

(Returned from [February 27, 2007 Public Hearing](#))

THAT Bylaw 7646 be now read a SECOND and THIRD TIME.

(CARRIED
UNANIMOUSLY)

- *3. Development Permit 32.06 - 375 Lynn Avenue**
File 08.3060.20/032.06
Tracking Number 2007-00193
(Brook Croome Architect Inc. on behalf of Olga and Siegfried Franiek)
(to allow for construction of a light industrial building on the property)

Report: [Community Planner, February 21, 2007](#)

THAT Development Permit 32.06 for 375 Lynn Avenue, as outlined in Attachment D1. and D2. to the February 21, 2007 report of the Community Planner, be ISSUED.

(CARRIED
UNANIMOUSLY)

- *8. Operating Support for Major Arts Organizations
Interim Funding 2007**
File 10.4794.90/001.000
Tracking Number 2006-00177
(to consider interim operating funds for 2007 totalling \$106,561.50 until the final municipal budget is approved)

Report: [Tourism, Arts & Cultural Development Coordinator, February 5, 2007](#)

THAT

1. interim funding be approved for the following major arts organizations, such funding to be disbursed in March 2007 and to be equivalent to one half of the 2006 Operational Support grants:
 - North Vancouver Community Arts Council..... \$47,624
 - B.C. Photography and Media Arts Society \$27,570
(Presentation House Gallery)
 - Presentation House Cultural Society \$18,867.⁵⁰
(Presentation House Theatre)
 - Seymour Art Gallery \$12,500; and
2. the balance of the 2007 Operating Support grant be disbursed in full further to Council's approval of the budget.

(CARRIED
UNANIMOUSLY)

***9. School Community Connections Step 2
Grant Application**

File 01.0360.20/006.000

Tracking 2007-00192

(to consider an endorsement for funding from the Provincial Government to upgrade Norgate Community School and the outdoor space at Sutherland Secondary School)

Report: [Director of Environment, Parks & Engineering Services, February 20,](#)

[2007](#)

THAT the School Community Connections Step II grant application be endorsed, as outlined in the February 20, 2007 report of the Director of Environment, Parks & Engineering Services.

(CARRIED
UNANIMOUSLY)

***10. UBCM Grant – Integrated Emergency Planning for
Local Governments and First Nations**

File 01.0250.20/000.000

Tracking Number 2007-00194

(to consider a recommendation for submission to the UBCM convention)

Report: [Acting Director, North Shore Emergency Management Office, February](#)

[22, 2007](#)

THAT the funding proposal for Integrated Emergency Planning for Local Governments and First Nations be endorsed and be submitted to the Union of British Columbia Municipalities for consideration.

(CARRIED
UNANIMOUSLY)

Motions

***12. UBCM Resolutions Sessions**

Submitted by Councillor Lisa Muri

WHEREAS the Union of BC Municipalities encourages all members of local governments to attend its annual Convention and participate in the resolutions sessions of the Convention;

AND WHEREAS it may not be possible for all council/board members to attend the full Convention as delegates;

THEREFORE BE IT RESOLVED that UBCM consider allowing council/board members who are unable to attend the full Convention as delegates, to attend only the resolution sessions of the Convention in order to speak to resolutions sponsored by their local government.

(CARRIED
UNANIMOUSLY)

1. FINANCIAL PLAN EXPENDITURE AUTHORIZATION BYLAWS 2007

File 05.1715.40/006.000

Tracking Number [2006-00282](#)

(to consider the 2007 Financial Plan Expenditure Authorization Bylaws)

Report: [Director of Financial Services/Chief Financial Officer, February 28, 2007](#)

Moved by Councillor LITTLE, Seconded by Councillor HICKS and CARRIED
THAT the following Bylaws be now read a FIRST, SECOND and THIRD TIME:

- | | | |
|----|------------|--|
| a) | Bylaw 7650 | 2007-2011 Financial Plan Approval Bylaw |
| b) | Bylaw 7651 | 2007 Heritage Fund Appropriation Bylaw No. 1 |
| c) | Bylaw 7652 | 2007 Development Cost Charges Reserve |
| | Fund | Parks Appropriation Bylaw No. 1 |
| d) | Bylaw 7653 | 2007 Development Cost Charges Reserve |
| | Fund | Road Works Appropriation Bylaw No. 1 |
| e) | Bylaw 7654 | 2007 Development Cost Charges Reserve |
| | Fund | Waterworks Appropriation Bylaw No. 1 |

The meeting recessed at 9:00 p.m. and reconvened at 9:10 p.m.

4. Comments on Proposed Canexus Technology Conversion Project

File 13.6440.40/002.000

Tracking Number 2006-00740

(to convey the District's feedback on the project to the Vancouver Port Authority as part of its Public Project Review Process)

Report: [Director of Sustainability, Planning and Development, February 27,](#)

[2007](#)

Ms S. Haid, Manager - Sustainable Community Development, Mr. R. Parr, Municipal Solicitor, Mr. D. Sewell, Section Manager – Business Services, and Dr. Norman Nibber, Consultant, were in attendance to speak to their PowerPoint presentation on the Canexus Technology Conversion (TCP)

Project application, the legal implications and the economic impacts on the District if the upgrade is approved.

Moved by Councillor NIXON, Seconded by Councillor MACKAY-DUNN

THAT Council forward the following feedback to the Vancouver Port Corporation (VPA) regarding the proposed Canexus Technology Conversion Project (TCP):

"The Council for the District of North Vancouver continues to support the key strategy and related policies of the Maplewood Local Plan, 2002, as outlined in Attachment 1 to the February 27, 2007 report of the Director, Sustainability, Planning and Development, to plan for the replacement of the chemical industry in the long term with a range of industrial uses, including light industry, opening opportunities for public access to the waterfront.;

The Council for the District of North Vancouver does not support the continued operation of a Canexus plant on the current site regardless of any technology employed.;

The Council for the District of North Vancouver does not support any extension to the current VPA lease.; AND

Should the Technology Conversion Project proceed, Council requests that VPA ensure the following aspects are addressed:

1. The Implementation Agreement on Chlorine Storage Limitation, 1998 must be revised and agreed upon by the District and Canexus to limit fixed tank on-site chlorine storage to 60 tonnes maximum.
2. Potential implications to effective annual shipping of chlorine defined under "Normal Shipping Needs" in the Implementation Agreement need to be assessed and the District needs to be assured there will be no further significant risks from the plant beyond the Quantitative Risk Assessment (QRA) completed for the TCP by Alp and Associates in 2006. Subject to no additional, quantifiable risks, the Implementation Agreement will require amendment of the effective maximum limit on shipping to be consistent with the TCP.
3. The extension period of the lease be agreed upon by the District and the VPA and be subject to ongoing review of risks and regular QRAs.
4. Canexus contribute to improved community emergency preparedness including improvements to the CanAlert line, coordination of "live drills" in the affected area of the Maplewood community, the dissemination of information to surrounding communities, including Lynnwood, Inter-River, Seymour Valley and Dollarton, as well as any others that staff feel it necessary to include, and funding of a local HAZMAT team.
5. Canexus to prepare and DNV to approve a societal risk assessment on specified parcels including "A" and "D" of the Maplewood Local Plan as outlined in Attachment 4 to the February 27, 2007 report of the Director, Sustainability, Planning and Development.
6. Canexus to implement recommendations for emergency operating procedures for inventory transfer and to provide fixed foam protection for the dyke around the fixed storage tank as specified in QRA Peer Review by Independent Risk Control, dated February, 2007.
7. Comments contained in this report regarding the evaluation of rail safety be addressed and measures to improve rail car safety involving inspection of cars by Procor, Canexus and CN as recommended by Doug McCutcheon and Associates in its peer review of the TCP QRA dated January 5th, 2007 be implemented.

8. Canexus to provide payment-in-lieu to the District should there be a property tax cap.
9. Prior to finalizing any renegotiation or renewal of the lease between the VPA and Canexus, the District of North Vancouver be indemnified against any damages that may result from the release of chlorine."

On request, the foregoing motion was split and dealt with as follows:

The question on the following statement in the preamble section of the original motion was put
and CARRIED

"The Council for the District of North Vancouver does not support the continued operation of a Canexus plant on the current site regardless of any technology employed.;"

Voting Against: Mayor WALTON, Councillors HARRIS, MURI

The question on the following statement in the preamble section of the original motion was put and CARRIED

"The Council for the District of North Vancouver does not support any extension to the current VPA lease."

The question on the original motion was then put and CARRIED

Final Motion:

THAT Council forward the following feedback to the Vancouver Port Corporation (VPA) regarding the proposed Canexus Technology Conversion Project (TCP):

- *"The Council for the District of North Vancouver continues to support the key strategy and related policies of the Maplewood Local Plan, 2002, as outlined in Attachment 1 to the February 27, 2007 report of the Director, Sustainability, Planning and Development, to plan for the replacement of the chemical industry in the long term with a range of industrial uses, including light industry, opening opportunities for public access to the waterfront.;*
- *The Council for the District of North Vancouver does not support the continued operation of a Canexus plant on the current site regardless of any technology employed.;*

The Council for the District of North Vancouver does not support any extension to the current VPA lease.; AND

Should the Technology Conversion Project proceed, Council requests that VPA ensure the following aspects are addressed:

1. *The Implementation Agreement on Chlorine Storage Limitation, 1998 must be revised and agreed upon by the District and Canexus to limit fixed tank on-site chlorine storage to 60 tonnes maximum.*
2. *Potential implications to effective annual shipping of chlorine defined under "Normal Shipping Needs" in the Implementation Agreement need to be assessed and the District needs to be assured there will be no further significant risks from the plant beyond the Quantitative Risk Assessment (QRA) completed for the TCP by Alp and Associates in 2006. Subject to no additional, quantifiable risks, the Implementation Agreement will require amendment of the effective maximum limit on shipping to be consistent with the TCP.*
3. *The extension period of the lease be agreed upon by the District and the VPA and be subject to ongoing review of risks and regular QRAs.*
4. *Canexus contribute to improved community emergency preparedness including improvements to the CanAlert line, coordination of "live drills" in the affected area of the Maplewood community, the dissemination of information to surrounding communities, including Inter-River, Lynnwood, Dollarton and Seymour Valley as well as any others that staff feel it necessary to include, and funding of a local HAZMAT team.*

- 5._ *Canexus to prepare and DNV to approve a societal risk assessment on specified parcels including "A" and "D" of the Maplewood Local Plan as outlined in Attachment 4 to the February 27, 2007 report of the Director, Sustainability, Planning and Development.*
- 6._ *Canexus to implement recommendations for emergency operating procedures for inventory transfer and to provide fixed foam protection for the dyke around the fixed storage tank as specified in QRA Peer Review by Independent Risk Control, dated February, 2007.*
- 7._ *Comments contained in this report regarding the evaluation of rail safety be addressed and measures to improve rail car safety involving inspection of cars by Procor, Canexus and CN as recommended by Doug McCutcheon and Associates in its peer review of the TCP QRA dated January 5th, 2007 be implemented.*
- 8._ *Canexus to provide payment-in-lieu to the District should there be a property tax cap.*
9. *Prior to finalizing any renegotiation or renewal of the lease between the VPA and Canexus, the District of North Vancouver be indemnified against any damages that may result from the release of chlorine."*

Mayor Walton, with the consent of Council, indicated that the order of the agenda would be varied and the following items considered at this time:

6. Housing Strategy Next Steps

File 01.0620.01/000.000

Tracking 2007-00215

Joint Report: [Mayor and Manager-Corporate Planning & Projects, February 27, 2007](#)

Moved by Councillor MACKAY-DUNN, Seconded by Councillor NIXON and CARRIED
THAT

1. the proposed mandate, objectives and membership profile for a Mayor's Housing Task Force be endorsed in principle and the Mayor be authorized to return a list of members and detailed Terms of Reference for Council's approval at the regular meeting of April 2, 2007; and
2. Staff be directed to initiate a proposal call for a research firm to conduct a random sample survey of District residents to probe key housing questions.

5. GVRD Discussion Paper on a Regional Affordable Housing Strategy

File 10.4782.01/000.000

Tracking Number 2007-00208

(to consider a resolution in support of the GVRD's Regional Affordable Housing Strategy for submission to the Federal and Provincial governments)

Report: [Social Planner, February 26, 2007](#)

Moved by Councillor MACKAY-DUNN, Seconded by Councillor HICKS and DEFEATED
THAT the Greater Vancouver Regional District (GVRD) Board be advised of the following:

"The Council for the District of North Vancouver supports in-principle the GVRD "Discussion Paper on a Regional Affordable Housing Strategy" but withholds endorsement until further details are forthcoming".

Voting Against: Councillors HARRIS, LITTLE, MURI, NIXON

Moved by Councillor NIXON, Seconded by Mayor WALTON and DEFEATED

THAT the Greater Vancouver Regional District Board be advised that the District of North Vancouver acknowledges and applauds the region's intent in challenging all member municipalities to do more to create and retain affordable housing;

AND THAT the District supports the regional roles set out in the majority of the proposed actions, with reservations regarding housing targets to be set by the region, noting a need:

- for additional municipal tools plus Federal and Provincial government contributions to enable municipalities to meet more than modest housing goals;
- to pursue pro-active efforts to retain existing affordable rental housing, or its replacement, including working with private owners of such properties to address their needs, as well as municipal housing objectives;
- for case studies and pro-forma analyses demonstrating how the GVRD's suggestions for affordable housing targets could be achieved as a requirement in new developments given current land and construction costs;

AND THAT the District of North Vancouver call upon the Provincial Government to amend its recently tabled budget to provide direct financial support for affordable housing initiatives in the GVRD commensurate with current needs;

AND FURTHER THAT a regional levy or property tax increase to raise \$50 million not be supported.

Voting Against: Councillors HARRIS, HICKS, LITTLE, MACKAY-DUNN, MURI

Moved by Councillor MACKAY-DUNN, Seconded by Councillor HARRIS and CARRIED

THAT

1. The Greater Vancouver Regional District (GVRD) Board be advised the District of North Vancouver:
 - a. supports the GVRD Board in preparing and implementing a Regional Affordable Housing Strategy;
 - b. supports the general directions of the GVRD "Discussion Paper on a Regional Affordable Housing Strategy" received December 8, 2006, from the Chair of the GVRD Board, however:
 - c. requests further information and discussion on how a Regional Affordable Housing Strategy would be implemented, including further details and analysis of potential municipal impacts before considering endorsement of a Regional Housing Strategy;

AND THAT

2. Copies of this resolution be forwarded to the North Vancouver Member of Parliament and Provincial Members of the Legislative Assembly, with a request that the Federal and Provincial Governments support the GVRD in preparing and implementing a Regional Affordable Housing Strategy.

Voting Against: Councillor LITTLE

The hour of 10:30 p.m. having been reached and, as required by Council Policy, it was

Moved by Councillor MURI, Seconded by Councillor MACKAY-DUNN and CARRIED

THAT the meeting continue to 11:00 p.m.

7. Bi-Municipal Office of Cultural Affairs: Consultation Process and Transition

Plan

Bylaw 7649

North Shore Arts Commission Establishment

Agreement Bylaw, Amending Bylaw 3

File 10.4794.00/000.000

Tracking 2006-00693

(amends Bylaw 6159)

(to consider a framework for the establishment of the proposed Office of Cultural Affairs in 2007)

Report: [Tourism, Arts & Cultural Development Coordinator, February 15, 2007](#)

Public Input:

Ms Lori Phillips, 2300 Block Mahon Avenue, Arts & Culture Commission of North Vancouver

- Spoke in support of the proposed proposal.

Mr. John Rice Tourism, Arts & Cultural Development Coordinator was in attendance to speak to the PowerPoint presentation and to respond to Council's questions.

Moved by Councillor NIXON, Seconded by Councillor HARRIS and CARRIED

THAT

1. the establishment of a single, bi-municipal Office of Cultural Affairs for the District and City of North Vancouver in 2007 be approved;
2. Staff be directed to implement the transitional steps as outlined in the February 15, 2007 report of the Tourism, Arts & Cultural Development Coordinator;
3. Bylaw 7649 ("North Shore Arts Commission Establishment Agreement Bylaw, Amending Bylaw 3") be now read a FIRST, SECOND and THIRD TIME; and
4. On an interim basis, retain the administrative resources (staff) of the Arts Commission to continue to deliver core services to the municipalities and the arts community.

11. Civic Recognition Program

File 01.0220.01/000.000

Tracking Number 2001-03068

(to consider a formal Civic Recognition Program for the District of North

Vancouver)

Report: [Municipal Clerk, February 6, 2007](#)

Moved by Councillor MURI, Seconded by Councillor LITTLE and CARRIED

THAT a multi-level formal Civic Recognition Program be established, consisting of the following:

1. Freedom of the District;
2. Award of Honour;
3. Achievement Award; and
4. Certificate of Appreciation.

Any Other Business

Motions and Notices of Motion

Motions

Moved by Councillor MURI, Seconded by Councillor HARRIS and CARRIED
THAT the following item be added to this evening's agenda:

13. Addition of Representative from Vancouver Natural History Society to Alpine Recreational Reference Group (ARRG)

File 13.6480.20/010.001

Tracking Number 2002-01306

Submitted by Councillors Lisa Muri & Janice Harris

Mr. David Cook, 900 Block Lytton Street

- confirmed that he was a Director of the Natural History Society, but was already representing the Parks Advisory Committee on the AARG, therefore someone else would need to be appointed to represent the Society on the AARG."

Moved by Councillor MURI, Seconded by Councillor HARRIS and CARRIED

WHEREAS the membership of the Alpine Recreational Reference Group (ARRG), as approved by Council at the August 28, 2006 Regular meeting, does not currently include representation from the Vancouver Natural History Society;

AND WHEREAS it would be appropriate to have a member of the Society on the ARRG to represent its objectives;

THEREFORE BE IT RESOLVED that the Terms of Reference for the ARRG be amended to include representation from the Vancouver Natural History Society.

Notice of Motions

Nil

Reports

Nil

Adjournment

Moved by Councillor MURI, Seconded by Councillor LITTLE and CARRIED
THAT the March 5, 2006, Regular Council Meeting be ADJOURNED.

The meeting adjourned at 10:55 p.m.

Certified correct:

Municipal Clerk

Mayor

From: Henry Ward [REDACTED]
Sent: June 16, 2026 2:00 PM
To: DNV Input; Signup
Subject: Ward Testimony 6162026: Bylaw 8778
Attachments: Ward Testimony 6162026.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

My name is Henry Ward. I wish to speak at the Public Hearing tonight, Tuesday, June 16, 2026, regarding District of North Vancouver Bylaw 8778. I would like to submit the attached written testimony in advance of the hearing. Thank you.

**Testimony of Henry Ward
District of North Vancouver Council
Public Hearing - June 16, 2026**

My name is Henry Ward. I am retired, with 41 years of experience in the chemical industry. I was the Vice President for Emergency Preparedness & Product Stewardship for the Chlorine Institute for the last 3 years of my career. Before that, I was the Global Director for Supply Chain Safety, Security and Sustainability for the Dow Chemical Company. In that role, I had responsibility for the safe and secure transportation of Dow's chemical products, worldwide, via all modes of transportation including rail, highway and marine. Tonight, I will talk about the Next Generation Rail Tank Car Project. A project that I had the opportunity to lead for the 4-year period from 2006 through 2009.

Slide #1 - Next Generation Rail Tank Car Project (NGRTCP):

The Next Generation Rail Tank Car Project was a joint project of The Dow Chemical Company, Union Tank Car Company and Union Pacific Railroad. It was conducted with heavy involvement from and close coordination with Transport Canada and the U.S. Departments of Transportation, Homeland Security and Defense, as well as a long list of chemical, railroad, rail equipment supplier and first responder organizations. We also drew on the expertise of university scholars and well-recognized scientists and engineers from the private sector and government.

The drivers for the project were safety and security – in response to the Graniteville, South Carolina tragedy and the awareness that terrorist groups in Iraq were trying to find ways to use chlorine as a weapon of mass destruction. The project yielded an enormous amount of new data that has been extensively published in peer-reviewed scientific journals and government reports. That data provided the foundation for much of what you are going to hear tonight from my esteemed colleagues regarding the new chlorine tank car design, the improved operating and maintenance practices that are in place for chlorine shippers and railroad carriers, and the improved emergency preparedness measures that have evolved over the past two decades.

Slide #2 - Designed for Safety and Security Threat Scenarios:

As part of the project, we looked at potential safety and security threat scenarios that could result in the release of chlorine from a rail tank car, and we evaluated a wide range of options to mitigate the potential for those releases. The evaluations involved lab testing and analysis of various materials of construction and full-scale field testing and modeling that focused on the most serious accident scenarios and potential acts of terrorism.

The field evaluation of accident scenarios was conducted under the leadership of the U.S. Federal Railroad Administration at their Transportation Technology Center in Pueblo, Colorado. We focused on the ability of various chlorine tank car designs to survive puncture and rollover threats in an accident.

The field evaluation of security threat scenarios was conducted under the leadership of the U.S. Department of Homeland Security, utilizing the expertise and facilities at the U.S. Navy Surface Warfare Center in Indian Head, Maryland and the U.S Army Proving Ground in Aberdeen, Maryland. We looked at various security threats, including the use of improvised explosive devices (IEDs), vehicle-borne improvised explosive devices (VBIEDs), track sabotage causing derailment, and the use of various high-powered rifles, including the .50 caliber sniper rifle.

Based on the results of the lab testing and analysis and the field evaluations and modeling, the project team was able to identify promising tank car designs, materials of construction and various additional design and operating enhancements that could provide greater protection for the safe and secure rail transportation of chlorine. The project team was specifically asked NOT TO CONSIDER COST at this stage. Technical feasibility in achieving the greatest possible level of protection was the only consideration. The results were reviewed by a wide range of subject experts from various disciplines. Their input led the project team to focus on two potential options for achieving its objectives:

1. An innovative tank-within-a-tank design, similar in concept to the double-hull construction used in some ocean tankers to provide additional safety protection from collisions and grounding.
2. An enhanced DOT 105J600W rail tank car design, providing a stronger (thicker) normalized steel tank, special full headshields, and stronger top fittings protection for potential rollovers.

Both of those options were built, road tested and exhaustively evaluated.

Slide #3 - Advanced Tank Car Cooperative Research Program (ATCCRP):

In 2010, the private sector-led Next Generation Rail Tank Car Project transitioned to the Advanced Tank Car Cooperative Research Program, which was led by the U.S. Federal Railroad Administration. That program built on the foundation established by the Next Generation Rail Tank Car Project and continued that work through 2016. It ultimately established the basis for government rulemaking to require adoption of the enhanced DOT 105J600W design, as the chlorine rail tank car of the future. Based on 11 years of testing, modeling and analysis under the two programs, and the DOT 105J600W's decades of excellent safety performance in service for other commodities, a consensus was reached by the experts from academia, the private sector and government that the enhanced DOT 105J600W design (now codified as DOT 105H600W) offered the best possible level of protection. There were no design features or materials of construction that were identified that could yield a greater level of reliable, long-term performance than the DOT 105H600W tank car design.

In addition to the field testing that I have already discussed, extensive field testing and modeling was also performed under the leadership of the U.S. Department of Homeland Security at the U.S. Army Proving Ground in Dugway, Utah. That work looked at actual releases of chlorine in a simulated urban environment and greatly advanced our understanding of chlorine's behavior

when released to the environment. That topic, along with its implications for spill mitigation, will be covered in greater detail by the emergency response specialists appearing later on the agenda this evening.

Slide #4 - DOT 105H600W Chlorine Rail Tank Car:

The DOT 105H600W chlorine rail tank car design includes several key features that I would like to highlight. It's normalized steel construction includes: 1-inch thick tank shell plate; 1-inch thick head plates; 1/2-inch thick full headshields; and a reinforced housing to protect chlorine valves and fittings in a rollover scenario. These features have dramatically improved the performance of the chlorine tank car for all reasonably foreseeable safety and security threats.

In closing, chlorine transportation is extremely safe and secure. This is supported by years of industry experience and the fact that the lessons learned from earlier accidents – such as those in Mississauga, Ontario (1979) and Graniteville, South Carolina (2006) – have been incorporated into the new tank car design, rail operations and training, and emergency preparedness.

Thank you.

Rev 6/11/2026

From: William Schoonover [REDACTED]
Sent: June 16, 2026 2:02 PM
To: DNV Input; Signup
Subject: Request to Present at Tonight's Meeting
Attachments: Testimony of William Schoonover Final.docx

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Good afternoon,

My name is William S. Schoonover. I would like to speak at the Public Hearing tonight, June 16 regarding District of North Vancouver Bylaw 8778, and I would also like to submit the attached information in advance of the hearing.

Thank you for your kind consideration.

Regards,

William Schoonover

Testimony of William Schoonover
District of North Vancouver Council
Public Hearing - June 16, 2026

Good evening. My name is William Schoonover. In June 2025, I retired after a 44-year career within the U.S. Department of Transportation. I served in three agencies, including the U.S. Coast Guard, the Federal Railroad Administration, and the Pipeline and Hazardous Materials Safety Administration. The last 9 years of my career, I served as the Associate Administrator for Hazardous Materials Safety. In that position, I was the senior career official overseeing the safe transportation of dangerous goods in all modes of transport, including the more than 1.9 million annual shipments by railroad. Tonight, I will talk about regulatory actions the government has taken to improve the safe transport of toxic by inhalation materials (also called TIH materials) in railroad transport.

Since its formation in 1967, DOT, in coordination with Transport Canada, has taken numerous actions to improve rail transportation safety of hazardous materials by adopting tank car design enhancements, improving operational controls, and implementing other rail safety improvements that reduce the likelihood of accidents. Transport Canada and DOT began addressing TIH materials in the mid-1980s, following the Bhopal, India, tragedy. Since then, several rulemakings have refined the packaging requirements for TIH materials, including those for tank cars. The final tank car design is based on years of federal and industry research, full-scale impact testing on cars, and our increased understanding of derailment dynamics from computer modeling, all of which were validated against observations of actual derailments.

After the terrorist attacks of 9/11, the government, in collaboration with industry, began several efforts to improve the safety and security surrounding the transport of toxic by inhalation materials. Several tragic rail accidents in 2005 spurred an increased urgency.

In 2007, the railroads issued several interchange rules requiring improved standards for new tank cars. The government believed that additional safety advancements were possible so, in April 2008, they proposed a more expansive set of regulatory requirements.

The government's proposal took a two-pronged approach to enhancing safety. First, we proposed speed restrictions to control derailment forces. Then, we proposed technology-forcing standards for head and shell puncture resistance. The standards were well beyond what the existing cars could withstand. (25 mph for shells and 30 mph for heads). While the industry applauded our efforts, they stated that technology was not available to support the design and manufacture of tank cars that could meet the proposed standards.

Using the Next Generation Rail Tank Car Project's work and input from the industry, DOT issued a final rule in January 2009. The rulemaking established an interim design standard for TIH tank cars. The change required cars built after March 2009, to have better steels that provided more impact resistance, thicker tank shell and heads, and top fitting protection that increased rollover survivability. The DOT adopted the interim design standard with a belief that the ongoing research would provide the government and industry with a final design that was better than anything presently available.

To address operational risk reduction, the rule imposed a 50-mile-per-hour maximum allowable operating speed for all loaded TIH tank cars. Lower train speeds mean lower impact speeds if an accident were to occur.

As one of the principal authors of the rulemaking, I worked closely with my colleagues at Transport Canada to ensure they were consulted, had access to all data and analytics, and had a voice in the changes. I also served as a member on the Canadian General Standard Board, Committee on Tank Car Tanks and participated in revising the standard to implement similar requirements for tank car design in Canada.

After the final rule was published and the interim specifications were adopted, efforts by the Advanced Tank Car Collaborative Research Program (the successor of the Next Gen Tank Car Project) demonstrated that the interim specifications provided significant safety improvements over legacy designs, and that other feasible options were scarce. The project concluded that, despite extensive research, no design feature or material had been identified that could provide a significantly greater level of improvement or was a reasonable alternative. The scientific support for making the interim specifications permanent was overwhelming.

As a result, in December, 2020, DOT issued another final rule revising the regulations to make the "interim" rail tank car specifications the "final" specifications for the transportation of TIH materials, and to prohibit the use of tank cars with shells or heads containing non-normalized steel for transport of toxic by inhalation hazard materials by rail after December 31, 2020. These efforts codified similar actions already taken by our colleagues at Transport Canada in March of 2019.

In closing, the zero-accident release safety record observed as a result of these regulatory actions demonstrates that DOT and Transport Canada, in concert with the industry, put the appropriate tank car and operational standards in place to improve safety and protect communities.

From: Henry Ward [REDACTED]
Sent: June 16, 2026 2:20 PM
To: DNV Input; Signup
Subject: Ward Testimony Slides 6162026
Attachments: Ward Testimony Slides 6162026.pptx

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Earlier today, I signed up to speak at the Public Hearing tonight, June 16 regarding District of North Vancouver Bylaw 8778. At that time, I submitted my written testimony for the record. If possible, I would also like to submit the attached slides (which I plan to use during my oral testimony) at the hearing. Thank you for your consideration.

Henry Ward

Next Generation Rail Tank Car Project (NGRTCP)



Joint project of The Dow Chemical Company, Union Tank Car Company and Union Pacific Railroad

- In conjunction with
 - Transport Canada
 - U.S. Department of Transportation
 - U.S. Department of Homeland Security
 - U.S. Department of Defense
 - Many chemical, railroad, rail equipment supplier and first responder organizations

Designed for Safety and Security Threat Scenarios

Evaluations involved

- Lab testing and analysis of various materials of construction
- Full-scale testing and modeling of serious accident scenarios
- Full-scale field testing on potential acts of terrorism
 - improvised explosive devices (IEDs)
 - vehicle-borne improvised explosive devices (VBIEDs)
 - track sabotage causing derailment
 - high-powered .50 caliber sniper rifle

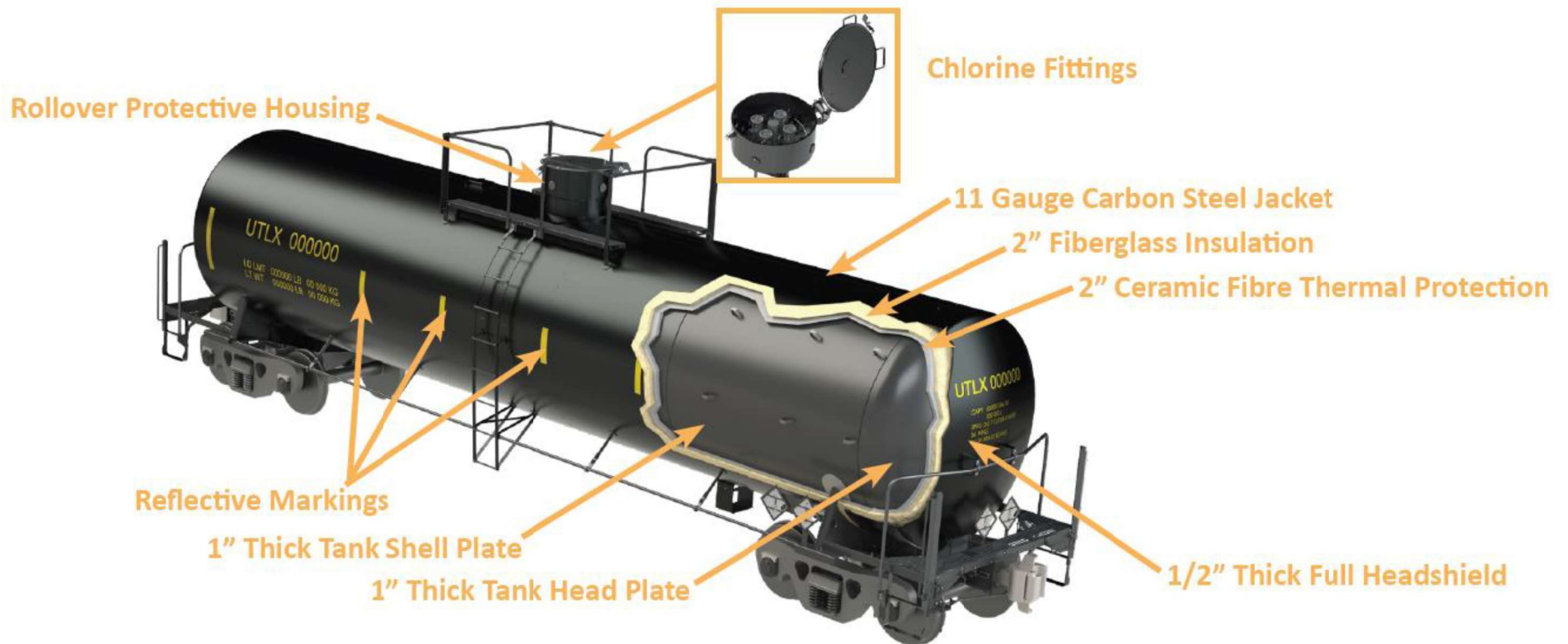


Advanced Tank Car Cooperative Research Program (ATCCRP)

- Built on the foundation established by the Next Generation Rail Tank Car Project
- Basis for government rulemaking to require adoption of the DOT 105H600W, as the chlorine rail tank car of the future based on
 - 11 years of testing, modeling and analysis
 - DOT 105J600W's decades of excellent safety performance in service for other commodities

There are no design features or materials of construction that can yield a greater level of performance than the DOT 105H600W

DOT 105H600W Chlorine Rail Tank Car



From: Rader, James [REDACTED]
Sent: June 16, 2026 2:31 PM
To: DNV Input; Signup
Subject: District of North Vancouver Bylaw 8778
Attachments: Rader Testimony Chemtrade Public Hearing Final.pdf; Jim Rader Testimony Slides Final.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

I wish to speak at the Public Hearing tonight, June 16, regarding the District of North Vancouver Bylaw 8778, and I would also like to submit the attached information in advance of the hearing. Please let me know if you have any questions.

Thank you,

James Rader

[REDACTED]

**Testimony of James H. Rader
District of North Vancouver Council
Public Hearing - June 16, 2026**

Part I: Inspections

My name is James Rader. I have more than 50 years of experience in the railway industry, including roles with two Class I railways in mechanical inspection, the Association of American Railroads (AAR), the Federal Railroad Administration (FRA), and a railcar manufacturer and lessor. Since 1983, I have been responsible for the safe transportation of dangerous goods.

At the FRA in Washington, D.C., I worked on rulemaking, tank car safety research, field inspections, enforcement, and accident response and investigation. Key rulemakings focused on improving tank car crashworthiness, as well as railway handling and movement of railcars. I also led efforts to redesign and modernize federal requirements for tank car inspection, testing, and maintenance to improve operating reliability.

I have served on several committees related to tank cars, including the AAR Tank Car Committee, the Canadian General Standards Board Committee on Tank Cars, the U.S. Surface Transportation Board's Rail Energy Transportation Advisory Committee, and the Railway Supply Institute's Committee on Tank Cars. I have also participated in the Next Generation Rail Tank Car Project and the Chlorine Institute's Transportation Issues Team meetings. In addition, I have delivered hundreds of presentations on tank car safety and reliability and am a recognized historian and resource in this field.

Tonight, I will discuss railway operating and inspection practices that, together with robust railcar design and inspection and maintenance requirements for dangerous goods, ensure the safest means of transporting these materials across North America.

Transport Canada, the U.S. Department of Transportation, and the AAR oversee freight movement across the general railway system. In Canada, the Railway Safety Act and the Transportation of Dangerous Goods Act authorize Transport Canada to govern railcar inspection, use, and movement.

Shippers inspect railcars before offering them to railways, and railways inspect them before placing them in trains. Trained employees assess a railcar's mechanical integrity during inspections. Railways also use wayside condition-monitoring systems to track potential issues in real time. These systems include acoustic bearing, dragging equipment, high/wide load, hot bearing, hot wheel, wheel-impact, wheel profile, truck performance and hunting, machine visual systems, and weigh-in-motion scales. These detectors identify defects that may not be apparent through visual inspection alone.

In addition, railway routes transporting higher-risk dangerous goods require maximum spacing between acoustic and hot-bearing detectors, periodic visual inspections by track inspectors, and biannual track inspections with specialized vehicles. These vehicles measure track position,

curvature, alignment, smoothness, rail cross-level, and internal flaws using various sensors, measurement systems, and data management systems to create a track profile. Railways use this data to monitor track degradation and set maintenance schedules.

The Railway Safety Act's implementing regulations set speed limits for trains based on track class. Track class is determined by geometric measurements and track maintenance. Trains on industry tracks move more slowly than those on mainline tracks. At lower speeds, fewer railcars derail, and there is less kinetic energy to puncture tank cars. This applies to railcars near the Chemtrade facility. For mainline trains carrying certain types and quantities of higher-risk dangerous goods, the Dangerous Goods Regulations set lower speed limits than the Safety Act's regulations. These trains, known as "key-trains," have a maximum operating speed of 80 kph (50 mph), reduced to under 56 kph (35 mph) in a Census Metropolitan Area. The Canadian regulations also have additional track inspection requirements in cold-weather conditions. These speeds ensure that, in a derailment, a tank car containing a material toxic by inhalation, such as chlorine, is less likely to be punctured.

Transport Canada employs railway safety and dangerous goods inspectors who inspect sites where dangerous goods are loaded and unloaded, and the railways transporting them. The department conducts about 40,000 combined railway safety and security inspections and 6,000 dangerous goods inspections annually. These inspections ensure railcars containing dangerous goods comply with the federal regulations, are mechanically safe and secure, and are transported safely.

While Federal inspections are important, they are in addition to those required by sites that handle dangerous goods and those conducted by railways from origin to destination. These inspections ensure the safe and secure packaging and transport of dangerous goods annually. From a statistical standpoint, 99.99% of the 1.9 million dangerous-goods shipments transported by rail annually arrive safely. Fewer than 20,000 shipments carry chlorine, and releases of chlorine are extremely rare.

Part II: Rail Routing and Security

Under this segment, I will discuss railway routing and security practices that, together with robust railcar design and inspection and maintenance requirements for dangerous goods, ensure the safest means of transporting these materials across North America.

In 2016, Transport Canada issued an Emergency Directive, and in 2019, the Department codified the Directive into its regulations. This Directive introduced route assessment requirements like those in the U.S. These requirements were part of a broader initiative to federalize industry practices for certain high-hazard trains.

The regulations require each railway to collect annual data on shipments of specific high-hazard materials, including materials that are poisonous by inhalation, explosives, and radioactive substances.

Railway carriers must obtain relevant safety and security information from municipal, local, and tribal authorities about hazards along or adjacent to their routes. They then analyze the route against 28 factors specified in federal regulations. The U.S. has 27 factors that are the same as Canada's, but Canada includes one additional factor: geohazards.

Several of these factors affect rail transportation safety and security, including travel volume and distance, track characteristics, population and environment, and incident history. Each carrier must analyze alternative routes for each primary route and select the one that minimizes risk.

These requirements match Transport Canada's advanced community notification regulations (Protective Direction 36). Class 1 railways must provide municipal officials with annual and quarterly data and advance notice of dangerous goods moving through their jurisdictions. In the US, this applies only to high-hazard flammable trains.

In 2019, Canada introduced the Transportation of Dangerous Goods by Rail Security Regulations. Railway carriers with dangerous goods and handling sites must develop security plans. Before movement and during transportation, they must inspect each railcar for tampering or suspicious items. If a railway inspector finds a compromised railcar, the railway must take measures before moving the dangerous goods.

Producers, manufacturers, or distributors of certain dangerous goods in specified quantities must have a Transport Canada-approved Emergency Response Assistance Plan (ERAP) to support emergency responders. ERAPs specify the specialized personnel and equipment needed to respond to incidents. Chemtrade Logistics has a Transport Canada-approved ERAP. If an incident occurs in Canada, Chemtrade will provide technical and emergency-response advice, monitor the response, and deploy emergency-response resources.

Regulatory Authorities



- Transport Canada, the U.S. Department of Transportation, and the Railway Association of Canada (RAC) and the Association of American Railroads (AAR) oversee and regulate freight movement across the general railway system.
- In Canada, the Railway Safety Act and the Transportation of Dangerous Goods Act authorize Transport Canada to govern the inspection, use, and movement of railcars.

Inspections and Wayside Detectors



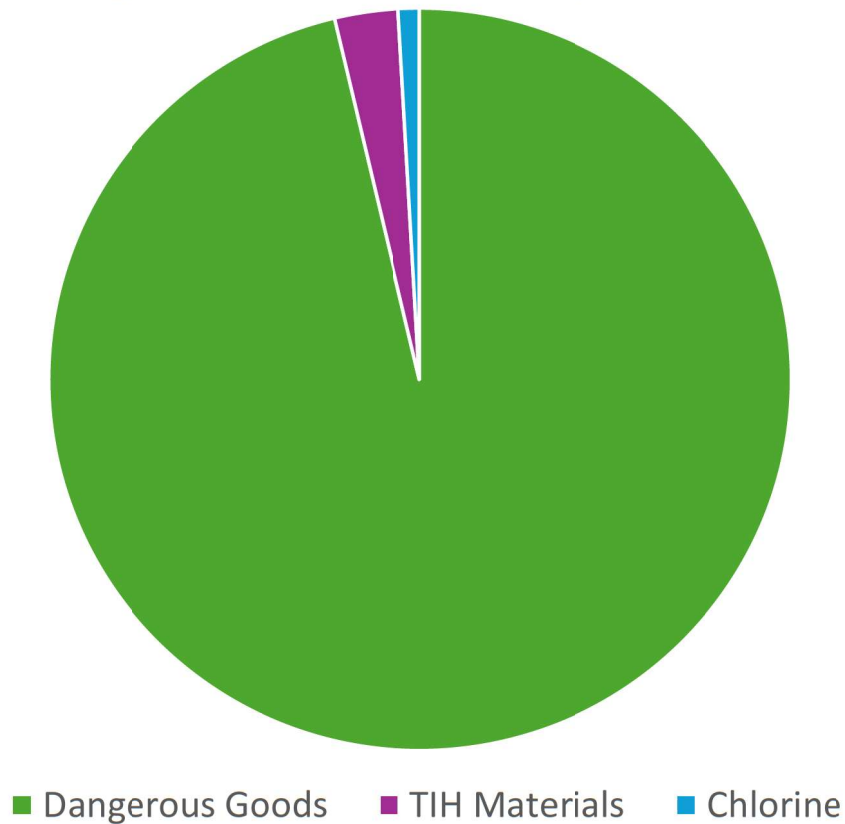
- Shippers who load and off-load dangerous goods from a railcar must inspect the railcar prior to offering the car to a railroad.
- Railways must inspect the car before placing the railcar in a train.
- In addition to railway employee inspections, railways use wayside condition-monitoring systems to track potential railcar issues in real time as each car travels along the line.
- Detectors include:
 - acoustic bearing,
 - dragging equipment,
 - high/wide load,
 - hot bearing, hot wheel,
 - wheel-impact, wheel profile,
 - truck performance and hunting,
 - machine visual systems, and
 - weigh-in-motion scales

Track Inspections and Train Speed

- Track class is determined by geometric measurements and track maintenance.
- Trains operating over industry tracks move at lower speeds than those on mainline tracks.
- At lower speeds, typically less than 40 kph (25 mph), fewer railcars in a train are likely to derail, and there is less kinetic energy that could puncture a tank car should a derailment occur.
- On mainline tracks, the Dangerous Goods Regulations set lower speed limits than those authorized under the Railway Safety Act's regulations if the train carries certain types and quantities of higher-risk dangerous goods.
 - 80 kph (50 mph)
 - 56 kph (35 mph) in highly urbanized areas.



Dangerous Goods Rail Car Shipments



Rail shipment of TIH is the safest option for above-the-ground transport.

More than 99.99 percent of rail dangerous goods shipments in North America reached their destination without a release caused by a train accident.

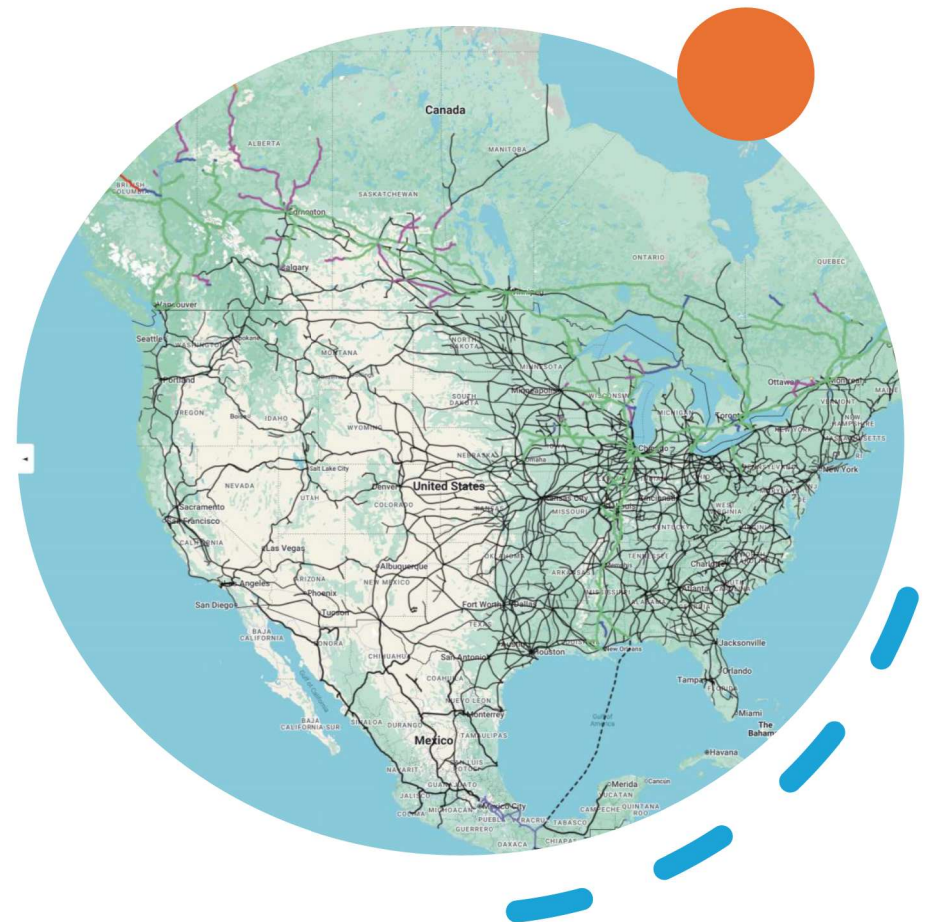
Rail dangerous goods accident rates are down 91 percent since 1980.

The last significant chlorine incident during transportation occurred on January 6, 2005.

Federal data shows that releases of chlorine in transportation are extremely rare.

Rail Routing

- Railway carriers gather safety and security information from municipal, local, and tribal authorities.
- They analyze the route, and alternative routes, against 28 factors.
- Based on the analysis, Railways select the safest route.
- Mandatory communication requirements apply to transit and delivery delays.
- Security audits, car/track inspections, yard surveillance, and speed restrictions are also required.
- For High Threat Urban Areas (HTUA), customers share responsibility with the rail carrier for maintaining positive control of incoming railcars during physical custody transfer. The transfer must be documented in writing or electronically, and the receiver must keep the railcar in a rail secure area until unloading.



Security Plans

- In 2019, Canada introduced the Transportation of Dangerous Goods by Rail Security Regulations.
- These regulations require railway carriers that possess dangerous goods and handling sites that load or unload dangerous goods to develop security plans.
- Before movement from a handling site and during transportation, railway carriers must conduct a visual inspection of each railcar containing a dangerous good for signs of tampering or suspicious items.
- If a railway carrier discovers a security-compromised railcar, it must take measures to address the situation before movement of the dangerous goods.



Emergency Response Assistance Plan (ERAP)

- Specific types and quantities of dangerous goods require an approved Transport Canada ERAP. Companies must submit an application to Transport Canada to obtain approval for their ERAP, which ensures the plan can be effectively implemented.
- They detail the shipper's capabilities and procedures for responding to incidents, including specialized response personnel, equipment, and actions.
- ERAPs may be used along with emergency response plans from other organizations (i.e., carriers and local or provincial authorities) and are tailored to the specific dangerous goods, mode of transport, means of containment, and geographical area of transport.



From: Jennifer Williams [REDACTED]
Sent: June 16, 2026 2:49 PM
To: DNV Input
Subject: Bylaw 8778

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Counsellors,

I am writing to add my voice to those of my fellow North Vancouver district residents who are urging you to vote to not allow Chemtrade chemical plant to shift their manufacturing of liquid chlorine gas to an adjacent site in the DNV.

Beyond many conversations with neighbours in Lynn Valley, I have become informed on this issue by reading the coverage in the *North Shore News* and the research provided by the not-for-profit group Force of Nature. I am taking into consideration the concerns of our neighbours in Burnaby, whose health could also be endangered. I understand that the City of Burnaby cited a risk assessment report that a chlorine release from a rail car could kill over 2,000 people. I am not surprised they are concerned given that, on average, four liquid chlorine rail cars travel through Burnaby daily.

Also, I have read that many municipalities -- including all of Metro Vancouver -- are now using ultraviolet light and ozone for water purification. Not chlorine.

Please vote in favour of a safer environment and against Bylaw 8778. The cost of a leak or a derailment is just too great.

Sincerely,

Jennifer Williams
[REDACTED]

From: Ben Wahl <BWahl@nhcwater.com>
Sent: June 16, 2026 3:05 PM
To: DNV Input
Subject: FW: June 16 2026 Public Hearing NHC Speaker
Attachments: 3009713_Chemtrade_Public_Hearing_FHA_R1A.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Forwarding to register document for June 16 hearing.

Best,

Ben Wahl, EIT | Hydrotechnical Engineer (EIT)

Pronouns: he/him

Northwest Hydraulic Consultants

30 Gostick Place | North Vancouver, BC V7M 3G3 | Canada

O: 604.980.6011 | Direct: 519.503.8822

bwahl@nhcwater.com | www.nhcwater.com

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From: Ben Wahl <BWahl@nhcwater.com>

Sent: Tuesday, June 16, 2026 2:01 PM

To: signup@dnv.org

Cc: Edwin Wang <EWang@nhcwater.com>; Ritchey, Bryan <britchey@chemtradelogistics.com>; Somerville, Drew <dsomerville@chemtradelogistics.com>

Subject: June 16 2026 Public Hearing NHC Speaker

Hello DNV,

I would like to register to speak at the June 16, 2026 public hearing.

Speakers: Ben Wahl, EIT and Edwin Wang, MEng, PEng

Attached are the slides which I will bring with me to present in person.

Best,

Ben Wahl, EIT | Hydrotechnical Engineer (EIT)

Pronouns: he/him

Northwest Hydraulic Consultants

30 Gostick Place | North Vancouver, BC V7M 3G3 | Canada

O: 604.980.6011 | Direct: 519.503.8822

bwahl@nhcwater.com | www.nhcwater.com

This email and any attached files are confidential and intended for the use of the addressee. If you believe you have received this email in error, please notify the sender, delete it, and destroy any copies. Check this email and attachments for viruses; NHC accepts no liability for virus damage caused by email.



Chemtrade 2030 Rezoning Flood Hazard Study

Public Hearing Round 1 Meeting

Ben Wahl, EIT
BWahl@nhcwater.com

Edwin Wang, Meng, PEng
EWang@nhcwater.com

Project Site Location



Guidance and Regulations Followed



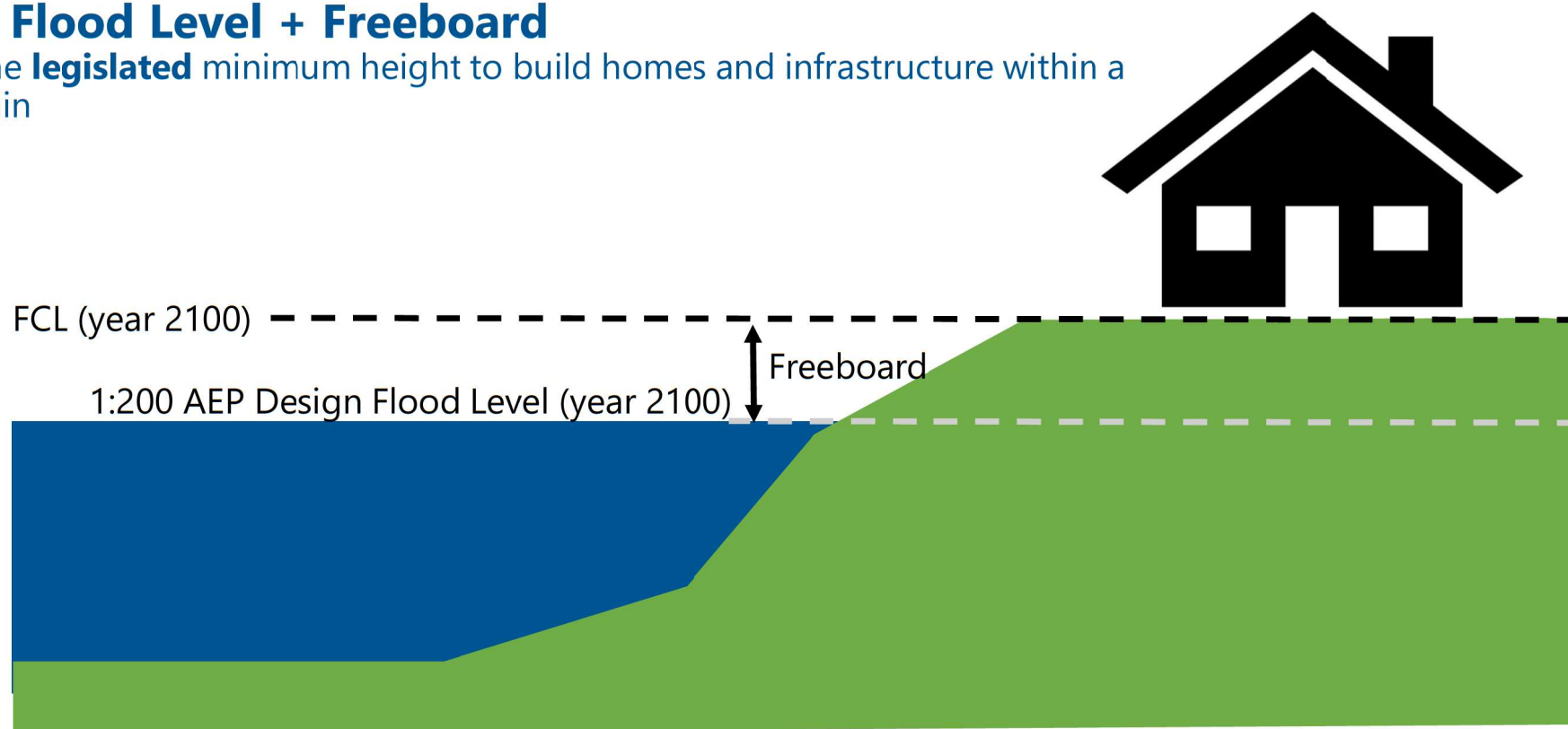
- Provincial Guidance
 - Flood Hazard Area Land Use Management Guidelines
 - Climate Change Adaptation Guidelines
 - EGBC Legislated Flood Assessments in a Changing Climate
- District Requirements
 - District of North Vancouver Official Community Plan
 - Creek Hazard Development Permit Area requirements

What is a Flood Construction Level (FCL)?



FCL = Flood Level + Freeboard

FCL is the **legislated** minimum height to build homes and infrastructure within a floodplain



What is a flood hazard assessment?



Riverine Hazards



River Flood Hazard

- Extreme river flood
- Climate change
- Freeboard

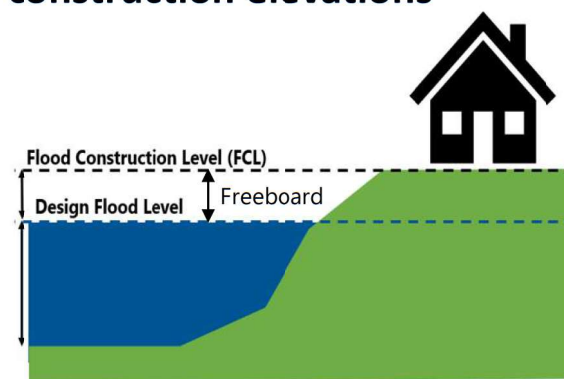
Coastal Hazards



Coastal Flood Hazard

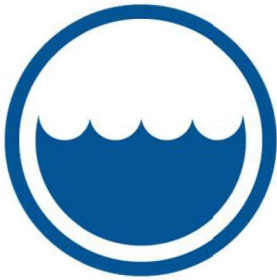
- Extreme water level (tide, storm surge, wind setup)
- Sea level rise
- Wave effects
- Freeboard

To determine recommended construction elevations



Maximum of
River FCL, Coastal FCL

Hazard Mitigation



Flood Construction
Levels



Material
Containment



Emergency
Response Plan



Chemtrade 2030 Rezoning Flood Hazard Study

Public Hearing Round 2 Meeting

Ben Wahl, EIT
BWahl@nhcwater.com

Edwin Wang, MEng, PEng
EWang@nhcwater.com

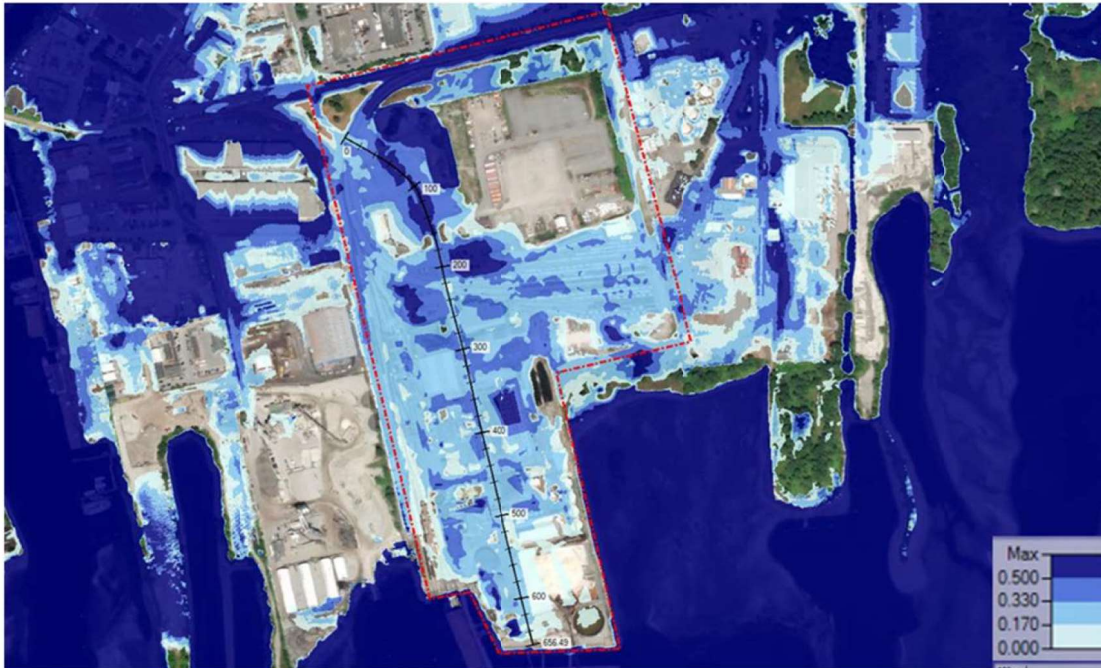
Session 1 Recap



- Flood hazards from the Seymour River and Burrard Inlet were assessed.
- Flood Construction Levels (FCLs) were established in accordance with current guidance and professional practice.
- FCLs account for future climate change, including sea level rise.
- The governing FCL is based on the higher of the riverine and coastal flood hazards.

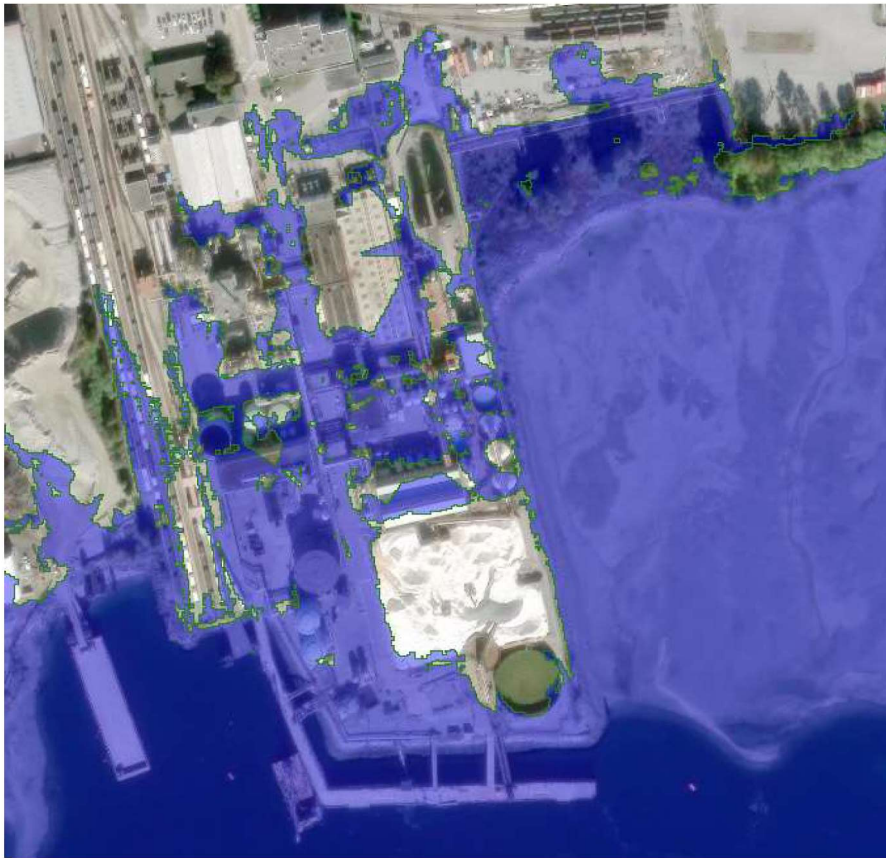
$$\text{FCL} = \max(\text{River FCL}, \text{Coastal FCL})$$

River Flood Hazard Assessment



- Governing scenario assumes blockage at the Dollarton Highway bridge.
- Typical flood depths on the site are generally 0.3 to 0.5 m.

Coastal Flood Hazard Assessment



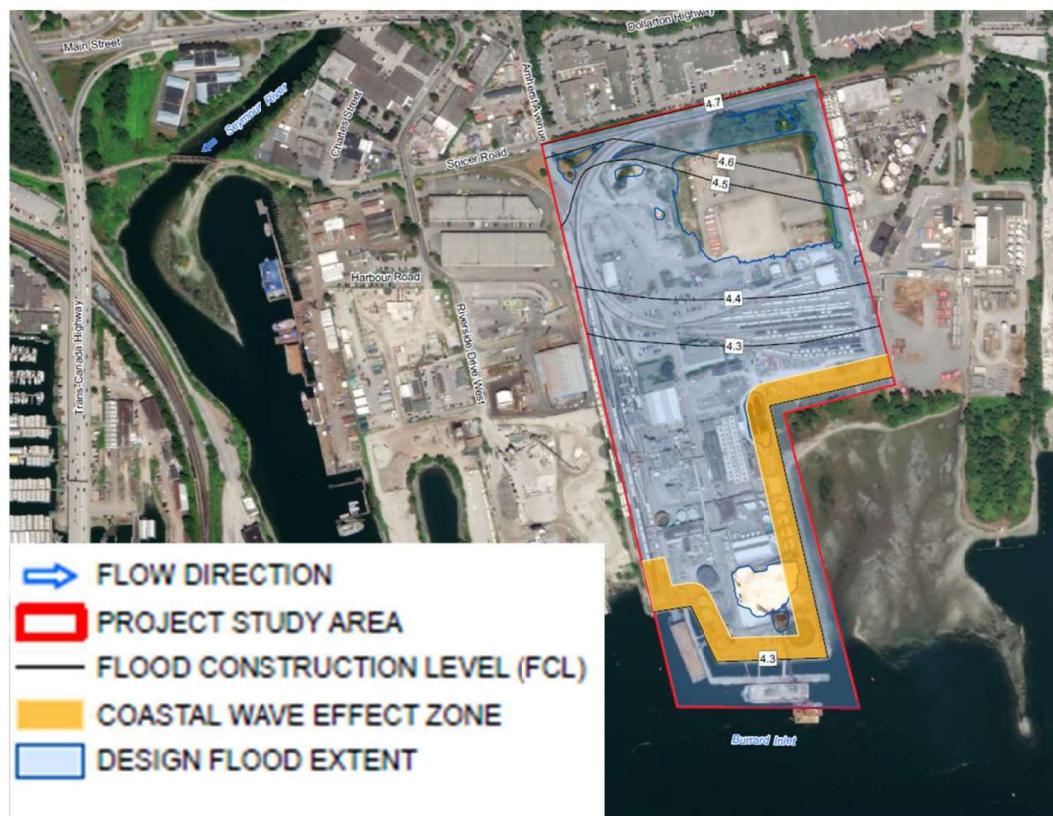
- Coastal Flooding
 - Extreme water levels
 - Sea level rise (year-2100)
 - Wave effects

Tsunami Risk



- Tsunami levels are expected to be **below** site elevation
 - Published studies reviewed
 - Tsunami hazard does not govern the recommended FCLs at this site

Recommended Mitigations



- Recommended FCLs
 - 4.3 to 4.7 m CGVD28 (~above sea level)
 - 0.3 to 0.5 m above ground on site
 - Low risk to railcars on site
 - Based on river and coastal flood hazards
 - Incorporates climate change and freeboard
- Implications for Development
 - Flood-sensitive infrastructure should be protected to the applicable FCL.
 - Detailed design should confirm flood mitigation requirements.

From: Tracy Clark <tracy@upsltd.us>
Sent: June 16, 2026 3:56 PM
To: DNV Input; Signup
Subject: FW: Speaking at the council meeting regarding the Chemtrade hearing
Attachments: Chemtrade Presentation to VanCouver Council.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

My apologies, I didn't realize that I had not attached my notes for the below meeting tonite. Please find that I have attached to this email. My apologies for the delay.

Best Regards and hope you all are well.

Tracy Clark

United Professional Services

-----Original Message-----

From: Signup <signup@dnv.org>

Sent: Tuesday, June 16, 2026 5:26 PM

To: Tracy Clark <tracy@upsltd.us>

Subject: RE: Speaking at the council meeting regarding the Chemtrade hearing

Thank you for your interest in speaking at the June 16, 2026 Public Hearing regarding 100 Amherst Avenue (Chemtrade). I have added you to the list of speakers. You will have up to five minutes to address Council.

Speakers must not speak disrespectfully of any other person, use rude, offensive, or aggressive language, or unnecessarily delay the hearing.

The meeting will commence at 7:00 pm and will be conducted in a hybrid format so you may participate either in person or virtually.

If you will be attending in person, District Hall is located at 355 West Queens Road. Doors will open at 6:30 pm. Please note that Council Chambers operates in a Windows environment. Mac format files are not supported on the presenter computer.

If you will be participating virtually, the Zoom webinar will open at 6:45 pm.

Please click the link below to join the webinar:

https://ca-central-1.protection.sophos.com?d=zoom.us&u=aHR0cHM6Ly9kb2VvcmlseENVemZ2OHovbk1vWT0=&h=e58ac0863b38491599efe00c4da44509&s=AVNPUEhUT0NFTkNSWVBUSVa8W4ntG6iyk_JbaW6G4PHQ

Webinar ID: 644 8415 6494

Or Telephone:

Dial: +1 778 907 2071

Webinar ID: 644 8415 6494

*9 to Raise Hand and *6 to unmute when called upon to speak

Please note the following important information regarding Zoom participation:

* You will enter the webinar as an 'attendee,' meaning you will be able to observe the webinar proceedings and use the raise hand function

* Shortly before your time to speak, your role will be changed to panelist. Please accept the panelist invitation when prompted as this is required to participate.

- * Do not exit any browser or window while staff are moving you between 'panelist' and 'attendee'; this will interrupt the role change and remove you from the webinar
- * The Mayor will call upon you when it is your turn to speak; at this time, your microphone will be enabled
- * If at any point you are disconnected, please reconnect using the webinar link above
- * For participation by telephone, please press on your telephone keypad *9 to Raise Hand and *6 to unmute

As a reminder, you may also provide a written submission regarding the public hearing up until it is closed at input@dnv.org.

-----Original Message-----

From: Tracy Clark <tracy@upsltd.us>

Sent: June 16, 2026 2:24 PM

To: Signup <signup@dnv.org>

Subject: Speaking at the council meeting regarding the Chemtrade hearing

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

My name is Tracy Clark & I would like to speak via Teams to the council meeting on June 16, 2026 as an independent Hazmat Contractor that conducts chlorine and chlorine related material transfers from railroad and transport trucks, & train with Chemtrade personnel. Thank you, Tracy Clark United Professional Services tracy@upsltd.us Sent from my iPhone

Author: Tracy Clark

Narrative for the ChemTrade Van Couver Council meeting on 6/16/26

Notes for the presentation to the Van Couver City Council meeting regarding the expansion of the Chem Trade facility plant.

My name is Tracy Clark and I am the Managing Partner of United Professional Services that is a Hazardous Materials Response Company located in Fort Worth, Texas. I have been in the Hazmat Response business for 43 years involving Train Derailments, Chemical Plant fires, and Highway Tanker Transport wrecks.

We are member of the Chlorine Institute, Inc as a classification of a Level 3 response Contractor, meaning we have the experience and equipment to respond to live Chlorine or Chlor-Alkali releases involving plugging, patching, and or transferring of liquid Chlorine, and the other Chlor Alkali products that are related to the Chlor-Alkali industry.

Our responses have consisted of Train derailments, fixed plant facilities, and highway transportation. We have been involved in training classes using live Chlorine and other recognized Chlor-Alkali products such as Sodium Hydroxide, Hydro-Chloric Acid, & Sodium Hydroxide, and Sodium Chlorate.

My career has also consisted of training, pre-planning with companies that are in the Chlor Alkali industry, and I have never experienced a more disciplined industry willing to help (mutual aid) to others in the "same like" industry (many times to their competitors), in whatever personnel or equipment that might be needed when there is a release OR reported possible release.

I have had the opportunity in my career to be a participant in Advanced Chlorine tank car Hot tapping Procedures of loaded Chlorine Tank cars Training at the Department of Defense Base in Mercury, NV and the Live release of Liquid Chlorine and the affects of the material on surrounding area that was conducted @ the Department of Defense Army base in Dugway, UT.

Of the derailments I have been involved with, If Chlorine tank cars were within the Train Consist (or manifest), they might have only slid off of the tracks and only had dents and or scores on the shell, many times they might not even be derailed at all but upright. If they derailed along with other cars in the mix, you would have thought they would have had more damage than they did, however not all, as a matter of fact the cars would be transferred in place into other like tank cars or suitable tank trucks, without No release of product what so ever.

Newer designs of Chlorine Tank cars such as 1" thick normalized steel construction has added tremendous ductility to the steel when subjected to extreme heat and or cold conditions.

My observance working and training with The Chem-Trade personnel, has always been an excellent experience with their well-qualified disciplined personnel. I have seen first hand that All of their processes and training personnel are well disciplined, knowledgably, and with an excellent Safety record in ALL the commodities that they produce and ship. They have been an excellent company to having training with and respond with their professional knowledgeable response personnel.

Thank you for your time and letting me speak.
Tracy Clark
United Professional Services, Ltd

From: Corrie Kost [REDACTED]
Sent: June 16, 2026 4:55 PM
To: Mayor and Council - DNV; DNV Input
Subject: Historical USA price of liquid Chlorine
Attachments: Historical USA price of liquid Chlorine-etc-b.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Your Worship & Members of Council,

The attached is mainly about money. Especially the value (in US\$) of a ton of Liquid Chlorine.

I will let council determine the role it plays in having such extraordinary amounts that are produced and shipped to the USA.

Yours truly,
Corrie Kost

[REDACTED]

Historical USA price of liquid Chlorine note: my prompts are in red

The historical pricing of bulk liquid chlorine in the United States shifted from a long-term stable average of \$150–\$200 per ton pre-2020 to historic peaks near \$600–\$800 per ton following post-pandemic supply shocks. [1, 2, 3]

Historical Price Timeline

Industrial liquid chlorine is typically sold in bulk contract or spot markets per metric ton (MT) or short ton. [1, 2, 3]

- **Pre-2020 (The Baseline):** Long-term steady state. Prices consistently fluctuated between \$150 and \$180 per short ton. Supply was highly predictable and tied closely to co-produced caustic soda. [1, 2, 3]
- **2021–2022 (The Peak Shock):** Major supply disruptions—including a catastrophic fire at a primary biolab facility, extreme Gulf Coast weather outages, and soaring energy grid costs—sent prices surging. Spot market prices peaked at \$500 to \$600+ per ton. [1, 2, 3, 4, 5]
- **2023–2024 (Sustained Highs):** Prices plateaued but remained stubbornly high due to inflation, logistics shortages, and high electricity costs. Average pricing moved between \$450 and \$580 per ton.
- **2025–2026 (Recent Levels):** As of mid-2026, baseline pricing sits between \$780 and \$810 per metric ton. This reflects a steady 10% year-over-year rise driven by high municipal water treatment demand and regional maintenance tightening. [1, 2]

US Producer Price Index (PPI) Trend

- The US Bureau of Labor Statistics tracks the macro price changes for Alkalies and Chlorine via the FRED PPI Index WPU061303 (Base year 1982 = 100): [1, 2]

Era / Year [1, 2, 3]	Approximate PPI Value	Market Context
2019	~110–120	Historical baseline stability
Mid-2022	490.94	Initial extreme supply-chain panic
Early 2023	603.59	All-time historical index peak
Early 2024	409.48	Moderate stabilization as logistics eased
Mid-2026	430.34	Current elevated, stable-to-firm plateau

Core Drivers of Price Volatility

1. **The Chlor-Alkali Link:** Chlorine gas is co-produced alongside caustic soda via energy-intensive brine electrolysis. If demand for caustic soda drops, factories slow down, inadvertently cutting the liquid chlorine supply and spiking prices. [1, 2, 3, 4, 5]
2. **Electricity Tariffs:** Power accounts for 30% to 60% of total production expenses. Industrial chlorine costs track regional electricity and natural gas price shocks very closely. [1, 3]
3. **Transportation Bottlenecks:** Liquid chlorine requires highly specialized hazardous material pressure railcars and tankers. Shortages in freight capacity or driver availability drastically compound regional spot market spikes. [, 2]

Can you provide the electricity rates that were charged to Chemtrade since 2010?

As a specific commercial entity, **Chemtrade Logistics' exact contract billing details and electricity bills are confidential**. However, regulatory filings with the British Columbia Utilities Commission (BCUC) and Chemtrade's public disclosures reveal that its North Vancouver electrochemical plant operates as a major heavy industrial consumer. [1, 2]

Consequently, Chemtrade has been billed under **BC Hydro's Transmission Service Rate Schedules**. Because **electricity is the primary cost of production for their chlor-alkali and sodium chlorate processes**, these specific rate schedules dictate their costs. [1, 2, 3, 4, 5]

The historical framework and estimated rates charged to a transmission-class operator like Chemtrade since 2010 follow a distinct timeline:

2010–2024: The Stepped Rate Era (Rate Schedule 1823)

For nearly two decades, major industrial transmission customers were placed on a conservation-based, two-tier "inclining block" rate. Under [Rate Schedule 1823](#), a Customer Baseline Load (CBL) was calculated for the plant: [1]

- **Tier 1 Price:** Charged for consumption up to 90% of the baseline. It historically hovered between roughly $3.5 \text{ \$/kWh}$ and $6.0 \text{ \$/kWh}$.
- **Tier 2 Price:** A significantly higher penalty rate charged for any consumption above 90% of the baseline to incentivize efficiency. It reached upwards of $8.5 \text{ \$/kWh}$ to $11.0 \text{ \$/kWh}$ over the decade.
- **Demand Charge:** A monthly fee charged per kilovolt-ampere (kVA) of peak power load. [1, 2, 3, 4]

2024–2026: The Transition to Flat Rates (Rate Schedule 1830)

In April 2024, BC Hydro began phasing out the stepped rate to support industrial decarbonization and electrification. Heavy users like Chemtrade were transitioned to a revenue-neutral flat rate: [1]

- **Flat Energy Charge:** Set at $4.439 \text{ \$/kWh}$ (\$44.39 per MWh) in 2024 dollars.
- **Demand Charge:** Increased to **\$11.00 per kVA**.
- **2026 Status:** As of April 1, 2026, [Rate Schedule 1823 has been officially cancelled](#), and all remaining transmission-class industrial plants are fully migrated **to Rate Schedule 1830**. [1, 2]

Historical Average Cost Trajectory

While exact numbers vary based on Chemtrade's specific peak load factor and monthly operational volume, the effective blended rate (combining energy and demand charges) for a 120 kV transmission-tier customer in B.C. has historically evolved as follows:

- **2010 – 2015:** Blended rate of roughly $4.5 \text{ \$/kWh}$ to $5.8 \text{ \$/kWh}$.
- **2016 – 2023:** Blended rate of roughly $6.0 \text{ \$/kWh}$ to $7.2 \text{ \$/kWh}$.
- **2024 – 2026:** Blended rate of roughly $6.8 \text{ \$/kWh}$ to $7.6 \text{ \$/kWh}$. [1]

If you are analyzing this for financial or academic modeling, let me know if you need help **calculating a blended rate estimate** using a specific megawatt load or if you want to look into **BC Hydro's historical general rate increase percentages** over these years

Please look into BC Hydro's historical general rate increase percentages over these years.

BC Hydro's general annual electricity rate adjustments from 2010 to 2026 reflect a shift from aggressive, multi-year infrastructure funding plans to strict provincial caps designed to keep power costs below inflation. [1, 2]

Over this 16-year period, cumulative rate changes increased by roughly **55% to 60%** overall, driven heavily by capital project investments like the Site C Dam. [1, 2]

Annual General Rate Adjustments (2010–2026)

BC Hydro's operational fiscal year begins on April 1. The general percentage changes applied to customers' bills were: [\[1, 2, 3\]](#)

Effective Date [1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13]	Overall Average Rate Change (%)	Primary Drivers & Context
April 1, 2010	+7.29%	BCUC negotiated settlement down from 9.3% interim request.
April 1, 2011	+8.00%	Cost-recovery for aging grid upgrades.
Effective Date [1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13]	Overall Average Rate Change (%)	Primary Drivers & Context
April 1, 2010	+7.29%	BCUC negotiated settlement down from 9.3% interim request.
April 1, 2011	+8.00%	Cost-recovery for aging grid upgrades.
April 1, 2012	+7.10%	Adjusted down by government review panel from higher targets.
April 1, 2013	+1.44%	Tempered via provincial government intervention.
April 1, 2014	+9.00%	Year 1 of the government's 10-Year Plan to build infrastructure.
April 1, 2015	+6.00%	Year 2 of the 10-Year Plan.
April 1, 2016	+4.00%	Year 3 of the 10-Year Plan.
April 1, 2017	+3.50%	Year 4 of the 10-Year Plan.
April 1, 2018	+3.00%	Final phase of the 10-Year Plan revenue

April 1, 2018+3.00%Final phase of the 10-Year Plan revenue requirement.**April 1, 2019+0.00%**Rate freeze enacted by the provincial government.**April 1, 2020-1.00%**Rate decrease due to audited revenue requirements adjustments.**April 1, 2021+2.70%**Balanced out the prior year's reductions.**April 1, 2022-0.30%**Minor rate decrease following adjusted system forecasts.**April 1, 2023+2.00%**Approved lower than initial 2.7% expectations.**April 1, 2024+2.30%**Under-inflation adjustments focused on industrial transition incentives. **April 1, 2025+3.75%**Under provincial "Rate Stability" policy due to inflation and drought.**April 1, 2026+3.75%**Final year of the capped stability directive as Site C comes online.

From: DNV Input
Sent: June 16, 2026 5:03 PM
To: DNV Input
Subject: Letter of Support - Rezoning Application for 100 Amherst Avenue, North Vancouver
Attachments: DNV06162026.pdf

From: Sadler, Paul <PSadler@harmacpacific.com>
Sent: June 16, 2026 1:15 PM
To: Mayor and Council - DNV <council@dnv.org>
Cc: ajonsson@chemtradelogistics.com
Subject: Letter of Support - Rezoning Application for 100 Amherst Avenue, North Vancouver

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Council for the District of North Vancouver,

Please accept this letter as input from an interested and potentially affected party to the rezoning application for 100 Amherst Avenue, North Vancouver.

Best regards,

Paul Sadler, P.Eng.
General Manager and CEO
HARMAC PACIFIC, Nanaimo Forest Products Ltd.
1000 Wave Pl., Nanaimo BC V9X 1J2
Tel: 250.722.4200 |
E-Mail: psadler@harmacpacific.com



**Nanaimo Forest
Products Ltd.**

June 16, 2026

VIA EMAIL

Dear Mayor and Council for the District of North Vancouver,

It has come to my company's attention that the District of North Vancouver is evaluating a rezoning application by Chemtrade Logistics which is required for Chemtrade's North Vancouver Chlor-Alkali facility's continued operation beyond 2030.

I am writing to voice support for the rezoning application.

The company I operate, Nanaimo Forest Products Ltd, Harmac Pacific (aka Harmac) is a 400,000 tonne per year Northern Bleached Softwood Kraft pulp mill with a green power generation facility supplying 200 GW per year of power to BC Hydro. This is enough power for 25,000 homes. With a unique ownership structure since 2008, (100% BC investors, 25% of which are the employees themselves), the company has become an anchor business for the coastal forest sector.

To produce our pulp products, sodium hydroxide (caustic) is a critical input. Harmac consumes approximately 18,000 tonnes per year of this material, and for over 30 years has been entirely supplied by the Chemtrade North Vancouver plant. Without this facility, our company will likely have to source the material from China, Taiwan or South Korea delivered in bulk tankers to storage facilities in the Vancouver area. The economic fallout of this is significant for the region and Canada's economy as a whole. Domestic demand for the Chemtrade North Vancouver plant's co-product chlorine will also remain, requiring importation from Asian or US suppliers. This would require regional storage and transload facilities.

As a Canadian, I believe it is important that we continue to manufacture domestic supply of these critical chemicals for Canada's economic and social needs. In addition, these chemicals are best produced using clean power for which BC is a world leader. As a manufacturer ourselves, I also know BC and Canada has a regulatory regime that will ensure the safe production and distribution of these products.

Some products and materials are not strategically important for Canadian's to produce. Base chemicals such as sodium hydroxide and chlorine are not in this category. To depend on foreign sources for these chemicals is poor public policy. Please approve this rezoning application.

Sincerely,

Paul Sadler, GM, CEO
Nanaimo Forest Products Ltd, Harmac Pacific
Nanaimo, BC

From: DNV Input
Sent: June 16, 2026 5:09 PM
To: DNV Input
Subject: Councillor Inquiry: Chemtrade follow-up - VFPA having option to purchase
Attachments: OTP Registered in 2008 as retrieved 2021 - 100 Amherst Avenue North Vancouver BC.pdf

Dear Mayor and Council,

Planning, Properties, and Permits has provided the following information in response to a Councillor inquiry regarding 100 Amherst Avenue:

Q: It would be interesting to know if VFPA has (or intends to) exercised its option to purchase ChemTrade's property. If so, it would potentially place a different perspective on the rezoning application.

Chemtrade has advised that the attached document is registered on the legal title and a public document. We will include it in the Public Hearing record.

The Vancouver Fraser Port Authority (VFPA) option to acquire the property, as set out in the attached, is only exercisable if one of the 4 conditions listed in section 2.5 of the attached exists. VFPA has confirmed that none of the conditions are trigger by Chemtrade's proposed rezoning. So, in other words, the VFPA cannot exercise the option to acquire the property at this time.

As a result, the jurisdictional question relating to application of the District's zoning bylaw to the Port does not arise in the current circumstance.

Sent: June 16, 2026 3:14 PM
Subject: FW: Chemtrade follow-up: VFPA having option to purchase

Hello Councillor Mah,

This email is further to your **highlighted request** in the email below.

Chemtrade has advised that the attached document is registered on the legal title and a public document. We will include it in the Public Hearing record.

The Vancouver Fraser Port Authority (VFPA) option to acquire the property, as set out in the attached, is only exercisable if one of the 4 conditions listed in section 2.5 of the attached exists. VFPA has confirmed that none of the conditions are trigger by Chemtrade's proposed rezoning. So, in other words, the VFPA cannot exercise the option to acquire the property at this time.

As a result, the jurisdictional question relating to application of the District's zoning bylaw to the Port does not arise in the current circumstance.

Regards,

Dan Milburn, MCIP, RPP, RI
General Manager, Planning, Properties & Permits
Servicing & Approving Officer



355 West Queens Road
North Vancouver, BC V7N 4N5

milburnd@dnv.org
604-990-2423

We respectfully acknowledge the original peoples of these lands and waters, specifically the səliłwətał (Tseil-Waututh), Skwxwú7mesh Úxwumixw (Squamish), and xʷməθkʷəyəm (Musqueam), on whose unceded ancestral lands the District of North Vancouver is located. We value the opportunity to learn, share, and serve our community on these unceded lands.

Sent: June 15, 2026 12:38 PM

Subject: Re: Chemtrade follow-up: VFPA having option to purchase

In reviewing my notes for the upcoming Chemtrade public hearing, I came across this email thread about the Port having an option to purchase Chemtrade's property.

I was speaking with Mike Fox this morning on a few things and I brought this up. He informed me that if Chemtrade has fee simple interest in its property and the Port were to exercise its option to purchase, that property would still be subject to DNV zoning.

Furthermore, it is only water leases where the Port would not necessary be subject to municipal bylaws. Interesting... one can indeed learn something everyday 😊

For me, it would be interesting to know if VFPA has (or intends to) exercised its option to purchase ChemTrade's property. If so, it would potentially place a different perspective on the rezoning application.

**TERMS OF INSTRUMENT – PART 2
OPTION TO PURCHASE**

THIS OPTION AGREEMENT dated for reference January 31, 2008

BETWEEN:

CANEXUS CHEMICALS CANADA LTD., a body corporate under the laws of Alberta, with offices at 100 Amherst Avenue, North Vancouver, British Columbia, V7H 1S4

(the "Owner")

AND:

VANCOUVER FRASER PORT AUTHORITY, a corporation pursuant to the *Canada Marine Act*, with offices at 100 The Pointe, 999 Canada Place, Vancouver, British Columbia, V6C 3T4

(the "Optionee")

WHEREAS:

- A. The Owner is the registered owner of the Lands (hereinafter defined); and
- B. The Owner has agreed to grant to the Optionee an option to purchase the Lands on the terms and conditions set forth in this Agreement;

NOW THEREFORE, in consideration of the mutual covenants and agreements contained in this Agreement, and of other good and valuable consideration, the receipt and sufficiency of which is acknowledged, the Owner and the Optionee covenant and agree as follows:

**ARTICLE 1
INTERPRETATION**

1.1 Definitions

The following terms will have the following meanings in this Agreement:

- (a) "**Accredited Appraiser**" means an appraiser having an A.A.C.I. designation and having at least five (5) years experience;
- (b) "**Agreement**" means this Option Agreement as may be amended from time to time;

- (c) **"Arms-Length"** has the same meaning of that term in the *Income Tax Act* (Canada);
- (d) **"Bona Fide Offer"** means an offer:
 - (i) from a purchaser or prospective purchaser who deals at Arms-Length with the Owner;
 - (ii) in writing signed by the purchaser or prospective purchaser; and
 - (iii) in a form legally enforceable against the purchaser or prospective purchaser;
- (e) **"Business Day"** means any day other than a Saturday, Sunday or statutory holiday in Vancouver, British Columbia;
- (f) **"Closing Date"** means, in respect of the closing of a purchase and sale under subsections (a), (b) or (c) of section 2.5, the first Business Day that is ninety (90) days after the Exercise Date on which the New Westminster Land Title Office is open for business or such other date as the parties may agree; and in respect of the closing of a purchase and sale under subsection (d) of section 2.5, the first Business Day that is ninety (90) days after the date when the Optionee has sent its written Confirmation of Remediation to the Owner in accordance with subsection (e) of section 2.6.
- (g) **"Contamination"** means the presence, in soil, sediment, water or groundwater of the Land or any adjacent lands, or in adjacent bodies of water of any Hazardous Substances quantities or concentrations exceeding those prescribed by the industrial standard described in any Environmental Laws;
- (h) **"Encumbrances"** means mortgages, charges, security interests, liens, encumbrances, pledges and other interests affecting title to or the ownership of the Lands;
- (i) **"Environmental Laws"** means any applicable federal, provincial, regional or municipal statute, by-law, regulation, ordinance or order, or any other applicable law, as enacted or amended from time to time, relating to the environment, occupational health and safety, product liability, transportation or Hazardous Substances;
- (j) **"Environmental Tests"** means such soil, sediment, air quality, water and groundwater tests and studies of the Land to be conducted by and

at the expense of the Owner to the satisfaction of the Optionee, in accordance with Section 17 of the Port Lease, for the purpose of identifying Contamination on the Land.

- (k) **"Exercise Date"** means the date on which notice of the exercise of the Option is delivered by the Optionee to the Owner under section 2.6;
- (l) **"Hazardous Substances"** means any contaminant, pollutant, dangerous substance, dangerous goods, waste, liquid waste, industrial waste, hauled liquid waste, special waste, hazardous material or hazardous substance as defined pursuant to any Environmental Law;
- (m) **"Lands"** means the lands in the District of North Vancouver, Province of British Columbia, legally described as:
 - Lot 5, except Part subdivided by Plan LMP40923,
 - District Lots 193 and 611, Group 1, New Westminster
 - District, Plan 17801
 - PID 007-253-265;
- (n) **"Option"** means the option granted by the Owner in favour of the Optionee under section 2.1;
- (o) **"Option Term Commencement Date"** means the date on which this Agreement is registered in the New Westminster Land Title Office;
- (p) **"Option Term Expiry Date"** means the date determined pursuant to section 2.8 or such sooner date as may be determined pursuant to section 2.6;
- (q) **"Option Fee"** means the sum of Ten (\$10.00) Dollars paid by the Optionee to the Owner;
- (r) **"Option Term"** means the period of time commencing on the Option Term Commencement Date and terminating on the Option Term Expiry Date;
- (s) **"Optionee's Solicitors"** means those solicitors who the Optionee may appoint;
- (t) **"Owner's Solicitors"** means Stikeman Elliott LLP;

- (u) **"Permitted Encumbrances"** means, collectively, any legal notations and charges registered against title to the Lands other than financial encumbrances;
- (v) **"Person"** includes an individual, partnership, corporation, trust, unincorporated association, pension plan, joint venture or other entity;
- (w) **"Port Lease"** means the lease between the Optionee, as Lessor, and Canexus Chemicals Canada Limited Partnership (of which the Owner is the general partner), as Lessee, of lands adjacent to the Lands, described as a total area of 768,050 square feet in Burrard Inlet fronting Block H, Plan 11241, District Lot 193, District of North Vancouver, comprising a land area of 548,978 square feet (Parcel "A") and a waterlot of 219,072 square feet (Parcel "B") for a period of TWENTY-FIVE (25) years commencing on July 1, 2007 and ending on June 30, 2032;
- (x) **"Purchase Price"** means the amount determined pursuant to section 2.2; and
- (y) **"Remediation"** means action to eliminate, limit, correct, counteract, mitigate, remove or dispose of any Contamination or the negative effects on the environment or human health of any Contamination, and includes, but is not limited to, the following:
 - (a) preliminary site investigations, detailed site investigations, analysis and interpretation, including tests, sampling, surveys, data evaluation, risk assessment and environmental impact assessment;
 - (b) evaluation of alternative methods of remediation;
 - (c) preparation of a remediation plan, satisfactory to the Optionee, including a plan for any consequential or associated removal of soil or soil relocation from the affected site;
 - (d) implementation of a remediation plan;
 - (e) monitoring, verification and confirmation of whether the Remediation complies with the remediation plan, applicable standards and requirements imposed by the Optionee or under any Environmental Law; and
 - (f) other action that the Optionee may reasonably require or that is imposed under any Environmental Law.

1.2 Currency

All dollar amounts referred to in this Agreement are Canadian dollars.

1.3 Governing Law

This Agreement will be governed by and construed in accordance with the laws of British Columbia and the laws of Canada applicable in British Columbia.

ARTICLE 2 GRANT AND EXERCISE OF OPTION

2.1 Option

In consideration of the payment of the Option Fee by the Optionee to the Owner and other good and valuable consideration, the receipt and sufficiency of which is acknowledged by the Owner, the Owner grants to the Optionee the sole and exclusive option, subject to the conditions precedent set out in sections 2.4 and 2.5, irrevocable up to and including the Option Term Expiry Date, for exercise by the Optionee to purchase the Lands.

2.2 Purchase Price

The Purchase Price for the Lands will be the fair market value of the Lands as at the Exercise Date, determined as set out in this section 2.2. Each of the Owner and the Optionee will, within twenty (20) Business Days after the Exercise Date, provide to the other an appraisal of the Lands, in condition for industrial use, without taking into consideration the environmental condition of the Lands in conducting the appraisal, prepared by an Accredited Appraiser. The average of the two appraised values set out in the two appraisals will be deemed to be the fair market value of the Lands as at the Exercise Date. If the higher of the two appraised values of those two appraisals is more than 10% greater than the lower of the two appraised values of those two appraisals, then each of the Owner and the Optionee will, within forty (40) Business Days after the Exercise Date, provide to the other a second appraisal, prepared by an Accredited Appraiser. The Owner and the Optionee will then disregard the highest and the lowest of the four appraised values, and the average of the remaining two appraised values will be deemed to be the fair market value of the Lands as at the Exercise Date.

2.3 Disputes Under Section 2.2

If any dispute arises under section 2.2, then the parties may agree, within thirty (30) days after either party gives to the other a notice of dispute, to appoint a mediator and try to resolve the dispute by participating in a structured negotiation with a

mediator pursuant to the Mediation Rules of Procedure of the British Columbia International Commercial Arbitration Centre. If the parties are unable to resolve the dispute within thirty (30) days of the appointment of that mediator, or within such longer period as the parties may agree, or, if the parties do not appoint a mediator, then the dispute will be referred to and finally resolved by arbitration pursuant to the *Commercial Arbitration Act* (British Columbia) and the International Commercial Arbitration Rules of the British Columbia International Commercial Arbitration Centre. There will be a single arbitrator who will be an Accredited Appraiser and an experienced arbitrator, or who will be a lawyer having significant experience in real estate arbitrations. Such arbitrator will be appointed by the parties by mutual agreement, and if the parties fail to agree upon the arbitrator within thirty (30) days of either party requesting in writing such agreement, such arbitrator will be appointed pursuant to the provisions of the *Commercial Arbitration Act* (British Columbia). The award and decision of the arbitrator will be final and binding upon the parties.

Unless otherwise required by law, the parties agree that, for the purposes of any arbitration arising hereunder, any appeal from a decision of the arbitrator or of any other matters arising out of such arbitration, will be referred to the Supreme Court of British Columbia.

2.4 Conditions Precedent to Agreement Effectiveness

This Agreement is conditional upon the satisfaction (or waiver by the Owner) of all of the following conditions precedent, on or before September 30, 2008 or such later date as the parties may agree:

- (a) the approval of the Technology Conversion Project by the board of directors of Canexus Limited, as evidenced by a resolution in writing;
- (b) the approval of this Agreement by the board of directors of the Owner, as evidenced by a resolution in writing;
- (c) the execution of the Port Lease by both parties; and
- (d) to the extent required under the documentation for any credit facilities to which the Owner is party, whether as a borrower, guarantor or otherwise, the receipt of written approval to the grant of the Option to Purchase in this Agreement as a "Permitted Encumbrance" from lenders, agents, note purchasers and other such persons as may be required under and pursuant to such documentation.

These conditions precedent are for the sole benefit of the Owner. The Owner will give notice to the Optionee of the satisfaction of the conditions precedent in this

section 2.4 within ten (10) Business Days of the satisfaction of the last condition precedent to be satisfied.

2.5 Conditions Precedent to Exercise of Option by Optionee

The Optionee will not be entitled to exercise this Option unless and until one of the following conditions precedent occurs:

- (a) the District of North Vancouver notifies the Owner in writing that it intends to rezone the Lands from their then current use (the "North Vancouver Rezoning Condition");
- (b) the Owner makes an application in writing to subdivide or to rezone the Lands from their then current use (the "Owner Rezoning Condition");
- (c) the Owner receives a Bona Fide Offer that the Owner has determined it would accept (the "Bona Fide Offer Condition"); or
- (d) the Port Lease terminates or expires (the "Port Lease Condition").

These conditions precedent to the exercise of this Option are for the sole benefit of the Owner.

2.6 Exercise of Option

- (a) With respect to the North Vancouver Rezoning Condition, the Owner will, within 10 Business Days after receipt by it of a written notice from the District of North Vancouver (the "North Vancouver Notice") that it intends to rezone the Lands, give to the Optionee a copy of the North Vancouver Notice, in which case the North Vancouver Rezoning Condition will be deemed to have been satisfied and the Optionee will be entitled to exercise this Option. The Optionee may, in this case, exercise the Option by delivering to the Owner written notice of the exercise of the Option no later than 5:00 p.m. Pacific Standard Time on the thirtieth (30th) Business Day following receipt by it from the Owner of the copy of the North Vancouver Notice. If the Option is exercised, this Agreement will become a binding agreement for the purchase and sale of the Lands, which will be completed upon the terms and conditions contained in this Agreement on the Closing Date. If the Option is not exercised by the Optionee in this instance, the Option remains available to be exercised at a later date pursuant the terms and conditions of subsections 2.6(a), (b) (c) and (d).

- (b) With respect to the Owner Rezoning Condition, the Owner will, within 10 Business Days after it files an application to rezone the Lands with the District of North Vancouver, give to the Optionee written notice of the filing of the application, in which case the Owner Rezoning Condition will be deemed to have been satisfied and the Optionee will be entitled to exercise this Option. The Optionee may, in this case, exercise the Option by delivering to the Owner written notice of the exercise of the Option no later than 5:00 p.m. Pacific Standard Time on the thirtieth 30th Business Day following receipt by it from the Owner of the notice of the Owner's rezoning application. If the Option is exercised, this Agreement will become a binding agreement for the purchase and sale of the Lands, which will be completed upon the terms and conditions contained in this Agreement on the Closing Date. If the Option is not exercised by the Optionee in this instance, the Option remains available to be exercised at a later date pursuant the terms and conditions of subsections 2.6(a), (b) (c) and (d).
- (c) With respect to the Bona Fide Offer Condition, the Owner will, within 10 Business Days after receipt by it of a Bona Fide Offer that the Owner has determined it would accept, give to the Optionee written notice of the receipt of the Bona Fide Offer (but not a copy of the Bona Fide Offer nor any terms of the Bona Fide Offer), in which case the Bona Fide Offer Condition will be deemed to have been satisfied and the Optionee will be entitled to exercise this Option. The Optionee may, in this case, exercise the Option by delivering to the Owner written notice of the exercise of the Option no later than 5:00 p.m. Pacific Standard Time on the thirtieth 30th Business Day following receipt by it from the Owner of the notice of the Bona Fide Offer. If the Option is exercised, this Agreement will become a binding agreement for the purchase and sale of the Lands, which will be completed upon the terms and conditions contained in this Agreement on the Closing Date. If the Option is not so exercised, then if the purchase and sale contemplated by the Bona Fide Offer is completed, this Option will be null and void in accordance with section 2.7 and the date on which the purchased sale contemplated by the Bona Fide Offer completes will be conclusively deemed to be an Option Term Expiry Date. If the purchase and sale contemplated by the Bona Fide Offer does not complete, then if the Owner receives any subsequent Bona Fide Offer, the provisions of this Agreement will apply.
- (d) With respect to the Port Lease Condition, the Owner will forthwith on the occurrence of the circumstances set out in section 2.5(d) give written notice to the Optionee that the Port Lease Condition has been

satisfied and the Optionee will be entitled to exercise this Option. The Optionee may, in this case, exercise the Option by delivering to the Owner written notice of the exercise of the Option no later than 5:00 p.m. Pacific Standard Time on the 10th Business Day following receipt by it from the Owner of the notice that the Port Lease Condition has been satisfied. If the Option is exercised, this Agreement will become a binding agreement for the purchase and sale of the Lands, which will be completed upon the terms and conditions contained in this Agreement on the Closing Date. If the Option is not so exercised, then this Option will be null and void in and accordance with section 2.7 and the date on which this Option becomes null and void pursuant to section 2.7 will be conclusively deemed to be an Option Term Expiry Date.

- (e) Upon the Owner receiving written notice from the Optionee that the Optionee has decided to exercise this Option pursuant to subsections (a), (b) or (c) of Section 26 and the Optionee grants a Leaseback to the Owner of the Lands as contemplated in Section 2.9 herein, Remediation of Contamination shall be the Owner's responsibility as a prior occupant of the Lands, all on the terms and conditions stipulated in Section 17 of the Port Lease.
- (f) Upon the Owner receiving written notice from the Optionee that the Optionee has decided to exercise this Option in respect of the Port Lease Condition in accordance with subsection (d) of this Section 2.6, the Owner shall, as soon as possible, advise the Optionee, in writing, of any Contamination or suspected Contamination on the Lands of which the Owner is aware, and the Owner shall conduct Environmental Tests after the removal of all fixtures required by the Optionee to be removed, to confirm that the Lands are free of Contamination for which the Owner is responsible or that any Contamination identified in previous environmental tests or studies have been remediated to the satisfaction of the Optionee. If the Owner has been required to remediate Contamination of the Lands, the Optionee may require that the Owner conduct at its sole expense, a series of tests and studies at such intervals following the exercise date of this Option by the Optionee in respect of the Port Lease Condition, as may be reasonably necessary to confirm that any Remediation of Contamination has been completed in accordance with the requirements of this subsection (f). Upon the Optionee being satisfied that the Lands are remediated to the industrial standard in the current Environmental Laws, it shall send written notice to the Owner (the "Confirmation of Remediation").

2.7 Non-exercise of Option

If the Option is not exercised within the times and in the manners set forth in subsections (c) or (d) of section 2.6, the Option and this Agreement will be null and void and no longer binding upon the parties and the Optionee will forthwith execute and deliver to the Owner a registrable release of the Option and this Agreement. If the Bona Fide Offer Condition is satisfied but the Option is not exercised, the Optionee will execute and deliver to the Owner or to such person as the Owner may direct the registrable release of the Option and this Agreement at least two (2) Business Days prior to the proposed completion date pursuant to the Bona Fide Offer, on appropriate solicitors' undertakings.

2.8 Rule Against Perpetuities

Notwithstanding any other provision in this Agreement, this Option will automatically terminate and expire on the day that is one day prior to the eightieth (80th) anniversary of the Option Term Commencement Date.

2.9 Leaseback

If the Owner is not in default under the Port Lease at the time of the delivery of a notice by the Optionee pursuant to section 2.6, other than the circumstance where the notice is delivered under section 2.6(d), the Optionee will concurrently with the Closing contemplated in Article 7 grant a lease to the Owner in respect of the Lands ("Leaseback") for the remainder of the term (plus any renewals) of the Port Lease. The Leaseback will be on the same terms and conditions as exist in the Port Lease, mutatis mutandis, except Basic Rent (as defined in the Port Lease) which will be calculated at the time of exercising of the Optionee's Option hereunder, recognizing that the parties will have recourse to dispute resolution in a manner consistent with Section 5 of the Port Lease should disagreements arise regarding Basic Rent or Revised Rental (as defined in the Port Lease) during the term of the Leaseback.

ARTICLE 3 INSPECTION

3.1 Inspection

The Optionee will be entitled upon reasonable notice to the Owner and in accordance with the Owner's reasonable requirements as to security to enter the Lands and carry out investigations of the Lands, and the Optionee will indemnify and save harmless the Owner from and against all losses, costs, damages, expenses, claims and liabilities suffered or incurred by the Owner arising out of any such inspection.

ARTICLE 4 OWNER COVENANTS

4.1 Covenants of the Owner

The Owner will, for the period commencing on the Registration Date and up to the Option Term Expiry Date:

- (a) take all reasonable care to protect and safeguard the Lands and operate and otherwise deal with the Lands as a prudent owner would do;
- (b) obtain the Optionee's prior written consent, which will not be unreasonably withheld or delayed, before entering into any Encumbrances, registered on title to the Land or otherwise, which extend beyond 2032, other than Encumbrances required by a governmental authority or utility; and
- (c) pay in full all municipal taxes, rates, levies, and assessments with respect to the Lands.

ARTICLE 5 RISK

5.1 Risk

The Lands will be at the risk of the Owner until 12:00 am on the Closing Date.

ARTICLE 6 ADJUSTMENTS AND POSSESSION

6.1 Adjustments.

All adjustments with respect to taxes, utilities and all other items normally adjusted between a vendor and a purchaser on the sale of similar property will be made with respect to the Lands to and including the Closing Date.

6.2 Possession

The Optionee will be entitled to possession of the Lands at the time that the transactions contemplated by this Agreement are completed on the Closing Date.

ARTICLE 7 CLOSING PROCEDURE

7.1 Closing

Closing will commence at 10:00 a.m. on the Closing Date. Closing will take place at the offices of Stikeman Elliott LLP or at such other place as the parties may agree.

7.2 Owner's Documents

At least one Business Day prior to the Closing Date and subject to the provisions of this Agreement, the Owner will execute or cause to be executed and will deliver or cause to be delivered to the Optionee's Solicitors the following:

- (a) a Form A Transfer ("Transfer") executed by the Owner, conveying the Lands to the Optionee subject only to the Permitted Encumbrances;
- (b) a statement of adjustments approved by the Owner;
- (c) a statutory declaration of a senior officer of the Owner stating that the Owner is not a non-resident of Canada within the meaning of the *Income Tax Act* (Canada); and
- (d) such other documents and assurances as may be reasonably required by the Optionee to give full effect to the intent and meaning of this Agreement.

All documentation will be in form and substance acceptable to the Optionee's Solicitors and the Owner's Solicitors, each acting reasonably and in good faith.

7.3 Optionee's Closing Documents

At least one Business Days prior to the Closing Date and subject to the provisions of this Agreement, the Optionee will execute or cause to be executed and will deliver or cause to be delivered to the Owner's Solicitors the following:

- (a) a statement of adjustments approved by the Optionee;
- (b) a certificate of the Optionee evidencing its GST registered status;
- (c) an assumption of the Permitted Encumbrances;
- (d) the Leaseback, if applicable, pursuant to section 2.9; and

- (e) such other documents and assurances as may be reasonably required by the Owner to give full effect to the intent and meaning of this Agreement.

All documentation will be in form and substance acceptable to the Optionee's Solicitors and the Owner's Solicitors, each acting reasonably and in good faith.

7.4 Preparation of Closing Documents

All closing documents will be prepared by the Optionee's Solicitors (to the extent that preparation is required) and delivered to the Owner's Solicitors at least five (5) Business Days before the Closing Date.

7.5 Payment in Trust

On or before the Closing Date the Optionee will pay to the Optionee's Solicitors in trust the Purchase Price as adjusted under section 6.1 less the Option Fee and the amount anticipated to be advanced to the Optionee on the Closing Date under secured financing arranged by the Optionee.

7.6 Registration

Forthwith following the payment in section 7.5 and after receipt by the Optionee's Solicitors of the documents and items referred to in section 7.2 and receipt by the Owner's Solicitors of the documents referred to in section 7.3, the Optionee will cause the Optionee's Solicitors to file the Transfer in the New Westminster Land Title Office.

7.7 Closing

Forthwith following the filing referred to in section 7.6 and upon the Optionee's Solicitors being satisfied as to the pending registration of the Transfer after conducting a post filing for registration check of the Lands index disclosing only the following:

- (a) the existing title number to the Lands;
- (b) the Permitted Encumbrances;
- (c) the Leaseback, if applicable; and
- (d) any financial encumbrances to be discharged by the Owner under section 7.9.

The Optionee will cause the Optionee's Solicitors to deliver to the Owner's Solicitors a certified trust cheque for the amount of the Purchase Price, as

adjusted under paragraph 6.1, and to release the items referred to in sections 7.2 and 7.3 to the Optionee and the Owner, as the case may be. Notwithstanding the above procedure, if at the time of closing there is applicable federal legislation which affects the timing of the release of the adjusted Purchase Price until good, safe-holding and marketable title, the parties agree to abide by such federal legislation, that applies to Optionee.

7.8 Concurrent Requirements

It is a condition of this Agreement that all requirements of this Article 7 are concurrent requirements and it is specifically agreed that nothing will be completed on the Closing Date unless and until everything required to be paid, executed and delivered on the Closing Date has been so paid, executed and delivered and until the Optionee's Solicitors have satisfied themselves as to the Optionee's title under section 7.7.

7.9 Discharge of Owner's Encumbrances

The Optionee acknowledges and agrees that if the Owner's title to the Lands is subject to any financial encumbrances which are required to be discharged by the Owner, the Owner will not be required to clear title before the receipt of the net sales proceeds payable hereunder but will be obligated to do so within a reasonable time following Closing and the Optionee will pay or cause its solicitors to pay the balance of the adjusted Purchase Price to the Owner's Solicitors in trust on their undertaking to discharge any such financial encumbrance.

ARTICLE 8 MISCELLANEOUS

8.1 Time

Time will be of the essence of this Agreement and the transactions contemplated in this Agreement notwithstanding the extension of any of the dates under this Agreement.

8.2 Tender

Any tender of documents or money may be made upon the party being tendered or upon its solicitors, and money may be tendered by certified cheque, solicitor's certified trust cheque, or bank draft.

8.3 Relationship of the Parties

Nothing in this Agreement will be construed so as to make the Optionee a partner of the Owner or an owner of the Lands for any purpose, including the *Builders' Lien Act*, until the Closing Date.

8.4 Notice

Any notice required or permitted to be given under this Agreement will be sufficiently given if delivered personally or if sent by prepaid registered mail as follows:

To the Owner:

CANEXUS CHEMICALS CANADA LTD.
100 Amherst Avenue
North Vancouver
British Columbia, V7H 1S4

Attention: Plant Manager

With a copy to: General Counsel

To the Optionee:

VANCOUVER FRASER PORT AUTHORITY
100 The Pointe
999 Canada Place
Vancouver, British Columbia
V6C 3T4

Attention: Director, Real Estate

With a copy to: Legal Counsel, Legal Services Department

provided that any party will be entitled to designate another address by giving notice of it to the other party in accordance with the terms of this Agreement. Any notice so mailed will be deemed to have been received, except during a period of interruption of normal postal service, on the third Business Day following the date of mailing.

8.5 Further Assurances

Each of the parties will, at the expense of the other party, execute and deliver all such further documents and do such further acts and things as the other party may reasonably request from time to time to give full effect to this Agreement.

8.6 Non-Merger

None of the provisions of this Agreement will merge in the Transfer or any other document delivered on the Closing Date, and the provisions of this Agreement will survive the Closing Date.

8.7 Certificates

Wherever this Agreement provides for a certificate of a responsible officer of a party, that certificate will state that the officer has made reasonable and prudent inquiries to determine the accuracy of the matter certified and that certificate will be deemed to constitute a representation and warranty or a covenant, as the case may be, by the party whose officer signed the certificate.

8.8 Payment of Fees

Each party will pay its own legal fees. The Owner will be responsible for the costs of clearing title of any financial encumbrances. The Optionee will pay all fees in connection with the registration of the Transfer and will pay any Property Transfer Tax.

8.9 Binding Effect

This Agreement will enure to the benefit of and be binding upon the parties, their respective successors and permitted assigns.

8.10 Assignment

The Optionee will not assign its interest in this Agreement to any other Person without the prior consent of the Owner, which consent may be arbitrarily withheld.

8.11 Entire Agreement

This Agreement constitutes the entire agreement between the parties with respect to the subject matter of the Agreement and contains all of the representations, warranties, covenants and agreements of the respective parties, and may not be amended or modified except by an instrument in writing executed by all parties. This Agreement supersedes all prior agreements, memoranda, and negotiations between the parties.

8.12 "As-is, Where-is"

The Optionee acknowledges that any purchase of the Lands by the Optionee pursuant to this Agreement will be on an "as-is, where-is" basis, and without limiting the generality of section 8.11, the Owner makes no warranty or representation whatsoever as to the condition of the Lands.

8.13 Counterpart and Telecopy Execution

This Agreement may be executed in any number of original counterparts, with the same effect as if all the parties had signed the same document, and will become effective when one or more counterparts have been signed by all of the parties and delivered to each of the other parties. All counterparts will be construed together and evidence only one agreement, which, notwithstanding the dates of execution of any counterparts, will be deemed to be dated the reference date set out above. This Agreement may also be executed by the parties and transmitted by telecopy and if so executed and transmitted this Agreement will be for all purposes as effective as if the parties had delivered an executed original Agreement.

END OF DOCUMENT

From: Neil Saldanha <nsaldanha@gflenv.com>
Sent: June 16, 2026 5:15 PM
To: Mayor and Council - DNV; DNV Input; Signup
Subject: June 16 District of North Vancouver Public Hearing - Chemtrade - GFL Letter
Attachments: DNV Council Meeting - 06-16-2026 - GFL Submittal-Signed.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Good Day,

My Name is Neil
Saldanha, Facility Manager of the GFL North Vancouver Re-Refinery at 130
Forester Street, North Vancouver, BC. I am unable to speak at todays public
hearing and therefore sending my support via the attached letter.

Regards,

--

Neil Saldanha | Facility Manager, Refinery
GFL Environmental Services
130 Forester Street North Vancouver, BC V7H 2M9
| C (604) 652-3642 | nsaldanha@gflenv.com | gesi.gflenv.com

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DNV Council Meeting – June 16, 2026 (CHEMTRADE)

Mayor and Council
District of North Vancouver
355 West Queens Road
North Vancouver, BC V7N 4N5
Sent via email: council@dnv.org, input@dnv.org, signup@dnv.org

Dear Mayor and Council of the District of North Vancouver,

My Name is Neil Saldanha, Facility Manager of the GFL North Vancouver Re-Refinery at 130 Forester Street, North Vancouver, BC. I am writing to express my support for the rezoning required for the continued operation of Chemtrade's North Vancouver chlor-alkali facility, located at 100 Amherst Avenue, North Vancouver, BC.

The GFL North Vancouver Re-Refinery is a 24-hour operation that recycles and re-refines over 40 million liters of used oil per year. We employ approximately 40 full-time staff on-site and are supported by numerous North Shore businesses for ancillary services and products. We collect used oil from automobile dealerships, lube centers, repair shops, heavy industry, mining, and oilfields. Re-refining is an environmentally responsible process that allows used oil to be recycled repeatedly, perfectly demonstrating a circular economy. This prevents the burning of waste oil and reduces the risk of environmental contamination. According to an independent Life Cycle Analysis, our North Vancouver facility prevents the release of greenhouse gas (GHG) emissions equivalent to taking more than 26,000 passenger vehicles off the road each year.

An intricate and essential part of our refining process is our hydrotreating technology. Pioneered at our facility in 1978, it is now the worldwide standard for re-refining. A strict supply requirement for this technology is pure, clean hydrogen, which is precisely why our refinery was strategically located adjacent to Chemtrade.

Our facility purchases and uses Chemtrade's by-product hydrogen in our processes. Without this reliable local material, our North Vancouver operation would no longer be economically viable. GFL would be forced to import high-pressure hydrogen trucks, which would significantly increase local truck traffic, elevate safety risks, and severely impact our operations and margins. Chemtrade Logistics has earned a stellar reputation as a reliable source of hydrogen for GFL, consistently demonstrating a commitment to safety and operational excellence.

Finally, the three facilities in this industrial corridor—ERCO, Chemtrade, and GFL—are deeply intertwined. From commercial arrangements and participation in the Community Advisory Panel to our alignment on emergency response protocols, this synergy is vital. We firmly believe this industrial corridor aligns with DNV's Official Community Plan (OCP) goals for retaining industrial employment lands and supporting environmental/climate objectives and is at the heart of the diversified District of North Vancouver's current and future economic success.

I am proud to support Chemtrade and their rezoning application, and I look forward to seeing our shared continued success and positive impact on the North Shore.

Sincerely,

A handwritten signature in blue ink, appearing to be 'Neil Saldanha', with a stylized, elongated loop at the end.

Neil Saldanha
GFL Environmental Services Inc., North Vancouver Re-Refinery

From: DNV Input
Sent: June 16, 2026 5:38 PM
To: DNV Input
Subject: Question suggestions for tonight...

From: Peter Teevan [REDACTED]
Sent: June 16, 2026 5:11 PM
Subject: Question suggestions for tonight...

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor & Council,

As you will recall - staff only ask questions posed by members of Council.

It is my hope that you see fit to include the following in your question submissions please:

1. On March 5, 2007, the DNV Council sent this to the Port:

- **Final Motion:**

- *THAT Council forward the following feedback to the Vancouver Port Corporation (VPA) regarding the proposed Canexus Technology Conversion Project (TCP):*
 - *“The Council for the District of North Vancouver continues to support the key strategy and related policies of the Maplewood Local Plan, 2002, as outlined in Attachment 1 to the February 27, 2007 report of the Director, Sustainability, Planning and Development, to plan for the replacement of the chemical industry in the long term with a range of industrial uses, including light industry, opening opportunities for public access to the waterfront.;*
 - *The Council for the District of North Vancouver does not support the continued operation of a Canexus plant on the current site regardless of any technology employed.;*
 - *The Council for the District of North Vancouver does not support any extension to the current VPA lease.;*

- What happened between this recommendation from the DNV to the Port that led to the extension of the lease through 2032?

-

- In the Port’s most recent June 12, 2026 letter, they say they are restricting liquid chlorine due to community concerns raised in 2006, and commitments made by the VPA to the community in 2006. What were the community concerns and what were the Port’s commitments? If the concerns were the above highlighted in yellow, why allow any chloralkali manufacturing?

2. Is council aware, that based on an independent QRA review, the DNV's total cost to absorb first responder readiness in the event of a liquid chlorine accident would amount to approximately \$60 million per year?
3. Please detail exactly what Council’s ability to include the storage of railcars and the shipping of railcars within the boundaries of the District of North Vancouver. To what extent can Council consider the risks associated with these activities? How would these questions relate, in legal terms, to normal requirements for shadow studies or traffic impact assessments in residential development applications?
4. If there was a release from a railcar onsite but outside the proposed sealed building, would the chlorine cloud stay within the Chemtrade property? And who would the First Responders be?

From: Justin MacDonald <JMacdonald@bcwwa.org>
Sent: June 16, 2026 7:11 PM
To: DNV Input
Cc: Lee Coonfer; Alex Beyer; Sarah Pratt
Subject: BCWWA - ChemTrade Public Hearing
Attachments: BCWWA_ChemTradePublicHearing.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Hi District of North Vancouver,

Lee Coonfer, CEO of the BCWWA spoke this evening at the ChemTrade public hearing regarding the Rezoning Bylaw 8778. To supplement the perspective of the BCWWA we've attached our strategic plan.

Please let me know if you require further assistance or have additional questions.

Cheers,

Justin

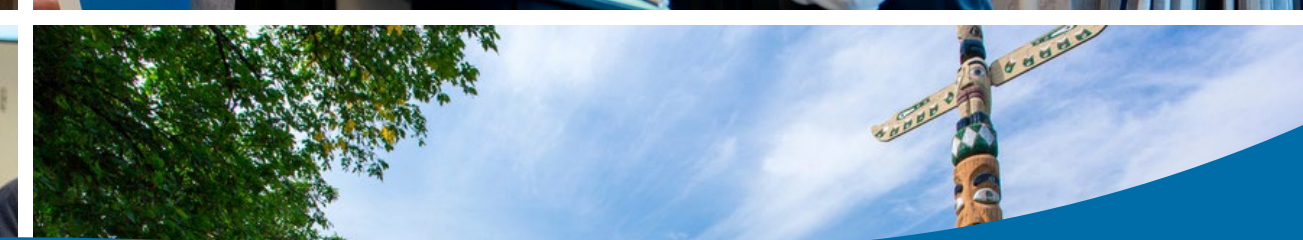
MacDonald he/him Communication

Coordinator **BC Water & Waste Association (BCWWA)** 215-4259 Canada Way, Burnaby, BC, V5G 1H1 P: +1

778-357-3620 jmacdonald@BCWWA.org | www.bcwwa.org [Connect](#)

with us! [LinkedIn](#) | [X](#) | [Threads](#) | [Instagram](#)

The BC Water & Waste Association (BCWWA) is committed to taking actions in reconciliation and acknowledge and thank the Hul'q'umi'num' / Halq'eméylem / hañq̓amiñani peoples on whose territory we operate our main office. We further recognize with gratitude that we work, educate and engage on the lands of Indigenous Nations throughout BC and Yukon. We honour our ongoing relationship with Indigenous Peoples and Nations and commit to continue working together.



**Connecting and Empowering the
One Water Sector in BC and the Yukon.**

What Is the BCWWA?

The BC Water & Waste Association

is a not-for-profit organization that represents over **4,700 water professionals** in British Columbia and the Yukon. Our members work tirelessly to ensure our water systems remain clean, safe and resilient for generations to come.



4,700 +
Active Members



Water and Wastewater
Practitioners and Professionals



Engineers and Consultants in
Water, Wastewater, Stormwater
and Infrastructure Planning



Backflow Assembly Testers and
Cross Connection Control (CCC)
Specialists



Local, Provincial, Territorial
and Federal Government Staff

Since 1978,

the BCWWA has provided training, certification and professional development to support members in their careers. We advocate on behalf of this critical sector.

2025 - 2027 Strategic Plan

Priority

1

Education

The BCWWA is the credible resource for workforce education and training solutions in the One Water sector.

Priority

2

Networking

The BCWWA is a primary convenor and point of connection in the One Water sector.

Priority

3

Advocacy

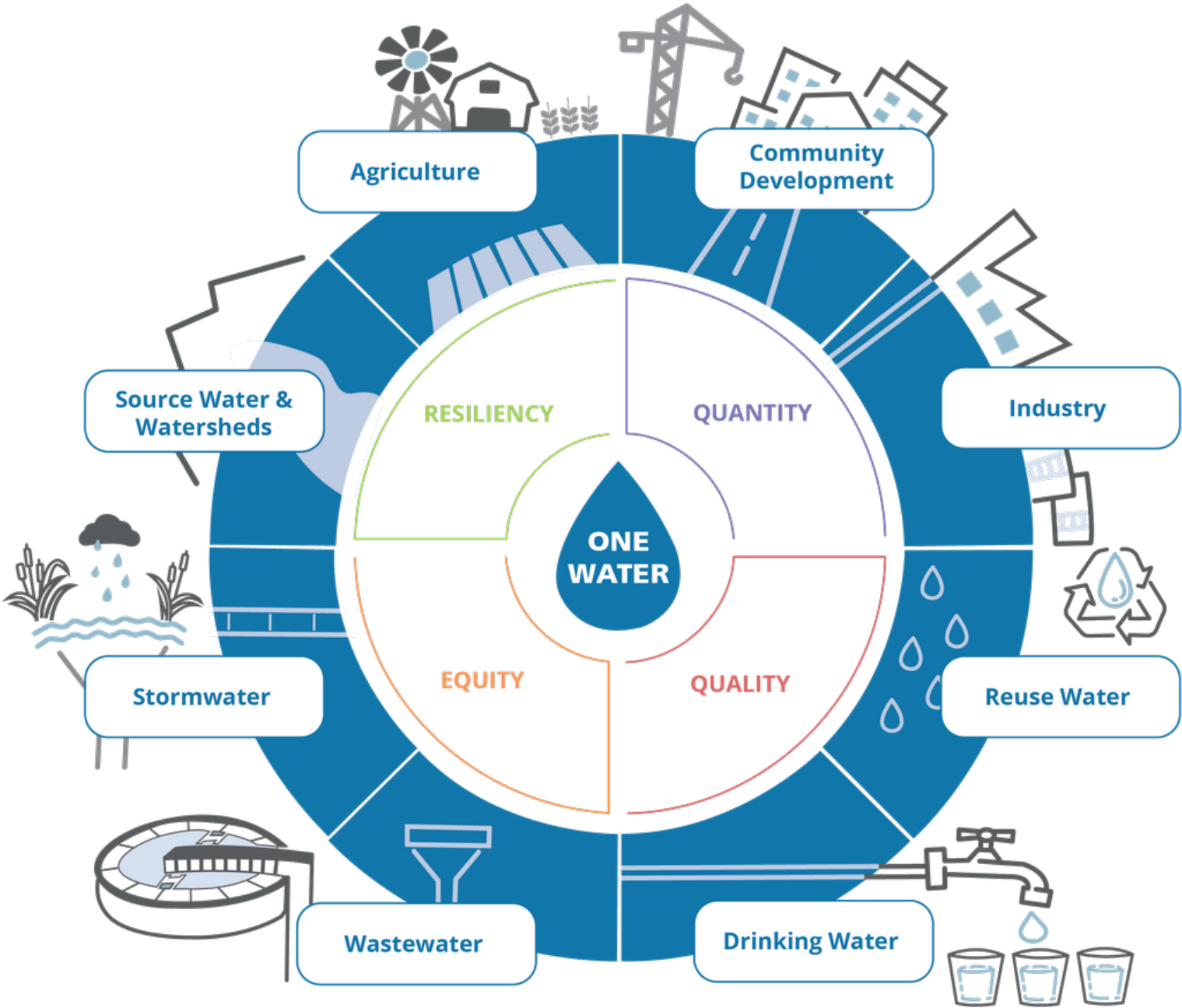
The BCWWA is a voice of record and champion of the One Water sector in BC and the Yukon.

Priority

4

Organizational Sustainability

The BCWWA has the leadership, talent, resources, insights and change strategies essential to successfully meet the challenges it now faces.



One Water Wheel

What We Do



Education & CCC Certification

- BCWWA is a trusted source for Continuing Education Unit (CEU) - eligible courses, training and professional development in the water sector.
- We are the recognized administrative body for the Province's cross connection control certification body, as confirmed by the Provincial Health Officer.



Networking

- Hosts BC's premier One Water conference and trade show, attracting over 1,200 delegates who work in Canada's water sector.
- Offer a robust program of conferences and workshops geared towards key industry topics.



Advocacy

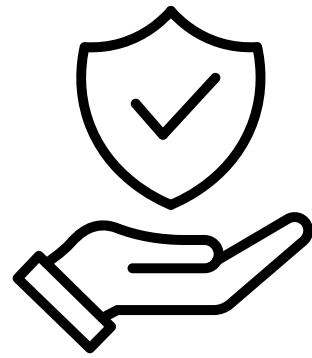
- Water professionals use the BCWWA to access best practices and data, make informed decisions and educate their networks.
- Elected officials and policymakers look to BCWWA as the logical conduit to the One Water sector.



Organizational Sustainability

- BCWWA is a recognized voice for the One Water sector in BC and the Yukon, engaging members within technical and advisory roles.
- BCWWA actively recognizes excellence and innovation in the sector, while fostering an accessible, inclusive and diverse environment for all.

Where We Engage



Supporting Water Governance & Policy

- Active participation in provincial and municipal roundtables and internal working groups.
- Support technical advisory committees with systematic and timely feedback to regulators.



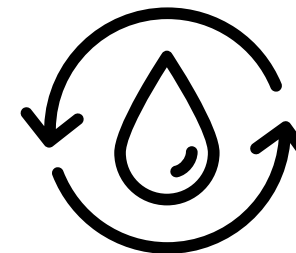
Reconciliation in the Water Sector

- Work with a dedicated Reconciliation Task Force to advance meaningful and actionable steps toward reconciliation in the water sector.
- Collaborate with Indigenous leaders and communities throughout our event planning process to ensure respectful and reflective programming and engagement on traditional lands.



Engaging Elected Officials & Decision-makers

- Connect elected officials and key decision-makers to key member conferences and events.
- Host regular MLA days at the BC Legislature in Victoria.
- Extend invitations to elected officials to serve as judges and keynote speakers at annually held tap water taste tests and operator competitions.



A Voice for the One Water Sector

- Continuous investment in impactful communication and marketing materials to help water professionals make informed decisions.
- Share updates and stories about our water sector through traditional, digital and social media channels.



Contact Us



contact@bcwwa.org



604-433-4389



bcwwa.org



215-4259 Canada Way
Burnaby, BC, V5G 1H1

Who's Here



Alex Beyer
Manager of Operations
778-357-3660
abeyer@bcwwa.org



Lee Coonfer
CEO
604-354-6210
lcoonfer@bcwwa.org



Justin MacDonald
Communication
Coordinator
778-357-3620
jmacdonald@bcwwa.org

SUBMITTED AT THE

JUN 16 2026

PUBLIC HEARING

1. Hello I'm **George McKay**. I live at [REDACTED] **Dollarton Highway** which is approximately 2 kilometers from Chemtrade at a similar elevation to it.
2. Our family has **lived at our property since 1976**.
3. In the **mid through late 1980s** my **parents were very involved lobbying the District of North Vancouver to remove Hooker Chemicals** (now Chemtrade) from its present location. These efforts over time were successful as far as the District ultimately determining that **the continued operation of a major chlorine plant at this location was and is not in the best interests of the District** and greater Vancouver generally.

4. I attend this meeting to AGAIN voice **our family's objection and concern** that the District may AGAIN be considering to allow Chemtrade to stay at this location long term.
5. Why is this happening when **it was already decided through the Public Hearing process and Council's existing decision to not allow Chemtrade to continue to operate a chlorine plant from this location?**
What has prompted this highly unusual step of rejecting the results of the prior Public Hearing and Council Vote and putting us all through this again?
6. Even before the Public Hearing and Council Vote earlier this year **it was already decided that Chemtrade should not have its rights to operate renewed.** Then earlier

this year we had the Public Hearing and Vote which Chemtrade lost. I admire **Chemtrade's** persistence but clearly they **wont take No for an answer.** Why are we giving into their Corporate pressure? Lets do what is right for the people in the District of North Vancouver here instead of Chemtrade and the powerful industrial lobby they represent.

7. This use is not compatible with acceptable community master planning as **the District and greater Vancouver move every year toward becoming one of the world's best cities.**

8. The land occupied by Chemtrade should be remediated and redeveloped for housing, offices, light industrial, retail and community uses, especially those that give

access to and rehabilitate this section of Burrard Inlet. We should be thinking in terms of a Granville Island or Lonsdale Quay type development for this land, which I think this will be a better use and ultimately generate more tax revenue for the District than having a major chlorine plant at this location.

9. Chemtrade states and it may be true that it is **one of the largest producers of chlorine in Canada.** This is all the more reason to have its facility at a location **suitable for heavy industrial operations** and with either no or a much **smaller number of people** living near it. And **if it is so critically important to our water that Chemtrade keeps making Chlorine in our District and sending it out every day on rail cars through Greater Vancouver why aren't the major**

providers of drinking water in Canada here supporting Chemtrade's bid, instead of us having to rely on Chemtrade telling us how important they are to our health???

10. **As I understand it the Federal government does not want and wont allow this use on their land.** Unless the Federal government has promised very significant money to the District to compensate it for having this unacceptable use exclusively on land within the District **its more than time to move on and go in the direction of a better and more acceptable use for this property.**
11. **We do not and should not bear the responsibility of being one of the biggest producers of chlorine for Canada. If its that important to Canada the Federal government should accommodate this use,**

not the District. Here in 2026 having a major chlorine plant within our boundaries is NOT what the District should be about.

Thank you

District of North Van / Public Hearing / Chemtrade Re-zoning Application / June 16, 2026

Griff Marshall – resident of the District of North Vancouver

- Hello, my name is Griff Marshall. I am a resident of the District of North Vancouver, from the Lynn Valley area.
- I am here to speak in favour of the requested re-zoning application by Chemtrade.
- To start, I would like to state that I do not work for, nor do I have any affiliation with Chemtrade.
- I do, however, have experience with the chemical industry, having spent my working career at one of the largest global chemical companies. Chemtrade would have been viewed as a competitor in one of the business segments of my former employer.
- I should also state that I was not directly involved in the Chlor-Alkali business (production of Chlorine and Caustic Soda), although Chlorine was an upstream feedstock to our process.
- I presented at the February '26 Public Hearing, so those comments will still be on record.

This evening, I would like to make comments related to 2 general subjects:

1. Security of Supply of a critical chemical, that being Chlorine
2. Why Chlorine is important for clean drinking water

SUBMITTED AT THE
JUL 16 2026
PUBLIC HEARING

1. Security of Supply of a Critical Chemical

- I will get into some discussion as to why Chlorine is critical, but let me start with some general background
- In Canada, Chlorine is produced in three provinces: British Columbia; Saskatchewan; and Quebec
- Chemtrade North Vancouver represents ~40% of the production capacity in all of Canada; and more regionally, ~70% of the Chlorine available in BC and Alberta
- Chlorine is a key input chemical for water treatment. (that will be covered in my second topic)
- I have real concerns that if Canada is not self-sufficient in Chlorine production, we could be left completely at the whim of the US government. And as an example, recollect that during the Pandemic, the US initially would not share vaccines or PPE with other countries.
- To the best of my understanding, there is not any planned new production capacity for Chlorine in North America. And to the contrary, approximately 1/3 of US Chlorine capacity is based on Asbestos-diaphragm technology. Asbestos-diaphragm must be phased out, in the coming years. *In the medium term, overall N.A Chlorine capacity will decline.*

- For the record, Chemtrade uses the most current Membrane technology to manufacture Chlorine.
- ==> Security of Supply

2. Chlorine and Water Treatment

- Chlorine, in the form of Sodium Hypochlorite, is a critical component in municipal water treatment and the supply of municipal drinking water.
- Sodium Hypochlorite is often referred to as Bleach, although there is a difference in concentration between Municipal (Industrial) and Household Bleach
- Sodium Hypochlorite is produced by reacting Chlorine gas with Sodium Hydroxide (Caustic Soda)
- This reaction product, Sodium Hypochlorite, is NOT stable. *Its potency decreases* ~~It decomposes~~ over time. Higher concentrations degrade more quickly than lower concentrations, and the rate of degradation is exponential, not linear, so a significant amount of the decomposition occurs in the first week after production.
- Municipal grade Sodium Hypochlorite typically ranges from **10% to 15%** available chlorine. 12.5% concentration is the standard "trade strength" for commercial and industrial applications. This strength provides a balance between high oxidizing potential and manageable storage stability.
- So, this all said, it is important to have Sodium Hypochlorite production located within a reasonable proximity of the water treatment facilities. Long-haul movement of this Bleach is both costly and time consuming. *→ period of Bleach degradation loss of potency.*
- And the way Sodium Hypochlorite is made is by reacting Chlorine with Caustic Soda.
- Here is what Google AI said about Vancouver water treatment:
 - Here is how your tap water is disinfected before it reaches your home:
 - **Primary Treatment:** Metro Vancouver treats water using ozone and ultra-violet (UV) light to kill microorganisms like Cryptosporidium and Giardia. [1, 2]
 - **Secondary Treatment: Sodium hypochlorite** (liquid chlorine/bleach) is added to the water before it leaves the treatment facilities. This is done to prevent bacterial regrowth as the water travels through the distribution network to your tap.

Conclusions:

- Chlorine is one of the building blocks for Sodium Hypochlorite
- Sodium Hypochlorite is critical for treating our water
- Canada needs to be self-sufficient in production of Chlorine, to meet its domestic needs
- Chemtrade employs current technology to produce Chlorine, which means that they will not be forced to phase out manufacture because of environmental matters.
- And finally, I leave you with some editorial comment: those of you making the decision should check out the facts that you hear from all the presenters, including me. At the previous meeting I attended there was a good deal slanted comments, false facts and misinformation.
- Thank you for listening to the input from your community.

1

Against

SUBMITTED AT THE

JUN 17 2025

PUBLIC HEARING

DNV Chemtrade final

My name is Laurie Parkinson, ~~I live in the city of north Vancouver.~~ *I'm a biologist.* *who* To my surprise, I discovered a chlorine accident *from Chemtrade* could affect me.

I live at the top of the hill above Park & Tilford. I shop at Park & Tilford, which is about 4 km from Chemtrade.

I oppose this rezoning for public safety reasons.

Chlorine gas travels far and fast in wind. It's **extremely dangerous**, as WWI veterans can tell you. When inhaled, the gas reacts with moisture in the lungs to form strong acids that burn and destroy tissue. It's often **fatal** if inhaled.

So the District was smart. Years ago you banned the production of hazardous materials, specifically naming chlorine, on the land Chemtrade wants to move onto. **This should stop the rezoning.**

The District's OCP contains the key goal of providing a safe community for all. **This should stop the rezoning. 1:16**

Here's some public risk information.

The Emergency Response Guide used by first responders shows: if a rail car of liquid chlorine was badly damaged, depending on the wind, a **significant portion** of the **entire north shore** could be affected. **This should stop rezoning. 1:38**

How about a smaller accident?

Maplewood Village **Centre** is about **1.5 km** from Chemtrade.

The National Institute of Health says a **mild wind** could move chlorine gas about **5 km**.

This Village and Park & Tilford are in this range.

This should stop the rezoning. 2:05

Chemtrade has known they need to move for **almost 20 years**.

In 2007 the port *asked them* told them they need to move by ~~2030~~ *2030*. *because the web said chlorine is so dangerous.*

So Chemtrade **still has 6 years** to move to somewhere less populated. They have a plant in Prince George. Why not move chlorine production there? 2:28

Another point: *No* Chemtrade's QRA study *again* *S* cover the shipping of chlorine.

On average 4 trains/day leave chemtrade and move through Burnaby, New West, Surrey, and Langley. A study showed a chlorine release from a rail car could kill upwards of 2,000 people in Burnaby. **This should stop the rezoning.** 2:56 *at least*

I'll add a little detail about
~~Let's talk about~~ water purification:

Most cities in BC **do not use chlorine for primary water treatment**: They use non-chemical means: microfiltration, UV, ozonation because they're much safer.

Here's a list:

MetroVan, Capital Regional District (on) Vancouver Island, Nanaimo, Kelowna, Kamloops
 Prince George, even Prince Rupert & Revelstoke.

Yes, these communities all use a little bleach to keep ^{bugs} critters out of water distribution pipes. However, ~~Chemtrade is not the only source of chlorine in Canada.~~ 3:43

chlorine is ~~also~~ available from Saskatchewan.

In Summary:

Chlorine gas is very toxic and travels far and fast in wind. A big accident would have ~~for~~ ^{horrible} ~~negative~~ results. A smaller accident with mild winds could take the gas to Maplewood Village Centre and Park & Tilford.

Chemtrade has known for almost 20 years that they need to move. They still have 6 years to move. Instead they're pressuring you.

Having Chemtrade produce chlorine here is an accident of history. No city planner would now propose ~~this~~ *this*.

The District wisely **banned** chlorine production on this land.

Your OCP contains a key goal of providing a safe community for all.

The need for public safety should stop this rezoning. 4:45

Thank you.

From: Jeff Powell [REDACTED]
Sent: June 16, 2026 9:14 PM
To: DNV Input
Subject: Written version of Jeff Powell's statement at the Chemtrade rezoning public hearing

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Thank you Mayor and Council. I'm Jeff Powell and I live in the Blueridge neighbourhood.

Please note that I am only speaking for myself. Nothing I say here is associated with any organization I volunteer with.

I'm here in opposition to Chemtrade's rezoning request.

To start: How many ways and times has this plant already been told "no"? I count at least 4:

1. A previous owner of the plant told the DNV council that chlorine production would end. And Council made decisions about many things, including developments in Maplewood, believing that would happen.
2. The current OCP does not allow the production of hazardous materials on that property.
3. The Port of Vancouver will not renew their lease.
4. On April 13th, your Council voted no.

How many times are needed before a decision actually sticks?

On the question of safety, I see it this way: the chlorine produced at this plant is not used for water purification anywhere as far as I can tell. I therefore discount the risk of waterborne disease as a result of changes at this plant.

That leaves safety concerns related to the plant and chlorine in transit. There your duty to protect DNV citizens comes into play.

1. How does continuing the production of a hazardous chemical in our midst make anyone safe?
2. Why are DNV residents subject to the risks of this plant, and rail cars full of chlorine in transit, when the product isn't even used here?

If **anyone** must be subject to these risks, it should be the people who benefit from the product. DNV residents are not those people.

On the topic of risk, the US National Institutes of Health has this on their website as of yesterday:

"... the intentional use of chlorine as an unconventional weapon is now occurring. Large chlorine stores in the U.S. are vulnerable and lack adequate security."

They don't consider Canadian facilities, but I suspect we have similar worries.

Now for a moment I'd like to address Chemtrade's trustworthiness.

In their May 15 letter to Mr. Milburn, in response to an allegation that they had claimed liquid chlorine was used to purify drinking water, Chemtrade wrote:

"... we reviewed the website and immediately corrected it. We also reviewed our other public information and are happy to share that in all other communications, we have been very clear that bleach, a derivative of

liquid chlorine, is most used for water treatment."

But that isn't true. The June 2026 issue of Chemtrade's community newsletter, #12, published well after May 15th, says:

"Knowing the significant role that Chemtrade liquid chlorine plays in supporting safe drinking water for millions of Canadians ..." and it goes on.

and

"A study conducted by Statistics Canada in 2015 found that 96 per cent of Canadian communities relied on chlorine to treat their municipal water supply ..." and it goes on.

These statements are right at the top of page 1, and they are clearly misleading.

Chemtrade has known all along that liquid chlorine is not used to purify drinking water, and they haven't yet managed to clean up all the places where they made that deliberately misleading assertion. I see no reason to trust their other statements as a result.

Their motivations are profit-driven, and they will do whatever it takes to keep their plant open, including stretching the truth beyond recognition.

Finally... Let's imagine a different company with no safety hazards operated at the Amherst Avenue site. Now that company comes to this Council asking for a zoning change to let them produce dynamite.

Would you grant the rezoning to allow that? Of course not.

But maybe that's too exciting?

What if they wanted to make chemical weapons?

Still too exciting? But chlorine was used as a chemical weapon, starting in World War I.

I had some Canadian history here, but it was grim, and I cut it for time.

I put it to you that this Council would never allow a new company to produce chlorine at the Amherst site. There is no standards body or regulatory organization in the world that would approve such a decision, the OCP forbids it, and your own jobs would be on the line if you approved it.

Putting the production of hazardous substances in the midst of a heavily populated area is **just not done**.

Chemtrade has already been told "no" repeatedly.

You need to reaffirm your April decision and stop this.

Thank you for your time.

From: DNV Input
Sent: June 16, 2026 11:10 PM
To: DNV Input
Subject: FW: Water treatment

From: Lisa Muri <MuriL@dnv.org>
Sent: Tuesday, 24 February 2026 21:17:21
To: Mayor and Council - DNV <Council@dnv.org>
Subject: Fw: Water treatment

From: Marilyn Towill <Marilyn.Towill@metrovancover.org>
Sent: Tuesday, February 24, 2026 9:03 PM
To: Lisa Muri <MuriL@dnv.org>
Subject: RE: Water treatment

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

We currently use sodium hypochlorite for our water treatment processes at our two water treatment plants (SCFP & CWTP) as well as our eight secondary disinfection stations.

Additional information:

- Some local municipalities who receive treated water from Metro Vancouver use sodium hypochlorite in their local rechlorination stations which are used to boost residual chlorine levels in their water distribution systems.
- Many non-Metro municipalities utilize sodium hypochlorite as part of their treatment processes – both primary treatment and rechlorination.
- Liquid Waste Services uses sodium hypochlorite for disinfection of their treated liquid waste prior to discharge to the environment. I believe this is mostly during the summer months.

Let me know if you have additional questions or need any more information.

Marilyn Towill, P. Eng.
General Manager
Water Services
t. 604.451.6069
c. 604.612.1131



From: Lisa Muri <MuriL@dnv.org>
Sent: Tuesday, February 24, 2026 8:30 PM
To: Marilyn Towill <Marilyn.Towill@metrovancover.org>
Subject: Water treatment

WARNING: This email originated from outside of our organization. Do not click any links or open attachments unless you trust the sender and know the content is safe.

do we use pure chlorine to treat our water or hypochlorite?

Get [Outlook for iOS](#)

From: Jeff Powell [REDACTED]
Sent: June 17, 2026 1:56 AM
To: DNV Input
Subject: More on Chemtrade

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor
and Councillors,

I've
arrived home after the meeting on Tuesday evening, June 16th, and I am clearly
not falling asleep any time soon. As a result, you get to hear from me again
now rather than later.

I'm sorry,
but my schedule is not my own on Wednesday, and I will not be able to attend
the second evening of the public hearing on the Chemtrade rezoning request.

Honestly, I
don't know whether to be upset about that or utterly relieved. It's just as
well. I am a terrible public speaker, and you won't have to listen to me babble.

But I do
have a few things to say in response to what happened on June 16th. I don't
know if these points will be interesting or helpful. In fact, given it's
approaching 2am, I am not even sure they will be intelligible, but here they
are. I'll start with this:

**None of
Chemtrade's experts addressed my most serious concern.**

There was
all kinds of praise for the safety record of the plant, the wonders of rail
transit, and the indestructibility of the rail cars. People extolled the
virtues of the new system for loading the cars and the value of the containment
building. These are all good things, I admit, but do you see the problem?

Hubris.

I heard
hubris in such huge quantities that they might as well be bringing it up here
in container ships along with all the salt they use at the plant.

I went to
an engineering school (where I studied computer programming), and I have a
technical degree. Something I've learned over the years is this: **All technical systems fail**. Eventually, 100% of
systems succumb given enough
time and use. Materials fatigue, processes miss obscure conditions, humans make
mistakes, and so on. There is no 100% safe system. Not at the Chemtrade plant,
or anywhere else.

And as a
computer programmer, do NOT get me started about software. Among those in the
computer field, it's well known that "hardware eventually fails while
software eventually works." But that masks the deeper problem with

software: it's riddled with flaws. I wrote code for a living for over 20 years, and anyone who says differently is selling something. All computer programs of any complexity have errors. Some of them can be found and exploited. The software systems at Chemtrade (or the DNV, or RBC, or... you get the idea) are all subject to failures of various kinds, some accidental, some deliberate.

And when you open up that "deliberate" category, you discover that it's incredibly nasty. Sure, the railcars have a zillion safety systems, and so does the fancy new loading facility, but the right set of security exploits - handily identified by the latest AI software being hyped in Silicon Valley - will skip right past those safety checks, and chlorine will wind up somewhere it's not supposed to be. In bulk.

And yes, Chemtrade will reply - quite correctly - that they have a great IT team that keeps their software patched and has all kinds of monitoring and intrusion detection software and systems. But I repeat: **all systems fail**. Determined hackers will find a way in given enough time. And if the enemy is sponsored by a nation-state, they have both the time and the funding to make it happen. That is a battle Chemtrade cannot win.

As I said, hubris was on fine display Tuesday night.

So was denial. I remind you: at last February's meeting we heard about a chlorine release at the plant (under a previous owner) that sent two people to the hospital. One of them never went back to work. The story was told in the first person by someone who was there. True, it wasn't a fatality, but that plant does **not** have a spotless record, and no one should claim that it does.

So let's go back to basics: Part of basic risk management is recognizing that **every complex system in the world eventually fails**.

And that is why we don't put chlorine plants in heavily populated areas, among other things.

It really is as simple as that. When it fails, we don't want a lot of people around.

Even worse? When I was in engineering school, we had a very dark joke. It went like this:

Q: What's the difference between an electrical engineer and a civil engineer?

A: Electrical engineers make weapons. Civil engineers make targets.

Do not kid yourself, the Chemtrade plant is a juicy target.

As the USA's political power falls (which it is doing rapidly right now), and as our

premier works to create new alliances that may raise Canada's position and political power, our industrial facilities will be probed for weaknesses by people a whole lot smarter than you and me.

Chemtrade

won't even know it's happened. In fact it might already have happened. All I can do is cling to the hope it never matters.

Now let's

consider what might happen if you do not grant the rezoning.

Various

speakers, including our MLA, sounded worried about the potential consequences. Drinking water not being purified, supply chains getting longer, loss of jobs, loss of Canadian suppliers, dogs and cats living together, mass hysteria, and so on.

But the

truth is this: **We don't know what would happen.** I doubt anyone does.

One thing

we do know is that there are 4 full years before the plant would have to stop making chlorine, and a lot can happen in that time. Here are a few options to consider:

- Chemtrade
might find a new location outside a heavily populated area and move the plant there.
- Chemtrade
could restructure their business on the site and not produce chlorine anymore.
- Chemtrade
could move their chlorine production to some other site the company already owns.
- Or
they could shut down completely, fire everyone, and sell the property.

Another

thing I know is that right now they won't talk about any of those first three options positively. That last one, though, they will talk about. It causes fear, and they want you (and the rest of us) afraid to shut them down. Fear is a tool. They are using it to manipulate you and the public.

Even if

shutting down is the option they wind up choosing, there are still 4 years for supply chains to adjust and for their competitors to step in and supply what is needed. It's not as if they lose the rezoning application and chlorine production stops the next day.

I remain

unconvinced that shutting this plant down would change things significantly on an economic level. It might, but no one actually knows that, and Chemtrade finds that lack of knowledge useful. It helps their cause.

I must

admit that if they shut down, a number of people would lose their jobs. But again, perhaps not as many as you might think. Chemtrade has other facilities, and some people would transfer elsewhere. Others would retire early on their severance packages. And yes, some would have to look for new work.

And it's

cold comfort, I know, but if the land was sold, some other business would move in and hire people. There would still be jobs and taxes paid to the DNV. We can't know if there would be a net loss or gain of employment and taxes a few years after such a change. Anything is possible.

Briefly,

I'd like to discuss "experts."

On that

topic, the June 16th meeting left me utterly depressed.

As with the

meetings in February, we are presented with "evidence" from "experts" whose credentials we (or at least I) do not have the time to vet and whose work we (or again, I) do not have the expertise to understand, let alone critique.

Clearly the

Chemtrade people learned a deep lesson about experts from their opponents and competitors at the first public hearing in February: stack the deck. Perhaps on Wednesday they can find 3 or 4 additional experts to tell us just how safe the railcars that carry chlorine are. Only having heard from 4 of them (I think?) on Tuesday, we clearly need to know more on that topic.

Sorry, I am

a bit snarky at this hour. But there is a point.

Chemtrade

clearly went on the offensive at this meeting, bringing in lots of their own staff to tell us just how much they care and how careful they are. And to that mix, they added expert after expert who told us things they've already told us before and whose words we just have to accept, apparently.

But again,

if you look and listen carefully, you will note the hubris on display:

- Our
people are so good they cannot make mistakes.
- Our
loading facility can't leak chlorine.
- Those
railcars will never leak.

But they

can, it will, and they will. Eventually.

**In closing,
the fundamental issues remain unaddressed:**

- This plant should have shut down decades ago. It's a nonconforming application that already had an end date.
 - It is NOT suitable for the location.
 -
 -
 - It's not permitted by the OCP for good reason.
 - No one would ever permit a new chlorine plant to operate there.
-
- Given enough time, there will be a serious event at that plant.
Say it with me: ***all complex systems eventually fail.***

Chemtrade has no response to these points. All they keep saying is "we're safe" and "we're critical" and "the world will collapse without us."

I don't claim to know what will happen if they don't get their rezoning. But I do know there are 4 years for things to adjust to the changing circumstances.

It is also abundantly clear that Chemtrade has been astonishingly good at making money at that facility. They can probably find a way to keep doing that. It might be a bit less, but they will almost certainly be fine.

I also suspect our drinking water will stay pure. I cannot prove it, but again, there are 4 years for systems to adjust, and there is money to be made by those willing to solve the problem.

Assuming you have, thank you for reading this far.

Jeff Powell

DNV resident

From: Michelle Sheardown [REDACTED]
Sent: June 17, 2026 8:36 AM
To: DNV Input
Subject: submissions on Chemtrade Public Hearing

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Mayor Little and Councillors,

My name is Michelle Sheardown and I live in the District of North Vancouver.

I spoke at the Public Hearing on June 16 and did not make it through my presentation in the 5 minutes. Unfortunately, I am unable to return this evening. As such, I am sending you my final comments and a brief summary of what I believe are the most important items for consideration.

My closing words:

Only you have the authority to make the decision regarding this particular bylaw. A bylaw which flies in the face of the OCP, the Zoning Bylaw, land use planning principles, and most importantly, the SAFETY of District residents. I implore you to make the right decision. The one that is safe and aligned with the values and principles in the District's Official Community Plan, the values and principles one would expect from our elected representatives.

Thank you.

Key points from June 16 presentation:

Safety first signifies putting well-being and risk prevention at the forefront of any activity. Ensuring health and avoiding hazards is the foundational rule before anything else.

Safety is important to our community and is codified in the Official Community Plan. According to the *Local Government Act*, the OCP is a statement of objectives and policies to guide decisions on planning and land use management. Both the old and new Official Community Plan refer to the words "safe" or "safety" over 70 times. In the OCP's vision... "Our young have safe and healthy environments in which to grow and succeed." One of the OCP's key goals is to "foster a safe, socially inclusive and supportive community that enhances the health and well-being of all residents."

Pursuant to the *Local Government Act*, all municipal bylaws must be consistent with the OCP. The bylaw amendment being discussed tonight is not safe and, therefore, is not consistent with the OCP.

You've heard about the catastrophic harm that can be caused by deadly chlorine gas. Not surprisingly, liquid chlorine is a "hazardous substance" under the District's Zoning bylaw. Right after explosives, you'll see liquid chlorine. The fact that it is expressly stated as a hazardous substance when any number of toxic chemicals could have been added to the list is indicative of just how hazardous this chemical is. As with explosives, it is deadly hazardous.

I previously shared with Council an article from 2009, entitled "Chlorine and Olympics a Dangerous Mix?" In it, the authors describe how 50 of Chemtrade's (then Canexus) rail cars full of liquid chlorine were sent to Washington State because the cars were considered to be a security threat and a potential terrorist target during the 2010 Olympic Games. The fact that these rail cars are so deadly should be the end of any consideration of their location within the District.

Land use planning principles actively discourage “non-conforming uses,” what this bylaw would be. Non-conforming land usage undermines comprehensive zoning goals and creates incompatible neighbourhoods. At 100 Forester Street, the manufacture of hydrogen has already received an exception to the prohibition on production of a hazardous substance. What’s next? Production of explosives on Riverside Drive? Production of radio-active materials on Spicer Road? How is that compatible with the nearby Maplewood Village Town Centre. There is no good reason to create an exception to the rule - a non-conforming use - for Chemtrade’s continued production of deadly chlorine gas.

I’m confused about what could rival “safety first” such that there is any debate?

- Is it the safe supply of drinking water? Despite what some may continue to argue, with respect, they are mistaken. This is a non-starter, a red herring. If any chlorine is needed for drinking water sanitization, which is less and less due to other methods of water treatment, there are other suppliers of chlorine. Chemtrade’s chlorine is not needed for water treatment.
- Is it the future of Chemtrade that comes first? Chemtrade is a successful business with many properties and would surely survive the closure of this facility. Regardless, does Chemtrade’s profitability trump SAFETY?
- Jobs? Yes, jobs are important. However, according to the Province of BC’s Labour Market Outlook: 2025 Edition, 15 skilled trades are expected to account for over 72,000 job openings over the next 10 years. There is huge demand for skilled industrial labour. Any impacted employees would have 4 years to find alternative employment prior to the facility being shut down when the existing arrangement ends in 2030.

And end it must.

Thank you,
Michelle Sheardown

From: [REDACTED]
Sent: June 17, 2026 10:44 AM
To: DNV Input
Subject: rezoning of DNV land at Chemtrade
Attachments: Chemtrade_letter_Jun17.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Hi,

I attended all of last night's meeting in person and will attend again tonight if I can. This morning I wrote a letter summarizing my thoughts and I think this email address is where I'm meant to submit it for Council to receive.

Thank you for reading/considering,

Cathy

Jun 17, 2026

Hi Council,

My name is Cathy Brydon, I live and have raised my kids in the Dollarton area. I attended yesterday's council meeting in person and listened to all the speakers. I also have attended Canexus meetings which I think were 20 years ago, attended Chemtrade's public info meetings over the past few years when I could and over many years attended/enjoyed CAP meetings. I came yesterday to listen and hadn't intended to speak or submit more input.

It seems to me that laypeople (including me) have a natural tendency when thinking about "liquid chlorine" to mistakenly think of it as bleach, rather than "chlorine gas that is pressurized until it reaches liquid form". I must admit that I feel frustrated when I hear opening remarks yesterday from a Chemtrade exec give examples of real-world accidents that have happened elsewhere and then describe a leak from a bleach truck in the US where the driver and 2 others were brought to hospital and later released. Am I misunderstanding in my thought that a bleach truck is a completely different world of a scenario than a vessel containing pressurized chlorine gas?

At one point yesterday a statement was made that "a reasonable person wouldn't stay in the situation, they would take action to protect themselves" if an event happened. My questions is whether all the people living/working in Maplewood or surrounding areas would have enough time to get to shelter or whether large numbers of people would be overcome before getting indoors. Also to understand if once everyone is sheltering in place and racing to try to shut down air circulation systems, would that likely be sufficient to prevent death or lifelong injury? I know these questions depend on the whether it's a leak from the plant or a rail car, the speed of the leak, the direction of the wind, etc.

Of all the reports and speakers, I most appreciate the consultants reports where qualified experts submit modelling of scenarios and appreciated hearing from DNV fire about the degree to which they have (or don't have) capability to respond.

I worry about the degree to which having a chlorine plant and railcars of pressurized chlorine gas near this population center makes this an attractive terrorist target. I don't know the answer to that question, but I expect that those in charge of protecting Canadian citizens have modelled it, and hope that Council making decisions like this about the safety of those living/working here have access to conclusions from government security experts.

I strongly hope that Council denies this application for rezoning of this land and upholds the previous decisions over the decades that liquid chlorine at this site would be phased out. The land would remain industrial and maybe there is business case for Chemtrade to continue to produce in other forms at this site.

Cathy Brydon

From: DNV Input
Sent: June 17, 2026 12:04 PM
To: DNV Input
Subject: Laurie Parkinsons speech from last night

From: [REDACTED]
Sent: June 17, 2026 9:59 AM
To: Mayor and Council - DNV <council@dnv.org>
Subject: Laurie Parkinsons speech from last night

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Hello Mayor and Council,

The copy I left in the tray last night contained some scribbles. This will be easier to read.

Mayor and Council:

My name is Laurie Parkinson, I'm a retired MSc biologist living in the City of north Vancouver. To my surprise I discovered a chlorine accident could affect me.

I live at the top of the hill above Park & Tilford. I shop at Park & Tilford, which is about 4 km from Chemtrade.

I oppose this rezoning for public safety reasons.

Chlorine gas travels far and fast in wind. It's extremely dangerous, as WWI veterans can tell you. When inhaled, the gas reacts with moisture in the lungs to form strong acids that burn and destroy tissue. It's often fatal if inhaled.

So the District was smart. Years ago you banned the production of hazardous materials, specifically naming chlorine, on the land Chemtrade wants to move onto. This should stop the rezoning.

The District's OCP contains the key goal of providing a safe community for all. This should stop the rezoning.

I spoke of public risk:

Maplewood Village Centre is about 1.5 km from Chemtrade.

The National Institute of Health says a mild wind could move chlorine gas about 5 km. This Village and Park & Tilford are in this range.

This should stop the rezoning.

Chemtrade has known they need to move for almost 20 years.

In 2007 the port told them they need to move by July 2030.

So Chemtrade still has 6 years to move to somewhere less populated. They have a plant in Prince George. Why not move chlorine production there?

Another point: Chemtrade's QRA study did not cover the shipping of chlorine.

On average 4 trains/day leave Chemtrade and move through Burnaby, New West, Surrey, and Langley. A study showed a chlorine release from a rail car could kill at least 2,000 people in Burnaby.

This should stop the rezoning.

Let's talk about water purification:

I found out from several Health Authorities that cities in BC do not use chlorine for primary water treatment: They use non-chemical means: microfiltration, UV, ozonation because they're much safer.

Here's a list:

MetroVan, Capital Regional District on Vancouver Island, Nanaimo, Kelowna, Kamloops Prince George, and even Prince Rupert & Revelstoke.

Yes, these communities all use a little bleach to keep bugs out of water distribution pipes. However, Chemtrade is not the only source of chlorine in Canada.

In Summary:

Chlorine gas is very dangerous and travels far and fast in wind. An accident coupled with mild winds could take the gas to Maplewood Village Centre and Park & Tilford.

Chemtrade has known for almost 20 years that they need to move. They still have 6 years to move. Instead they're pressuring you.

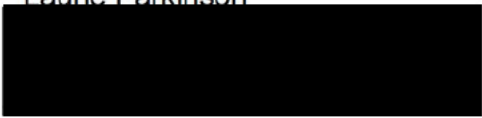
Having Chemtrade produce chlorine here is an accident of history. No city planner would now propose that.

The District wisely banned chlorine production on this land.

Your OCP contains a key goal of providing a safe community for all.

The need for public safety should stop this rezoning.

Thank you,
Laurie Parkinson



From: Erick Yuli [REDACTED]
Sent: June 17, 2026 2:24 PM
To: DNV Input
Subject: [SUSPECTED SPAM] Re: 100 Amherst Avenue — Chemtrade Chlor-Alkali Production Plant

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Council,

I am writing on behalf of myself and my partner as residents who live on Old Dollarton Rd, 800 meters from the Chemtrade facility. We strongly oppose Chemtrade's application to amend the zoning bylaw, the grant of which would provide an exception to the prohibition on the manufacturing and storing of liquid chlorine, a hazardous material unequivocally listed as a hazardous substance within Bylaw 5661.

Our concern is not with Chemtrade's operators, employees, contractors, or partners. We respect the professional work they do and their dedication to safety. The issue is one of location and proximity to the now well-populated urban areas surrounding it. As more residents, families, businesses, and public spaces are added as part of the Maplewood Town Centre developments, the consequences of an industrial incident become too serious to justify. The surrounding natural habitats and wildlife are also part of the local ecosystem and should not be treated as an afterthought either.

We ask the Council to reject the application for the following reasons:

1. The catastrophic consequences of an industrial leak of chlorine in liquid and gas form have already been previously discussed and expressed in public records.
2. If Bylaw 5661 specifically lists liquid chlorine as a hazardous substance, and hazardous substance manufacturing and storage is prohibited, then I struggle to understand why Council would even re-consider making an exception for exactly the type of activity the zoning bylaw was put in place to restrict in the interest of public safety.
3. As some others have said previously, it is the wrong framing of this discussion as a choice between safety and necessity. It is a question of location. It doesn't have to be all or nothing. If liquid chlorine production is so critical to Canada's supply chain security, the onus should be on Chemtrade to propose to work with additional layers of governments on finding even safer alternatives to this site. Or, further diversifying Chemtrade's portfolio and transition away from liquid chlorine. There seems to be other ways for Chemtrade to continue contributing to the local and broader regional economy without the risk and danger of liquid chlorine. The onus is on Chemtrade to figure that out, and not re-allocate the risk back to the public.
4. Would you approve a new proposal to produce liquid chlorine, or even other hazardous substances in this neighbourhood today? This type of hazardous activity is simply incompatible with the zoning bylaw and the nature of the community now and for the future (reminder to see our own DNV Official Community Plan).
5. Chemtrade's second proposal of additional safety improvements raises some logic question: why were those measures not included from the beginning? Why wasn't the highest possible standard for public safety the starting point to begin with. Why only now come forward with additional safety proposals when the Council rejected the initial application back in April.
6. Even though we are relatively new to the neighbourhood since March last year, we have made this our longterm home. We have yet to receive any information about safety protocols, emergency responses drills, etc. or even simply information and awareness of what we as residents should know. Why is that?
7. We have tremendous concerns about the capacity of our local responders to adequately respond to all of disaster events happening at once (the "what if"): a major earthquake, flood, wildfire, plus a chemical leak. There are not enough of them! Again, applicant's proposal is simply incompatible with the zoning bylaw, and the current and future vision of this community.

In conclusion, we urge Council to put public safety as the ultimate priority and to uphold, and make permanent, the prohibition on hazardous substances production/storage at 100 Amherst Ave. and reject Chemtrade's application.

Respectively,

Erick and Andrea

3. ~~PROT~~ JAMIESON
4. ALEX ~~CHEN~~ TRADE REZONING 16 JUNE '26

INTRO A, J RETIRED PLANNER, - OPPOSED - SEE MY LETTER
ABOUT MY QUALIFICATIONS, 7 YRS ARCHITECTURE, UBC GRAD.
~~419 E. 11th St.~~

- WORKED FRASER VALLEY AND RICHMOND, ENVIRONMENTALIST DESIGN WITH NATURE.
- CHANGESS SINCE 1957% LOWER MAINLAND: 100,000 TODAY 3, 2m
- MORE PEOPLE WILL BE AFFECTED,
- IN 1984, COUNCIL AMENDED ZBL TO MAKE THIS SITE A LEGAL - NON CONFORMING USE ..

+ LETTER SENT - SUMMARY:

NG:
ZENG

PLANNING STANDARDS FOR SEPARATION "HOW BIG A SEPARATION"

LOTS OF DIFFERENT ONES: 3 in my LETTER
MIAAC - "RESPONSIBLE CARE ETHICS" 190. 1400.

- MY CONCLUSIONS AS A PLANNER: IN A WORST CASE SCENARIO: FIRE, FLOOD, SPILL, TRAIN ACCIDENT + WIND
"KILOMETERS", NOT METRES.

- NOW SPEAKING AS A HUMAN/RESIDENT:

I FEAR FOR MY FAMILY, FRIENDS, AND THE ENVIRONMENT (THE SEA, CREEK, AN MAPLEWOOD ARE I SPEAK FOR US ALL. "Design with Nature" RIGHT THERE.)
... I SUPPORT BIODIVERSITY.

- AS DISTRICT COUNCILLORS, YOU HAVE THE POWER, IT IS NOT UP TO THE PROVINCE OR ANYONE ELSE, YOU NEED TO PROTECT US IN SPITE OF ECONOMIC AND CORPORATE PRESSURE. NOT JUST E

DO NOT APPROVE THIS REZONING, LOOK AT EACH OF THEM.

Procedural probs.
Cafs after public hearing

From: carol [REDACTED]
Sent: June 17, 2026 2:52 PM
To: DNV Input
Subject: No to production beyond 2030

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Hello DNV council,

Please be advised as to my opposition to allowing Chemtrade to continue liquid chlorine production beyond 2030. Chlorine is toxic in both liquid and gas form.

We have invested in residential property in this area and strongly disagree with the continuation of this production.

Yours truly,
Carol Brown

From: DNV Input
Sent: June 17, 2026 3:07 PM
To: DNV Input
Subject: Councillor Inquiry: Chemtrade
Attachments: FW: Chemtrade; Councillor Inquiry: Chemtrade Rezoning Application (100 Amherst Avenue)

Sent: June 17, 2026 2:49 PM
Subject: Councillor Inquiry: Chemtrade

Dear Mayor and Council,

Planning, Properties, and Permits has provided the following information in response to a Councillor inquiry regarding a chronology of discussions with Chemtrade:

Further to your email question below please see the following chronology:

- In early 2024 DNV staff became aware that Chemtrade was negotiating an extension to their lease with the Port. Around the same time, Chemtrade started to undertake community outreach regarding the proposed changes to their site. Publicly available information from Chemtrade was shared with Mayor and Council at that time (see attached email).
- Chemtrade provided me (General Manager, Planning, Properties, and Permits) with a high-level presentation on their proposed changes in early May 2024, and in late May 2024 Chemtrade sought clarity about what District approvals would be necessary for their proposed changes as they had initially assumed only building permits would be required. This request prompted DNV staff to ask Chemtrade for additional information on their proposal.
- Over several months Chemtrade hosted site visits and shared additional information with members of Council, DNV staff, and community members.
- After assessing additional information submitted by Chemtrade in mid-September 2024, I wrote to Chemtrade on September 27th, 2024, advising them that "should Chemtrade wish to pursue the Chlorine Risk Reduction Project, Chemtrade should first submit an application to amend the Zoning Bylaw to permit the manufacture of liquid chlorine on the subject property. The District would then consider the application, and if Council approved a Zoning Bylaw amendment allowing the manufacture of liquid chlorine on the subject property, then staff could process the other applications..."
- Over several months Chemtrade prepared their application submission materials. DNV staff received a complete rezoning application from Chemtrade in early October 2025. Council was advised of the application submission in an email update (see attached email).

Good morning, when did Chemtrade first come in to discuss the rezoning with the District?

From: Council Liaison [REDACTED]

To: Mayor and Council - DNV

Sent: May 31, 2024 3:05:39 PM

Subject: FW: Chemtrade

Attachments: Community Newsletter May 21 2024 Issue 1.pdf (166 KB); image001.jpg (68 KB); Chemtrade-OpenHouse-Invite.pdf (1726 KB); NorthShore News ad.pdf (51 KB);

Dear Mayor and Council,

Please see attached information that has been shared with Council by ChemTrade, including their Community Newsletter, invitation to an Open House on June 6, 2024 and an ad that will be running in the North Shore News.

Kind regards,

***Carly Moberg for
Council Liaison Office***



District of North Vancouver
355 West Queens Road
North Vancouver, BC V7N 4N5

Chemtrade North Vancouver Community Update

May 21, 2024

Issue 1

Chemtrade's North Vancouver chlor-alkali facility is one of Canada's largest providers of liquid chlorine – accounting for 40 per cent of all liquid chlorine available in Canada. Regionally, this equates to over 70 per cent of the liquid chlorine available in BC and Alberta. Why is this important? A study conducted by [Statistics Canada in 2015](#) found that 96 per cent of Canadian communities relied on chlorine to treat its municipal water supply, which equates to over 30.7 million Canadians.

Knowing the significant role that liquid chlorine plays in supporting safe drinking water for millions of Canadians, we need to start having conversations now regarding our potential future operations.

To support this, we are starting a series of community meetings and will be engaging with local First Nations, special interest groups like community associations, and other identified stakeholders, as well as municipal, provincial, and federal elected officials. We will be launching a new website, [AskChemtrade.ca](#), where you will find resources, information, be able to submit questions, as well as sign up for email updates.



What has changed at the site in recent years?

Today's North Vancouver chlor-alkali facility is not the same as the facility of the early 2000s. Since 2010, we have invested over \$500 million in modernization projects that have improved both the safety and reliability of the plant. There has also been a significant change in how the facility is operated. Using liquid chlorine storage levels from the year 2000 as the benchmark, the amount of liquid chlorine stored on site has been reduced by over 94 per cent.

We have also seen regulations in the United States regarding the export of liquid chlorine become more stringent as they look to secure chlorine for domestic use. In addition, earlier this year, the US Environmental Protection Agency (EPA) finalized its previous ruling under the Toxic Substance Control Act, prohibiting the use of chrysotile asbestos. This ruling – which will come into effect in 2029 – will have a direct impact on eight facilities in the US who use asbestos diagrams in their chlorine production. These eight facilities represent about 30 per cent of the total supply available in North America (Canada, the US and Mexico).

Converting technologies is a significant cost (approximately \$1 billion per facility), but also requires a lengthy facility shut down to convert the equipment. As these facilities shut down for conversion of their equipment, this will remove a significant amount of production from the US, making it is even more critical that Canada secures its own domestic supply.

Further to the modernization projects described above, North Vancouver facility has already been converted to modern membrane technology and will not be affected by the new EPA regulations.



Safety above all else

At all of our sites, including our North Vancouver facility, we have strict safety protocols in place that start with production and continue through to our products reaching our customers.

These safety protocols include comprehensive training for employees, rigorous safety protocols and procedures at all stages of production, facility safety drills, and emergency response planning. On a facility level, we are fully automated, and the system is continuously monitored by a state-of-the-art system that can automatically notify operators, shut down and isolate areas within the plant should something outside of the normal operating ranges be detected. This significantly reduces the chance of an accidental release or incident.

Currently, there are 72 sensors located throughout the facility site, including along the perimeter and in the railcar loading area. These sensors are capable of detecting chlorine as low as 0.1 parts per million. Once the sensors are triggered, automated shut down processes to isolate the area are initiated, and site operators are notified.

In the case of a power outage, the facility is equipped with several safety mechanisms that are immediately deployed and do not require operator support. Valves are immediately closed once the facility loses power, securing the chlorine supply within the system.



Facility's rail loading area, where strict safety and operating procedures are followed

In North Vancouver, we work closely and collaboratively with local first responders, including North Shore Emergency Management. This includes providing support for other emergency response initiatives.

Moving forward, we will continue to explore ways to further improve the plant, both for the safety of our employees and local community, and to be able to contribute to support the availability of safe drinking water for millions of people across Canada and the Western US.

Transporting our products

Chemtrade transports chlorine using specially designed rail cars which are custom designed for the transport of liquid chlorine. We lease and maintain our own fleet of rail cars, which we monitor and test to ensure full functionality and safety both prior to and after loading. Rail transport has been proven as the safest method to transport our product over land (source – AAR.com), and we are proud to share that since we have taken over operation of the facility in 2017, Chemtrade has not had a release of chlorine during transportation – either as the result of an accident or a non-accidental release (known as a NAR). Examples of a NAR would include leaks, splashes, or other releases from improperly secured or defective valves, fittings, tank shells or release through a safety relief device.

In fact, we are proud to share that in 2022, we were awarded the American Association of Railroads NAR Grand Slam Award, which is presented annually to companies that are exemplary shippers of hazardous materials. An award winner must have been recognized by at least four Class I railroads and have had zero NARs involving their shipments the previous calendar year. In 2023, Chemtrade was awarded both the Canadian National Railway (CN) Platinum award for Zero Process Safety Related Incidents, and the Gold Level CN Safe Handling award for no non-accidental releases.

At our facility, as a member of [Responsible Care®](#), the [Chemistry Industry Association of Canada](#) (CIAC), and [The Chlorine Institute](#), we follow all safety association guidelines, while also being committed to reducing the environmental impact of our activities and improving the health & safety of our employees and the communities in which we operate.

We also follow all Canadian and US federal regulations and ensure that our employees receive training and follow all industry and railroad-specific procedures related to the handling, loading, and shipping of liquid chlorine. This includes following strict speed limits, thorough inspections, rail yard practices, and using identified shipping routes for materials deemed hazardous. We maintain and operate a fleet of leased railcars, all of which have been specifically designed for the transport of our various products – like liquid chlorine and meeting all of the required regulatory specifications.

Looking at ways to further reduce potential risk to the community

We are working with an independent third-party company – BakerRisk – who have developed updated risk information for the facility using the latest technology and accepted parameters. The risk survey work also considers the work already completed at the site – like the modernization projects completed since 2010 – and the changes to operations which have reduced the amount of liquid chlorine stored on site by over 94 per cent based on year 2000 storage levels.

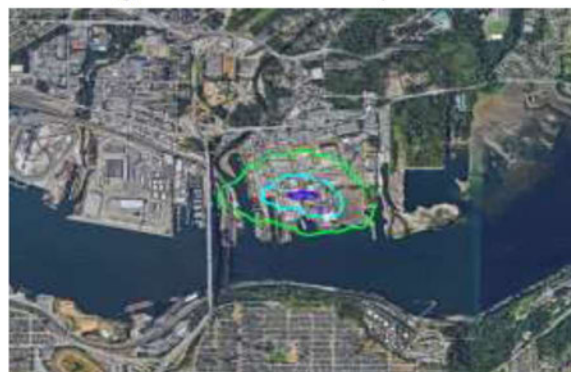
While the risk mapping work is still underway, initial results are promising and show that with the completion of strategic improvement projects, like the construction of a containment shed with air scrubbers around the rail loading area, we could reduce risk to the community by reducing the risk to the area at or close to the facility's property lines.

Our intention is to move forward with the strategic improvements as suggested by the BakerRisk risk reduction modeling to significantly reduce any potential risk to the community from continued liquid chlorine production. This investment will require initial engineering studies and a full estimation process as well as regulatory permits and an extension of Chemtrade's lease for adjacent Port lands, used for both operations and to import

Below: 2006 modelling reflecting our current operations



Below: possible updated risk, should full risk mitigation measures be implemented



salt for production. As an organization who prioritizes safety above all else, we are willing to begin this work, and do not expect the cost to be an impediment to our desire to move forward. We are also looking at ways to make further operational changes – like reducing onsite storage of liquid chlorine by over 99.6 per cent from year 2000 levels.

As part of our continuous improvement philosophy, Chemtrade continues to explore ways to further improve the plant, both for the safety of our employees and local community, and to contribute to safe drinking water for millions of people across Canada and the Western US.

Frequently Asked Questions

How is your facility linked to securing drinking water in Canada?

By our estimates, our North Vancouver facility produces over 40 per cent of the liquid chlorine in Canada. This equates to over 70 per cent of the available liquid chlorine in Alberta and BC. We also supply the US, providing up to 60 per cent of the chlorine for the Western US. The most common use for chlorine is water treatment. In fact, according to a [2015 study by Stats Canada](#), over 96 per cent of Canadian communities, representing over 30.7 million Canadians, rely on chlorine to treat their municipal drinking water.

Is Chemtrade willing to look at additional measures to reduce risks related to the production of liquid chlorine?

We are working with a third-party company – BakerRisk – who is developing updated risk mapping for us. As part of this work, they are modelling how the risk map would change if various changes to the plant were implemented. The results have been very encouraging and - reduce the risk to either near or within our property line.

Although the work is still draft, initial possible capital improvements to help further reduce risk include building an enclosure over both the rail loading area and the distillation column, both of which would be equipped with scrubbers that can remove chlorine particles from the air. On an operational level, and using the year 2000 as a benchmark, we would look to further reduce the amount of liquid chlorine stored on site by over 99 per cent.

Our intention is to move forward with the strategic improvements as suggested by the BakerRisk risk reduction modeling to significantly reduce any potential risk to the community from continued liquid chlorine production. This investment will require initial engineering studies and a full estimation process as well as regulatory permits and an extension of Chemtrade's lease for adjacent Port lands, used for both operations and to import salt for production. As an organization who prioritizes safety above all else, we are willing to begin this work, and do not expect the cost to be an impediment to our desire to move forward.

Who can you contact for more information?

There are several ways to get in touch with us. The first is by visiting AskChemtrade.ca, where you will be able to submit questions, find all of our information and request email updates. The second is by reaching out directly to our Director, Corporate Communications Amy Jonsson at ajonsson@chemtradelogistics.com.




CHEMTRADE


OPEN HOUSE



Date: June 6, 2024



Location: North Vancouver Holiday Inn, 700 Old Lillooet Rd, North Vancouver, BC



Times: 2:00 p.m. to 4:00 p.m. and 6:00 p.m. to 8:00 p.m.

The presentation and information will be the same at both meetings. The first portion will be unstructured with time for visiting information stations and asking questions. The second portion of the meeting will include presentation and open floor questions. Please attend which ever meeting best fits your schedule.

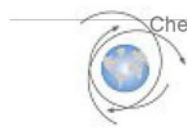
Chemtrade operates a chlor-alkali facility in North Vancouver, located at 100 Amherst Avenue. The facility has been operating since 1957 and provides over 70 per cent of the liquid chlorine available in BC and Alberta, which is critical for treating municipal drinking water.

Chemtrade has started conversations regarding lease renewals for its facility in North Vancouver, and as part of that process, is engaging with the District of North Vancouver, the community, First Nations, stakeholders, and special interest groups to share information, listen, and answer questions.

Chemtrade would like to invite you to attend an upcoming Open House to learn more about the process and possible next steps.

LEARN MORE:





CHEMTRADE



OPEN HOUSE JUNE 6

Chemtrade operates a chlor-alkali facility in North Vancouver, located at 100 Amherst Avenue. The facility has been operating since 1957 and provides over 70 per cent of the liquid chlorine available in BC and Alberta, which is critical for treating municipal drinking water.

Chemtrade has started conversations regarding lease renewals for its facility in North Vancouver, and as part of that process, is engaging with the District of North Vancouver, the community, First Nations, stakeholders, and special interest groups to share information, listen, and answer questions. Chemtrade would like to invite you to attend an upcoming Open House to learn more about the process and possible next steps.

Event details:

Date: June 6, 2024
Location: North Vancouver Holiday Inn
700 Old Lillooet Rd,
North Vancouver, BC
Times: 2:00 p.m. to 4:00 p.m. and
6:00 p.m. to 8:00 p.m.

Note – The presentation and information will be the same at both meetings. The first 45 minutes will be unstructured with time for visiting information stations and asking questions. The second hour of the meeting will include a presentation and open floor questions. Please attend which ever meeting best fits your schedule.

You can learn more information about Chemtrade, the North Vancouver facility, and the potential lease renewal process by visiting [AskChemtrade.ca](https://askchemtrade.ca). For questions about the meetings, please contact Amy Jonsson, 236-808-7851, or ajonsson@chemtradelogistics.com.

From: Council Liaison [REDACTED]
To: Mayor and Council - DNV
Sent: October 07, 2025 2:20:42 PM
Subject: Councillor Inquiry: Chemtrade Rezoning Application (100 Amherst Avenue)
Attachments: image001.jpg (68 KB);

Dear Mayor and Council,

As Council has inquired on the Chemtrade Rezoning Application, Development Planning has provided the following information:

STATUS

- A completed Detailed Development Application have been received from Chemtrade and is currently being processed by PPPClerical.
- The applicant is currently working with Planning staff to complete the non-statutory public notification items for upcoming In-Person and Virtual PIMs, including on-site/off-site signage, notification flyers and newspaper advertisements.
- Staff are also preparing a PIM Report to Council for review and comment.

PROPOSAL

- Chemtrade is proposing a site-specific text amendment (*rezoning*) to the Zoning Bylaw to permit the production of a hazardous substance [liquid chlorine] at 100 Amherst Avenue, which will permit several on-site capital improvements aimed at reducing the overall risk associated with the proposed use to the surrounding community;

PUBLIC ENGAGEMENT

- Virtual PIM
 - October 27th to November 7th via www.DNV.org/public-meeting
- In-Person PIM
 - Wednesday , October 29th from 6-8PM
 - Holiday Inn & Suites North Vancouver, 700 Lillooet Road, North Vancouver

Please let me know if any additional information is required at this time.

Warm regards,

Council Liaison Office



District of North Vancouver
355 West Queens Road
North Vancouver, BC V7N 4N5

From: Charlene Adkins [REDACTED]
Sent: June 17, 2026 3:09 PM
To: DNV Input
Subject: Objection - 100 Amherst Avenue — Chemtrade Chlor-Alkali Production Plant

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Council,

My family and I strongly oppose Chemtrade's application to amend the zoning bylaw to permit the manufacturing and storage of liquid chlorine, a substance explicitly identified as hazardous under Bylaw 5661.

Our concern is with the facility's location within an increasingly populated urban area. As Maplewood Town Centre continues to grow, bringing more residents, businesses, and public spaces, the potential consequences of a chlorine-related incident become increasingly difficult to justify. The surrounding natural environment and wildlife would also be at risk.

We urge Council to reject this application for the following reasons:

- Bylaw 5661 prohibits the manufacturing and storage of hazardous substances, including liquid chlorine. Granting an exception would undermine the purpose of the bylaw and its public safety objectives.
- This is a question of location, not necessity. If liquid chlorine production is critical, safer locations should be considered.
- Given the community's current character and future vision, this type of activity is no longer compatible with the area.
- We are concerned about the capacity of local emergency responders to manage a major chemical release alongside other potential disasters such as earthquakes, floods, or wildfires.

In conclusion, we ask Council to prioritize public safety, uphold the intent of Bylaw 5661, and reject Chemtrade's application.

Sincerely,

Charlene and Nick Adkins

From: Bruce Brown [REDACTED]
Sent: June 17, 2026 3:11 PM
To: DNV Input
Cc: Andrea Brown; Erick Chang; Carol Brown
Subject: Chemtrade Hearing

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Good afternoon

Although I currently live in Victoria, I have children living in North Vancouver less than a kilometre from the Chemtrade plant. I believe the risk to the community, the environment and future generations far outweighs the economic value that this proposal would provide.

Liquid chlorine is a very toxic and dangerous product and there have been numerous accidents and deaths, over the years, resulting from improper storage and handling of this product.

The Chemtrade plant, while once in a less populated area now finds itself in close proximity to a residential community that is growing with many families choosing to live there, including members of my family.

Please work with Chemtrade to find a more appropriate location and reject their application.

Yours truly

Bruce Brown
Colwood, BC

Sent from my iPhone

From: Marco Bulfone [REDACTED]
Sent: June 17, 2026 3:43 PM
To: DNV Input
Subject: 100 Amherst Ave Rezoning

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Council,

I am writing in support of Chemtrade's proposed rezoning application.

My name is Marco Bulfone, I am a Millwright (Industrial Mechanic) and member of the Chlorep team at Chemtrade's facility located at 100 Amherst Avenue. I have worked at the site for the past three years and have firsthand knowledge of the facility's operations and chlorine railcars.

I currently live in Lower Lonsdale and am in the process of purchasing a townhouse in the Lynnmour area. My wife and I are also expecting our first child later this year. Given my intimate understanding of the facility and chlorine railcars, I have no concerns about moving my family closer to the site. If I believed the facility posed an unacceptable risk to nearby residents, I would not be making the decision to raise my family in the surrounding community.

As an employee, I have seen the company's commitment to safety, continuous improvement, and employee training firsthand. Chemtrade invests heavily in maintaining safe operations and ensuring its workforce is well trained and supported.

Chemtrade provides stable, well-paying union jobs that allow employees like myself to build careers, support our families, and contribute to the local economy. Maintaining industrial employment opportunities within North Vancouver is important to preserving a diverse and resilient community.

I respectfully ask Council to support Chemtrade's rezoning application.

Sincerely,

Marco Bulfone

From: Corrie Kost [REDACTED]
Sent: June 17, 2026 4:09 PM
To: DNV Input; Mayor and Council - DNV
Subject: Please include the 2 attachments into the public record for the June 16 2025 public hearing
Attachments: Historical USA price of liquid Chlorine-etc-b.pdf; Summary of Corrie Kost input on Jun 16 2026 Public Hearing.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Your Worship and Members of Council,

Please read the "Summary..." attachment which urges action by a member of council so that staff and thus the public can obtain information on the current liability insurance of the Chlorine plan. This short document also provides the rational catalyst for council to vote for a permanents shutdown of of the export of liquid chlorine.

The "Historical..." document indicates the huge increase in the market price of liquid chlorine from pre-2020 to the current day.

Yours truly,
Corrie Kost

[REDACTED]

Historical USA price of liquid Chlorine note: my prompts are in red

The historical pricing of bulk liquid chlorine in the United States shifted from a **long-term stable average of \$150–\$200 per ton** pre-2020 to **historic peaks near \$600–\$800 per ton** following post-pandemic supply shocks. [1, 2, 3]

Historical Price Timeline

- Industrial liquid chlorine is typically sold in bulk contract or spot markets per metric ton (MT) or short ton. [1, 2, 3]
- **Pre-2020 (The Baseline):** Long-term steady state. Prices consistently fluctuated between **\$150 and \$180 per short ton**. Supply was highly predictable and tied closely to co-produced caustic soda. [1, 2, 3]
 - **2021–2022 (The Peak Shock):** Major supply disruptions—including a catastrophic fire at a primary biolab facility, extreme Gulf Coast weather outages, and soaring energy grid costs—sent prices surging. Spot market prices peaked at **\$500 to \$600+ per ton**. [1, 2, 3, 4, 5]
 - **2023–2024 (Sustained Highs):** Prices plateaued but remained stubbornly high due to inflation, logistics shortages, and high electricity costs. Average pricing moved between **\$450 and \$580 per ton**.
 - **2025–2026 (Recent Levels):** As of mid-2026, baseline pricing sits between **\$780 and \$810 per metric ton**. This reflects a steady 10% year-over-year rise driven by high municipal water treatment demand and regional maintenance tightening. [1, 2]

US Producer Price Index (PPI) Trend

- The US Bureau of Labor Statistics tracks the macro price changes for Alkalies and Chlorine via the [FRED PPI Index WPU061303](#) (Base year 1982 = 100): [1, 2]

Era / Year [1, 2, 3]	Approximate PPI Value	Market Context
2019	~110–120	Historical baseline stability
Mid-2022	490.94	Initial extreme supply-chain panic
Early 2023	603.59	All-time historical index peak
Early 2024	409.48	Moderate stabilization as logistics eased
Mid-2026	430.34	Current elevated, stable-to-firm plateau

Core Drivers of Price Volatility

1. **The Chlor-Alkali Link:** Chlorine gas is co-produced alongside caustic soda via energy-intensive brine electrolysis. If demand for caustic soda drops, factories slow down, inadvertently cutting the liquid chlorine supply and spiking prices. [1, 2, 3, 4, 5]
2. **Electricity Tariffs:** Power accounts for **30% to 60% of total production expenses**. Industrial chlorine costs track regional electricity and natural gas price shocks very closely. [1, 3]
3. **Transportation Bottlenecks:** Liquid chlorine requires highly specialized hazardous material pressure railcars and tankers. Shortages in freight capacity or driver availability drastically compound regional spot market spikes. [, 2]

Can you provide the electricity rates that were charged to Chemtrade since 2010?

As a specific commercial entity, **Chemtrade Logistics' exact contract billing details and electricity bills are confidential**. However, regulatory filings with the British Columbia Utilities Commission (BCUC) and Chemtrade's public disclosures reveal that its North Vancouver electrochemical plant operates as a major heavy industrial consumer. [1, 2]

Consequently, Chemtrade has been billed under **BC Hydro's Transmission Service Rate Schedules**. Because **electricity is the primary cost of production for their chlor-alkali and sodium chlorate processes**, these specific rate schedules dictate their costs. [1, 2, 3, 4, 5]

The historical framework and estimated rates charged to a transmission-class operator like Chemtrade since 2010 follow a distinct timeline:

2010–2024: The Stepped Rate Era (Rate Schedule 1823)

For nearly two decades, major industrial transmission customers were placed on a conservation-based, two-tier "inclining block" rate. Under [Rate Schedule 1823](#), a Customer Baseline Load (CBL) was calculated for the plant: [1]

- **Tier 1 Price:** Charged for consumption up to 90% of the baseline. It historically hovered between roughly $3.5 \text{ \$/kWh}$ and $6.0 \text{ \$/kWh}$.
- **Tier 2 Price:** A significantly higher penalty rate charged for any consumption above 90% of the baseline to incentivize efficiency. It reached upwards of $8.5 \text{ \$/kWh}$ to $11.0 \text{ \$/kWh}$ over the decade.
- **Demand Charge:** A monthly fee charged per kilovolt-ampere (kVA) of peak power load. [1, 2, 3, 4]

2024–2026: The Transition to Flat Rates (Rate Schedule 1830)

In April 2024, BC Hydro began phasing out the stepped rate to support industrial decarbonization and electrification. Heavy users like Chemtrade were transitioned to a revenue-neutral flat rate: [1]

- **Flat Energy Charge:** Set at $4.439 \text{ \$/kWh}$ (\$44.39 per MWh) in 2024 dollars.
- **Demand Charge:** Increased to **\$11.00 per kVA**.
- **2026 Status:** As of April 1, 2026, [Rate Schedule 1823 has been officially cancelled](#), and all remaining transmission-class industrial plants are fully migrated **to Rate Schedule 1830**. [1, 2]

Historical Average Cost Trajectory

While exact numbers vary based on Chemtrade's specific peak load factor and monthly operational volume, the effective blended rate (combining energy and demand charges) for a 120 kV transmission-tier customer in B.C. has historically evolved as follows:

- **2010 – 2015:** Blended rate of roughly $4.5 \text{ \$/kWh}$ to $5.8 \text{ \$/kWh}$.
- **2016 – 2023:** Blended rate of roughly $6.0 \text{ \$/kWh}$ to $7.2 \text{ \$/kWh}$.
- **2024 – 2026:** Blended rate of roughly $6.8 \text{ \$/kWh}$ to $7.6 \text{ \$/kWh}$. [1]

If you are analyzing this for financial or academic modeling, let me know if you need help **calculating a blended rate estimate** using a specific megawatt load or if you want to look into **BC Hydro's historical general rate increase percentages** over these years

Please look into BC Hydro's historical general rate increase percentages over these years.

BC Hydro's general annual electricity rate adjustments from 2010 to 2026 reflect a shift from aggressive, multi-year infrastructure funding plans to strict provincial caps designed to keep power costs below inflation. [1, 2]

Over this 16-year period, cumulative rate changes increased by roughly **55% to 60%** overall, driven heavily by capital project investments like the Site C Dam. [1, 2]

Annual General Rate Adjustments (2010–2026)

BC Hydro's operational fiscal year begins on April 1. The general percentage changes applied to customers' bills were: [\[1, 2, 3\]](#)

Effective Date [1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13]	Overall Average Rate Change (%)	Primary Drivers & Context
April 1, 2010	+7.29%	BCUC negotiated settlement down from 9.3% interim request.
April 1, 2011	+8.00%	Cost-recovery for aging grid upgrades.
Effective Date [1, 2, 3, 4, 5, 7, 9, 10, 11, 12, 13]	Overall Average Rate Change (%)	Primary Drivers & Context
April 1, 2010	+7.29%	BCUC negotiated settlement down from 9.3% interim request.
April 1, 2011	+8.00%	Cost-recovery for aging grid upgrades.
April 1, 2012	+7.10%	Adjusted down by government review panel from higher targets.
April 1, 2013	+1.44%	Tempered via provincial government intervention.
April 1, 2014	+9.00%	Year 1 of the government's 10-Year Plan to build infrastructure.
April 1, 2015	+6.00%	Year 2 of the 10-Year Plan.
April 1, 2016	+4.00%	Year 3 of the 10-Year Plan.
April 1, 2017	+3.50%	Year 4 of the 10-Year Plan.
April 1, 2018	+3.00%	Final phase of the 10-Year Plan revenue

April 1, 2018+3.00%Final phase of the 10-Year Plan revenue requirement.**April 1, 2019+0.00%**Rate freeze enacted by the provincial government.**April 1, 2020-1.00%**Rate decrease due to audited revenue requirements adjustments.**April 1, 2021+2.70%**Balanced out the prior year's reductions.**April 1, 2022-0.30%**Minor rate decrease following adjusted system forecasts.**April 1, 2023+2.00%**Approved lower than initial 2.7% expectations.**April 1, 2024+2.30%**Under-inflation adjustments focused on industrial transition incentives. **April 1, 2025+3.75%**Under provincial "Rate Stability" policy due to inflation and drought.**April 1, 2026+3.75%**Final year of the capped stability directive as Site C comes online.

Summary of Corrie Kost input on Jun 16 2026 Public Hearing

On safety of the facility: We absolutely need to know the liability insurance that the current chlorine plant has in place. The only information I have from data many years ago is \$300million. Insurance companies know the real risks to the public of this plant. Unless a member of council asks this question of DNV staff the public will never get at this important fact.

Related to the above information is the need to know the “worst-case scenario liability”

For a council whose paramount mandate is the physical safety of its immediate constituents, the 90% export figure of the produced liquid chlorine changes the plant's profile from an **essential public utility** into a **commercial export operation dealing in highly hazardous materials**. In municipal governance, a council can rationally justify exposing its residents to some level of managed risk if it directly secures their own critical survival needs (like their own drinking water). However, forcing residents to live under the shadow of a worst-case scenario plume for an export product fundamentally shatters that compromise, providing a powerful, rational catalyst to vote for a permanent shutdown of liquid chlorine production.

From: [REDACTED]
Sent: June 17, 2026 5:15 PM
To: DNV Input
Subject: 2026.06.17 - Public Hearing - Information
Attachments: DNV Public Hearing 2026.06.17 C. Bowcock - Chemtrade's Release Sceanrio - Presentation.pdf; DNV Public Hearing 2026.06.17 C. Bowcock - HazMat Response Limitations Presentation.pdf; DNV Public Hearing 2026.06.17 C. Bowcock - Decision Presentation.pdf; DNV Public Hearing 2026.06.17 C. Bowcock - Realities of Chlorine Release Presentation.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Chris Bowcock
[REDACTED]

Chemtrade's Chlorine Release Scenario

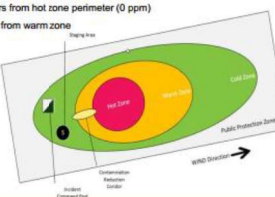
1.7.1 Chemtrade Integrated Contingency Plan (ICP) Guide – Chlorine Release

Priorities – People, Environment, Business:

1. Life safety (consider yourself, responding personnel, and the public)
2. Incident stabilization (control and containment)
3. Minimize impact to environment and property

Isolation Response & Protection Zones:

Hot Zone – Physical product/ hazard location (>0.1 ppm)
Warm Zone – 3 meters from hot zone perimeter (0 ppm)
Cold Zone – >3 meters from warm zone



Chlorine Hazards:



- Health Concerns:
 - 1 to 3 ppm for 1 hour – Mild mucous membrane irritation
 - 5 to 15 ppm – Moderate irritation of upper respiratory tract, stinging and burning eyes
 - 30 ppm – Immediate chest pain, vomiting, choking and coughing
 - 40 to 60 ppm – Toxic pneumonitis and pulmonary oedema
 - 430 ppm for 30 minutes – Lethal
 - 1,000 ppm, few minutes – Fatal
- Life-threatening symptoms may be delayed up to 36 hours!
- Contact with compressed liquid gas may cause frostbite or chemical burns.
- Persons with pre-existing respiratory disease, e.g. asthma may be at greater risk
- Vapours react violently with many combustible materials, other chemicals and water.
- Can form an explosive mixture with oils.
- Extremely corrosive to most metals in the presence of moisture.
- Combustibles burn in chlorine as they do in oxygen.

Immediate Strategies and Tactics:

If odours are detected or the mandatory CI2 monitor alarms and is above 0.1ppm, notify the Shift Supervisor, don emergency chlorine respirator IMMEDIATELY and evacuate.

Chlorine monitors, Shelter in Place locations, and sock and flag locations is presented on Figure 4.

Activate the emergency horn. Shift Supervisor to activate if Site shelter-in-place is required. Move straight to the nearest shelter-in-place. Understand that you should not attempt to perform any job or task that you have not been trained for, or that will put you in a position that is dangerous to your health or wellbeing.

Once outside of the building, look for the windssock (see Figure 4) to determine wind direction and proceed to the safest upwind shelter-in-place and remain there until you are directed to do otherwise.

Wear impervious, chemical-resistant clothing, gloves, footwear, and goggles.

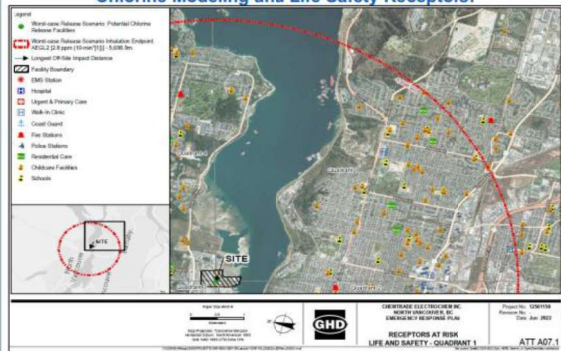
Eliminate ignition sources.

Evacuate area in vicinity and downwind of release. Activation of public first responders 911.

Shelter-in-Place Locations:



Chlorine Modeling and Life Safety Receptors:



Chlorine Alarms:

Level	Trigger	Internal Notification	External Notification
Alert	1 ppm local alarm	Strobe & siren	None
1	1-10 ppm local; 0.3 ppm fence	Strobe & siren	Fence siren; neighbor notice
2	>10 ppm sustained; 0.3-1 ppm fence	Strobe & siren; SIP horn	Fence siren; SIP horn; neighbor + Alertable (Zone 1)
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Chemtrade ICP – Quick Reference Guide

- Section 1: Introduction
- Section 2: Core Plan
 - (2.1) Discovery
 - (2.1.2) Incident Classification
 - (2.1.3) Preliminary Assessment
 - (2.1.4) Response Zone Determination and Scene Control
 - (2.1.5) Notifications
 - (2.2) Initial Response
 - (2.2.1.1) Response Structure
 - (2.2.5.1.1) Chlorine Product Release
- Annex A: Chlorine
 - Annex A, Attachment A.1: SDS
 - Annex A, Attachment A.2: Technical Brief
 - Annex A, Attachment A.3: P&ID
 - Annex A, Attachment A.4: Scenario Modeling
- Appendix A: Internal/ External Contact List
- Appendix B – Disciplined Approach
- Appendix C – Notification and Reporting
- Appendix G – Public Communications

This document was provided by Chemtrade
via the DNV Bylaw #8778 Re-Zoning Amendment Process
within the Public Hearing Documents of 2026 February

Emergency Plans are required:

- For emergencies that could **reasonably be expected to occur**
- For events with the **longest impact distance** outside the boundary of the facility
- To address **natural and human-caused incidents**, including **terrorist threats**

Required by: *Canadian Environmental Protection Act 1999*



Environment and
Climate Change Canada
Environnement et
Changement climatique Canada

1.7.1 Chemtrade Integrated Contingency Plan (ICP) Guide – Chlorine Release

Priorities – People, Environment, Business:

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Chlorine Hazards:



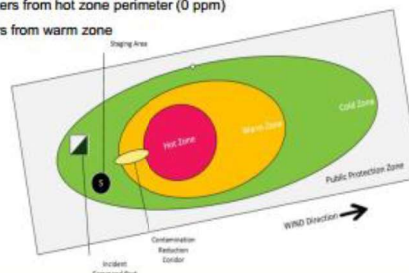
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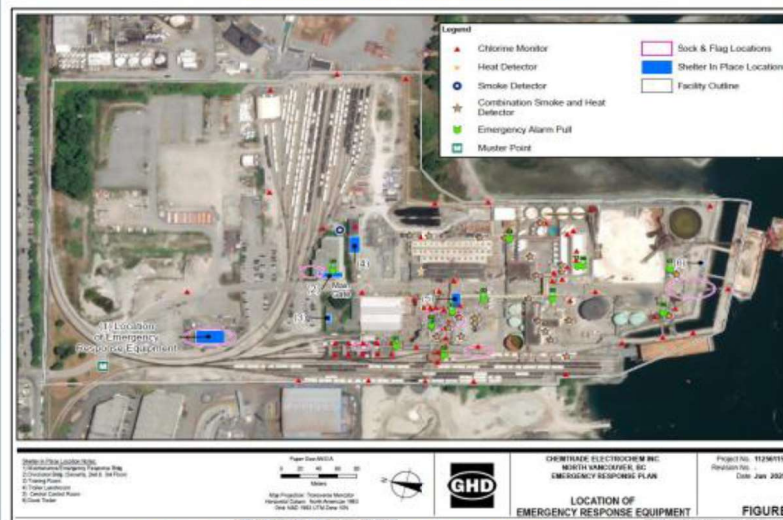
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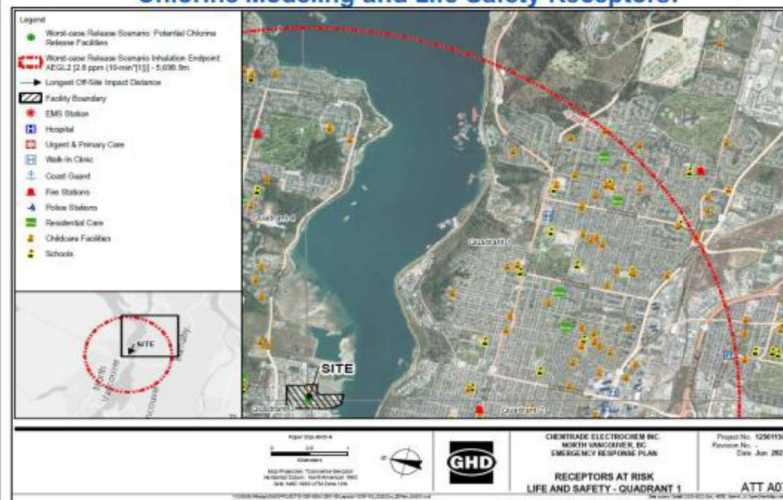
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Shelter-in-Place Locations:



Chlorine Modeling and Life Safety Receptors:

Chemtrade ICP –
Quick Reference
Guide

Section 1: Introduction

Section 2: Core Plan

(2.1) Discovery

(2.1.2) Incident

Classification

(2.1.3) Preliminary Assessment

(2.1.4) Response Zone Determination and Scene Control

(2.1.5) Notifications

(2.2) Initial Response

(2.2.1.1) Response

Structure

(2.2.5.1.1) Chlorine Product Release

Annex A: Chlorine

Annex A. Attachment

Annex A, Attachment A.2:
Technical Brief

Annex A, Attachment A.3:

Annex A. Attachment A.4:

Scenario Modeling

Appendix F: Internal External Contact List

Appendix B – Disciplined Approach

Appendix C – Notification and Reporting

Appendix G – Public Communications

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Chlorine Hazards - Chemtrade

- **Fatal:** 1,000 ppm in a few mins
- **Lethal:** 430 ppm for 30 mins
- **Life Risk:** 60 ppm
- Person with Respiratory Disease at Greater Risk

1.7.1 Chemtrade Integrated Contingency Plan (ICP) Guide – Chlorine Release

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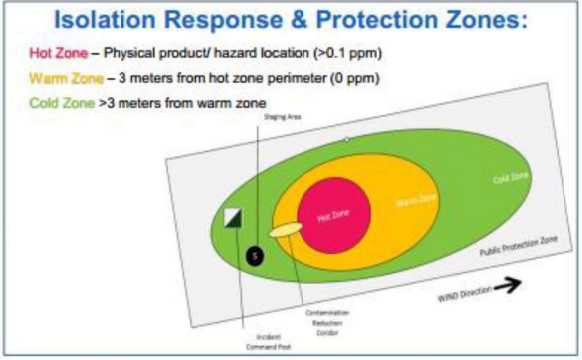
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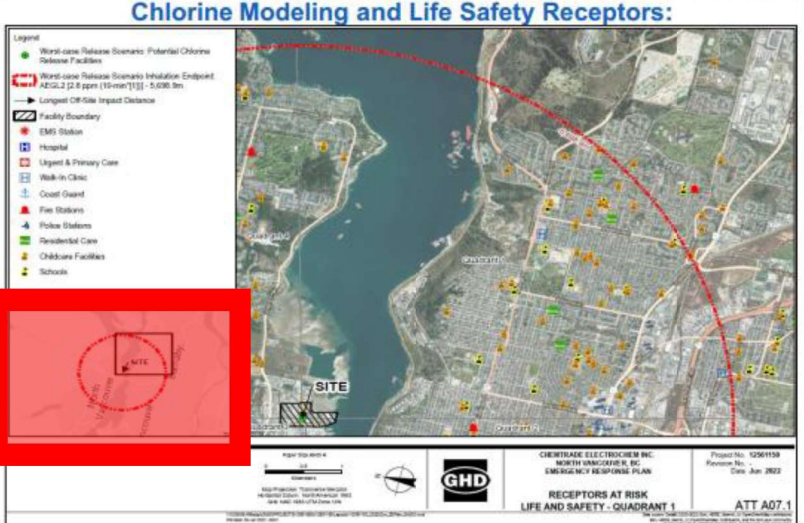
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Annex A, Attachment A.2: Technical Brief

Annex A, Attachment A.3: P&ID

Annex A, Attachment A.4: Scenario Modeling

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Appendix G – Public Communications



Impact Map Orientation

- Why is the orientation rotated
- Even the labelling is rotated....
- It's organized to confuse
- It's **not organized to be transparent**

1.7.1 Chemtrade Integrated Contingency Plan (ICP) Guide – Chlorine Release

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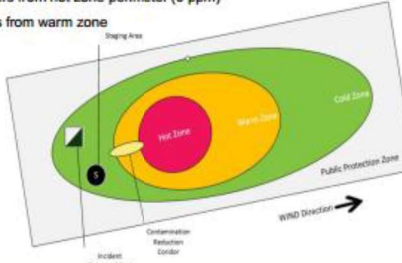
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Shaping Area
Incident Command Post
Contamination Release Point
Public Protection Zone
WIND Direction

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Shelter-in-Place Locations:



Legend:
Chlorine Monitor
Heat Detector
Smoke Detector
Combustion Smoke and Heat Detector
Emergency Alarm Pull
Muster Point
Sock & Flag Locations
Shelter In Place Locations
Facility Outline

Figure 4: LOCATION OF EMERGENCY RESPONSE EQUIPMENT

Chlorine Modeling and Life Safety Receptors:



Legend:
Worst-case Release Scenario: Potential Chlorine Release Facilities
Worst-case Release Scenario Inhalation Endpoints: A2GL2 (2.8 ppm (10-min T1)) - 5,000 km
Longest Off-Site Impact Distance
Facility Boundary
EMS Station
Hospital
Urgent & Primary Care
Walk-in Clinic
Coast Guard
Fire Stations
Police Stations
Residential Care
Child-care Facilities
Schools

Figure 5: RECEPTORS AT RISK LIFE AND SAFETY - QUADRANT 1

Chemtrade ICP – Quick Reference Guide

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Annex A: Chlorine

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Annex A, Attachment A.2: Technical Brief

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Annex A, Attachment A.4: Scenario Modeling

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Chlorine Modelling



14 Schools

52 Child Care

10 Elderly Care

ACUTECH

2026 Feb 20

Final Report - Risk Assessment of Chlorine Railcars in the District of North Vancouver, Canada

Colin Armstrong

Liquid Chlorine Rail Car Release – Context

- Rail accidents involving hazardous materials have occurred; a survey of industry accidents since 1995 identified at least 4 incidents involving chlorine releases from railcar accidents, resulting in 13 deaths and over 300 hospitalizations.
- Derailments are the primary cause of hazardous material releases in rail transport, with higher accident frequencies occurring on low-speed tracks, such as those in Vancouver.
- While chlorine railcars are designed to be robust, there is a risk of hazardous material release upon derailment, as illustrated by previous accidents.
- A chlorine railcar release along the rail line through Vancouver has the potential to fatally impact up to 2,000 people, and thousands more would be required to evacuate.
- Within the potential impact zone are hundreds of sensitive receptors, such as schools, daycares, hospitals, senior care facilities, and dense residential areas, which could be subject to toxic inhalation hazards and required to be evacuated in the event of a large chlorine railcar spill.
- These severe impacts are considered to be credible catastrophic scenarios and are supported by the risk assessment.

Chlorine Modelling



5,698.9 m

+5.6 km

ACUTECH

2026 Feb 20

Final Report - Risk Assessment of Chlorine Railcars in the District of North Vancouver, Canada

Colin Armstrong

For a Rail Car Chlorine Release

Distance of

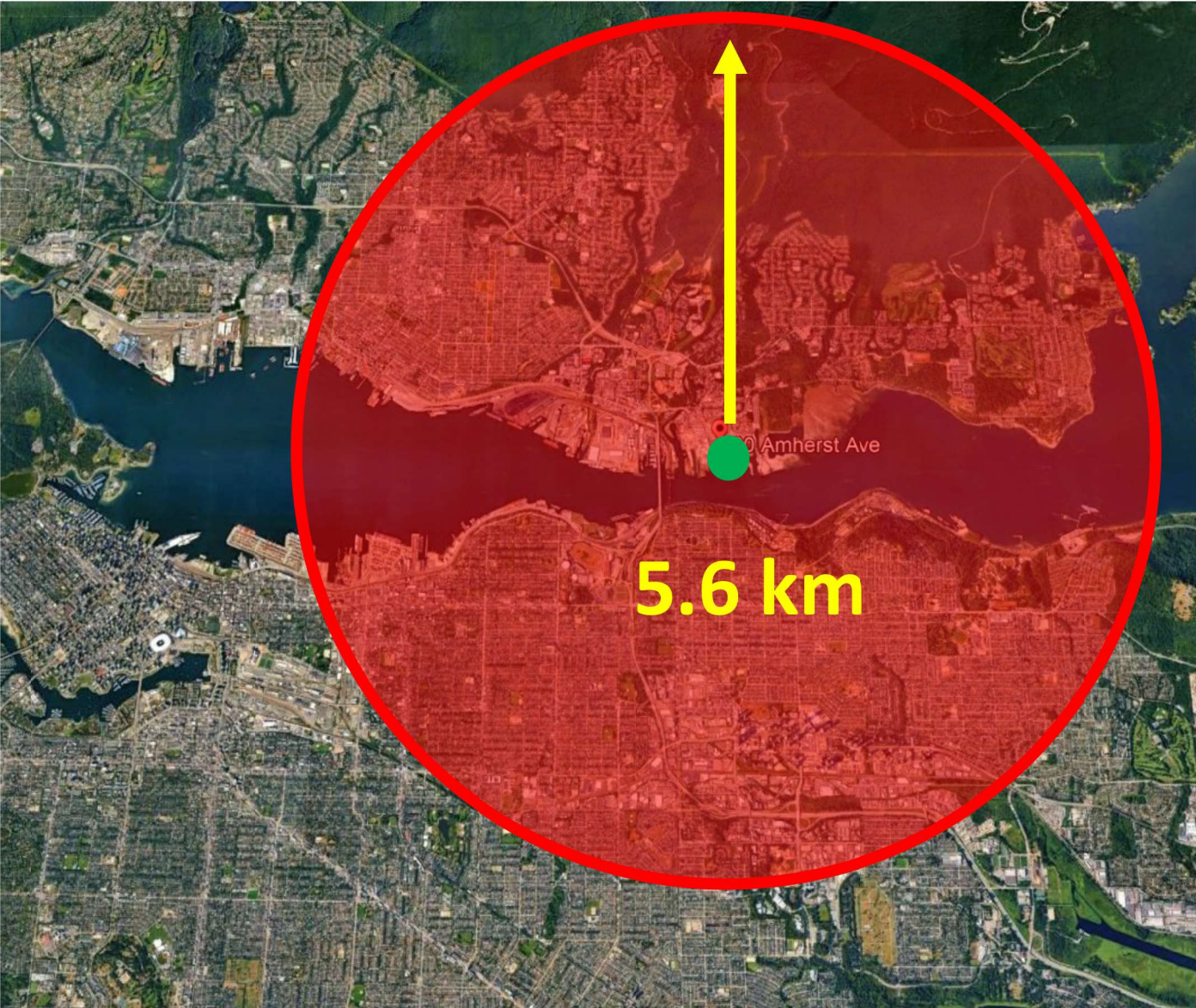
ERPG-3	3.9 km	12,870'
99% Indoor Fatality	0.4 km	1,285'
10% Indoor Fatality	1.3 km	4,301'



Risk Contour
Chemtrade Property



Chlorine Release
From Chemtrade Property



ACUTECH

2026 Feb 20

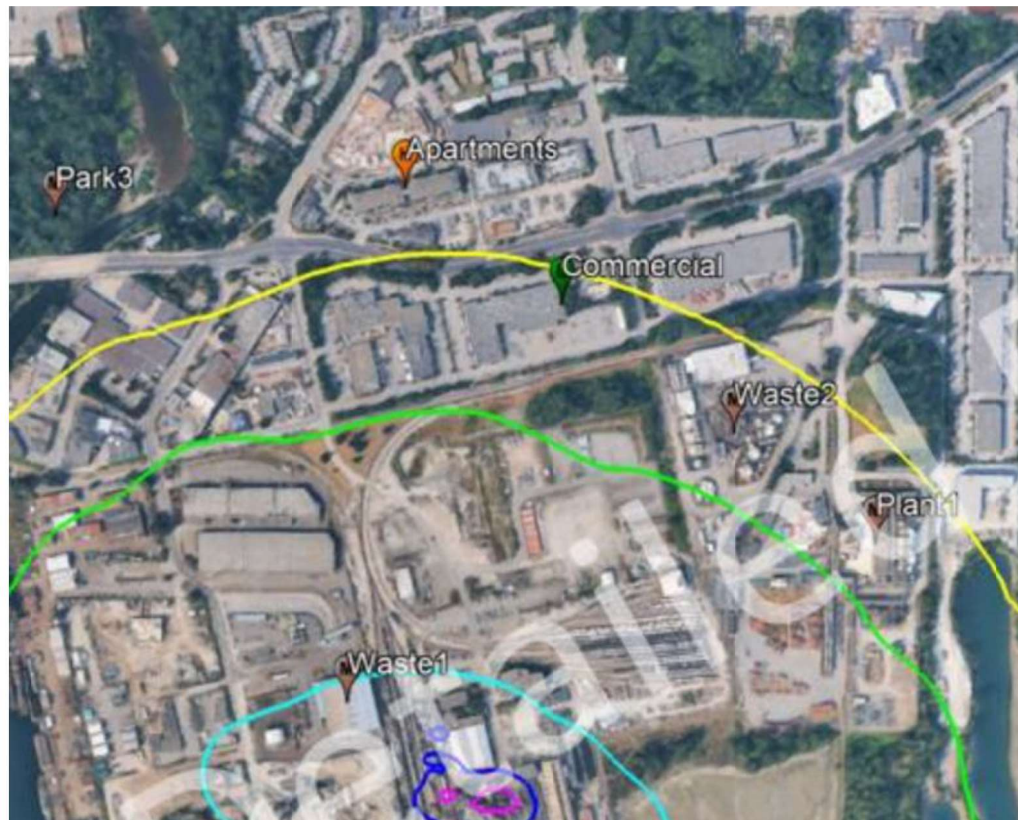
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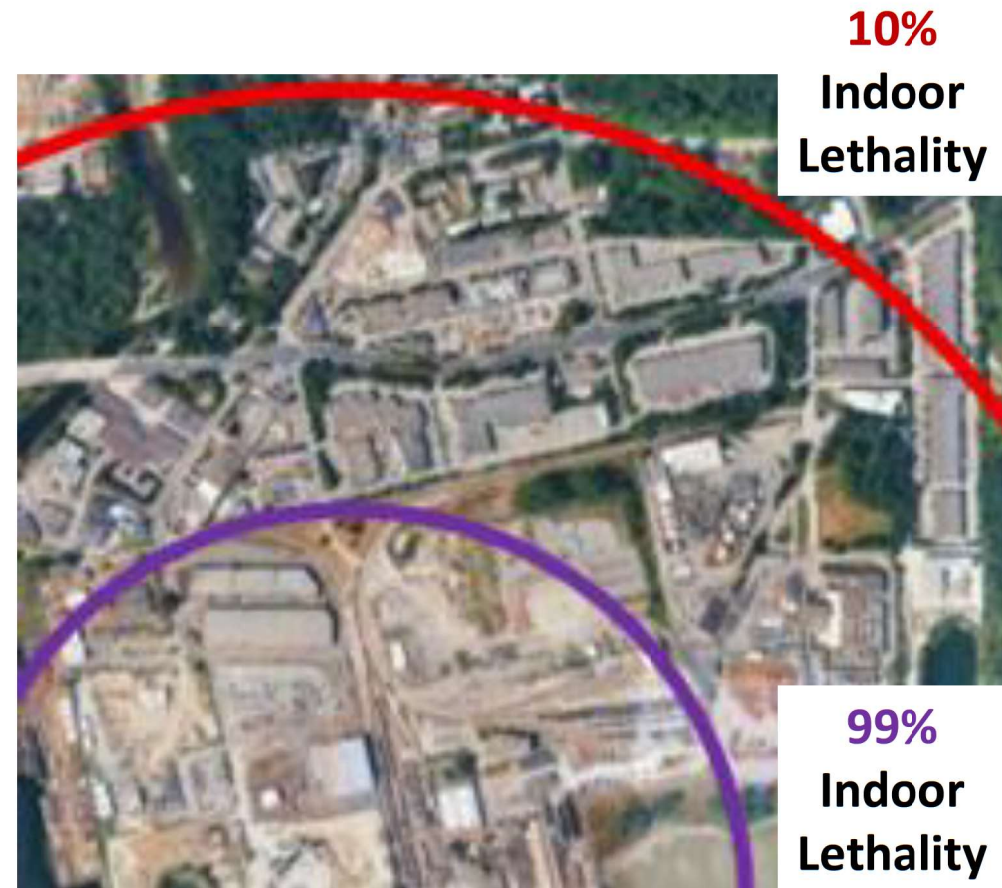
Lethality Probability for Chlorine

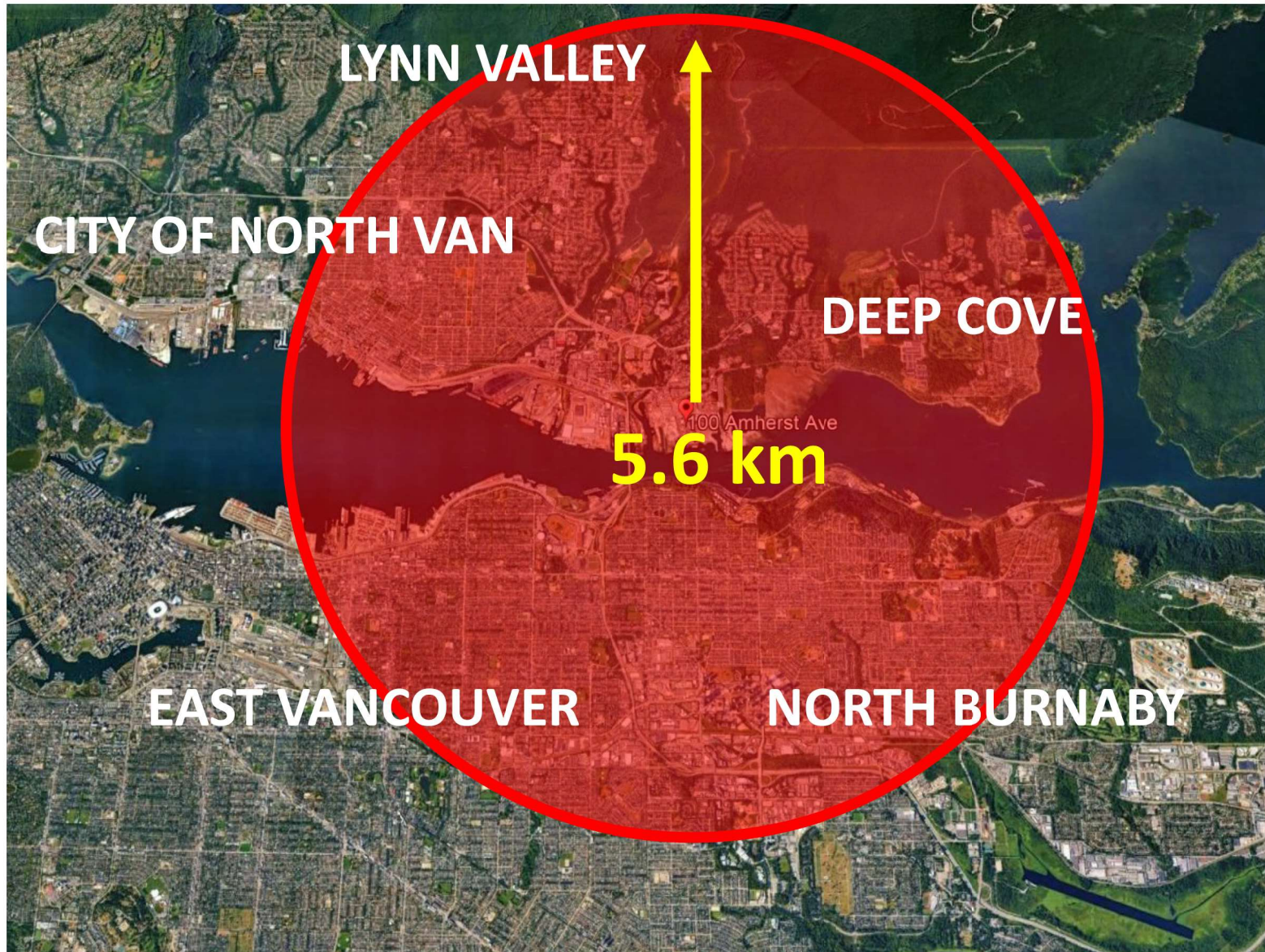
	90% Fatality Range
1,000 ppm	10 mins
800 ppm	12 mins
600 ppm	14 mins
400 ppm	20 mins
200 ppm	40 mins

QRA Risk Contour



Release Impact Model





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Final Report - Risk Assessment of Chlorine Railcars in the District of North Vancouver, Canada

Colin Armstrong

3 ppm:	can cause irreversible health effects
50 ppm:	is considered life-threatening
100 ppm:	1% Fatality in 10 mins
450 ppm:	Lethal @ 30 mins
1,000 ppm:	Immediately Fatal



5.6 km

100 Alberici Ave

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2026 Feb 20

Final Report - Risk Assessment of Chlorine Railcars in the District of North Vancouver, Canada

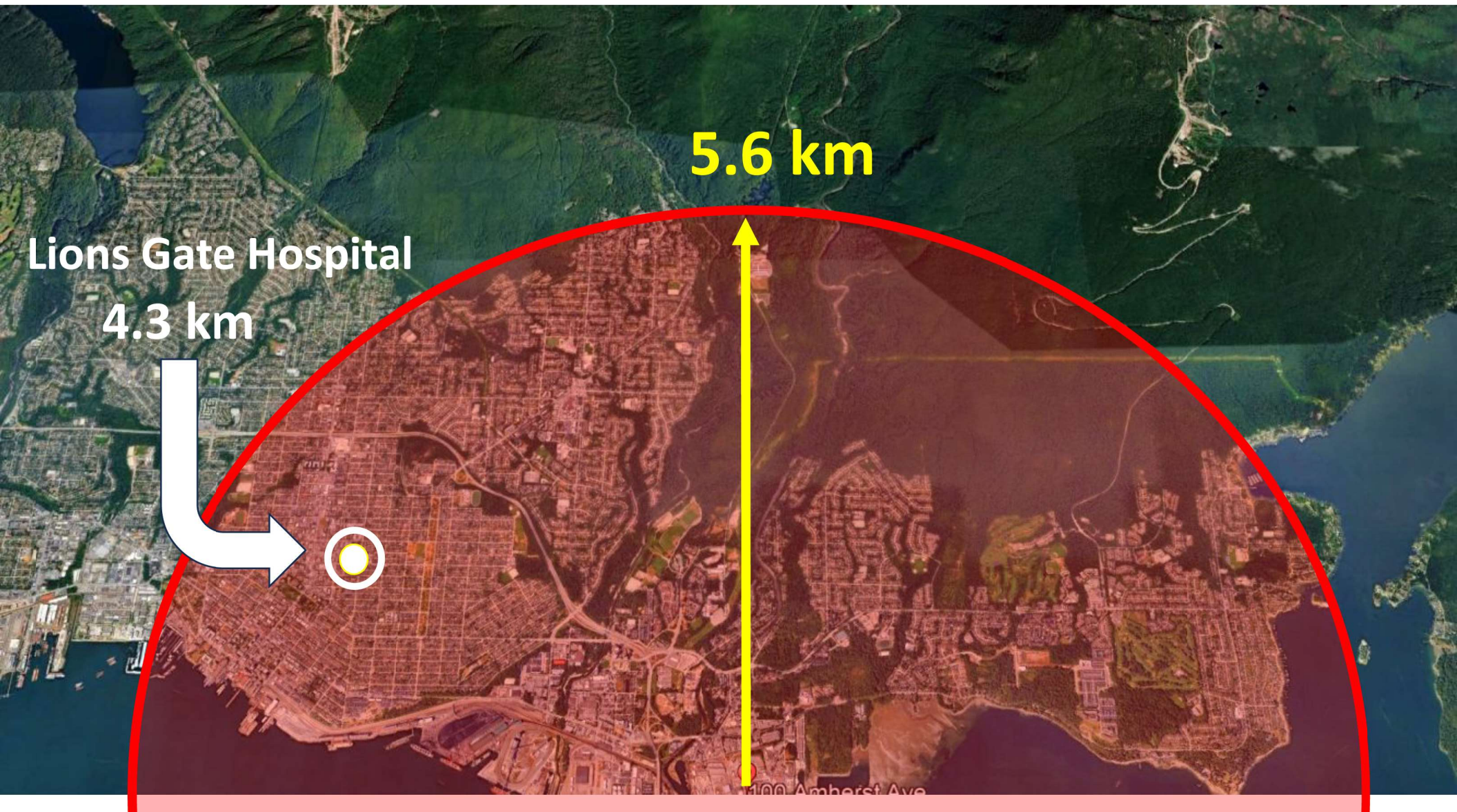
Colin Armstrong

1 ppm

ERPG-1 is the maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing more than mild, transient adverse health effects or without perceiving a clearly defined objectionable odor.

3 ppm

ERPG-2 is the maximum airborne concentration below which nearly all individuals could be exposed for up to 1 hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action.



Hospital Care

- need for rescue from Shelter-In-Place locations
- need for immediate chemical body surface decontamination
- need for immediate oxygen therapy to sustain the respiratory and cardiovascular systems
- need for rapid transport to the hospital
- significantly reduced access to pre-hospital medical care
- significantly reduced access to emergency room care

Coastal Health & Fraser Health

Hospital Capacity

- ER Space = ~500 ER beds
- Total Beds = 9,500 + 3,600 = 13,000
- vs. Chlorine Release Scenario of up to 10,000 hospitalizations

Lions Gate Hospital (40)

Vancouver General Hospital (50)

St. Paul's Hospital (35)

Richmond Hospital (35)

Royal Columbian Hospital (75)

Langley Hospital (50)

Abbotsford Hospital (35)

Surrey Memorial Hospital (100)

Burnaby General Hospital (65)

Ambulance Response Capacity

North Shore (4)

Vancouver (30)

Citizens Impacted - Evacuation Area

DNV	~ 50,000 citizens
NVC	~ 30,000 citizens: east of Mahon Park
Burnaby North Burnaby	~80,000 citizens
Vancouver East Vancouver	~150,000 citizens



Populations

Lynn Valley:	20,000
Blueridge:	2,000
Deep Cove:	2,000
Seymour Parkway:	2,000
Dollarton:	2,000
Maplewood:	2,000
Lynnmour:	4,000
Lynn Creek Town Centre:	5,000
Calverhall:	2,000
Queensbury:	3,000
The Boulevard:	5,000
Tempe Heights:	2,000
Lynnmour North	2,000
Inter-River:	1,000

Evacuation: 98.5 km²

- **No pre-warning**
- **<10 mins** to fatality exposures
- **Chlorine exposures** in evac routes
- **Limited egress routes**
- **Traffic congestion**



Evacuation of ~**90,000** North Shore Citizens

Within **15-30 mins**

Firefighters needed to evacuate all areas impacted by Chlorine

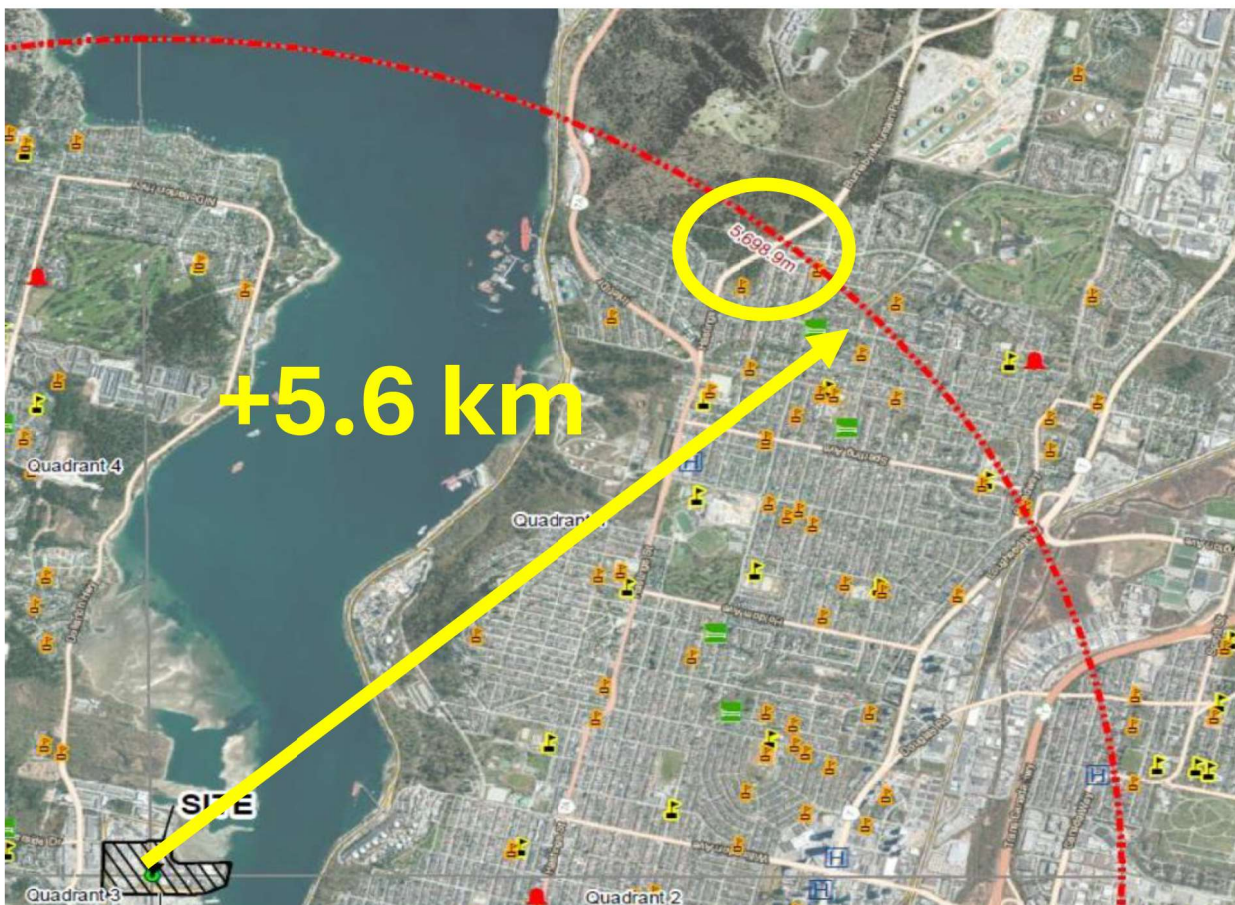
Where can you send Evacuees: **West Van, Squamish** ~90,000

This is why Cities, Counties, and Regions

& Even **US Dept of Homeland Security.....**

View Liquid Chlorine releases → as an **Excessive Community Risk**

When stating that the Risk will be maintained within the Chemtrade Property :



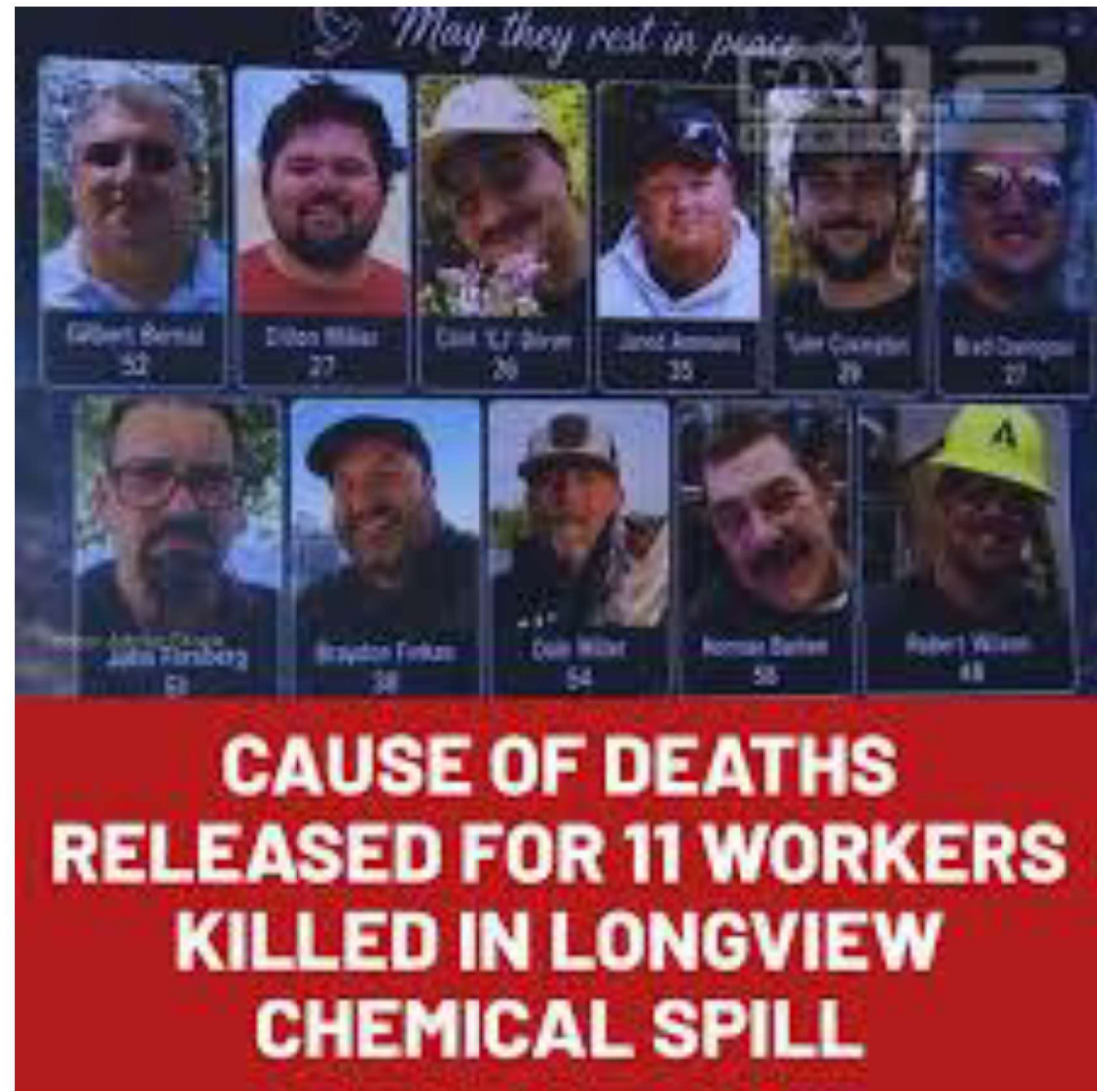
Chlorine impacts

5 km Off Property

Longview, Washington

2026 May 26

11 fatalities



Garden Grove, California

2026 May 26

50,000 evacuated
over 24 hours

785 First Responders
170 Firefighters
473 Police Officers

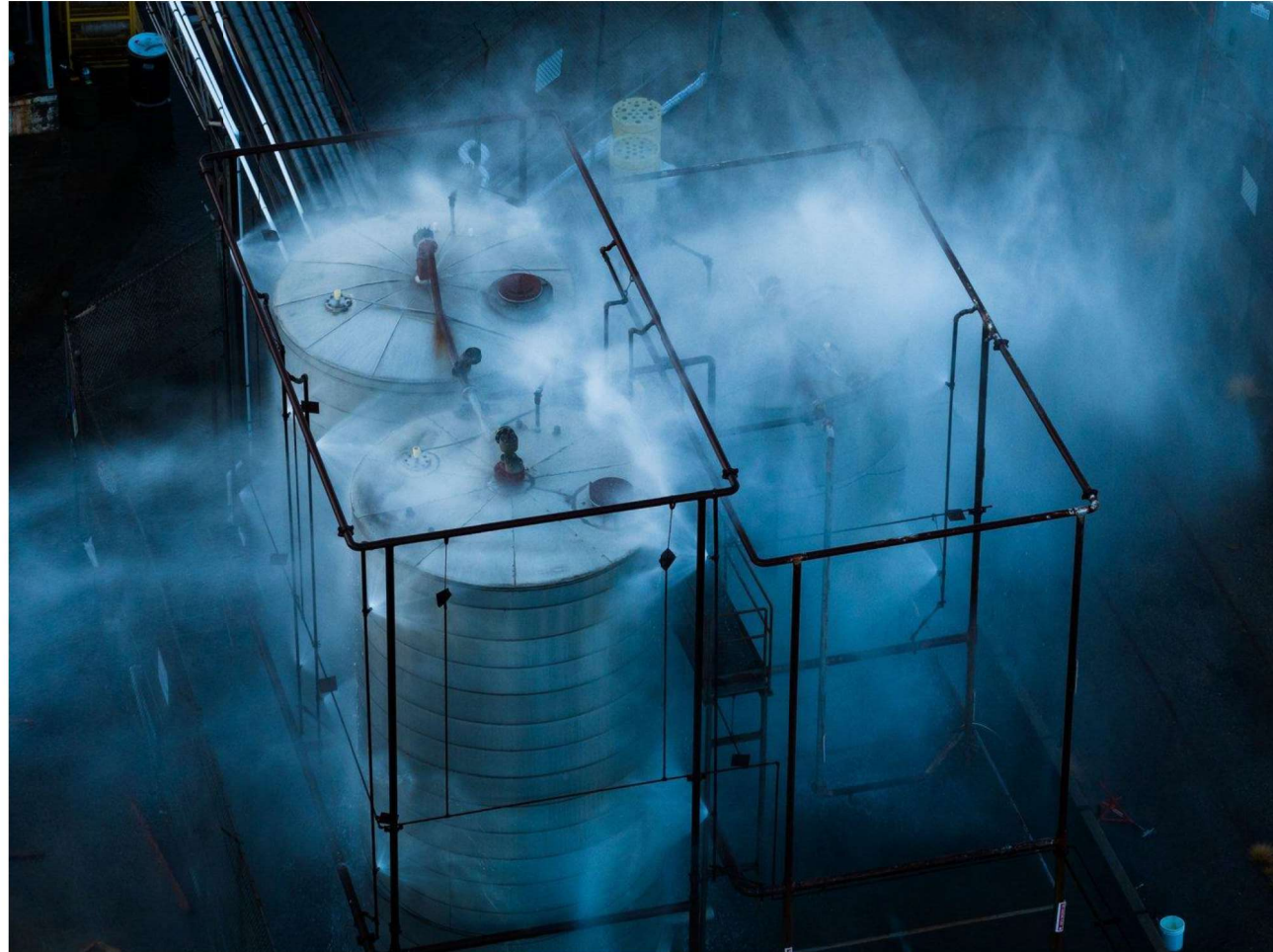


Table 5-1: Causes & Consequences of Significant Incidents

Location & Year	Incident Type	Immediate Cause	Root Cause	Consequence	Lessons Learned
Alberton, MT, 1996	Train derailment-Chlorine	Fracture of rails causing train derailment	Internal cracking undetectable by equipment in use	64.8 tons Cl released; 1 death; 200 hospitalizations	Analyses should consider routine derailment causes for toxic materials.
Macdona, TX, 2004	Train collision & derailment-Chlorine	Train collision at high speed causing derailment	Operator shift work fatigue leading to human error	9,400 gallons Cl released; 3 deaths; 30 hospitalizations	Awareness of fatigue as accident cause; insufficiency of emergency response
Graniteville, SC, 2005	Train collision & derailment-Chlorine	Train collision at moderate speed causing derailment	Operator fatigue and haste leading to human error	60 tons Cl released; 8 deaths; 75 hospitalizations	Need to lock & monitor main-track switches; low speed in absence of switch lights
Squamish, BC, 2005	Train derailment-other hazmat	Wheel slip at low speed causing derailment	Steep & winding travel route with excessive train loading, high horsepower causing sideways force	40,000 liters sodium hydroxide released in river	Tonnage limits and operational controls required on difficult track terrain
Lac-Mégantic, QC, 2013	Train derailment-other hazmat	Brake failure leading to high-speed train derailment	Poor repairs leading to fire; fire mitigation & procedural conflict then causing loss of braking power	47 deaths; 2000 evacuations	Mandatory minimum hand brakes required; improvements to route planning of hazardous materials
Aqaba, Jordan, 2022	Chlorine tank release	Mishandling of chlorine tank causing rupture	Poor safety culture & communication leading to the use of insufficient lifting equipment	25 tons Cl released; 9 deaths; 250 hospitalizations	Safety culture is integral to incident-free operations; employees should be aware of procedures and hazard risks
East Palestine	Train derailment – hazmat released	Axel failure leading to high-speed train derailment	Overheated L1 bearing on a hopper car	Environmental impact and long-term toxic exposure to community	Improve railroad design, railcar inspection, and emergency responder preparedness

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Final Report - Risk Assessment of Chlorine Railcars in the District of North Vancouver, Canada

Colin Armstrong

Worst-Case Scenarios:

They are Occurring



Citizens' Lives are Affected



This is Chemtrade's Scenario

The Fatality Risk → 2,000 Lives

1.7.1 Chemtrade Integrated Contingency Plan (ICP) Guide – Chlorine Release

Priorities – People, Environment, Business:

1. Life safety (consider yourself, responding personnel, and the public)
2. Incident stabilization (control and containment)
3. Minimize impact to environment and property

Chlorine Hazards:

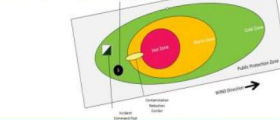
- Health Concerns:
 - 1 to 3 ppm for 1 hour – Mild mucous membrane irritation
 - 5 to 15 ppm – Moderate irritation of upper respiratory tract, stinging and burning eyes
 - 30 ppm – Immediate chest pain, vomiting, choking and coughing
 - 40 to 60 ppm – Toxic pneumonitis and pulmonary oedema
 - 430 ppm for 30 minutes – Lethal
 - 1,000 ppm, few minutes – Fatal
- Life-threatening symptoms may be delayed up to 36 hours
- Contact with compressed liquid gas may cause frostbite or chemical burns.
- Persons with pre-existing respiratory disease, e.g. asthma may be at greater risk
- Vapours react violently with many combustible materials, other chemicals and water.
- Can form an explosive mixture with oils.
- Extremely corrosive to most metals in the presence of moisture.
- Combustibles burn in chlorine as they do in oxygen.

Isolation Response & Protection Zones:

Hot Zone – Physical product hazard location (>0.1 ppm)

Warm Zone – 3 metres from hot zone perimeter (0 ppm)

Cold Zone >3 metres from warm zone



Immediate Strategies and Tactics:

If odours are detected or the mandatory C2 monitor alarms and is above 0.1 ppm, notify the Shift Supervisor, don emergency chlorine respirator IMMEDIATELY and evacuate.

Chlorine monitors, Shelter-in-Place locations, and sock and flag locations is presented on Figure 4.

Activate the emergency horn. Shift Supervisor to activate if Site shelter-in-place is required. Move straight to the nearest shelter-in-place. Understand that you should not attempt to perform any job or task that you have not been trained for, or that will put you in a position that is dangerous to your health or wellbeing.

Once outside of the building, look for the windsock (see Figure 4) to determine wind direction and proceed to the safest upwind shelter-in-place and remain there until you are directed to do otherwise.

Wear impervious, chemical-resistant clothing, gloves, footwear, and goggles.

Eliminate ignition sources.

Evacuate area in vicinity and downwind of release. Activation of public first responders 911.

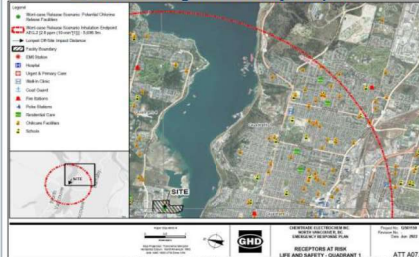
Chlorine Alarms:

Level	Trigger	Internal Notification	External Notification
Alert	1 ppm local alarm	Strobe & siren	None
1	1-10 ppm local; 0.3 ppm fence	Strobe & siren	Fence siren; neighbor notice
2	>10 ppm sustained; 0.3-1 ppm fence	Strobe & siren; SIP horn	Fence siren; SIP horn; neighbor + Alertable (Zone 1)
3	>10 ppm escalating; ≥1 ppm fence	Strobe & siren; SIP horn	Fence siren; SIP horn; mass public alert + Alertable

Shelter-in-Place Locations:

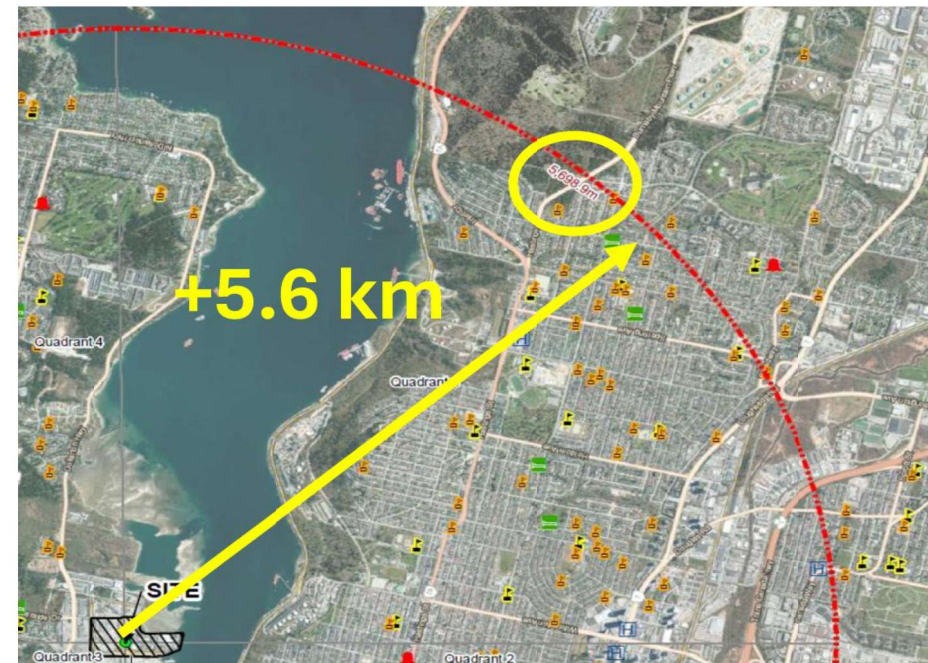


Chlorine Modeling and Life Safety Receptors:



Chemtrade ICP – Quick Reference Guide

Section 1: Introduction
Section 2: Core Plan
(2.1) Discovery
(2.1.2) Incident Classification
(2.1.3) Preliminary Assessment
(2.1.4) Response Zone Determination and Scene Control
(2.1.5) Notifications
(2.2) Initial Response
(2.2.1.1) Response Structure
(2.2.5.1.1) Chlorine Product Release
Annex A: Chlorine
Annex A: Attachment A.1: SDS
Annex A: Attachment A.2: Technical Brief
Annex A: Attachment A.3: P&ID
Annex A: Attachment A.4: Scenario Modeling
Appendix A: Internal External Contact List
Appendix B – Disciplined Approach
Appendix C – Notification and Reporting
Appendix G – Public Communications





HAZMAT RESPONSE Limitations

Hazards of Liquid Chlorine

- **Lethal in low concentrations**
- **Spreads rapidly**
- **Large** Volume from Rail Car
- **Remains close to the ground**



Chlorine Toxicity

Fatal @ 1,000 ppm immediately

Fatal @ 450 ppm for 30 min exposure

SHELTER IN PLACE

Dangerous for
Chlorine Exposures



Inappropriate for the identified concentrations of Chlorine:

- Toxic Inhalation Hazard at Low Concentration Hazard
- Vulnerable Populations
- Use without the close support of Firefighters
- Where vulnerable populations face a fatality risk

Fatality Rates for SIP

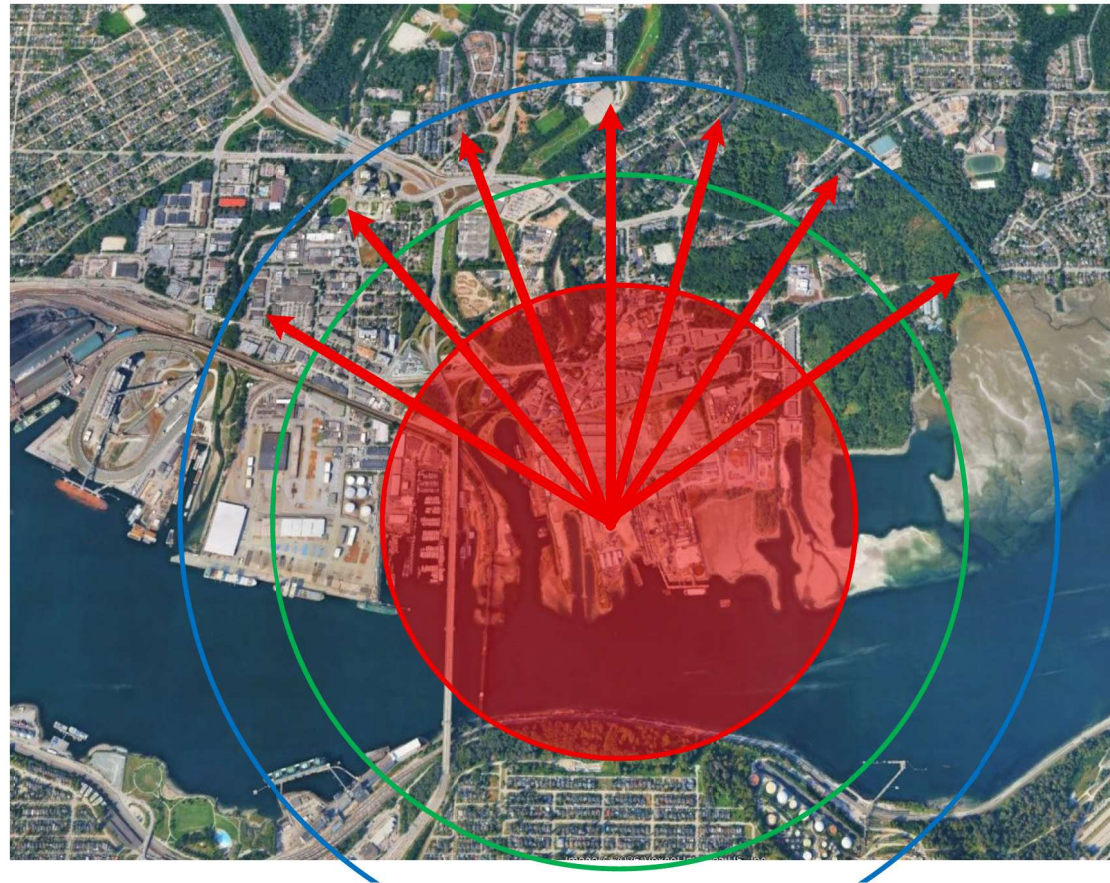
- Vulnerable populations require rescue
- Duration limits versus Building seepage rate: Is only 90% effective at best
- Building with low air-tightness requirements

For populations in close proximity to chlorine gas exposures

- Indoor fatality rates may be partially reduced by shelter-in-place provisions
- But only for the portion of the population that identifies the need to act promptly and undertakes the provisions seamlessly and without delay.
- In practice, a reduction in fatalities would be expected with shelter-in-place strategies compared with standard indoor fatality rates.
- However, for exposure populations in the Maplewood community, the fatality expectations related to a chlorine railcar release would remain significant.

Hazards of Liquid Chlorine Release

- **Immediate** action required
- **only 7% of citizens** use the Alertable notification system
- High Outdoor **Fatality hazard**
- Creates **lethal exposures** for Shelter in Place
- **Limited escape** routes



Notification System - Alertable

7% notification

Based on 15,000 NS participants of the 215,000 population

Limited ability to direct a person inside the Isolation Zone, not on Alterable

Rapid-Notify System at Chemtrade to the local area

Sirens & Horns

Less impactful: ambient noise/distractions, ignoring rates, confirmation bias

Does not identify the individual action required

NSEM

1-2 hour elapse time to Steady State Operations

Traffic

Congestion in the area and adjacent highways and bridges

The effectiveness of sheltering in place strategies

Protecting citizens during a chlorine gas release emergency is dependent on:

- The elapsed time and duration of outdoor chlorine gas exposure
- The elapsed time for a citizen to escape from outdoors to indoors
- The elapsed time to building ventilation system shutdown
- The elapsed time and extent of the citizen's physical air sealing provisions
- Where relatively effective air-tightness provisions can be rapidly achieved by citizens sealing their homes to chlorine gas exposure, it is still expected that many lives will be lost due to the chlorine gas exposure prior to completing these isolation measures, or by the 1 to 10% of the chlorine exposure that will not be prevented from entering the sheltering spaces after the provisions have been completed.
- A building's Heating Ventilation and Air Conditioning system (HVAC) is designed to exchange a designed amount of air from outdoors to indoors.
- During a Chlorine release, it is critical that the HVAC system be shut down immediately to prevent the movement of Chlorine gas into the building via the HVAC system.
- This requires an individual on-site with sufficient technical system knowledge, authority and a safe enough immediate environment to operate the building's HVAC system immediately.
- Most residential buildings will experience a significant time elapsed before receiving an HVAC system shutdown, increasing the rate of Chlorine gas infiltration into the building.

A shelter-in-place strategy is least effective for toxic inhalation hazards such as chlorine gas

- Fatality rates are high for chlorine gas exposures to low concentrations and low durations times.
- Chlorine gas poses a significant indoor fatality risk to sheltering citizens, in that even low building infiltration rates of chlorine gas can be fatal in short exposures.

FATALITY Risk: for Shelter In Place

Note: For Exposure longer than 10 minutes Building Infiltrations Rates Increase	FIELD PLANNING MODEL Chlorine Infiltration Rate during 1st - 10 minutes of Chlorine Exposure			
	Residential New Construction (with full SIP Actions)	Residential Legacy Construction (with full SIP Actions)	Commercial Buildings (with full SIP Actions)	Industrial Buildings (with full SIP Actions)
SIP Efficiency vs Outdoor Cl ₂ Concentration	90 - 99%	<90%	<90%	<90%
100,000 ppm Chlorine 10.00%	1,000 - 10,000 ppm	>10,000 ppm	>10,000 ppm	>10,000 ppm
10,000 ppm Chlorine 1.00%	100 - 1,000 ppm	>1,000 ppm	>1,000 ppm	>1,000 ppm
1,000 ppm Chlorine 0.10%	10 - 100 ppm	>100 ppm	>100 ppm	>100 ppm
100 ppm Chlorine 0.01%	1 - 10 ppm	>10 ppm	>10 ppm	>10 ppm
1,000 ppm 99% Fatality immediately at exposure				
450 ppm 99% Fatality for 30 minute exposure				
100 ppm 1% Fatality Risk for 10 minute exposure				
10 ppm Immediately Dangerous to Life & Health				

Chlorine release locations in close proximity to populations

- These proximity scenarios present a rapid impact of chlorine gas concentrations on lives after short elapse times.
- The short elapsed time to hazardous chlorine concentrations reduces the time a citizen will have to isolate themselves within the buildings available to them, effectively operate to disable the building's ventilation system, and then provide physical air movement reduction measures within the building.
- Each step is critical for the safety of citizens utilizing shelter-in-place strategies, and each can present fatality exposures if not completed rapidly and comprehensively.

Legacy buildings and non-residential buildings

- These buildings are far less air-tight by design and construction types, and thus far less effective at limiting chlorine gas infiltration, presenting higher indoor chlorine exposures to those sheltering.

Vulnerable populations

- Vulnerable residents with respiratory weakness or weakness in rapid, physically or cognitively stressful situations are at extreme risk of failing to execute the demands required to provide air sealing functions within their home with sufficient immediacy to prevent their own personal harm.

SIP & Self-Evacuation places the responsibility of Safety on the Resident

- The Resident needs to take these technical actions to maintain their own lives vs a highly lethal exposure
- There will be directions given if you are successfully connected with the Alertable App, but the rest is Your responsibility



EVACUATIONS

- will be too slow
- Traffic Congestion
- Routes will have Chlorine

Self Evacuation

- can occur at <4 mph, <100 m per min
- Note: distance from the release point in Chemtrade to the location,
 - location to safe ERG isolation distance: measured distance of travel and time required to travel by foot
 - Expand to ERG Daytime protective zone
 - Expand to ERG Night time protective zone
- *identify vulnerable population not able to self-evacuate:
 - Illness
 - high-exposure
 - Young
 - Old
 - special needs
 - mobility issues

Evacuation Issues

- Rapidly to a set of fatal concentrations of chlorine
- Rapidly changing and expanding hazard area
- limited escape routes
- Delay in receiving/understanding the need to evacuate
- Delay in receiving/understanding the suitable escape direction
- Delay in receiving support to evacuate
- Delay in assistance for those needing physical assistance to evacuate
- Traffic limitations create an inability to escape by vehicle
- Distance limitations create an inability to escape the expanding chlorine area

PROBLEMS - Liquid Chlorine Release

- Evacuations impacted by **Chlorine exposures**
- First Responders engaged **supporting the evacuation**
- **The Scope of the Incident** limits Responder Actions inside the Chlorine exposure area



Citizen Immediate Requirements

1. **Rescue** from Lethal Environments
2. **Rescue** from Unsustainable Shelter In Place Locations
3. **Decontamination** of Chlorine from Evacuees
4. **Medical Treatment** for those suffering from Chlorine exposures
5. **Evacuation Support** to direct action in the community

Elapse Time to Rescue Initiation:

- Call Answer: 10 sec
 - Call Dispatch: 60 sec (70 sec)
 - Turn Out: 80 sec (150 sec)
 - Travel Time: 240-960 sec (390-1110 sec)
 - PPE Dress-In & Tactical Briefing: 240 sec (630-1350 sec)
 - Travel & Rescue at 400m: 900 sec (1530-2250 sec)
- = 25.5 - 37.5 mins to Rescue

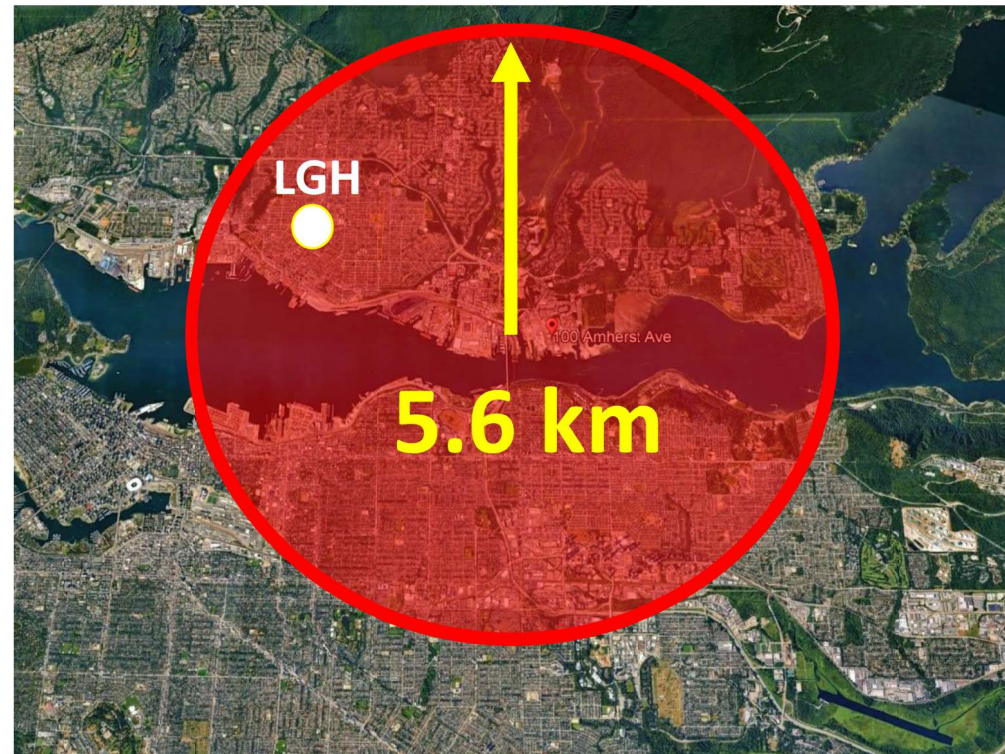
Field Reference:

28 ppm is fatal for a 30 min exposure

*Only patient located at the outer edge of the chlorine exposure area
(a distance of +800m from the release point)
would be deemed potentially survivable for Firefighter Physical Rescue

Safe Distance from Chlorine Release

- +0.8 km Initial Safe Distance
 - **Start Point for Responders**
- 3.5 km Daytime
- 8.0 km Nighttime
- +5.6 km Chemtrade E2 Plan
 - **Maximum Travel Distance of HazMat Rescue Team <1.0 km**



Firefighter Travel:

travel distance for FF teams ~1km

Walk In: <100m per min (<4 mph)

Rescue with 4: ~50m per min (2 mph) - or 100m in 2 mins

400m Rescue distance

round trip on 45-minute cylinder: 15 minutes (exclusive of Decon)

Entry: 400m in 4 mins

Victim Assess & Packaging: 3 mins

Egress with Patient: 8 mins

+ Decon: 3 mins

600m Rescue distance

round trip on 60-minute cylinder: 20 minutes (exclusive of Decon)

Entry: 600m in 6 mins

Victim Assess & Packaging: 3 mins

Egress with Patient: 12 mins

+ Decon: 3 mins

Emergency Response versus Speed of Chlorine Impact:

- **A response time occurs**
prior to the arrival of a full force
- **Limited North Shore Fire**
staff availability
- **Delay in Mutual Aid**
from outside the North Shore



Life Safety Actions

1. **Rescue:** to remove Lives from Lethal Environments

- (12) Rescuers per (4) victims per hour
Rescuers for 100 patients in first hour of event = 1,200 firefighters just for rescue

2. **Shelter In Place Rescue:** to remove Lives vulnerable from SIP Chlorine exposure

3. **Rapid Intervention:** Rescue Team for Firefighters with injuries or in trouble

4. **Air Monitoring:** to identify the actual impact of Chlorine & track/predict its %

5. **Decontamination:** hygiene removal of Chlorine - Evacuees, Rescuers, Recuees

- Mass Decon Evacuees: 4
- Mass Decon Rescuers: 4
- Decon of Rescuers: 4

6. **Field Medical Services:** provide Triage, Field Medical Treatment, and transport to the hospital

7. **Evacuation:** to provide In-Field direction to facilitate Evacuation or Shelter In Place

Supporting Actions – Incident Structure

- **Command Staff:** Commander, Safety, Liaison, Public Information
- **Rehab:** Medical assessment and re-tooling for responders
- **Perimeter:** Isolation & control of hazard area perimeter
- **Planning:** Technical direction of all incident actions
- **Logistics Support:** Control of responding resources, equipment & systems

Focus of First Responders:

- Establishing a **Safe Perimeter**
- **Support Evacuations** outside the hazard area
- **Decontamination** of Evacuees
- Providing **Medical Care**



HazMat First Responders: Immediate Requirements to Limit Loss of Life

Analyze:

- Collect basic hazard information using the Emergency Response Guidebook (ERG).

Implement:

- Initiate protective actions
- Secure the area
- Isolate the hazard
- Make notifications to emergency response centers

HazMat Operations: Structure Response – to Provide Rescue

Analyze:

- Predict the behaviour of the Chlorine Release
- Estimate potential harm

Plan:

- Identify response objectives
- Select appropriate personal protective equipment (PPE)
- Determine decontamination

Implement:

- Establish scene control
- Implement the Incident Command System (ICS)
- Perform emergency decontamination

Evaluate:

- Monitor the status of actions
- Communicate progress to the commander

HazMat Technicians: Structure Response – to Provide Rescue

Analyze:

- Establish monitoring of release

Plan:

- Formulate an offensive safety and control plan
- Select specialized chemical-protective clothing
- Establish technical decontamination

Implement:

- Perform offensive control measures while wearing specialized PPE

Evaluate & Terminate:

- Measure the effectiveness of the control operation
- Document the incident

For citizens inside the Chlorine Area

- **No support for evacuations** inside the Chlorine Area
- **No Rescue** from inside the Chlorine Area
- **No support for vulnerable citizens** from the Shelter in Place locations
- Potential for up to **2,000 fatalities**



HazMat Operations: Structure Response – to Provide Rescue

Analyze:

- Predict the behaviour of the Chlorine Release
- Estimate potential harm

Plan:

- Identify response objectives
- Select appropriate personal protective equipment (PPE)
- Determine decontamination

Implement:

- Establish scene control
- Implement the Incident Command System (ICS)
- Perform emergency decontamination

Evaluate:

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Plan:

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- Select appropriate personal protective equipment (PPE)
- Determine decontamination

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- Implement the Incident Command System (ICS)
- Perform emergency decontamination

Evaluate:

- Monitor the status of actions
- Communicate progress to the commander

HazMat Technicians: Structure Response – to Provide Rescue

Analyze:

- Establish monitoring of release

Plan:

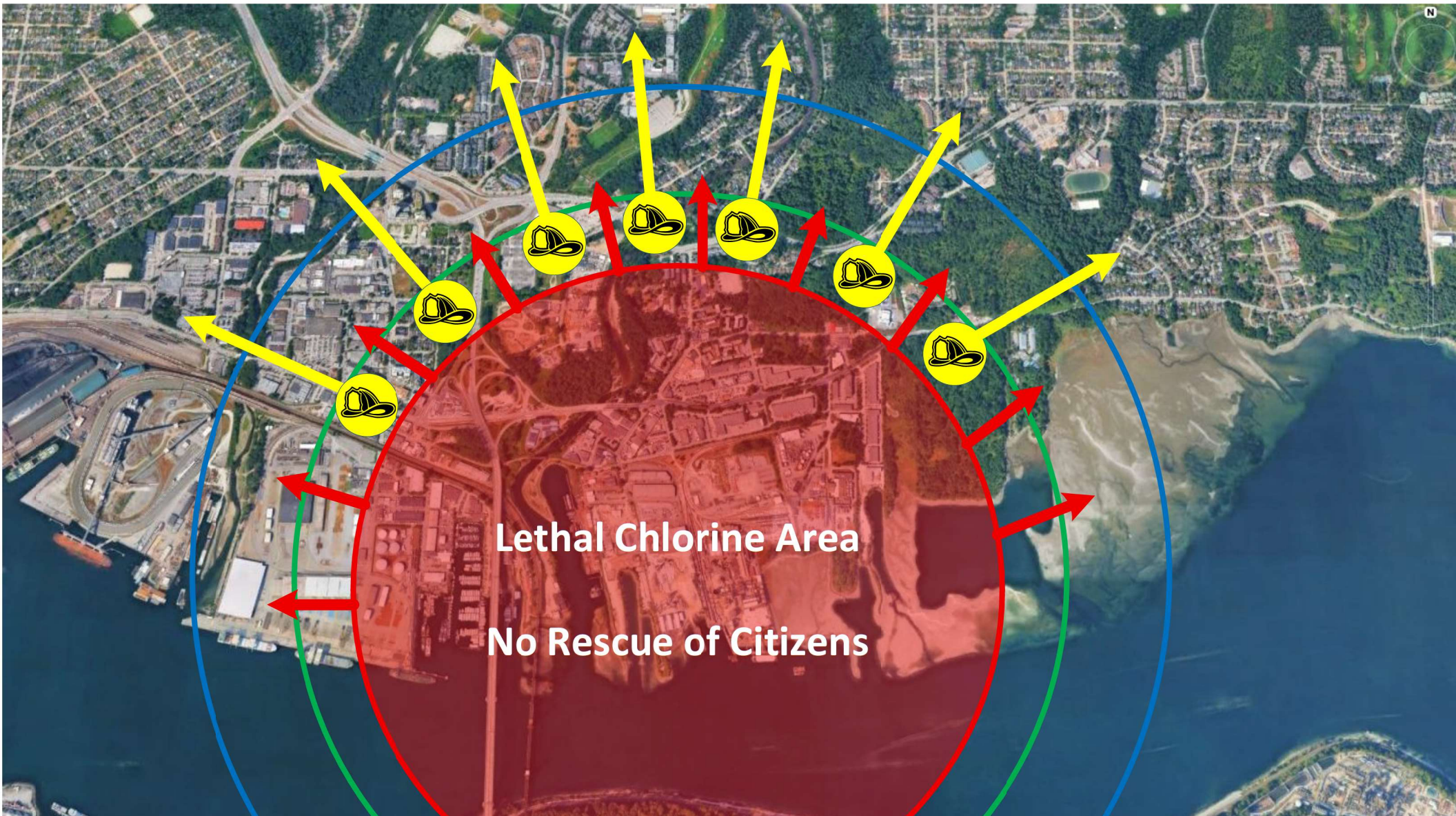
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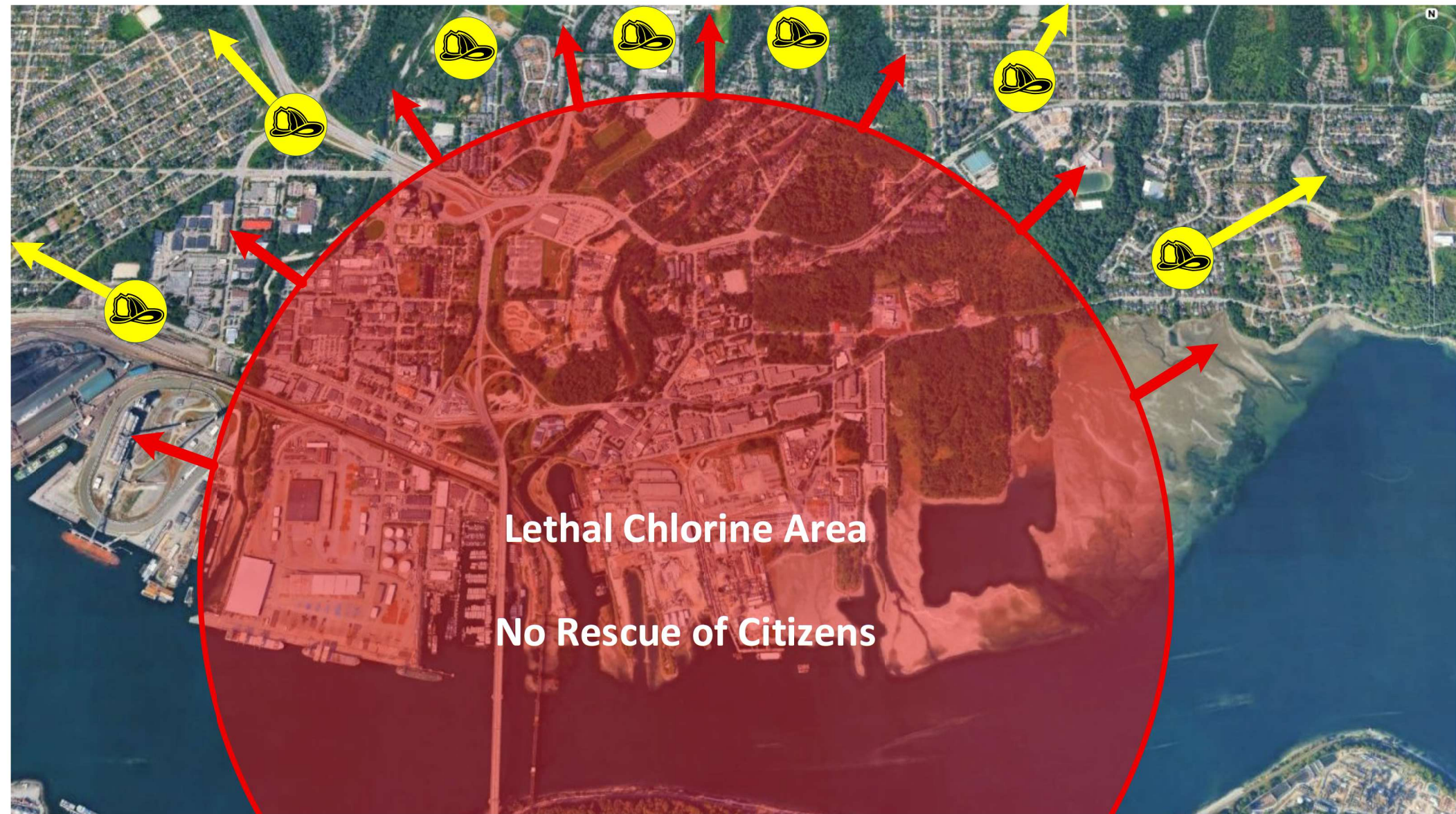


Lethal Chlorine Area

No Rescue of Citizens



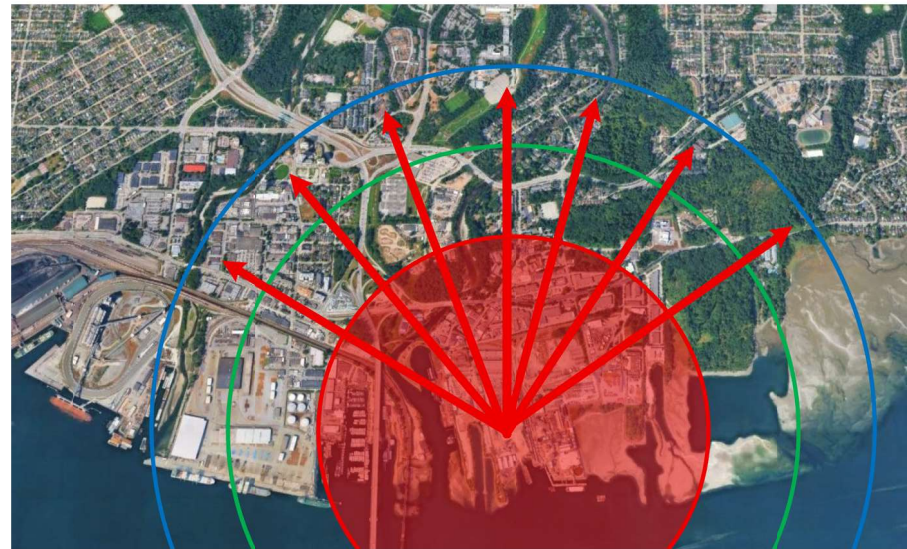
Lethal Chlorine Area
No Rescue of Citizens



Lethal Chlorine Area
No Rescue of Citizens

Liquid Chlorine Release

- Lethal
 - Very Quick
 - Too many Citizens
- = **Fatalities** become unpreventable



Chlorine Toxicity

Fatal @ 1,000 ppm immediately

Fatal @ 450 ppm for a 30 min exposure

Liquid Chlorine Rail Car Release

Release Volume: 80 Metric Ton of Liquid Chlorine

Release of full content: BakerRisk modelled at 10 minutes & 60 minutes

Expands 460:1 at Liquid Chlorine transition in chemical state to Gaseous at Atmospheric Pressure

Chlorine properties

- Create the greatest magnitude MCI HazMat Incident impact
- Toxic Inhalation Hazard is uncontrollable
- High Expansion Ratio
- High Density – heavier than air, reduces the rate of dilution to lower concentrations
- Low dispersal rate to safe exposure limits
- short time frames to fatality risk
- cumulative fatality risk
- Victims unable to self-escape after significant exposure
- Decon requirement

Supporting Information

Table 7-1: Risk Factors Comparison of Chlorine and Bleach

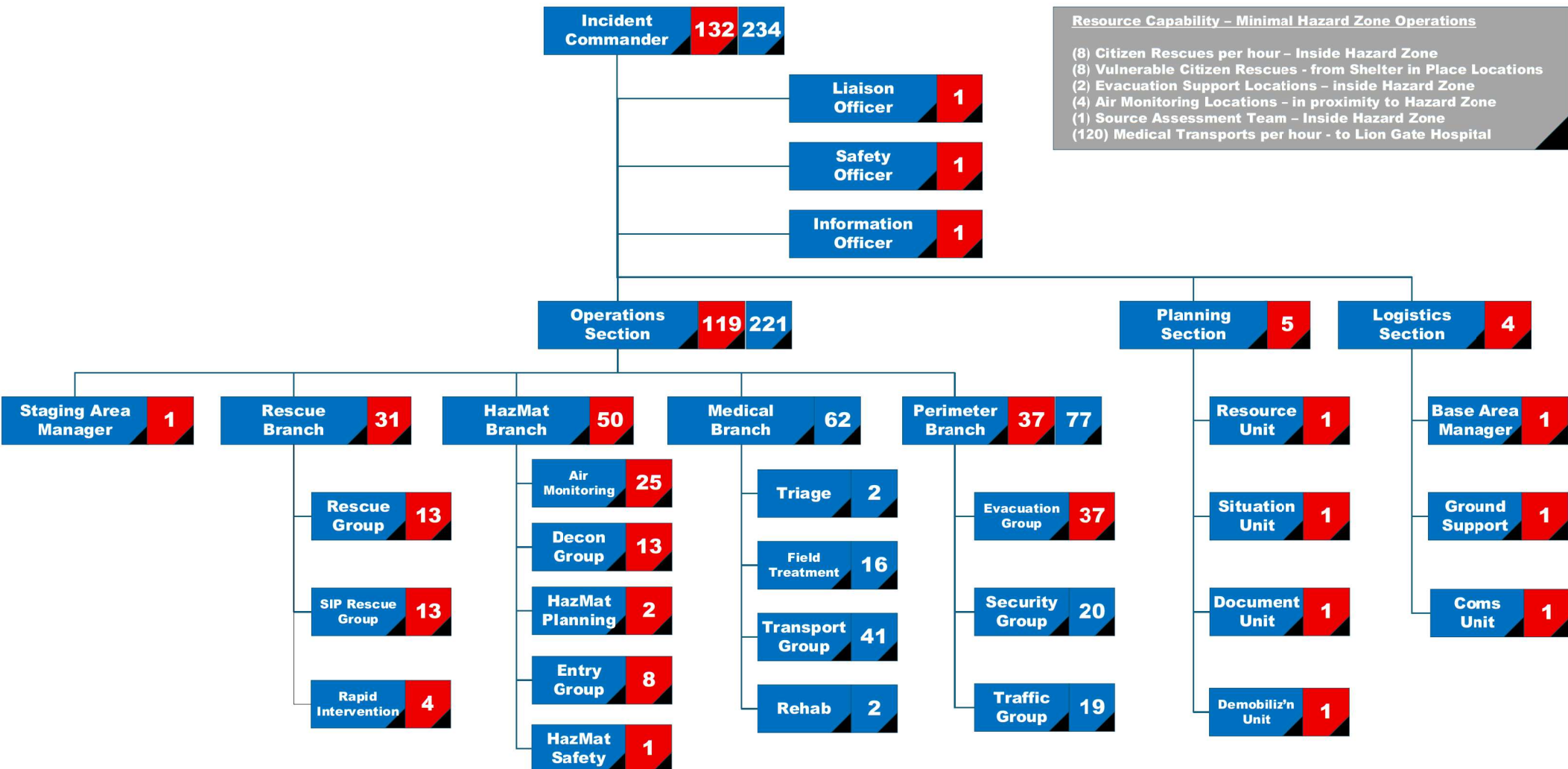
Risk Factor for Large Scale Release	Chlorine	Bleach
Acute inhalation hazard	Very high	Low
Impact scale	City-scale	Localized
Time to toxic effect	Minutes	Hours
Direct exposure hazards	Very high	Very low
Chemical reactivity hazards	High	Low
Reported fatalities (industry incidents)	Many	None
Shelter-in-place effectiveness	Limited	Effective
Emergency response complexity	Very High	Moderate
Vapor cloud formation	Immediate, very large	Minimal
Toxic Dispersion distance	Kilometers	Tens of meters
Dependence on weather	High	Low
Mitigation after release	Difficult	Feasible

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Rescue Group	Staffing based on (2) Active Teams, (1) Supervisor & Accountability Officer with (2) Members per Team, 3:1 High Intensity SCBA Workcycle Rescue Capability: (8) Citizens Rescues per Hour
SIP Rescue Group	Staffing based on (2) Active Teams, (1) Supervisor & Accountability Officer with (2) Members per Team, 3:1 Long Travel Distance SCBA Workcycle Rescue Capability: (8) Vulnerable SIP Citizens Rescues per Hour
Rapid Intervention	Requiring (4) Members
Air Monitoring	Staffing based on (4) Active Teams, (1) Supervisor & Accountability Officer with (2) Members per Team, 3:1 Constant Field Presence SCBA Workcycle
Decon Group	Staffing based on Mass Decon with (4), Medical Decon with (4), Entry Decon with (4) 2:1 Low Intensity SCBA Workcycle
Entry Group	Staffing based on (1) Active Team with (2) Members per Team, 3:1 Long Travel Distance Workcycle 2 Supervising Officers with Accountability Officer responsibilities
Transport Group	Staffing based on (20) Transport Ambulances, (1) Supervising Officer 20 minute round-trip to LGH: (3 - 2 patient) transports per hour per unit 120 transports per hour to LGH. <60 transports per hour to other facilities
Field Treatment	Staffing based on (15) Paramedics (1) Supervising Officer with Accountability Officer responsibility
Evacuation Group	Minimum Staffing (2) Teams each of (2) Members, (1) Supervising Officer with (2) Members per Team, 3:1 Constant Field Presence SCBA Workcycle Expanded Staffing due to 3.5-8.0 km ERG Evacuation Radius: (6) Teams of (2)
Off-Duty NS Fire Members	50% Staff Availability: area access, region absence-vacation, injury/sickness Delay forecast based on closure of 2nd Narrows Bridge, NS traffic congestion
MetroVan Fire Mutual Aid	Unavailable – due to HazMat response Demands within own City Delays due to distance, traffic congestion and diverted access routes

**HazMat Chlorine Incident
Fire Staffing Demand** **132**

North Shore Fire Staffing **71** **123**

**On-Duty
Fire Service** **52**

Chief Officers **19**

**Off-Duty Members
50% @ 60 min Delay** **123**

**District
North Van FRS** **140**

**On-Duty
Staffing** **23**

**Chief
Officers** **6**

**50% Off-Duty
60 min Delay** **56**

**North Van City
FD** **64**

**On-Duty
Staffing** **11**

**Chief
Officers** **5**

**50% Off-Duty
80 min Delay** **24**

**West Van
FR** **110**

**On-Duty
Staffing** **18**

**Chief
Officers** **6**

**50% Off-Duty
90 min Delay** **43**

**MetroVan Mutual Aid
60 min Delay** **20**

**Vancouver FRS
NA – Response in City** **0**

**Burnaby FD
NA – Response in City** **0**

**Surrey FS
Available – 60 min Delay** **8**

**Richmond FR
Available – 60 min Delay** **8**

**Delta FR
Available – 60 min Delay** **4**

**HazMat Chlorine Incident
Fire Staffing Demand** **132**

**On-Duty Fire Service
& Chief Officers** **71**

**Off-Duty Members
60 min Delay** **123**

**Fire Staffing Shortfall
1st – 60 mins** **61**

**Annual Cost +60 Firefighters On-Duty
= +300 Firefighters on Payroll** **\$63M**

Annual Compensation **\$60M**

**Annual Training Cost
HazMat Mission-Specific Ops** **\$<1M**

**Annual Station &
Equipment Cost** **\$2M**

**DNV Increase in Tax Draw
\$1M Tax Draw is 1%** **+63%**

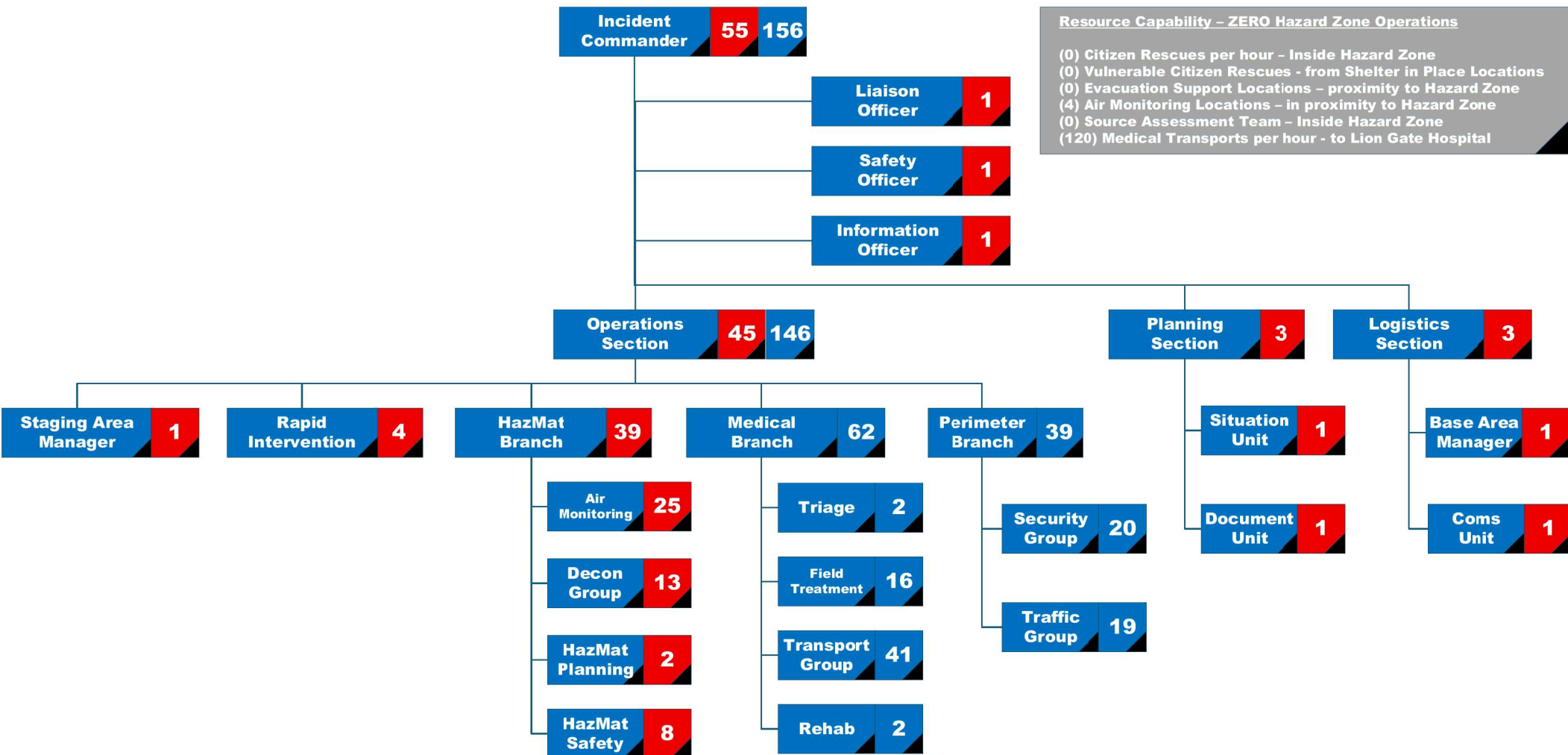
**Annual Cost +20 Firefighters On-Duty
= +100 Firefighters on Payroll** **\$20M**

Annual Compensation **\$20M**

**Annual Training Cost
HazMat Mission-Specific Ops** **\$<1M**

**Annual Station &
Equipment Cost** **\$<1M**

**DNV Increase in Tax Draw
\$1M Tax Draw is 1%** **+20%**



Incident Commander	NFPA 1710 5.2.4.4.1 NFPA 1561 5.3.1, 5.3.2 NFPA 472 1.1.3	Based on high-hazard management requirements Position requirement Position requirement
Safety Officer	NFPA 1710 5.2.4.4 NFPA 1561 8.3.1	based on High-Hazard management requirements Position to be assigned at applicable incidents
Liaison Officer	NFPA 1561 5.9.3.1 (1)-(3) ICS 300	Command Staff position required based on incident Command Staff position required based on incident
Public Information Officer	NFPA 1561 5.9.3.1 (1)-(3) ICS 300	Command Staff position required based on incident Command Staff position required based on incident
Operations Section Chief	NFPA 1561 5.10.1 ICS 300	General Staff position required based on scope General Staff position required based on scope
Planning Section Chief	NFPA 1561 5.10.2 ICS 300	General Staff position required based on scope General Staff position required based on scope
Logistics Section Chief	NFPA 1561 5.10.3 ICS 300	General Staff position required based on scope General Staff position required based on scope
Staging Manager	NFPA 1710 5.2.4.4.1 NFPA 1561 5.10.1.8 ICS 300	Position required for high-hazard incident Operations position required based on scope Operations position required based on resources
Base Manager	NFPA 1561 5.10.3.5 ICS 300	Logistics position required based on scope Logistics position required based on resources
Resource Unit	NFPA 1561 5.10.3(1) ICS 300	General Staff position required based on scope General Staff position required based on scope
Situation Unit	NFPA 1561 5.10.3(2) ICS 300	General Staff position required based on scope General Staff position required based on scope
Documentation Unit	NFPA 1561 5.10.3(3) ICS 300	General Staff position required based on scope General Staff position required based on scope
Demobilization Unit	NFPA 1561 5.10.3(4) ICS 300	General Staff position required based on scope General Staff position required based on scope
HazMat Safety Officer	NFPA 472 1.1.3	Position requirement based on operations required
Ground Support	NFPA 1710 5.3.4.4.1	Based on High-Hazard management requirement

Search Group	NFPA 1561 5.1.6 NFPA 1561 5.1.10 NFPA 1561 5.8.1-7 NFPA 1710 5.2.4.4.1	Supervisor required for Span of Control Supervisor required for function supervision Supervisor required for function control Minimum of (2) – 2 Member Teams for high-hazard
Evacuation Group	NFPA 1561 5.1.6 NFPA 1561 5.1.10 NFPA 1561 5.8.1-7 NFPA 1710 5.2.4.4.1	Supervisor required for Span of Control Supervisor required for function supervision Supervisor required for function control Minimum of (2) – 2 Member Teams for high-hazard
Air Monitoring Group	NFPA 1561 5.1.6 NFPA 1561 5.1.10 NFPA 472 5.4 NFPA 1561 5.8.1-7 NFPA 1710 5.2.4.4.1	Supervisor required for Span of Control Supervisor required for function supervision Supervisor required for the Intelligence Officer role Supervisor required for function control Minimum of (2) – 2 Member Teams for high-hazard
Entry Group	NFPA 1561 5.1.6 NFPA 1561 5.1.10 NFPA 1561 5.8.1-7 NFPA 1710 5.2.4.4.1	Supervisor required for Span of Control Supervisor required for function supervision Supervisor required for function control Minimum of (2) – 2 Member Teams for high-hazard
SIP Rescue Group	NFPA 1561 5.1.6 NFPA 1561 5.1.10 NFPA 1561 5.8.1-7 NFPA 1710 5.2.4.4.1	Supervisor required for Span of Control Supervisor required for function supervision Supervisor required for function control Minimum of (2) – 2 Member Teams for high-hazard
Rapid Intervention Team	NFPA 1407 3.3.8 NFPA 1561 8.8	Minimum Team of (4) Members Immediate allocation of resources
Communications Unit	NFPA 1561 8.11.2	Staffing required for Command Post Support
Accountability Officer	NFPA 1561 8.12.4	Position required for Supervisors: 3+ Companies
NFPA Standard - References	NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, 2020 edition NFPA 472 Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents, 2018 edition NFPA 1407 Standard for Training Fire Service Rapid Intervention Crews, 2015 edition NFPA 1561 Standard on Emergency Services Incident Management System and Command Safety, 2014 edition	
ICS 300	ICS 300 Incident Command System Level 300 For Expanding Incidents	

Incident Commander	Incident Safety Officer Incident Command System	NFPA 1521 Level 2 Level 300
Safety Officer	Incident Safety Officer HazMat Safety Officer Incident Command System	NFPA 1521 Level 2 NFPA 472 Level 300
Liaison Officer	Incident Command System	Level 300
Public Information Officer	Incident Command System	Level 300
Operations Section Chief	HazMat Technician Level Incident Command System	NFPA 472 Level 300
Planning Section Chief	HazMat Technician Level Incident Command System	NFPA 472 Level 300
Logistics Section Chief	Incident Command System	Level 300
Staging Manager	Incident Command System	Level 300
Base Manager	Incident Command System	Level 300
Resource Unit	Incident Command System	Level 300
Situation Unit	Incident Command System	Level 200
Documentation Unit	Incident Command System	Level 200
Demobilization Unit	Incident Command System	Level 200
HazMat Safety Officer	HazMat Technician Level HazMat Safety Officer Incident Command System	NFPA 472 NFPA 472 Level 300
Ground Support	Incident Command System	Level 200
Search Group	HazMat Operations Level Incident Command System	NFPA 472 Level 300

Evacuation Group	HazMat Operations Level Incident Command System	NFPA 472 Level 300
Air Monitoring Group	HazMat Technician Level Incident Command System	NFPA 472 Level 300
Entry Group	HazMat Technician Level Incident Command System	NFPA 472 Level 300
SIP Rescue Group	HazMat Technician Level Incident Command System	NFPA 472 Level 300
Rapid Intervention Team	HazMat Operations Level Rapid Intervention Crew Incident Command System	NFPA 472 NFPA 1407 Level 300
Communications Unit	Incident Command System	Level 200
Accountability Officer	Incident Command System	Level 300
NFPA Standard - References	NFPA 1710 Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments, 2020 edition NFPA 472 Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents, 2018 edition NFPA 1407 Standard for Training Fire Service Rapid Intervention Crews, 2015 edition NFPA 1561 Standard on Emergency Services Incident Management System and Command Safety, 2014 edition	
ICS 300	ICS 300 Incident Command System Level 300 For Expanding Incidents	

Garden Grove, CA	2026.05.21		50,000 Evacuated	1 mile Evacuation Radius
East Palestine, OH	2023.02.03	Derailment – Fire	2,000 Evacuated	1 mile Evacuation Radius
Aqaba, Jordan	2022.06.27	Chlorine Release – 25 Tons 9 Fatalities		
Beruit, Lebanon	2020.08.04	Ammonium Nitrate Explosion	300,000 Evacuated	
New Martinsville, WV	2016.08.27	DOT-105 Failure 90 Ton Chlorine Release		5 mile Evacuation Radius
Le-Megantic, QC	2013.07.06	Derailment 47 Fatalities	2,000 Evacuated	
Graniteville, SC	2005.01.06	Chlorine Derailment 9 Fatalities	5,400 Evacuated	1 mile Evacuation Radius
Bhopal, India	1984.12.02	Methyl Isocyanate 3,000 immediate fatalities	500,000 Evacuated	
Mississauga, ON	1979.11.10	Derailment Chlorine Release	200,000 Evacuated	

DECISION



Liquid Chlorine Risk to Community

Chemtrade Re-Zoning Amendment Decision

- This DECISION requires careful consideration....
- PROs vs CONs
- **BUSINESS MODEL** vs **RISKS**



BUSINESS MODEL

- ~~Drinking Water~~
- ~~Critical Supply to Industry~~
- ~~Corporate Sustainability~~
- ~~Corporate Profit~~
- ~~Local Jobs~~
- ~~Municipal Taxes~~

- Accelerated Profits

RISKS

- 2,000 Fatalities
- 10,000 Hospitalizations
- “incidents are low in frequency”



BUSINESS MODEL

RISKS

- 2,000 Fatalities
- 10,000 Hospitalizations



This is the **DESCISION**

- Accelerated Profits

There is 1 more piece....

Chlorine is HIGH RISK for Responders:

- Firefighters
- Paramedics
- Constables
- Health Care Workers

Do NOT put them in this **HIGH RISK**



BUSINESS MODEL

RISKS



- Accelerated Profits

- 2,000 Fatalities
- 10,000 Hospitalizations
- Firefighter Injuries
- First Responder Trauma

This is the **DESCISION**

The loss of **Citizen Lives** defines a City

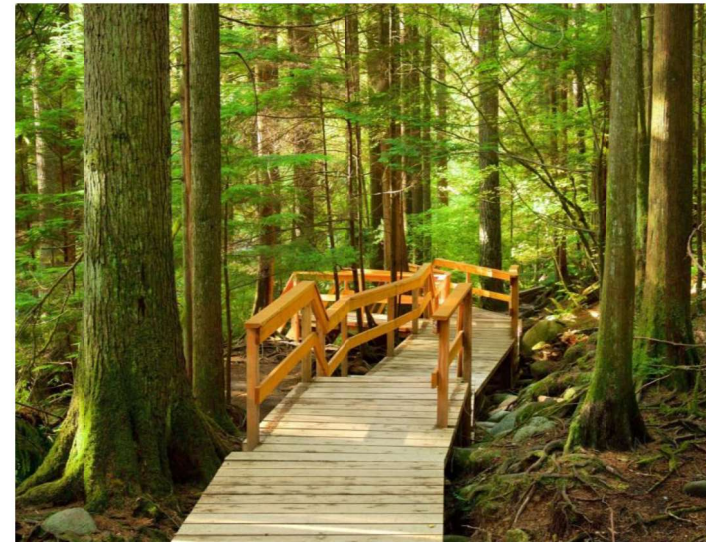
→ for Generations



...Reputationally

...Financially

...Morally



If this DECISION is still, tough....

What if:

- ✓ The First Responders risk absolutely everything they have
- ✓ Luck is truly on our side – on that day

BUSINESS MODEL

RISKS

- 2,000 Fatalities
- 10,000 Hospitalizations
- Firefighter Injuries
- First Responder Trauma

What if:
Impacts are reduced by 90%

- Accelerated Profits

BUSINESS MODEL

- Accelerated Profits

RISKS

- 2,000 Fatalities
- 10,000 Hospitalizations
- Firefighter Injuries
- First Responder Trauma

Is the **DECISION** easier for:

- 200 Fatalities
 - 1,000 Hospitalizations
- or the SAME**

BUSINESS MODEL

Consider:
You are also making this DECISION for

Citizens of North Vancouver
Citizens of Burnaby
Citizens of Vancouver
Citizens of New Westminster
Citizens of Surrey
Citizens of Langley

- Accelerated Profits

RISKS

- 2,000 Fatalities
- 10,000 Hospitalizations
- Firefighter Injuries
- First Responder Trauma





Oklahoma City firefighter Chris Fields holds Baylee Almon on April 19, 1995.
Charles Porter IV / ZUMAPRESS.com

**Some losses are too horrific
to **RISK****

... Decision ...

**What is in the community's
Best Interest**



This is who the District is:



... Decision ...

**What is in the community's
Best Interest**

Realities of a Liquid Chlorine Release



The Risk of Liquid Chlorine is Present

Worst-Case Scenarios:

High Fatality Rates

Alarming in Scale:

+5 km Impact Area

Liquid Chlorine Releases:

Rapid Impact into community

Harsh Impacts:

Fatal in low concentrations

Exceeding Response Capability:

No In-Chlorine Rescue of citizens

The Risk of Liquid Chlorine is Present

- Liquid Chlorine Rail Cars present a massive risk
- The travel through the community is the same
- **Rail Performance**
 - 41 Serious Incidents
 - 33 involving Liquid Chlorine rail cars**
 - 14 had major damage
 - 6 rolled on their sides

The Risk of Liquid Chlorine is Present

is this evidence to Rail Safety.....or is it a **Warning**

- **33 Incidents**
risking community **Deaths**
- Clear **Warning** of the
next fatal derailment
- ~ 1 Major BC Derailments
per month



Train Speeds Exceed Design

Top Fitting Roll-Over Protection: 15 km/h

- **>530%** exceeding Protection @ 80 km/h
- **>430%** exceeding Protection @ 65 km/h
- **>260%** exceeding Protection @ 40 km/h



Train Speeds Exceed Design

Side Puncture Resistance: 30 km/h



- **>260%** exceeding Protection @ 80 km/h
- **>210%** exceeding Protection @ 65 km/h
- **>130%** exceeding Protection @ 40 km/h

Outcomes are Harsh **Uncontrollable**



High Fatality Rates:

up to **2,000**

10,000 Hospitalizations

Large Impact areas:

5 - 10 km Impact Radius

Liquid Chlorine expansion:

Immediate Fatality Concentrations

Chemtrade's Chlorine Modelling

Integrated Contingency Plan

5,698.9 m

+5.6 km



Impact to Citizens In-Chlorine

- **Ineffective Shelter in Place** vs Toxic Inhalation Hazard
- Must **self-evacuate** to escape
- **Short time** to chlorine Lethality
- Poor Escape Routes – **traffic congestion**



DNVFRS Services



Base Services :

Structure Fire

Medical Emergencies

Motor Vehicle Incidents

Special Operations:

Tech Rope/Mountain Rescue

Wildland Firefighting

No HazMat Advanced Operations In-Chlorine



Fire : **Defensive** activities only – outside the Chlorine

No entry into the Chlorine

Scale too large

Contractor: Delayed arrival - +60 mins to entry (QRA 60 min)

CHLOREP: requires “Operations & Technician” Level Support

No Ability to Intervene In-Chlorine



Fire Resources:

Aid from across the North Shore – required

Release will quickly **exceed response capability**

Aid from across Metro Van – **unlikely**

Fire Actions:

Work outside Chlorine Areas - **No Rescue**

Impact on Responders

End of Career Damage

- **Inhalation** Damage
- **Cardiac Injuries** from over exertion and stress
- **Psychological** Trauma
- Lasting impact of witnessing a Mass Casualty Incident



Would an Expansion of DNV Fire Change Rescue Rates

Yes, but limited to:

- Need for +60 on-shift Firefighters to properly staff (**+300 members**)

= **>\$60M**
- Rescue Rates: Increase from 0 to ~20 patients per hour
vs 2,000 fatalities → **+1% Survivability**



The Risk of Liquid Chlorine is Present

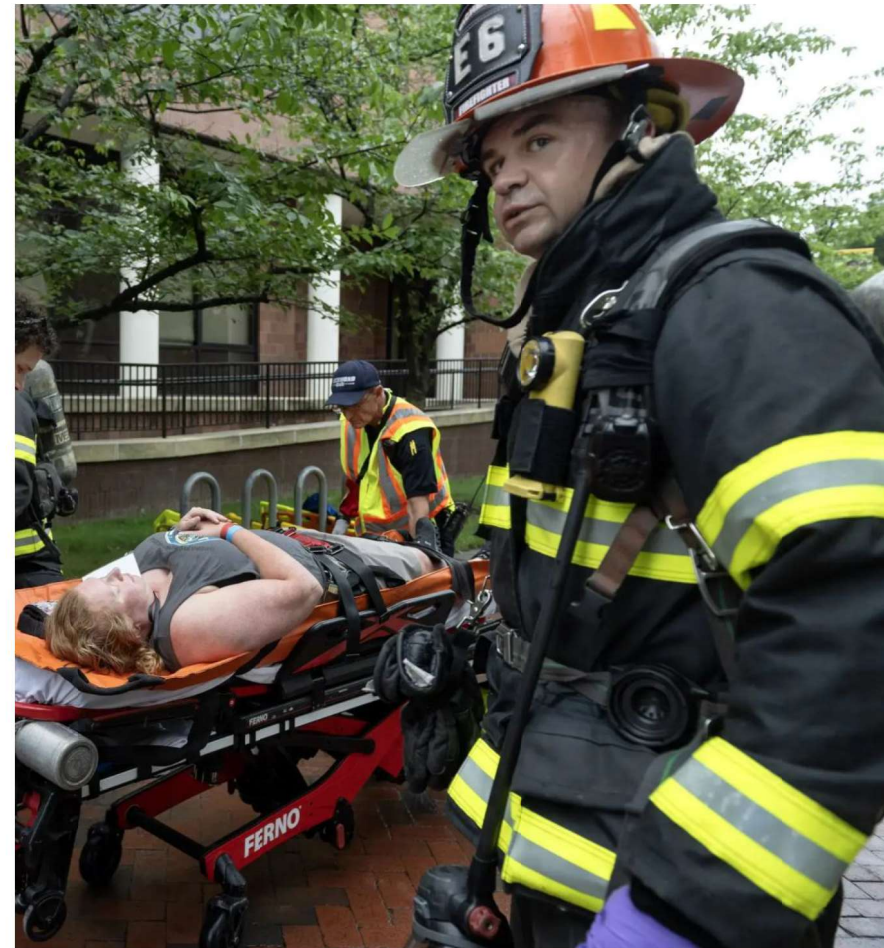
High Fatality Rates

Alarming in Scale

Rapid Impact into community

Fatal in low concentrations

Exceeding Response Capability



From: Michael Graveson <OMG.Consulting@outlook.com>
Sent: June 17, 2026 5:42 PM
To: Mayor and Council - DNV; DNV Input
Subject: Michael Graveson 1st presentation
Attachments: June 16 Myths with notes.pptx

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Although I understand that post close we cannot discuss any new information, but if I am not mistaken, if you would like any clarification of the attached, please do not hesitate to contact me.

Thank you for the opportunity.

Michael C. Graveson

M: 702-232-9918

E: OMG.Consulting@outlook.com



FICTION



NON-FICTION





**Securing safe drinking water for Canadians
and reducing potential risk to the community**

Securing safe drinking water?

Claim	Truth
Our chlorine treats the water	Bleach treats the water
But bleach doesn't work	Bleach works great and is safer
Most of our chlorine is used in Canada	Nope...less than 5%. Over 90% is shipped to the USA
There's no alternative domestic chlorine source	There's surplus domestic readily available chlorine



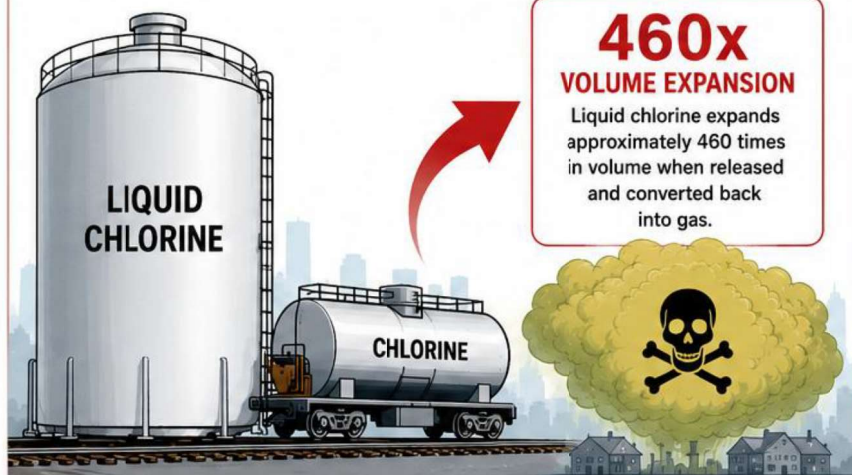
**Securing safe drinking water for Canadians
and reducing potential risk to the community**

Why focus on liquid chlorine?

LIQUID CHLORINE: STORED UNDER PRESSURE, SHIPPED IN BULK

A DANGEROUS RISK

When chlorine is liquefied and stored under pressure, a release will **rapidly expand** into a large deadly cloud.



HOW THE RISK IS CREATED

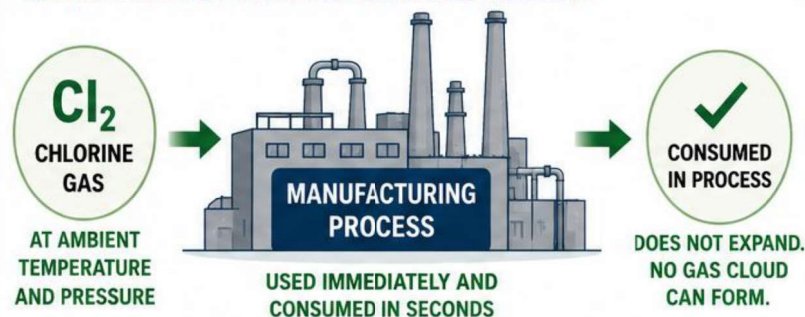


A RELEASE OF LIQUID CHLORINE CREATES AN EXTREME TOXIC INHALATION HAZARD to workers, first responders, and surrounding communities.

CHLORINE GAS: USED DIRECTLY IN A MANUFACTURING PROCESS

A SAFER, FAR LESS RISKY APPROACH

By contrast, chlorine gas used in a manufacturing process is **consumed as it is produced—IT DOES NOT EXPAND**. It is reacted and converted into other products within seconds. **THERE IS NO LARGE INVENTORY OF CHLORINE AT ANY TIME, ELIMINATING THE POTENTIAL FOR A MASS RELEASE.**



Essentially **eliminates the quantity of chlorine available** for accidental release—only a minimal, momentary amount exists in the system at any time.



Eliminates the need for bulk storage tanks and loaded chlorine railcars moving through surrounding communities.



Dramatically reduces the potential for a toxic inhalation hazard—protects workers, first responders, and surrounding communities.



LIQUEFYING CHLORINE CREATES RISK. USING IT DIRECTLY ELIMINATES THAT RISK.

What are the Risks to the Community?

- 1. A liquid chlorine release during loading**
- 2. A liquid chlorine release during storage**
- 3. A liquid chlorine release during transportation**

A liquid chlorine release during loading

- **Current situation:** Railcar loaded outside



Current loading outside

A liquid chlorine release during loading

- **Current situation:** Railcar loaded outside
- **Proposed situation:** Railcar loaded in a sealed building

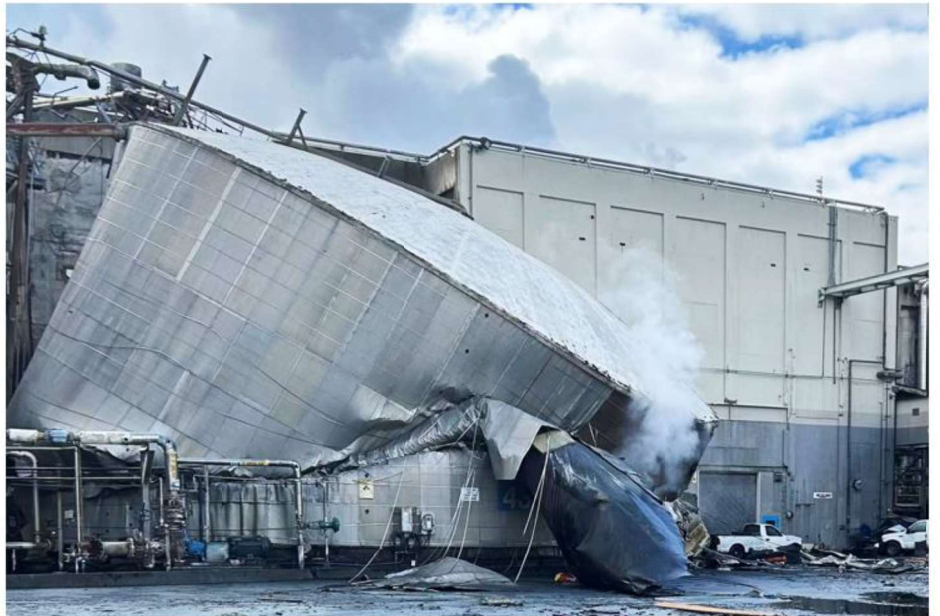
Improvement? Yes. If a railcar leaks while it is inside the building, the chlorine would be captured and neutralized.

A liquid chlorine release during **storage**

We are “effectively removing almost all onsite storage of liquid chlorine”

- **Current situation:** 32 full liquid chlorine cars (80 tonnes each) plus 1 fixed 60 tonne storage tank
= 2,620 tonnes

Recent incidents in California and Washington







**32 FULL CHLORINE
RAILCARS**

**60-TONNE
CHLORINE
STORAGE TANK**

LEASE BOUNDARY

A liquid chlorine release during **storage**

- **Current situation:** 32 full liquid chlorine cars (80 tonnes each) plus 1 fixed 60 tonne storage tank
- **Proposed situation:** Remove only the 60 tonne tank. Keep the 32 full liquid chlorine cars

No improvement

From AskChemtrade.ca (FAQ section)

What is **stored** in the railcars on your site?



While we have the space to **store** up to 270 railcars at our site at any given time, the number of cars on site can vary from one day to the next.

We looked at data from full years 2023, 2024 and the beginning of 2025, to determine some averages. Using this data, we have determined that on average, we have approximately 251 railcars on our site. Within that, however, we can go even deeper to provide additional details.

The average number of rail cars that are sitting empty on our site at any given time is 159, which accounts for over 63 per cent (63.3%) of the total cars on site. In comparison, at any given time **we have an average of 32 cars containing liquid chlorine on our site,** representing just under 13 per cent (12.7%) of all cars on our site. The remaining 24 per cent (24%) of railcars are a combination of those that contain caustic soda (27 cars) and hydrochloric acid (28 cars).

A liquid chlorine release during **transportation**

- **Current situation:** 4-5 railcars per day
- **Proposed situation:** 4-5 railcars per day

No improvement

THE NET “IMPROVEMENT”





~~Securing safe drinking water for Canadians
and reducing potential risk to the community~~

From: Michael Graveson <OMG.Consulting@outlook.com>
Sent: June 17, 2026 5:43 PM
To: Mayor and Council - DNV; DNV Input
Subject: Michael Graveson 2nd presentation
Attachments: June 16 3rd option with notes.pptx

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Thank you for the opportunity.

Michael C. Graveson

M: 702-232-9918

E: OMG.Consulting@outlook.com





TWO OPTIONS

Consideration	Option 1 Status Quo	Option 2 Closure
Jobs	✓ Preserved	✗ Lost until replaced
Tax Revenue	✓ Preserved	✗ Lost until replaced
Industrial Activity	✓ Preserved	✗ Lost until replaced
Local chlorine production	✓ Preserved	✗ Lost until replaced
Water	✓ Treated	✓ Treated
Risk associated with liquid chlorine	✗ Preserved	✓ Removed

3rd OPTION?

What if there was a 3rd option that would preserve jobs, tax revenue, industrial activity, and local chlorine production, but also eliminate the risks associated with liquid chlorine?

THE SAFE ALTERNATIVE

Chemtrade can continue producing chlorine, caustic soda, hydrochloric acid, hydrogen, and other valuable products that serve the economy, while ending the production, storage, and shipment of liquid chlorine.

VFPA DOESN'T ACCEPT THE RISK OF LIQUID CHLORINE



3rd OPTION – The Safe Alternative

Consideration	Option 1 Status Quo	Option 2 Closure	Option 3 No liquid chlorine
Jobs	✓ Preserved	✗ Lost until replaced	✓ Preserved
Tax Revenue	✓ Preserved	✗ Lost until replaced	✓ Preserved
Industrial Activity	✓ Preserved	✗ Lost until replaced	✓ Preserved
Local chlorine production	✓ Preserved	✗ Lost until replaced	✓ Preserved
Water	✓ Treated	✓ Treated	✓ Treated
Risk associated with liquid chlorine	✗ Preserved	✓ Removed	✓ Removed

THIS SUCCESSFUL MODEL ALREADY EXISTS

- Bleachtech (Ohio and Virginia)
- Carbon Free (Texas)
- Covestro (Texas)
- CPS (Colorado)
- Eddyville Chlor-Alkali or Chlorum Solutions USA (Iowa)
- Hasa (Texas)
- H. Krevit & Company (Connecticut)
- Kuehne (New Jersey)
- K2 Pure Solutions (California)
- Odyssey Manufacturing Co. (Florida)
- Sentry Industries (Florida)
- Trinity Manufacturing Inc. (North Carolina)

NO NEED TO SPECULATE

Independent Bank Analysts Have Already Assessed the Question

- Major Canadian banks and investment firms that **regularly follow Chemtrade** have evaluated the impact of **eliminating liquid chlorine**.
- Their job is to assess **earnings, business risks, and long-term commercial viability**.
- Their **credibility depends on accurately** evaluating a company's future performance.
- They are not advocates, activists, politicians, community groups, or competitors—they are financial professionals responsible for advising investors.

ANALYST CONSENSUS

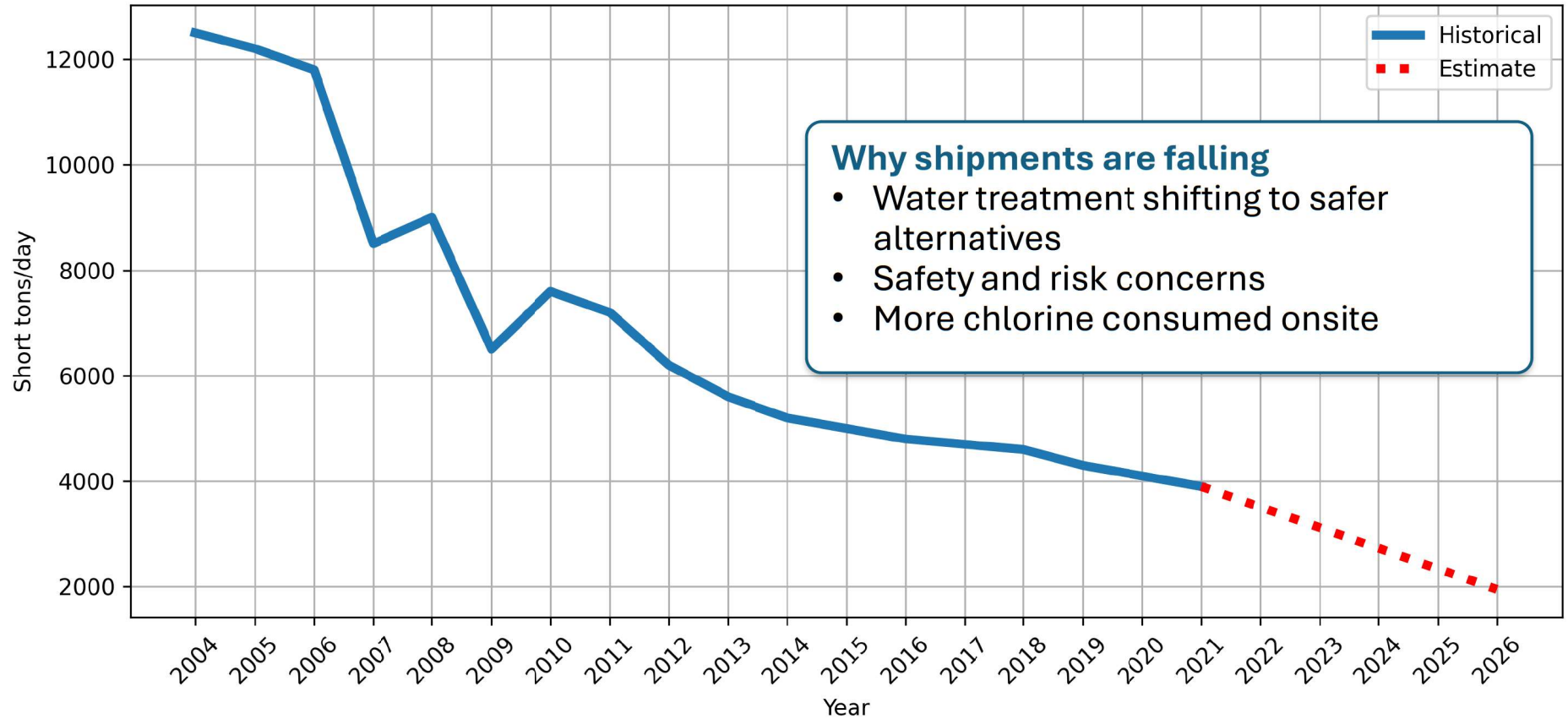
Chemtrade would remain a **commercially successful company without liquid chlorine**, including through increased production of chlorine derivatives such as hydrochloric acid and sodium hypochlorite.



RAYMOND JAMES



US Liquid Chlorine Shipped



THE REAL STORY IS CAUSTIC SODA

- But “...it would significantly impact the production of our other **products** – caustic soda and hydrochloric acid (HCl)”
- Chemtrade sells their surplus chlorine to the US to allow them to make caustic, which is by far the most profitable product they make in North Vancouver.
- With most chlorine derivatives, **you still get caustic soda.**
- **HCl would be positively impacted** because they make it with **chlorine gas, NOT liquid chlorine.** AND it allows them to make the caustic. And HCl is actually more profitable than chlorine.

DO THE B.A.T. NOW, NOT IN 2041

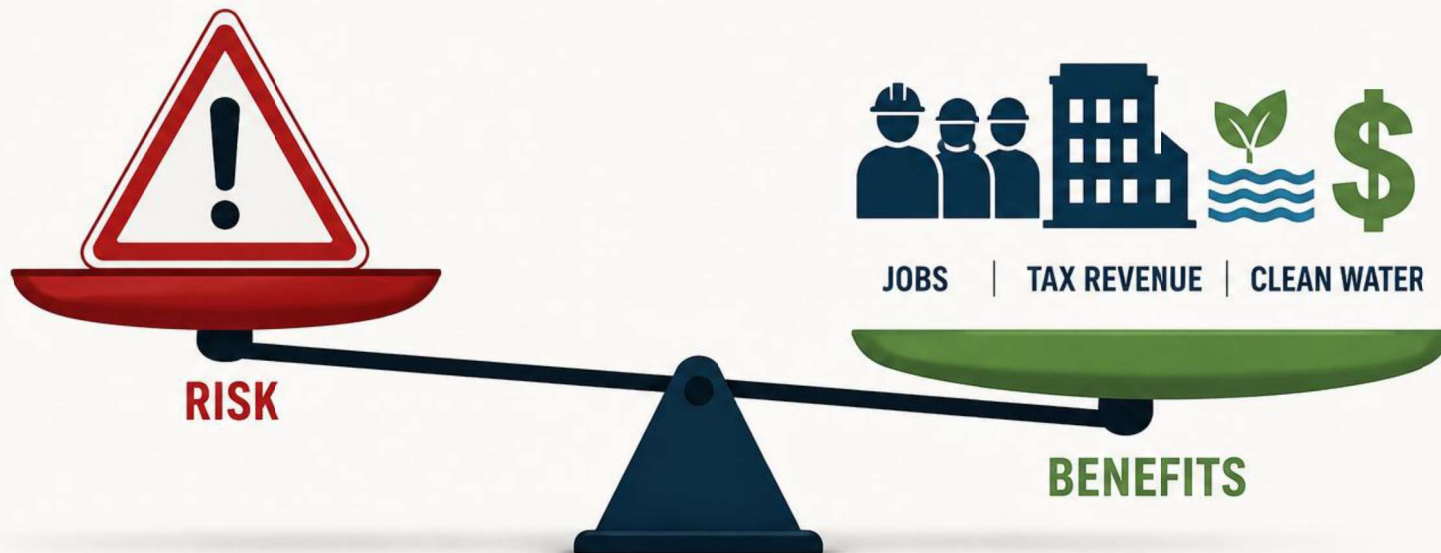
The **BEST AVAILABLE TECHNOLOGY (BAT)** for the DNV **and the community** is where Chemtrade stays open but **doesn't make, store, receive or ship liquid chlorine.**

SECTION 219 Covenant

DNV is willing to amend the bylaw to permit the use of the Lands as set out in Schedule “A”, subject to the registration of this restrictive covenant on title, including:

- (i) an express “**End Date of Chlorine Operations**” of the earlier of **December 31, 2046** or termination of the Port Lease for “Chlorine Operations”, defined as the manufacture, processing, distribution and storage of dry chlorine; with an “**End Date of Liquid Chlorine**” manufacture, processing, distribution, reception and storage of **June 30, 2030**;
- (ii) review and oversight opportunities for DNV at meaningful milestones;
- and (iii) the restriction of the manufacture, processing, distribution, or storage of liquid chlorine (on the Lands)

WHY KEEP **THE RISK** WHEN YOU CAN **KEEP** — **THE BENEFITS?** —



From: [Michael Graveson](#)
To: [Mayor and Council - DNV](#); [DNV Input](#)
Subject: Chlorine data
Date: June 17, 2026 5:47:06 PM
Attachments: [image001.png](#)
[Chemtrade and Canada Chlorine Data.docx](#)

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Please find the results attached concerning the supply and demand of chlorine in Canada, demonstrating that there is abundant chlorine available in Canada.

Michael C. Graveson

M: 702-232-9918

E: OMG.Consulting@outlook.com



Ms. Muri,

Your question on Feb 25th was “How much chlorine is destined for markets outside Canada?” And it’s an important question because you wanted to know how much of the risk caused by liquid chlorine in railcars was for essential Canadian water treatment, and how much was for the US.

Chemtrade knew exactly why you were asking that question. They had been hiding the fact that most of their chlorine goes to the US on purpose. Their answer was that 70% of their total products are sold in the US. I was the one to clarify that 90% goes to the US.

My research actually speaks to 2 issues, the first being how much of Chemtrade’s chlorine production is essential for Canada, and how much the other 3 domestic producers have.

1. How much of Chemtrade’s chlorine is destined for markets outside of Canada?

Throughout the rezoning process, Chemtrade frequently stated that it produces approximately 70% of Western Canada's chlorine and approximately 40% of Canada's total chlorine production. While those figures may accurately describe production, they do not answer the more important question of how much of that production is actually required to serve Canadian needs. Producing surplus chlorine and shipping it to the US does not serve Canadian needs.

Sourced from official US Census Bureau data and Chemtrade’s public information, the table below illustrates the distinction. In 2025, Chemtrade produced approximately 170,000 metric tonnes of chlorine, yet only approximately 8,000 metric tonnes of chlorine gas were sold in Canada, representing about 4.7% of total production. At the same time, approximately 92% of Chemtrade's liquid chlorine production was exported to customers in the United States.

Chemtrade (2025)	Amount (MT)	%
Chlorine gas production	170,000	100.0%
Chlorine gas sold in Canada	8,000	4.7%
Liquid chlorine production	101,394	100.0%
Liquid chlorine exported to U.S.	93,394	92.1%

2. Is there any other domestic (Canadian) chlorine available or would we need to import from the US?

The data below suggest there is ample domestic chlorine production available to replace the approximately 8,000 tonnes of chlorine currently sold by Chemtrade in Canada.

Total Canadian Chlorine Industry (2025)

Producer	Chlorine Gas Production (MT)
Chemtrade	170,000
Olin	120,430
Westlake	54,432
Erco	29,937
Total Canada	374,799

Total Canadian liquid chlorine exports to U.S. 171,872 tonnes = 46%

In 2025, Canadian producers exported 171,872 tonnes of liquid chlorine to the United States—more than 21 times the volume of chlorine that Chemtrade sold in Canada.

Put another way, the amount of chlorine required for western Canadian use represents only a small fraction of Canada's overall chlorine production and export capacity.

For this reason, I do not believe it is accurate to suggest that without Chemtrade Canadian water treatment would be in jeopardy or depend on imports from the US. The data indicate that sufficient domestic chlorine production exists to meet Canadian needs. That said, **Chemtrade should continue to produce the chlorine gas onsite and make the bleach used by western Canadian drinking water facilities. No need for alternative domestic or US supply.**

From: [REDACTED]
Sent: June 17, 2026 5:51 PM
To: DNV Input
Subject: 2026.06.17 - Public Hearing - (2)
Attachments: DOT-105 Rail Car Release Incidents.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

DOT-105 Chlorine Rail Car Release Incidents



Recent Chemtrade Document within DNV Package

Chemtrade:

“In fact, the QRA is conservative in nature due to the fact that the rail car release probability was based on historical release data that would have reflected older rail car design. The next generation rail cars are significantly safer but limited data is available for releases from them because **there has never been a release from a next generation car during transport.**”

Technically Correct, but ... Mis-Leading

2026 Axial Corporation
New Martinsville, West Virginia

Rupture of a **DOT-105 Rail Car**
Subsequent **Chlorine Release**

National Transportation Safety Board
Hazardous Materials Accident Report
NTSB/HZM-19/01 PB2019-100294



Axial DOT 105 Chlorine Rail Car Rupture:

- a railroad tank car sustained a **42"crack** in its tank shell
- shortly after being loaded with **80.9 Tons** of liquefied chlorine
- Over the next **2.5 hours**, the entire load of chlorine was released
- Forming a large vapor cloud that migrated along the Ohio River valley



@ +2 minutes from Chlorine Release

- 8:29 a.m. Across the 500-acre chemical manufacturing facility several in-plant gas sensors recorded chlorine concentrations above the NIOSH level of **immediately dangerous to life and health** (IDLH)
- The perimeter gas sensors also measured chlorine concentrations exceeded the US EPA Acute Exposure Guideline Level 3 predicted the general population could experience **life-threatening health effects or death** (NRC 2004).



Chlorine Impact Distance Perimeter

- The Marshall County command post was about **+4 miles** from the site
- Evacuation Zone
5-mile radius of the Axial facility
- A total of 1,864 households evacuated
- Population Density
of Marshall County
of DNV
40 people per km²
550 people per km²



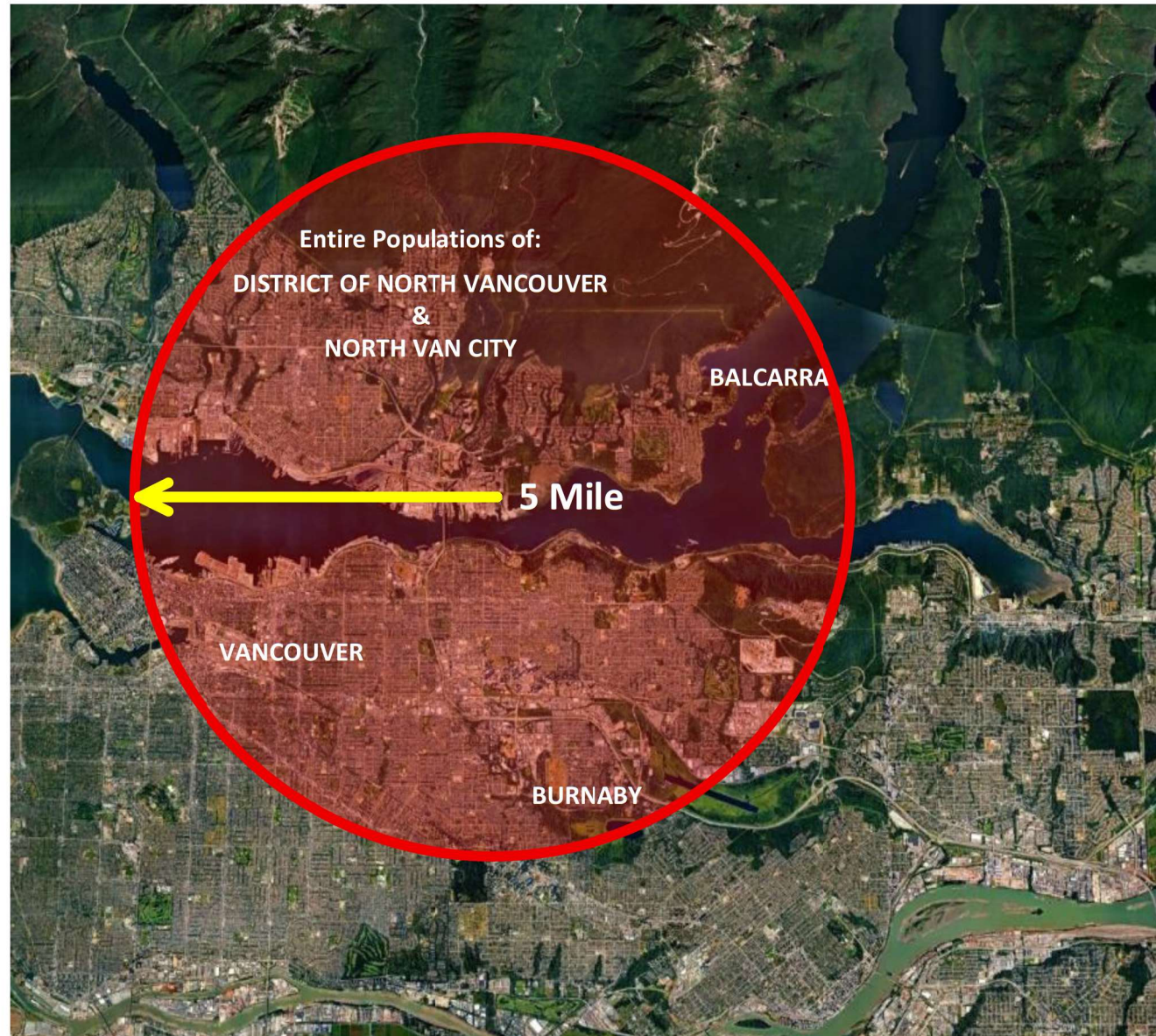
5-Mile Radius Evacuation Zone for DNV

+400,000

Resident Evacuations

Question:

What is the Detail of
that **Evacuation Plan**?



Recent Chemtrade Document within DNV Package

Chemtrade

In fact, the QRA is conservative in nature due to the fact that the rail car release probability was based on historical release data that would have reflected older rail car design. The next generation rail cars are significantly safer but limited data is available for releases from them because there has never been a release from a next generation car during **transport**.

This incident reference is omitted

Because the Rail Car was not in **TRANSIT....?**

The wordplay feels

Misleading



From: [Michael Graveson](#)
To: [Mayor and Council - DNV](#); [DNV Input](#)
Subject: 2007 DNV Council recommendation to the Vancouver Port Authority
Date: June 17, 2026 5:50:33 PM
Attachments: [image001.png](#)
[March 5 2007 Minutes.docx](#)
[Feb 27, 2007 report to council.pdf](#)

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Please find attached the minutes and report from 2007 where Council seems to have suggested their opposition to the continuation of the chloralkali plant past the then expiry date of 2018. For your convenience I have highlighted in yellow the pertinent information in the minutes.

I hope this helps.

Thank you,

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COUNCIL AGENDA/INFORMATION				
☐ In Camera	Date:		Item #	
☒ Regular	Date:	mar. 5/07	Item #	4.
☐ Agenda Addendum	Date:		Item#	
☐ Info Package	DM#		Date:	Mailbox:

 Dept. Manager	 Director	 CAO
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2007.02.28

The District of North Vancouver REPORT TO COUNCIL

February 27, 2007
File: 13.6440.40/02
Tracking Number: RCA 2006-00740

ORIGINAL
File No. <u>13.6440.40/02</u>
PLANNING Department

AUTHOR: Margaret Eckenfelder
Director, Sustainability, Planning and Development

SUBJECT: Comments on Proposed Canexus Technology Conversion Project

RECOMMENDATION:

That Council forward the following feedback to the Vancouver Port Corporation (VPA) regarding the proposed Canexus Technology Conversion Project (TCP):

District Council continues to support the key strategy and related policies of the Maplewood Local Plan, 2002 (Attachment 1) to plan for the replacement of the chemical industry in the long term with a range of industrial uses, including light industry, opening opportunities for public access to the waterfront.

Should the Technology Conversion Project proceed, Council requests that VPA ensure the following aspects are addressed:

1. The Implementation Agreement on Chlorine Storage Limitation, 1998 must be revised and agreed upon by the District and Canexus to limit fixed tank on-site chlorine storage to 60 tonnes maximum.
2. Potential implications to effective annual shipping of chlorine defined under "Normal Shipping Needs" in the Implementation Agreement need to be assessed and the District needs to be assured there will be no further significant risks from the plant beyond the Quantitative Risk Assessment (QRA) completed for the TCP by Alp and Associates in 2006. Subject to no additional, quantifiable risks, the Implementation Agreement will require amendment of the effective maximum limit on shipping to be consistent with the TCP.
3. The extension period of the lease be agreed upon by the District and the VPA and be subject to ongoing review of risks and regular QRAs.

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4. Canexus contribute to improved community emergency preparedness including improvements to the CanAlert line, coordination of "live drills" in the affected area of the Maplewood community, and funding of a local HAZMAT team.
5. Canexus to prepare and DNV to approve a societal risk assessment on specified parcels including "A" and "D" of the Maplewood Local Plan (see Attachment 4).
6. Canexus to implement recommendations for emergency operating procedures for inventory transfer and to provide fixed foam protection for the dyke around the fixed storage tank as specified in QRA Peer Review by Independent Risk Control, dated February, 2007.
7. Comments contained in this report regarding the evaluation of rail safety be addressed and measures to improve rail car safety involving inspection of cars by Procor, Canexus and CN as recommended by Doug McCutcheon and Associates in its peer review of the TCP QRA dated January 5th, 2007 be implemented.
8. Canexus to provide payment-in-lieu to the District should there be a property tax cap.

Additional comments on the TCP application are contained in this report for the VPAs consideration and response.

REASON FOR REPORT:

To convey the District's feedback on the Canexus Technology Conversion Project (TCP) to the Vancouver Port Authority as part of its Public Project Review Process.

SUMMARY:

The Vancouver Port Authority referred the application of the Canexus chemical company for an upgrade to its plant in Maplewood. The TCP is entirely on land leased to Canexus by the Port and as such, the VPA has decision making authority whether to approve the TCP application. This report provides a comprehensive review of the TCP application with recommendations and comments for Council's consideration in order to convey its feedback on the project to the VPA.

Given the breadth and complexity of the application and the review, staff will present the findings of this report (in a Power Point presentation) to Council at its March 5th, 2007 meeting. Key points are:

- The Quantitative Risk Assessment completed for the project is accurate and complete for both the 2006 and TCP conditions. Further significant reduction in risk contours is not anticipated because the storage volume of chlorine on site is minimized.
- For the current condition (2006 risk contours), the proposed land uses around a village centre according to the Maplewood Local Plan could not be realized.

- For the TCP, much of the Maplewood Plan and Maplewood Project could be realized due to the reduction in risk contours on the local community.
- Recommendations are made in the peer review of the QRA to undertake a further societal risk assessment on specific areas in Maplewood, and to improve Canexus' operation, community emergency preparedness and building design guidelines.
- The Implementation Agreement between the District and Canexus identifies a maximum allowable fixed storage volume on-site and an annual shipping volume for chlorine. These aspects would need to be addressed to the satisfaction of the District.
- Comments to further assess rail risks and to enhance rail car safety through increased rail car monitoring are provided.
- The review of the environmental analyses did not identify significant concerns, however, comments are provided to minimize impacts and enhance habitat.
- The review of traffic impacts did not identify significant concerns although further review of rail car queuing implications is suggested.
- A preliminary economic analysis of potential land value, property taxation and job implications of the TCP suggest there are significant benefits of the project and continuing the operation in its current format has negative implications.
- A sustainability analysis revealed both negative and positive aspects of the project while highlighting the need for flexibility including the elimination of this operation in the long term future. The analysis points to the need for rigorous conditions should the project proceed.

The details of this summary are contained in the following report.

BACKGROUND:

The VPA referred the application for the Canexus Technology Conversion Project to the District of North Vancouver on November 8, 2006. The TCP is entirely on land owned by the VPA which is leased to Canexus. As such, the VPA has decision-making authority on the use of its lands.

Overview: Technology Conversion Project

Canexus is a chloro-alkali manufacturing company in the Maplewood area of North Vancouver that produces chlorine, hydrochloric acid and caustics for a variety of industries and uses. This plant has been in North Vancouver since 1957. Canexus has a lease with the VPA for its current operation that extends until 2018. Canexus employs 162 persons, of which approximately one third live on the North Shore. The Plant contributes \$1.6 million annually in municipal taxes. Canexus is a member and practitioner of the Responsible Care® code of practice for industry safety.

The Technology Conversion Project involves updating the technology in the processing of chemicals at the plant which facilitates increased production. The project is proposed to commence construction in 2008 with completion and operation in 2009. It would extend the business life of the plant by more than 20 years. Key aspects of the project include:

- Converts processing from a diaphragm to a membrane technology whereby asbestos diaphragms are eliminated.
- Reduces plant footprint with the existing cell house to be demolished and a new cell house with membrane technology of smaller footprint to be constructed.
- Increases plant capacity by approximately 25% with annual chlorine production (equivalent) rising from 154,000 to 197,000 tonnes.
- Reduces greenhouse gas emissions by 80% reduction as hydrogen generated from the chemical process replaces the use of natural gas.
- Reduces on-site chlorine storage in the fixed tank by approximately 50% to 60 tonnes.
- Reduces truck transport of products by shifting to rail transport.
- Rail cars would increase from 3804 cars in 2006 to 4232 cars in 2007 to 6095 cars in 2009 with the total increase from the TCP of 1863 rail cars. This equates to an increase of 4-5 rail cars / day with an increase of 1 rail car/ day of chlorine to be added to existing trains.
- Increased production facilitates around-the-clock loading of rail cars (3 shifts) and the above-noted reduced fixed storage on site.
- The reduced storage on-site reduces the risks to the local community of potential chlorine spills associated with the plant. These risks have been quantified in a Quantitative Risk Assessment.

Technology Conversion Project Application and Analyses

As part of the project application to the VPA, a number of background analyses were completed by Canexus to assess the implications of the TCP including: a Quantitative Risk Assessment (QRA), environmental analysis, traffic study, transportation risk assessment, security assessment, transportation air emissions, archeological impacts, and other considerations such as noise and light. These are available at:
www.portvancouver.com/canexus.

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Public Consultation

The VPA undertook public consultation on the project. A presentation on the project and the consultation process was made to District Council on November 6, 2006. A public open house was held on November 23, 2006 at the Holiday Inn in North Vancouver. Written public comments were and continue to be received by VPA during the application phase. A summary of public consultation for the Canexus TCP, dated January 22, 2007 has been prepared by VPA and is available on the above website. The summary report indicates that at the date of the report, a total of 23 public comments have been received including those from the open house (64 persons attended including Canexus and VPA staff) and 13 emailed comments. Of the 13 emailed comments, nine people oppose the TCP, one indicates support and two identify concerns but do not define a position on the project. VPA has responded to all public comments and copied these responses to the District. VPA has extended invitation to consult with the Tsleil-Waututh First Nation and the Squamish First Nation. The Squamish First Nation has expressed support for the project with the request for more information and discussion of items which has been followed up on by the VPA.

Quantitative Risk Assessment

A Quantitative Risk Assessment (QRA) was prepared by Alp and Associates as part of the project application. A QRA estimates risks by identifying what can go wrong in the worst or realistic events (consequences) and then estimates how likely these events are to occur (i.e. risk = consequence $\times$ frequency). For the Canexus Plant, risks are associated with the potential loss of containment of chlorine and its impact to the health and safety of the surrounding community. Levels of risk are expressed as "risk contours" which are based on risks to individuals assuming an individual is standing stationary for 24 hours/ day. Risk contours show the level of risk to individuals moving away from the plant. A risk contour of 1×10^{-6} indicates an estimated annual level of risk for a member of the public who is inadvertently exposed to an industrial incident of one in one million chance of fatality; the 1×10^{-5} risk contour indicates an estimated annual risk of ten in one million chance of fatality.

Two previous QRAs have been prepared for this chemical plant, one in 1997 for the rezoning of lands north of the plant and one in 1994 for operational changes of the plant. The risk contours from the 1997 QRA is shown in Attachment 2. The QRA completed by Alp and Associates shows risks contours for the current (completed in 2006) plant operation and for the TCP (see Attachment 3). For the 2006, current plant operation the risk contours are approximately 150 metres closer to the plant. This change from the 1997 risk contour is due to improved modelling and specific data from the plant regarding volume of chlorine stored in the fixed tank. For the TCP, risk contours move an additional 100 metres southwards to the plant for a total of a 250 m reduction in risk contours from the 1997 QRA (Attachment 3).

The Major Industrial Accidents Council of Canada (MIACC) has defined levels of acceptable risk for communities and land use guidelines related to risk management. MIACC is considered the standard for industries and many Canadian communities in terms of risk management. The MIACC guidelines are shown in Attachment 2. In the area beyond the 10^{-6} risk contours, MIACC supports open or any land uses and densities. Between the 10^{-6} and 10^{-5} risk contours, MIACC restricts land uses to low density residential (currently defined in the Maplewood Plan as 8 units/acre), commercial, office, light industrial and parkland uses. Land uses are further restricted as they move closer to the plant.

EXISTING POLICY:

The District OCP designates the Canexus/VPA lands as Industrial which is defined as *"Areas providing for a range of manufacturing, warehousing, transportation and port industrial uses."*

The Maplewood Local Plan designates the VPA portion of the Canexus site as 'Port Industrial' and the balance of the property as 'Medium Industrial'. Port Industrial is defined as *"Port-oriented heavy industry with some rail/water transport needs.... Contains heavy chemical industries which will be eventually relocated"*. Medium Industrial is defined as *"Medium manufacturing and storage including "Minimal office space."*

The Plan includes a Vision of a 'complete and balanced community' based on increased residential densities and local employment opportunities to complement a new Village commercial centre. However, due to the risks of the Canexus Plant and the 1997 QRA risk contours, the Plan limits new residential development within the central area to a maximum of 8 units per acre in accordance with the MIACC guidelines. New development is to be environmentally sound and there is a strong desire for improved access to the waterfront.

The Plan contains a number of policies which are applicable to the Canexus TCP, included as Attachment 1. However, a Key Plan Strategy is *"to plan for the replacement of the chemical industry in the long term with a range of industrial uses, including light industry"*. This would apply to ERCO Worldwide and Newalta as well as Canexus. The Plan's policies do, however, promote upgrading and business investment in such industries in the interim recognizing the positive contributions to job creation and municipal taxation.

The Maplewood Eco-industrial Project further identified opportunities to advance the redevelopment of Maplewood as a complete and sustainable community with enhanced industrial uses. While not adopted policy, the project includes design concepts from a design charrette/ workshop in 2003 which show the port area be retained for port-industrial uses in the long term with value-added manufacturing and heavy and light industry (including on the underutilized/ vacant Canexus lands) with a vibrant and dense village centre containing commercial, residential and office uses. This project envisages increased residential densities that are dependent on a significant reduction or elimination of risk contours from the Canexus Plant.

ANALYSIS:

Peer Review of QRA

As part of the District's review of the TCP application, Independent Risk Control (IRC), Dr. Norman Nibber was retained to conduct a peer review of the QRA. VPA similarly retained Doug McCutcheon of the University of Alberta to peer review the QRA. Both peer reviews found the QRA prepared by Alp and Associates for the 2006 and TCP condition to be complete and accurate with risk contours identified correctly. IRC further indicated that future significant reductions in risk contours were not anticipated as on-site chlorine storage is minimized.

Land Use Implications

IRC assessed the land use implications of the QRA with regard to the ability to achieve land uses within the Maplewood Plan and the Maplewood Project.

For the 2006 condition, IRC found that the movement of the 10^{-6} risk contour to Old Dollarton Road will facilitate "open" uses north of Old Dollarton including parcels B, J, F and part of G from the Maplewood Local Plan (Attachment 4). This would facilitate more dense housing options such as townhouse and apartments on some areas as indicated in the Maplewood Local Plan. Areas A, C, D, H, I, E and the lower portion of G would remain for low density residential (currently defined at 8 units/ acre), commercial, office, light industrial and park uses. Overall, the proposed "Village Centre" around Front Street and south of Old Dollarton could not effectively be achieved. While the commercial and office land uses proposed in this area could be implemented, residential development would be limited to low density.

For the TCP condition, IRC assessed the 10^{-6} risk contour as effectively moving to Front Street. Risk contours are defined in the peer review as broad bands and there is a degree of flexibility in their interpretation with regard to land uses as they are intended to show transitional areas. As a result, parcels B, J, F, I, E, H, G and C from the Maplewood Plan (Attachment 4) could accommodate open land uses with the TCP. Areas A and D would remain restricted to low density residential, commercial, office, light industrial and park uses.

With the TCP, most of the Maplewood Plan and much of the Maplewood Project vision could be achieved. The remaining restricted areas are: Area A which is intended for multi-family residential and Area D which is intended for mixed-use residential commercial. While commercial uses could be accommodated, residential would be restricted to low density. Design concepts within the Maplewood Project also included mixed use residential-commercial and industrial development along the Seymour River. This use could not be achieved with the location of the risk contours resulting from the TCP.

Independent Risk Consultants Recommendations and Considerations

IRC has recommended that a "Societal Risk" assessment be undertaken in relation to the 2006 and TCP QRAs for specific areas of Maplewood to assist in land use planning. A societal risk assessment looks at risks to society (versus individual risk) and considers the specific number of people and their day-and-night movements in the assessment of risks. It is a more precise means of determining appropriate land use densities in relation to the MIACC guidelines. As previously indicated, risk contours are based on an assessment of individual risks whereby an individual is assumed to occupy space and be stationary for 24 hours/ day. Societal risk assessment can be undertaken after risk contours are determined. IRC suggests a societal risk assessment would be a more accurate, scientific approach to determine appropriate densities on specific parcels such as Area A and D within the Maplewood Local Plan area to better assess land use implications of the TCP around the proposed Village Centre.

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Additional recommendations from IRC's peer review are:

Emergency Operating Procedures (EOPs) for Inventory Transfer – This involves procedures and training for all staff to de-inventory the main chlorine storage or other vessels should they leak. While Canexus has Safe Operating Procedures (SOPs) for de-inventorying storage vessels, EOPs provide an additional level of safety and training.

Fixed Foam Protection – This involves installation of a foam deluge system around the 300-tonne storage tank dyke to manage the spread of chlorine vapours should there be a leak from the tank into the dyke.

New Building Design Measures – IRC suggests that the District encourage developers of new constructions in the area located between the 10^{-6} and 10^{-5} risk contours engage qualified professionals to prepare plans for the detection and management of chlorine. Building design measures may include shelter-in-place facilities, HVAC systems with chlorine detection, shut-off mechanisms, and appropriate window seals, etc.

Community Emergency Response – IRC assessed emergency response plans of Canexus and the community which engage Canexus, the North Shore Emergency Management Office, the Fire Department and the RCMP. While IRC found emergency response plans to be adequate, it is suggested that measures to enhance communications and surveillance and practice "live drills" for a chlorine spill scenario in the community would be beneficial.

Rail Risk Assessment

The TCP application assessed the risks of rail transport of products from Canexus. The assessment notes the incidence of rail accidents in Canada where dangerous goods have been released is very low and equals 0.07×10^{-6} for a 5-year average per one million train miles with no fatalities or injuries reported. The peer review completed by Doug McCutcheon reviewed the rail risk assessment and concluded that Canexus meets the Responsible Care Standard for rail loading and shipment operations and that the risks are considered acceptable. Recommendations to further monitor rail cars for malfunctions prior to loading (by Procor), during and following loading (by Canexus) and for shipment on the train (by CN) were made by McCutcheon. DNV staff support these additional measures being taken.

In addition, DNV staff comments on the rail risk assessment are:

- The measure of 5 year average/ million train miles used in the assessment may not be the most appropriate as accidents are more likely to occur in train yards and rail crossings. The evaluation should consider this.
- The rail risk assessment should consider broader information and local concerns. There are local concerns regarding recent derailments of CN trains that are not reflected in the report. Staff also reviewed a recent report from the Centre for Disease Control which identified several chlorine spills from rail cars in the US between 2002 and 2005 with resulting human impacts. As goods are shipped from Canexus to Canada and the US, the rail risk assessment should consider the relevancy of the broader data.

Environmental Analysis

Staff has reviewed the Environmental Analysis Report and the Transportation Air Emissions Inventory in the Canexus application and provide the following comments to the VPA:

- **Habitat and Landscaping** – The project should include a comprehensive landscape plan to “green” the site overall, with particularly attention to the northern portion of the property with habitat enhancements to the marine foreshore nearby.
- **Site Contamination** – The report describes the contamination of the land and the groundwater of the Canexus site. There are concerns for the contaminated groundwater impacting Burrard Inlet. Since the project occupies federally owned land, the VPA have a program in place to deal with the contamination issues on this property. The TCP project does not affect the ongoing investigation and remediation efforts that are in place for this contamination. The VPA also have provisions for clean-up of contamination in their lease agreement with Canexus.
- **Effluent Permits** - The Ministry of Environment effluent permit for Canexus authorizes discharges to Burrard Inlet with maximum levels of copper, nickel, zinc and chlorine defined for the marine ecosystems. Staff feels that the overall environmental loading of the Inlet should be considered by the Ministry in the review of the effluent permit for Canexus with specific attention to the discharge levels for copper and chlorine. The actual discharge levels for all of the parameters are likely lower than currently allowed by the permit and, if so, the permit should state the lower levels that can be achieved rather than simply allowing a continuous maximum.
- **Air Emissions** - The overall 80% reduction of greenhouse gas (GHG) emissions due to the improved energy efficiency of the operation is very positive. The Transportation Air Emissions Inventory also analyzed the direct GHG contributions from on-site equipment which indicated a 4% increase in GHG due to increased land-based activity. However, the analysis did not consider the effect of air emissions from deep sea vessels. It does state that emissions are estimated to increase by 20% due to increased deep sea vessel traffic. Marine vessels contribute significantly to the discharge of both GHG emissions and other pollutants of concern, such as particulate matter and sulphur oxides. The contribution of the deep sea vessels should be part of this assessment and quantified. While reductions to GHG emissions will remain highly significant overall, a “balance sheet” which considers all of the above components should be included as there could be pollution effects due to the increased activities, primarily by marine vessels.

Traffic Impact Study

A Traffic Impact Study was prepared by UMA Engineering /Associated Engineering Consultants for the proposed TCP. The study reviewed the traffic impacts of the project on road, rail, and marine traffic in the study area including current day, 2008 construction, 2009 operation and ten years after opening.

Following conversion, all increased production will be shipped by rail or barge, and truck traffic will actually decrease from 4,692 trips in 2005 to 2,941 in 2007. The modal shift away from trucks results in increased transport by rail as noted in “Overview of Technology Conversion Project” above.

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To manage transportation demand, the Traffic Impact Study encourages Canexus to stagger shift times away from peak hours. Rail movements should also be outside peak hours. Transport Canada only permits at grade road/rail intersections to be closed to vehicular traffic for a maximum of five minutes, resulting in minimal impacts to traffic.

Overall, District staff found there would be no significant impacts on the District road network due to this project. The queuing analysis at the rail crossing needs to be put into context by showing where the queues extend to and whether they interfere with any intersections in the District. The assumption of CN adhering to the 5-minute closures at the at-grade crossing should be field-verified.

Implementation Agreement

In 1998 the District entered into an agreement with Canadian Occidental Petroleum Ltd. ("CanOxy") entitled "Implementation Agreement: Chlorine Storage Limitation, Rezoning Dollarton Highway." Execution and delivery of this agreement by CanOxy was a precondition to the rezoning of land owned by CanOxy adjacent to the plant site. The agreement remains in force and binds Canexus.

The main purpose of the Implementation Agreement is to implement limits on the storage of chlorine on the plant lands. There are a number of storage limitations in the agreement, but the most important limitation is that on-site fixed tank storage must not exceed 300 tonnes. Prior to the agreement, on-site fixed tank storage capacity was roughly 1500 tonnes.

The Municipal Solicitor has advised that the agreement also strongly supports an effective contractual limitation of 160,000 tonnes per year on shipping of chlorine by rail from the plant lands. This is important because Canexus has stated that for the TCP to be economically viable, they need the flexibility to produce and ship more than 160,000 tonnes of chlorine if market conditions for hydrochloric acid and caustic were to weaken. In this regard, we understand that after the TCP is complete, Canexus would have the ability and the plant capacity to produce and ship about 180,000 tonnes of chlorine per year.

To be fair, Canexus has advised that it is their intention to produce and ship no more than 160,000 of chlorine per year, with the balance of product being hydrochloric acid and caustic. But this does not alter the fact that capacity at the plant will increase to 197,000 tonnes of product per year (representing a combination of chlorine, hydrochloric acid and caustic) if the TCP proceeds.

Two important points arise as a result of the foregoing:

- If the TCP is to proceed then the Implementation Agreement needs to be revised to limit fixed tank on- site storage to 60 tonnes maximum; and
- Before the TCP proceeds the Implementation Agreement needs to be revised to increase the effective maximum limit on shipping from 160,000 tonnes of chlorine per year to at least 180,000 tonnes of chlorine per year.

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Economic Assessment

District staff from Finance undertook a preliminary economic analysis related to property and land use implications in the current scenario, with the TCP and without Canexus. From the District's perspective there are four areas of economic impact that the Canexus TCP project potentially impacts: (1) District owned land values; (2) private property land values; (3) property tax revenue; and (4) economic development (job creation).

With the current risk contour lines, the District is not restricted in the development of the majority of its residential landholding in the Maplewood area. Consequently the Canexus TCP project or the presence of Canexus's current operations do not materially impact the District owned land values.

The shift of the risk contour lines from Old Dollarton to Front Street (as allowed by the TCP project) would potentially increase the value of privately owned property by approximately \$80 million. The elimination of the risk contours (through cessation of operations) would benefit private property owners by an additional \$20 million.

From a property tax perspective, the assessable value of the improvement will not be known with certainty until the new plant is constructed. Furthermore, with the current legislative uncertainty concern Port property taxation, it is hard to predict applicable future tax rates for facilities located on Port land. However, having said that, with some consideration of the revenue risk, there is the potential for a \$2 – 4 million increase in annual property tax derived from the significant new investment into major industrial land. This contrasts with the potential \$200k increase in tax revenue derived from the increased residential densification that would be allowed by the elimination of the risk contours. This \$200k increase is predicated on the current Canexus lands being able to generate a similar tax profile to the existing operations. Given existing site contamination concerns, there is the real risk that the absence of Canexus would jeopardize \$1.6 million of current tax revenues for a number of years while the site remediation takes place.

From an economic development viewpoint with a primary focus on total number of jobs, the Canexus operations both with and without the TCP project are projected to remain at approximately 162 jobs. The redevelopment of Canexus controlled property to other major and light industrial uses (assuming market demand), would potentially increase the employment density and create a net increase of 500 – 1,200 new positions. Again, this potential is at risk due to the contamination issues associated with the Canexus site.

Summary of Financial Implications

	No Canexus	Canexus (Current)	Canexus (TCP)
DNV Property	-	-	-
Private Property	\$100m	-	\$80m
Property Taxes	\$200k / yr	-	\$2 – 4m / yr
Jobs	500 – 1,200+	-	-

Sustainability Analysis

In November of 2004, Council resolved to adopt The Natural Step sustainability principles as guiding objectives for long-term strategic planning (see Attachment 5). The four principles are system-based conditions necessary for sustainability. In 2005, Council articulated a vision, "*By 2020 we will be recognized among the most sustainable communities in the world.*" A sustainability framework which identifies how District policies, plans, projects and works are aligned with sustainability objectives has recently been prepared. The Maplewood Project and vision is a component of this framework.

The following is a brief evaluation of the Canexus TCP based on The Natural Step principles:

1. *To eliminate fossil fuel dependence and wasteful use of scarce metals and minerals*
 - The TCP involves an 80% reduction in greenhouse emissions and is not dependent on scarce metals and minerals for chemical production.
2. *To end dependence upon persistent chemicals and wasteful synthetic substances*
 - Chemical products produced by Canexus include chlorine, hydrochloric acid and caustics (e.g. sodium hydroxide). These products are used for a variety of processes and products. For example, chlorine is used to help purify the region's water supply; other products are used in the pulp and paper industry and in the production of many synthetic substances. The plant does contribute to the dependence of persistent chemicals in the environment.
3. *To prevent encroachment upon nature: land, water, wildlife, forests, soil and ecosystems.*
 - The project will result in a reduction in the overall footprint of the plant and a reduction in greenhouse gas emissions. However, the plant site is contaminated from previous use and impacts ground water. It also discharges effluent into Burrard Inlet as permitted by the Ministry of Environment. Overall, the plant will continue to impact local ecosystems, but these impacts are reduced over the current operation through the TCP.
4. *To meet human needs fairly and efficiently.*
 - Based on the adopted Maplewood Local Plan, the District does not see the chemical industry in Maplewood as an appropriate use in the long term and the plan sees a transition to cleaner, non-hazardous industries when chemical companies leave. This plant was established in 1957 before there was significant population in the local community or the District. It does contribute significantly to the local economy, tax and job base.
 - The plant presents a safety risk on the local community due to the potential for a chlorine spill. The TCP reduces the risk of the plant substantially, and a peer review of the QRA for the District supports the TCP from a public safety perspective. However, the TCP extends the life of the plant by more than 20 years. If the TCP does not proceed, the plant will continue to operate in its current format with the current lease extending to 2018. The current operation has a greater risk and land use impact than the TCP.

- The plant produces chemicals that are both hazardous and which contribute to public health and safety (e.g. chlorine for water purification).
- The plant contributes significantly to the local economy and municipal tax base. The TCP would likely result in a significant increase in municipal tax contributions which could be used towards the enhancement of the Maplewood community. The TCP would also largely allow for the realization of a village centre in Maplewood.

Based on this cursory analysis, it is apparent that this project has both negative and positive attributes from a sustainability perspective. Under the adopted Maplewood Local Plan, this use would not be supported in the community if it was being proposed today. However, the plant has been in existence for 50 years and the TCP involves a technology upgrade that reduces public risks significantly. If the TCP does not proceed, Canexus has indicated they will continue to operate as long as possible. The current lease extends to 2018 and staff are not aware if renewal provisions exist with VPA. There is also a risk that if the plant were to close in the foreseeable future, the existing contaminated site would remain and the site would be an unused, "brownfield" for a significant period while remediation was coordinated and implemented. A key aspect from a sustainability perspective would be to ensure that if the TCP occurred, a "flexible platform" existed whereby the potential for the elimination of Canexus in the longer term future remained. This could be retained through the provision of specific conditions of the lease including limiting the period of extension.

Timing/Approval Process: The Vancouver Port Authority's Public Review Process on the Canexus application is nearing completion and the Port is awaiting the District's feedback.

Concurrence: The information contained in this report has been developed in concurrence with various District divisions and departments including: Sustainability, Planning and Development; Legal; Finance; and Environment, Parks and Engineering.

Conclusion: The TCP project is under the jurisdiction of the VPA and the project has been referred to the District for comment as part of the Port Authority's Public Review Process. This report provides a comprehensive review of the Canexus TCP project and identifies specific comments and proposed project conditions for the consideration of Council to forward as its feedback to the VPA.

Options:

1. Council may forward the following feedback to the Vancouver Port Authority regarding the proposed Canexus Technology Conversion Project:

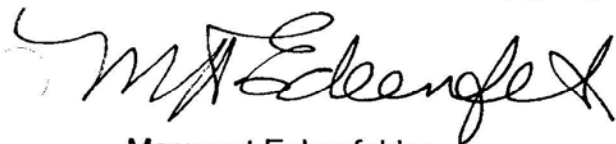
District Council continues to support the key strategy and related policies of the Maplewood Local Plan, 2002 (Attachment 1) to plan for the replacement of the chemical industry in the long term with a range of industrial uses, including light industry, opening opportunities for public access to the waterfront.

Should the Technology Conversion Project proceed, Council requests that VPA ensure the following aspects are addressed:

- a) The Implementation Agreement on Chlorine Storage Limitation, 1998 must be revised and agreed upon by the District and Canexus to limit fixed tank on-site chlorine storage to 60 tonnes maximum.
- b) Potential implications to effective annual shipping of chlorine defined under "Normal Shipping Needs" in the Implementation Agreement need to be assessed and the District needs to be assured there will be no further significant risks from the plant beyond the Quantitative Risk Assessment (QRA) completed for the TCP by Alp and Associates in 2006. Subject to no additional, quantifiable risks, the Implementation Agreement will require amendment of the effective maximum limit on shipping to be consistent with the TCP.
- c) The extension period of the lease be agreed upon by the District and the VPA and be subject to ongoing review of risks and regular QRAs.
- d) Canexus contribute to improved community emergency preparedness including improvements to the CanAlert line, coordination of "live drills" in the affected area of the Maplewood community, and funding of a local HAZMAT team.
- e) Canexus to prepare and DNV to approve a societal risk assessment on specified parcels "A" and "D" of the Maplewood Local Plan (see Attachment 2).
- f) Canexus to implement recommendations for emergency operating procedure for inventory transfer and to provide fixed foam protection for the dyke around the fixed storage tank as specified in QRA Peer Review by Independent Risk Control dated February, 2007.
- g) Comments contained in this report regarding the evaluation of rail safety be addressed and measures to improve rail car safety involving inspection of cars by Procor, Canexus and CN as recommended by Doug McCutcheon and Associates in their review of the TCP QRA dated January 5th, 2007 be implemented.
- h) Canexus to provide payment-in-lieu should there be a property tax cap.

Additional comments on the TCP application are contained within this report for the VPAs consideration and response. **Alternatively,**

2. Council may provide other feedback on the project as determined by Council.
Alternatively,
3. Council may request further follow-up by staff, and/or the VPA, and/or Canexus.
Alternatively,
4. Council may choose to provide no comment on the project as it is under the jurisdiction of the VPA.



Margaret Eckenfelder
Director, Sustainability, Planning and Development

REVIEWED WITH:	REVIEWED WITH:	REVIEWED WITH:	REVIEWED WITH:
☐ Sustainable Community Development	☐ Clerk's Office	External Agencies:	Advisory Committees:
☐ Development Services	☐ Corporate Services	☐ Library Board	☐ _____
☐ Utilities	☐ Communications	☐ NS Health	☐ _____
☐ Engineering Operations	☒ Finance	☐ RCMP	☐ _____
☐ Parks & Environment	☐ Fire Services	☐ Recreation Commission	
☐ Economic Development	☐ Human resources	☐ Other: _____	
	☐ ITS		
	☐ Solicitor		

RECEIVED

FEB 28 2007

PLANNING & DEVELOPMENT
CITY OF CALGARY

ATTACHMENT 1 - MAPLEWOOD LOCAL PLAN OBJECTIVES AND POLICIES

The following are policies excerpted from the Maplewood Local Plan relating to the Canexus TCP:

Environment and Conservation

Policy 4.5.2 Encourage the development of site remediation plans for all polluted industrial sites with, approximate timelines, to assist in succession planning of such sites.

Policy 6.1.8 Residential densities in excess of MIACC guidelines will not be supported in lower Maplewood in all areas designated RM on the Plan Map. This means that the allowable residential development shall not exceed the projected number of units listed on Table 1. These density restrictions to be removed when production of chlorine ceases permanently at the Nexen Inc chemical plant, or reviewed should Nexen Inc make plant changes that reduce risk.

Industrial

Key Plan Strategy: to plan for the replacement of the chemical industry in the long term with a range of industrial uses, including light industry, opening opportunities for public access to the waterfront.

Policy 9.2.1 Upon redevelopment, chemical industry lands lying south of the CNR tracks should be considered for port-related uses in the short to intermediate term and for high tech marine R&D or other suitable port-related uses such as small specialised niche terminals, marine construction and light industrial uses in the long term.

Policy 9.2.2 All heavy industrial land occupied by chemical industry uses shall be remediated once vacant to allow for replacement by lighter industrial uses.

Policy 9.2.3 Ensure that no hazardous industries replace the vacating chemical industry.

Policy 9.2.4 In the meantime support existing heavy industry by creating a positive business climate that encourages upgrading of equipment and investment in such businesses and that further recognises the positive contributions in job creation and municipal taxes of these businesses.

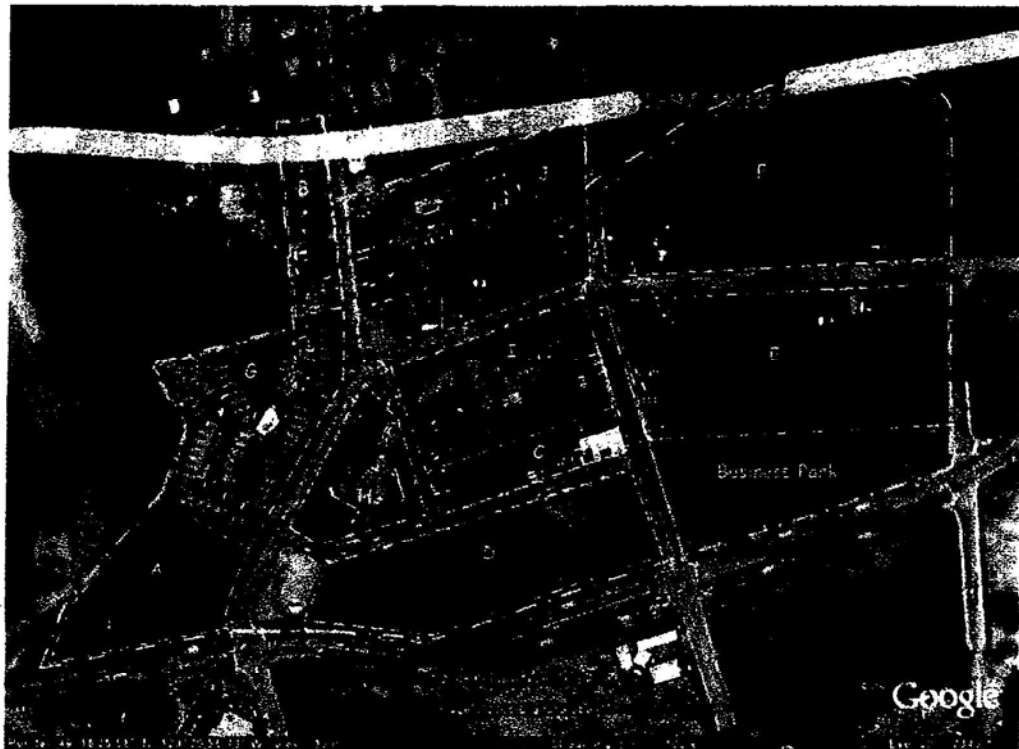
Policy 9.3.3 Fashion better public access to the waterfront by working with Industry to effect more public access to industrial sites and to the industrial waterfront where safety allows opportunities for viewing platforms. Opening up closed street ends and re-creating historic street ends should all be considered.

Policy 9.5.1 All uses within, and surrounding, the Nexen Inc chemical plant shall be governed by the standards set by MIACC, until the plant ceases operation.

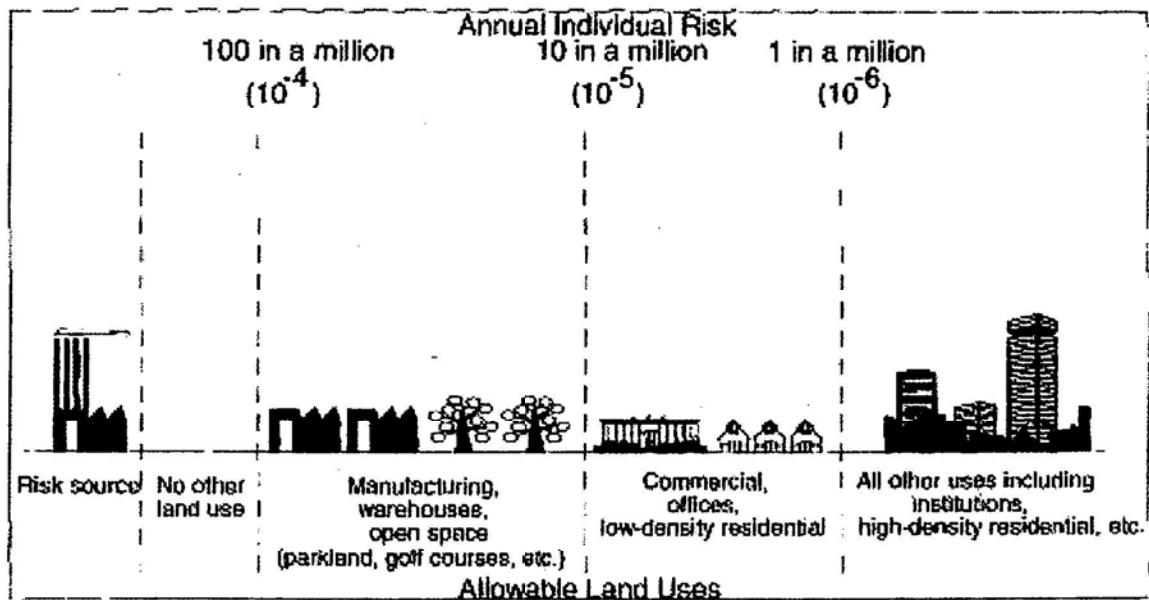
Policy 9.5.2 Minimize the manufacture, storage and transportation of hazardous materials within the community.

ATTACHMENT 2 - 1997 Quantitative Risk Assessment (QRA) and the Major Industrial Accidents Council of Canada (MIACC): Allowable Land Use Diagram

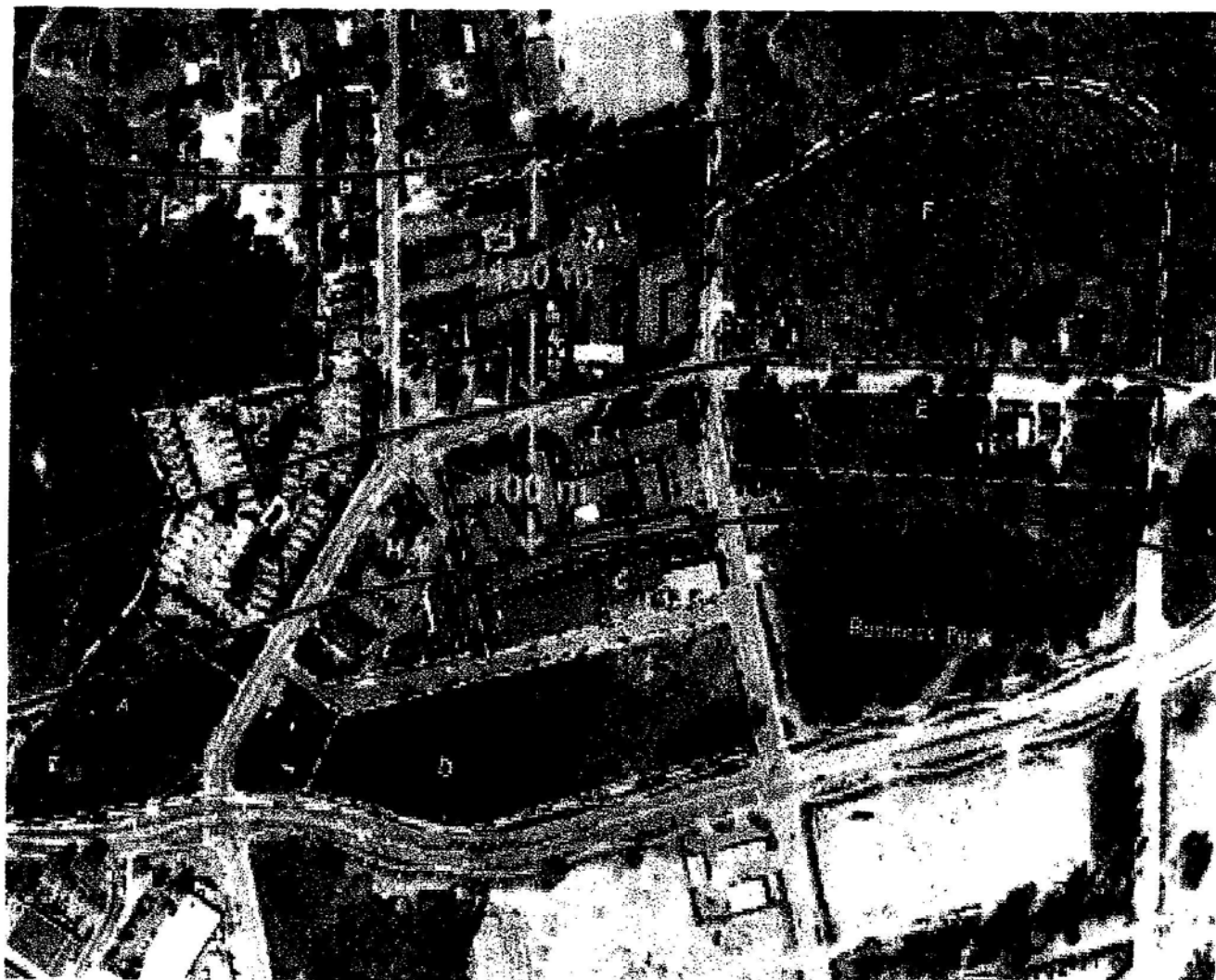
1997 QRA



Major Industrial Accidents Council of Canada (MIACC): Allowable Land Use Diagram



ATTACHMENT 4 – Comparison of the Quantitative Risk Assessment Contours (QRA) for 1997, 2006 and the Technology Conversion Project (TCP)



Attachment 5 - The Natural Step Conditions

File 01.0620.20/001.000

Tracking number 2004-01216

Submitted by Councillor Nixon

At the regular meeting of Council November 1, 2004 it was,

Moved by Councillor NIXON, Seconded by Councillor MCKEON HOLMES and CARRIED

WHEREAS there are a number of human activities that are unsustainable over time;

AND WHEREAS a number of human activities flaunt the basic laws of physics, biology and ecology;

AND WHEREAS human society consistently mines and brings into use substances formed below the earth's surface, many of which do not degrade, and many of which are known to be toxic;

AND WHEREAS human society continues to manufacture synthetic substances such as chemicals that do not occur in nature, and which accumulate faster than they degrade;

AND WHEREAS human activity is breaking down by depletion and destruction, natural systems such as land, water, forests, soil and ecosystems faster than their systems can renew themselves;

AND WHEREAS 80% of the world's wealth and resources is controlled by 20% of the population;

THEREFORE BE IT RESOLVED THAT the Council of the District of North Vancouver adopt the following as guiding objectives in its long-term strategic planning:

- 1. to take the necessary actions over time to eliminate our community's contribution to fossil fuel dependence and to the wasteful use of scarce metals and minerals;**
- 2. to take the necessary actions over time to eliminate our community's contribution to dependence upon persistent chemicals and wasteful use of synthetic substances;**
- 3. to take the necessary actions over time to eliminate our community's contribution to encroachment upon nature, meaning: land water, wildlife, forests, soil and general ecosystems; and**
- 4. to take the necessary actions over time to meet human needs fairly and efficiently;**

AND FURTHER BE IT RESOLVED THAT the Council of the District of North Vancouver agrees to provide funds to a maximum of \$5,000 in order to facilitate a presentation of the *Natural Step for Communities Framework* to Council and the wider community at a public forum to be held early in January 2005. The *Natural Step for Communities Framework* being one successful method by which the long-term guiding objectives may be attained

Click here to view the entire meeting: 

MINUTES of the Regular Meeting of the Council for The Corporation of the District of North Vancouver held in the Council Chamber of the Municipal Hall, 355 West Queens Road, North Vancouver, B.C. on **Monday, March 5, 2007**, commencing at 7:00 p.m.

PRESENT:

Mayor: Richard Walton

Councillors: Janice Harris, Robin Hicks, **Mike Little**, Doug MacKay-Dunn, **Lisa Muri**, Alan Nixon

Staff: Mr. J. Ridge, Chief Administrative Officer
Ms A. Hilsen, Municipal Clerk
Ms N. Deveaux, Director of Financial Services/Chief Financial Officer
Mr. J. Dioszeghy, Director of Environment, Parks & Engineering Services
Ms M. Eckenfelder, Director of Sustainability, Planning and Building
Ms C. Grant, Manager - **Corporate Planning & Projects**
Ms S. Haid, Manager - Sustainable Community Development
Mr. D. Allan, Senior Development Planner
Mr. P. Chapman, Social Planner
Mr. R. Danyluk, Section Manager – Financial Plan and Cost Management
Mr. R. Parr, Municipal Solicitor
Mr. J. Rice, Tourism, Arts and Cultural Development Coordinator
Mr. D. Sewell, Section Manager – Business Services
Ms K. Arscott, Council Clerk

General Matters

Public Input

1. Mr. Tom Young, 2000 Block Dollarton Highway, regarding Item 4.
 - Spoke against the proposed Canexus conversion project commenting that any expansion or conversion is contrary to the Official Community Plan, and against the wishes of the community.
2. Mr. John Walkley, 300 Block Seymour River Place, regarding Item 4.
 - Expressed opposition to the proposed Canexus conversion project.
 - Rejected any expansion of chlorine manufacture and the transportation of chlorine.

- There is no place for a chlorine plant in perpetuity near the densely-populated area of Maplewood and its environs.
3. Mr. Derek Lunden, 1100 Block Silverwood Crescent, regarding *The Super Cities Walk for Multiple Sclerosis* at Ambleside Park on Sunday April 22, 2007.
- Invited members of Council and the community to participate in the 10th anniversary of this fundraising event. Further information/on-line registration is available at supercitieswalk.com or at 1-800-268-7582.
3. Mr. David Cook, 900 Block Lytton Street, member of Parks & Natural Environment Advisory Committee representing the Alpine Recreational Reference Group, and Director of the Vancouver Natural History Society.
- Requested that the Vancouver Natural History Society be included in ARRG as a stakeholder.

Delegation

Mr. Peter Thompson, Community Monitoring Advisory Committee, Seymour-Capilano Water Utility Projects, regarding CMAC Report on 2006 Activities and Results File 01.0360.20/067.000

Email: [Mr. Peter Thompson, February 14, 2007](#)

Mr. Peter Thompson, Community Monitoring Advisory Committee, appeared before Council to present CMAC's 2006 *Activities and Results* report on the Seymour-Capilano Water Utility Projects. CMAC is a District of North Vancouver Council appointed committee of community representatives from the Capilano and Seymour areas who provide a community perspective to both the Greater Vancouver Regional District and the District of North Vancouver on current and planned water utility construction projects.

Mr. Thompson indicated that on a project specific basis, CMAC has addressed the following agenda items:

- Seymour-Capilano Filtration Project - Updates and progress
- Seymour Water Main Project/Lower Seymour Conservation Reserve (LSCR) Access Improvements
- Seymour Falls Dam Seismic Upgrade Project.

Mr. Thompson also provided clarification on the *Assessment of Results and Challenges – 2007 to Project End* and invited the public to read the report in its entirety or to view the Council meeting on-line at www.dnv.org March 5, 2007 Regular Council Meeting.

Mayor Walton, on behalf of Council and the community, expressed appreciation to Mr. Thompson for his in-depth presentation.

Moved by Councillor MURI, Seconded by Councillor HARRIS and CARRIED
THAT the delegation of Mr. Peter Thompson, Community Monitoring
Advisory Committee, regarding Seymour-Capilano Water Utility
Projects, be received.

Minutes

Moved by Councillor MURI, Seconded by Councillor LITTLE and CARRIED
THAT

1. the Minutes of the Regular Council Meeting held February 19, 2007, be ADOPTED;
2. the Minutes of the Special Financial Plan Meeting held February 13, 2007 be ADOPTED;
3. the Minutes of the Council Workshop held February 12, 2007 be RECEIVED; and
4. the Report of the Public Hearing held February 27, 2007 on Bylaw 7646 be RECEIVED.

Release of Special (Closed) Meeting Decisions

February 19, 2007

Municipal Library Board Appointment

THAT

1. *the applications for the vacancy on the Municipal Library Board, as attached to the February 9, 2007 report of the Deputy Municipal Clerk, be received;*
2. *Corporate Policy 1-0360-3, which allows Council seven days to nominate other interested individuals to the committee, be waived;*
3. *Mr. Areef Abraham be appointed to the Municipal Library Board, as a member at-large, for a two-year term ending December 31, 2008, as determined by secret ballot.*

Council Matters

Consent Agenda Items (Items *2, *3, *8, *9, *10, *12)

Moved by Councillor MURI, Seconded by Councillor HARRIS and CARRIED
THAT the recommendations listed within the "Consent Agenda" be approved.

***2. Bylaw 7646 Rezoning Bylaw 1224 – 1315**

East 8th Street, Proposed Subdivision

File 08.3060.20/034.06

Tracking Number 2007-00034

(to consider a bylaw to allow subdivision of the subject property into two lots)

Report: [Community Planner, December 20, 2006](#)

(Returned from [February 27, 2007 Public Hearing](#))

THAT Bylaw 7646 be now read a SECOND and THIRD TIME.

(
CARRIED
UNANIMOUSLY)

***3. Development Permit 32.06 - 375 Lynn Avenue**

File 08.3060.20/032.06

Tracking Number 2007-00193

(Brook Croome Architect Inc. on behalf of Olga and Siegfried Franiek)

(to allow for construction of a light industrial building on the property)

Report: [Community Planner, February 21, 2007](#)

THAT Development Permit 32.06 for 375 Lynn Avenue, as outlined in Attachment D1. and D2. to the February 21, 2007 report of the Community Planner, be ISSUED.

(
CARRIED
UNANIMOUSLY)

***8. Operating Support for Major Arts Organizations**

Interim Funding 2007

File 10.4794.90/001.000

Tracking Number 2006-00177

(to consider interim operating funds for 2007 totalling \$106,561.50 until the final municipal budget is approved)

Report: [Tourism, Arts & Cultural Development Coordinator, February 5, 2007](#)

THAT

1. interim funding be approved for the following major arts organizations, such funding to be disbursed in March 2007 and to be equivalent to one half of the 2006 Operational Support grants:

- North Vancouver Community Arts Council..... \$47,624

- B.C. Photography and Media Arts
Society \$27,570
(Presentation House Gallery)
 - Presentation House Cultural
Society \$18,867.⁵⁰
(Presentation House Theatre)
 - Seymour Art Gallery
\$12,500; and
2. the balance of the 2007 Operating Support grant be
disbursed in full further to Council's approval of the budget.

(
CARRIED
UNANIMOUSLY)

***9. School Community Connections Step 2
Grant Application**

File 01.0360.20/006.000

Tracking 2007-00192

(to consider an endorsement for funding from the Provincial
Government to upgrade Norgate Community School and the
outdoor space at Sutherland Secondary School)

Report: [Director of Environment, Parks & Engineering
Services, February 20, 2007](#)

THAT the School Community Connections Step II grant
application be endorsed, as outlined in the February 20, 2007 report of
the Director of Environment, Parks & Engineering Services.

(
CARRIED
UNANIMOUSLY)

***10. UBCM Grant – Integrated Emergency
Planning for Local Governments and First
Nations**

File 01.0250.20/000.000

Tracking Number 2007-00194

(to consider a recommendation for submission to the UBCM
convention)

Report: [Acting Director, North Shore Emergency Management
Office, February 22, 2007](#)

THAT the funding proposal for Integrated Emergency Planning for
Local Governments and First Nations be endorsed and be submitted

to the Union of British Columbia Municipalities for consideration.

(
CARRIED
UNANIMOUSLY)

Motions

*12. UBCM Resolutions Sessions

File 01.0250.20/005.001

Tracking Number 2007-00191

Submitted by Councillor Lisa Muri

WHEREAS the Union of BC Municipalities encourages all members of local governments to attend its annual Convention and participate in the resolutions sessions of the Convention;

AND WHEREAS it may not be possible for all council/board members to attend the full Convention as delegates;

THEREFORE BE IT RESOLVED that UBCM consider allowing council/board members who are unable to attend the full Convention as delegates, to attend only the resolution sessions of the Convention in order to speak to resolutions sponsored by their local government.

(
CARRIED
UNANIMOUSLY)

1. FINANCIAL PLAN EXPENDITURE AUTHORIZATION BYLAWS 2007

File 05.1715.40/006.000

Tracking Number 2006-00282

(to consider the 2007 Financial Plan Expenditure

Authorization Bylaws)

Report: [Director of Financial Services/Chief Financial Officer, February 28, 2007](#)

Moved by Councillor LITTLE, Seconded by Councillor HICKS and CARRIED
THAT the following Bylaws be now read a FIRST, SECOND and THIRD
TIME:

- | | | |
|----|------------|---|
| a) | Bylaw 7650 | 2007-2011 Financial Plan Approval Bylaw |
| b) | Bylaw 7651 | 2007 Heritage Fund Appropriation Bylaw No. 1 |
| c) | Bylaw 7652 | 2007 Development Cost Charges Reserve
Fund Parks Appropriation Bylaw No. 1 |
| d) | Bylaw 7653 | 2007 Development Cost Charges Reserve
Fund Road Works Appropriation Bylaw
No. 1 |

- e) Bylaw 7654 2007 Development Cost Charges Reserve
Fund Waterworks Appropriation Bylaw
No. 1

The meeting recessed at 9:00 p.m. and reconvened at 9:10 p.m.

4. **Comments on Proposed Canexus Technology Conversion Project**

File 13.6440.40/002.000

Tracking Number 2006-00740

(to convey the District's feedback on the project to the
Vancouver Port Authority as part of its Public Project Review
Process)

Report: [Director of Sustainability, Planning and Development,
February 27, 2007](#)

Ms S. Haid, Manager - Sustainable Community
Development, Mr. R. Parr, Municipal Solicitor, Mr. D. Sewell,
Section Manager – Business Services, and Dr.
Norman Nibber, Consultant, were in attendance to speak to
their PowerPoint presentation on the Canexus Technology
Conversion (TCP) Project application, the legal implications
and the economic impacts on the District if the upgrade is
approved.

Moved by Councillor NIXON, Seconded by Councillor MACKAY-DUNN
THAT Council forward the following feedback to the Vancouver Port
Corporation (VPA) regarding the proposed Canexus Technology
Conversion Project (TCP):

"The Council for the District of North Vancouver continues to
support the key strategy and related policies of the Maplewood
Local Plan, 2002, as outlined in Attachment 1 to the February 27,
2007 report of the Director, Sustainability, Planning and
Development, to plan for the replacement of the chemical industry
in the long term with a range of industrial uses, including light
industry, opening opportunities for public access to the waterfront.;

The Council for the District of North Vancouver does not support
the continued operation of a Canexus plant on the current site
regardless of any technology employed.;

The Council for the District of North Vancouver does not support any
extension to the current VPA lease.; AND

Should the Technology Conversion Project proceed, Council
requests that VPA ensure the following aspects are addressed:

1. The Implementation Agreement on Chlorine Storage Limitation,
1998 must be revised and agreed upon by the District

and Canexus to limit fixed tank on-site chlorine storage to 60 tonnes maximum.

2. Potential implications to effective annual shipping of chlorine defined under "Normal Shipping Needs" in the Implementation Agreement need to be assessed and the District needs to be assured there will be no further significant risks from the plant beyond the Quantitative Risk Assessment (QRA) completed for the TCP by Alp and Associates in 2006. Subject to no additional, quantifiable risks, the Implementation Agreement will require amendment of the effective maximum limit on shipping to be consistent with the TCP.
3. The extension period of the lease be agreed upon by the District and the VPA and be subject to ongoing review of risks and regular QRAs.
4. Canexus contribute to improved community emergency preparedness including improvements to the CanAlert line, coordination of "live drills" in the affected area of the Maplewood community, the dissemination of information to surrounding communities, including Lynnwood, Inter-River, Seymour Valley and Dollarton, as well as any others that staff feel it necessary to include, and funding of a local HAZMAT team.
5. Canexus to prepare and DNV to approve a societal risk assessment on specified parcels including "A" and "D" of the Maplewood Local Plan as outlined in Attachment 4 to the February 27, 2007 report of the Director, Sustainability, Planning and Development.
6. Canexus to implement recommendations for emergency operating procedures for inventory transfer and to provide fixed foam protection for the dyke around the fixed storage tank as specified in QRA Peer Review by Independent Risk Control, dated February, 2007.
7. Comments contained in this report regarding the evaluation of rail safety be addressed and measures to improve rail car safety involving inspection of cars by Procor, Canexus and CN as recommended by Doug McCutcheon and Associates in its peer review of the TCP QRA dated January 5th, 2007 be implemented.
8. Canexus to provide payment-in-lieu to the District should there be a property tax cap.
9. Prior to finalizing any renegotiation or renewal of the lease between the VPA and Canexus, the District of North Vancouver be indemnified against any damages that may result from the release of chlorine."

On request, the foregoing motion was split and dealt with as follows:

The question on the following statement in the preamble section of the original motion was put

and CARRIED

“The Council for the District of North Vancouver does not support the continued operation of a Canexus plant on the current site regardless of any technology employed.”

Voting Against: Mayor WALTON, Councillors HARRIS, MURI

The question on the following statement in the preamble section of the original motion was put and CARRIED

“The Council for the District of North Vancouver does not support any extension to the current VPA lease.”

The question on the original motion was then put and CARRIED

Final Motion:

THAT Council forward the following feedback to the Vancouver Port Corporation (VPA) regarding the proposed Canexus Technology Conversion Project (TCP):

“The Council for the District of North Vancouver continues to support the key strategy and related policies of the Maplewood Local Plan, 2002, as outlined in Attachment 1 to the February 27, 2007 report of the Director, Sustainability, Planning and Development, to plan for the replacement of the chemical industry in the long term with a range of industrial uses, including light industry, opening opportunities for public access to the waterfront.”

The Council for the District of North Vancouver does not support the continued operation of a Canexus plant on the current site regardless of any technology employed.”

The Council for the District of North Vancouver does not support any extension to the current VPA lease.; AND

Should the Technology Conversion Project proceed, Council requests that VPA ensure the following aspects are addressed:

- 1. The Implementation Agreement on Chlorine Storage Limitation, 1998 must be revised and agreed upon by the District and Canexus to limit fixed tank on-site chlorine storage to 60 tonnes maximum.*
- 2. Potential implications to effective annual shipping of chlorine defined under “Normal Shipping Needs” in the Implementation Agreement need to be assessed and the District needs to be assured there will be no further significant risks from the plant beyond the Quantitative Risk Assessment (QRA) completed for the TCP by Alp and Associates in 2006. Subject to no additional, quantifiable risks, the Implementation Agreement will require amendment of the effective maximum limit on shipping to be consistent with the TCP.*
- 3. The extension period of the lease be agreed upon by the District and the VPA and be subject to ongoing review of risks and regular QRAs.*
- 4. Canexus contribute to improved community emergency preparedness including improvements to the CanAlert line, coordination of “live drills” in the affected area of the Maplewood community, the dissemination of information to surrounding communities, including Inter-River, Lynnwood, Dollarton and Seymour Valley as well as any others that staff feel it necessary to include, and funding of a local HAZMAT team.*

- 5._ *Canexus to prepare and DNV to approve a societal risk assessment on specified parcels including "A" and "D" of the Maplewood Local Plan as outlined in Attachment 4 to the February 27, 2007 report of the Director, Sustainability, Planning and Development.*
- 6._ *Canexus to implement recommendations for emergency operating procedures for inventory transfer and to provide fixed foam protection for the dyke around the fixed storage tank as specified in QRA Peer Review by Independent Risk Control, dated February, 2007.*
- 7._ *Comments contained in this report regarding the evaluation of rail safety be addressed and measures to improve rail car safety involving inspection of cars by Procor, Canexus and CN as recommended by Doug McCutcheon and Associates in its peer review of the TCP QRA dated January 5th, 2007 be implemented.*
- 8._ *Canexus to provide payment-in-lieu to the District should there be a property tax cap.*
9. *Prior to finalizing any renegotiation or renewal of the lease between the VPA and Canexus, the District of North Vancouver be indemnified against any damages that may result from the release of chlorine."*

Mayor Walton, with the consent of Council, indicated that the order of the agenda would be varied and the following items considered at this time:

6. Housing Strategy Next Steps

File 01.0620.01/000.000

Tracking 2007-00215

Joint Report: [Mayor and Manager-Corporate Planning & Projects, February 27, 2007](#)

Moved by Councillor MACKAY-DUNN, Seconded by Councillor NIXON and
CARRIED

THAT

1. the proposed mandate, objectives and membership profile for a Mayor's Housing Task Force be endorsed in principle and the Mayor be authorized to return a list of members and detailed Terms of Reference for Council's approval at the regular meeting of April 2, 2007; and
2. Staff be directed to initiate a proposal call for a research firm to conduct a random sample survey of District residents to probe key housing questions.

5. GVRD Discussion Paper on a Regional Affordable Housing Strategy

File 10.4782.01/000.000

Tracking Number 2007-00208

(to consider a resolution in support of the GVRD's Regional Affordable Housing Strategy for submission to the Federal and Provincial governments)

Report: [Social Planner, February 26, 2007](#)

Moved by Councillor MACKAY-DUNN, Seconded by Councillor HICKS and
DEFEATED

THAT the Greater Vancouver Regional District (GVRD) Board be
advised of the following:

“The Council for the District of North Vancouver supports in-
principle the GVRD “Discussion Paper on a Regional Affordable
Housing Strategy” but withholds endorsement until further details
are forthcoming”.

Voting Against: Councillors HARRIS, LITTLE, MURI, NIXON

Moved by Councillor NIXON, Seconded by Mayor WALTON and DEFEATED
THAT the Greater Vancouver Regional District Board be advised that
the District of North Vancouver acknowledges and applauds the
region’s intent in challenging all member municipalities to do more to
create and retain affordable housing;

AND THAT the District supports the regional roles set out in the
majority of the proposed actions, with reservations regarding housing
targets to be set by the region, noting a need:

- for additional municipal tools plus Federal and Provincial
government contributions to enable municipalities to meet more
than modest housing goals;
- to pursue pro-active efforts to retain existing affordable rental
housing, or its replacement, including working with private owners
of such properties to address their needs, as well as municipal
housing objectives;
- for case studies and pro-forma analyses demonstrating how
the GVRD’s suggestions for affordable housing targets could be
achieved as a requirement in new developments given current
land and construction costs;

AND THAT the District of North Vancouver call upon the Provincial
Government to amend its recently tabled budget to provide direct
financial support for affordable housing initiatives in the GVRD
commensurate with current needs;

AND FURTHER THAT a regional levy or property tax increase to raise
\$50 million not be supported.

Voting Against: Councillors HARRIS, HICKS, LITTLE, MACKAY-DUNN,
MURI

Moved by Councillor MACKAY-DUNN, Seconded by Councillor HARRIS and
CARRIED

THAT

1. The Greater Vancouver Regional District (GVRD) Board be
advised the District of North Vancouver:
 - a. supports the GVRD Board in preparing and
implementing a Regional Affordable Housing Strategy;

- b. supports the general directions of the GVRD "Discussion Paper on a Regional Affordable Housing Strategy" received December 8, 2006, from the Chair of the GVRD Board, however:
- c. requests further information and discussion on how a Regional Affordable Housing Strategy would be implemented, including further details and analysis of potential municipal impacts before considering endorsement of a Regional Housing Strategy;

AND THAT

- 2. Copies of this resolution be forwarded to the North Vancouver Member of Parliament and Provincial Members of the Legislative Assembly, with a request that the Federal and Provincial Governments support the GVRD in preparing and implementing a Regional Affordable Housing Strategy.

Voting Against: Councillor LITTLE

The hour of 10:30 p.m. having been reached and, as required by Council Policy, it was

Moved by Councillor MURI, Seconded by Councillor MACKAY-DUNN and
CARRIED
THAT the meeting continue to 11:00 p.m.

7. Bi-Municipal Office of Cultural Affairs: Consultation Process and Transition Plan
Bylaw 7649 North Shore Arts Commission Establishment Agreement Bylaw, Amending Bylaw 3
File 10.4794.00/000.000
Tracking 2006-00693
(amends Bylaw 6159)
(to consider a framework for the establishment of the proposed Office of Cultural Affairs in 2007)

Report: [Tourism, Arts & Cultural Development Coordinator, February 15, 2007](#)

Public Input:

Ms Lori Phillips, 2300 Block Mahon Avenue, Arts & Culture Commission of North Vancouver

- Spoke in support of the proposed proposal.

Mr. John Rice Tourism, Arts & Cultural Development Coordinator was in attendance to speak to the PowerPoint presentation and to respond to Council's questions.

Moved by Councillor NIXON, Seconded by Councillor HARRIS and CARRIED
THAT

1. the establishment of a single, bi-municipal Office of Cultural Affairs for the District and City of North Vancouver in 2007 be approved;
2. Staff be directed to implement the transitional steps as outlined in the February 15, 2007 report of the Tourism, Arts & Cultural Development Coordinator;
3. Bylaw 7649 ("North Shore Arts Commission Establishment Agreement Bylaw, Amending Bylaw 3") be now read a FIRST, SECOND and THIRD TIME; and
4. On an interim basis, retain the administrative resources (staff) of the Arts Commission to continue to deliver core services to the municipalities and the arts community.

11. Civic Recognition Program

File 01.0220.01/000.000

Tracking Number 2001-03068

(to consider a formal Civic Recognition Program for the District of North Vancouver)

Report: [Municipal Clerk, February 6, 2007](#)

Moved by Councillor MURI, Seconded by Councillor LITTLE and CARRIED
THAT a multi-level formal Civic Recognition Program be established, consisting of the following:

1. Freedom of the District;
2. Award of Honour;
3. Achievement Award; and
4. Certificate of Appreciation.

Any Other Business

Motions and Notices of Motion

Motions

Moved by Councillor MURI, Seconded by Councillor HARRIS and CARRIED
THAT the following item be added to this evening's agenda:

13. Addition of Representative from Vancouver Natural History Society to Alpine Recreational Reference Group (ARRG)

File 13.6480.20/010.001

Tracking Number 2002-01306

Submitted by Councillors Lisa Muri & Janice Harris

Mr. David Cook, 900 Block Lytton Street

- confirmed that he was a Director of the Natural History Society, but was already representing the Parks Advisory Committee on the AARG, therefore someone else would need to be appointed to represent the Society on the AARG."

Moved by Councillor MURI, Seconded by Councillor HARRIS and CARRIED
WHEREAS the membership of the Alpine Recreational Reference Group (ARRG), as approved by Council at the August 28, 2006 Regular meeting, does not currently include representation from the Vancouver Natural History Society;

AND WHEREAS it would be appropriate to have a member of the Society on the ARRG to represent its objectives;

THEREFORE BE IT RESOLVED that the Terms of Reference for the ARRG be amended to include representation from the Vancouver Natural History Society.

Notice of Motions

Nil

Reports

Nil

Adjournment

Moved by Councillor MURI, Seconded by Councillor LITTLE and CARRIED
THAT the March 5, 2006, Regular Council Meeting be ADJOURNED.

The meeting adjourned at 10:55 p.m.

Certified correct:

Municipal Clerk

Mayor

From: Rader, James [REDACTED]
Sent: June 17, 2026 6:33 PM
To: DNV Input; Signup
Subject: District of North Vancouver Bylaw 8778

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

I wish to speak a second time at the Public Hearing tonight, June 17, regarding the District of North Vancouver Bylaw 8778. I did submit information in advance of the hearing last night. Please let me know if you have any questions.

Thank you,

James Rader
[REDACTED]

From: Colin D Armstrong <CArmstrong@acutech-consulting.com>
Sent: June 17, 2026 7:26 PM
To: DNV Input
Subject: Colin Armstrong Presentations
Attachments: AcuTech Rail Risk Assessment 26-06-16.pdf; AcuTech Rail Risk Assessment 26-06-17.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Presentations from today and yesterday are both attached to add to the public record.

--

Colin D Armstrong, CCPSC
Group Lead & Principal Engineer, Quantitative Risk Services
carmstrong@acutech-consulting.com | +1 (571) 733-0245
www.acutech-consulting.com | [Follow us on LinkedIn](#)





**A global leader in process risk
management services**

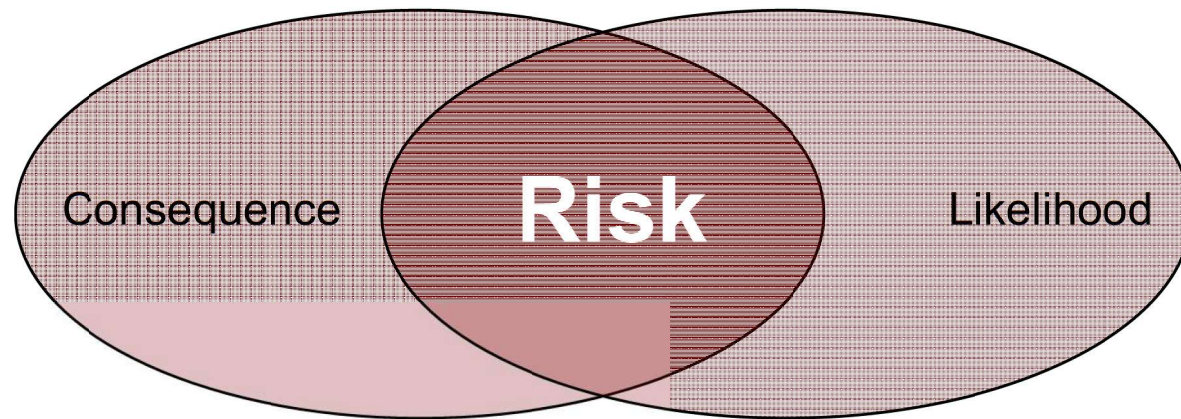
District of North Vancouver
Chlorine Railcar Risk Assessment

www.acutech-consulting.com

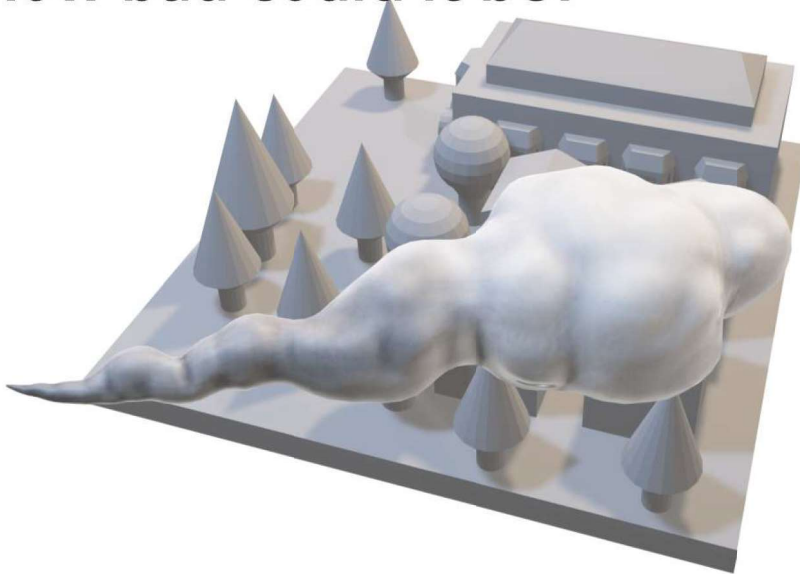


Background

- **AcuTech is a global leader in risk management for hazardous chemical processes since 1994**
 - **Lead author of the Center for Chemical Process Safety's Guidelines for Chemical Transportation Safety, Security and Risk Management (2nd Edition)**
- **Colin D Armstrong, Senior Principal Engineer**
 - **Certified Chemical Process Safety Professional**
 - **Lead AcuTech's Quantitative Risk Services Group**
 - **Conducted hundreds of risk assessments across the globe**
 - **Recognized expert in consequence modeling, risk assessment, and risk management**



How bad could it be?



When will it happen?



Risk Analysis Scope



Figure 2. LSIR Contours for Current Facility with Proposed Design Changes

Chemtrade's QRA lists the
onsite stored railcar release scenario
#1 in the list of the
highest far-field risk drivers

The onsite railcars are driving the risk at the fenceline and beyond

Potential Consequence

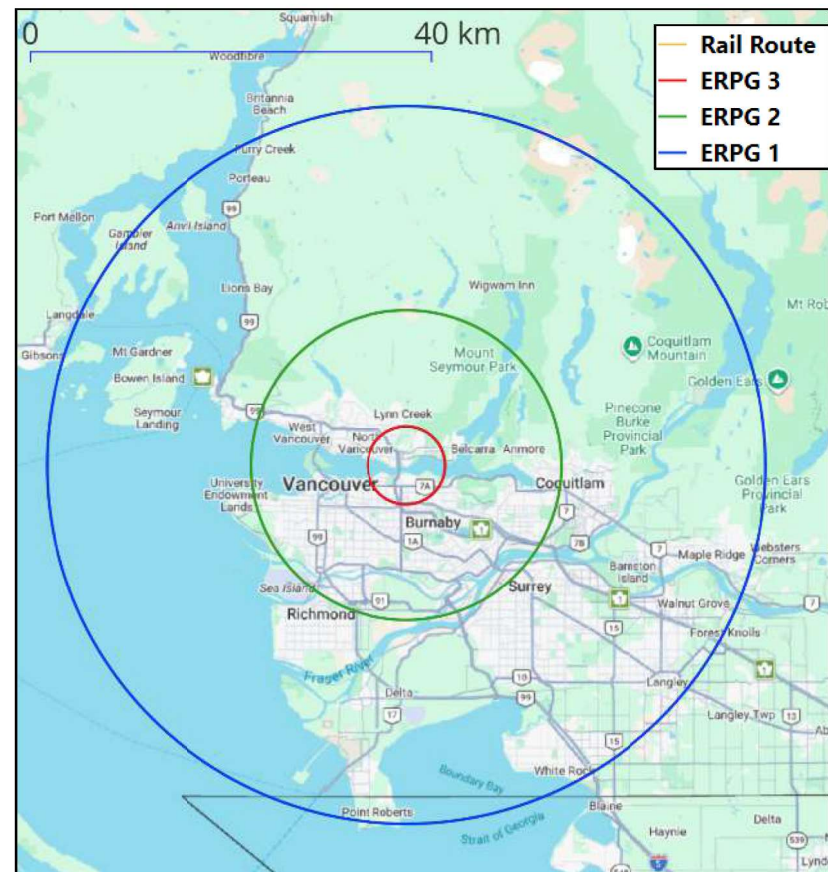
Emergency Response Planning Guidelines (ERPG) Contour ERPG for Chlorine

20 ppm - ERPG-3 - life-threatening health effects

3 ppm - ERPG-2 - serious, irreversible health effects or symptoms which could impair an individual's ability to take protective action

1 ppm - ERPG-1 mild, transient health effects, a clearly defined objectionable odor

Toxic ERPG from Loaded Chlorine Railcar



Potential Consequence

Release from Loaded Railcar – 2 inch hole size

Indoor Shelter-In-Place Lethality – 1% or greater

Lethal Impacts for people sheltering in place extend beyond the property line and into the community

Release Description	Maximum Distance to Lethality Level Indoor (ft)			
	0.1%	1%	10%	99%
Railcar – Loaded - Large Release Size	5,808	4,405	3,077	1,285
Railcar – Loaded - Small Release Size	7,928	6,121	4,301	1,265



Looking Closely at the Railcar Risks

- Chemtrade's QRA lists the stored railcar release scenario as #1 in the list of the highest far-field risk drivers
- It is the only scenario that references a 20-year old 2006 QRA study to define the release case and likelihood
- It is the only scenario in the report that does not consider a range of release cases
 - Only a WCS is assessed (based on 2006 analysis)
 - The smaller release scenario which is more lethal, was not assessed
- The modeling ignored jetting/flashings, which accounts for 40%+ of the chlorine vapor
 - Only considered pool vaporization

Basis of Release

Table 7. Failure Rate Data – Releases

Equipment	F-release (per year) (pipes are per ft-year)			Reference
	0.5-in	2-in	FB	
Centrifugal Compressor	3.0E-3	3.0E-4	3.0E-5	References 1-10
Reciprocating Compressor (<3MW)	5.0E-3	1.0E-3	5.0E-4	References 1-10
Reciprocating Compressor (>3MW)	5.0E-2	1.0E-2	5.0E-3	References 1-10
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Reciprocating Pump	1.0E-2	3.0E-3	1.0E-3	References 1-10
1-inch Diameter Pipe	3.0E-6	6.0E-7		References 1-10
2-inch Diameter Pipe	1.0E-6	1.5E-7		References 1-10
4-inch Diameter Pipe	1.0E-6	2.0E-7	6.0E-8	References 1-10
6-inch Diameter Pipe	9.0E-7	2.0E-7	6.0E-8	References 1-10
10-inch Diameter Pipe	6.0E-7	1.0E-7	7.0E-8	References 1-10
12-inch Diameter Pipe	5.0E-7	1.0E-7	6.0E-8	References 1-10
20-inch Diameter Pipe	3.0E-7	9.0E-8	4.0E-8	References 1-10
Process Vessel	1.5E-4	3.0E-5	7.0E-6	References 1-10
Storage Vessel	3.0E-3	2.0E-4	2.0E-5	References 1-10
Shell-Tube Heat Exchanger	5.0E-4	7.0E-5	3.0E-5	References 1-10
Fin-Fan Heat Exchanger	1.0E-3	4.0E-4	2.0E-4	References 1-10
Filter	4.0E-4	6.4E-6	6.4E-6	References 1-10
Number of HCl Loads Per Year	1.0E-4	3.0E-5	1.0E-5	References 1-10
Railcar Building Release - Vent	6.1E-9	1.6E-7		FTA ²
Railcar Building Release - Louver		2.0E-6		FTA ²
Stored Railcar Breach			1.6E-6	Existing 2006 QRA ⁸
2-in Diam. Double Wall Pipe	1.0E-7	1.5E-8		References 1-10 with credit for double wall and detection
4-in Diam. Double Wall Pipe	1.0E-7	2.0E-8	6.0E-9	References 1-10 with credit for double wall and detection

BakerRisk states this was done at Chemtrade's request

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The Release Model in the Chemtrade Study

- “The cloud formed from this evaporation is the risk-driving hazard and is conservatively evaluated as such”
- The Baker study assumed pool vaporization was the major risk driver for a catastrophic release from storage
 - The basis for this assumption was not documented in the report

This does not match incidents that have occurred

Modeling shows 40%+ of the liquid chlorine flashes when release from storage

Previous Incidents



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Liquid Chlorine Release Dynamics



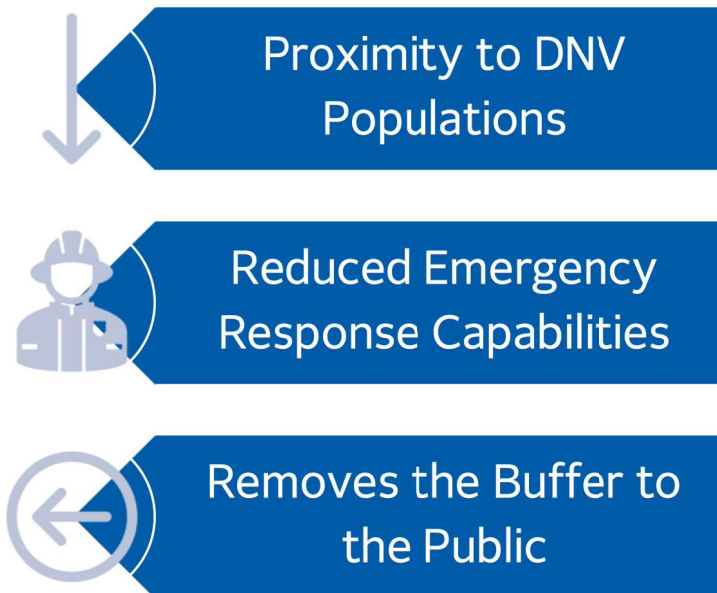
Model Results

- From “Det Norske Veritas Phast”
 - The most widely used consequence modeling software in the chemical industry
- 9-inch hole (Catastrophic failure event)
 - 41% of liquid Chlorine flashes to vapor immediately upon release
- 2-inch hole (Smaller release, longer distance to lethal impacts)
 - 52% of liquid chlorine flashes to vapor immediately upon release
- This is consistent with incidents
- Pool vaporization is secondary to the immediate flashing

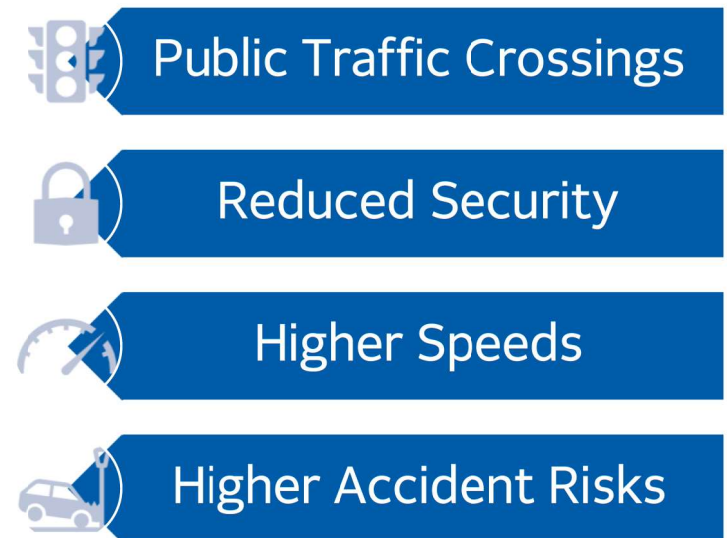
If the stationary railcar is the highest onsite risk driver...

What happens when it leaves the site?

Protection Measures Decrease



Risk of Accidents Increase



Potential Consequence

Release from Loaded Railcar – 2 inch hole size

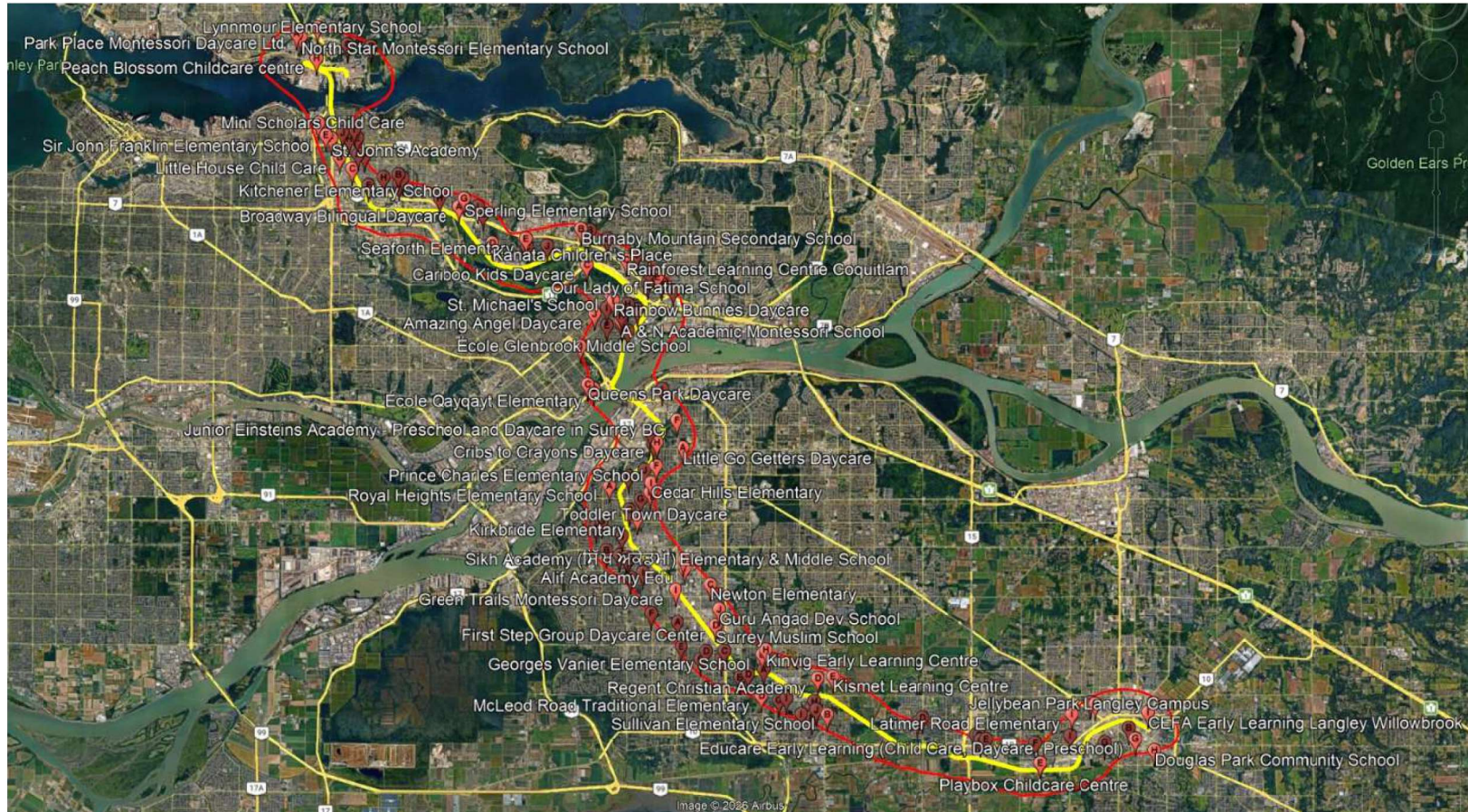
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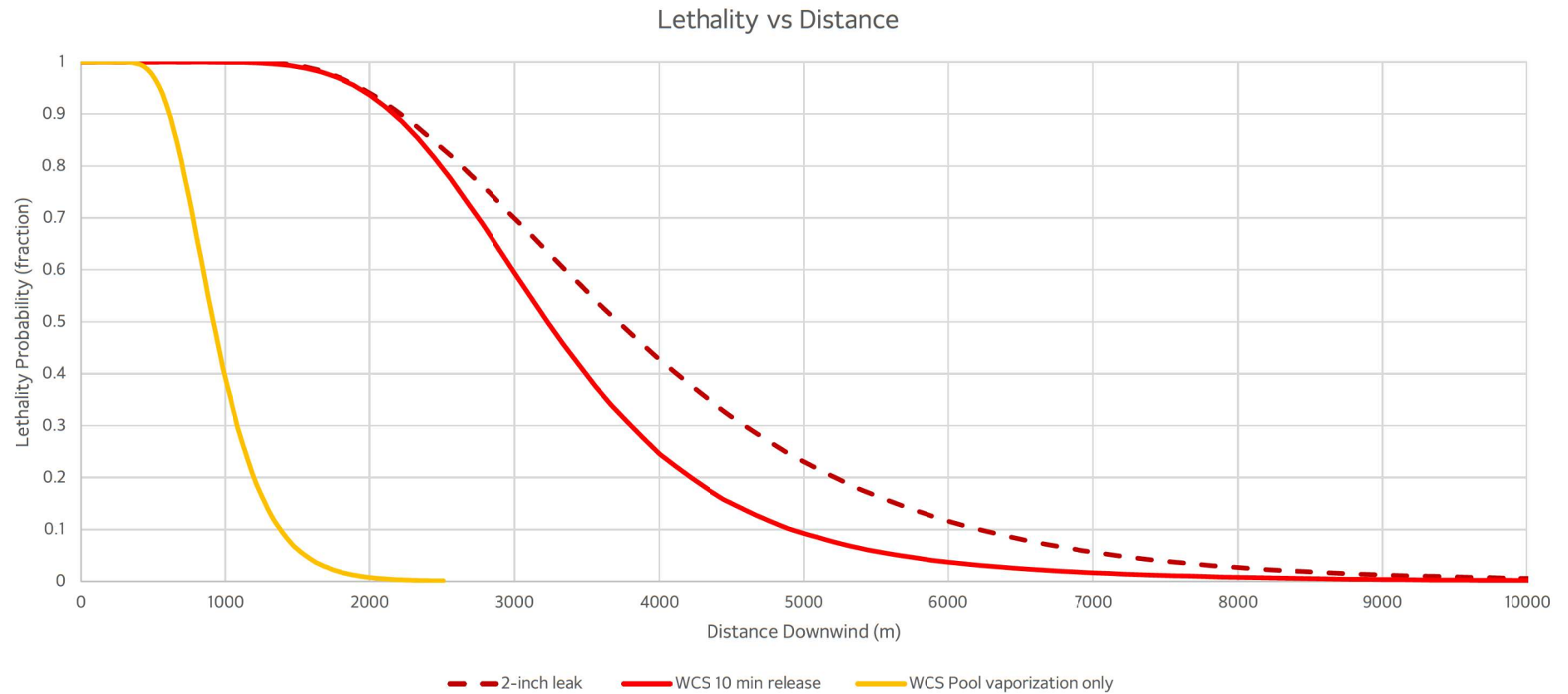
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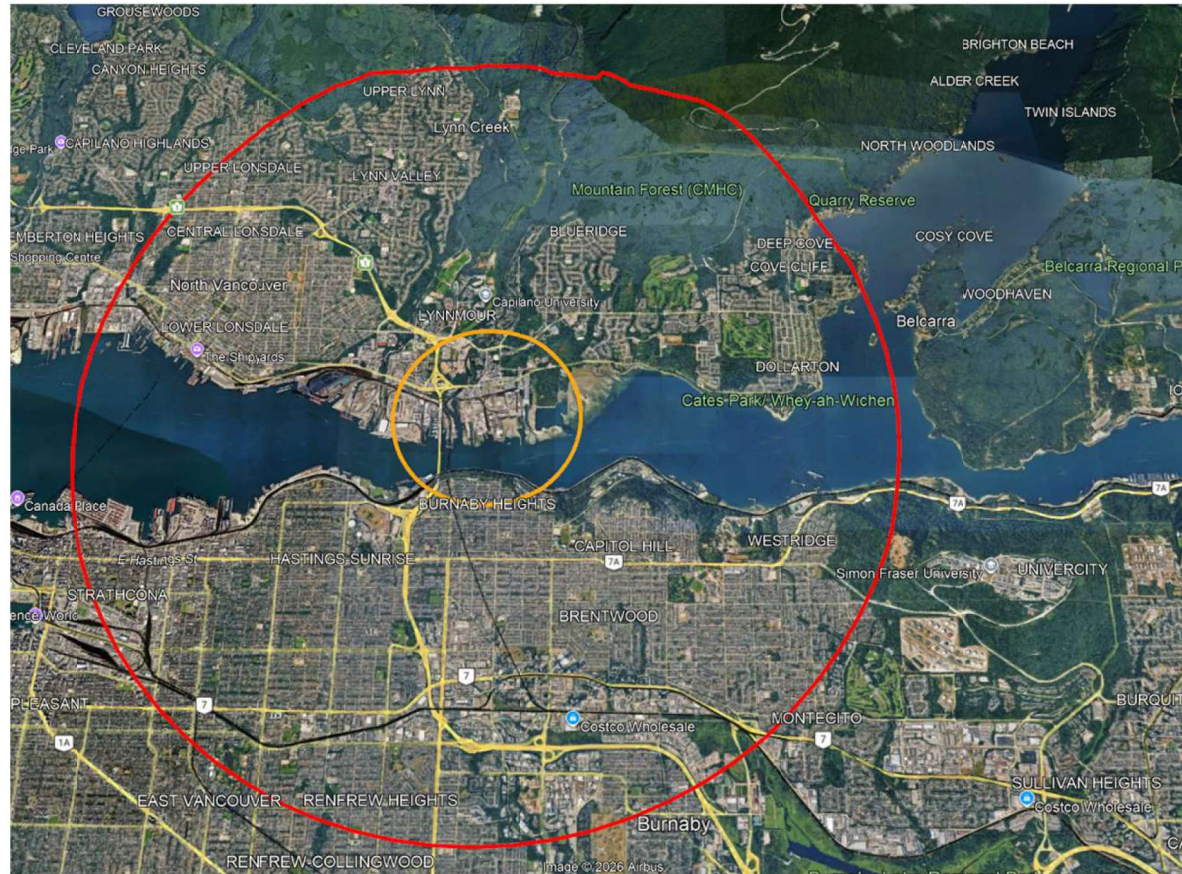
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Comparison of Cl Lethality



Comparison of CI Lethality



Risk Analysis Scope



Figure 2. LSIR Contours for Current Facility with Proposed Design Changes

Summary of Chemtrade's QRA

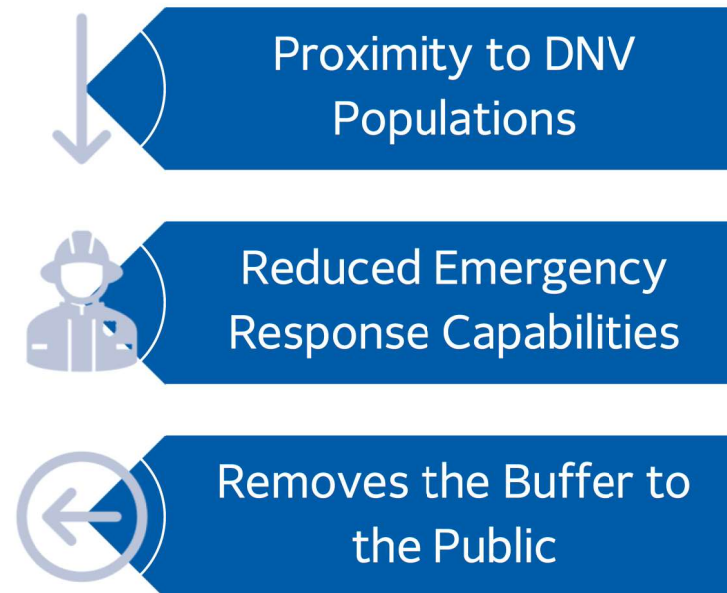
- The study did not consider the risk of smaller hole sizes which are more likely and may cause larger lethal impacts
- The study used frequency basis that was provided to Baker by Chemtrade and it was not provided for review
 - The report states that Baker did not review or validate the frequency data
- The study used modeling that did not account for 40% of the chlorine vaporization
 - the most hazardous generation of chlorine vapor (immediate flashing)
 - Only pool vaporization was considered

If the frequency was not fully considered, and the consequence was underestimated, then the risk contour is wrong, and the risk extends beyond the fenceline.

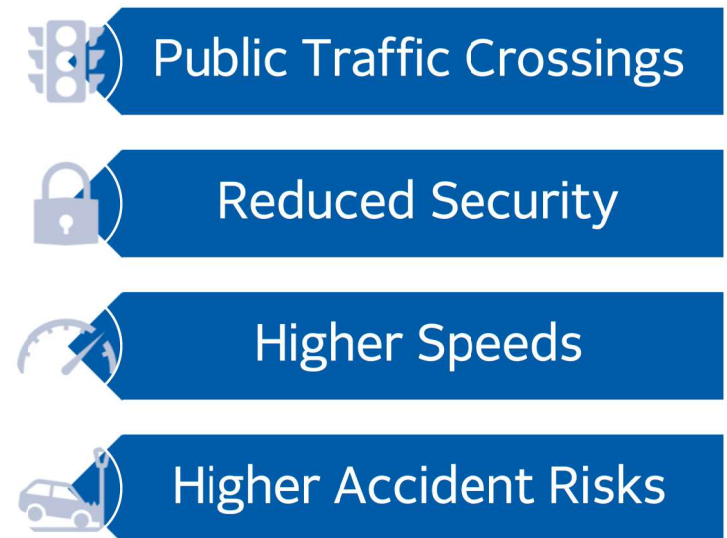
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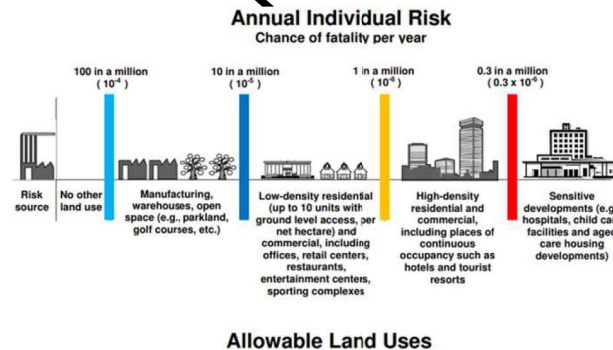
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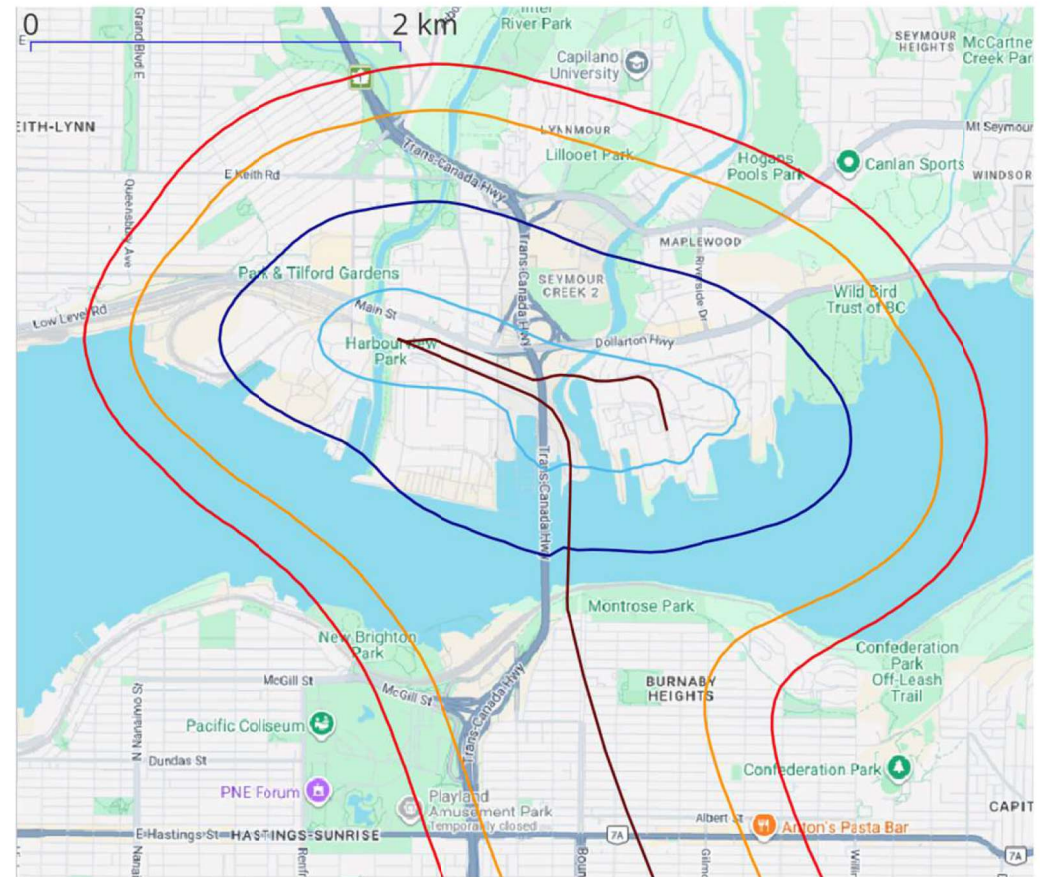


Full Railcar QRA Results

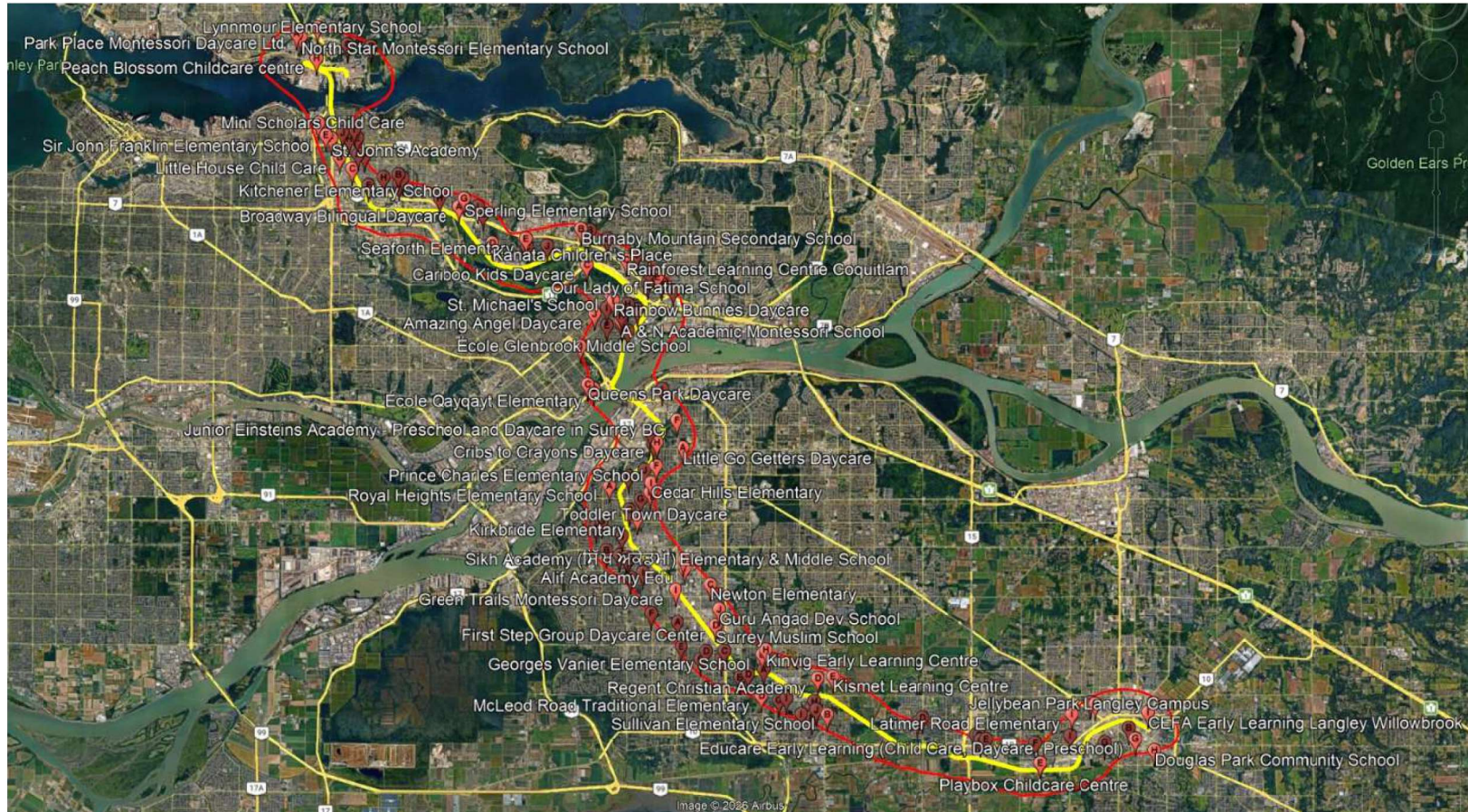


Results are based on:

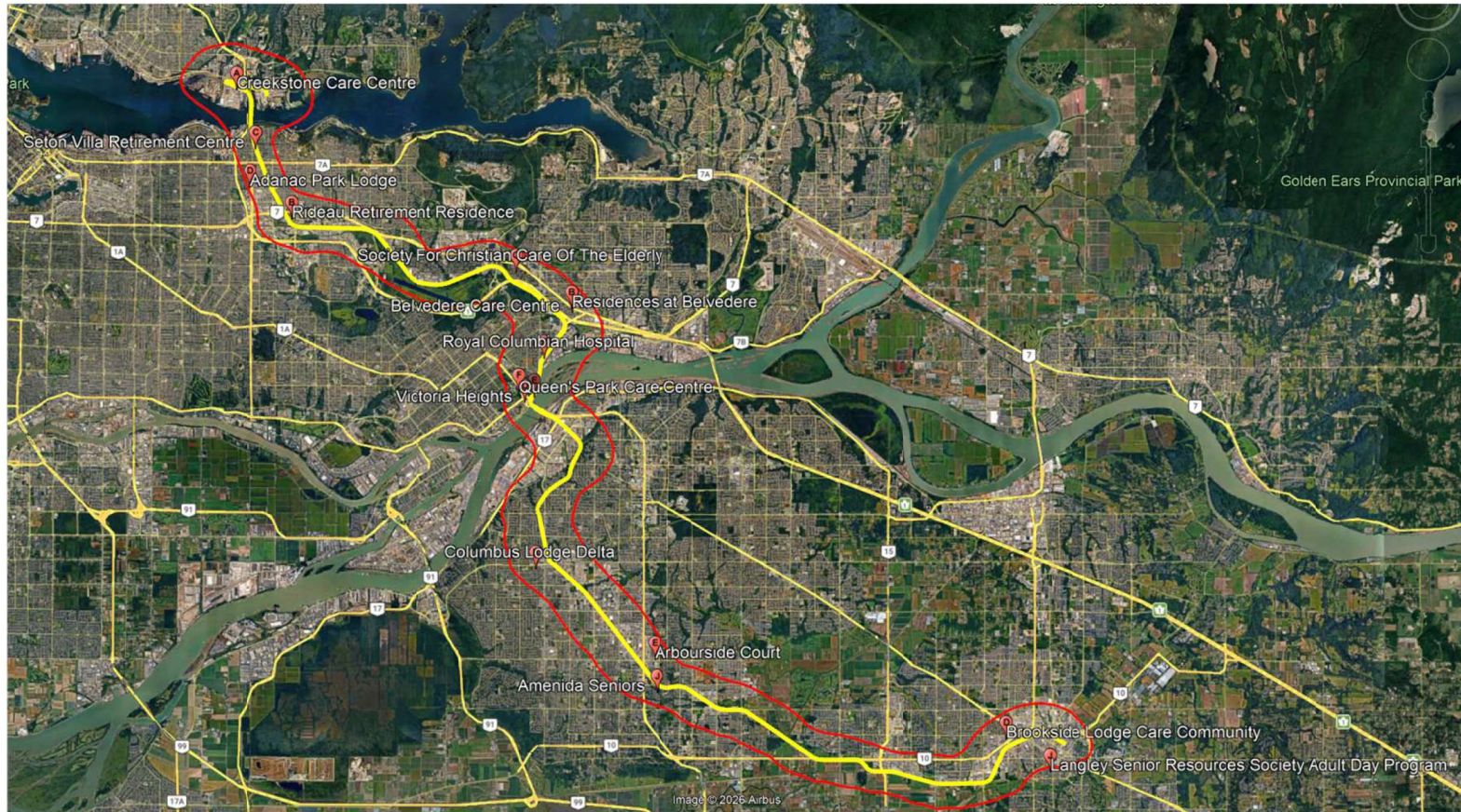
- Actual Accident Statistics from Rail Canada
- Actual Track Class, Speed Limits, and Crossings
- Publicly Published probabilities of failure for pressurized Hazmat railcars (*6 in 1,000 chance of failure even in a derailment*)
- Publicly available dispersion models
- A range of release sizes (small and large releases)
- Railcars that are actually shipped out of the Chemtrade facility



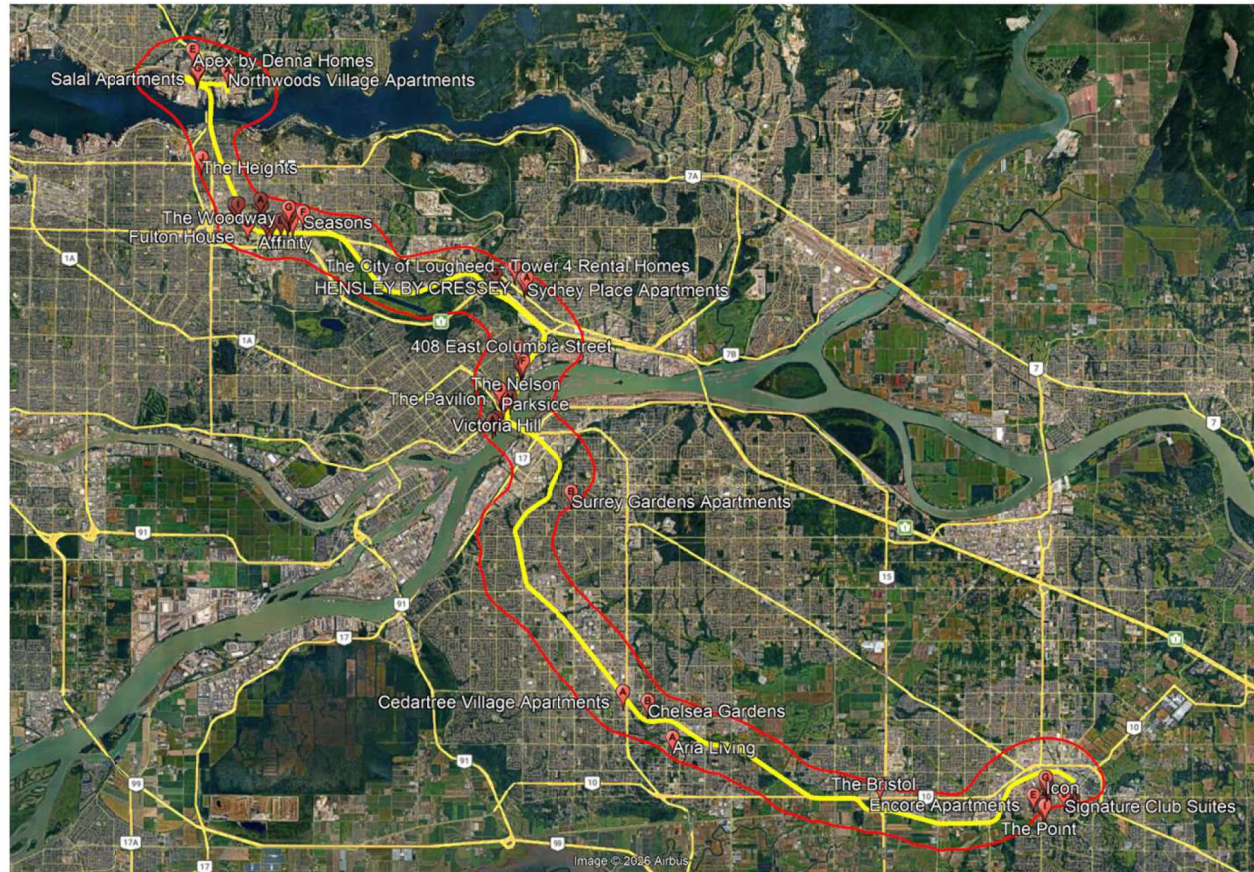
Schools and Daycares in High Risk Zone



Hospitals and Senior Care Facilities in High Risk Zone



High-Density Housing Locations in High Risk Zone



From: Heather Drugge [REDACTED]
Sent: June 17, 2026 7:49 PM
To: DNV Input
Subject: June 17th chemtrade hearing PowerPoint.
Attachments: chemtrade_lobbying (1).pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

[Heather Drugge](#)

[REDACTED]

AN UNEQUAL CONTEST

A \$2 billion corporation.

A municipality of 50,000 people.

A 5-minute delegation.

Chemtrade deployed Hill & Knowlton Strategies, six senior executives, and 2.5 years of sustained lobbying — from the Premier's office to three federal ministries.

The Lobbying Machine

Chemtrade deployed a three-part lobbying operation above the municipal level

EXTERNAL
LOBBYIST

Hill & Knowlton Strategies

Jarred Anderson
registered as consultant lobbyist
— federally and provincially —
for Chemtrade

IN-HOUSE
EXECUTIVES

6 Chemtrade Representatives

Scott Rook (CEO)
Amy Jonsson
Alan Robinson
Ben Bunford
Raman Batra
Dale Bossons

GOVERNMENTS
LOBBIED

Offices

BC Premier's Office
BC Ministry of Jobs,
Econ Dev & Innovation
Health Canada
Public Safety Canada
Transport Canada

All of this for a local municipal rezoning application

The Complete Lobbying Record

BC Lobbying Registry — Chemtrade Electrochem Inc. & Hill & Knowlton | 2023–2024 (Campaign Launch)

Date	Official Lobbied	Role & Ministry	Lobbyist
Dec 7, 2023	Susie Chant	MLA, North Vancouver–Seymour	In-house + H&K
Feb 9, 2024	James Mack	ADM, Water Fisheries & Coastal Policy — WLRS	In-house + H&K
Apr 5, 2024	Susie Chant	MLA, North Vancouver–Seymour	In-house + H&K
Apr 18, 2024	Susie Chant George Chow	MLA, North Vancouver–Seymour Minister of Citizens' Services	In-house
May 7, 2024	James Mack	ADM, Water Fisheries & Coastal Policy — WLRS	In-house
Aug 1, 2024	Susie Chant	MLA, North Vancouver–Seymour	In-house
Sep 10, 2024	Susie Chant	MLA, North Vancouver–Seymour	In-house
Dec 10, 2024	Susie Chant	MLA, North Vancouver–Seymour	In-house

Campaign launched December 7, 2023 — the same day Chemtrade registered both in-house lobbyists and Hill & Knowlton. Susie Chant (local MLA) was the primary target throughout 2024.

The Complete Lobbying Record

BC Lobbying Registry — Chemtrade Electrochem Inc. & Hill & Knowlton | 2025–2026 (⚠️ Post-rejection meetings highlighted in red)

Date	Official(s) Lobbied	Role & Ministry	Lobbyist
Feb 6, 2025	Gavin Dew	MLA, Kelowna–Mission	In-house + H&K
Feb 26, 2025	Lynne Block Tony Luck Donegal Wilson	MLAs for West Vancouver–Capilano, Fraser–Nicola, Boundary–Similkameen	In-house + H&K
Mar 14, 2025	Lynne Block	MLA, West Vancouver–Capilano	In-house
Mar 17, 2025	Susie Chant Lisa Dekleer Lori Halls Randene Neill	MLA North Van–Seymour Ministerial Advisor, WLRS Deputy Minister, WLRS MLA & Minister of WLRS	In-house
May 2, 2025	Susie Chant	MLA, North Vancouver–Seymour	In-house
May 26, 2025	Lori Halls	Deputy Minister, Water, Land & Resource Stewardship	In-house
— 11 month gap —			
Apr 17, 2026 ⚠️	Susie Chant	MLA, North Vancouver–Seymour [4 days after rejection]	In-house
Apr 22, 2026 ⚠️	Fazil Mihlar Paul Pawlowski Richard Sawchuk	DM, Major Investments Office ADM, Major Investments Office Exec Project Director, MIO	In-house
Apr 24, 2026 ⚠️	David Eby	Premier of British Columbia [11 days after rejection]	In-house

Source: BC Lobbying Registry — Chemtrade Electrochem Inc., Activity Reports 2023–2026

Provincial Officials Lobbied

BC Lobbying Registry filings show meetings with the following officials

KEY

David Eby

Premier of British Columbia

Meeting reported April 24, 2026 — 11 days after rezoning rejected

Fazil Mihlar

Deputy Minister, Major Investments Office
Ministry of Jobs, Economic Development & Innovation

Province's strategic industrial investment arm

Paul Pawlowski

Assistant Deputy Minister, Major Investments Office
Ministry of Jobs, Economic Development & Innovation

Reports directly to Mihlar in the same office

Richard Sawchuk

Executive Project Director, Major Investments Office
Ministry of Jobs, Economic Development & Innovation

All three MIO officials lobbied simultaneously

KEY

Susie Chant

MLA, North Vancouver–Seymour
Parliamentary Secretary for Seniors' Services

The local MLA representing the affected community

Lori Halls

Deputy Minister, Ministry of Land,
Water and Resource Stewardship

Former Deputy Minister for Emergency Management BC

Federal Officials Lobbied

Chemtrade framed a local municipal rezoning as a national critical infrastructure issue

Health Canada

Topic: Chlorine supply and drinking water treatment

Framing: 'Approve the rezoning or Canadians lose access to safe drinking water'

Public Safety Canada

Topic: Critical infrastructure and emergency supply chain

Framing: 'Our chlorine facility is critical national infrastructure'

Transport Canada

Topic: Rail transport and hazardous materials regulation

Framing: 'Disruption to chlorine supply chain affects national transport safety'

The Province's letter of support — cited repeatedly by Chemtrade — was not an independent government assessment. It was the output of this lobbying campaign.

Notable Absences

Chemtrade lobbied these federal agencies — yet none appeared at the public hearing or sent a letter of support

ABSENT

Health Canada

Lobbied on: Chlorine supply and drinking water treatment

If Chemtrade's closure truly threatened the drinking water supply of millions of Canadians, why didn't Health Canada say so — in writing, on the record?

Their silence could mean the federal public health authority did not endorse Chemtrade's drinking water narrative.

ABSENT

Public Safety Canada

Lobbied on: Critical infrastructure and emergency supply chain

If this facility were genuinely critical national infrastructure, why hasn't Public Safety Canada intervened in the public process?

Their silence could mean the federal agency responsible for critical infrastructure did not classify this rezoning as a national public safety issue.

ABSENT

Transport Canada

Lobbied on: Rail transport and hazardous materials regulation

Chemtrade ships liquefied chlorine gas by rail through Metro communities. Transport Canada regulates hazardous materials in transit.

Their silence could mean the federal regulator of hazardous materials did not appear to endorse continued operations at this location.

Chemtrade lobbied all three agencies. Not one endorsed the rezoning. Council should weigh that silence carefully.

The Timeline

What happened in the 16 days after Council said no

April 13, 2026

Council votes
4-3 to REJECT
Chemtrade rezoning

April 29, 2026

Reconsideration letter with new
framework sent to
Mayor Little

April 24, 2026

Chemtrade CEO
meets Premier
David Eby

May 12, 2026

Chemtrade's
artificial
deadline

11 days from rejection to CEO meeting the Premier · 16 days from rejection to reconsideration letter

The Real Reason

Chemtrade's caustic soda and sulphuric acid supply BC's \$100B+ major industrial projects — not mainly drinking water

LNG Canada

\$47.9B

📍 Kitimat

Caustic soda for amine gas treating — removes H₂S & CO₂ from gas before liquefaction

Phase 1 exporting 2025; Phase 2 announced

Cedar LNG

\$4.6B

📍 Kitimat (Haisla Nation)

Caustic soda for gas treatment and scrubbing

Under construction, target 2028

Ksi Lisims LNG

\$10B

📍 Nisga'a Territory, NW BC

Caustic soda for gas processing

Federal nation-building project

Rio Tinto BC Works

\$660M+/yr GDP

📍 Kitimat

Caustic soda in alumina refining — one of Western Canada's largest single consumers

Only aluminum smelter in BC; ongoing operations

Red Chris Mine Expansion

Major

📍 NW BC

Sulphuric acid for copper/gold ore heap leach processing

Federal nation-building project

NW Critical Minerals Corridor

Multi-\$B

📍 Northwest BC

Sulphuric acid for critical mineral extraction (copper, nickel, lithium)

Federal/provincial priority corridor

This is why they lobbied the Major Investments Office — not drinking water. Chemtrade is critical supply chain for BC's industrial mega-projects.

There is a massive financial incentive to maintaining the supply of caustic soda and hydrochloric acid

It is council's job to protect citizens, not to manage the finances of the province or of private corporations

Vote no to the application for a change to the zoning

From: Peter Teevan [REDACTED]
Sent: June 17, 2026 8:11 PM
To: DNV Input
Subject: MY THIRD SPEAKING NOTES
Attachments: Chemtrade_Claim_vs_Record_Expanded_Report.pdf

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Sent from my iPad

Chemtrade North Vancouver: Claim vs. Record Matrix

Expanded Council Briefing With Exact Quotes and Cross-Comparison to Chemtrade's May 26, 2026 Myth-Busting Submission

Purpose: This report combines the prior Council Sentiment Analysis, Council Hold-Firm Analysis, and the newly reviewed Chemtrade May 26, 2026 Myth-Busting submission. It focuses on areas where Chemtrade adjusted, clarified, narrowed, or reframed earlier messaging, and where the public record gives Council a reasonable basis to hold firm on the April 13, 2026 decision to abandon Bylaw 8778.

Important note: This report does not assert that Chemtrade intentionally misled Council. It identifies statements that were corrected, reframed, incomplete, narrowly scoped, or potentially misleading when compared with the fuller public record.

Executive Summary

- Chemtrade admits it corrected an FAQ that had stated liquid chlorine is directly used for water treatment in Canada, rather than bleach.
- Chemtrade confirms that approximately 5-10% of liquid chlorine produced at the facility remains in Canada, while up to 90% is shipped to Western U.S. customers.
- Chemtrade reframes the Canadian-benefit argument by shifting from liquid chlorine-specific use to total plant capacity across liquid chlorine, caustic soda and HCl.
- Chemtrade confirms off-site rail transportation risk is outside the QRA scope because it falls under federal regulatory jurisdiction.
- Chemtrade confirms railcars are not counted in the onsite inventory reduction calculation, even though loaded railcars may remain onsite for several days or weeks.
- Chemtrade states earthquake effects were captured inside standard release scenarios rather than modelled as separate earthquake events.
- The February public hearing record shows Council asked directly about off-site rail risk, security vulnerability, earthquake scenarios, emergency preparedness, bleach alternatives and local liability.
- The April 13 minutes show Council abandoned Bylaw 8778 at First Reading. The motion was moved by Mayor Little, seconded by Councillor Muri, carried, with Councillors Back, Hanson and Mah opposed.

A. Core Claim vs. Record Matrix

Issue	Chemtrade Claim / Adjustment	Record Evidence	Why Council Can Hold Firm
Water treatment wording	Chemtrade admits a correction: "We admit we have made a misstep or two" and says it corrected an FAQ that stated liquid chlorine is directly used for water treatment in Canada, rather than bleach. Source: Myth-Busting, p.49.	At the public hearing, the applicant confirmed that municipalities use bleach and that chlorine is used upstream to produce bleach. Source: Public Hearing Minutes, pp.23-24.	This directly validates Council's concern that prior public-facing messaging was, at minimum, inaccurate or incomplete.
Canadian-use claim	Chemtrade says the 5% claim is "directionally accurate" and clarifies that "approximately five to 10 per cent" of liquid chlorine remains in Canada. Source: Myth-Busting, p.50.	The same document says Chemtrade ships "up to 90 per cent" of liquid chlorine to Western U.S. customers. Source: Myth-Busting, p.50.	Council can distinguish between Canadian water-treatment importance and the fact that most liquid chlorine production serves non-Canadian markets.
Public-benefit framing	Chemtrade reframes the issue by saying roughly "60 per cent of our total plant capacity stays in Canada" when looking at liquid chlorine, caustic soda and HCl together. Source: Myth-Busting, p.50.	Bylaw 8778 is specifically a site-specific zoning amendment to permit manufacturing, handling, storage, loading and shipping of chlorine. Source: Public Hearing Minutes, p.3.	Council can hold that total plant-capacity framing does not answer the chlorine-specific land-use risk question.
Off-site rail risk	Chemtrade says the QRA scope is aligned with the District land-use decision and off-site transportation falls under Transport Canada. Source: Myth-Busting, p.53.	BakerRisk advised that its scope was the facility site and it "did not review risks for rail transportation off-site." Source: Public Hearing Minutes, p.21.	Federal jurisdiction does not remove local consequence. Council can reject a land-use exemption where a major public-risk component is outside the submitted QRA.
Security risk	Chemtrade's myth-busting document emphasizes QRA thoroughness, but the QRA discussion remains primarily accidental-release focused.	Staff advised the QRA primarily assesses accidental release, while BakerRisk said security is analyzed through a separate security vulnerability analysis that "has not been conducted for this project." Source: Public Hearing Minutes, p.26.	Council can hold firm that intentional attack, sabotage, cyber and physical-security concerns were not comprehensively addressed before the decision.
Railcar inventory	Chemtrade states: "we do not count rail cars in our onsite inventory calculation" because railcars are shipping, not storage. Source: Myth-Busting, p.56.	Chemtrade also says loaded railcars may sit in the yard for "several days or even weeks" and average loaded railcar storage is limited to 32 cars. Source: Myth-Busting, p.56.	Council can treat this as a definitional shift. Residents reasonably see loaded railcars on site as onsite chlorine inventory and risk.
32 railcars and total railcars	Chemtrade says the focus is process-storage reduction because that is where the greatest chance of release exists. Source: Myth-Busting, p.56.	At the public hearing, the applicant said 32 liquid chlorine railcars may be on site, and approximately 260 total railcars may be on site. Source: Public Hearing Minutes, p.27.	Even if process risk is reduced, Council can hold that substantial chlorine-related railcar presence remains a land-use and emergency-preparedness issue.
Earthquake modelling	Chemtrade says earthquake effects were addressed within standard release scenarios "rather than modeling earthquakes as separate events." Source: Myth-Busting, p.55.	Council asked whether a major earthquake could cause a full railcar release plus other loaded railcar leaks. BakerRisk said simultaneous release from multiple railcars would likely affect a larger area but was too remote and "not included." Source: Public Hearing Minutes, p.24.	Council can hold that seismic risk was not explored in the specific scenario the public and Council were concerned about.

Issue	Chemtrade Claim / Adjustment	Record Evidence	Why Council Can Hold Firm
Bleach conversion	Chemtrade says bleach cannot be shipped long distances and estimates approximately 34 trucks to replace one liquid chlorine railcar. Source: Myth-Busting, pp.51-52.	At the hearing, Chemtrade said limited bleach production was under consideration but declined to share trade information because competitors were present. Source: Public Hearing Minutes, pp.23-24.	Council can hold that the alternatives analysis remained incomplete, especially for partial phase-out, regional conversion or conditional pathways.
Opposition motives	Chemtrade devotes extensive discussion to K2 Pure Solutions and opposition motives, and includes redacted sections under "Asking questions about the motives." Source: Myth-Busting, pp.49, 57-59.	Council's role is not to decide competitor motives. The public hearing record contains substantive technical questions from residents, experts, former emergency personnel and Council itself. Source: Public Hearing Minutes, pp.8-39.	Council can hold that motive arguments do not resolve the planning, risk, security, rail, emergency-response or land-use questions.

B. Exact Quotes That Matter

1. Chemtrade admits a correction to public-facing water-treatment messaging

"We admit we have made a misstep or two along way."

Source: Chemtrade May 26 Myth-Busting submission, p.49

2. Chemtrade describes the corrected FAQ issue

"liquid chlorine is directly used for water treatment in Canada, rather than bleach (a derivative of liquid chlorine) that is most commonly used for water treatment. Once this concern was identified, we reviewed the website and immediately corrected it."

Source: Chemtrade May 26 Myth-Busting submission, p.49

3. Chemtrade confirms the 5-10% Canadian-use point

"approximately five to 10 per cent of the liquid chlorine we produce stays in Canada"

Source: Chemtrade May 26 Myth-Busting submission, p.50

4. Chemtrade confirms U.S. export exposure

"We also ship up to 90 per cent of the liquid chlorine we produce to customers in the Western United States."

Source: Chemtrade May 26 Myth-Busting submission, p.50

5. Chemtrade confirms bleach is what municipalities use

"Bleach is what is used at municipalities to treat drinking water."

Source: Chemtrade May 26 Myth-Busting submission, p.51

6. Chemtrade states direct municipal liquid chlorine use is rare

"Only one large municipality (Los Angeles) that we are aware of in the U.S. still uses liquid chlorine directly"

Source: Chemtrade May 26 Myth-Busting submission, p.51

7. Chemtrade confirms off-site rail risk is outside the QRA scope

"The scope of the risk assessment is aligned with the land use decision under consideration by the District of North Vancouver, as transportation of our products falls under the regulatory guidance and framework of Transport Canada."

Source: Chemtrade May 26 Myth-Busting submission, p.53

8. Chemtrade confirms railcars were excluded from inventory-reduction calculation

"It is true that we do not count rail cars in our onsite inventory calculation for reducing storage"

Source: Chemtrade May 26 Myth-Busting submission, p.56

9. Chemtrade confirms loaded railcars may remain onsite

"more rail cars may be sitting in the yard for several days or even weeks before they are shipped to customers."

Source: Chemtrade May 26 Myth-Busting submission, p.56

10. Chemtrade confirms earthquake effects were not modelled as separate events

"Earthquake effects were addressed in the QRA by incorporating their potential impacts within conservative, standard release scenarios, rather than modeling earthquakes as separate events."

Source: Chemtrade May 26 Myth-Busting submission, p.55

C. Public Hearing Record: Exact Quotes and Questions

Bylaw scope

"manufacturing, processing, liquefaction, handling, storage, loading and shipping of chlorine"

Source: Public Hearing Minutes, p.3

QRA off-site rail scope limitation

"their scope of work was the facility site and they did not review risks for rail transportation off-site."

Source: Public Hearing Minutes, p.21

Security vulnerability assessment gap

"security is analyzed in a separate process known as a security vulnerability analysis, which has not been conducted for this project."

Source: Public Hearing Minutes, p.26

Multiple railcar release not modelled

"simultaneous release from multiple railcars release would likely impact a larger area, but the risk is significantly lower and considered so remote, it was not included."

Source: Public Hearing Minutes, p.24

Loaded railcars on site

"The applicant advised that 32 railcars of liquid chlorine may be on site"

Source: Public Hearing Minutes, p.27

Total railcars on site

"there are approximately 260 railcars on site, many of which are empty and others contain other substances produced at the site."

Source: Public Hearing Minutes, p.27

Insurance and emergency preparedness question

"Please confirm the training and education for the community and surrounding businesses and homes, how is the surrounding community advised as to what to do in an event?"

Source: Public Hearing Minutes, p.28

Independent study question

"Can DNV request a new, robust study by an independent consultant that goes further than the RiskTec review of Chemtrades's safety study?"

Source: Public Hearing Minutes, p.37

Unique residential proximity

"staff advised that they do not have a comprehensive scan and are not aware of another example of a site located near residential areas."

Source: Public Hearing Minutes, p.38

Applicant acknowledges uniqueness

"their facility is the only chlor-alkali plant close to a residential area."

Source: Public Hearing Minutes, p.38

D. Council Decision and Voting Record

The April 13 minutes record the motion to abandon Bylaw 8778 at First Reading. The motion was moved by Mayor Little and seconded by Councillor Muri. The motion carried, with Councillors Back, Hanson and Mah opposed.

"THAT 'District of North Vancouver Rezoning Bylaw 1462 (Bylaw 8778)' is given no further Readings and is abandoned at First Reading."

Source: April 13, 2026 Regular Council Minutes, p.7.

Councillor-by-Councillor Sentiment From Available Minutes

Councillor	Recorded Action / Vote	Inferred Position From Available Record	Notes
Mayor Mike Little	Moved April 13 abandonment motion.	Against continuing Bylaw 8778 as presented.	Central role in ending the application at First Reading.
Councillor Lisa Muri	Seconded April 13 abandonment motion.	Against continuing Bylaw 8778 as presented.	Also seconded first-reading referral in January, showing position evolved after hearing record.
Councillor Betty Forbes	Not listed as opposed to abandonment.	Supported abandonment or did not oppose it.	Assumed Chair briefly when Mayor left meeting after the vote.
Councillor Catherine Pope	Not listed as opposed to abandonment.	Supported abandonment or did not oppose it.	Absent for January vote but present for hearing and April vote.
Councillor Jordan Back	Opposed abandonment.	Favoured continuing the bylaw process.	Also seconded motion to extend the February 24 public hearing.
Councillor Jim Hanson	Opposed abandonment.	Favoured continuing the bylaw process.	Moved to close the February public hearing and return Bylaw 8778 for further consideration.
Councillor Herman Mah	Opposed abandonment.	Favoured continuing the bylaw process.	Seconded First Reading on January 12 and opposed abandonment on April 13.

E. Areas Where Council Should Hold Firm

1. Hold firm that the corrected FAQ matters

A correction after criticism is not a minor public-relations issue. It goes to whether Council and the public were given precise, plain-language explanations of what is used directly for water treatment.

2. Hold firm on liquid chlorine-specific analysis

Chemtrade's shift to total plant capacity may be commercially relevant, but Bylaw 8778 is about chlorine. Council can focus on chlorine-specific risk, chlorine-specific exports and chlorine-specific local impacts.

3. Hold firm on off-site rail risk

The QRA did not evaluate rail transportation risk beyond the site. The fact that rail is federally regulated does not eliminate the local land-use consequence of approving more onsite loading and shipment.

4. Hold firm on security risk

A security vulnerability analysis had not been conducted for the project at the time of the hearing. This leaves intentional attack, sabotage, cyber and malicious-actor concerns unresolved.

5. Hold firm on earthquake and multiple-release concerns

Chemtrade's explanation confirms earthquake impacts were folded into standard scenarios rather than modelled separately, while multiple railcar release was not included.

6. Hold firm on inventory framing

Railcars may not be counted as storage in Chemtrade's terminology, but loaded railcars may sit onsite for days or weeks. Council can consider them in practical risk terms.

7. Hold firm on emergency preparedness

Questions about shelter-in-place, training records, vulnerable populations, first responder capacity and community notification remained central and unresolved for many speakers.

8. Hold firm on residential proximity

The record indicates the facility is unusual in its proximity to residential areas. That alone supports a higher standard of evidence before granting a site-specific exemption.

F. Recommended Council Talking Points

- Council's decision was not based on proving Chemtrade unsafe. It was based on the conclusion that the information presented did not justify a site-specific exemption for continued chlorine manufacturing, loading, storage and shipment.
- Chemtrade's own myth-busting submission confirms several public concerns were directionally accurate, including the correction to water-treatment messaging, the 5-10% Canadian liquid chlorine use, the up-to-90% U.S. shipment figure, and the exclusion of off-site rail risk from the QRA.
- The District can recognize Chemtrade's economic contribution while still declining to expand or perpetuate a hazardous-substance exemption near residential areas.
- Federal regulation of rail transportation does not answer whether the District should approve the land-use change that enables continued local loading and shipment.
- The strongest unresolved issue is not one single technical point. It is the cumulative gap between broad public-benefit messaging and the narrower scope of the technical risk assessment.

Bottom Line

The May 26 Myth-Busting submission does not eliminate Council's reasons to hold firm. It confirms that Chemtrade corrected water-treatment wording, confirms the export-heavy nature of liquid chlorine production, confirms off-site rail risk is outside the QRA, confirms railcars are excluded from inventory-reduction claims, and confirms earthquake impacts were not modelled as standalone events. These admissions and reframings support Council's ability to maintain the April 13 decision.

From: Peter Teevan [REDACTED]
Sent: June 17, 2026 8:11 PM
To: DNV Input
Cc: Peter Teevan
Subject: Shared from North Shore News: CN train collides with truck on North Van railroad crossing

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

This article is for addition to the public hearing binder tonight - I will refer to it in my remarks.

Peter Teevan

[https://ca-central-1.protection.sophos.com?
d=nsnews.com&u=aHR0cHM6Ly93d3cubnNuZXdzLmNvbS9sb2NhbmC1uZXdzL2NuLXRyYWluLWNvbGxpZGVzLXdpdGgtb24tbm9ydGgtbmFuLXJhaWxyb2FkLWNyb3NzaW5nLTg1OTM0Mzl_dXRtX3NvdXJjZT1FbWVpbF9TaGFyZSZ1dG1fbWVkaXVtPUVtYWIsX1NoYXJlJnV0bV9jYW1wYWlnbj1FbWVpbF9TaGFyZQ==&i=Njk4M2U3ZWVmYTEyYjEzZmU2ZTI4YjU3&t=Z25aaDRiSDU1REVpK1Rna3VseHJLMUNBV0dLYWVlaHgyMTNsK292Z1RlZz0=&h=ba610e664ab448cba9d1c3c6bc6ee654&s=AVNPUehUTONFTkNSWVBUSVbFMVtpZYj6HYGOzO6XOlcz](https://ca-central-1.protection.sophos.com?d=nsnews.com&u=aHR0cHM6Ly93d3cubnNuZXdzLmNvbS9sb2NhbmC1uZXdzL2NuLXRyYWluLWNvbGxpZGVzLXdpdGgtb24tbm9ydGgtbmFuLXJhaWxyb2FkLWNyb3NzaW5nLTg1OTM0Mzl_dXRtX3NvdXJjZT1FbWVpbF9TaGFyZSZ1dG1fbWVkaXVtPUVtYWIsX1NoYXJlJnV0bV9jYW1wYWlnbj1FbWVpbF9TaGFyZQ==&i=Njk4M2U3ZWVmYTEyYjEzZmU2ZTI4YjU3&t=Z25aaDRiSDU1REVpK1Rna3VseHJLMUNBV0dLYWVlaHgyMTNsK292Z1RlZz0=&h=ba610e664ab448cba9d1c3c6bc6ee654&s=AVNPUehUTONFTkNSWVBUSVbFMVtpZYj6HYGOzO6XOlcz)

Also: be sure to check out all of today's latest news at [https://ca-central-1.protection.sophos.com?
d=nsnews.com&u=aHR0cHM6Ly93d3cubnNuZXdzLmNvbS9kYWlseQ==&i=Njk4M2U3ZWVmYTEyYjEzZmU2ZTI4YjU3&t=NzdEaUY5SVdCZHo3eIF0RkUxWndwQUdiV0lInmIMd0hoaFJJWXdRekNOUT0=&h=ba610e664ab448cba9d1c3c6bc6ee654&s=AVNPUehUTONFTkNSWVBUSVbFMVtpZYj6HYGOzO6XOlcz](https://ca-central-1.protection.sophos.com?d=nsnews.com&u=aHR0cHM6Ly93d3cubnNuZXdzLmNvbS9kYWlseQ==&i=Njk4M2U3ZWVmYTEyYjEzZmU2ZTI4YjU3&t=NzdEaUY5SVdCZHo3eIF0RkUxWndwQUdiV0lInmIMd0hoaFJJWXdRekNOUT0=&h=ba610e664ab448cba9d1c3c6bc6ee654&s=AVNPUehUTONFTkNSWVBUSVbFMVtpZYj6HYGOzO6XOlcz)

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d=nsnews.com&u=aHR0cHM6Ly93d3cubnNuZXdzLmNvbS9kYWlseQ==&i=Njk4M2U3ZWVmYTEyYjEzZmU2ZTI4YjU3&t=L3lpV2hPMStnemxlbklvY1RIUjErV253K0UxbmRXaUxlcmlwN2M1RUtRbz0=&h=ba610e664ab448cba9d1c3c6bc6ee654&s=AVNPUehUTONFTkNSWVBUSVbFMVtpZYj6HYGOzO6XOlcz](https://ca-central-1.protection.sophos.com?d=nsnews.com&u=aHR0cHM6Ly93d3cubnNuZXdzLmNvbS9kYWlseQ==&i=Njk4M2U3ZWVmYTEyYjEzZmU2ZTI4YjU3&t=L3lpV2hPMStnemxlbklvY1RIUjErV253K0UxbmRXaUxlcmlwN2M1RUtRbz0=&h=ba610e664ab448cba9d1c3c6bc6ee654&s=AVNPUehUTONFTkNSWVBUSVbFMVtpZYj6HYGOzO6XOlcz)

Sent from my iPad

From: Peter Teevan [REDACTED]
Sent: June 17, 2026 8:11 PM
To: DNV Input
Subject: My slide deck from the public hearing
Attachments: Public Hearing Two - First Opportunity.pptx

Follow Up Flag: Follow up
Flag Status: Flagged

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

At councillor Muri's suggestion/request

Sent from my iPad

Peter Teevan

1900 BLOCK INDIAN RIVER CRESCENT

SPEAKING ON MY OWN BEHALF

DISTRICT OF NORTH VANCOUVER – 100 AMHERST APPLICATION

JUNE 16TH 2026

The question at hand...



The Applicant's Narratives

- ▶ “Our chlorine is essential for safe drinking water in western Canada.”
- ▶ “The QRA shows this plan is safe. We looked at a “worst-case-scenario”.
- ▶ “The Port doesn’t mind liquid Chlorine, they just want their lands used for import/export.”
- ▶ “We are substantially reducing the amount of Chlorine that we store onsite.”
- ▶ “That Council should not consider railcars off the property”.
- ▶ “The idea that jobs are at risk/tax revenue would be lost

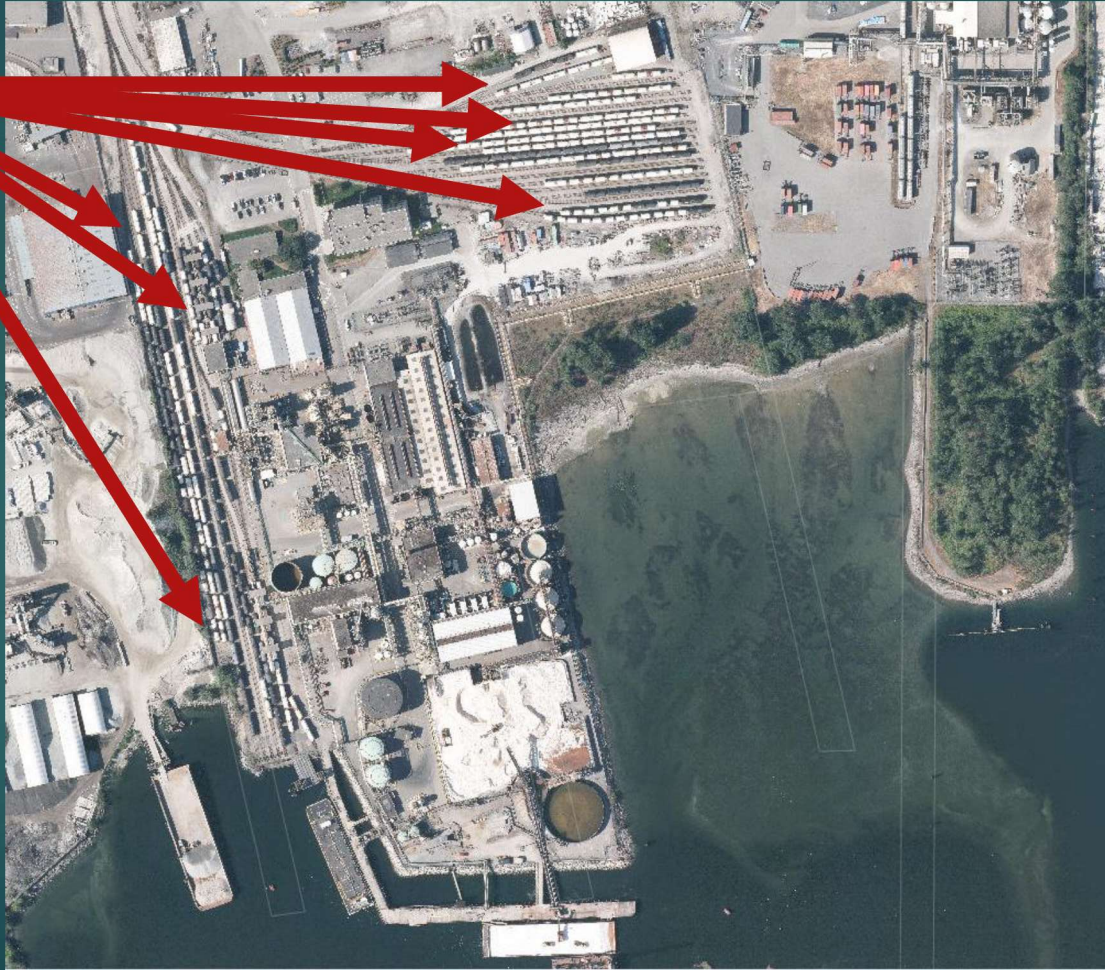
Narratives...

- ▶ ~~“Our chlorine is essential for safe drinking water in western Canada.”~~
 - ▶ Our systems use bleach not pure chlorine.
 - ▶ At least one local bleach manufacturer doesn't buy Chemtrade's chlorine.
 - ▶ Over 90% of Chemtrade's chlorine goes south to the USA.
 - ▶ There is excess supply and capacity for chlorine in Canada.
- ▶ ~~“The QRA shows this plan is safe. We looked at a “worst-case-scenario”.~~
 - ▶ There was nothing “worst-case” about it:
 - ▶ Increased density in Maplewood not included.
 - ▶ Hydrogen plant next door not included.
 - ▶ Rail cars not included.
 - ▶ Seismic event not included for entire plant.

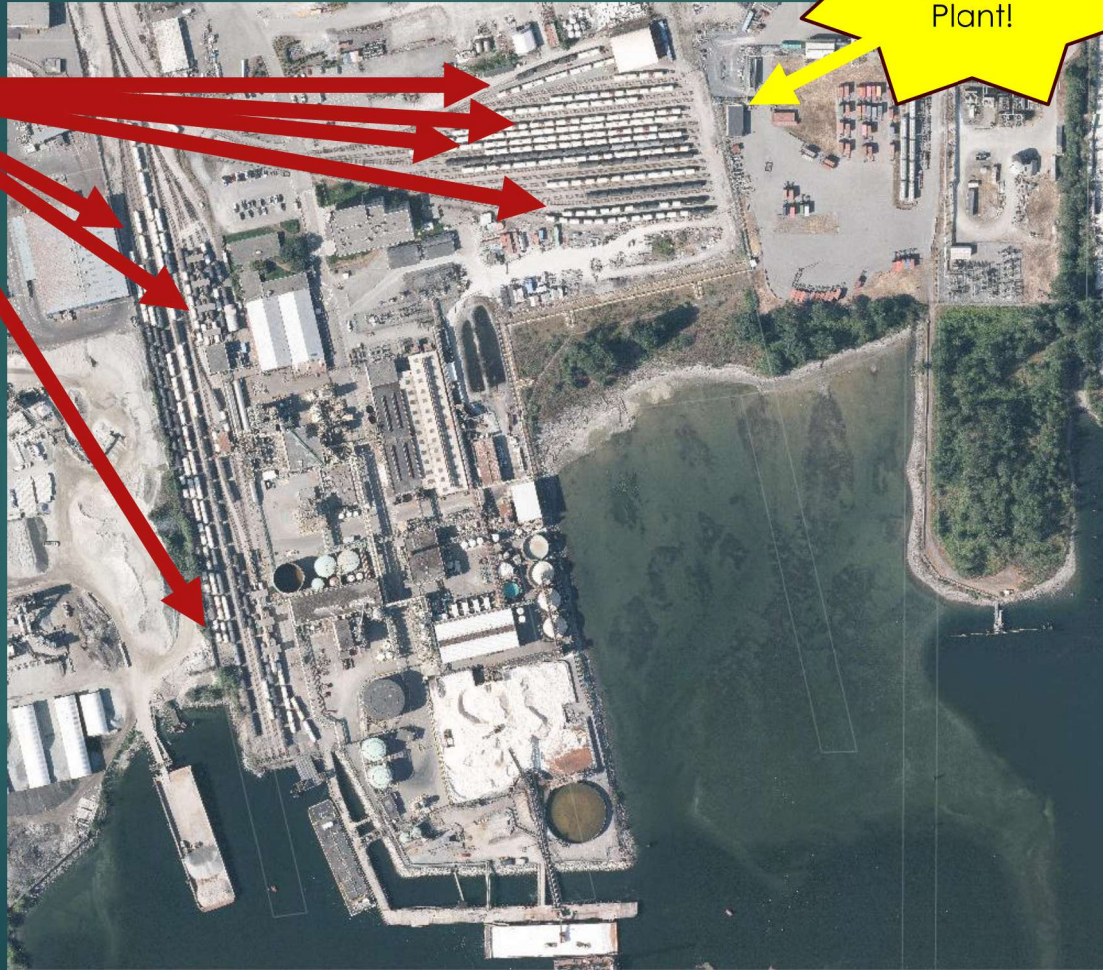
Narratives con't...

- ▶ ~~“The Port doesn't mind liquid Chlorine, they just want their lands used for import/export.”~~
 - ▶ the Cell House - the “heart” of production, is to stay on Port Lands.
 - ▶ We now have confirmation from the Port that all they are forcing off their land is liquid chlorine. WHY?
- ▶ ~~“We are substantially reducing the amount of Chlorine that we store onsite.”~~
 - ▶ They are eliminating one tank.
 - ▶ 32 full and 100+ partially filled railcars remain on site.

Railcars on site...



Railcars on site...



Approved
Hydrogen
Plant!

Narratives con't...

- ▶ ~~“Council should not consider railcars off the property”~~
 - ▶ I will speak later in the public hearing on this topic.
- ▶ ~~“the idea that jobs are at risk/tax revenue would be lost”~~
 - ▶ This is the “All or nothing” gambit being played.
 - ▶ There is a third option – a path forward.
 - ▶ CALL THEIR BLUFF

This was never about Chlorine

- ▶ The market in Canada is over-supplied with Chlorine.
 - ▶ Chemtrade ships over 90% of their Chlorine to the USA.
- ▶ The markets for Caustic Soda is much larger than the market for Chlorine.
- ▶ Caustic Soda and Hydrochloric Acid (HCL) have many uses in Canada.
 - ▶ Caustic is used in pulp and paper production.
 - ▶ Hydrochloric acid is used in Natural Gas fracking.
- ▶ Chlor-Alkali plants can only produce as much Caustic and HCL as they can safely get rid of chlorine.

What is this “Path Forward”?

- ▶ Continue Chlor-Alkali operations.
- ▶ STOP producing, storing and shipping liquid chlorine.
- ▶ INSTEAD use the chlorine gas to produce BLEACH and other safer chlorine derivatives.
- ▶ KEEP the jobs.
- ▶ STAY profitable.
- ▶ MAKE US SAFER.

From: DNV Input
Sent: June 18, 2026 8:22 AM
To: DNV Input
Subject: Public Hearing Input: Chemtrade

From: [REDACTED]
Sent: 2026-06-17 6:39:33 PM
To: infoweb@dnv.org

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Mayor & Council,

I am not an expert regarding the risks posed by the Chemtrade facility. However, I have been involved in risk analysis during my professional life and, on balance, my impression is that others with better expertise and no vested interest in the Chemtrade business have adequately stated real risks to a significant (and growing) residential population in the vicinity of the plant.

We live in an area with a risk of earthquake. That's our choice and it's an unavoidable risk that is out of our control if we choose this place as our home. However, my opinion is that the risks to residential populations that are associated with Chemtrade are AVOIDABLE and within our control and should therefore be discontinued.

Katherine Fagerlund
[REDACTED]

SUBMITTED AT THE
JUN 17 2020
PUBLIC HEARING

Speech – June 17 Public Hearing – 100 Amherst Ave

Good evening Your Worship, Counsellors,

My name is Andrea Brown, and I live in Maplewood [REDACTED] less than a kilometre from the Chemtrade facility.

I'm here tonight to express my strong opposition to this rezoning application.

I want to address ^aChemtrade's claim made during yesterday's public hearing, ^{It was said} that there is strong community support for this project. That was not what I observed at last night's meeting. At that meeting, the voices I heard that were in favour, were from Chemtrade employees or individuals connected to the company and its industry partners. The majority of residents spoke against Chemtrade's application for rezoning.

As others
have
mentioned,

This rezoning application is being ^{unfairly positioned as} framed as "all or nothing" situation — that either this facility is approved to continue operating as proposed, or our region risks losing access to chlorine entirely. That framing feels overly simplistic and, frankly, unfair. It puts pressure on the community and on Council to accept a high level of risk without fully exploring safer or more appropriate alternatives.

As many others have said, I also understand the importance of industry. It plays a vital role in our economy. But safety must come first, especially when we are talking about hazardous materials in close proximity to high density neighbourhoods filled with homes, schools, and public spaces.

At this point, I don't feel confident that the safety concerns have been adequately addressed.

For example, the plan relies heavily on a "shelter in place" response in the event of a chlorine leak. But how would that work in practice? How would residents be notified through phone alerts, sirens? If evacuating quickly is important, and people only have minutes to respond, what happens if they are not at home? If someone is out for a run, or children are outside, what are they expected to do? Are we expected to constantly monitor our phones just in case? Also, as we know, the Iron Workers Memorial bridge can easily get backed up. That being the case, how are we expected to get additional safety supports in the event of a leak, if all the roads are blocked.

I am also concerned about the reliance on a covenant as a long-term safeguard against this zoning bylaw, given that it could potentially be altered or even removed after 2046. That does not provide lasting reassurance. ~~We are being asked to accept ongoing risk based on something that may not be permanent, and that raises serious concerns about long-term accountability.~~ ^{might}

Finally, we need to consider the broader context that we live in today. Climate-related emergencies are becoming more frequent. At yesterday's meeting, we heard there are ~~only~~ 11 firefighters on call at a time. With increasing pressure from wildfire seasons and other emergencies, it is difficult to understand how emergency services would be able to respond effectively to a chlorine leak at the same time.

And again, this is especially concerning in the context of Maplewood's own long-term plan. This is an area that is actively being densified, with more housing, more families, and more people moving in. Approving this rezoning means accepting unnecessary risk, at the same time as we are intentionally growing the population in this neighbourhood. Those two directions are fundamentally at odds.

Of course, life comes with acknowledging that we take risks. But if we can help to mitigate unnecessary risks, then why accept that thousands of lives must be put in danger "because life just comes with risk". Chemtrade has stated that there are increased safety measures in place since their initial application was denied on April 13th. However, I'm wondering why these safety measures were not already proposed when they initially applied, given that a chlorine leak would be devastating.

And ultimately, Council is accountable to the people of North Vancouver — the residents who live here, raise families here, and who will continue to be put at risk if this application goes through.

This comes down to the safety and well-being of our community. Allowing this level of risk to continue in an increasingly densely populated residential neighbourhood requires a very high standard of justification — and in my view, that standard has not been met.

I'm asking you to stand with our community, and make the decision that protects the people who live here — now and in the future. Please reject this rezoning application.

Thank you for your time.



Andrea Brown

1/4

Dave Sadler, Roche Point Drive, North Vancouver V7G 2G4

Located 4Km Downwind from the Chlorine Plant

Speaking Against

I asked AI to compile a list of chlorine plants located in Urban Areas around the world. It came up with a list of 6 while pointing out that 5 were located in Industrial Zones away from populated areas. However there was only ONE plant located in the middle of a residential area – our very own Chemtrade Chlorine Plant in Maplewood. Wow!

During this hearing I've heard from Chemtrade's Top Guns & their employees attesting to the safety of the plant.

But the fact remains that despite industry safety protocols, accidents do happen.

I'm sure Dow Chemicals Olin Chlorine Plant in Freeport Texas have similar safety bells & whistles in place as our own Chlorine Plant.

However in May 2025 – 1 year ago – it leaked 10,000 lbs of chlorine gas in only 48 minutes and a yellow gas cloud escaped the plant's boundaries.

Thousands of people from the nearest towns of Freeport, Chute & Lake Jackson were all placed temporarily under lockdown – in towns were located 1, 8 & 11 miles away from the plant!!!

Imagine the anxiety, turmoil, parents & school children freaking out & the economic cost to those communities.

Now think about our community – 2nd Narrows, roads gridlocked, a huge area under lockdown, no where to hide and I know I should have had those air tight vinyl windows installed.

It's no wonder that today all chlorine plants are now situated far from population centres.

SUBMITTED AT THE
JUN 7, 2025
PUBLIC HEARING

To really upgrade our Chlorine Plant to World Class Risk Status, we must consider the Big One.

Qualified Seismologists expect a catastrophic 9+ Magnitude Earthquake with a probability of 10-20% within the next 50 years. Just like Japan's Fukushima.

A smaller shallow 6-7 Magnitude Earthquake probability increases to 30% within 50 years. This is more likely & could occur without warning.

Construction built on soft-soil areas or fill or silt (like the North Shore waterfront) would experience amplified shaking & soil liquefaction. Roads would crack and building foundations sink.

And I wonder how over 30 - 90 Ton Chlorine Rail Cars would hold up?

This is why much of the Chlorine site is classified as a Full Destruction Zone in the District's created Red Zones. *(when the ground shakes page 14)*.

In the last public hearing, Council appeared to dismiss the Seismologists Predictions, almost as a non-event.

Should 1000's of District Homeowners cancel their earthquake insurance & ignore the Seismologists warnings as well? I don't think so.....

The chlorine plant has been operating for 69 years – we're being asked to add another 20 years to 2046 and the plant will be 89 years old.

Yet the Seismologists talk in terms of 50 years.
I think of a ticking Time Bomb.

So place your bets – **but Council should not gamble with public safety.**

Thank you

Dave Sadler, Roche Point Drive, North Vancouver V7G 2G4

Located 4Km Downwind from the Chlorine Plant

Speaking Against

Chemtrade acquired the plant in 2017 after it's purchase of Canexus. They knew full well that Chlorine production would cease in 2030, so they have had 13 years to prepare. The company operates 60 chemical plants throughout Canada & the USA.

In 2025 their revenue was \$2 Billion Dollars. I estimate the very lucrative North Van plant's income at over \$500 Million with 90% of the chlorine shipped to the USA. Their CEO made over +\$7M in 2025 and his 4 Underlings +\$1M each. So we're talking BIG BUCKS.

If this company is making so much money, why wait years to apply new safety protocols, reducing (not eliminating) risk. As former Councillor Ernie Crist would say "it's all balderdash".

I'm very disappointed in Chemtrade's 11th hour tactics to try & get their lease extended for another 18 years.

I'm embarrassed to say I'm a shareholder of this company.

And remember Council, it's **SAFETY FIRST**.

Dave Sadler, Roche Point Drive, North Vancouver V7G 2G4

4/4

Located 4Km Downwind from the Chlorine Plant

Speaking Against

In regards to the **Railway Chlorine Tank Cars**, the Public Hearing was addressed by Mr. Tracy Clark from Texas who identified himself as a Hazardous Handler involved with rail cars. He stated that tank cars that contained chlorine arrived at his facility sometimes "pretty banged up". I found his remarks very disturbing considering the Chlorine's lethal nature & not being transported with proper care & attention.

I believe the Railcar issue was addressed in a thorough & consciousness manner by **AcuTech Consulting Group**. They are a global consulting firm that specializes in industries handling hazardous materials and are highly respected. They have 75 Employees and have been around since 1994. I don't care who commissioned their report – the facts are the facts and should not be taken lightly.

Finally Council, I believe a firm finite decision is required on this matter, so alternate sources or suppliers can be found when the plants Chlorine phase out is complete.

Thank you Council. **SAFETY FIRST**

☒ Are there chlorine plants located in populated urban settings?

Yes — but only a small number. Most chlorine (chlor-alkali) plants worldwide are intentionally located in **industrial zones far from dense populations** because chlorine is a *toxic inhalation hazard* (TIH).

However, a few **notable exceptions** exist where chlorine plants operate **inside or immediately adjacent to major urban areas**.

Below is the **definitive list of confirmed cases**, based on global chlor-alkali inventories, municipal records, and industry disclosures.

Confirmed chlorine plants in populated urban settings

1. North Vancouver, Canada — Chemtrade Chlor-Alkali

- Located **inside the District of North Vancouver**, surrounded by residential neighbourhoods, commercial zones, and waterfront development.
- The only plant in Canada producing liquid chlorine on the West Coast.
- Subject of municipal rezoning debates due to proximity to dense population.

2. Niagara Falls, New York (USA) — Olin / Occidental legacy sites

- Chlor-alkali production historically located **within the urban Niagara Falls industrial district**.
- Several facilities operated close to residential areas.

3. Antwerp, Belgium — Port of Antwerp cluster

- Chlor-alkali plants located in the **Antwerp metro industrial zone**, which is tightly integrated with the city's urban footprint.

4. Rotterdam, Netherlands — Rijnmond industrial area

- Chlorine production occurs in the **Rotterdam metropolitan industrial belt**, adjacent to dense population centres.

5. São Paulo, Brazil — Cubatão industrial zone

- Chlor-alkali facilities operate in the **Cubatão industrial complex**, historically one of the most polluted industrial zones, located within the São Paulo metro region.

6. Shanghai, China — Pudong & surrounding industrial districts

- China hosts the world's largest number of chlor-alkali plants, and several are located **within or immediately adjacent to major urban districts** due to rapid industrial-urban overlap.

☐ Why urban chlorine plants are rare

Chlorine is:

- **Highly toxic**
- **Heavier than air** (spreads along the ground)
- Capable of causing **mass casualties** in a major release

Because of this, most countries:

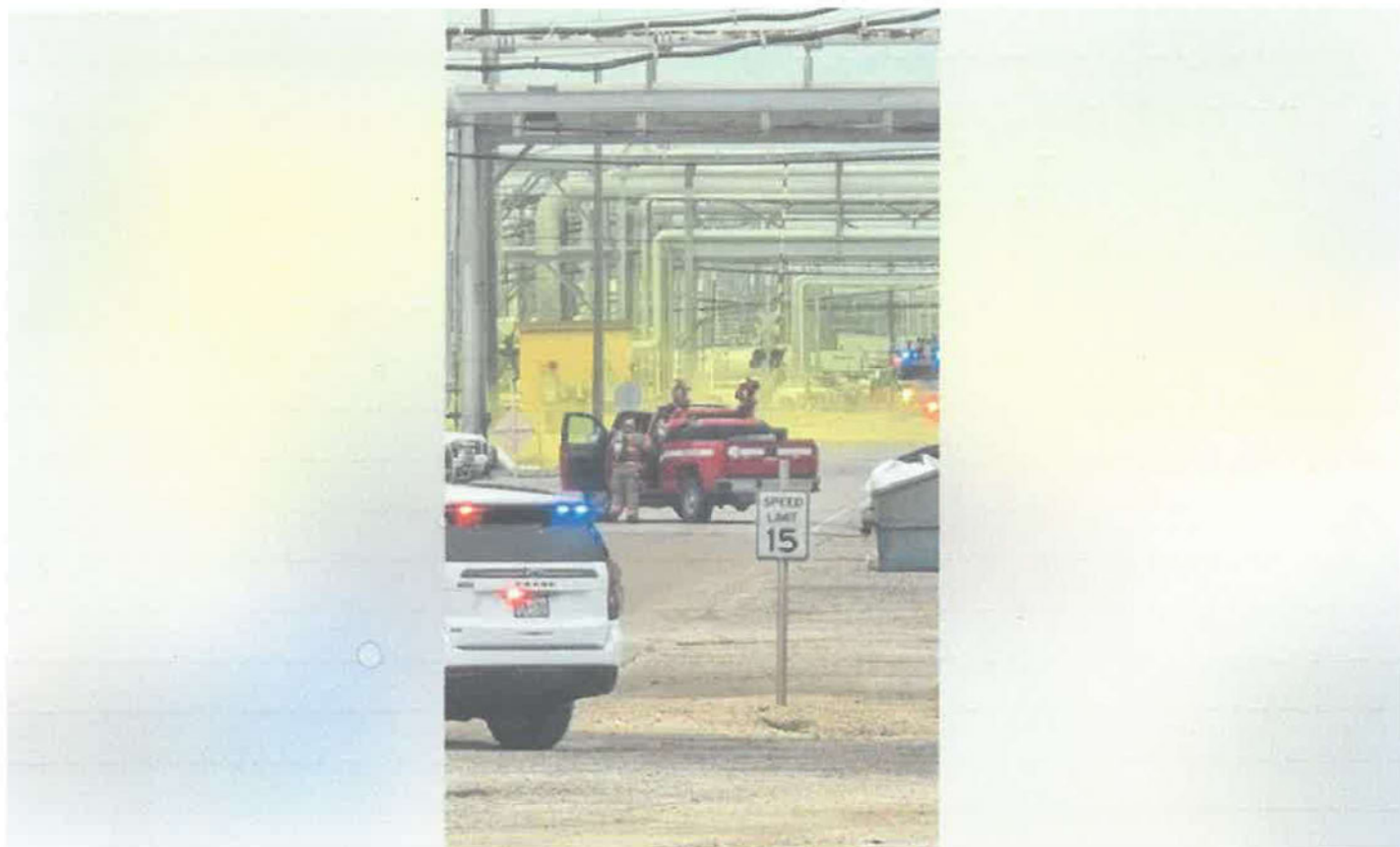
- Zone chlorine plants in **remote industrial areas**
- Restrict **large onsite storage**
- Require **buffer zones** between plants and residential areas

Urban-located chlorine plants are typically **older legacy facilities** that were built before modern zoning rules — like North Vancouver.

☐ Which urban chlorine plant is the most documented?

The North Vancouver (DNV) plant is the **most publicly documented urban chlorine plant in North America**, due to:

- Rezoning battles
- Rail-transport risk debates
- Its location inside a dense municipality
- Its role supplying chlorine for drinking water across Western Canada



Chlorine Gas Leak Prompts Shelter-In-Place Orders For Thousands In Texas

 May 21, 2025

A chlorine gas leak at the Olin Plant B in Freeport, Texas, caused a major emergency response on Tuesday morning, prompting thousands of residents to shelter indoors.

THE INCIDENT

The leak occurred around 9:00 a.m. local time when chlorine gas escaped from industrial equipment at the facility. Loud sirens immediately sounded throughout the area as yellow gas clouds billowed from the plant. The incident was classified as a Level 3 release by the Lake Jackson Police Department, signaling that the gas had moved beyond the plant's boundaries.



EN

**JOIFF**

HOME ABOUT TRAINING MEMBERSHIP THE CATALYST

NEWS EVENTS CONTACT

MEMBERS' AREA

EMERGENCY RESPONSE

Local authorities swiftly issued shelter-in-place orders for Freeport and nearby communities, including Clute and Lake Jackson. The directive also applied to local schools. The leak was contained by 9:46 a.m., but safety orders remained in effect as a precaution.

Freeport's Emergency Management Office stated that while the situation is under control, they are closely monitoring air quality.

Chlorine gas poses serious health risks. Even at low concentrations, it can irritate the eyes, throat, and respiratory system. High exposure can result in lung damage, including pulmonary edema, and may be fatal. Residents near the plant reported symptoms consistent with chlorine exposure.

BACKGROUND ON OLIN PLANT B

The Olin Plant B is part of the Dow Texas Operations complex, one of the largest chemical production sites in the region. The plant manufactures chlorine, caustic soda, hydrochloric acid, industrial bleach, and other key chemicals used in plastics, paper, cleaning products, and water treatment.

Photo credit: Norman Mejias. All rights reserved.

USA

Share:

**INCIDENT REPORTS**

ctors Injured in Explosion at Baltimore Wastewater Treatment Plant June 17, 2026

A major chlorine release occurred in Freeport, Texas on May 20, 2025, involving the Olin Corporation chemical complex. The event is well-documented across multiple independent sources and is considered one of Texas's most serious chlorine accidents in recent years.

□ Core facts (the short version)

A maintenance error at Olin's Freeport facility caused ~8,000–10,000 pounds of chlorine gas to escape over roughly 45–48 minutes, triggering Level 3 emergency alerts and shelter-in-place orders for nearby cities. One worker was seriously injured. [U.S. Chemical Safety and Hazard Investigation Board](#) [Spectrum News](#) [Newsmax](#) [Translogistics](#)

What happened (event timeline)

May 20, 2025 — Around 8:15–9:00 a.m.

- A maintenance worker **disassembled a rupture-disc holder on an active chlorine line**, believing the system had been isolated.
- Olin's operations team had mistakenly isolated and tagged **the wrong, nearly identical piping system**.
- Chlorine began venting as a **greenish-yellow cloud**, visible off-site.
[U.S. Chemical Safety and Hazard Investigation Board](#)

8:15–9:03 a.m. (approx.)

- State pollution data shows **8,000–10,000 pounds** of chlorine released over **48 minutes**.
[Translogistics](#) [thehouston.org](#)

9:00–9:45 a.m.

- Brazosport CAER and local authorities issued **shelter-in-place orders** for Freeport, Clute, and Lake Jackson.
- Several schools were included in the order.
[Spectrum News](#) [Newsmax](#)

10:40 a.m.

- Leak declared **contained**; “all clear” issued.
[Spectrum News](#)
-

☐ Impact & consequences

Human impact

- **One worker** was hospitalized with serious injuries but released the next day.
[U.S. Chemical Safety and Hazard Investigation Board thehouston.org](#)
- No confirmed public injuries, though thousands sheltered indoors.

Environmental & community impact

- Classified as a **Level 3 chemical release**, meaning the chlorine cloud **breached the plant boundary** and posed a risk of mass casualties.
[Newsmax thehouston.org](#)
- Residents reported **no audible sirens**, despite 11 CAER sirens surrounding the plant.
[thehouston.org](#)

Regulatory & financial impact

- Estimated **\$23 million** in property damage.
[U.S. Chemical Safety and Hazard Investigation Board](#)

☐ Why this incident stands out

- It was **Texas's largest unlawful chlorine release since 2020**.
[thehouston.org](#)
 - Emergency alerting systems **failed to notify many residents**, raising major public-safety concerns.
[thehouston.org](#)
 - The root cause—**disassembling the wrong equipment due to mis-tagging**—mirrors other high-consequence U.S. chemical accidents in 2025.
[U.S. Chemical Safety and Hazard Investigation Board](#)
-

The Big One

N. Van Earthquake (1/2)

A major earthquake in Vancouver is not just possible — it is expected, and the odds are well-quantified by seismologists. The region faces **three different earthquake threats**, each with its own probability. Here are the numbers grounded in the latest research.

1. Cascadia Subduction Zone “Big One” (Magnitude 9+)

This is the catastrophic offshore megathrust quake similar to Japan 2011.

- **Probability: 10–20% in the next 50 years** earthquakenearme.com
- **Expected magnitude: M9.0–9.2**
- **Shaking duration in Vancouver: 3–6 minutes**
- **Last event: January 26, 1700**
- **Recurrence: Every 300–600 years on average**

This is the event that could cause **province-wide devastation**, though Vancouver would not face a tsunami (Vancouver Island absorbs it).

2. Shallow Crustal Earthquakes (Magnitude 6–7)

These occur **directly beneath Metro Vancouver** and can be more damaging locally than the Big One.

- **Probability of M6+ in 50 years: ~30%** earthquakenearme.com
 - **Depth: 5–30 km**
 - **Risk: Strong, localized shaking; highest danger for older buildings and soft-soil areas (e.g., Richmond, Delta).**
-

3. Deep Intraslab Earthquakes (Magnitude 6–7)

These originate deeper within the Juan de Fuca plate.

- **Frequency: Roughly every 30–40 years for M6+ events** earthquakenearme.com
 - **Impact: Felt widely but less surface damage due to depth.**
-

What this means for Vancouver

- Metro Vancouver is in **one of Canada's highest seismic-risk zones**.
 - The region experiences **~300 earthquakes per year**, though only a few are felt.
earthquakenearme.com
 - The Cascadia megathrust is the **largest threat**, but a shallow M6–7 directly under the city could be **more damaging locally**.
-

□ Bottom line

There is a meaningful chance of a major earthquake in your lifetime:

- **10–20%** chance of a **M9+ Cascadia megathrust** in 50 years
- **30%** chance of a **M6+ local crustal quake** in 50 years

Both are serious, but the crustal quake is **more likely** and could hit **without warning**.

If you want, I can also tell you:

- Which neighbourhoods in Metro Vancouver are at highest risk
- What a Cascadia M9 would do specifically to North Vancouver
- The most effective preparedness steps for your home and family

Just tell me what angle you want to explore.



Crease Harman LLP

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SUBMITTED AT THE

JUN 8, 2026

PUBLIC HEARING

June 8, 2026

Peter Teevan

via email:

Dear Mr. Teevan:

RE: Chemical industries in North Vancouver

AND: Application to Amend Zoning Bylaw 8778 exempting 100 Amherst Avenue, District of North Vancouver

We write to provide an opinion as to the jurisdiction of the District of North Vancouver (the "**District**") to consider factors external to the site, including transportation of produce by rail, in its deliberations on application of Chemtrade Logistic Inc.'s (the "**Application**") to amend Zoning Bylaw 8778 (the "**Bylaw**") to allow for the continued storage and shipping of liquid chlorine at 100 Amherst Avenue (the "**Site**"), which was reopened for consideration following the Regular Meeting on May 25, 2026. As you know, the District's Bylaw 3210 Section 403A(1)(f)¹ generally prohibits the manufacture of hazardous substances in all zones of the District, which includes the manufacture of liquid chlorine.

While it is true that interprovincial rail falls under federal oversight, the power to regulate hazardous substances within its borders rests with the District, regardless of the methods of transportation. The doctrines of pith and substance, as well as double aspect permit the regulation of the lands, even if it affects a matter covered by federal regulation.

I. INTRODUCTION AND SOURCE OF MUNICIPAL POWER

The District possesses statutory authority to regulate the use of land within its borders. Under Section 479 of the *Local Government Act*², a local government may, by bylaw, regulate the use of land, buildings, and other structures within a specific zone. Modern Canadian jurisprudence requires that these powers be interpreted broadly and flexibly to respond to the changing needs and circumstances of the community.³

¹ District of North Vancouver, by-law No 3210, *District of North Vancouver Zoning Bylaw, 1965* (1965) [Bylaw 3210], s 403A(1)(f).

² R.S.B.C. 2015, c. 1.

³ 1120732 B.C. Ltd. v. Whistler (Resort Municipality), 2020 BCCA 101 [Whistler] at paras. 53, 81.

The Supreme Court of Canada has further recognized that municipalities often act as "trustees of the environment," addressing neighborhood concerns such as health risks and public safety.⁴ This authority includes the application of the "precautionary principle," which dictates that a lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.⁵

II. REGULATING MANUFACTURE, PROCESSING AND STORAGE

The District's authority to manage industrial activities involving hazardous substances is well-established, provided the regulations focus on land "use" rather than targeting a specific "user."

1. Zoning of Use vs. User

While zoning bylaws must generally regulate the manner in which property is used rather than the identity of the user, a bylaw is not invalid simply because it incidentally affects a specific entity.⁶ "Incidental" means "effects that may be of significant practical importance but are collateral and secondary to the mandate of the enacting legislature...".⁷ For instance, the District may legally distinguish between different forms of a substance—such as liquid versus solid chlorine—to address specific health risks associated with dispersal, as permitting one form while banning another is a legally defensible distinction based on the "health" component of municipal authority.⁸ The District has specific authority under its zoning regulations to define "hazardous substances" and restrict "heavy manufacturing," which includes chemical production and refining plants.⁹ Furthermore, the District may prohibit operations that produce malodorous, toxic, or noxious matters discernible beyond lot boundaries.¹⁰

2. Regulation of Surface Land Use

The District maintains jurisdiction over the surface use of land even when an industry operates under a provincial or federal license. A permit from a higher level of government does not "sterilize" a valid municipal zoning bylaw; the user must generally comply with both regulatory regimes.¹¹ Courts have affirmed that a municipality may regulate screening, stockpiling, and storage activities on the surface of the land even if a provincial Mines Act permit authorizes the underlying extraction.¹² Therefore, a license to manufacture a product does not automatically override the District's power to determine if that specific manufacturing "use" is compatible with its surrounding neighborhood.

III. REGULATING THE SHIPMENT OF DANGEROUS GOODS VIA RAIL

⁴ 114957 *Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*, 2001 SCC 40 [*Spraytech*] at para. 27.

⁵ *Spraytech* at para. 31.

⁶ *Whistler* at paras. 76, 85.

⁷ *Canadian Western Bank v. Alberta*, 2007 SCC 22 [*Canadian Western Bank*], At para. 28

⁸ *Spraytech* at para. 29.

⁹ *Supra* at note 1.

¹⁰ *Ibid* at s. 403A(1)(e).

¹¹ *Squamish (District) v. Great Pacific Pumice Inc.*, 2003 BCCA 404 [*Squamish*] at paras. 56–57.

¹² *Cowichan Valley Regional District v. Norton et al.*, 2005 BCSC 1056 at paras. 14, 30.

Regulating rail transit requires navigating the division of powers between municipal land-use authority and federal jurisdiction over interprovincial undertakings.

Jurisdictional Limits

Under sections 91(29) and 92(10)(a) of the *Constitution Act, 1867*, interprovincial railways fall under the exclusive jurisdiction of Parliament. Consequently, the District cannot directly ban materials in transit on federal lines or dictate packaging rules governed by the *Transportation of Dangerous Goods Act, 1992*, SC 1992, c 34. However, the District can pass bylaws restricting the manufacture of certain goods on its land, which may incidentally impact what is transported by rail. Determining if such a bylaw is *intra vires* requires analyzing the distribution of powers, the "pith and substance" and double aspect doctrine.

In *Rio Hotel Ltd v New Brunswick*¹³, Dickson CJC stated that paramountcy applies only where there is "actual conflict in operation as where one enactment says 'yes' and the other says 'no'".¹⁴ This principle was tested in *Harvest Fraser Richmond Organics Ltd v British Columbia*,¹⁵ involving a facility on federal land that argued its provincial and municipal air emission permits were inoperative due to a conflict with federal law under the doctrine of paramountcy. The Panel found that *Harvest* failed to establish that the effects of the EMA¹⁶ and the bylaw create an operational conflict with the federal powers under the *Canada Marine Act*¹⁷ or the *Canadian Environmental Assessment Act*¹⁸ (now repealed) such that *Harvest* cannot comply with both the federal and provincial legislation.¹⁹

In *Taseko Mines* the court applied the principle that federal statutes should be interpreted to avoid interference with provincial laws whenever possible.²⁰ Conflict occurs only through operational impossibility or when a provincial law frustrates a federal purpose.²¹ Purpose is frustrated only where federal law creates a "positive entitlement" rather than a merely permissive regime.²² As established in *Coastal First Nations*, "if a federal law says 'yes with conditions' then provincial law can also say 'yes with further conditions'."²³ Applying this "further conditions" logic²⁴, the District

¹³ (*Liquor Licensing Board*), 1987 SCC 24.

¹⁴ *Ibid* at para. 5.

¹⁵ (*Environmental Management Act*), 2015 BCEAB 25.

¹⁶ *Environmental Management Act*, S.B.C. 2003, c. 53.

¹⁷ S.C. 1998, c. 10.

¹⁸ *Canadian Environmental Assessment Act* [Repealed], S.C. 1992, c. 37

¹⁹ *Harvest Fraser Richmond Organics Ltd v British Columbia (District Director, Environmental Management Act)*, 2017 BCEAB 13 [*Harvest*] at para. 187.

²⁰ *Canada (Canadian Environmental Assessment Agency) v Taseko Mines Limited*, 2018 BCSC 1034 [*Taseko*].

²¹ *Alberta (Attorney General) v Moloney*, 2015 SCC 51 at para 18.

²² *Ibid* at para 26.

²³ *Coastal First Nations - Great Bear Initiative Society v British Columbia (Minister of Environment)*, 2016 BCSC 34 [*Coastal First Nations*] at paras 72-73.

²⁴ See Immanuel Kant, *Critique of Pure Reason*, translated by Paul Guyer & Allen W Wood (Cambridge: Cambridge University Press, 1998) at 155. "Further conditions" enable us to bridge the gap between a priori logic (pure reason) and the real world we use two further conditions Intuitional (time and Space) and Conceptual (the categories, such as "cause and effect").

may validly prohibit the manufacture of "liquid chlorine" on its lands even if federal law generally permits the activity.²⁵

Valid Municipal Incursion: The "Externalities" Logic

While the District cannot regulate the railway itself, it may regulate the land-use activities that generate high-risk traffic. Municipalities are entitled to consider "externalities"—the spillover effects on neighbors and public safety—when making zoning decisions.²⁶ A council can validly deny a rezoning application on the basis that the associated transportation of hazardous materials poses an unacceptable safety risk to the surrounding community.

The courts have in recent years shown an increasing disposition to avoid interference with the legislative functions of municipal councils except in cases where there has been a clear excess or abuse of statutory authority or a disregard of some statutory condition upon which the right to exercise such authority is based.²⁷ The Courts have attempted in many circumstances to reconcile legislation relating to specific issues with that empowering municipal governments, and have often upheld the municipality's efforts to control the use and misuse of land within its jurisdiction. Such was the cause in *Squamish* where a company which had obtained a permit to stockpile pumice under the Mines Act must also comply with municipal zoning by-laws. The Legislature did not give precedence to a mining regime over the local government regime.²⁸

IV. CONSIDERATIONS FOR ENACTING BYLAWS

The "Pith and Substance" of Decisions

The "pith and substance" doctrine is founded on the recognition that it is in practice impossible for a legislature to exercise its jurisdiction over a matter effectively without incidentally affecting matters within the jurisdiction of another level of government. Also, some matters are by their very nature impossible to categorize under a single head of power: they may have both provincial and federal aspects.²⁹ Thus the fact that a matter may for one purpose and in one aspect fall within federal jurisdiction does not mean that it cannot, for another purpose and in another aspect, fall within provincial competence.³⁰ The double aspect doctrine, as it is known, which applies in the course of a pith and substance analysis, ensures that the policies of the elected legislators of both levels of government are respected. The double aspect doctrine recognizes that both Parliament and the provincial legislatures can adopt valid legislation on a single subject depending on the perspective from which the legislation is considered, that is, depending on the various "aspects" of the "matter" in question.³¹ "Impairment" is a higher standard than "affects".

²⁵ Bylaw No 3210, s 2 "hazardous substances" (ii).

²⁶ 114957 *Canada Ltée (Spraytech, Société d'arrosage) v. Hudson (Town)*, 2001 SCC 40 at para. 31.

²⁷ *Regina (City) v. Cunningham*, 1994 CanLII 4689 (SK CA).

²⁸ *Squamish* at para. 63.

²⁹ *Renvoi relatif à la Loi concernant les enfants, les jeunes et les familles des Premières Nations, des Inuits et des Métis*, 2024 SCC 5.

³⁰ CED 4th, *Constitutional Law*, "The Constitution Act, 1867—Powers of Dominion and Provinces in General: Overlapping, Ancillary and Concurrent Legislation" at § 47 (January 2026).

³¹ *Canadian Western Bank* at para. 30.

It suggests an impact that not only affects the core federal power but does so in a way that seriously or significantly trammels the federal power.³² In an era of cooperative, flexible federalism, application of the doctrine of interjurisdictional immunity requires a significant or serious intrusion on the exercise of the federal power. It need not paralyze it, but it must be serious.³³

If a bylaw or zoning decision is challenged, the legal test is its "pith and substance" or true core purpose. If the purpose is community safety and local planning (e.g., determining if a plant loading liquid chlorine is appropriate near residences), courts will grant high deference to the elected council. However, if the decision is framed as an attempt to regulate interprovincial transit or international policy, it may be ruled *ultra vires*.³⁴

Implementation: Section 219 Restrictive Covenants

To secure safety commitments, the District can utilize Section 219 Restrictive Covenants under the *Land Title Act*.³⁵ These can stipulate land uses, impose time limits (e.g., tying operations to a lease expiry), and mandate periodic Quantitative Risk Assessments (QRA) or "Best Achievable Technology" (BAT) reviews.³⁶ This is also where the District is empowered to regulate or restrict the manufacture, processing, storage and shipping of hazardous substances, such as liquid chlorine.

V. CONCLUSION

The District possesses substantial authority to regulate the manufacture and storage of dangerous goods through its zoning power. While you cannot directly regulate interprovincial rail transit, you are legally entitled to consider the safety impacts of such transport as a relevant land-use planning factor. Decisions anchored in local public safety and the mitigation of off-site impacts are well within municipal jurisdiction and likely to receive high deference from the courts.

The District would be entirely within its jurisdiction to restrict or prohibit the manufacture, processing, storage and distribution of liquid chlorine, with consideration to the hazard created by railway transportation of this substance.

Yours truly,

CREASE HARMAN LLP

Per:



R. BRUCE E. HALLSOR, K.C.
RBEH/pc

³² *Quebec (Attorney General) v Canadian Owners and Pilots Association*, 2010 SCC 39 at para 45, [2010] 2 SCR 536.

³³ *Harvest* at para 137.

³⁴ *Shell Canada Products Ltd. v. Vancouver (City)*, 1 S.C.R. 231.

³⁵ R.S.B.C. 1996, c. 250.

³⁶ *Whistler* at para. 111.

From: DNV Input
Sent: June 19, 2026 8:24 AM
To: DNV Input
Subject: FW: Emergency Management Information - NSEM Impacts via Chemtrade Re-Zoning
Attachments: Emergency Management Information - NSEM Impacts via Chemtrade Re-Zoning.pdf

From: [REDACTED]
Sent: Friday, June 5, 2026 8:42 AM
To: Mayor's Office DNV <mayor@dnv.org>
Subject: Emergency Management Information - NSEM Impacts via Chemtrade Re-Zoning

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Hello Mayor Little,

I am reaching out to you in support of your Council inquiry related to emergency management & preparedness provisions associated to the Chemtrade issue, from the 2026 June 01 Meeting .

I shy away from speaking too directly about myself, as I find it distasteful. But on this occasion, I think it is important from the standpoint of understanding my perspective. For greater than 30 years I have not been the firefighter, fire chief officer or consultant that celebrated small victories, or that politicked for promotion, or that told the client what they wanted to hear. I built a solid career on brutal honesty - first, and working tirelessly to engineer high level protection abilities for that the day of emergency. This is most often accomplished by dealing with all of the inconvenient realities present, in a very aggressive manner.

The strongest organizations aggressively attack their own weaknesses, and continually improve - creating resiliency.

Within the public realm it is critical to remain objective-focused and to deal with the uncomfortable realities and complexities the community faces, and in a transparent manner. I believe this is paramount to maintaining credibility and the trust of the community.

I initially became involved in your DNV Chemtrade Re-Zoning issue as a favor to a DNV resident, but I have become embroiled in the issue as a result of seeing poor business practices being utilized to facilitate corporate objectives mis-aligned with community and District objectives. At this moment, the concern I think you might be interested in, is that emergency preparedness support from Chemtrade appears to have the mis-aligned objective of satisfying an on paper public relations campaign to garner corporate support as opposed to protecting the community.

Emergency preparedness is a vital tool for a municipality to define the risk events the community lives amongst, and to describe the District's response actions and expectations in order to address consequences and realities in a transparent manner. I believe emergency preparedness activities must be undertaken in good faith, in order to preserve and grow trust between the community, the District, and in this case its corporate partners.

What is not productive within this relationship are converging objectives. Typically, a city is very responsive and aligned with the objectives of its community. This exists purely as a positive function of the democratic process in some form (political cause and effect). In this case, where a fundamental challenge exists in that corporate interests appear to be of higher priority than the community interest as it relates to Chemtrade objectives for emergency preparedness.

Going forward, I am willing to support your advocacy with any information you may need.

Here is a very small sample and high-level **Qualitative Outline** of emergency preparedness issues related to a chlorine release incident that you referred to Monday, June 01. Specifically, the difference between “on paper preparation” and “high quality emergency preparedness”.

I believe this **Qualitative Outline** may assist you.
Attached is a PDF of the Table below.

If you have any questions, or would see the value of further discussion to clarify any of the detail, please do not hesitate to contact me directly.

On-Paper Preparedness: Public Relations	High Quality Emergency Preparedness
Training Chemtrade Site Tours • Supports the safety/rescue of Chemtrade employees only • Ensures the engagement is outside of the public eye, reducing the connection between the Chemtrade site and the need for emergency response Specialized Chlorine Response Training • Chlorine Institute's Level 2 CHLOREP • To mitigate localized chlorine leaks from small containers and tank cars • 16-hour program • Focuses solely on Chlorine	Training In-Field Air Monitoring Systems • Allows incident leaders to accurately identify the chlorine concentrations within the community and plan for responder action to intervene in fatality locations • Pre-Plans the deployment positions and activities of air monitoring resources • Identifies threshold levels of impact and predictive assessments to guide changing response requirements due to hazard area migration Funding of DNVFRS Hazardous Materials Training • NFPA 472 Technician Level Training • To provide the technical ability to comprehensively manage large scale chlorine release incidents, and provides the skills, knowledge and abilities to provide an effective, efficient and safe hazardous material incident response • 80-hour National Certification program • Applicable to all chemical products • Cost Assessment for DNVFRS Training

		and certification in HazMat Technician Level: 50 members = \$500,000 annually
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On-Paper Preparedness: Public Relations	High Quality Emergency Preparedness
Hazard Scenario Plans Worst Case Scenario Documentation - Chemtrade's current worst case scenario plan for a chlorine release has not been aggressively shared to provide transparency to the community: 1.7.1 Chemtrade Integrated Contingency Plan (ICP) Guide – Chlorine Release, 2022 - Identifies a 5,700 m impact zone radius - Impact Radius includes entirety of North Burnaby - Not represented on the plan is the 5.7 km impact radius within the DNV, encompassing areas: - West to include: Mahon Park & Carson Graham School - North to include all of: the Lynn Valley Community - East to include all of: the Blueridge Community the Deep Cove Community the Dollarton Community	Hazard Scenario Plans Requirements by Canadian Environmental Protection Act (CEPA 1999) - Including an identification of any environmental emergency that could be expected to occur from facility operations - including environmental emergencies with harm to the environment or danger to human life or health - Specifically to include: the scenarios for the environmental emergency that is more likely to occur - Specifically to include: the scenario with the longest impact distance outside the boundary of the facility NSEM Comprehensive Evacuation Plans - Established plans to organize and directly support the high-risk evacuation provisions necessary to protect lives during the chlorine gas incident (5.7 km radius impact zone) - Cost Assessment: \$200,000 NSEM Comprehensive Shelter in Place Plans - Established plans to directly support the use of high-risk shelter in place tactics for a high-concentration exposure to a toxic inhalation hazard during the chlorine gas incident (5.7 km radius impact zone)

		• Development of Vulnerable Community Inventories to identify unacceptable shelter in place exposures with elevates fatality risk, and tactical requirements for priority in-field rescue operations by fire responders • Cost Assessment: \$200,000 WSBC worker safety plans to support DNV businesses • WSBC safety plans to support DNV businesses • Shelter in Place tactics for a high-risk Toxic Inhalation Hazard, creates the responsibility of DNV businesses to generate WSBC compliant plans and safe work procedures to care for their employees • Cost Assessment: \$40,000
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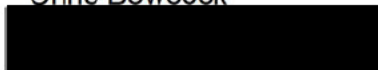
On-Paper Preparedness: Public Relations	High Quality Emergency Preparedness
Expanded Drills Table Top Drills • Chemtrade will assist NSEM by providing the scenario development, there by controlling the conditions within, using favorable and low-impact exposures to minimize the optics of risk Large-Scale Annual Emergency Simulations • In coordination with NSEM and local fire services with simplified release conditions to gain favorable results but avoid community sensitive release issues • Impact distances will be provided by Chemtrade, and likely utilize reduced impact zones instead of worst-case scenarios as identified by federal Canadian Environmental	Expanded Drills Emergency Management Plan Vetting Exercise • Utilizing federally required Worst-Case Public Impact scenarios to define a public exposure scenarios • Account for vulnerable population impacts in a Vulnerable Community Inventory Reference Guide to support response priorities • Identify high risk chlorine concentration areas versus public populations • Vet EM Plans for Aspirational Perspective versus Audited Resource Availability Federal Requirements for Emergency Exercises

Protection Act (CEPA) 1999 requirements for Emergency and Environmental Plans	• Required by Canadian Environmental Protection Act (CEPA) 1999 regulation • Chemtrade is responsible to conduct a "full-scale simulation exercise" every (5) years • Chemtrade is responsible to conduct a "simulation exercise" every year • Typical Costs associated with community risk exercises: Annual Exercise: \$30,000+ 5 Year Full-Scale Exercise: \$300,000+ • These shall include participation by DNVFRS and NSEM, and be recorded to formally document the engagement and findings
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On-Paper Preparedness: Public Relations	High Quality Emergency Preparedness
Community Notification Expanded Siren Integration Exercise • Conducting periodic siren activation exercises and providing community education and direction training	Community Notification Community Notification Exercise • Auditing communication effectiveness to citizens and visitors to area • Establish Notification expectations • Develop EM Plans to relate Notification KPIs to Evacuation & Shelter In Place performances, and thus fatality prevention goal • Currently only 7% of all NS population subscribe to <u>Alertable</u> • Identifying large effectiveness gaps in public notification & public directed actions by NSEM • Identify performance failure consequences

On-Paper Preparedness: Public Relations	High Quality Emergency Preparedness
Defining Chlorine Event Potentials Focus on low frequency of events - Minimize the understanding of personal exposure consequences by utilizing MIACC land use risk as a measure - Avoid use of chlorine concentration rates and related fatality percentages	Defining Chlorine Exposure Potentials Chlorine Release Modelling - Utilizing computer-based chlorine dispersion modelling data to identify life risk potential versus proximity populations - Identifying Time Elapse to Fatality Risk in adjacent community populations, defining time-to-action requirements of first responders

Chris Bowcock



**Emergency Management Information
NSEM Impacts via Chemtrade Re-Zoning**

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On-Paper Preparedness: Public Relations	High Quality Emergency Preparedness
Training Chemtrade Site Tours ▪ Supports the safety/rescue of Chemtrade employees only ▪ Ensures the engagement is outside of the public eye, reducing the connection between the Chemtrade site and the need for emergency response Specialized Chlorine Response Training ▪ Chlorine Institute's Level 2 CHLOREP ▪ To mitigate localized chlorine leaks from small containers and tank cars ▪ 16-hour program ▪ Focuses solely on Chlorine	Training In-Field Air Monitoring Systems ▪ Allows incident leaders to accurately identify the chlorine concentrations within the community and plan for responder action to intervene in fatality locations ▪ Pre-Plans the deployment positions and activities of air monitoring resources ▪ Identifies threshold levels of impact and predictive assessments to guide changing response requirements due to hazard area migration Funding of DNVFRS Hazardous Materials Training ▪ NFPA 472 Technician Level Training ▪ To provide the technical ability to comprehensively manage large scale chlorine release incidents, and provides the skills, knowledge and abilities to provide an effective, efficient and safe hazardous material incident response ▪ 80-hour National Certification program ▪ Applicable to all chemical products ▪ Cost Assessment for DNVFRS Training and certification in HazMat Technician Level: 50 members = \$500,000 annually

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From: DNV Input
Sent: June 19, 2026 8:26 AM
To: DNV Input
Subject: FW: Chemtrade Application

From: [REDACTED]
Sent: Monday, May 25, 2026 11:43 AM
To: Mayor's Office DNV <mayor@dnv.org>; Jordan Back <backj@dnv.org>; Betty Forbes <forbesb@dnv.org>; James Hanson <hansonj@dnv.org>; hahh@dnv.org <hahh@dnv.org>
Cc: Herman Mah <mahh@dnv.org>; Lisa Muri <muril@dnv.org>; Catherine Pope <popec@dnv.org>
Subject: Chemtrade Application

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor Little and District Council:

My name is Jean Prescott and I live at [REDACTED] North Vancouver, [REDACTED].

I am completely opposed to the reinstatement of Chemtrade's application to continue to produce chlorine gas in the District of North Vancouver. Chlorine combined with air becomes a highly toxic gas which can cause loss to both animal and human life.

Manufacturing chlorine gas has no place in a densely populated residential area no matter how "safe" this company claims to be.

Please, please do not renew Chemtrade's application.

Thank you for your consideration of this matter.

Jean Prescott

From: DNV Input
Sent: June 19, 2026 8:25 AM
To: DNV Input
Subject: FW: Chemtrade

From: Lyle Craver [REDACTED]
Sent: Sunday, May 31, 2026 7:33 PM
To: Mayor's Office DNV <mayor@dnv.org>; Jordan Back <backj@dnv.org>; Betty Forbes <forbesb@dnv.org>; James Hanson <hansonj@dnv.org>; Herman Mah <mahh@dnv.org>; Lisa Muri <muril@dnv.org>; Catherine Pope <popec@dnv.org>
Subject: RE: Chemtrade

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mayor and Council,

I urge you NOT to reconsider the rezoning Chemtrade is seeking in Monday's Council Meeting and believe the case is overwhelming that DNV should NOT pursue this matter further.

While I can't possibly consider ALL arguments, I think the following are most important:

- Chemtrade previously committed to Council that they would be shutting down their Chlorine production by 2030. *** ON THAT BASIS *** The Council of the day permitted construction of the Hydrogen plant next door.

- I've heard and read a great deal about the 1979 Mississauga chemical disaster that led to the evacuation of 1/4 million people. Various of my in-laws have pointed out to me the key road closings of that year. Many of you knew my late wife [REDACTED] what you probably DON'T know is that in 1979 she was a 25 year old courier driver just starting out in this world in the Oakville/Mississauga area and she was in her first job as a courier driver. She made at least 2 dozen trips into the quarantine zone to help her clients evacuate their documents and goods out of the quarantine area and while she was well paid for it she knew she was taking a personal risk.

The essential difference between the Mississauga situation and North Vancouver is that in 1979 Mississauga had NO level rail crossings - every location involved overpasses over the rail lines (and still does).

Unlike North Vancouver where there are MANY level crossings over rail lines and several of these cross busy roads (Lonsdale Quay, old Second Narrows Bridge, Lower Riverside Drive (the main route to the Transfer Station), the rail crossing under the Lions Gate Bridge among others. Most or all of these are LEVEL CROSSINGS

- To me the fact that the chlorine plant relies on their goods either travelling by rail or crossing rail lines at level crossings makes safety concerns MUCH more problematic than in Mississauga.

- Again, everything depends on weather conditions at the time of a disaster but depending the weather and the wind direction large areas east of the Seymour River and North Burnaby are at risk.

- a LOT of residential construction within 3 miles of this plant has taken place since Chemtrade made their 2030 commitment - and like the Hydrogen plant it is reasonable to presume the Council of the day would not have allowed the development of these areas without the 2030 commitment

I remind you yet again, Chemtrade undertook to close the plant by 2030 and ON THAT BASIS District Council granted the building of hydrogen facilities.

Fact is both are hazardous plants but given the comparative chemistries of hydrogen and chlorine, chlorine is by a considerable margin the more dangerous of the two.

- MOST OF ALL, to my mind the need for use of level crossings to move their product out of North Vancouver is the single biggest argument against extending this plant another 10-15 years. Even if there were no level crossings this extension would be problematic but far more so using these crossings. The safety risk is not just on Chemtrade's premises (which I agree their proposal achieves their purpose of making things as safe as a chlorine plant could be) but the logistics of getting their product to their customers.

My question to Council is "Did Chemtrade mean it when they committed to closing by 2030?" and "Should Council allow them to now say 'oops - sorry we had our fingers crossed when we made that promise?'" Because it SURELY is no surprise to Chemtrade to know that based on their promise serious commitments would be made and have been made by DNV to residents and businesses in their area that are now completely problematic if Chemtrade is allowed to welch on their commitment now - and let's be honest - if Council DOES give them their wish how do we know that as 2043 approaches Chemtrade won't come back to Council seeking a yet another extension.

Council - do the right thing and hold to your original decision.

Yours truly,

Lyle Craver



From: DNV Input
Sent: June 19, 2026 8:25 AM
To: DNV Input
Subject: FW: Chemtrade Public Hearing prep

From: Peter Teevan [REDACTED]
Sent: Thursday, June 4, 2026 11:42 AM
To: Mike Little, Mayor <littlem@dnv.org>; Lisa Muri <muril@dnv.org>; Betty Forbes <forbesb@dnv.org>; Herman Mah <mahh@dnv.org>; Jordan Back <Backj@dnv.org>; Catherine Pope <popec@dnv.org>; James Hanson <hansonj@dnv.org>
Subject: Chemtrade Public Hearing prep

EXTERNAL: Do not click links or open attachments unless you trust the sender and content.

Dear Mike, Lisa, Betty, Herman, Jordan, Catherine and Jim,

I'm using your first names because this letter is personal—from me to each of you.

Here we are on June 4, just 12 days before the second—and perhaps final—public hearing on Chemtrade.

I keep writing because this may be one of the most important decisions any DNV Council has ever faced. It is also so complex that no one can adequately explain it in five minutes increments at a public hearing.

At this point, it is difficult to understand how any member of Council could still be considering approval after reviewing the public submissions and, in particular, the June 1 agenda package.

If you have not read the material, please do. If you have not had the time, then reconsider the certainty of your position. This application is simply too important.

Twelve days before the hearing resumes, Chemtrade has effectively conceded that:

- This was never about drinking water safety.
- This was never about Canadian demand for liquid chlorine.
- This was never about preserving local jobs.
- This was always about maximizing profits.

The pathway forward is clear:

- Keep the plant.
- Keep the jobs.
- Stop producing, storing and shipping liquid chlorine.
- Increase production of safer products such as bleach, hydrochloric acid and other chlorine derivatives.

What does this mean for Chemtrade? The continuation of a very viable business.

Chemtrade knows this. It is a public company with management, analysts and investor-relations professionals. The issue is not feasibility. The issue is willingness.

Here are some quotes from credible Canadian analysts commenting on what would happen if Chemtrade stopped producing liquid chlorine:

BMO Capital Markets: "only a ~5% hit to company earnings (i.e. upgrade all gaseous chlorine to hydrochloric acid and produce no liquid chlorine)". Rating: Outperform.

CIBC Capital Markets: "(in) the event liquid chlorine must cease, the impact would likely be partially mitigated by producing alternative chemicals (although at lower profitability) at the plant such as ferric chloride and bleach" Rating: Outperformer.

National Bank of Canada: "If CHE (Chemtrade) is unable to continue producing liquid chlorine, it can increase conversion into derivatives like HCL (hydrochloric acid) or bleach. Our sensitivity analysis suggests a ~\$3/unit

impact to our target (Target now is \$23.50/unit) - Rating: Outperform.

Council should send a clear message: "I find the risks associated with liquid chlorine unacceptable in a dense urban setting. The future is without liquid chlorine."

What does North Vancouver lose if Chemtrade stops shipping more than 90% of its liquid chlorine to the United States?

Nothing.

Property taxes remain.

Jobs can remain.

Drinking water remains safe.

Bleach remains available.

What does North Vancouver gain?

Less risk.

Even if an accident never occurs, maintaining readiness for a major chlorine release carries significant costs. Planning, training, equipment and response capability cost money. Ask Chief Danks what would be required today to respond to a major release.

As this hearing continues, you will likely hear renewed attempts to argue:

- Liquid chlorine is essential to drinking water safety.
- BakerRisk represents a true worst-case scenario.
- The site would perform well in a major seismic event.
- Chemtrade cannot transition away from liquid chlorine.
- Chemtrade cannot remain profitable without it.

These arguments have already been debunked.

Council does not need jurisdiction over a chlorine railcar that never leaves the site.

The bylaw before you concerns the manufacturing, storage and shipment of liquid chlorine.

You can simply say "no."

There are 12 days until the hearing resumes, perhaps 30 days until Council votes, and roughly 135 days until each of you stands for re-election.

If you have not yet done all of your homework, now is the time. If you need help, it is available. I can share what I have learned, including conversations with industry participants and bleach manufacturers. A number of other experts have already shared their advice.

These issues are simply too complex to explain in three five-minute presentations. At its core, this issue has always been about corporate profits—not community safety.

Please do not place corporate profit ahead of the safety of your constituents.

Keep the jobs.

Keep the plant.

End liquid chlorine.

That is the path forward.

See you soon,

Peter