

**DISTRICT OF NORTH VANCOUVER
PUBLIC HEARING**

**100 Amherst Avenue
Zoning Bylaw Amendments**

REPORT of the Public Hearing held on Tuesday, February 24, 2026 commencing at 7:09 p.m. in the Council Chambers of the District Hall, 355 West Queens Road, North Vancouver, British Columbia.

Present: Mayor Mike Little
Councillor Jordan Back
Councillor Betty Forbes
Councillor Jim Hanson
Councillor Herman Mah
Councillor Lisa Muri (via Zoom)
Councillor Catherine Pope

Staff: Mike Fox, Chief Administrative Officer
Dan Milburn, General Manager – Planning, Properties and Permits
Genevieve Lanz, Director – Legislative Services and Corporate Officer
Yan Zeng, Manager – Development Planning
Heidi Granger, Municipal Solicitor
Cheryl Archer, Confidential Council Clerk
Afrooz Fallah, Planning Assistant – Development Planning
Amanda Day, Administration Clerk

Also in

Attendance: Naser Badri, Technical Specialist, RiskTec
Raman Batra, Vice President – Electrochem, Commercial, Chemtrade
Dale Bossons, Vice President – Electrochem Manufacturing, Chemtrade
Fareed Ebrahim, Senior Technical Advisor II, Chemtrade
Alex Fergusson, Engineer-in-Training – Process Safety Group, BakerRisk
Blair Hetherington, Emergency Response System Manager, Chemtrade
Amy Jonsson, Director – Corporate Communications, Chemtrade
Alvin Loh, Site Director, Chemtrade
David Montgomery, Principal Consultant, Risktec
Christopher Rees, Team Lead, Risktec
Bryan Ritchey, Senior Project Manager, Chemtrade
Alan Robinson, Group Vice President – Commercial, Chemtrade
Drew Somerville, Project Manager, Chemtrade

1. OPENING BY THE MAYOR

Mayor Little welcomed everyone and advised that the Public Hearing was convened pursuant to Section 464 of the *Local Government Act*. Members of Council, staff, and the public participated in person and via Zoom and the Hearing was being streamed live over the internet and recorded in accordance with the *Freedom of Information and Protection of Privacy Act*.

Mayor Little stated that:

- The opportunity to be heard or provide written submissions was accommodated by speakers having signed up in advance, the details of the Zoom meeting having been provided on the District's website and in the notice of public hearing, and the acceptance of written submissions up until the hearing was closed;
- Following the staff and applicant presentations, speakers would be called from the established speakers list. At the end of the speakers list, the Chair would call on speakers from the audience;
- Each speaker would have five minutes to address Council for a first time and should begin remarks to Council by stating their name;
- After everyone who wished to speak had spoken once, speakers would then be allowed one additional five-minute presentation;
- Any additional presentations would be allowed at the discretion of the Chair;
- Speakers were reminded to refrain from repeating information from their previous presentations and to ensure all comments remained focused on the bylaw under consideration;
- If a written submission was provided, speakers were asked not to read the entire submission, noting that they could provide a summary or briefly reiterate the highlights;
- All members of the audience were asked to be respectful of one another as diverse opinions are expressed, noting that the meeting was an open and impartial forum for Council to hear everyone's views;
- Council's role at Public Hearings is to listen to the public, not to debate the merits of the bylaw;
- Council may ask clarifying questions during Public Hearings;
- A binder containing documents and submissions related to the bylaw is available for review in hard copy and online;
- Speaking opportunities would be provided for everyone who wished to provide input and the meeting would be continued on a second night, if required;
- At the conclusion of the public input Council may request further information from staff, which may or may not require an extension of the meeting, or Council may close the meeting, after which Council should not receive further new information from the public.

2. INTRODUCTION OF BYLAW BY CORPORATE OFFICER

Genevieve Lanz, Corporate Officer, introduced the proposed bylaw, stating that Bylaw 8778 proposes to amend the District's Zoning Bylaw, in general terms, by adding an exception to the prohibition of the manufacture of hazardous substances in all zones for the subject site to permit the manufacturing, processing, liquefaction, handling, storage, loading and shipping of chlorine on the lands located at 100 Amherst Avenue.

3. PRESENTATION BY STAFF

Yan Zeng, Manager – Development Planning, provided an overview of the proposal elaborating on the introduction by the Corporate Officer. Ms. Zeng advised that:

- The proposal requires an amendment to the Zoning Bylaw to permit the manufacturing, processing, liquefaction, handling, storage, loading, and shipping of chlorine at the Chemtrade Facility at 100 Amherst Avenue;
- The subject property is located within the Maplewood Heavy Industrial Area within two jurisdictions, Chemtrade-owned within the District and Vancouver Fraser Port Authority (Port) lands, leased from the Port;
- Part of the chlorine liquefaction process occurred on the leased Port lands and the Port has advised that production activities must be removed from the lands under their jurisdiction by 2030;
- Chemtrade must relocate and consolidate chlorine liquefaction entirely onto their own land that is under the District's jurisdiction;
- Although the site is already zoned for heavy industrial use, the relocation of facilities and capital improvement of the site requires the site-specific amendment to the Zoning Bylaw;
- The proposal is consistent with the Official Community Plan (OCP) objectives for industrial and employment lands: maintaining industrial uses, supporting industrial jobs, and preventing encroachment by incompatible uses;
- The applicant intends to make capital improvements to the facility, including a new condenser tower and an enclosed rail loading facility on the District portion of the lands;
- Storage, railyard, and other support functions would remain on the Port portion of the lands and active chlorine production would be removed;
- Chlorine production is not proposed to be increased;
- The proposed amendment is site-specific and limits the exemption to chlorine and only for 100 Amherst Avenue;
- A Facility Siting Study (FSS) and quantitative risk assessment (QRA) was prepared by BakerRisk, a risk management and engineering consulting firm;
- The FSS evaluated off-site public risk with chlorine hazards and assesses the proposed redesigned facility to remove bulk liquid chlorine storage and add enclosed railcar loading systems, which were designed to reduce potential release scenarios;
- The QRA used quantitative risk modelling to evaluate individual and societal risk and compared the results with Canadian land-use safety guidelines;

- The QRA was revised in response to peer review comments by the District's independent consultant, Risktec;
- Risktec's peer review concluded that:
 - The revised QRA meets Canadian risk tolerance standards;
 - Off-site individual and societal risks remain below applicable thresholds;
 - The 1-in-10,000 per year control zone remains within the property boundary;
 - The modelling techniques used, including QRA, CFD, fault tree analysis, and human reliability assessment, are technically sound, conservative, and consistent with industry best practice; and,
 - The proposed upgrades are expected to reduce both the likelihood of an event and its potential consequences.
- Ms. Zeng provided answers to questions from Council received at First Reading of the bylaw:
 - Subsequent safety review and ongoing operations:
 - The applicant would be required to submit a detailed validation QRA prepared by the same independent qualified professional who provided the Facility Siting Study and QRA prior to issuance of a building permit;
 - Additional peer review may also be required by the District;
 - Prior to the issuance of an occupancy permit, a verification report to confirm that the project has been constructed in accordance with the approved risk assessment and safety commitments;
 - A series of *Land Title Act* Section 219 covenants would be required to be registered on title prior to Council consideration bylaw adoption to secure compliance with all recommendations and requirements in the FSS and QRA. Additional requirements identified through validation and verification, establish clear limitations on chlorine storage, and prohibit chlorine storage on Port lands; and,
 - The covenants are attached to the land, not the individual owner.
 - Agreement between the applicant and the Port;
 - Port lands are federally regulated;
 - The current Port lease expires on June 30, 2030 and there is a non-binding Letter of Intent to extend the lease to December 31, 2044;
 - The Port has confirmed that processing and manufacturing activities are not permitted on lands under its authority;
 - As a condition of lease renewal, chlorine manufacturing must be removed from Port lands, which would be fulfilled by the proposed relocation of these activities to lands within the District's jurisdiction;
 - The Port has indicated it is supportive of continued trade-related use of the site provided that the condition regarding removal of manufacturing is met;
 - The bylaw under consideration is only applicable to District lands; and,
 - Continued operation of the facility would also depend on Port lease arrangements, which are outside District authority;
 - Community safety and emergency response;

- Multiple QRAs have been completed and peer reviewed for the Maplewood area;
- Risk contours were established using Major Industrial Accidents Council of Canada (MIACC) risk acceptability criteria, which define acceptable land uses and densities based on levels of individual risk;
- Schools and hospitals are located within more conservative risk contours;
- The Maplewood Implementation Plan incorporates these contours and includes policies requiring development to align with MIACC guidelines;
- Within the defined risk contour areas, additional building-level measures are recommended;
- There is an established collaborative response for partners including City and District Fire and Rescue Services, North Shore Emergency Management (NSEM), and facility operators;
- In the event of a release with potential off-site impact, Chemtrade would activate a facility siren, which automatically triggers a 911 call and public messaging via the emergency notification system;
- District of North Vancouver Fire and Rescue Services (DNVFRS) would respond immediately and coordinate with the facility;
- NSEM is able to use the emergency notification system to send alerts by text, telephone, and email to defined geographic areas and the system is tested monthly and emergency notification procedures reviewed regularly;
- Emergency planning includes education on shelter-in-place procedures, encouragement for residents and businesses to register for notification systems, covenants registered on title with some of the development in the area to make residents aware of the procedure, and ongoing review through the Community Advisory Panel; and,
- Community safety is addressed through risk-based land use planning, peer-reviewed technical analysis, building-level design mitigation, coordinated emergency response protocols, and, ongoing monitoring and community engagement.
- Rail safety once railcars leave the site;
 - Rail transportation is regulated by the Federal Government and overseen by Transport Canada under the *Railway Safety Act*;
 - The transportation of dangerous goods, including chlorine, is regulated by the *Transportation of Dangerous Goods Regulations*;
 - Railcars used to transport chlorine are specialized pressure tank cars designed to stringent federal standards and are subject to regular inspection, maintenance, and certification;
 - Operational matters such as routing, speed, crew requirements, and rail corridor safety are federally regulated;
 - The District's authority relates to land use and development within its jurisdiction and rail operations beyond the site boundary are under federal jurisdiction;

- Emergency response coordination with established protocols includes local Fire and Rescue Services, rail operators, and federal authorities.
- Based on the technical review, staff recommend that Council adopt Bylaw 8778 to permit the manufacturing, processing, liquefaction, handling, storage, loading, and shipping of chlorine on the lands located at 100 Amherst Avenue.

4. PRESENTATION BY APPLICANT

4.1. Alan Robinson, Group Vice President – Commercial, and Dale Bossons, Vice President – Manufacturing, Chemtrade:

- Provided an overview of Chemtrade North Vancouver operations, noting that the site produces 40 percent of the country's liquid chlorine, including the treatment of 70 percent of drinking water in western Canada;
- Highlighted the importance of the country's capacity to treat and secure drinking water;
- Advised that 118 people are employed full-time at the site with an annual payroll of 24.5 million dollars, the facility adds 150 million to the economy, and paid almost 6.7 million dollars in taxes and fees to the District in 2025;
- Noted that the facility has operated safely since 1957 and has had no major issues;
- Advised that investments of more than 500 million dollars in safety upgrades to the site have been made since 2010;
- Noted that the facility produces several products;
- Stated that products from the facility support several industries including water treatment, energy, technology, pulp and paper, and others;
- Stated they recognize their responsibility to the community and are focussed on reducing risk, making upgrades, and improved safety and control systems, noting on-site liquid chlorine storage has been reduced by up to 94 percent since 2000;
- Noted that the most hazardous substance produced at the site is chlorine;
- Commented on the regulations regarding transportation of liquid chlorine off the site, noting that transportation by rail is highly regulated;
- Stated that rail is the safest option to transport liquid chlorine;
- Advised that the railcars used for transportation of liquid chlorine are designed to withstand significant impact and rollovers and are regularly inspected and maintained, noting they have never had a release due to a rail incident;
- Noted they propose to undertake a number of safety improvements, including a new enclosed railcar loading facility with modernized handling facilities, designed to be kept under negative pressure and with a scrubbing system attached to the building;
- Advised that major work is proposed to take place between 2028 and 2030;
- Advised that they have conducted significant outreach and engagement with the community over the past few years to communicate the reasons for the application; and,

- Highlighted the company's contributions to the community, including the need to ensure the security of domestic supply.

4.2. Alex Fergusson, Engineer-in-Training – Process Safety Group, BakerRisk:

- Advised that he is a safety consultant with BakerRisk, noting the company has specialized in risk management for 40 years;
- Reviewed how risk is defined in their work, noting it is a data-intensive process to evaluate and understand processes and identify potential maximum credible events and where a release could happen from initial production to final departure of the materials;
- Noted three main pieces define consequence: what is going to happen if there is a loss of containment, define end points and extent of potential impacts, and identify potential vulnerabilities;
- Stated that risk is calculated based on frequency estimates incorporating conditional probabilities;
- Noted there is inherent risk in many aspects of life;
- Advised that their assessment included a detailed review of potential loss of containment events using industry-accepted failure rates for all equipment, taking into account conditional probabilities such as local weather conditions, wind direction, time of day and ignition conditions if there are flammable materials;
- Commented on the modelling tools used in their review as well as site-specific operations and historical data;
- Noted that MIACC guidelines were used as a benchmark for the results to provide information for the project;
- Advised that there are more restrictions on land use closer to the source of risk;
- Compared a 1 in 1,000,000 risk to other activities such as travelling on a long-haul flight or spending a day skiing;
- Stated that all aspects of the operation were reviewed, including the potential for leak sources, equipment failure, human error, or earthquake, noting that the assessment includes the scenario of a full release of a chlorine railcar onsite;
- Advised that the results were referred to RiskTec for peer review; and,
- The risk reduction curves were updated within MIACC guidelines.

5. REPRESENTATIONS FROM THE PUBLIC

5.1. Chris Bowcock:

- Spoke in opposition to the proposal;
- Advised that he is a retired Fire Chief and that he worked in fire protection and emergency management for 25 years, including work at a chlor-alkali plant;
- Stated that he was exposed due to a leak;
- Stated that liquid chlorine in a railcar is under pressure and becomes a gas when released that expands rapidly, presenting a risk to life;
- Noted that chlorine gas affects the respiratory system;
- Reviewed modelling of a chlorine release from a railcar in Washington, DC and extrapolated a release on the North Shore could result in approximately 2,000 fatalities, more than 12,300 hospitalizations, and effects up to 40 kilometres from the incident;
- Commented on the inhalation hazard downwind and upwind of the incident;
- Stated a release would result in a mass casualty event requiring 150 firefighters, 50 paramedics, and 30 police officers from multiple jurisdictions;
- Stated that chlorine affects the respiratory system at low concentration; and,
- Stated that people affected by a release would require rapid transport to medical care.

5.2. Colin Metcalfe:

- Spoke in opposition to the proposal;
- Stated that he is the president of the Pemberton Heights Community Association, but was not speaking on their behalf;
- Stated that he was speaking on behalf of residents and future residents;
- Acknowledged the site has been in operation for many years;
- Stated that chlorine is a highly lethal industrial chemical and the Council will decide whether to allow it in a residential area;
- Stated that chlorine can kill a person within minutes and was used in World War One;
- Commented on the risk of exposure outside of the site, noting it could affect thousands of people;
- Noted that an incident could occur anywhere along the transportation route;
- Opined that the risks are unnecessary and the lack of a previous incident does not mean that one cannot occur in the future;
- Opined that the plant does not need to manufacture chlorine and that other substances serve the same purpose and are in use in other areas;
- Questioned why alternatives are not being used;
- Stated that water treatment is not the issue;
- Expressed concern regarding additional residential density being proposed near the facility;
- Stated that he is not anti-industry;

- Opined that Council would be making a conscious decision to prioritize industry over residents;
- Stated that residents would hold Council responsible if there is an incident in the future;
- Stated that the impacts would continue past the current Council's term of office; and,
- Encouraged Council not to approve the proposal.

5.3. Susie Chant:

- Spoke in support of the proposal;
- Advised that she is the Member of the Legislative Assembly for North Vancouver-Seymour, a nurse by profession, and a long-time resident of North Vancouver;
- Stated that Chemtrade is an important employer, providing high-paying jobs in North Vancouver;
- Stated that continued operation of the facility is crucial to the safe supply of drinking water, noting that it kills bacteria, viruses, and parasites, greatly reducing the risk of these infections, including typhoid and cholera;
- Stated that chlorine is the method of choice for drinking water, noting that most of the supply for B.C., Alberta, and Saskatchewan is produced at the facility and that there is no alternative domestic source;
- Advised that importing chlorine from the United States (USA) would be necessary if it is not produced at the facility, noting that there have been interruptions to the availability of materials from the USA in the past;
- Advised against risking the safety of drinking water on trade with the USA;
- Commented on the closure of outdated chlorine facilities in the USA due to asbestos, noting that the facilities that are being upgraded would be offline for a period of time;
- Commented on the facility's safety record, safety culture, and investment in safety upgrades; and,
- Encouraged Council to approve the proposal.

5.4. Patrick Stafford-Smith:

- Spoke in support of the proposal;
- Advised that he is the Chief Executive Officer of the North Vancouver Chamber of Commerce and that the Chamber supports the proposal;
- Stated that the proposal will ensure that a major employer providing approximately 120 skilled jobs in North Vancouver and regional supplier of essential materials to the province and western Canada remains in North Vancouver;
- Commented on additional economic impacts for local suppliers and contractors;
- Commented on uncertainty in global trade, stating that domestic capacity helps safeguard supply chains and improve community resilience; and,
- Opined that the proposal helps ensure the long-term stability of North Vancouver.

5.5. Charlie Grahn:

- Spoke in support of the proposal;
- Stated that he lives in East Vancouver and is not involved with Chemtrade in any way;
- Stated that his child had asked what the substance piled at the waterfront was several years ago and when he contacted the company to ask, they confirmed it was salt and invited them for a tour of the facility;
- Stated that they spent 2.5 hours at the facility and were shown what they do and discussed both the public benefit and risks; and,
- Opined that if good companies are not supported, bad actors will step in.

5.6. David Cynamon:

- Spoke in opposition to the proposal;
- Stated that his concern regarding the application is public safety;
- Advised that he is from Edmonton and is a businessperson and investor, and has worked in and around the chemical sector;
- Stated that he has worked to reduce public safety risks of chlorine production and transportation for twenty years;
- Stated that his perspective is based on experience;
- Stated that he has family in North Vancouver;
- Acknowledged the importance of clean drinking water and stated that the issue is the production and transportation of hazardous material;
- Stated that a chlorine release would form a dense gas cloud that moves quickly and causes serious physical harm;
- Stated that risks when chlorine is transported by rail are small but carry severe consequences if an incident does occur;
- Stated that more than 90 percent of drinking water sites ban chlorine gas and that some use bleach;
- Stated that sodium hypochlorite (bleach) does not carry the same risks as liquid chlorine;
- Commented on industrial sites close to residential areas and transit corridors;
- Opined that the decision would be difficult to reverse;
- Stated that there are safer alternatives and there is no need to continue to manufacture liquid chlorine;
- Stated that the applicant could produce bleach on the site and eliminate the risk associated with liquid chlorine without losing jobs; and,
- Urged Council to deny the proposal.

5.7. Robyn Kinsley:

- Spoke in support of the proposal;
- Advised that she is the Vice President of Transportation, Emergency Management and Regulatory Affairs at The Chlorine Institute and is a chemical engineer;

- Advised that the chlorine industry has worked closely with the governments of Canada and the USA to improve chlorine rail transportation safety;
- Advised that safety improvements to railcars include stronger value protection designed to withstand rollovers, significantly stronger tanks with reinforced tank heads, thermal protection and an outer steel jacket to slow pressure increase in case of a fire, and head shields on both ends of each car for increased impact protection;
- Noted that enhancements to railcars significantly reduce the risk of release, including in the event of a collision;
- Advised that both Canada and the USA require the older design railcars to be phased out by December 31, 2027;
- Stated that the railcars used by Chemtrade meet the new standards;
- Commented on rail operator requirements and operational rules for rail transportation of chlorine, including speed, routing, inspections, detectors, storage in railyards, incident response, real-time railcar information for emergency responders, positive train control, security and route risk analysis for rail movements of hazardous materials, chain-of-custody monitoring and reporting, and risk reduction programs;
- Advised that the Chlorine Institute works with members to review and update best practices to help ensure the safety of rail transportation of chlorine;
- Noted that rail transportation of chlorine has improved significantly with a 91 percent reduction in railcar releases of chlorine in the USA since 2006 and zero chlorine releases from railcars in Canada in that time period;
- Stated that none of the railcars with the newer enhanced design involved in derailments have released hazardous materials; and,
- Advised that the Chlorine Institute maintains an emergency response mutual aid network in North America, including response teams, member companies, specialized emergency response contractors, and trains first responders regarding chlorine emergency response and connects them with the network.

5.8. Michael Graveson:

- Spoke in opposition to the proposal;
- Advised that he has been a consultant for the chemical industry for more than 40 years;
- Opined that there is missing information as well as misinformation in the materials;
- Opined that transportation of chlorine by railcar is not needed;
- Stated that Canadian drinking water is treated with chlorine bleach, not chlorine gas, less than five percent of Chemtrade's product is used for water treatment, which is sent to an off-site plant to convert to bleach;
- Opined that the safety improvements in the proposal are not adequate to protect the public;
- Stated that Chemtrade makes deadly chlorine gas that has been used as a weapon;

- Opined that water treatment facilities do not want to use chlorine gas, using bleach and ultraviolet light, as well as other alternative methods;
- Stated that Metro Vancouver uses bleach and not chlorine gas for water treatment;
- Stated that he had spoken to most of the major water treatment facilities in BC and Alberta over the past two weeks and offered to share their contact information;
- Stated that Chemtrade materials refer to a survey from 2015 regarding chlorination of drinking water;
- Stated that most of the chlorine produced at the facility is sent to the USA;
- Suggested Chemtrade produce bleach onsite to eliminate the need to transport liquid chlorine;
- Opined that part of the proposal is to reduce bulk liquid chlorine storage and that having the product in railcars is less safe;
- Opined that the enclosed building proposed for loading railcars is a good idea;
- Stated that two to four railcars could be contained in the building and 191 railcars containing chlorine would be stored onsite outside the building;
- Commented on a chlorine leak in 2016 in West Virginia, stating that they used the same type of building to load railcars as in the proposal and that the railcar leaked its contents after it had left the site, causing a mass evacuation event; and,
- Opined that the biggest threat to the District is railcars full of chlorine shipped through the municipality and region.

5.9. Colin Armstrong:

- Spoke in opposition to the proposal;
- Advised that he is a chemical engineer with AcuTech, stating that AcuTech is a global leader in the management and assessment of risk for hazardous chemicals and is lead author of guidelines for chemical transportation safety;
- Provided his qualifications as an expert in the field, including risk assessments and involvement with incidents;
- Commented on risk analysis and how the risks are presented by Chemtrade;
- Stated that it is important to assess the consequences of a risk rather than the likelihood of an incident;
- Advised that he reviewed the report and assessed risks beyond the study to include railcars travelling through the metropolitan area with some travelling to a bleach plant in Langley and others to the United States;
- Stated that modelling shows the potential consequence of a release in transit would be a large gas cloud with up to 2,000 fatalities up to four kilometres from the release;
- Acknowledged that a railcar is unlikely to leak, noting that the possibility of a leak exists;
- Referred to previous incidents involving fatalities, including an explosion in the Port of Jordan in 2022;

- Advised that he performed a QRA based on accident statistics from the Transportation Safety Board of Canada using the same risk criteria as BakerRisk and found a significant number of schools, daycares, and nursing facilities within an intolerable risk area along the transportation route from the Chemtrade site to Langley; and,
- Stated that risk mitigation must be implemented and that proposed mitigation at the facility only is not adequate.

5.10. Jess Conard:

- Spoke in opposition to the proposal;
- Played a video showing a train derailment and health impacts of a release of vinyl chloride in East Palestine, Ohio;
- Advised that she is a resident of East Palestine and was affected by the derailment;
- Noted the cause of the derailment was ruled to have been mechanical and stated that train derailments are frequent in the United States and Canada;
- Urged Council to defer or deny the rezoning application;
- Advised that she founded Rail Watch;
- Stated that there is a derailment involving hazardous materials in Canada every four days;
- Stated that chlorine is shipped in the same type of railcar that cracked in the East Palestine derailment and released a full railcar of chlorine and opined that it is a matter of when, not if, one will crack;
- Stated that containment of the new type of railcar is less effective as the temperature drops;
- Commented on the practice of extending the life of railcars to 50 years and opined it was an economic rather than safety-based decision;
- Noted that safety of the materials outside of the facility site is important to consider;
- Stated that chemical exposure can cause many different physical ailments and injury;
- Stated that the proposal is to transport a chemical weapon used in World War One through the District;
- Compared improvements to railcars to the addition of filters to cigarettes; and,
- Recommended removing the hazard entirely.

5.11. Jennifer Law:

- Spoke in support of the proposal on behalf of the Port;
- Stated that Chemtrade has been a responsible tenant at the site for several decades and have made significant investments in safety improvements over that period to meet or exceed industry standards;
- Commented on Chemtrade's role in ensuring safety of Canada's drinking water;
- Stated that the Port executed a Letter of Intent to extend Chemtrade's lease from its current expiry in 2032 to 2044, subject to District rezoning;

- Stated that the Port requires removal of chlorine manufacturing facilities by 2030 and this requirement is in their lease; and,
- Noted that there are inconsistencies with leases due to historical agreements and that the Port is working to align agreements with the Port's land use plan.

5.12. Griff Marshall:

- Spoke in support of the proposal;
- Advised that he is a Lynn Valley resident and has experience with the chemical industry, not specifically with chlor-alkali;
- Opined that the District needs industrial use as part of the community, noting that businesses provide services and employment;
- Noted that Chemtrade is a longtime employer in the District, manufacturing materials for domestic use;
- Noted that Chemtrade supplies 70 percent of the chlorine in western Canada and 40 percent of the total supply in Canada;
- Expressed concern that the alternative would be importing chlorine from the United States, noting the current political climate;
- Noted the facility's safety record;
- Stated that the facility follows guidelines for safety and, if their proposal is approved, the company intends to spend 50 million dollars on upgrades, including containment for railcar loading;
- Opined that upgrades and new procedures would reduce the risk of a large volume release with the proposed upgrades;
- Advised that Chemtrade and other industrial businesses in the area support regular communication with the community through the Community Advisory Panel (CAP), which is open to the public, noting that he participates in their meetings;
- Encouraged members of the public to attend CAP meetings, noting they discuss industrial activity in the area, including safety performance and planning, and opined that discussion and debate in an open forum is a better way to reach understanding than reacting to concerns that may be based on partial or incorrect information;
- Opined that the proposal would have a positive impact on taxes and jobs in the District and help western Canada be self-sufficient; and,
- Encouraged anyone with concerns to engage directly with Chemtrade.

5.13. George McKay:

- Spoke in opposition to the proposal;
- Advised that he lives on Dollarton Highway approximately two kilometres from the site and at the same elevation of the site;
- Advised that his parents tried to have the chemical plant removed from the site in the 1980s;
- Opined that the operation of a chlorine plant at the site is not in the community's interest and that the use is not compatible with nearby residential use;
- Recommended remediation and redevelopment of the site to accommodate housing or light industrial use;
- Opined that this would be a better use for the site and would generate more revenue than heavy industrial use;
- Recommended moving chlorine production somewhere near fewer residential properties;
- Opined that if the federal government does not want the use on their land that the land use should be changed;
- Opined that the District is not responsible for providing a space for the use and that if it is needed, it should be on federal land; and,
- Stated that the application is an opportunity for the District to take action.

5.14. Rick Hind:

- Spoke in opposition to the proposal;
- Advised that he has worked on environmental issues with Greenpeace and others for the past 30 years, starting with the incident at the Union Carbide facility in Bhopal, India;
- Stated that the incident in Bhopal was predicted by reporters and that a similar facility in West Virginia had a near miss a year later;
- Opined that safety claims are overconfident or dishonest;
- Noted that facilities are run by humans and mistakes are possible;
- Advised that he worked with the United Nations regarding a chlorine international treaty and with legislators and the Environmental Protection Agency in regulatory policy in the USA;
- Noted that railroad safety and security legislation work was undertaken in 2006 and that the September 11, 2001 attacks showed that rail safety is a security issue;
- Stated that the security assessment should take into account a potential intentional attack by bad actors;
- Recommended that a comprehensive assessment of response capacity be required, including how many firefighters and hospital space would be needed to respond to an incident;
- Expressed doubt that any community would be prepared to respond to a chlorine release;
- Commented on the alternative proposal presented by another speaker;

- Expressed concern that bad actors could present a risk intending to hurt and kill people; and,
- Encouraged Council to deny the proposal and Chemtrade to produce a safer alternative to chlorine.

5.15. Peter Teevan:

- Advised that he is a local resident;
- Stated that he has concerns with the proposal;
- Noted that he has attended Public Information Meetings for the project;
- Stated that he is not concerned about the safety of operations within the facility;
- Stated that he trusts Chemtrade and does not trust CN Rail;
- Opined that the rail crossings at Mountain Highway and Riverside Drive are not controlled or well maintained, noting heavy traffic in both areas;
- Stated that in the list of rail incidents in Canada resulting in injuries or deaths on Wikipedia, CN Rail was involved in all but three events;
- Reviewed data from software used to predict the effects of a heavy truck puncture of a railcar at Riverside Drive;
- Showed the affected areas in summer and winter wind conditions;
- Commented on the hydrogen facility next door to the Chemtrade facility, stating that chlorine and hydrogen combine to form hydrochloric acid;
- Noted that the Port requires removing the use from their land by 2030; and,
- Stated that the staff report says the proposal is consistent with the OCP and opined that the use is forbidden by the OCP.

5.16. Eric Godot Andersen:

- Advised that he would like to reconsider his position on the matter due to what has been presented at the hearing and would not use his speaking time.

The hearing recessed at 9:07 p.m. and resumed at 9:20

5.17. Dave Montgomery:

- Advised that he is the principal consultant from Risktec on the project; and,
- In response to a question regarding Risktec's experience, confirmed that Risktec has completed several QRAs internationally since 2004 and specifically in Canada since 2010, including chlorine facilities.

5.18. Henry Gend:

- Spoke in support of the proposal;
- Advised that he is a longtime District resident currently living in the Dollarton area and a retired professional engineer, noting that he has no connection with Chemtrade;
- Advised that he was an engineer at the site for the companies that operated the facility prior to Chemtrade;

- Stated that he participated in nearly every project during his time at the plant, including modernization projects;
- Opined that the proposal is an excellent plan to improve safety and clean up the site, as well as remove obsolete equipment and buildings;
- Commented on the safety record of the facility, noting there have been no major accidents or injuries and that nothing beyond the site has been affected; and,
- Recommended that Council approve the proposal as it would further improve site safety.

5.19. Rob Inman:

- Advised that he is a longtime resident of North Vancouver and owns buildings near the site;
- Stated that he is impressed with the expertise of the professionals involved in the project and with leadership at DNVFRS;
- Questioned whether he should sell his properties;
- Noted that trains sound their horns at the intersection at Riverside Drive, there are crossing lights, and that trains travel at a slow speed through the intersection;
- Stated that new construction will likely be consistent with earthquake standards;
- Commented on incidents in 1993 at the site when it was operated by Hooker Chemicals, including a chlorine leak that occurred while a railcar was being filled, noting that two workers from the plant inhaled chlorine gas and did not return to their jobs and another had long-term health impacts;
- Noted that he received information from the company after the incidents on what to do in an emergency; and,
- Requested written information for him and his tenants, noting there are many new buildings in the area, noting that he had not heard the siren tested at the site in some time.

5.20. Corrie Kost:

- Spoke in opposition to the proposal;
- Advised that he is a longtime District resident, and has a PhD in physics;
- Noted that he has attended the majority of Council meetings held for the last 40 years;
- Provided binders of historical materials regarding the site;
- Stated that the plant has had no serious releases since it started operating in 1957;
- Opined that if a new facility were proposed for the site today, it would be rejected by all levels of government;
- Opined that the future of vision for Maplewood Village Centre cannot be realized as long as the facility exists;
- Opined that taxes and fees should not be considered in the decision on the matter;
- Opined that safety is more important than money;

- Opined that the facility's 300 million dollar liability insurance in the 1990s should be approximately one billion dollars today and if they do not have that level of insurance, it shows the risk involved;
- Noted that the proposed bylaw does not have an expiry date for the production of chlorine on the site;
- Opined that the rezoning would not be reversible and is not advisable;
- Stated that there are no other chlorine plants anywhere else in the world as close to residential housing;
- Stated that the BakerRisk report shows the 10^{-6} contour does not lie within boundary of site; and,
- Stated that one of the requirements in other jurisdictions including Melbourne, Australia is that the 10^{-6} risk contour is within the boundary of the property.

5.21. Michael Graveson SPEAKING FOR A SECOND TIME:

- Stated that railcars called empty are not completely empty, holding an average of two to three tonnes of chlorine, and are treated as full by emergency responders;
- Opined that the applicant should not claim they are reducing onsite storage;
- Stated that Chemtrade is the largest producer of chlor-alkali in Canada because a larger supplier's plant blew up due to a hydrogen leak;
- Opined that the proximity of loaded railcars is a hazard;
- Stated that the applicant acknowledged that bleach is used as a disinfectant;
- Noted that bleach is produced in Coquitlam and Langley;
- Questioned why the applicant does not produce bleach on the site instead of shipping chlorine to bleach producers; and,
- Stated that he is not advocating for complete closure of the facility.

5.22. Rick Hind SPEAKING FOR A SECOND TIME:

- Opined that if a security assessment had not already been conducted, a vulnerability assessment for cyber and physical attack should be required;
- Expressed concern regarding threats from artificial intelligence;
- Stated that in 2006 railroads claimed that they were unable to get liability insurance for toxic inhalation hazard (TIH) railcars;
- Stated that a worst-case scenario would be more severe in an intentional attack and that railroads are highly vulnerable to attack;
- Stated that there is a high potential for fatalities for a rail incident although the likelihood is low; and,
- Expressed concern regarding the reliability of rail travel and the potential for more than one railcar to be involved in an incident.

5.23. Jess Conard SPEAKING FOR A SECOND TIME:

- Advised that two benzene residue railcars derailed in her community, noting that a residue railcar is one that contains a substance and is not completely full;
- Stated that she sheltered in place for four days, noting that shelter-in-place requires staying indoors with windows closed and ventilation, heat, and air conditioning off and that it is not comfortable;
- Noted that people who rely on delivery services and medical services were negatively impacted; and,
- Advised that she had health issues despite following the guidelines to shelter-in-place.

5.24. Colin Armstrong SPEAKING FOR A SECOND TIME:

- Opined that the BakerRisk report did not assess the worst-case scenario and did not show the area that would be affected;
- Stated that the report did not include an assessment of the impacts of a full railcar release, only the risk;
- Showed the map reviewed during his previous speaking time showing the area potentially affected by a railcar release between the facility and the bleach plant in Langley;
- Reiterated that the BakerRisk report did not assess risk beyond the site;
- Stated that the BakerRisk report did not take the hydrogen facility adjacent to the site into account;
- Disagreed with the report's assessment that the blast wall would mitigate risk, noting that he had not reviewed the hydrogen facility's QRA and that he is considered an expert in hydrogen facilities;
- Reviewed the map of daycares and schools near the rail route to the bleach production facility presented during his previous speaking time and reiterated points regarding risk to the daycares, schools, and medical facilities in the event of a release along the rail route;
- Stated that on-site production has acceptable risk but risk outside the site during transportation does not;
- Opined that risk mitigation measures are required;
- Stated that the industry has moved to using bleach; and,
- Reviewed the hierarchy of controls, noting that elimination of a risk is the most effective and opined that the engineering and administrative controls proposed are not as effective.

5.25. Peter Teevan SPEAKING FOR A SECOND TIME;

- Questioned if seismic activity was included in risk assessments for the site;
- Provided a 2015 Department of Natural Resources map showing the site is at high risk for earthquakes;
- Questioned the level of confidence regarding earthquake safety at the nuclear site at Fukushima, Japan;

- Opined that the risk is similar for the subject site;
- Quoted a bible verse regarding foreseeing danger and taking precautions;
- Questioned the possible impact of a railcar incident in the District outside of the facility;
- Noted that the proposed bylaw amendment includes transportation of liquid chlorine and recommended Council consider the risk;
- Questioned how many people were killed or injured in chlorine accidents over the past 50 years versus in bleach accidents;
- Questioned why the focus is on liquid chlorine if water treatment uses bleach;
- Compared the hazard warnings for liquid chlorine and bleach;
- Reviewed a Metro Vancouver Seymour Water Filtration Plant brochure from 2016, noting that it includes water treatment with bleach;
- Questioned why the word chlorine is shown in brackets below sodium hypochlorite on the brochure and opined it is disinformation;
- Opined that the province and Metro Vancouver are placing the risks and costs on the District for something that benefits others; and,
- Opined that Metro Vancouver is spreading misinformation and disinformation.

5.26. Corrie Kost SPEAKING FOR A SECOND TIME:

- Reiterated points regarding the proximity of the facility to housing, the risk contour not contained within the site boundary, and requirements regarding risk contours that must not be outside the site boundary in Melbourne, Australia;
- Opined that similar requirements should apply to the facility as in Melbourne;
- Referred to previous studies of the site;
- Stated that the risk to the site in an earthquake has not been assessed;
- Stated that shelter-in-place is not effective in an earthquake as windows in residences would be broken;
- Opined that an earthquake is the most likely scenario and would impact the chlorine facility, hydrogen facility, or both;
- Stated that chlorine only has a small part in water safety; and,
- Stated that UV and bleach and maybe a small amount of chlorine are used in water treatment.

The hearing was adjourned due to time constraints prior to the completion of the speaker's remarks. Mayor Little advised that Corrie Kost would be permitted to continue speaking when the hearing reconvened on February 25, 2026.

6. QUESTIONS FROM COUNCIL

Do we know why the Port is requiring removal of chlorine manufacturing facilities on their land by 2030?

In response to the question from Council, the applicant advised that an answer had been provided by speaker Jennifer Law and that the Port is moving to remain within their land use mandate.

Mayor Little added that the Port is removing all manufacturing processes on all their sites to allow for more trade-enabling businesses and industries.

Have accidents involving chlorine leaks occurred at this site in the past? Has this led to death or injury at this site in the past?

In response to the question from Council, the applicant advised that there has never been a fatality on the site as a result of any chemical exposures, including chlorine. The applicant noted that there have been minor injuries treated by first aid due to small releases on site, with workers able to return to work following treatment with oxygen.

How many loaded railcars would typically be on site at one time?

The applicant advised that they are restricted to 32 railcars on site, noting that a speaker referred to a significantly higher number that was inaccurate.

Has staff compared the relative risk of one static tank versus multiple loaded railcars? Did the QRA evaluate only on-site risk, or did it also include transportation risk along the rail corridor?

In response to the question from Council, staff advised that there has been no analysis performed by District staff and referred the question to the applicant team. The applicant's consultant from BakerRisk advised that their scope of work was the facility site and they did not review risks for rail transportation off-site.

What are the additional risks in regard to adding a hydrogen plant next door and an increase in population, representing doubling of the previous density, that was not there when the last rezoning and risk assessment was done?

In response to the question from Council, the applicant's consultant from BakerRisk advised that population density is not part of MIACC guidelines and that they did not review offsite impacts of hydrogen. It was noted that they reviewed the QRA for the hydrogen facility at the adjacent site and, if the recommendation to add a blast wall to that site has been followed, there should be no risk.

Are we recording the presenters' questions as they are part of the record and will the questions be answered?

In response to the question from Council, staff advised that all questions would be recorded but they would only respond to questions from Council.

What resources are required to train and create exercises to emergency situations in the surrounding area, who is responsible for the resident and business community in regard to how to shelter-in-place, and what is the evacuation plan in a worst-case scenario, whose responsibility and who will pay for this program? Where is the plan?

In response to the question from Council, staff advised that the staff presentation included the information regarding the established community safety protocol in the event of an incident. Staff noted that emergency planning is a coordinated responsibility, including Chemtrade's on-site emergency response plan, training, and exercises, of the DNVFRS and NSEM oversight of broader community safety coordination and notification systems. Public shelter-in-place instructions would be communicated through established alert systems and other actions such as evacuation, if required, would be coordinated by incident command based on real-time conditions.

Can we learn more about Baker Engineering and Risktec's experience and record in risk assessment? Do they have experience in the assessment of risk of similar plants (chlorine) in other locations?

In response to the question from Council, the applicant's consultant from BakerRisk advised that BakerRisk performs risk assessments for a variety of industries across all chemical industries, including several manufacturers of chlorine. Staff noted that Risktec is a reputable firm based in Calgary.

If the rezoning is granted, what restrictions will Chemtrade be under in terms of level of production of liquid chlorine? Would they be able to expand production and shipments?

In response to the question from Council, staff advised that the proposal is not to increase production and that legal instruments including the development permit and a covenant on title would restrict production and shipment.

Although rezoning would be enduring, what would happen if the Port decided to not renew the lease with Chemtrade after Dec 31, 2044?

In response to the question from Council, staff advised that the lease is within the Port's jurisdiction and that the facility could not operate without access. The applicant confirmed that they could not continue to operate without access.

I would like to consider how we could align with the Port's lease agreement [in terms of the zoning]?

In response to the question from Council, staff advised that the proposed rezoning of the site would allow the use and, if the zoning for the site changed at a later date to prohibit the use, it would become existing non-conforming and could continue. Staff noted that there would be no direct mechanism for the District to align the site's zoning with the Port's lease agreement.

Other municipalities such as Coquitlam have converted their water treatment facilities to using bleach instead of chlorine to reduce the risk to the community. The North Shore Wastewater Treatment Plant (NSWWTP) will NOT be using Chlorine or bleach and instead using an ultraviolet (UV) process - also to reduce risk. Why isn't Chemtrade using newer technologies that are safer than liquid chlorine? What would be the difference between potable water disinfecting versus wastewater disinfecting.

In response to the question from Council, staff advised that disinfecting potable water and wastewater is different and that UV treatment is suitable for wastewater but does not provide a residual disinfection system. Staff noted that municipalities use bleach for drinking water, which requires chlorine to produce, making chlorine necessary upstream in the supply chain.

The applicant advised that most municipalities use bleach for drinking water. The applicant noted that bleach is made from chlorine, caustic soda, and water and bleach cannot be produced without chlorine. The applicant noted that most municipalities use bleach and reiterated that chlorine is used in its production. The applicant advised that bleach breaks down over time and with exposure to temperature, so is produced locally for municipalities due to these limitations as it no longer works when it breaks down.

Mayor Little clarified that the NSWWTP does not use UV treatment and that potable water filtration includes UV. Mayor Little provided the Seymour Capilano Filtration Plant as an example, where the final treatment stage includes uses both UV and chlorine. Mayor Little further advised that the NSWWTP uses cellular membrane and biofilter technology.

If bleach is safer overall, why doesn't Chemtrade either consider or use a process that involves converting chlorine to bleach?

The applicant advised that they could not share trade information as there were competitors at the public hearing, noting that limited bleach production at the site was under consideration and the limitation would be based on the distance bleach could be shipped without breaking down. The applicant advised that they could not meet their current clients' needs in Canada or the USA if they converted their operation to the production of bleach. It was further noted that if they produced bleach rather than shipping liquid chlorine to bleach plants, it would change transportation of their product from 1,000 railcars of liquid chlorine

to 70,000 to 100,000 truckloads of bleach per year, significantly increasing truck traffic in North Vancouver.

The consultant from BakerRisk described the "worst case scenario" would be the full release onsite of Liquid Chlorine (LC) from a railcar. Would an even worse situation be, during a massive earthquake, that there was full release of LC from a railcar as well as leaks from other loaded railcars that are waiting to be transported?

In response to the question from Council, the applicant's consultant from BakerRisk advised that 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.

What is the applicant's response to the argument they could produce bleach instead of chlorine?

In response to the question from Council, staff referred to the answer provided by the applicant earlier in the public hearing.

The point is that other water treatment needs, such as wastewater, are not using chlorine either. How many water treatment plants in Canada use chlorine gas, in terms of liquid chlorine, chlorine gas and hypochlorite? Metro uses the latter, please confirm the difference.

In response to the question from Council, the applicant advised that Metro Vancouver uses bleach and that chlorine produced by Chemtrade used to produce bleach.

Will Chemtrade be using the "newer" reinforced railcars? If so, how many and how many fully loaded cars would be on site at any given time?

In response to the question from Council, the applicant advised that all railcars are mandated to be the new type by January 1, 2028 and approximately half of their fleet already meets the new requirements. The applicant noted that the maximum number of loaded railcars on site is 32.

What safety controls remain within the District's authority once chlorine leaves the site? What sort of exercises has NSEM run for a chlorine release?

In response to the question from Council, staff summarized the response from DNVFRS that they have a collaborative response alongside their partners at the City of North Vancouver Fire Department. Staff reviewed the emergency response plan (ERP) for the site, which covers different scenarios including catastrophic chlorine release. Staff noted that key components of the ERP include training and preparedness, regular review and practice of safety processes, tabletop exercises simulating emergency scenarios, and full-scale facility-side exercises to test and update ERP effectiveness. External notification procedures include an immediate 911 call by staff, notification of NSEM to activate the Alertable public alert

system with detailed instructions and information on the nature of the incident, shelter-in-place steps, and instructions shared with first responders, and posted on Chemtrade's social media. Notification also includes direct telephone calls to local First Nations, immediate neighbours, and all levels of elected officials. Incident response procedures include establishment of Chemtrade's incident command centre and activation of their CHLOREP team, contractors and consultants, use of emergency modelling software to predict release impacts and share real-time data with first responders. The resumption of joint emergency exercises has been identified as a priority by Chemtrade and DNVFRS and is planned for Fall 2026. Site tours were provided to Fire Department members in 2024 and 2025 to familiarize members with risks. Chemtrade and CN Rail commitment to ongoing product-specific training including liquid chlorine response. Flowchart and a detailed response are in the public hearing binder.

Can we ask for all presentations from members of the public?

In response to the question from Council, staff advised that the presentations that were emailed to input@dnv.org would be included in the public hearing materials and encouraged presenters to provide their materials prior to the close of the public hearing.

Why is the Port's lease limited to 2044 and why do they want the removal of the facilities from the Port property, is it to avoid liability?

In response to the question from Council, staff advised that the Port is focussing on their mandate and permitted land uses related to trade and shipping.

Has the potential significant increase in residential density of the Addition to Reserve on Dollarton Highway been considered in the risk assessment by Risktec, BakerRisk or the District?

In response to the question from Council, staff advised that information regarding the proposed future use of lands near the site is publicly available in the District's OCP and is part of the calculation of risk.

Staff advised that they have considered the risks and that there have been a number of MIACC assessments, including one in the Maplewood Plan. Staff noted that the applicant's revised MIACC assessment would be used by staff for future land use decisions if the application is approved.

What exactly is the Port leasing to Chemtrade? What is the legal liability to the District in regards to a catastrophic release? Is it the reason the Port wants the production and storage removed from its property? If not, what is it then?

In response to the question from Council, staff advised that matters regarding liability and risk would ordinarily be discussed in-camera. Staff noted that there is statutory risk reduction

in the *Local Government Act* regarding Council's decisions on rezoning or issuance of permits, Council has a core policy decision-making role and has mitigated liability for core policy decisions, and staff recommend that, if the project is approved, save harmless and indemnity clauses be included in conditions attached to the property in a covenant.

Is there any direct compensation offered to the District of North Vancouver (other than normal property taxes) for approval of this project?

In response to the question from Council, staff advised that the application fee would be the only other revenue received for the project.

Can DNV hire a consultant to do a robust, independent review of Chemtrade's operations and safety? The RiskTec report only reviewed the results of Chemtrade's safety report.

In response to the question from Council, staff advised that the standard approach is for the applicant's consultant to complete the report and to have their report peer reviewed.

Have the risk assessments considered security issues?

In response to the question from Council, staff advised that the QRA primarily assesses accidental release and that security threats are reviewed using another framework. The applicant's consultant from BakerRisk advised that staff's summary is accurate and that security is analyzed in a separate process known as a security vulnerability analysis, which has not been conducted for this project.

Is the production and shipping of liquid chlorine the only profitable way for Chemtrade to operate an industrial plant on this land? Is there not a business case to operate a plant that does not present the same level of risk and produce alternatives?

In response to the question from Council, the applicant advised that they are reviewing opportunities for other technologies that would reduce the amount of liquid chlorine shipped from the site. The applicant noted that the business cases for these technologies are on hold as they would not completely replace the production of liquid chlorine at the site.

Has there been any assessment regarding our personnel capacity to handle varying degrees of accidents?

In response to the question from Council, staff advised that the risk response plan for DNVFRS in the public hearing materials provides the requested information.

How many railcars are allowed on the site?

In response to the question from Council, the applicant advised that 32 railcars of liquid chlorine may be on site and that there is no limit to the number of railcars containing other products.

Can staff provide a log of exercises over the last 5 years based on emergency response and training for local business and residents, how often it occurs, who provides the training, and who pays for the cost of the training?

In response to the question from Council, the applicant advised that the facility is mandated to perform a full-scale exercise every five years and has performed a full-scale exercise every two years for the past six years. These exercises involve the entire operation as well as outside parties. The applicant noted that tabletop exercises with staff and consultants are required once per year and are currently held once a month.

Is a blast wall being included in HTEC's development?

In response to the question from Council, staff advised that a development permit for the HTEC site was issued in spring 2025 and a building permit application has not been received. Staff noted that this information would be included in the final design and the regulatory requirements at the building permit stage. Staff noted that they would ensure appropriate safety measures are implemented based on recommendations of the final QRA for the site, which may include a blast wall.

Our GEOweb aerial photos show hundreds of railcars on Chemtrade's site, can they advise given the 32 number?

In response to the question from Council, the applicant advised that there are approximately 260 railcars on site, many of which are empty and others contain other substances produced at the site. The applicant reiterated that 32 railcars of liquid chlorine are permitted on the site. The applicant noted that they track what is in each railcar on site.

Chemtrade's chlorine goes to a bleach plant. Where are those bleach plants?

In response to the question from Council, the applicant advised that they have customers across Canada and the United States and declined to provide a specific list due to the presence of competitors at the public hearing.

What year was the Chemtrade and BakerRisk assessment report completed?

In response to the question from Council, staff advised that the QRA was completed in September 2025 and the peer review in December 2025, with final revisions and comments completed in February 2026.

This rezoning is in perpetuity but water access is only until 2044? What happens then?

In response to the question from Council, staff advised that if the lease is not extended, operations at the site would not be possible.

Is there still a siren or alarm at the site or do they rely on Rapid Notify for alerting the neighbors?

In response to the question from Council, the applicant advised that there is an alarm on site and it is tested every Tuesday.

What insurance protections are in place for on site and off-site risk?

In response to the question from Council, the applicant advised that the site has insurance and that they would need to check with the team regarding the specific details and could report back.

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?

In response to the question from Council, staff advised that there ongoing community coordination and education as well as a Community Advisory Panel, instructions regarding shelter-in-place procedures, and covenants for developments in Maplewood to ensure future residents are informed about shelter-in-place procedures. Staff noted they could provide additional clarification prior to consideration of second reading of the bylaw.

At 10:29 p.m. Council considered extending the meeting past 10:30 p.m.

MOVED by Mayor LITTLE

SECONDED by Councillor BACK

THAT the February 24, 2026 Public Hearing regarding Bylaw 8778 is authorized to continue beyond 10:30 p.m.

CARRIED

Opposed: Councillors Hanson and Mah

7. COUNCIL RESOLUTION

MOVED by Mayor LITTLE

SECONDED by Councillor BACK

THAT the February 24, 2026 Public Hearing regarding Bylaw 8778 is adjourned and will reconvene on February 25, 2026 at 7:00 p.m. in Council Chambers of District Hall at 355 West Queens Road, North Vancouver, B.C.

CARRIED

(10:59 p.m.)

The Public Hearing reconvened in the Council Chambers of the Municipal Hall, 355 West Queens Road, North Vancouver, B.C. on Wednesday, February 25, 2026 at 7:01 p.m.

Present: Mayor Mike Little
Councillor Jordan Back
Councillor Betty Forbes
Councillor Jim Hanson
Councillor Herman Mah
Councillor Lisa Muri (via Zoom)
Councillor Catherine Pope

Staff: Mike Fox, Chief Administrative Officer
Dan Milburn, General Manager – Planning, Properties and Permits
Genevieve Lanz, Director – Legislative Services and Corporate Officer
Yan Zeng, Manager – Development Planning
Cheryl Archer, Confidential Council Clerk
Afrooz Fallah, Planning Assistant – Development Planning
Amanda Day, Administration Clerk

Also in

Attendance: Naser Badri, Technical Specialist, RiskTec
Raman Batra, Vice President – Electrochem, Commercial, Chemtrade
Dale Bossons, Vice President – Electrochem Manufacturing, Chemtrade
Fareed Ebrahim, Senior Technical Advisor II, Chemtrade
Alex Fergusson, EIT – Process Safety Group, BakerRisk
Blair Hetherington, Emergency Response System Manager, Chemtrade
Amy Jonsson, Director – Corporate Communications, Chemtrade
Alvin Loh, Site Director, Chemtrade
David Montgomery, Principal Consultant, Risktec
Bryan Ritchey, Senior Project Manager, Chemtrade
Alan Robinson, Group Vice President – Commercial, Chemtrade
Drew Somerville, Project Manager, Chemtrade

Mayor Little advised that the purpose of the reconvened Public Hearing was to receive further input from the community on Bylaw 8778 and reviewed the established rules of the meeting.

Mayor Little restated that the Public Hearing was convened pursuant to Section 464 of the *Local Government Act*. Members of Council, staff, and the public participated in person and via Zoom and the Hearing was being streamed live over the internet and recorded in accordance with the *Freedom of Information and Protection of Privacy Act*.

Mayor Little stated that:

- The opportunity to be heard or provide written submissions was accommodated by speakers having signed up in advance, the details of the Zoom meeting having been provided on the District's website and in the notice of public hearing, and the acceptance of written submissions up until the hearing was closed;
- Speakers would be called from the established speakers list, starting with the person who was speaking at the time the hearing was adjourned on February 24, 2026, followed by those who had signed up to speak since the hearing was adjourned. At the end of the speakers list, the Chair would call on speakers from the audience;
- Each speaker would have five minutes to address Council for a first time and should begin remarks to Council by stating their name;
- After everyone who wished to speak had spoken once, speakers would then be allowed one additional five-minute presentation;
- Any additional presentations would be allowed at the discretion of the Chair;
- Speakers were reminded to refrain from repeating information from their previous presentations and to ensure all comments remained focused on the bylaw under consideration;
- If a written submission was provided, speakers were asked not to read the entire submission, noting that they could provide a summary or briefly reiterate the highlights;
- All members of the audience were asked to be respectful of one another as diverse opinions are expressed, noting that the meeting was an open and impartial forum for Council to hear everyone's views;
- Council's role at Public Hearings is to listen to the public, not to debate the merits of the bylaw;
- Council may ask clarifying questions during Public Hearings;
- A binder containing documents and submissions related to the bylaw is available for review in hard copy and online;
- Speaking opportunities would be provided for everyone who wished to provide input and the meeting would be continued on a third night, if required;
- At the conclusion of the public input Council may request further information from staff, which may or may not require an extension of the meeting, or Council may close the meeting, after which Council should not receive further new information from the public.

5. REPRESENTATIONS FROM THE PUBLIC (continued)

5.26. Corrie Kost SPEAKING FOR A SECOND TIME (continued) and SPEAKING FOR A THIRD TIME:

- Stated that there is no assessment for a more serious event such as a major earthquake and expressed concern regarding the impact to the facility;
- Opined that liquid chlorine plays a small role in drinking water safety;
- Stated that most drinking water is treated with bleach;

- Opined that shelter-in-place is not a suitable response to an earthquake, noting that windows may break;
- Opined that the Lynn Creek Town Centre would have a chlorine gas cloud;
- Requested information on insurance;
- Requested information on small and large releases and opined that small releases over a period of years can cause major impacts;
- Stated that he is opposed to a chlorine plant being located near a residential area;
- Questioned why the facility is permitted if safety is a priority;
- Opined that money and employment are more important than safety to the District;
- Commented on population growth near the facility since it was originally constructed;
- Acknowledged that safety measures have improved and opined that they are still not adequate;
- Questioned how a power outage would impact the systems in the facility during a chlorine release;
- Questioned how sensitive the mapping of the risk contours is to specific locations of residences and public spaces to ensure risk thresholds are not exceeded;
- Questioned who would be responsible if the study proved to be inaccurate in the future;
- Acknowledged the facility's safety record and expressed concern regarding the risk of earthquakes and the data on which the risks have been assessed; and,
- Stated that if the risk probability has been understated, the risk contours are not accurate.

5.27. Robyn Kinsley SPEAKING FOR A SECOND TIME:

- Advised that of more than 1.9 million hazardous material shipments in Canada and the USA in 2024, 55,000 of which were classed as TIH shipments and more than 65 percent of which were transported in the upgraded railcar design, there were 45 hazardous material railcar incidents rated as serious with no injuries or fatalities;
- Stated that the last chlorine release due to a railcar incident was in 2019 with 0.003lb released and there were no injuries;
- Noted that the last serious chlorine release rail accident resulting in a fatality was in 2005 and, as a result of the incident, major safety improvements were implemented for railcar design, regulations, and operations;
- Stated that the rate of chlorine rail incidents as of 2024 was less than one 100th of one percent;
- Noted that of 20 million chlorine shipments by rail over past 20 years in the USA there has been one fatality caused by derailment involving flammable materials;
- Opined that the probability of a release of chlorine during rail shipment is extremely low and that rail is the safest and most reliable method of land transportation of chlorine; and,

- Compared the equipment and conditions involved in the derailment in East Palestine, Ohio with those in use for chlorine shipments, noting that the train was travelling faster than the maximum speed permitted for trains carrying chlorine through Vancouver, and although the railcars carrying vinyl chloride monomer were an older design not used for chlorine shipment, they remained intact in the derailment, the railcars carrying flammable material that were punctured in the derailment resulting in a large fire are no longer permitted to be used for those materials, and that the release of vinyl chloride monomer was the result of a response decision to avoid leaving the railcars in proximity to the fire.

5.28. Andrea Akelaitis:

- Advised that she is legal counsel for K2 Pure Solutions, experienced in environmental law, and a resident of North Vancouver;
- Stated that municipalities have challenges balancing environmental concerns, safety, and supporting industry; and,
- Recommended the District consider deferring and amending the bylaw to allow production on the condition that they phase out shipping.

5.29. Peter Teevan SPEAKING FOR A THIRD TIME:

- Expressed concern regarding the risk of earthquakes, noting the District is within the Pacific Ring of Fire and stated that there is frequent seismic activity;
- Commented on the public hearing process and purpose;
- Opined that information from the previous night showed that the QRA did not address a worst-case scenario, including seismic activity, the hydrogen facility at the adjacent site, an accident off-site, sabotage or act of war;
- Commented on the changes to the municipality since the facility opened in 1957, including population and land use;
- Questioned if it makes sense to produce a hazardous material in an urban area;
- Stated that when development proposals have come forward in the area, the District staff has advised that the plant is shutting down in 2030;
- Opined that the public will have been gaslit if the proposal is approved;
- Stated that he had warned that the business would not shut down during previous development application processes;
- Questioned how many decisions have been made under the current OCP for developments in the area based on a projected end date of 2030 for chlorine production at the facility;
- Questioned if there was a report from the DNVFRS Fire Chief; and,
- Opined that the public hearing could not be closed unless Council rejects the proposal.

5.30. Jess Conard SPEAKING FOR A THIRD TIME:

- Accused the Chlorine Institute of providing inaccurate information in their presentation;
- Stated that she has lived through a derailment and has spent three years studying related documents, including the National Transportation Safety Board (NTSB) report on the incident;
- Advised that she has travelled to many communities to speak on the issue;
- Questioned the decision to limit the safety assessment to the site;
- Commented on the impact of the vinyl chloride spilled in the derailment in East Palestine;
- Expressed support for the applicant considering alternative products;
- Questioned why the applicant is pursuing alternatives if liquid chlorine is safe;
- Questioned if Council would find an incident or derailment acceptable, who would be affected, the cost of clean up, impact on property values, and insurance claims;
- Questioned if the District is indemnified;
- Stated that the facility does not need to close and that she respects the company; and,
- Recommended amending the proposal to phase out the shipping of chlorine.

5.31. Michael Graveson SPEAKING FOR A THIRD TIME:

- Stated that bleach is already being shipped in trucks and opined that there would be no increase in truck traffic if the facility produced bleach instead of liquid chlorine;
- Stated that if bleach were made on site, it would require a change in logistics;
- Stated that 95 percent of the chlorine produced at the facility is shipped to the United States;
- Stated that bleach is used for water treatment and the facility produces ingredients to make bleach;
- Stated that opposition is to the liquification of chlorine, not the production;
- Stated that there are four chlor-alkali producers in Canada and most of their product is exported due to a lack of domestic demand;
- Stated that Acutech concluded that the risk of shipping liquid chlorine is not acceptable;
- Noted that a reduction of stored liquid chlorine is not proposed and that 32 full railcars would be on site; and,
- Stated that there would be an average of 159 unloaded railcars that are called empty but contain an average of two to three tonnes of liquid chlorine.

5.32. Alex Ferguson, EIT – Process Safety Group, BakerRisk:

- Stated that they used the industry average for the failure rate of containment based on a rate that includes natural hazards that are not adjusted for the specific seismic activity at the subject site; and,
- Noted that the seismic risk analysis is in Appendix F of the QRA.

5.33. Colin Armstrong SPEAKING FOR A THIRD TIME:

- Advised that Acutech wrote the standard for security risk assessments for petrochemical facilities and he is familiar with security threats for chemical facilities;
- Stated that it is standard practice to assess vulnerability to security and other threats as part of a risk assessment;
- Stated that a security risk assessment has not been provided as part of the application and that the QRA did not specifically address security;
- Questioned if a security assessment has been conducted and requested that it be reviewed or an explanation provided if one has not been conducted;
- Stated that the relocation of railcars containing chlorine during the 2010 Olympic Games in Vancouver show that they pose a security threat;
- Stated that the risk of a stored railcar breach used by BakerRisk in the QRA was in a 2006 QRA written by a third-party consultant and requested by the applicant;
- Opined that BakerRisk did not use rail safety data they would normally and used data requested by the applicant;
- Questioned if BakerRisk reviewed the original study as he did not see a reference to this in the QRA;
- Questioned how the validity of the third-party report could be verified;
- Reiterated that housing, daycares and schools are located along rail routes and opined that they are within areas of unacceptable risk.

5.34. Blair Hetherington, Emergency Response System Manager, Chemtrade:

- Commented on emergency response training provided to the community, noting that North Shore Emergency Management (NSEM) offers free training on emergency preparedness and shelter-in-place procedures and that Transcare offers free training supported by Chemtrade; and,
- Noted that the Transcare safety train is located at the facility.

5.35. Rob Inman SPEAKING FOR A SECOND TIME:

- Advised that he is a residential and commercial landlord;
- Stated that he met with all his tenants in the Riverside area and spoke with five of the largest businesses;
- Stated that no one has an issue with the facility and that they had not heard the siren that the applicant had advised is tested every Tuesday;
- Noted that there is a notification via mobile telephone for earthquakes;
- Questioned how tenants would know if there had been a spill at the facility, particularly those with loud equipment in use;
- Stated that the horn for the shift change at Sea Span can be heard up to the Blueridge neighbourhood;
- Recommended the applicant send out information and communicate what residents and businesses should do if there is an incident at the facility;
- Noted that he observed trains travelling through the area at very slow speeds; and,

- Noted that DNVFRS could be on site in a short time due to the proximity of the new firehall on Dollarton Highway.

5.36. Colin Metcalfe SPEAKING FOR A SECOND TIME:

- Referred to the District publication *When the Ground Shakes*; and,
- Stated that the level of expected damage at the site is indicated as complete in a map in the publication.

5.37. Chris Bowcock SPEAKING FOR A SECOND TIME:

- Questioned the percentage of chlorine gas and liquid produced at the facility that is used in Canada and in BC;
- Opined that reported amounts are inaccurate;
- Questioned the effectiveness of shelter-in-place as an emergency response, noting it relies on personal responsibility and that some types of buildings are not airtight;
- Stated that 90 percent effectiveness for residential buildings built to the highest standards as used for emergency training exercises;
- Stated that sealing residential buildings would be difficult for many people;
- Stated that the Acutech report shows 99 percent lethality inside a building at up to 1,200 feet, which would include up to Dollarton Highway;
- Stated exposure would still be significant if reduced by 90 percent;
- Opined that older persons and children may not be able to move quickly enough to reach shelter and that parents of children may have difficulty bringing children inside; and,
- Recommended that vulnerable persons who may need assistance to shelter-in-place are identified.

5.38. Paolo Pucci:

- Opined that the District is not prepared for a significant earthquake;
- Stated that the Cleveland Dam would collapse in an earthquake and would flood the facility; and,
- Commented on proposed residential density increases in the area.

6. QUESTIONS FROM COUNCIL

In the event of a serious chlorine rail incident here, who is legally responsible, and would the District face any financial risk before being reimbursed?

In response to the question from Council, staff advised that the land is privately owned and that Zoning decisions do not give rise to liability exposure to the District, noting that the *Local Government Act* does not allow for compensation due to loss or damages due to the adoption of a Zoning Bylaw, which limits the District's liability. Staff noted that there are risks associated with chlorine production and storage and the District would require a legal covenant to secure performance and compliance with the BakerRisk QRA and RiskTec peer

review relating to construction, production, and storage if the zoning bylaw amendment is adopted. A verification report from BakerRisk confirming the project meets the conditions in the current QRA, as well as a security vulnerability assessment prepared by a qualified professional, would be required prior to the issuance of a building permit.

Can staff provide a log of exercises over the last 5 years based on emergency response and training for local business and residents, how often it occurs, who provides the training, and who pays for the cost of the training? 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? (referred from February 24, 2026)

In response to the question from Council, staff noted that the applicant had provided a response regarding their responsibility, practices, and protocols as outlined in their emergency response plan at the public hearing on February 24, 2026 and that DNVFRS and NSEM had provided their responses to staff. DNVFRS advised that they are a key emergency response resource in case of an incident at the site and not considered a registered professional authority. During any response, DNVFRS would coordinate with Chemtrade, and CHLOREP, the specialized response team. Chemtrade would also engage contractors and technical consultant in the event on an incident and first responders would receive information in real time. Staff noted that information on DNVFRS training at Chemtrade and incident reports for the past five years are in the public hearing binder. Staff advised that NSEM has established emergency response procedures for the facility. In the event of an incident, Chemtrade staff would assess the situation in accordance with their emergency response plan, including providing a rating of the severity. Chemtrade would then provide information to NSEM, which may be issued as alerts on the Alertable app, if appropriate. Staff reviewed responses based on the level of severity, including when an Emergency Operations Centre would be required, and a description of actions taken for shelter-in-place.

What insurance protections are in place for on-site and off-site risk? (referred from February 24, 2026)

In response to the question from Council, staff provided information from the applicant, advising that Chemtrade has more than 500 million in insurance coverage with FM Global, a firm that only insures clients who are serious about engineered risk reduction and which employs engineers rather than actuaries to underwrite risk. Staff further provided that the insurer has spent considerable time at all large Chemtrade sites, including the location in the District, and has been the insurer for that site since it was purchased in 2017.

Is the plant isolated from off-site malicious actors?

In response to the question from Council, staff advised that the applicant provided information that a cybersecurity review was completed in 2024 and layers of security have been implemented. Cybersecurity at the facility includes system firewalls, employee training,

and annual review of measures and audit. If the system were to be compromised, they have a series of e-stops that can override and shut down areas of the facility.

How long would a typical shelter-in-place order be for a ruptured Chlorine Tank Car?

In response to the question from Council, staff advised that there is no average or typical length of time, noting that the conditions of events vary based on many factors and that first responders would activate the appropriate response.

Is Sodium Hypochlorite commonly called Chlorine Bleach?

In response to the question from Council, the applicant advised that they are the same substance and it is made from chlorine, sodium caustic soda, and water. Production of chlorine is required prior to bleach production and conversion of chlorine to bleach is a simpler process that can be done on a smaller scale than chlorine production.

How was seismic activity considered in the risk assessments?

In response to the question from Council, staff provided information provided by the applicant, including that the possibility of an earthquake was included in the QRA and that risk from an earthquake was included in Appendix F of the report, using the industry average failure rate, which includes loss of containment due to natural hazards but does capture the higher-than-average seismic activity. It was noted that no release due to a seismic-initiated event was modelled as the applicant intends to address this through design of the new site, including the removal of all outdoor storage of liquid chlorine from the site.

How much of the Chemtrade liquid chlorine, chlorine gas is destined for markets outside Canada?

In response to the question from Council, staff provided information provided by the applicant that they do not disclose the exact location of their customers and confirmation that 70 percent of capacity remains in Canada.

Can DNV request a new, robust study by an independent consultant that goes further than the RiskTec review of Chemtrades's safety study? Specifically, I'd want to know the impact of a severe earthquake, the rail car safety beyond DNV borders, and a clearer explanation and scan of what other municipalities are doing when it comes to water purification and what the best practices are for purification in the future.

In response to the question from Council, staff advised that the District is able to request a separate study beyond those required for the application. Staff noted that the recommended approach was for the applicant's consultant to complete the study based on standards as outlined and to have it peer reviewed. Staff advised that future validation and verification reports would be required prior to the issuance of a building permit due to the

province being in an active earthquake zone. The District has a duty to ensure all approved construction complies with earthquake standards. Staff noted that rail traffic is regulated by other levels of government. Staff advised that they are not able to predict how future technologies will be applied to water purification and that they do not have information on all communities in Canada's processes.

Did the BakerRisk safety study rely on data from 2006?

In response to the question from Council, the applicant's consultant from BakerRisk advised that the railcar failure rate based on 2006 data used in the previous QRA was discussed and reviewed as part of the QRA.

Can staff share examples of similar facilities near residential areas, and what separation or safety measures were used?

In response to the question from Council, staff advised that they do not have a comprehensive scan and are not aware of another example of a site located near residential areas. Staff noted that the Maplewood Area Plan took MIACC guidelines into account regarding risk contours for different land uses. Staff advised they could share clarification at second reading of the bylaw. The applicant stated that there are other chemical facilities in close proximity to residential areas and that their facility is the only chlor-alkali plant close to a residential area.

Still unclear about the earthquake assessment. Did BakerRisk do its assessments using modeling for a severe earthquake event?

In response to the question from Council, the applicant's consultant from BakerRisk advised that they used a 2,475-year return period as specified in the *BC Building Code* (BCBC), noting that he does not have the specific severity level available, but it is more than an average event. Staff advised that the qualified professional must design to the BCBC standard and that the consultant's report complies and is appropriate. Staff noted that *When the Ground Shakes* uses aggregated data and includes buildings not designed to today's modern standards, and that the proposed containment building would be constructed to modern safety standards.

Does the berm and facility envelope on the property provide enough containment for one ruptured railcar?

In response to the question from Council, the applicant advised that the building is designed to contain one ruptured railcar and an additional nominal amount, and to manage evaporating vapour with enough capacity to scrub for that one railcar.

If rezoning is approved, it would contain one railcar, in the case of a rupture. What about the other 32 rail cars filled with chlorine gas?

In response to the question from Council, the applicant advised that the probability of a railcar rupture outside of containment is extremely low and that the property is not designed as a containment system. The applicant noted gas would settle, sink, and dissipate along the ground, and that conditions including wind and weather would affect how that occurred.

7. COUNCIL RESOLUTION

MOVED by Councillor HANSON

SECONDED by Councillor MAH

THAT the February 24, 2026 Public Hearing regarding Bylaw 8778 is closed;

AND THAT "District of North Vancouver Rezoning Bylaw 1462 (Bylaw 8778)" is returned to Council for further consideration.

CARRIED
(8:34 p.m.)

CERTIFIED CORRECT:


Confidential Council Clerk