

At Vancouver Drydock, we service and repair vessels that range in size from a SeaBus and fishing boats, to Coast Guard vessels and large freighters. Specifically, we clean and paint hulls and exteriors, retrofit interiors, repair and replace worn or damaged parts and replace sections of steel which involves cutting out and replacing areas of the hull or superstructure.

Noise is generated at Vancouver Drydock as vessels and tugs arrive and depart, when pressure washing hulls, during repair work, gantry crane movements and other general site activities which include safety alarms and alerts.

Ultra-High Pressure Washing

The most notable source of noise is Ultra-High Pressure (UHP) washing, which uses compressors to provide water under very high pressure to remove debris and paint. Vancouver Drydock adopted UHP technology in 2020 to improve air quality by eliminating the potential for dust generated by the grit blasting technique used previously. Noise is generated at the nozzles and where the water jets hit the steel hull or superstructure.

Port Authority Noise Requirements and Monitoring

The port authority recognizes that while port operations are industrial by nature and occur on a 24/7 basis, the port authority and its tenants, including Vancouver Drydock, have a responsibility to work to minimize noise impacts on surrounding communities.

As part of these efforts, the port authority has a **Noise Monitoring Program** including 11 monitoring stations throughout the Lower Mainland to identify and track noise issues raised by communities and to work toward mitigation, where possible. Real-time noise levels are publicly available on the port authority's website for each of the monitoring stations. The monitoring station that is in closest proximity to Vancouver Drydock is located at St. Georges Avenue and Victory Ship Way.

Each monitoring station has an alert threshold, which is the background noise plus 10 decibels (dBA). Within the port authority's most recent **2020 annual noise monitoring report** for the St. Georges location it is noted that "there were minimal alerts generated at this site, with most alerts generated during the nighttime." Night periods within the report are defined as 10:00pm to 7:00am.

Operating Hours

Similar to other port authority tenants, Vancouver Drydock operations can occur year-around, 24 hours a day. The majority of the time, Vancouver Drydock operates two shifts from 7:00am to 10:30pm. Overnight activities are usually limited to such things as vessel arrivals and departures, which for safety, must be timed to align with the tides and currents, as well as urgent repair projects.

We recognize that our industrial operations are adjacent to residences and whenever possible schedule activities with the highest potential noise impact during the daytime from 7:00am to 7:00pm.

Noise Concerns

The port authority notifies Vancouver Drydock of all community noise complaints, which are investigated to determine the root cause. When contact information is provided, concerns are addressed directly with individuals.

In 2021, Vancouver Drydock received two noise complaints. One was determined to be pressure washing activity at the facility and the other was road repairs on Esplanade from a City of North Vancouver contractor.

Permit Application Noise Assessment

As part of our permit application, Vancouver Drydock engaged an independent engineering firm specializing in acoustical consulting to undertake an **Environmental Noise Assessment**. The assessment followed the port authority's **Project & Environmental Review (PER) Guidelines - Environmental Noise Assessment** and compared the predicted post-project noise impacts against the PER Assessment Guideline indicators.

The engineering firm used a 3D model to assess noise levels at the nearby Trophy, Cascade East and Cascade West developments. The model predicted that the LRden (rated day-evening-night equivalent sound level) would increase one decibel (dBA) at the Trophy (65 dBA to 66 dBA) development and three dBA at both the Cascade East (62 dBA to 65 dBA) and Cascade West (60 dBA to 63 dBA) development. The maximum predicted LRden does not exceed 75 dBA, which is acceptable under Health Canada guidelines at any of the residences.

The 3D model also predicted an increase in percent highly annoyed (%HA), which is a measure of anticipated change in community annoyance, of 1.5% at the Trophy development, 3.4% at the Cascade East development and 3.8% at the Cascade West development. The predicted increase in %HA does not exceed the Health Canada guideline of 6.5%.

The assessment predicted an increase in the low frequency sound level (LLF) from 71 dBA to 75 dBA, which suggests a slight likelihood of increased noise induced rattles.

How We Plan to Reduce Noise as a part of the Proposed Water Lot Project

Should Seaspan receive a project permit, a post-project noise assessment will be completed to verify the model predictions and identify additional noise-reduction mitigations. The report will be publicly available on the project website.

Seaspan will trial the use of noise-reducing barriers around the ultra-high pressure (UHP) pumps, measuring noise before and after installation of the barriers to assess their effectiveness. The results of the trial will be included in the post-project noise assessment and posted on the project website.

Seaspan will also investigate the use of noise-reducing curtains on the drydocks. As part of this assessment, baseline measurements will be recorded at Vancouver Drydock and, in the community, to help determine their effectiveness. The results of the investigation and testing will be included in the post-project noise assessment, and posted on the website.

Construction Noise

During construction, the noisiest activity will be pile driving, which is anticipated to take six weeks – three to six days for each of the six pile installations.

Efforts will be made to minimize the impact of noise by muffling engines, timing operations within daylight hours, adopting quieter installation techniques for pile driving, installing bubble curtains and using soft start procedures, which involve the gradual increase in hammer energy at the start of pile driving.

The construction approach is detailed in the permit application in a document called the **Construction Environmental Management Plan**.