

Fair Sailing is an initiative by the James Bay Neighbourhood Association (JBNA) to advocate for responsible cruise tourism practices that prioritize the interests of residents, local businesses and the environment of Victoria, Canada’s highest volume port-of-call.

James Bay residents want quality of life, clean air, no foreign garbage and a healthy safe community. The impacts of the cruise industry in our neighbourhood include overtourism, air pollution, the import of foreign garbage and threats to public health.

This section of **Fair Sailing** provides more detailed information on monitoring air quality in James Bay, federal and international regulations, and pertinent information on monitoring and enforcement in the United States. The purpose of this section is to support the **Air Pollution** requests for Actions Needed.

www.fair-sailing.com

The James Bay Neighbourhood Association uses as its guiding principle the maxim **“What is measured, is managed”**.

In 2006, the JBNA Board approached the Vancouver Island Health Authority (VIHA, now Island Health, IH), requesting assessment of air quality during cruise-ship visits. Island Health convened a team comprising federal and provincial government meteorology specialists and, with funding from provincial and federal programs in air quality, retained the services of the Spatial Sciences Research Lab at the University of Victoria to carry out a James Bay Air Quality Study (JBAQS).

An advanced non-steady-state meteorological and air quality modeling system, CALPUFF, was used to simulate atmospheric pollution dispersion of cruise ship emissions. Schematics for several pollutants were created. In 2009, the third year of JBAQS, real measures were recorded.

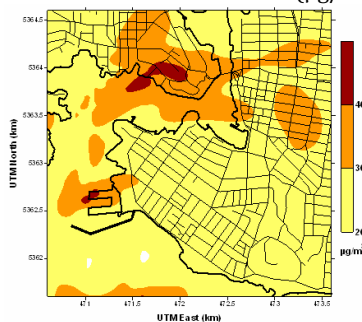
CALPUFF Dispersion Modelling

CALPUFF modelling produced 1-hour and 24-hour dispersion schematics for several pollutants.

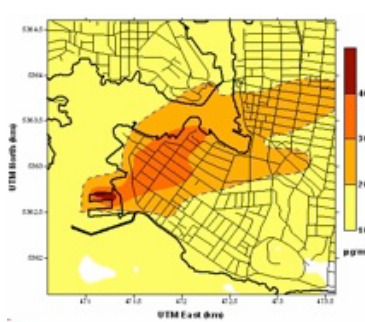
While the dispersion was related to actual meteorological conditions, predictions of pollutant levels were based on fuel sulphur values provided by the cruise-industry.

The figures below are CALPUFF dispersion schematics of PM_{2.5}, SO₂ and NO₂ within the JBAQS study area.

JBAQS Figure 26: Maximum predicted 1-hr PM_{2.5} concentrations (µg/m³)



CALPUFF Prediction: Maximum 24-hour SO₂ areas



JBAQS Figure 27: Maximum predicted 24-hr NO₂ concentrations (µg/m³)

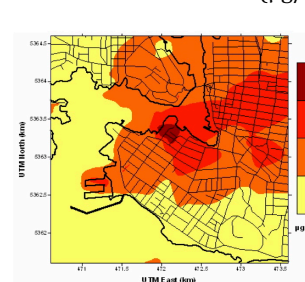


Figure 27. Maximum predicted 24-hour NO₂ concentrations (µg/m³).

BC Ministry of the Environment MAML

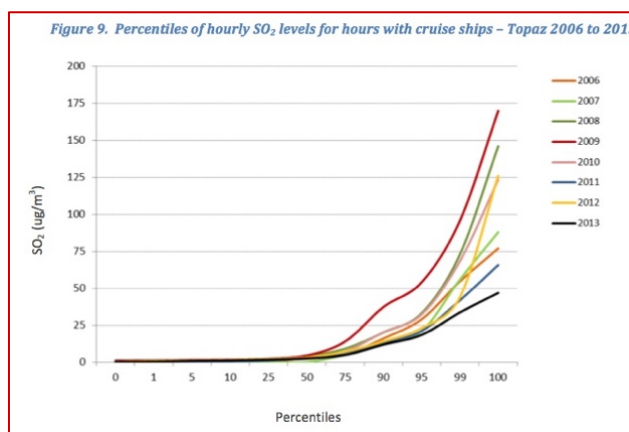
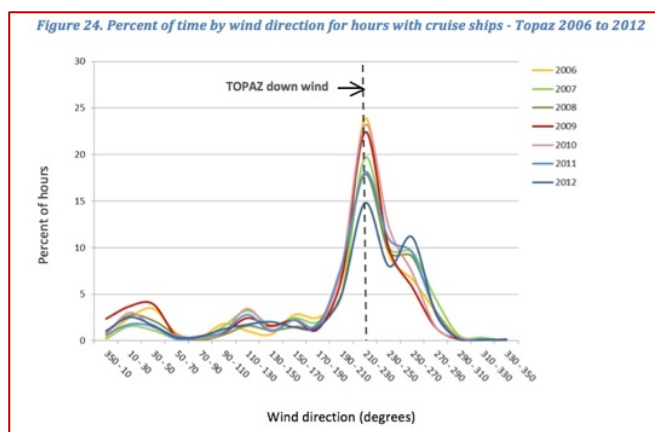
In 2009, the BC Ministry of Environment (MoE) placed a Mobile Air Monitoring Laboratory (MAML) in James Bay. Monitoring during part of the 2009 cruise season found SO₂ levels to be triple what had been predicted by CALPUFF modelling, suggesting that the industry provided information of 1.6% sulphur content in the fuel was off by a factor of three. This provided the first real local data on the impact of cruise ship fuels and emissions on James Bay. (See **Air Pollution** section for MAML results.)

JBAQS Monitoring and Analysis to 2013

As a response to the CALPUFF modelling and MAML results, IH urged for ongoing SO₂ monitoring. In 2011 a single SO₂ monitor was placed in James Bay by the MoE. As soon as the monitor was in place, SO₂ levels almost halved as the cruise lines moved the most polluting ships off the Alaska route.

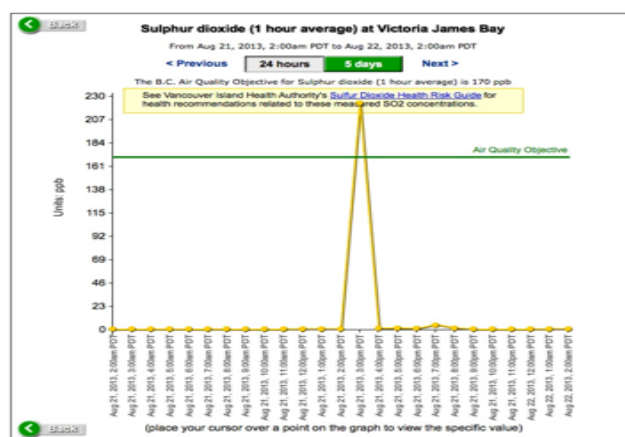
The JBAQS team examined “Topaz” regional air quality station SO₂ data from 2006-2013. Figure 24 of a JBAQS report suggests a significant limitation to regional data collection when mobile emissions sources, such as cruise ships at Ogden Point, are in port. The emissions are ‘caught’ only when the winds take the emissions towards the Topaz monitoring station.

Figure 9 shows the growth in emissions from 2006 through to 2009 as the number and size of ships grew. As soon as a single SO₂ monitor was placed in James Bay, SO₂ levels dropped. The introduction of the North American Emissions Control Area (ECA) led to even lower levels of SO₂, suggesting that the industry responds to both measurement/transparency and regulation.



The monitoring station placed in James Bay from 2011 through 2019 measured only SO₂ levels when winds took the ship plumes to the site. This meant that high emission levels could be sourced to specific ship(s).

Monitoring and use of scrubbers, reduced high levels of SO₂ during 2013 and forward, with the exception of May 9, 2014. However, people sensitive to chemical pollutants, continued to feel the effect of pollution as other byproducts of burning petroleum products were still being emitted.



Local, Federal, and International Responsibilities

City of Victoria

City of Victoria zoning for Ogden Point is M-2, Light Industrial. Sec 1 & 1 (g) state: 1. The following uses are permitted, provided they are not noxious or offensive to the immediate neighbourhood or the general public by reason of emitting odours, dust, smoke, gas, noise, effluent or hazard: (g) docks, wharves and piers.

Although the City of Victoria has not enforced the zoning to ensure that no noxious or offensive odours, smoke, gas or noise be emitted onto the neighbourhood from cruise-ships, in late 2019, the Mayor of Victoria, Lisa Helps stated that shore power should be used in Victoria, but that the taxpayer, or public funding, should not be responsible for the costs of installing any shore power facility for cruise ships.

Federal & IMO Regulation

The Minister of Transport Canada is responsible for the *Canada Shipping Act* although the Minister of Fisheries & Oceans has responsibilities under specific sections of the Act. The Environmental Protection Division of Transport Canada is responsible for the development and management of relevant regulations/guidelines and oversight of Canadian participation at the International Marine Environmental Protection Committee (IMO).

In 2010, the North American Emissions Control Area (ECA) was created with a phased approach to the reduction of SO2 levels. The ECA extends up to 200 miles from the coast of Canada and the US. The first-phase fuel sulfur standard of 1% came onto effect August1, 2012, and the second phase of 0.1% came into effect January 1, 2015.

As of January 1, 2020, the IMO implemented a sulfur cap regulation, known as IMO 2020, which set a decrease of sulfur content in the fuel from 3.5% to 0.5%. However, the IMO regulations provide for an alternate method of achieving low sulphur emissions, a way around using low sulphur fuel. A common method is the use of scrubbers. The alternate method used must be approved by the flag state or the ship’s administration. Most ships that visit Victoria are ‘flagged’ in countries other than the cruise-line’s home nation, such as Panama and Bermuda.

In early 2012, towards the end of the worst period of high sulphur dioxide levels, JBNA had several communications with Transport Canada officials which included monitoring of cruise ship practices in the Strait of Juan de Fuca. At that time, Transport Canada monitoring consisted, in the main, of checking ship logs while ships were berthed in Vancouver.

United States Monitoring and Enforcement

Actions taken by US agencies have provided pertinent information about cruise line practices that are relevant to Victoria as a port-of-call.

Alaska

2018 Alaska Violations (reported in 2019)

Ship Name	Air Violation	Water Violation	# of Victoria Visits
Amsterdam	x		18
Emerald Princess	x	x	20
Eurodam	x	x	22
Golden Princess	x	x	1
Nieuw Amsterdam	x	x	1
Regatta		x	9
Ruby Princess		x	23
Seven Seas Mariner		x	4
Star Princess		x	1
Westerdam	x	x	1
Total			100

In late 2006, the Ocean Ranger Program in the Department of Environmental Conservation became law (Note: defunded in 2019). The Ocean Ranger program, with onboard observers, reported on wastewater treatment practices, pollution control equipment and ship discharges.

Of the 243 cruise ship visits to Victoria in 2018, 100 or 41% were by ships which violated Alaskan air or water environmental regulations. An additional three pending settlements were cited and a US\$37,500 fine paid by Norwegian Cruise Lines.

Environmental Protection Agency (EPA)

In 2016, Princess Cruise Line's use of a 'magic pipe' to discharge oily waste into the oceans as a way to circumvent environmental safeguards became known. The EPA took legal action against Carnival Cruise Lines, leading to the largest fine ever given for pollution. EPA reports suggest that the circumvention of environmental safeguards had been ongoing for over 10 years. Four of the five ships found to be purposely polluting the oceans had been port-of-call ships in **Victoria**.

In addition to the US\$40 million fine for dumping oily waste into the ocean, Carnival's Princess Cruises also pleaded guilty to seven felony charges, relating to what US officials called "*a campaign of obstruction in an effort to hide the deliberate pollution*". A plea agreement filed in a federal US court required Carnival to submit 78 cruise ships across its eight brands to a five-year compliance program. Despite these convictions both Golden Princess & Star Princess were caught discharging sludge from the exhaust system scrubbers in port at Ketchikan in 2018.

In June, 2020, problems of systemic disregard for environmental laws were cited by US senior federal Judge Seitz at a hearing during the fourth year of probation for its actions from 2005-2013. At a subsequent hearing in October, the Judge spoke of ongoing compliance issues concerning pollution-prevention equipment, and discharging of plastics and sewage at sea.

Monitoring Going Forward

"What is measurable, can be managed." Residents have an expectation of government to provide oversight, to minimize negative impacts on our health, and to honour commitments.

JBAQS has proven what people knew, namely that cruise ships burning petroleum products pollute. The JBAQS study and subsequent reports and presentations have given 'breathing room' for the industry to grow without constraint and to continue polluting without regulatory control to minimise impacts on the neighbourhood.

The industry chose not to use lower sulphur fuels while in port, it chose not to install shore power, it chose not to 'dilute' the impact by thoughtful scheduling many years ago.

Carnival's Princess Line's use of the "magic pipe" suggests disregard for standards of behaviour

with regards to pollution. Also problematic, has been Carnival's behaviour while under US Court Order of Probation.

While many pollutants have now been lowered, others continue to affect the well-being of many residents who feel the presence of emissions. The use of scrubber technology is known to create higher levels of fine particulates. In preparation for the return of the cruise industry, JBNA is obtaining base-line readings of fine particulates with the use of the **PurpleAir** system this year.

Governments have voiced commitments to cleaner air and water. Residents cannot be expected to respect Canada's, BC's, and City of Victoria commitments to a lower carbon world while foreign floating resorts bring pollution and waste products into our neighbourhood.

What Residents say

"As the cruise ship industry has proven that it cannot be trusted to monitor itself, there needs to be absolutely strict enforcement, monitoring and public accountability of this industry as a whole."

"Support establishment of national government-funded programs to ensure that IMO-certified, third party monitors are on board all vessels to monitor and enforce local and national environmental and public health regulations for all ports of call."

"In the interim [until shore power], between now and the installation of shore power, we should have real data about the potential impacts to our health. Without the cruise ships this year, our air quality has significantly improved. And it is not just about air quality."