



*“Noise from planes and helicopters is deafening.” (Dallas Rd resident)*

# ***Aerodrome Noise, Emissions & Safety Victoria Harbour***

***September 2011***



**James Bay Neighbourhood Association**

[www.jbna.org](http://www.jbna.org)

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## 1. JBNA Residents Survey 2009

The James Bay Quality of Life Survey was undertaken in order to identify and measure the factors of greatest importance to the Quality of Life in James Bay.

The survey was done during the summer of 2009 and resulted in the return of 573 completed questionnaires thereby providing a highly accurate representation of community views. Completed surveys were received from all areas within James Bay.

Respondents provided about 740 written comments, which describe residents' views about their lives in James Bay. Some of these comments are quoted, in italics, throughout this report.

**Aircraft Noise** was the overall **sixth ranked priority** (of 28) within the survey while **Float Plane Noise** was the **fifth ranked transportation related priority** (of 11). 40.1% of respondents are of the opinion that "Aircraft Noise" had worsened over the last five years. 31 respondents provided comments on noise and emissions from aircraft (both floatplanes and helicopters). Considerable differences were observed in the responses from different areas within James Bay.

Erie St resident: *"Picture it ... In the shower around 7 AM. Surrounded on six sides by reinforced concrete, save for the door which is closed. The radio loudly playing CBC 1 so that I can hear it above the shower. The shower is beating down on my head and the ceiling fan is groaning on. Above all of that noise an airplane is clearly heard throttling up in take off mode. Gimme a break, eh !!"*



**Aircraft Fumes** was the **seventh ranked priority** (of 28) overall. 34.0% of respondents were of the opinion that "Aircraft Fumes" had worsened over the last five years. Responses stratified by street address indicated that residents living along Dallas Road and in James Bay West (in both cases, especially those whose homes face north) are the most affected by aircraft emissions. 55% of respondents along Dallas Road, and 50% of respondents in James Bay West stated that aircraft emissions were getting worse, versus 34% for survey respondents as a whole.

St Lawrence St resident: *"Helijet Fuel rain: I am not speaking of exhaust, but unspent fuel that rains down on my neighbourhood and me... I can feel it on my skin and I can see it on my windows, car, anything outside, to say nothing of the smell. The cancerous consequences of this scare the crap out of me, to be blunt. It is killing me slowly and there is nothing I can do about it but leave James Bay, and I love it here."*



## 2. History & Background

James Bay, home of the Sernghung (Coast Salish), had become a growing hub of activity by 1850. Farms surrounded the Hudson Bay Company's Fort Victoria.

After the first Legislative Building and a bridge to span the bay were built, the elite of Victoria built residential properties in the south and east of James Bay. The west side became an industrial and shipping hub with working class residential areas.

Float planes and float homes began using Victoria Harbour in the 1930s. The 1950s and 1960s saw major residential developments in James Bay. It became and remains the most densely populated neighbourhood in Victoria, with 14% of the city's population, the largest number of residences of which 70% are rented, and the largest group of 65+ residents.

The early 1970s brought the first scheduled float plane service. In November, 1986, Helijet started helicopter operations while James Bay residents were assured that the Ogden/Camel Point area would be a temporary location. There were to be 16 flights daily.

In the 1987 Port of Victoria Ogden Point Development Plan excessive helicopter noise is discussed: ***“Noise levels due to the Camel Point heliport are presently 80-90 dBA along Dallas Road ... These levels are clearly excessive relative to most available criteria”***.

The adverse effects of aerodrome activities on residential communities are acknowledged throughout the western world. In Canada, the Canadian Housing and Mortgage Corporation (CHMC) developed standards during the 1970s which were formalised in 1981. Tools were developed to monitor and control the effects of aeronautical noise on the general populace. During the 1990s, the World Health Organisation commissioned studies. In 1995 and in 1999, it released documents concerning “Community Noise” and “Guidelines for Community Noise”.

In Victoria, the City had developed plans by the early 1980s to develop the Songhees area on the north side of the middle harbour. Residential condominium buildings were constructed and occupied. In 1989, at the time residents were moving into these buildings, there were 5313 float plane movements and 4966 helicopter movements. CHMC standards were not respected.

In 1989, Helijet was ‘permanently’ situated at Ogden/Camel Point. In March, 1988, floatplane runway use was altered (Alpha/Bravo even/odd days). In March 2001, the Alpha and Bravo runways were altered and the use further altered to a greater use of Bravo. By 1999, there were 38 daily scheduled float plane flights, and 19 scheduled Helijet flights; in total, 21,340 float plane and 15,000 helicopter movements occurred in the Harbour.

By the late 1990s, there was considerable resident opposition to increasing noise levels and fumes related to the ever-increasing number of float planes and helicopters in the Harbour area.

In April 2000, Transport Canada, with the support of the City of Victoria, certified Victoria Harbour Airport and, in May, issued an updated Harbour Traffic scheme.

By 2007, there were 44,000 aircraft movements during the year (see Appendix A). During the recession of 2008 and 2009, movements decreased by about 10,000. However, the June 2011 turbo-float plane movement activity increased by 220 movements (9%) over June 2010.

Today, James Bay serves as an “image” of Victoria which promotes tourism. The old streets of James Bay and the remaining vintage housing stock serve as character components which emphasize the Victorian charm of the City. The industrial areas of James Bay have, in large part, disappeared; townhouses and condominiums have taken their place. Industrial activities are centred on the Greater Victoria Harbour Authority (GVHA) properties and Erie Street. There are a few other commercial enterprises and high-tech (IT) operations.

Ladysmith resident: *Air pollution (all forms) is the highest “Quality of Life” concern.*



Harbour marine movements continue to increase with continuing industrial activities in the Selkirk area and a number of tourist related activities including ferries to the US, harbour ferries, whale watching, kayaking, canoeing, rowing, yachts, tour-cruising, and marine special events such as Tall Ships, Dragon Boat and boat show festivals, and yacht races. In the summer period there are more than 1000 marine movements per day.



### 3. Aerodrome Emissions

Ontario St resident: *Too much helicopter noise and fumes and aircraft smells.*

Belleville St resident: *Floatplane noise & unhealthy air*

Montreal St resident: *Floatplane noise & constant stink has to be creating a very unhealthy environment.*

James Bay and Songhees area residents, and users of the WestSong Way, have complained about float plane and helicopter emissions for the past two decades. Vulnerable residents living with medical conditions such as asthma or other lung ailments have reported health affects which they have associated with aircraft emissions from float plane and helicopter operations.

The stench of the aerodrome operations is carried around the middle harbour and near the causeway, by the floatplane bases. Helicopter emissions are noticed by residents along the west side of James Bay, from Shoal Point in the north, to Ladysmith in the south. Emissions particularly of concern are those in the class of Volatile Organic Compounds (VOCs), which result from partially spent fuels.

### VOC considerations:

From 1999 through 2001, Transport Canada commissioned Tradewind Scientific Ltd. to assess VOC levels in the harbour. Three reports were issued. VOC levels, in addition to other indicator compounds, were modelled. Tables 4 and 5, below, are from these reports. The modelling was based on 1998 aircraft movements in the harbour. The 1999 Modelling study suggested VOC levels would **not** be high enough to be of concern, in 2001; however, Tradewind recommended that a 5-year study of VOCs in the harbour be done.

**Table 4: Aircraft Movements and Emissions at Victoria Harbour Airport in 1998**

1998	Aircraft Movements	TPM (kg)	PM10 (kg)	PM2.5 (kg)	SOx (kg)	NOx (kg)	VOC (kg)	CO (kg)
Turboprop	11,438	191	106	75	535	1,939	34,545	40,456
Piston	9,425	10	5	4	27	152	925	42,452
Helicopters	13,777	395	218	154	1,105	7,096	13,621	8,825

**Table 5: Marine Vessel Emissions at Victoria Harbour in 1998**

1998	Annual Hours Underway	TPM (kg)	PM10 (kg)	PM2.5 (kg)	SOx (kg)	NOx (kg)	VOC (kg)	CO (kg)
M.V. Coho	1733	8,625	8,625	7,935	79,968	106,871	4,687	7,668
Victoria Clipper	4212	4,685	4,685	4,310	2,930	48,885	2,546	7,394
Fishing	2910	3,242	3,242	2,982	2,027	40,169	1,762	2,882
	# of Outboards							
Motorboats/VVV	5080	8,026	6,420	5,377	803	1,174	179,681	587,019

The current helicopter fleet tends to be larger and newer than the 1998 fleet, while float planes are the same vintage planes used over the past 30-40 years. Since 1998, the number of planes and flights in the harbour have gone up significantly (see Appendix A). Turbo float planes contribute higher levels of VOCs. These movements increased by 161% from 1997 to 2007. Although flight movements dipped in number during 2009 and 2010 due to the recession, June 2011 turbo-flights surpass 2010 values by 9%.

As part of the 2007-2008 James Bay Air Quality Study (JBAQS), researchers attempted to capture VOC measures but were unsuccessful. In 2009, the Ministry of the Environment Mobile Air Monitoring Laboratory (MAML) study also had equipment limitations and was not able to monitor VOC levels in James Bay.

Phase II of the JBAQS study identified VOCs as a knowledge gap, requiring further studies.

In the JBAQS study, the Songhees area was predicted to receive the highest 1-hr SO<sub>2</sub> and NO<sub>2</sub> levels. This area, particularly near the narrows across from Heron Cove and Laurel Point, could also expect to receive the highest level of float plane VOC emissions. The mix and interaction of the various pollutants from cruise ships and floatplanes has not been studied.

Commercial helicopter operations, by Helijet, are centered on Camel Point with Coast Guard helicopter activity at Shoal Point.

Dallas near Ogden resident: *Air pollution caused by emissions from helicopters (excess fuel). Float planes and cruise ships have a major impact on our enjoyment of the outdoors and on warm summer day ... This is the overall number 1 concern followed by excessive noise levels.*

Erie St resident: *Helijet ...Have you ever watched the helijets take off and land. The filth pours out behind them. They may have found solace in the green buy your way out program, but the pollution keeps piling up on the neighbourhood.*

In addition to inhalation of emissions, residents are concerned about “helijet rain”.

Dallas resident: *I see the problem with not only helijet noise but breathing the emissions is downright unhealthy. Also, the ‘oil slick’ is visible on the side of my house.*

For many, cigarette smoke is a health issue; for others, a Quality of Life issue. In a similar way, the noxious fumes dumped into the air - and which permeates many Songhees residences - may or may not be a health issue. Regardless, is a serious Quality of Life issue.

Those who walk the Westsong Way know about the foul air created by the residual float-plane kerosene-like fuel. Reports from yacht owners tell us that when they dock in the inner harbour they will not dock near the float plane terminus.

For 1998, it was estimated that VOCs being dumped into the harbour came from two main sources. The identified sources were aircraft, with turbo-props being by far the worst, and motor boats including whale watching boats. Motorboats and whale watching boats dump more VOCs in the harbour than aerodrome activities – 180 metric tonnes at waterlevel in 1998; however, aircraft emissions, being airborne, disperse differently and impact residents.

**Aircraft from the Aerodrome dump up to 100 metric tonnes per year of Volatile Organic Compounds into the air, less than 100 meters from homes.**

Airports throughout the world install DOAS (Differential Optical Absorption Spectrometer) to monitor aircraft emissions. Air Pointer technology is the newest system being used. In Victoria, clean air is asserted by the City while no air monitoring program exists in the inner harbour aerodrome area.

#### **4. Aerodrome Noise**

*The noise levels in residential areas of “The Most Livable City in the World” rival the noisiest airports in the world. (see Appendix C)*

In 2007, Victoria Harbour Airport’s 44,271 aircraft movements included 34,732 float plane and 9,539 helicopter take-offs and landings (see Appendix A). The Transport Canada (TC) Aircraft Noise Measurement Project – year 2001 (released May 2002) provides the most recent relatively comprehensive study of noise emanating from airport operations. L<sub>dn</sub> noise levels measured in 2001 on the west side of James Bay ranged from **63.4 to 64.7 dBA**. A comparative James Bay measurement for 1999 was cited in this study, namely the 90 Dallas L<sub>dn</sub> of 49 dBA.

The significant and substantial noise increase from 49dBA to 64dBA in a short period of two years is attributed to two changes. First, 1999 was prior to implementation of the preferred Bravo runway over the Alpha runway. Second, there was a significant increase in cruise ship related vehicular traffic during this two year period.

The 1997 Wakefield Study (Report 97-436-1), Huron Street Management Ltd. Harbour Noise Exposure Assessment, suggested that Shoal Point only marginally exceeded the CMHC and Transport Canada threshold for the onset of negative effects, namely 55 dBA, while the Songhees site was substantially over all thresholds. Shoal Point  $Leq(1hr)$  values ranged from the mid-40s dBA in the late evening to 62 dBA in the peak hour; Songhees  $Leq(1hr)$  peak value was 74 dBA.  $Leq(24)$  for Shoal Point was 57.3 dBA while  $Leq(24)$  at Songhees was 67.3 dBA. “This 10 dBA difference in noise exposures means that, subjectively, the Huron Street site would be judged to be about half as noisy as the Songhees site.”

Runway changes, done to minimise noise in the inner harbour, Laurel Point Inn and Ocean Pointe areas, shifted the noise further onto residential areas. The 2001  $L_{dn}$  measurement of 63.9 dBA at Shoal Point confirmed the effect of shifting the noise to James Bay. Comparison with measurements done in 1997 suggest a doubling of effective noise levels at Shoal Point by 2001. While the Shoal Point measured  $L_{dn}$  value was 63.9, the 55 Songhees level was 64.8 and planned  $L_{dn}$  for Paul Kane Place was 68.4 for runway Alpha, with Bravo planning  $L_{dn}$  values being Shoal Point 61.9, 55 Songhees 57.1, and Paul Kane 58.0. The 2001  $L_{dn}$  noise level of 64 dBA suggests that in the west and north west parts of James Bay and the Songhees noise levels are well-above the WHO recommended levels for healthy living.

Although helicopter flights have decreased significantly since 2001, from 13,746 to 7,969 in 2010, the type of aircraft has changed. Larger Sikorsky helicopters used now are much noisier than the previous fleet but do not idle at as high a noise level. The overall impact is not known.

Single event noise measures, which describe the perceived noise level created by “impulse-like” events such as an aircraft take-off, have been measured and cited in reports:

- 2001 (Wakefield Study Report 01-706-1): SEL values included a 60-second SEL  $Leq(60 \text{ sec})$  event at the Songhees of 93.4 dBA.
- 2005 (Residents Study): Measures of individual aircraft take-offs found that SEL values frequently exceeded 90 dBA. A Turbo Otter had the highest  $L_{max}$  at 99dBA with average  $L_{max}$  90.6 Alpha, and 86.4 Bravo. SEL values (10dBA above  $L_{max}$ ) of over 100 dBA were identified.
- In 2009, several noise measurements were taken from a residence on the harbour.  $L_{max}$  for take-offs generally ranged from 77 to 100 dBA. One Alpha take-off measure was **101.9 dBA**.

These single events had noise peaks within 10 dBA of  $L_{max}$  for about 12 seconds with the total event lasting for about 40 seconds. Residents who have enclosed or three walled balconies could experience, with reverberations, a single event of over a minute in duration.

The 2005 study combined with current float plane movement statistics suggest that residents are subjected to several, perhaps over 100, short-term exposures over 85 dBA on a daily basis during the spring to fall period. With up to 26 movements/hour there could be 13 exposures of between  $L_{max}$  85 and 99 dBA in an hour. With SEL values being about 10 dBA higher, residents may be exposed to noise level equivalents of between 95 and 105 dBA. Each single incident involves about 40 seconds of time when the noise level is above 65 dBA. For residents, the effect could be severe noise impairment for 13 minutes in an hour.

In addition to James Bay and Songhees residents, there are other residents affected adversely by aircraft activity, namely those who live in condominiums just north and to the west of the Songhees area, including Swallows and family dwellings along the east shore of Esquimalt.

## ***Impact of Noise***

Erie St resident: *We need more quiet airplanes (modern ones are quieter). Get rid of the old noisy ones.*

The World Health Organisation's "Guidelines for Community Noise", 1999, identifies several principles which guide noise management policies and are universally accepted as guidelines for community planning. Recognised government policies are based on the principle of precaution, the principle of "polluter pays", and the principle of noise prevention.

WHO Noise levels guidelines and effects include:

- ~ residential indoor LAeq of 35 dBA;
- ~ moderate annoyance outdoors (including balconies) LAeq of 50 dBA;
- ~ serious annoyance outdoors (including balconies) LAeq of 55 dBA; and
- ~ hearing impairment outdoors 110 dBA for 1 hour.

WHO studies also suggest that noise above 80 dBA reduces helping behaviour and increases aggressive behaviour. Stress, hypertension and heart attacks can also be caused by excessive noise. Further, to avoid hearing loss, a daily one hour LAeq should not exceed 85 dBA and Lmax noise levels should always be below 110 dBA. Interference with daily activities occurs with indoor noise of 60 dBA, which occurs when an outdoor noise of 75dBA occurs and the windows are closed.



Dallas Rd resident: *Noise from planes and helicopters is deafening*



## **5. Economic Considerations**

Transport Canada, the City of Victoria, and aircraft operators have not acknowledged or dealt with the anomaly which has the residents of James Bay, the Songhees, and West Bay communities paying a high social cost for the financial benefit of operators and the travel convenience of select travellers.

Since the carrying capacity of each float plane or helicopter is relatively small, the benefits associated with the existence of these carriers is relatively small compared to the economic impacts of ferry services such as the Coho and Victoria Clippers. The Coho alone brought 205,000 return trip visitors to Victoria in 2006. Although the number of return trip visitors carried by the combined float plane and helicopter operations may now be comparable to this number, the tourism revenue impact of their customers is relatively small compared with customers of water-based transportation links. A high proportion of air travellers are business

or government sector commuters; hence, fewer tourist dollar effects should be associated with these travellers<sup>1</sup>. It is therefore easy to overstate the economic benefits of aircraft operations while the social costs of aircraft noise and airshed emissions, if properly measured, are substantial. If float plane and helicopter operations did not exist, the number of tourist trips to Victoria might not be very much affected, given alternative modes of transportation, so that the real benefit of these operations is measured only by the value of travel time savings (eg., from downtown Victoria to downtown Vancouver), and not by purported tourist expenditures. On the other hand, 56% of foot passengers and 22% of vehicle passengers report that they would not have travelled to Victoria if the Coho service were not available.<sup>2</sup>

A comparison with Toronto Pearson International Airport is interesting. Pearson has about 1,200 aircraft movements/day and 383,000/year. At its peak, Victoria Harbour had 12-16% of this activity. However, Pearson has 70,000 workers and moves 30 million passengers. Harbour noise levels are out of proportion to the noise levels experienced in Toronto, or likely any urban based airport in Canada. Victoria has up to 200 aircraft movements per day during the summer but nowhere near 8,000 workers employed, nor anywhere near 3.6 million passengers carried. Victoria is not receiving major economic spin-offs from float plane and helicopter operations.

A major difference between the Victoria Harbour Airport customer base and the customer bases of Pearson Airport and the marine-based Coho and Victoria Clipper is the alternate travel options which are available. Although trips would be lengthened by one to two and a half hours each way, Vancouver to Victoria travellers have alternate ways of travelling, by ferry or by land-based aircraft. They can travel to and from the ferries by taxi, bus, or private vehicle. While same-day business travellers would incur higher travel time costs, hotels and other Victoria businesses might gain due to increased overnight visits. In contrast, travellers to Pearson arrive from across Canada (40% of flights) and 100 countries throughout the world.



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<sup>1</sup> An economic impact study entitled Victoria's Seaplane Services (circa 1997/8) suggested that these services were "invaluable" and that the total passenger arrivals for all operators amounted to about 120,000 per year. While some carriers suggested that their passengers were mostly tourists, the largest float plane operator (Harbour Air) reported that most of its passengers were business travellers. The multiplier effects reported in this study are massively inflated, and based on faulty methodology. Direct operator revenues of \$8,640,000 (120,000 passengers times \$72 per fare) somehow generate an economic impact for Victoria of \$105 million. Twelve fold multipliers exist nowhere in the world, and the result is overstated by an order of magnitude. You cannot apply a multiplier to the sum of direct and indirect impacts. The indirect impact is the main component of the so-called multiplier effect.

<sup>2</sup> Tourism Victoria MV Coho Economic Impact study, November 15, 2007, Dr. Brock Smith.

Letters in the *Times Colonist* and *Victoria News* have attested to residents relocating from James Bay because of aircraft noise and foul air. This is known to Victorians, but not yet to retirees and others from outside the city who are considering moving to Victoria. “The sensitivity of house prices to changes in noise level is measured by the noise depreciation sensitivity index (NDSI), ... which ... represents the percentage change in the value of a house that results from a unit increase in the noise level, measured in NEFs. ... The best estimate of the NDSI for air traffic in the U.S. is 0.65 percent ... In other words, if the noise level increases by one NEF, then the price of an affected house will decrease in value by 0.65 percent on average. Thus, [other things being equal] houses adjacent to an airport with NEFs of 40 are priced 9.75 percent lower than houses farther from the airport with NEFs of 25. For roadway noise pollution, Bateman and his colleagues suggest that the NDSI is 0.64 percent ... Using Canadian data, ... [Uyeno, Hamilton and Biggs] estimate that the NDSI is 0.65 percent for detached houses with NEFs of 25 or higher ...; they estimate it is 0.90 percent for condominiums and 1.66 percent for vacant land.”<sup>3</sup> [Social Costs of Air Pollution of various pollutants have also been estimated (e.g. Health costs for VOCs from vehicles have been estimated at a mean value of \$2,448 per ton per year).<sup>4</sup>] Over time, the effects of noise pollution around Victoria Harbour will have an adverse effect on the reputation of the City and will negatively impact property values, and thus property tax revenues.

Transport Canada and other jurisdictions have addressed the economic impact of decisions related to noise in different ways. The **polluter pays principle** has guided decisions regarding noise abatement measures. Two examples are:

- Lac St-Augustin<sup>5</sup> – the removal of sight-seeing operations from the Lac St-Augustin area meant the elimination of about 45% of aircraft movements. The costs associated with the regulations prohibiting the commercial activity were to be borne by the owners and employees of the two commercial operators affected; however, the operators were entitled to continue to operate elsewhere, including at the main land-based Quebec/Jean-Lesage Airport.
- Heathrow - Heathrow established a system whereby operators participated, and funded, a program involving the purchase of residential properties experiencing high levels of noise (comparable to the Songhees and north James Bay), re-imbursing relocation costs of residents who wanted to move, and paying for acoustic insulation when noise levels jumped by 3 dBA (see Appendix C – Heathrow).



<sup>3</sup> Boardman/Greenberg/Vining/Weimer, *Cost-Benefit Analysis Concepts and Practice*, Fourth edition, p 428-9.

<sup>4</sup> *ibid.*, p 430.

<sup>5</sup> <http://canadagazette.gc.ca/partII/1998/19980121/html/sor20-e.html>

## 6. The Players – those with Responsibilities

### *Aerodrome: City & Transport Canada*

Over the past twenty years, Transport Canada and the City of Victoria have employed the strategy of ‘hot-potato’ to circumvent their separate and joint obligations to residents who live near the harbour. As a result, aircraft operators have not been held accountable for the social and economic costs forced upon harbour residents. ***In reality, the City of Victoria and Transport Canada are jointly and severably responsible for the situation as it now exists.***

The City of Victoria, through its Standing Committee on the Harbour Airport, held hearings and created a report on the Harbour (2008-December 2009). The shortcomings of the final report are highlighted in the JBNA response (see Section 7).

Belleville St resident: *Please establish new by-laws so the appropriate businesses are forced into making changes to the buses/planes as the citizens of James Bay are being poisoned by all their emissions.*

**6.1 Transport Canada:** Transport Canada’s mission is to develop and administer policies, regulations and services for the best transportation system for Canada and Canadians — one that is safe and secure, efficient, affordable, integrated and environmentally friendly.

Transport Canada (TC) promotes the Noise Exposure Forecast (NEF) as a community planning tool. Residents, when asking for information concerning noise levels created by airports, are referred, by TC staff, to the NEF for the airport. Airports regularly update the NEF to reflect changes in fleet composition and changes due to community development. It is not unusual to have a NEF updated every 3-5 years. Transport Canada, as operator of the Victoria Harbour Airport, would be responsible for the creation of contour maps.

The NEF is recognised nationally and internationally as a community planning aid and as a noise-policy decision tool for municipalities and governments. The NEF for Victoria Harbour should have been done ten to thirty years ago, prior to the building of major residential buildings, and prior to certification of the airport. **The TC decision not to follow TC and industry standard practices has, in itself, been a tool in obfuscating the situation for residents,** who must bear the financial, health and social costs which accompany noise pollution.

TC has supported the interests of aircraft operators at Victoria Harbour. The 1999 TC Victoria Harbour Management Review details hurdles and problems that operators would encounter if noise abatement procedures were to be implemented.

TC studies related to Vancouver used SEL 85 as a boundary level of noise. Yet, Victoria residents who have complained about SEL levels of over 100 dBA have not been supported. TC has dismissed Victoria harbour residents while acknowledging the unacceptability of similar extreme noise levels in other parts of Canada.

Operators and TC suggest that the City should not have permitted residential development in close proximity to the airport. However, in the case of the Victoria Harbour Airport, the corollary of this position better reflects the history of the development of residential areas and the airport. That is, ***should TC have advocated the creation of an airport in a built-up urban area, indeed one of the most densely built-up areas, of Victoria, and should the City of***

***Victoria have supported TC in the creation of an airport in 2000, a decade after the Songhees residential area was established?***

TC states that “**It has always been the responsibility of local land use authorities to ensure that the use of the land surrounding an airport is compatible with airport operations**”. However, TC had the authority under the Aeronautics Act, Part 1, Section 5.4(2) to have lands set aside to ensure that conflicts between the aerodrome and residential properties were minimized – it chose not to take any such action.

In April 2000, TC certified the aerodrome as an ‘airport’. This was done to comply with Canadian Aviation Regulations which require that an aerodrome used for commuter services or sightseeing flights which is located in the built-up area of a city must be certified as an airport. TC used **draft standards** to certify the airport (see pages 17 & 18). Although residents requested mitigative actions and an environmental review of the aerodrome operations, no environmental review has been completed.

Mitigation strategies could include:

- Eliminate certain types of services (eg., Sightseeing)
- Restrict types of aircraft permissible within the Harbour
- Restrict aircraft noise made under normal conditions (short term 90dBA; long term 85dBA)
- Relocate part or all of the Harbour Airport operations to another area
- Institute a noise monitoring system
- Implement a regulatory system which would identify and sanction delinquent operators
- Alter take-off procedures - say to one take-off per 7.5 minutes
- Restrict all float plane flights to 100 per day and to 2000 per month<sup>6</sup>
- Restrict helicopter movements to 40 movements per day
- create a polluter-pays dBA and VOC auction system to determine which operators should operate in the Harbour.



Nav Canada works with Transport Canada in the day-to-day operations of the aerodrome. Nav Canada has stated that a major reason for the need for a new Flight Services Station was their concern for their employees’ exposure to noise and effluents. The levels were too high for their work environment. These employees work for about 35 hours per week. Residents of the middle harbour are subjected to the same noise and emission exposure for 82 hours a week.

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<sup>6</sup> July 13, 1998 report: Robert Woodland, Manager, Legislative Services, suggested an option of 2000 per month which is double the 1997 resident request of 1000 per month.

## **6.2 Aerodrome Operators and GVHA**

Dock/Dallas resident: *Isn't there new technology that makes the float planes quieter?*

TC supports aerodrome commercial interests. Currently there is no requirement by TC for operators to have “modern” equipment. TC has legislative oversight but has not enacted regulations to control noise or emissions from the aerodrome.

The reality is that operators will not willingly act against their own self-interests; they will not change their levels of operations or their levels of noise (some of which is discretionary through piloting practices) until there is a reason to change. That will happen only with the introduction of regulations and penalties.

Current commercial operators include Harbour Air Ltd. (which encompasses WestCoast Air), Kenmore Air Harbor Inc., Hyack Air, Helijet International Inc., and possibly other float plane operators.

The Greater Victoria Harbour Authority (GVHA) as a not-for-profit society, has ownership of former TC and Provincial lands (Ogden Point, Fisherman’s Wharf, Inner Causeway to Ship Point and Wharf Street docks). Currently, float plane operations operate from the Wharf Street docks and from City property directly north of Ship Point. GVHA, in the spring of 2011, submitted an application for re-zoning to permit float plane docks on one of its waterlots in the inner harbour. The application is for a 20 year lease and would contribute to an increase in float plane moorage in the harbour.

The influence of float plane operators on the GVHA Board should not be underestimated. There was only a short period, in 2009, when there was not at least one executive officer/manager of one of either Harbour Air or Hyack Air, appointed as a Director of the GVHA Board. Prior to that, Randy Wright of Harbour Air sat on the Board as a Community Director from 2002 through 2008, while Jim Allard of Hyack Air sat on the Board briefly in 2006.

As example of the influence of the float plane industry on GVHA occurred at the October 2009 AGM. Jim Allard of Hyack Air attended the GVHA AGM and Board meetings of October 16, 2009, as a new Board appointee from the Victoria Esquimalt Harbour Society (VEHS). Also at that AGM meeting, due to the ‘Member Agency’ voting privileges, Randy Wright of Harbour Air was a voting delegate for Tourism Victoria, and Lyle Soetaert of WestCoast Air was a voting delegate for VEHS.

GVHA Strategic and Business Plans over the past several years make reference to GVHA examining the possibility of developing a marine air terminal of high-quality and to initiating discussions with Transport Canada to take over the management of Victoria’s harbour airport when GVHA has built additional organizational capacity.

In consideration of the support of a re-zoning proposal to enable Harbour Air to lease a portion of a GVHA waterlot near Ship Point, GVHA assessed the financial impact of having a

float plane dock near marine clients. The pricing considerations for the proposed 20 year lease (Two 10-year leases with 5-year lease rate renewal terms) suggested the following<sup>7</sup>:

Year	\$ Base Lease Rate	\$ External Impact	Total Annual Lease Rate
Year 1	\$58,115 (\$3.00/ft <sup>2</sup> )	\$20,000	\$78,115
Year 2	\$62,959 (\$3.25/ft <sup>2</sup> )	\$20,000	\$82,959
Year 3	\$67,802 (\$3.50/ft <sup>2</sup> )	\$20,000	\$87,802
Year 4	\$72,645 (\$3.75/ft <sup>2</sup> )	\$20,000	\$92,645
Year 5	\$77,488 (\$4.00/ft <sup>2</sup> )	\$20,000	\$97,488
<b>TOTAL</b>	<b>\$339,009</b>	<b>\$100,000</b>	<b>\$439,009</b>

GVHA, in consideration of a pricing proposal, recognized that the impact of emissions pollution “Will require consultation with clients to mitigate possible impact from float plane exhaust during peak season – may be a contentious issue for some harbour users.”

**6.3 City of Victoria:** The City of Victoria plays a direct role in the planning of foreshore land use which results in residential and commercial development. The City created the Songhees Plan which encouraged the development of waterfront condominium structures along the Harbour’s north shore. At that time, commercial helipad operations were relocated to west James Bay within a couple of hundred meters of family housing.

The City planned harbour developments of residential buildings near the shoreline, knowing that there were floatplanes taking off and landing within a few meters of the shoreline. Noise baseline studies were done as far back as 1973/4/5 and 1984/5 by the City and by Transport Canada in anticipation of the residential developments and these studies predicted noise concerns from residents, as long as 34 years ago. Nevertheless, the development proceeded without the use of the standard NEF planning tool.

In 1997, the City sent a letter to the Minister of Transport stating that City Council recommended that City “staff be requested to review and recommend a maximum noise level for float plane operation in Victoria Harbour, to be achieved over a reasonable period of time”. In July, 1998, Robert Woodland, Manager, City of Victoria Legislative Services, suggested an operational ceiling of 2000 movements/month, double the 1997 resident request of 1000/month.

Although the City does not have authority over aircraft operations, it does have authority over the business licenses it issues, over its leases to aircraft operators, and over zoning of other landlord waterlots. Through its decision to NOT follow Transport Canada and Canadian Housing & Mortgage Corporation established NEF guidelines, the City of Victoria chose to subvert the needs and rights of residents to enjoyment of property to the economic interests of aircraft operators. The City rents property to air operators for terminal purposes while GVHA rents to operators indirectly via the Regent Hotel and is currently planning to lease a waterlot to Harbour Air. TC has stated that it will take its lead from the City.

The City of Victoria, through its Standing Committee on the Harbour Airport, held hearings and created a report on the Harbour (2008-December 2009). The City, in its report, absolves itself of responsibility by not addressing planning obligations.

<sup>7</sup> February 18, 2001 GVHA Report

Other jurisdictions have acted to limit discrete noise events while the City of Victoria Council plays Pontius Pilot.

· The CRD was concerned enough to take ‘noise-related’ legal action, leading to a fine, against a resident of a 5 acre rural/residential zoned property who had been raising chickens for many years, because she was unable to contain her roosters’ cock-a-doodling<sup>8</sup>.

· In Ontario, the Ontario Municipal Board, while rendering a decision on an airport-residential development matter stated that it was incumbent upon the parties to consider whether “a reasonable quality of residential environment will result”. The Board concluded that it is not normal for residents to have to be enclosed by triple glazed windows with the air conditioning on to enjoy their gardens (see Appendix C – Toronto Pearson Airport).

The harbour aerodrome is a luxury, not a necessity. A land airport is 35 minutes away from downtown. Over the past decades, the harbour aerodrome has become the sacred cow of Victoria – not to be questioned or challenged. Residents have been told they should leave the City if they suffer from aerodrome pollution. Most, if not all, of the major owners/managers of the aircraft operators do not live in the City of Victoria.

**The Future:** Land compatibility issues will only increase as the City’s tourism industry matures and as eco-tours and eco-management expectations of residents and tourists increase. The issue is no longer one of residential buildings being compatible with an airport, but rather, whether an airport is compatible with residential communities and participative tourist and resident transportation needs and pleasure activities. Resident complaints have been minimalised with fallacious arguments (see Appendix B for discussion).

By 2009, realtors were identifying aerodrome pollution in MLS residential real-estate listings. For example:

MLS: 267984 Swallows north/ne/nw facing suite 2009

*“without the extreme noise and fumes of float planes taking off”*

MLS; 8918988 The Reef south facing (does not face middle harbour) 2009

*“located on the south side of the building shielding the noise”*

**Polluter Pays Principle:** Victoria’s “Green” and “Sustainability” initiatives exclude aerodrome and cruise ship pollution. Rather than the operators funding mitigative strategies to deal with the pollution created by their operations, taxpayers support the aerodrome since TC operations are funded through tax-dollars. However, TC does NOT monitor the pollution from the airport operations. Noise monitoring and air pollution stations are not in place.

Noise and air quality are serious issues. All levels of government have initiated green house gas initiatives but they appear to be ignoring a local pollution problem right in Victoria’s Harbour. Carbon-neutral policies will not stop or alleviate this local pollution.

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<sup>8</sup> Feb 17, 2008, Times Colonist, Fed-up farmer pulls out over noise fine:  
[http://www.canada.com/victoriatimescolonist/news/capital\\_van\\_isl/story.html?id=f1a7088f-722a-461e-a42d-b1874830f242&k=31498](http://www.canada.com/victoriatimescolonist/news/capital_van_isl/story.html?id=f1a7088f-722a-461e-a42d-b1874830f242&k=31498)

#### **6.4 Aerodrome and the Province:**

Dallas Rd resident: ..., *I find it ironical & hypocritical that a Government that holds itself out to be so “green”, takes steps to control automobile emissions in Vancouver but NOT in its own capital city. I refer of course to the AIR CARE programme.*

The B.C. Ministry of the Environment (MoE) supported the JBAQS. It also provided the MAML and technical support for 2009 air quality monitoring in James Bay. However, the Ministry has not carried out air quality monitoring in the Songhees area where maximum VOC measures from float plane emissions would be expected.

Reports have suggested that the major ‘customer’ for Harbour Air scheduled flights has been the Provincial Government.



#### **6.5 The Residents of Victoria**

Dallas resident: *Aircraft noise and fumes should be removed from the inner harbour which spoils the walkways and use of same.*

Canadians considering a move to Victoria are NOT provided with full information to guide their decisions to buy along Victoria’s waterfront. **TC has not followed its own policies and the City of Victoria has played blind to the incremental changes which have resulted in doubling and trebling of aircraft movements, and hence of single event noise levels of over 100 dBA.** TC has moved runways to areas adjacent to existing housing. TC and the City are culpable in decisions which have created the situation we have today - a concrete canyon with noise reverberating across the canyon and effluents being funnelled to the narrowest point of the canyon, the Songhees/Laurel Point gap. The Noise Exposure Forecast is a system of public disclosure of information. The City and TC knowingly made decisions without an NEF in place. Unlike other airports, noise monitoring is not done on a routine basis and residents are not provided information relating to single event noise.



## 7. Aerodrome Safety

Lewis resident: .... *Float planes are the real nuisance and never stop flying.*

Harbour residents have seen many incidents that gave them cause for concern – close calls. Although the TC Risk Assessment (Q850 Document, August 2002), and the City of Victoria Hazard Risk and Vulnerability Assessment (March 2006), discuss the possibility of an aircraft crash, the data used were considerably out-of-date at the time of the studies and did not reflect current standards and expectations for airport hazard assessments. The 2006 report on City mitigation strategies makes no mention of residents living in the many buildings surrounding the middle harbour but does identify agencies which may be involved in dealing with hazards or with a crash, and the need to work with hotels that are at high risk to discuss rescue plans.

In 2010, there was much attention paid to the “mega-yacht marina” proposal. Kayakers and other harbour users wrote many letters expressing concerns about safety in the harbour. As part of the mega-marina protest, a report concerning safety in the harbour was commissioned by the Save-the-Harbour group. The report, prepared by QualaTech Aero Consulting Ltd., dated September 10, 2010, is titled ***Victoria Harbour and the Need for a Safety Case***. Although the report was commissioned as part of the 2010 anti-marina campaign, it speaks more to the safety of the harbour due to the presence of an aerodrome.

During the Victoria Standing Committee on the Harbour Airport’s 2008-2009 review of the harbour aerodrome, residents and the City were assured, by Transport Canada, that safety in the harbour was “not an issue”. However, the QualaTech report challenges this view with the statement: “*it is reasonable to expect the regulator (Transport Canada) to require this [Safety Case], since the initial ‘Systems Safety Review (Risk Assessment)’ of the Victoria Harbour, was undertaken by Transport Canada 10 years ago with a future time horizon of ten years. Thus the said review is now expired and obsolete, as are the subsequent reports arising from it. Furthermore, there have been significant changes to a number of relevant national and international standards.*”

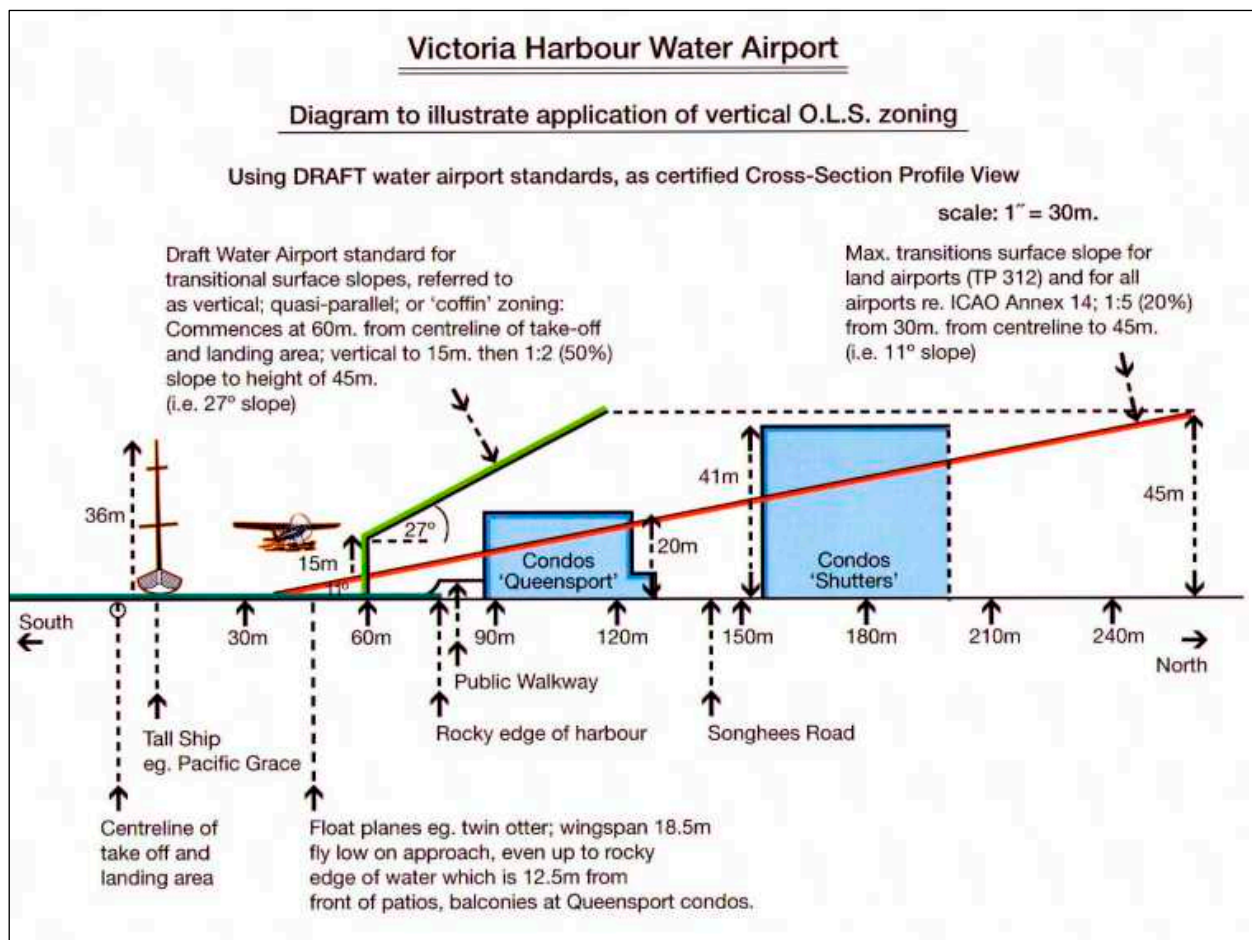
The key recommendation in the report is that a current, competent, and timely Hazard and Risk Assessment (Aeronautical Study), followed by a Formal Safety Case on the complete operation of the current marine and air operations of Victoria Harbour utilizing current best national and international (ISO 3100-2009) practices and standards, be undertaken.

The report brings into question the application of vertical airspace zoning without benefit of an aeronautical study. The report also suggests that, had a Safety Management System been in place, the construction of the NavCanada flight station would also have triggered an environmental or aeronautical review.

In 1998, Transport Canada acknowledged the incompatible land use and that the aerodrome did not respect Canadian Aviation Regulations (CAR), Part III, Subpart 2, - Airport, specific code 1 airport airspace requirements. CAR, Part III, Subpart 2 also required an airport designation as a requirement for this water aerodrome pursuant to CAR 602.13 *Take-offs, Approaches and Landings within Built-up Areas of Cities and Towns*, since the aerodrome is located in a built-up area of a city.

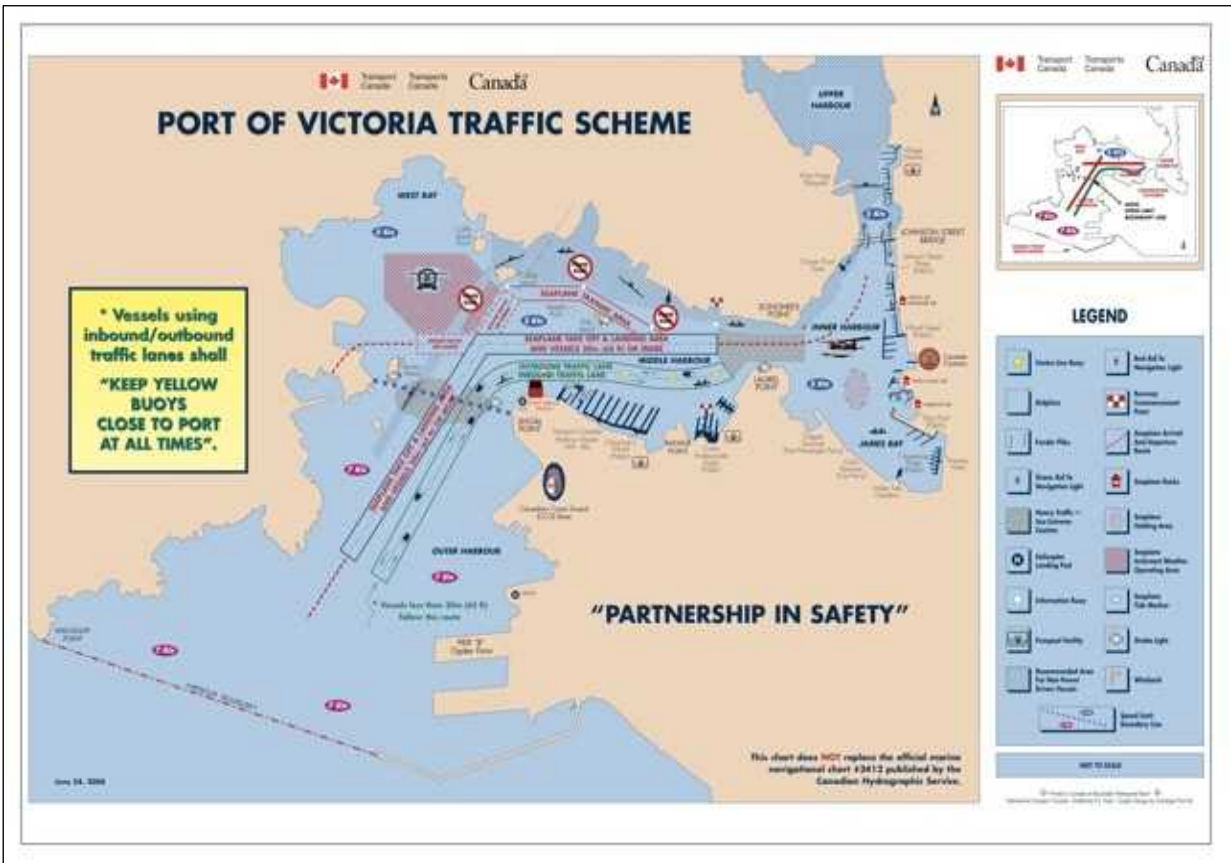
As a result of incompatible land use, there is not sufficient *unobstructed airspace for the landing and taking off of aircraft at the airport*, as is required for a certified land airport. In response, TC designed and implemented a water airport Draft Standard<sup>9</sup> for the purpose of certification of the aerodrome. This standard is a much inferior or lower standard than would be required for land airports according to the standards of TP312 (from which water airports are now exempted). After 10 years, this draft standard still has not yet been enabled.

The Draft Standard, in order to make the easterly takeoff, landing, and approach surface fit, reduces the normal airport design of a 1:5 (20%) Transitional Surface to a 1:2 (50%) *Vertical Transitional Surface* measurement. This type of vertical airspace design is referred to as ‘**coffin zoning**’ in the aviation industry, and in this harbour it was designed to be located closer than 50 m from the Westsong Pathway, and closer than 100m from Songhees condominiums.



TC increased the ‘flexibility’ of the airport design further by superimposing the takeoff and landing on the narrow channel which vessels in excess of 20 m (65 ft) in length and over use to enter and exit the inner harbour. This channel, a marine arterial highway, should not be considered to be *unobstructed airspace for the landing and taking off of aircraft in the port*. Vessels are incursions on the take off/landing area, and masts, etc., project into the airspace.

<sup>9</sup> See TC Draft Water Airport Standards as used for certification of the water airport dated April 2000. Schematic is referred to in "Appendix F Standards" in the Victoria Harbour Water Airport Operations Manual.



The QualaTech report questions the appropriateness of Transport Canada’s actions in light of Transport Canada’s role as both owner/operator AND regulator of the water airport. It also questions Transport Canada’s decision to delay implementation of Safety Management Systems (SMS) for water airports until 2014 (although the requirement has existed for certified land airports since 2009).



## Safety in the Harbour

### *Follow the flight-path of the plane .....*

Harbour residents frequently observe situations which give rise to questions of safety in the harbour.

During the recent (2009/10) debate on the mega-yacht marina proposed for the Songhees area, the anti-marina lobby presented various arguments which usually lead to similar concerns (Note: most quotes from the *Times Colonist* ‘TimesCol’):

*“paddlers...travelling through dangerous air and seaborne harbour traffic”* Times Col Ap 9: Peter Chance

*“they take their chances outside the marina with the floatplane taxiway a very short distance away.”*

TimesCol Ap 22: J&J Warrington

*“and make the harbour, already used by sea planes, more congested”* TimesCol Ap 23: David Turner

*“either we’re out there where the planes are, or...”*

Monday Magazine: Brian Henry

*“his concern that it won’t fit with existing activity like plane traffic”. “Against this backdrop of a congested harbour, this marina will be a recipe for disaster.”*

TimesCol Ap 30: Keith Martin

Victoria Harbour Ferry Co. executive, Barry Hobbis, speaking against the marina, suggested that a dangerous situation will exist as a yacht, whose owner is unfamiliar with our harbour, crosses from south to north to the new marina, into the path of a floatplane.

(Victoria Ferry contributes 51% of marine movements in the harbour.) City Council April 30: Barry Hobbis

Another, who does not appear to be on either side of the issue, said: *“I have experienced seaplanes with spinning propellers almost tailgating my charter boat while they taxi! ... The noise and fumes do not help either. The city and governing authorities alike must not wait until there is some deadly accident ... immediate action to regulate and control the amount of traffic in our crowded harbour.”*

(TimesCol Mar 11; David Carlos)

There are more crowded and active harbours - they have shore to shore boats; more than one water-taxi service, lighters; industrial barges; pleasure watercraft. The difference - other harbours do not have bush planes.

## 8. JBNA Response

The JBNA Board submitted letters to the City with specific requests concerning the Harbour Airport. The first, dated March 23, 2010, critiqued the 2009 Standing Committee on the Harbour Airport Report and requested actions. The second, dated January 17, 2011, followed the release of the QualaTech Report.

**March 23, 2010:** “... we have been ...shunted aside with promises of “discussions” ...The aerodrome pollution now affects thousands of Victoria residents... The report and recommendations were **lacking in five matters:**

- ~ omitted the City’s role in the creation of the current situation through its planning process... CHMC guidelines... were ignored while... the City acknowledged the impact of aircraft noise;
- ~ of the five recommendations addressed to Transport Canada, none request mitigative action;
- ~ there is no recommendation for the City to monitor aircraft impulse noise;
- ~ the report contains no mention of helicopter operations, specifically commercial; and
- ~ the City’s argument for not employing rezoning powers is circular ...

Regarding the City’s recommendations contained within the report (page 8/15):

- ~ Recommendations 1 and 2 suggest that Transport Canada incorporate quality of life or livability considerations in their operations and management of the aerodrome. Given that TC has had either a triple-bottom line or sustainability clause in their vision statement for many years, recommendations 1 and 2 may be meaningless.
- ~ Recommendation 3 concerns communications... Transport Canada has had a noise committee and a complaint mechanism for years. Communication is not a quality of life issue; noise and emissions are ... a new complaint system ... and consultation are but a screen for further deterioration of our environment. We’ve been playing that game far too long.
- ~ Recommendation 4 suggests further noise studies... Noise studies... over the course of a day or part of a day are not of issue. With aircraft, impulse-type noise is the issue.
- ~ Recommendations 4 and 5 suggest long term reviews, essentially a repeat of 10-20 year old requests... might provide mitigation in 10-20 years time...

**We ask the city to act now ...** The City of Victoria needs to forward its stated vision for a viable and sustainable harbour by putting some resources behind the verbiage. Pressing Transport Canada to “begin” is not good enough.

... we request that the City of Victoria

- 1) install permanent noise recording systems at 3-4 sites on the harbour to capture impulse-type noises near residences...
- 2) commission a full air quality examination of the aerodrome, with particular attention to Volatile Organic Compounds (VOCs), during the 2010 summer season...
- 3) request that Transportation Minister... under section 4.9 of the Aeronautics Act,
  - ~ create the regulatory framework to ensure that WHO and CHMC guidelines for noise are met,
  - ~ order the cessation of non-scheduled commercial or “tourist” flights ... and
  - ~ create a water airport operational requirement staging flight take-offs such that there are 7.5 minutes between take-offs to provide a safer harbour for all.”

## **January 17, 2011: Victoria Harbour and the Need for a Safety Case: The QualaTech Report**

*The JBNA Board requests that the City take steps to ensure that Victoria Harbour is a safe place for marine activities and for residents, visitors and businesses using foreshore properties. Specifically, we ask that you request Transport Canada to commission a Safety Case Study, including an Aeronautical Study, Risk Assessment and establishment of a Safety Management System.*

*Attached is the QualaTech Aero Consulting Ltd. report dated September 10, 2010 and titled **Victoria Harbour and the Need for a Safety Case**. Although the QualaTech report was commissioned as part of the 2010 anti-marina campaign, it speaks more to the safety of the harbour due to the presence of an aerodrome.*

*During the Victoria Standing Committee on the Harbour Airport's 2008-2009 review of the harbour aerodrome, residents and the City were assured, by Transport Canada, that safety in the harbour was "not an issue". However, the QualaTech report challenges this view with the statement: "it is reasonable to expect the regulator (Transport Canada) to require this [Safety Case], since the initial 'Systems Safety Review (Risk Assessment)' of the Victoria Harbour, was undertaken by Transport Canada 10 years ago with a future time horizon of ten years. **Thus the said review is now expired and obsolete, as are the subsequent reports arising from it. Furthermore, there have been significant changes to a number of relevant national and international standards.**"*

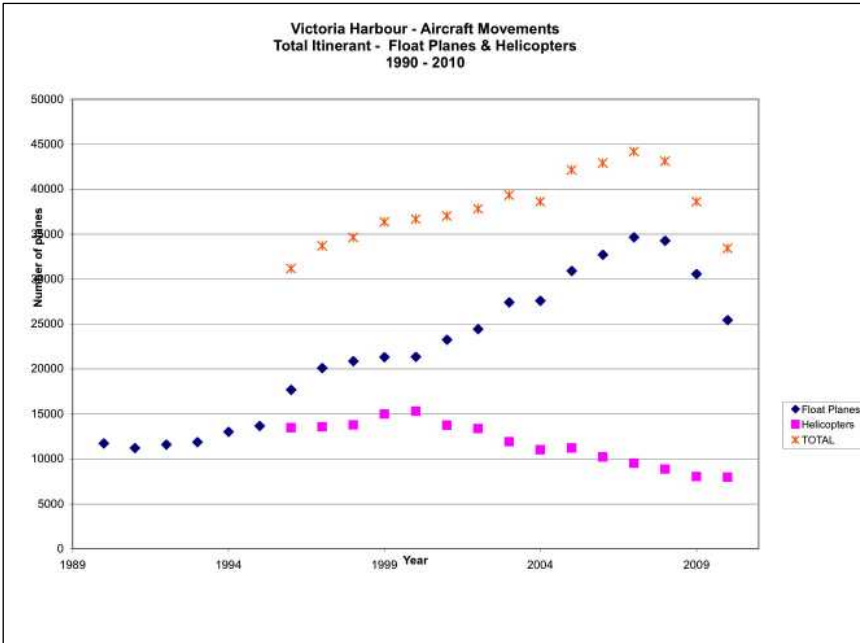
*The key recommendation in the report is that a current, competent, and timely Hazard and Risk Assessment (Aeronautical Study), followed by a Formal Safety Case on the complete operation of the current marine and air operations of Victoria Harbour utilizing current best national and international (CAO/IS 31000-2009) practices and standards, be undertaken.*

*The report brings into question the application of vertical airspace zoning without benefit of an aeronautical study. The report also suggests that, had a Safety Management System been in place, the construction of the NavCanada flight station would also have triggered an environmental or aeronautical review.*

*The report questions the appropriateness of Transport Canada's actions in light of Transport Canada's role as both owner/operator AND regulator of the water airport. It also questions Transport Canada's decision to delay implementation of Safety Management Systems (SMS) for water airports until 2014 (although the requirement has existed for certified land airports since 2009).*

***The JBNA Board asks the City to ensure that an impartial third party review of the requirements for a Safety Case be undertaken; this would include the Aeronautical Study and Risk Assessment necessary for a complete Safety Case.***

## Appendix A: Actual Float Plane & Helicopter Movements



*Rising once more*

### June Turbos

2011 2705

2010 2485

2009 2969

*2011- increase of 9% over 2010*

### Maximums to date

**34,732** float plane movements per year

**27** movements in one hour

**216** movements in one day

### Flight Service Station

89,000 limit (then Tower)



*How close are float planes allowed to be to major 'solid' forms, such as buildings and ships?*

## Appendix B: Debunking of Fallacious Arguments

**The airplanes were always there:** The airplanes have *not* always been here. The Songhees people lived in James Bay for thousands of years and the Hudson Bay settlement existed almost 160 years ago. There have been airplanes since the 1930s. Homes near the Ogden/Camel Point area were established well before the commercial helipad appeared a little over 25 years ago.

**They can close the windows and use their air-conditioners:** One of Victoria's *attractions* is its ambient temperature. Developers and the City promote Victoria's weather and climate. The most efficient and 'green' way to regulate room temperature is to use the 'fresh air'. To date, the only condominium building on the harbour in which all suites have air-conditioning is the Bayview. Most residential buildings do not have air-conditioning.

**They should have known better:** Residents, as they purchased homes along the harbour, did know that there was an aerodrome. They expected float plane noise. But they did not expect noise at the levels which exist. The level of impact noise (single event noise events of up to SEL 110dBA) has not been routinely declared by realtors; nor has the information been readily available for home purchasers. The number of extreme noise events has also increased beyond predictions with almost a doubling in the past decade. For residents south of Erie street, noise levels from float planes and government helicopters were very low until the mid-1980s.

Residents, many of whom have lived here for decades, had no reason to expect that 45,000 aircraft movements per year would be thrust onto them. *There is no reason why they should have known – Transport Canada projections did not suggest this growth.*

Residents also expect government to safeguard their interests, to follow their own policies and practices. They expect to be treated with the same respect across Canada.

**Demand determines the number of flights:** Demand only determines the number of flights when there are no checks and balances against the elimination of residents' rights to quiet enjoyment of their homes, or when aircraft operators are permitted to achieve economic benefits without assuming responsibility for the social and environmental costs of their operations. When polluters are not held accountable for the pollution they create, there is no limit to the level of pollution they can create.

**Developers should/could build more sound-proof buildings:** Most harbour residences were built many years ago. Further into James Bay, housing has existed for over a hundred years.

**Tourists enjoy the planes:** Yes, many tourists enjoy passing time watching the planes land and take-off. But these tourists do not come to Victoria to see float planes. Tourists enjoy marine related activity on the harbour including harbour ferries and eco-friendly activities of kayaking, dragon boat racing, and rowing. Many tourists do not like the noise of aircraft, or the smell.

**Close Alpha – Use only Bravo:** The strategy of shifting activity to Bravo runway may reduce the problem for many Songhees and James Bay residents east of Heron Cove, but it would increase problems for other James Bay residents and Esquimalt residents, particularly in West Bay. Shifting the problem is not a solution.

**The airport needs to be closed:** Noise abatement does not imply the closing of Victoria Harbour airport. The lowering of noise does not suggest or mean that the airport must close.

## Appendix C: Comparative Considerations and Mitigative Strategies

### Summary:

Noise levels, particularly  $L_{max}$  and SEL values, which occur within Victoria Harbour are either not permitted in residential areas in most jurisdictions throughout the western world or are comparable to major airports which provide essential and major movements of people and which provide major economic benefits to nearby urban areas.

**Lac St. Augustin<sup>10</sup>:** TC Press Release No. Q002/97, January 23, 1997, detailed the prohibition of sightseeing float plane tours as of January 1, 1998. Prior to the prohibition, movements on the lake were about 10,600 per year plus 7,500-9,000 tourist flights. Transport Canada issued this bulletin in response to requests from municipal governments of communities around the Lake. The decision was made to restore to residents their “undisturbed enjoyment of property”. Operators bore the cost of the regulation. They were not decertified or deregistered in any way, so that they could carry out their business in other locations.

**Ottawa International:** An Ottawa Airport authority staff member<sup>11</sup> investigates and responds to each noise complaint. Complaints generally involve noise levels of  $L_{max}$  65 or 70 dBA.

### Toronto Lester B. Pearson International:

The Authority and the Regional Municipality of Peel went before the Ontario Municipal Board to resolve a rezoning issue involving a proposed residential development within the 30 NEF contour. The Board found that although a residential development could meet requirements of noise isolation it was obliged to determine “whether a reasonable quality of residential environment will result”. The Board concluded that it is not normal for residents to have to be enclosed by triple glazed windows with the air conditioning on to enjoy their gardens<sup>12</sup>. (See also Appendix E for contour schematic)

**Heathrow<sup>13</sup>:**  $L_{max}$  experienced by those *working* at Heathrow reaches 100dBA. Communities living close to the airport experience  $L_{max}$  levels over 90dBA. There is a daytime departure noise limit of 94 dBA<sup>14</sup> and “Airlines whose aircraft breach noise limits are fined by BAA, with the money donated to local community projects (p. 10)”.

**Santa Barbara Airport (2002 data)<sup>15</sup>:**  $L_{eq}$  values measured in near-by residential areas ranged from 45.2 to 63.4 dBA.

### Noise levels and limits – US airports

Santa Monica	1500 ft from runway = SEL 95 ( $L_{max}$ ~ 85)
Torrance Municipal Airport	$L_{max}$ 82 dBA daytime; 76 dBA night
John Wayne	SEL of 101.8 at runway monitor (93 at further monitor)
Montgomery Field (San Diego)	residential neighbourhood 88 $L_{max}$ day – 70 $L_{max}$ night
Hayward Executive Airport	SEL at any site must be 3dBA lower at night
Lake Tahoe	$L_{max}$ 84 dBA at ends of runways 77 dBA at night
Teterboro Airport	90 $L_{max}$ day – 80 dBA night at any monitor

<sup>10</sup> <http://canadagazette.gc.ca/partII/1998/19980121/html/sor20-e.html>

<sup>11</sup> Interview with Claudio Bulfone

<sup>12</sup> October 2005, Pryde Schropp McComb study done for the Regina International Airport & City of Regina, p. 77

<sup>13</sup> Interview with Stewart of HACAN

<sup>14</sup> ERCDC Report 0706 London Heathrow Airport Strategic Noise Maps 2006, December 2007

<sup>15</sup> <http://www.flysba.com/?pageID=53> & <http://www.flysba.com/pdf/Chapter%203.pdf>