



James Bay Neighbourhood Association

Emissions, Noise, and Traffic Volumes as Quality of Life Factors

Traffic Volumes:

JBNA Quality of Life Survey respondents (573 in number) ranked traffic volumes as the highest priority requiring attention in James Bay, out of 28 listed quality of life factors spanning community safety, traffic and transportation, access to amenities, and quality of property development. 81% of respondents said that traffic volumes had become worse over the past five years.

Questionnaire responses were stratified by street address into five sub-zones: Dallas Road – 107 respondents, West except Dallas – 137 respondents, Interior Central – 134 respondents, Douglas Street – 79 respondents, and East except Douglas – 95 respondents.

The stratified responses indicate that residents living in James Bay West, and especially residents living along Dallas Road, are the most affected by traffic volumes, and most especially by tourist bus volumes. 87% of respondents living in James Bay West (excluding Dallas Road) and 88% of those living along Dallas Road stated that traffic volumes are getting worse.

Traffic counts completed during the summer of 2007 indicated that the 4,200 vehicles which travel along Erie Street and Dallas Road on non-cruise ship days increase to 5,150 vehicles on three cruise ship days, and that each average sized cruise ship generates 317 additional traffic movements along this route, with traffic volumes often concentrated in the late afternoon and evening hours.

Pedestrian safety was ranked as the tenth highest priority requiring attention by respondents to the JBNA Quality of Life Survey, right after sidewalk quality and maintenance. 48% of respondents thought that pedestrian safety had become worse during the past five years, while only 6% said that pedestrian safety had improved. Pedestrian safety appears to be inversely correlated with traffic volumes.

Street repair costs appear to be directly correlated with traffic volumes, especially where heavy vehicle movements are involved.

Traffic Noise:

JBNA Quality of Life Survey respondents ranked traffic noise as the second highest priority requiring attention in James Bay. 74% of respondents said that traffic noise had become worse in the past five years.

Responses stratified by street address indicate that James Bay residents living along Douglas Street (especially those whose homes face east), along Dallas Road and in James Bay West (in both cases, especially those whose homes face south) are the most affected by

traffic noise, with tourist buses and motorcycles most often mentioned. 78% of Douglas Street respondents, 80% of Dallas Road respondents, and 82% of James Bay West respondents stated that traffic noise is getting worse.

During June, 2009, Wakefield Acoustics Ltd. recorded 24-hour noise levels along Dallas Road near Ogden Point and at the Dallas-Erie corner that varied between Leq 59.3 dBA and Leq 63.7 dBA, which also converts to an Ldn range from 61.0 dBA to 65.6 dBA. Traffic volumes associated with cruise ship calls have a significant impact on the noise measurements. One minute interval Lmax measurements above 80 dBA were frequently recorded, although some of these related to float plane and helicopter movements.

The Wakefield report contains the following statement: *“The Leq (24) at Site 1, the Dolphins location, was 3.2 dBA higher for the second 24-hour monitoring session day when numerous cruise ships were berthed at Ogden Point. Since the scheduled seaplane and Helijet arrival and departure noise would be roughly the same for the two adjacent 24-hour periods and transit bus noise would be expected to be the same over this period, the increase in noise levels is considered to be largely due to increased tour bus activities associated with the cruise ships. This substantial 3.2 dBA increase in noise levels over 24-hours corresponds, that is, would be equivalent in effect to, roughly a doubling of all transportation noises over the day. ... The increase in Leq(24) at site 2, ... of 2.2 dBA was less pronounced but can be equated to roughly a 50-60% increase in all forms of transportation noise.”*

Aircraft noise was ranked as the sixth highest priority requiring attention by respondents to the JBNA Quality of Life Survey. Responses stratified by street address indicate that residents living in James Bay West and along Dallas Road are the most affected by aircraft noise. 55% of respondents in James Bay West, and 57% of respondents along Dallas Road, stated that aircraft noise is getting worse, versus 40% for survey respondents as a whole.

Emissions:

JBNA Quality of Life Survey respondents ranked traffic emissions as the third highest priority requiring attention in James Bay. 71% of respondents said that traffic emissions had become worse in the past five years.

Responses stratified by street address indicate that residents living in James Bay West and along Dallas Road (in both cases, especially those whose homes face south) are the most affected by traffic emissions. 80% of James Bay West respondents, and 82% of Dallas Road respondents stated that traffic emissions are getting worse.

Aircraft emissions were ranked as the seventh highest priority requiring attention by respondents to the JBNA Quality of Life Survey. Responses stratified by street address indicate 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 are getting worse, versus 34% for survey respondents as a whole.

Among the transportation categories, cruise ship emissions were the fourth ranked priority requiring attention, after tourist bus volumes, tourist bus noise, and motorcycles. 44% of

respondents listed cruise ship emissions as a problem, while 14% had no opinion. Although all areas within James Bay provided similar responses on cruise ship emissions, Dallas Road respondents, at 53%, were most likely to regard cruise ship emissions as a problem. However, the priority level given to cruise ship emissions was highest among Central Interior respondents.

During three summer months in 2009, the Vancouver Island Health Authority (VIHA) arranged for measurements of air quality at a fixed site near the community gardens on Montreal Street. The measurements of NO_x, PM_{2.5} and PM₁₀ came in close to those which had been previously modelled by researchers at the University of Victoria. Maximum levels for these pollutants on both the one-hour and 24-hour exposure criteria came within the relevant standards.

However, measurements of SO₂ content were recorded at about three times the levels expected from the earlier modelling exercise when considered from both the one-hour and 24-hour exposure criteria. Episodic peaks in SO₂ content correlate with times that cruise ships call at Ogden Point.

These SO₂ measures are quite alarming because the maximum one-hour levels come close to exceeding the BC and Canadian standard of 450 micrograms per cubic meter, while the maximum 24-hour CRD standard is almost reached on a midnight to midnight basis and exceeded on a rolling 24-hour basis. The new WHO 24-hour standard of 20 micrograms per cubic metre is exceeded on 14 of the 89 days monitored.

On a maximum daily basis, SO₂ measurements recorded in James Bay this past summer are 1.6 times those recorded at Trail Butler Park, 3 times those recorded at Vancouver Robson Square and Prince George Plaza, 4 times those recorded at Victoria Topaz, and 5 times those recorded at Vancouver Second Narrows. On a maximum hourly basis, measurements recorded in James Bay are exceeded by those recorded at Trail Butler Park, but are considerably larger than those recorded at the other four sites. The five-fold difference between the James Bay measurements and those recorded at Vancouver Second Narrows on both a maximum daily and maximum hourly basis is surprising, since Vancouver Second Narrows is, with prevailing westerly winds, immediately down-wind of the Vancouver dockyards.

If this information had been made available to James Bay residents before they completed the JBNA Quality of Life Survey questionnaire, the priority level given to cruise ship emissions might well have been higher than fourth among the transportation categories.

Summary:

The JBNA now has measurements of traffic volumes, noise levels, and air quality, as well as the survey results on these three quality of life dimensions which are consistent with the physical measurements.

The City of Victoria has various policy instruments that could improve the quality of life for James Bay residents with respect to the measured factors and the associated priorities: traffic volume mitigation, noise abatement, and emission controls.