

Background Paper #4: Water Transportation

1. Overview

Bowen Island is serviced by BC Ferries Corporation . In 1991, The Queen of Capilano, with a vehicle capacity of 85 and passenger capacity of 445¹, replaced the Mayne Queen which had a vehicle capacity of 70 and passenger capacity of 400. During that period, ferry traffic use rose significantly. Over the past few years, BC Ferry Corporation ferry use has stabilized (see below). In addition to BC Ferries, Bowen Island has long been connected to ‘the continent’ by private water taxi. Recently, new foot passenger scheduled water taxi service has been added, linking Snug Cove to downtown Vancouver.

This discussion paper examines the existing and future use of water transportation on Bowen Island and discusses the implications of such use on the OCP Update.

2. Existing use patterns

The existing OCP (1996) notes that, “ferry usage has increased dramatically over the past several years with summer passenger traffic up about 9% per year and winter passenger traffic increasing by more than 13% annually since 1986”. More recently, passenger growth has stabilized or trended lower. For instance, between 1997 and 2007 passenger volumes on the Bowen run increased by 7 percent (c.f., Bowen total population increased by 32 percent for the same ten year period). Six of those ten years experienced drops in total passenger numbers (with the median increase/decrease of -0.5%).

As the report, British Columbia Ferries Passenger Volume Modeling: Modeling Approach and Output (2008), noted, “the changing number of annual trips better followed the pattern change in working aged population (20-54) which grew significantly to 2001 and then began to decline back towards the levels seen in 1997” (see: Background Paper #2: Population Discussion). In the case of Bowen, the working aged population is considered to be the prime generator of passenger volume (British Columbia Ferries Passenger Volume Modeling: Modeling Approach and Output (2008), p.2). British Columbia Ferries Passenger

¹ Note: the original capacity was reduced by Transport Canada from 462 to 445 in 2009 (personal communication, Bob Lalonde, Chair BIMFAC: February 3, 2010).

Volume Modeling: Modeling Approach and Output (2008) found that, “with a population that increased over the past decade and benchmark passenger trip volumes that declined, the ratio of trips per resident declined noticeably, falling from 119.6 trips per resident in the lowest four months in 1997 to an average of 96.7 by 2007” (p.2).

As the BC Ferries study of its routes notes, “some routes examined showed a stronger pattern of the working aged population than others, specifically those routes which are in close proximity to major employment centres (such as Bowen Island)” (2008: p.2). Further, “commercial and industrial passenger to and from these destination communities will play a much smaller role than population based travel” (p.1).

In addition, “while the travel patterns of this route demonstrate a seasonal pattern, as August has averaged volumes which were 149 percent of the average benchmark level over the past decade, this seasonal pattern is significantly less than other routes” (op. cit., p.2). Therefore, Bowen is much less affected by seasonal use than many other routes.

Bruce Howlett undertook a significant study in 2005 when he organized and wrote, This Commuter Island. A Report on Ferry Use From and To Bowen Island (2005)². That study examined a ‘day in the life of the Queen of Capilano’ on August 24, 2005 (Horseshoe Bay to Snug Cove) and October 26, 2005 (Snug Cove to Horseshoe Bay). The purpose of the study was “to get some facts” to address the “opinions, judgments, theories, biases and interminable talk – about the ferry ‘problem’” (Howlett: 2005, p. 8). He organized and completed a very comprehensive examination of each of the study dates and his report provides the most complete review of Bowen Island ferry use to date (every ferry sailing was surveyed for the given day that the survey took place). The study’s point of departure related to an in-depth analysis of ferry users heading to ‘the continent’ via the Queen of Capilano (the October 26th date) and correspondingly ferry users heading to Bowen from Horseshoe Bay (the August 26th date). The former was intended to focus upon non-summer users, while the latter examined summer ferry users. As Howlett (2005) notes, “this data provides some numerical scale, or approximate estimates, of actual travel patterns of ferry users” (p.31).

He concludes that “Bowen is a commuter island with strong peaks going to the Mainland in the morning and coming home in the afternoon. It is this commuter

² All tables are used with permission of the author, Bruce Howlett (2005). His survey contacted 64% of the October 24th vehicles getting on the ferry in Snug Cove and about 61% of walk-ons. In August, 69% of vehicles and walk-ons were contacted.

pattern that affects the ferry marshalling problem” (p4). Further, he finds that 40% of ferry users approaching Snug Cove, are travelling on Government Road at the Cates Hill junction. Those peaks in use affect Bowen’s infrastructure and ferry marshalling needs.

2.1 Fall Survey: Bowen to Horseshoe Bay

As Bowen Islanders well know, the morning rush on the island relates primarily to the 6:35 and 7:35 ferry departures (Chart 1). The principle mode of travel to the ferry was by driving, followed by walking and bus (Chart 3). While the 7:35 sailing has a large number of students (122 in the survey) headed to West Vancouver schools, the majority of passengers are destined for North Vancouver, Vancouver Downtown, West Vancouver and Vancouver unspecified (Chart 4). The majority of the morning travelers from Bowen are heading to work, followed by “return to my home” (Chart 5). The latter group are largely workers who commute to Bowen in the AM and return home on the mainland in the PM.

Howlett observes that, “virtually the same number drove from Horseshoe Bay to their destinations as arrived in Snug Cove . . . however, a larger estimated number took the Translink bus from Horseshoe Bay, amounting to an estimated 180 Translink bus passengers throughout the day” (p.22). The difference likely relates to those who park vehicles in Horseshoe Bay and drive from there. Nevertheless, “how people got to the ferry in Snug Cove is not the same as they used when they left the ferry in Horseshoe Bay. More take the bus from Horseshoe Bay than drive and park in Snug Cove” (p.22) (Chart 7).

While the Howlett study makes a number of valuable contributions to our understanding of ferry use, one of its most important findings relates to the frequency of use (Chart 8). When West Vancouver students are excluded from the results, the greatest number of passengers travel 2 days or less per week. That figure suggests that daily commuters may not dominate the passenger trips as many thought. A review of [British Columbia Ferries Passenger Volume Modeling: Modeling Approach and Output](#) (2008), confirms that while the working commuter population has grown on Bowen, it has done so at a slower rate than the growth in retired population which has a demonstrably lower trip per resident factor (see: Section 3: Projected Use below). As well, Howlett (2005) found that nearly 9 percent of all Snug Cove

departing passengers were employees or trades. That suggests upwards of 150 people commute to Bowen to work.

2.2 Summer Survey: Horseshoe Bay to Bowen

The August survey examined similar variables as those explored in Section 2.1. Not surprisingly, those leaving the Queen of Capilano in Snug Cove drove home (75%), others walked (14%), travelled as passenger in another's car (5%) and bussed (5%). As in the morning sailing from Snug Cove, passengers came from all over the island. Interestingly, more passengers on the Horseshoe Bay to Bowen run came to work on Bowen in the summer (14%) than did in the fall (9%). One could speculate that these were seasonal employees (e.g., students) working on Bowen for the summer or specialised summer based workers such as those in the film industry. Approximately 6 % came to their summer home, 2% came to sightsee, 7% to recreate and 9% to visit. As noted in British Columbia Ferries Passenger Volume Modeling: Modeling Approach and Output (2008), August experiences a 149% level of use when compared to the four winter months, thereby confirming Howlett's findings that seasonal use affects ferry use (but not to the extent experienced on most other ferry accessed south coast BC islands).

2.3 Options

Bruce Howlett (2005) identifies a number of options related to future ferry use, including;

- a. Reducing ferry demand by increasing alternative employment options on Bowen (p.47);
- b. Shifting the mode of travel away from cars, such as dedicating direct bus service on the island, onto the ferry, and off the ferry to downtown. As he noted, "there are environmental benefits to mode shifting that should also be considered. If a convenient and reasonably economic alternative service can be provided to those who take vehicles there would be less traffic, less vehicle pollution, less waiting in line with idling engines and less wear and tear on the roadway infrastructure" (p.47);

- c. Providing “more medical services . . . on-island, that would reduce the need for on-islanders to take a vehicle on the ferry ‘into’ town for those services” (p.48);
- d. Increasing “or broad(ing) the amount of residential units that could accommodate some of those who currently take the ferry to work on-island” (p.48).

3. Projected use

British Columbia Ferries Passenger Volume Modeling: Modeling Approach and Output (2008) prepared for BC Ferries by Urban Futures examined projected future passenger use of the ferry system between Bowen and Horseshoe Bay³. In the case of Bowen Island, the BC Ferries study predicts a continued decline in the rate of overall population growth to 34 percent growth between 2008 and 2031 or total of 4,273 residents in 2031. Of particular note, the projected continued “aging of the island’s current residents and changes to its historical share of the working aged population (that would) grow more modestly” (p.3) will affect future use if that trend continues.

As a result, British Columbia Ferries Passenger Volume Modeling: Modeling Approach and Output (2008) predicts that the per capita ridership will decrease from 95.9 trips per resident in 2008 to 66.7 trips per resident in 2031. That decrease is largely attributed to the increasing age of Bowen’s population (and that population’s propensity to travel off-island less frequently than the working population (read: commuter population) and corresponding modest population growth of the latter group. While the 20-54 age group ferry use is projected to increase from 197.6 trips per resident in 2008 to 221.2 trips per resident in 2031, its growth in ferry use is projected to be offset by a decline in ferry use by the +54 age group. The following is worth noting:

Population growth alone (at constant 2008 per resident ratios) would see total future traffic volumes of 1.45 million by 2031. Continuing the trend of decline in the per resident ratio would result in a total 2031 volume of 1.0

³ As noted in British Columbia Ferries Passenger Volume Modeling: Modeling Approach and Output (2008), “smaller routes will largely be driven by two factors; demand from full time residents; and demand from residents of other regions for summer travel . . . the resident population was therefore seen as the determinant of the low season” (i.e., November to February) (p.1). Those four months were used to calculate the benchmark monthly passenger volume.

million. The corresponding projection, based on the per working age population ratios ranges from 1.28 to 1.39 million trips in 2031.

Therefore, the BC Ferries study suggests that total projected passenger trips will increase to a mean average of 1.3 million total trips in 2031 (c.f., 1.2 million in 2008).

This average represents a balancing of the two trends that will shape the future of the Island: slowing of volume as a result of the aging of current residents from working to retirement stage of life cycle, combined with growth as a result of the increase in the resident labour force community to the Lower Mainland labour market (op.cit, p.3).

Further, “this is a route that is highly oriented to work trip traffic, as it has one of the lowest ratios of peak benchmark volumes (149 percent) and the lowest variances between months (August variance of 4 percent)” (op. cit., p.3). That information suggests a route that is very susceptible to fluctuation depending upon future growth patterns. In recognition of that fact, the BC Ferries study cautioned that, “municipal land use planning policies must be monitored; the degree to which the projected population (and hence population based volumes) are attained, will depend upon housing capacity” (p.3).

4. Other water transportation

Bowen has been serviced by water taxis for over 30 years, principally connecting Horseshoe Bay and Snug Cove for late evening use as well as emergency service and charter service in the Salish Sea area (passenger capacity of 12, 38 and 40 on three vessels). More recently, additional water taxi service between Snug Cove and downtown Vancouver has been implemented. Two operators have offered that service. One service has been terminated and replaced by another operator. In both cases, the number of users has been increasing gradually. One water taxi has a capacity for 67 passengers and the other has a capacity for 12 passengers. Given the fact that both operations are relatively new and small, their overall effect upon commuting volumes upon the Queen Capilano are not likely very significant (e.g., total capacity of the Queen of Capilano at 462 passengers and 79 capacity for both existing water taxi operators). But, the water taxis do offer an opportunity for some island residents and off-islanders to commute more easily between work and home. Still, given the overall number of available ‘seats’ on the water taxis, the affect of the current water taxis upon issues of growth and Snug Cove congestion will be minimal.

5. Existing OCP discussion of ferry use

The existing OCP identifies the following objective (Section 4.1), Objective 2: “to ensure that transportation services do not encourage population growth” (p.96.). Further, under “water transport objectives” (p.97), the OCP states that the municipality “request B.C. Ferry Corporation . . . to ensure that expansion of ferry services follows, rather than anticipates, demand” (p.97). It also encourages “use of transportation systems other than the private automobile on or connecting to the ferries” (p.97). Additional emphasis is placed upon better pedestrian and bus access to the ferry dock and associated enhanced amenities to facilitate and encourage non-automobile use.

6. Ferry Marshalling

Snug Cove serves as both a ferry marshalling area as well as the central commercial area for Bowen Island. Ferry marshalling capacity and flow was improved a number of years ago by permitting double unloading and an expanded, dedicated vehicle parking area for waiting vehicles. The existing OCP “promote(s) a Snug Cove Village form that caters to the pedestrian” (p.98). It also identifies a number of “Road Objectives”, including:

- 4) to allow a free flow of off-loading vehicles from the ferry to other parts of the island and to the Snug Cove commercial areas.
- 5) to provide ferry marshalling spaces in a manner that least affects the character and functioning of the village centre, while maintaining the amenities of the surrounding park and residential areas.
- 6) to encourage the provision of a road system that will reduce conflicts between ferry and local traffic, give the pedestrian precedence over the automobile within the Snug Cove village centre and provide safe bicycle shoulders or lanes, particularly in areas of traffic near the ferry terminal” (p.98)

The existing OCP continues by identifying road policies that consider ferry marshalling:

- 4.1.2.11 BC Ferry Services Inc. and the GVRD are encouraged to work (with) the Municipality to address ferry marshalling issues, with the intent of developing a plan for a ferry marshalling area. Any plan for the ferry

marshalling shall incorporate visual and sound attenuation devices to protect the residential and park values of the surrounding area.

4.1.2.12 Government Road shall continue to be used for ferry marshalling, local traffic, and commercial parking until a ferry marshalling area is constructed, after which the road should be altered to a cul de sac at the east end.

It appears that the 1996 OCP had considerable focus upon ferry marshalling. Within the existing OCP Update, however, ferry marshalling has not been identified as a central issue at community OCP Update public meetings or in community feedback (see: Survey data from the August survey: Question 4 Close ended questions). Perhaps the recent revamping of ferry parking and unloading has reduced public concern. Further, the 2005 Snug Cove Village Plan that was adopted as an amendment to the OCP, confirms that, “in the short term, ferry marshalling will continue to occur on Government Road, in a reconfigured manner that is intended to improve pedestrian and vehicular traffic movement within the Cove and provide a more appealing entry to the community” (p.21).

7. Implications for OCP Update

- a. Given the forecasts for future ferry use over the short term (i.e., the life of this Update), the Queen of Capilano has sufficient capacity to service foreseeable Bowen Island existing and future population needs.
- b. The timing of ‘overloads’ may start to shift away from commuter time periods of early in the morning going to Horseshoe Bay (6:30 AM and 7:30 AM sailings) and returning in the early evening (5:30PM and 6:30PM) to later AM sailings from Snug Cove and mid and later afternoon sailings from Horseshoe Bay. This emerging trend may occur as the non-commuter traveler (the fastest growing population group) uses the ferry to access services not available on Bowen and commuter traffic decreases due to series of factors (possibly including, increased work from home, declining percent increase in 20-54 age cohort, increased cost of ferry use, increased cost of housing).
- c. Snug Cove will continue to serve as the access point to BC Ferries (certainly for the life of this Update). Therefore, ferry marshalling will continue to be an issue that requires on-going management to ensure safe and efficient ferry loading.

- d. The private water taxi services that connect Snug Cove to Vancouver appear to have a core user group that reduces demand for ferry walk-on use and likely some vehicle use. But, the overall effect upon Snug Cove ferry marshalling and ferry capacity is likely not significant.
- e. The existing OCP is clear on water transportation policies and they should not be altered unless a future Comprehensive OCP Review identifies other more appropriate policies.

Bibliography:

Howlett, B., This Commuter Island, A Report on Ferry Use From and To Bowen Island, (2005).

British Columbia Ferries Passenger Volume Modeling Modeling Approach and Output November 2008

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