

TO: Project Proponents at Northland Properties and Aquilini Investment Group of Vancouver
FROM: Avril Li
DATE: November 8, 2016
SUBJECT: Garibaldi at Squamish

As of 2010, BC Environmental Assessment Office released a report addressing several issues regarding the “Garibaldi at Squamish” project proposed by your company through an application for a Project Approval Certificate under the Environmental Assessment Act in 1997. Following your supplemental application in April 2015, in May and June of 2015, the Resort Municipality of Whistler also addressed their concerns regarding the project during their two month-long community consultation. I will be discussing and providing statistics in response to their evaluations regarding your project in this memorandum.

In the 2010 report by BC Environmental Assessment Office, they suggested to provide more information on the potential effects on vegetation and fish and wildlife habitat and recommended supplying measurements to prevent or reduce any significant environmental, social, economic, heritage and health effects. The “Garibaldi at Squamish” project mostly affects old growth forest, ungulate habitat, and red listed ecosystems and fish, and measurements have been taken to address their valid concerns. Upon their request, the area measurements of project area in protected regions are as follows:

- Old growth forest is 6.78% of total project area
- Ungulate habitat with Mule Deer and Mountain Goat is 4.24% and 3.65% of total project area respectively
- Redlisted species, which include Falsebox, Salal, Cladina, Kinnikinnick, Flat Moss, Deer Fern, and Cat's-tail Moss, are in total 24.77% of total project area
- Fish habitat affected is 26.29%
- Total protected area that falls in the project area is 52.67%

The above statistics were obtained through ArcMap. The total area of project area is $54717275.030137m^2$. The areas of old growth forest and ungulate habitat were determined by summation of data. To determine the area occupied by redlisted species, first, I identified and isolated all the redlisted species. The redlisted species included Falsebox, Salal, Cladina, Kinnikinnick, Flat Moss, Deer Fern, and Cat's-tail Moss. After identifying them individually, I merged the polygons of each species, and calculated the total area by summing the 6 merged values. In order to measure the area of sensitive fish habitat, a 50-meter in thickness zone outlined in areas with elevation above 600 meters, and 100 –meters in elevation below 600 meters. The area of fish habitat is then determined by summing all the areas surrounding the river. Finally to calculate the total protected area, I combined all the data layers of interest into one layer and found the sum. To calculate the percentage of one factor

to the project area, a ratio is taken following the formula of $\frac{\text{area of interest}}{\text{total project area}} \times 100$. Using this formula, individual areas can be calculated as well.

In the consultation report by the Resort Municipality of Whistler's in 2015, they specifically stated the concern of skiing below 555 meters in elevation by saying "climatological considerations rule out reliable skiing on the lower 555m of vertical" (1974). Since 1974, there has been climate and topographical change; thus that height has altered to 600 meters. I have also taken measurements in response to their concern. The area lower than 600 meters in elevation is 31.79% of total project area. Their concern came from the fact that there might not be enough snow in areas lower than 600 meters in altitude, making skiing infeasible in those regions. Nonetheless, it is only 31.79% of the entire project area. In response to unreliable skiing in areas lower than 600 meters addressed by Resort Municipality of Whistler, your project should be valid for approval with the support with statistics.

Since areas unsustainable for skiing is 31.79%, the rest 68.21% of the project above 600 meters is very developable as the mountain resort. Therefore, the concern expressed by the Resort Municipality of Whistler's is relatively minor. However, environmental problems presented by the BC Environmental Assessment Office raise several valid concerns. Two greatest environmental challenges from this project include potential landslide and animal habitat destruction from resort construction. With the construction of resort, landslide and avalanche may be induced due to the erosion of soil and ground. Possible mitigation process may include rehabilitation of ski piste and re-vegetate skiing surface during summer months. Skiing tracks may also intersect and disrupt wildlife habitats due to clear cutting and construction. Preserving wildlife while building the resort is extremely critical as there are quite a lot of redlisted fish species in the project area. Building of the resort may interrupt animal's migration and hibernation patterns. To protect wild life, fences can be built around their habitat to ensure no human entrance. We can also find alternative forms of obtaining resources such as water in order to avoid competition with wild lives.

Other social, health and economic concerns may also be taken into consideration, which we can discuss further. I have also attached a map of the project with outlined old growth forest, ungulate habitat, redlisted species, fish habitat and areas below 600 meters. Please do not hesitate to contact me for further inquiries.

Yours truly,
Avril Li