

Student 2 Page 1: High Merit

NZQA Intended for teacher use only

Student 2-High Merit



100 0 100 200 Kilometers



Queenstown

1

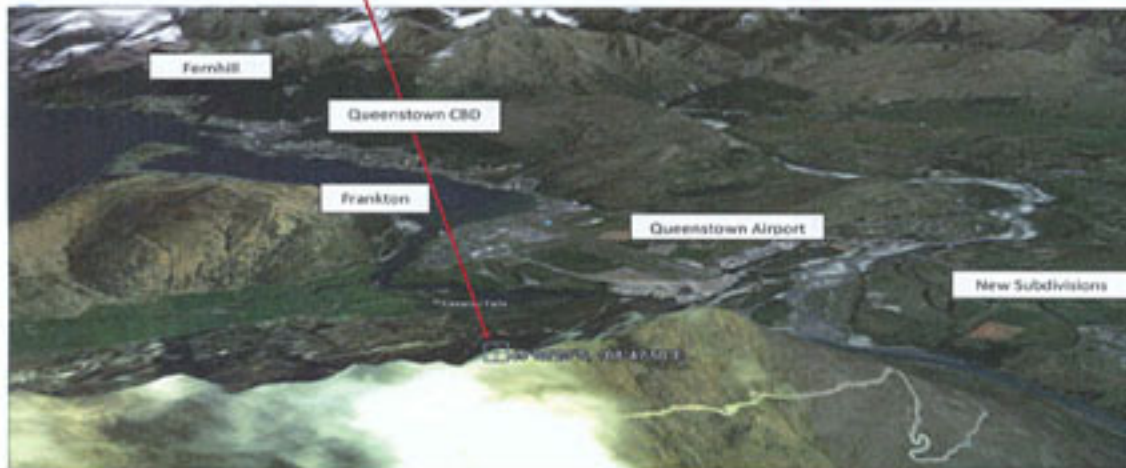
A second Google image showing locations of the 6 sites was also included.

Queenstown Area
Scale: 4Km

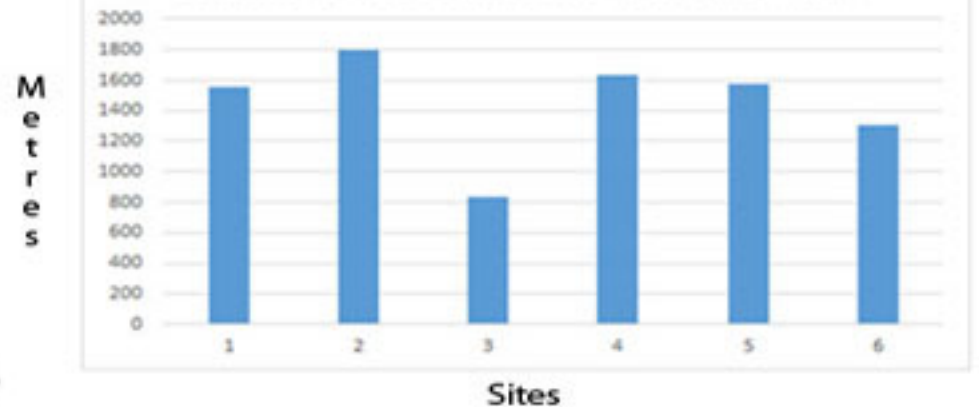
Key

Land over 1500 m asl	
Land over 1200 m asl	
12km buffer from QT	
4km road buffer from sites	

Preferred Site – Remarkables Range



Elevation for 6 selected sites around Queenstown



Student 2 _ High Merit

Summary of findings for each of the 6 locations:

Site	Name	Position	Elevation (m)	Slope	Nearest road (km)	Distance to Q. (m)
1	Remarkables Range (1)	45°02'23"S, 168°47'50"E	1560	11%	3507	10724
2	Remarkables Range (2)	45°04'32"S, 168°48'00"E	1800	6%	3126	11786
5	Ben Lomond	45°00'48"S, 168°36'48"E	1580	11%	2905	4304

2

Problem: Where to locate a new cell phone tower to serve Queenstown?

The problem results from black spots being experienced and limited reception in some areas.

The best location for a new cell phone tower in the Queenstown region needs a location over 1500masl to ensure good reception, within 12km of the major town and within 4km of a major road. This shows the need for accessibility as well.

Recommendation and Summaries for each site:

Remarkables Range -1: PREFERRED SITE THAT MEETS ALL PARAMETERS.

Evidence from the layout shows that site one meets all the guidelines. It is at an altitude of 1560masl showing that it will be high enough to provide reception to Queenstown and this is shown on the Google image...It is on a slope of 11% which equates to 5 degrees. A disadvantage of this site is that it may be above the snowline in winter...

This site is easily accessed by SH6 and the Remarkables ski road. Even though parts of this road is unsealed, it is graded and easily accessible by 4x4. This site is also fairly close to Queenstown. This accessibility advantage will mean that the costs of construction and ongoing maintenance of the cell phone tower could be less than some of the other sites.

Considering the advantages of this site I recommend that it is investigated by a team of structural engineers...(3)

Ben Lomond Peak – 5: This site is in a good position from Queenstown as shown on the map. It is 1780masl and has a clear view of Queenstown, Fernhill and Kelvin Heights Peninsular. It is 4.1km to the nearest highway, (4) Gorge Road to Arthur's Point. It would enable good reception to most of the Queenstown area. However, it does have a relatively steep slope and in winter could be above the snow line. Access could also be secured by helicopter from Queenstown Airport.