

The highest level attained on the survey is at the 127th mile. I cannot for reasons already mentioned, give from my own observations the height of this point over that of the sea, but taking as accurate, the level given in the geological reports of Elephant Lake (called Papineau Lake in the reports) as 1,122, I believe the level of the highest point at the 127th mile is not more than 1,400 feet over the sea. Carleton Place is 440 feet above the level of the sea, so that the summit level is 960 feet above that of Carleton Place.

With regard to grades up to the summit level of the railway I would draw your attention to the fact that from the eighteenth to the twenty-eighth mile, the thirty-sixth to the fortieth, the forty-seventh to the seventy-fifth, the eighty-first to the 101st, and the 113th to the 127th, a total length of seventy-six miles, the grades are all ascending the valleys of rivers and streams. Of the remaining fifty-one miles up to the summit a very large proportion has grades ascending in the same direction, there being no portion having descending grades of any consequence except from the sixteenth mile to the eighteenth, the thirty-fifth to the thirty-sixth, to the forty-fourth to the forty-seventh, and the seventy-seventh to the eightieth, in all nine miles. The grades at these places would fall not more than one in 100, if so much.

There is thus probably a height of about 450 feet to be added to the difference of level between Carleton Place and the summit of the railway, making a total rise up to the summit, of 1,410 feet, and giving an average grade of 11 feet per mile.

On the other hand, in descending from the summit to Parry Sound, there will be an ascending grade for about two miles at 133 miles; about one mile at 158 miles; about four miles ascending slowly at different points between 168 and 180 miles—one mile of steep ascent at 190 miles, and a slow ascent from 195 to 198 miles. I have not reliable instrumental observations of these rises, but I believe they do not amount to more than 400 feet. As before stated, I estimate the height of the summit level above the sea at 1,400 feet. The height of the Georgian Bay above sea level is 578 feet. The difference of level between the summit of the railway and Parry Sound is thus 822 feet, and the above sum of 400 feet for rising grades between the summit and Parry Sound gives a total descent of 1,222 feet between these points, giving an average descent of 12 feet per mile. You will notice on the map that from the 135th mile to the 145th, the 150th to the 168th, the 188th to the 190th, and the 198th to the 225th, a total length of fifty-seven miles, the line runs by large lakes and streams.

In this connection I would refer you to what I have stated in regard to the line between the 120th and the 130th miles, to show that it is highly probable a lower summit for the railway can be readily found, by which the total rise and fall would be reduced by between fifty and eighty feet.

On the next half of the line the lakes are very numerous, and they afford most excellent opportunity for concentrating a great amount of local traffic on certain points of the railway, notably at Kennebec Lake, Kahweambijawanagog or Hollow Lake, Lake of Bays, Mary Lake and Skeleton Lake. I am informed that a small steamboat will be put for trade on the Lake of Bays during the coming summer and that a similar one will ply through Peninsula Lake, Fairy Lake, Lake Vernon, and Mary Lake. By means of these lakes and others which I have not mentioned the railway would be of almost immediate accommodation to a very wide district.

The sites for using water power through the country traversed by the line are very numerous, and the power to be obtained is almost unlimited, the lakes affording means for making storage reservoirs of immense capacity, and at very little cost and injury to surrounding lands. The shores of the lakes, though in many cases comparatively low, generally rise quickly from the water, so that a dam of a few feet in height across the outlet of a lake would in most cases flood but a small area of ground.

The surface of the country traversed is generally much broken, except on the first ten miles the unbroken flat land of any considerable width is very little. There are numerous beaver meadows on the line and elsewhere in the neighborhood, but