

westward to Annapolis of the best and most approved kind—the cost per mile should not exceed £6000 cy. not including the cost of a bridge over the Avon at Windsor.—Light trains are supposed to be used—iron sleepers are being used in England, and iron bridges in the United States—the cost would be greatly increased if iron structures are extensively used in the formation of Railways in this Province, unless we can manufacture iron for our own use at a cheap rate. I can see no reason why we should not do so. The western line will require but few bridges of importance, but many farm bridges will be required. The charge for land and fences will be a large item of the cost. Materials to form the road bed, bridges, culverts, &c., are to be had on all sides of the best kind. Slate is the hardest kind of rock to be found on the route, and this is not expensive to excavate; and should a good strata of this rock be cut into, the transport of it alone on the Railway would produce a very great Revenue. The reason the quarries are not worked at the present time in Rawdon is the great cost of truckage to the tide water. It must be remembered that the summit grade may be greatly reduced by a deep cut or tunnel. The cost of a tunnel in slate rock is not expensive, and should the experiment to cut a tunnel by steam power through the Housac Mountains succeed, it may be advisable to tunnel the Rawdon ridge, and thus reduce the grades and shorten the distance.

My estimate is for a single track with turnouts, narrow cuttings, and embankments, but I would build all the bridges for a double track, including also some few locomotives and cars. The road bed would be raised to get rid of the snow whenever this could be effected. The cost of iron rails at the present time landed at Halifax would be £7 10 Currency. For my estimate I can form one from the main trunk to Victoria Beach on the best principles now known to Engineers, using light trains and engines. Speed for passenger trains 30 to 40 miles per hour—goods trains 10 to 15 miles per hour, and with grades not to exceed 35 or 40 feet per mile. This line would pay interest and expenses as soon as its traffic is fully developed. Other routes to the westward of the one now proposed may be found over the Rawdon ridge. I did not explore with a line of levels the four valleys to the west of the Little River or Scott's valley. The best information I could obtain, joined with my own judgment, induced me to try Scott's and Temple's valleys. It would have cost a larger sum of money to cut through the woods in the other valleys than I felt justified or authorized to expend. The chances are against a good line being found except a very deep cut or tunnel be used at the summit height. I do not include in this estimate any part of the main trunk line. The distance to Windsor from Halifax is 63 miles.

From the rapid, singular, and regular slope of the Rawdon ridge, it is extremely easy to grade and curve the Line of Railway which may be constructed over, under or around it. Temple's valley permits the best grades through it, as shewn by the section to be 25 or 30 feet per mile. It has very high land on each side. The rock on the west mountain is all slate. I believe the rocks on the east side to belong to the coal formation. Both of the routes proposed are good as regards grades. It would require much consideration and an exact survey to decide which should be used. Taking the same height near McPhee's bridge, one hundred feet for both routes, to begin the ascent over the summits, we have, say $6\frac{1}{2}$ miles, with grades of not more than 30 per mile for Temple's valley, and grades of not over 40 feet per mile for $7\frac{1}{2}$ miles for Scott's valley, the summit heights being cut to 290 and 330 feet above medium high tides in Halifax Harbour.

The profile of the road from Taggart's brook to Wm. Withrow's mills, plainly shows that the Lines of Railway may be carried with good grades up the four other valleys to the westward of those I have explored, as far as this road. It is plain that the line will be shorter via any of the other valleys than by those chosen for a trial survey. The most direct line would be that explained by Mr. Wightman, but it would

have