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*** START OF THE PROJECT GUTENBERG EBOOK REPORT OF THE KNARESBROUGH RAIL-WAY COMMITTEE ***

Transcribed from the March 1820 edition by David Price, email ccx074@pglaf.org

REPORT OF THE KNARESBROUGH RAIL-WAY COMMITTEE.

TO THE
NOBLEMEN AND GENTLEMEN,
Proprietors of Estates,
ON THE ADOPTED LINE;

TO THE
SUBSCRIBERS FOR THE SURVEY,
AND TO AN ENLIGHTENED AND LIBERAL PUBLIC,

This Report
OF THE
KNARESBROUGH RAIL-WAY,
(Originally intended for a Canal)

IS WITH ALL DUE DEFERENCE AND REGARD
PRESENTED BY THEIR FAITHFUL
AND OBEDIENT SERVANTS,
THE COMMITTEE.

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PREFACE.

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If the River Nidd and the brooks adjacent, in the vicinity of Knaresbro', up the valley to Ramsgill, near Pateley-Bridge, and near the adopted line, had not possessed the many water-falls, and given motion to the sixty-seven mills which they do;—or had the great landed proprietors, on the line now adopted been hostile to this all improving project, of this highly favoured and not less honoured, their native district;—or had the hand of Nature, when it varied the surface of our earth, no doubt for wise purposes, and formed those high hills, composed their bowels of any other substance than what it is;—or had the commercial necessities of Knaresbro' and its neighbourhood not existed, and the slow progress of their redemption, compared with others, at one time of far less note, not been too apparent; then, perhaps, this project, commendable as it is, would have shared the same fate, during a season of sickness, which it did twenty years ago.

But since these falls of water do exist, and are always ready to lend their willing aid to turn the ponderous wheels which impart motion to many mill-stones and many thousand spindles, beyond

the possibility of denial;—and since the great landed proprietors have expressed nothing unfriendly to the project, but, if any thing, the reverse, at this moment of national difficulties and distress, highly to their credit and understanding;—and since the all-wise hand of Providence hath permitted an unceasing demand in one place, and a never-failing supply in another, at distances perhaps the most suitable and interesting for a work of this kind; [vi]—and, considering the necessity which the commerce of this district so evidently requires in an improved mode of transporting, from place to place, its heavy weights, with despatch and cheapness; then there can be no doubt of the propriety of prosecuting a scheme of this kind, so long, as we believe, on substantial data, that the completion of it will reward the shareholder, and give to this place what it once possessed, and be the means of rendering it again the first district in the kingdom for the manufacture of linens.

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REPORT OF THE COMMITTEE.

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At a meeting held the 16th day of March, 1818, in the Town's-Hall, at Knaresbro', your Committee were authorised to appoint a suitable person to take a survey of the country, in order to point out the most eligible line for a Canal to Knaresbro'.

After various correspondence with different engineers, the choice of your Committee fell upon Thomas Telford, Esq. a gentleman of long experience, and of whose abilities, as a civil engineer, every reliance was placed. About the latter end of May following, this gentleman visited Knaresbro', viewed the localities of the place, took running and comparative levels over the shortest and most convenient ground, to the higher side of Linton-lock, and also towards Tadcaster. In the latter direction, as being a more direct communication with the port of Hull, he fully recommended a close survey to be made, for which purpose he sent his assistant Mr. Palmer, who commenced the survey with such other assistance as he required, about the latter end of June, and continued surveying and levelling in various directions until the middle of September;—about this time your Committee became alarmed for the success of the intended Canal, both on account of the unfavourable ground between the town of Knaresbro' and Ribston, and the difficulty of obtaining a sufficient head of water in a natural manner.

Besides at this time the elevated situation of Knaresbro' above the Wharfe was ascertained to be 198 feet, equal to 22 locks of 9 feet each; and hence, even if water could be obtained at a cheap rate, by artificial means, the number of locks requisite for locking down into a navigable part of the river Wharfe or Ouse, distant about twenty miles, would alone render the project unadvisable, by swelling the expense of the work in such a manner as would totally destroy the expected advantages to be derived by the trade of Knaresbro' and the surrounding neighbourhood, or leave little or no hopes for the shareholders receiving a fair per centage for their money embarked.

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Under these circumstances your committee abandoned all further hopes of a Canal, and notwithstanding the funds then collected for the survey were exhausted, they relied on the same spirit which gave rise to the project, and felt convinced of the great utility and advantages of a Rail-way, if taken from a navigable part of the river Wharfe, and continued, passing Knaresbro', up the valley to Pateley-Bridge.

The object of extending the work thus far, was, in order to secure the back carriage of the lead, which is produced on a large scale in that neighbourhood, besides the excellent lime for agricultural purposes made at Greenhow-Hill, and the very excellent stone to be had there for making and repairing of highways; together with the inexhaustible quantities of stone for all purposes of building, which by the accounts we have of it, cannot be excelled; and also the produce of many flax and cotton mills, all of which are turned by water, and hence more likely to increase in number than diminish; the quantity of tonnage to be found in that direction, at a comparatively small expense in obtaining it, added to the tonnage of the lower end of the line, would, undoubtedly increase, not only the utility of the work, as regards the country in general, but give a preponderating quantity of tonnage in a descending direction; the advantages of which were so obvious to your Committee, that a survey nearly upon new ground was undertaken, and continued under very favourable hopes, till at length it was brought within the compass of both plans and sections, and exhibited to your Committee about the latter end of January, 1819.

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From which data, and what more Mr. Palmer was able to give Mr. Telford from his own observations, your Committee requested Mr. Telford to give his estimates of the most advantageous manner of communicating this place with the navigable part of the river Ouse at Acaster Sailby, (this being at that time the point fixed on at the lower end of the line) either by a double Rail-way only, or by a double Rail-way to the Brook Crimple, and hence by a Canal to Acaster Sailby, taking the water from this brook as a supply, and forward from Knaresbro' to Pateley-bridge, by a single Rail-way, with passing places.

The separate expenses of each, as furnished by Mr. Telford, are below:—

MR. TELFORD'S ESTIMATE.

		£.
--	--	----

4¾ miles, with 116 feet fall.	From the lowest part of the Bond End, at the bottom of the High-Street, in Knaresbro', to the Brook Crimple, on Ribston-Green, a double Railway	15,794
9m. 1140 yds. with 82 feet fall.	From the Crimple Brook to Acaster Sailby, a Canal	68,628
	Add Ten per Cent. for Contingencies	8,442
		92,864
20 m. 142 yds. with 198 feet fall.	From the same point in Knaresbro' to Acaster Sailby, by a double Rail-way	60,000
14¾ m. with a fall of 11 feet per mile.	From the same point in Knaresbro' to Pateley-Bridge, with Passing-places	38,830

In the foregoing estimates Mr. Telford has considered the Canal, with its locks and bridges, as suitable for the Humber Sloops, and the Rail-way sufficiently strong to admit of one ton and a half being carried by one waggon.

When it was originally intended for the lower end of the line to commence at Acaster Sailby, it was unknown to your Committee that an Act of Parliament existed, levying duties on merchandise on the River Ouse, after the same had passed the Wharfe mouth towards York; for the better information of the public, we insert as much as relates thereto.

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ACT OF THE 5TH OF GEORGE II.

“An Act for rendering more effectual an Act passed in the 13th year of the reign of his late Majesty King George the First, entitled an Act for improving the Navigation of the River Ouse, in the County of York:—

“That from and after the 24th day of June, 1732, all and every the goods, wares, and merchandises, and other commodities, carried and conveyed on the said River Ouse, above Wharfe mouth, except such manure, dung, compost, or lime only, as shall be water borne, and used and applied in tillage; and also except all timber, stone, and other materials, made use of in or about the works necessary for improving of the navigation of the said river, shall pay the tolls or rates following, that is to say,—

“For every ton of wines and groceries, almonds, Areack brandy, cyder, cydar egar, hops, fish oil, line-oil, Florence oil, Seville oil, and turpentine oil, rum, spirits, tobacco, vinegar, bacon, hams, sides, and pork; cases and chests by measure, china, coffee, cork, drugs, and medicines; dyers' ware, (except logwood, copperas, and alum); flour, glass, (except green glass bottles); haberdashers' wares, household furniture, iron wrought, linen, linen-drapers' wares, lemons, oranges, and nuts; leather and calves' skins; mercery ware, silk and woollen, paper white and books, garden seeds, salt, tea, and woollen-drapery ware,—two shillings and sixpence respectively;—and so in proportion for any greater or less quantity. For every ton of cheese, flax, pewter, soap, marble, bell-metal, brass battery, and copper, two shillings respectively, and so in proportion for any greater or less quantity.

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“For every ton of oak, bark, corn of all sorts, earthenware, green glass bottles, iron cast and unwrought, lead white and red; paper, cap, white, and brown; grass-seeds, beans and peas, rapeseed, stone, tallow, tin-plates and wire; timber, oak, ash and elm,—one shilling respectively; and so in proportion for every greater or less quantity.

“For every ton of alum, copperas, logwood, brimstone, bricks, tiles, coals, hemp, hay, lime for building, lead, and turfs,—sixpence respectively; and so in proportion for any greater or less quantity.

“For every firkin, pot, cask, or other vessel of butter, one penny. For every hundred of oysters, one penny. And that all other goods, not herein particularly rated, shall pay ad valorem, such rates or duties as shall be ascertained by the said commissioners, appointed by or in pursuance of the said former Act.”

Soon as your Committee had clearly ascertained the existence of this Act, and its consequent increase on the tonnage of flax, a deputation went down to the Wharfe mouth, to examine the river, as far up as Bolton Percy, and found from their own observations, but more particularly from the information they collected, that vessels of seventy tons burden can navigate the river, nearly always once in twelve hours the whole year; and that, if a little improvement was made in the river at three places, which are rather too shallow for vessels of this burden, they might pass at all times without interruption; the deputation were also of opinion that the improvement was practicable at a moderate expense. This deputation also examined the line below Bolton Percy, (see the map [\[12\]](#)) and found it passed through the estate of Sir Wm. Milner Bart. near his residence, and over lands in his own occupation, consequently more likely to meet with his opposition than his approbation.

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Under these accumulated circumstances, your Committee decidedly recommended a double Rail-

way, to commence at a bend in the river, near Bolton Percy, (see the map) which will shorten the length of the original line about one mile and a half, and lessen the expense of the project at the same time; thence in a line, nearly straight, to Bow-Bridge, passing on the South side of the village of Wighill, and close to the North end of the village of Walton. Thence in a circuitous direction towards Wetherby;—but if the line was permitted to pass from the North end of the village of Walton to the North side of Ingmanthorpe, the seat of Richard Fountaine Wilson, Esq. distant from his residence about four hundred yards, it would pass over very suitable ground, and shorten the length of the line five-eighths of a mile more. By either of these lines it would cross the great North Road, near the Drover's Inn, then proceed on the North side of the village of Little Ribston, and by the banks of the River Nidd, sufficiently high to avoid the broken parts, crossing the said river by a bridge, near St. Robert's Well, and thence proceeding along the Eastern side of the town of Knaresbro', ascending, in an uniform manner, to the level of the bottom of the High-Street, commonly called Bond-End; where it will most conveniently pass behind, or on the West side of Mr. Wm. Clayton's house; or, if more desirable to the owners of property at this point, it is possible to pass it under ground, and enter the valley of the Nidd without affecting or destroying any property, except two or three old houses belonging to Mrs. Stubbs. The line, for a single Rail-way, will then wind along the North bank of the valley, till it crosses the Nidd by another bridge, the clumps of trees on Scotton Moor; from this point it will keep on very favourable ground along the South side of the river, passing half way between Killinghall village and Killinghall bridge; thence through the middle of Hampsthwaite village, and close by Wreaksmill crossing the Nidd again below the village of Birstwith; after which it winds along the North bank of the River Nidd to Pateley-Bridge.

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Your Committee having stated their reasons for abandoning the project of a Canal, and recommending that of a Railway, and having also pointed out the adopted line, the next duty which presents itself to their notice is the Revenue;—the nature and quantity of Tonnage which is likely to come upon the line, and within the limits of its attraction;—and give to each such a charge as will equally benefit the various consumers. Such as we conceive to be of the most general importance, first attracts notice, which is the article of

COAL,

Wherein there is little doubt but a saving of eight shillings per chaldron will, on the completion of the work, be effected—a most material object for the poor, and the general benefit of commerce. The rule by which this computation is made, compared with others we have seen, is very much on the safe side, but should a trifling mistake occur, we confidently believe that the decrease in the price of this article will very much enhance its consumption, without anticipating any increased demand at the lime-works and bleach-grounds, arising from an increase of business, which naturally follows the cheapness of carriage, and the rapid transport of goods from place to place. The increase of population, while speaking of this article, must not be omitted, since, in the last twenty-one years it hath increased from four to near seven thousand, including Knaresbro', Scriven-with-Tentergate, and Brearton. The most correct statement we are able to give is below:

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	TONS.
Knaresbro' and Scriven with Tentergate, including lime-kilns and bleach-grounds	11,000
Brearton	100
Flaxby	50
Goldsborough	100
Haverah Park	25
Killinghall	350
Plumpton	100
Harrowgate and Bilton	3,000
Ribston	150
Scotton	200
Stainburn	200
	15,275
Birstwith Township	500
Hampsthwaite and Felliscliffe do.	600
Clint do.	260
Darley do.	400
Hartwith do.	450
Thornthwaite do.	200
Dacre do.	500
Bewerley do.	1,600

Bishopside do.	50
Updale do.	1,500
Pateley Tonnage	6,060
Knarebro' do.	15,275
Total Tonnage of Coals	21,335

From good authority we are informed that Kippax and Haigh-Moor coals can be delivered at Bolton-Percy for ten shillings per chaldron, or 8s. to 8s 6d. per ton.; and if any back carriage could be procured they would be delivered for less, hence the advantage of taking yarns, &c. from Knarebro', and the neighbourhood of Pateley-Bridge to Barnsley, and bringing coals back; but independent of such an advantage we are able to prove the great saving named before in these coals:

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	£.	s.	d.
Cost per chaldron of the Kippax, or Haigh-moor coals, at the end of the Rail-way, at or near Bolton Percy, is	0	10	0
Removing do. into the waggon, (if not landed 4d.)	0	0	9
Rail-way dues, 18 miles, at 2d. per ton, per mile	0	3	0
Waggon dues, 18 miles, at 1½d. per ton, per mile	0	2	3
	0	16	0

The present cost by way of Boroughbridge, is one pound five shillings, and hence the saving to the public on every ton, or chaldron of coals, will be nine shillings, except the merchants' profit.

By the foregoing statement the tonnage of the Knarebro' and Pateley-Bridge coal, when it reaches Knarebro', will yield a revenue of £3200. annually, being 21,335 tons, at 2d. per ton, per mile, for 18 miles, and the tonnage on the coal belonging the district up to Pateley-Bridge will be 6000 tons, for 6 miles, the average distance at 2d. per ton, per mile, or £303. 0s. 0d. making together £3503. 0s. 0d.

The next topic for our consideration which naturally presents itself, is the surplus

PRODUCE OF THE SOIL,

Which although composed of a great variety, we shall here only notice that of Corn; and although the town of Knarebro' and its vicinity, cannot complain of a scanty or contracted supply, nor yet of exorbitant prices, compared with their more western neighbours, the inhabitants of Craven, and the borders of Lancashire: who, at least must pay such suitable advance as will compensate for a long and expensive land, or a longer and protracted water carriage, neither of which in all probability, can in these days of depression, bear a further reduction of rate.—Under these circumstances, knowing the soil in the neighbourhood of Wetherby and Tadcaster to be rich and fertile, we feel some confidence that corn and its produce in flour and meal, (which can so conveniently be converted by mills upon the line,) will soon become an article of tonnage in no small degree, nearly the whole length of the line; and thence being removed by land carriage from Pateley-Bridge to Skipton and other places further west, will be found cheaper than heretofore. The quantity of tonnage on this head is not so clearly ascertained, still it will have some reference to the quantity of coals brought from Skipton into the neighbourhood of Pateley-Bridge, or the quantity of lead taken from Pateley-Bridge, to Ripon as either one or the other of these articles, in both directions must be considered back carriage, otherwise they could not be removed, as heretofore, at the usual low rates. From these data, and the fact of three waggons three days each week from Knarebro' towards Skipton, we believe the tonnage under this head in that direction will be three thousand tons annually, which being nearly the whole length of the line, or twenty-five miles at 3d. per ton, per mile, will yield a revenue of £937. 10s. Being aware some doubt may arise as to the computation of this tonnage being correct, we feel no apprehension as to the result.

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For while it must be admitted, that lead in this case ceases to be a back carriage, hence the expense of carrying corn from Ripon to Pateley-Bridge must naturally increase, whilst on the contrary, the expense by the Railway must as naturally decrease; these two circumstances in all probability will fully support the estimate, if not greatly exceed it.

We now come to the present principal trade of the town and neighbourhood of Knarebro', which is that of dressing Flax and spinning Yarns; and what first takes our notice upon the subject of tonnage, is that of

FLAX.

This article during the latter period of the late war, was dressed and manufactured here in greater quantities than at present, probably owing to the profits upon it at that time being more adequate to the heavy expense of carriage, than they are now. The depressed state of the trade since that period has caused one flax-mill, turned by water, to be converted into a corn-mill, no

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doubt to the detriment of others in that line; and two more, turned by the power of steam, to stand still, and become useless; whereas, if carriage could be considerably reduced upon this article, and also in that of coal as stated already there remains little doubt but this useless property would regain its former value, and additional employment be afforded to the increasing population of the neighbourhood; an object at all times deserving the notice of the opulent and rich, and which of late, hath, with partial success engaged the united efforts of the legislature.

In calculating on the tonnage of this article we have it in our power to be more exact than on that of any named before, for every individual concerned with it, has made his own return, and which added together amounts to two thousand four hundred and forty tons, being for the town of Knaresbro', one thousand seven hundred; and for the neighbourhood up to Pateley-Bridge, seven hundred and forty. Hence the amount of revenue from this tonnage will be as follows:

	£.	s.	d.
From Bolton Percy to Knaresbro' 2440 tons per ann. 18 miles, at 4d. per ton, per mile	732	0	0
From Knaresbro' to Pateley-Bridge, which is 14¾ miles, but for safety sake is only taken at 12.			
740 tons, 12 miles at 4d. per ton, per mile	148	0	0
	880	0	0

Having pointed out the probable amount of revenue which the article of Flax will yield to the Railway; we shall next endeavour to exhibit how much will be saved between the present and the projected mode of conveying it to Knaresbro':

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From Hull, via B. Bridge, the present expense per ton, is				£ 1	2	0
And the time of coming from 10 to 21 days						
From Hull to Bolton Percy, per ton	0	5	0			
Removing from the boat into the waggon	0	0	9			
Rail dues, 18 miles, at 4d. per ton per mile	0	6	0			
Waggon dues, 18 miles, at 1½d. per ton, per mile	0	2	3	0	14	0
				0	8	0

By this statement it appears there is a saving of 8s. per ton from Hull to Knaresbro'; and nothing seems to prevent the same ratio holding good from Hull to Pateley-Bridge; besides should the Flax come from Hull on board the regular traders, it will in all probability arrive at the Wharfe mouth in two tides, and from thence to Knaresbro' in eight or nine hours; but should the trade of Knaresbro' attract the notice of the owners of steam vessels, its dispatch would doubtless be greater; and more in proportion it would benefit the trade of the place; in as much as cheapness of carriage and dispatch of goods whether manufactured or otherwise are the very sinews of commerce, and in such proportion as these are obtained, so will the wealth and prosperity of the town or neighbourhood be regulated.

In presuming upon any increase of tonnage on this head, we feel equally safe as on any other, or more so; for if the present mills turned by water, and spinning Flax were found insufficient, some corn-mills might easily be converted, and in lieu of them, wind-mills might be erected, for which purpose many fine situations present themselves on both sides of the valley, where there is abundance of stone and lime always contiguous, which would render such erections less expensive than in many other places.

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The next subject for our consideration, and which naturally follows the last, is the tonnage arising from manufactured

LINEN,

Which in former times when spinning was done by hand, was the staple trade of Knaresbro' and its vicinity, but which, of late years has been much on the decline, perhaps owing to many causes.

The principal one we are disposed to believe, arose from the capitalists originally engaged in that line becoming mill owners; and as mills for sometime did not increase by their numbers so rapidly as to glut the market with their produce, the profits in that branch were better than the other; and as this became apparent, its effects soon spread; so that few more reasons are requisite to prove the fact, of the Linen Manufacture having given place to that of Yarns.

Another reason why it hath not made equal progress with other places, may be the length of time manufactured goods are on their passage to London, where there is a market for every thing every day; the port of York is the only one where these goods have been shipped, and from what cause we cannot say, but they have been frequently so long on their passage, that good connections have been entirely lost on that account; whereas if the Railway was completed, Hull would naturally become the port of Knaresbro', and all produce of its manufacture would reach Hull in two days, at a much less expense than at present, and London most probably in five or six days more. Thus it is highly probable an order from London might be executed and warehoused in eight days, or sometimes in half that time; a convenience perhaps unenjoyed by any other

place of the kind.

Notwithstanding the manufacture of Linens here has not till lately been carried forward in that variety, nor the great increase of Looms been made compared with other places, still the character of Knaresbro' Linens is maintained, when brought into service.

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With regard to the tonnage arising from Linens, it alone will not be considerable, but as it is one article of tonnage in a descending direction, we beg leave to class with it, that of Linen Yarns, for should, by this improved mode of conveyance, either of these increase in quantity in a descending direction, the other as naturally will decrease, and as a considerable proportion of Yarns made in this neighbourhood, finds a market at Barnsley, and in that direction, it is presumed that along the Railway, and thence by a Barnsley boat, will be the cheapest mode of conveyance; and in the reverse direction coal will naturally become an article of tonnage and traffic. Having already from good and safe data, stated the quantity of Flax likely to come on this improved line of conveyance, at 2440 tons, and why a great proportion of it when made into Linens, Yarns, and Tow, should naturally be tonnage in a descending direction, we hope the public will give us credit for estimating this tonnage, at 2000 tons, per annum, and which we will suppose to be all delivered at Knaresbro'; hence the tonnage of it to Bolton Percy, will be 2000 tons, 18 miles, at 4d. per ton, per mile £600. per annum, in a descending direction.

We now come to that consideration belonging the tonnage arising from

GENERAL MERCHANDIZE,

Which will include every thing consumed for the support of the population, and which there is no occasion to dwell upon separately under respective heads. This tonnage is made up from entries of different individuals, and amounts to 1035 tons, per annum, in an ascending direction; 570 for the town of Knaresbro'; and for the district, up to Pateley-Bridge, 465; the revenue arising from this source will be as under:

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1035 tons, 18 miles, at 6d. per ton, per mile	£465	15	0
465 do. do. do. do. do.	139	10	0
	605	5	0

Although the distance from Knaresbro' to Pateley-Bridge is 14¾ miles, still we have only rated it at 12 miles.

TIMBER AND IRON

Will also become articles of tonnage in an ascending direction, and although different when considered respectively, are in their application so liable to meet, that perhaps it may not infringe much on their respective rights if classed together for their amount of tonnage; the amount handed to us is composed of returns made by such individuals as are concerned in the trade, and although it does not form a conspicuous figure, nor produce a great sum, still perhaps it is not the less likely to make up its full share of increase; for with these, cast metal may be classed, and recollecting the great wear and tear in mills, machinery, and waggons on the Railway, the quantity is more likely to be doubled, in a short period, than that of any named before; the amount of revenue as at present calculated, would be 1250 tons, up to Knaresbro' from Bolton Percy, being 18 miles, at 3d. per ton, per mile, is £281. 5s. 0d. And for the district of Pateley-Bridge, the returns are 450 tons, taken at 12 miles, at 3d. per ton, per mile, amounts to £67. 10s. 0d. per annum.

Another article of tonnage both ascending and descending may be named, and on which some revenue may be expected to arise, although the data for estimating it may be greatly clouded; it is that of

PASSENGERS.

The market of Knaresbro' is generally well supplied, and prices moderate, as they are in other equally fertile districts, except in a few articles, such as poultry, butter and eggs; but the increase of price in these articles is the most felt during the Harrogate season, when large quantities are in great demand for that improving place. Contemplating the execution of this project, it would immediately afford a most complete opening for all produce of this kind, coming to the market, in an easy, comfortable, and cheap manner, from a neighbourhood which hath not before enjoyed such an advantage, and would bring with it a corresponding demand for such articles of merchandize as are sold at Knaresbro', and in daily consumption in all farm houses. Contemplating again the prospect of a steam conveyance from the lower end of the Railway to Hull, which is highly probable, it is only natural to suppose, that very few journies would be taken, by the inhabitants of Knaresbro', and its vicinity, by any other conveyance to Hull, because cheapness, expedition, and comfort would recommend it.

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Having stated such as we can at present call the ascending tonnage, our next duty is to say what there is which presents itself, that we can rely upon for a descending tonnage, more than what hath already been treated of.

Of these we find a tolerable variety, and of some articles a never failing supply; viz. lead; stone for building; stone for highways; lime and lime stone; slates; flags; oak bark; wood; cotton twist; Irish flax and linens; ashes and several other kinds of American produce; which if we treat of as they are respectively named, that of

LEAD

First takes our attention. This article from time immemorial has been extracted from the bowels of the earth, at Greenhowhill, near Pateley-Bridge, in large quantities, the greatest part of which, of late years, has been carted to Ripon, a distance of twelve miles, and thence shipped for Hull, at an expense of one pound per ton.

From good authority we are informed that these mines produce annually, 3000 tons, out of which quantity 2500 will become tonnage along the Railway, as below:—2500 tons, 33 miles, 1½d. per ton, per mile, is £515 12 6.

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The advantage which the proprietors of these mines will derive from this improved mode of conveyance, is made apparent, by the following statement:—

From Pateley Bridge to Hull, by way of Ripon and Boroughbridge, per ton, is			£ 1	0	0
BY THE RAILWAY,					
From Pateley-Bridge to Bolton Percy, 33 miles, 1½d. per ton	4	1½			
Rail dues, 33 miles, at 1½d. per ton, per mile	4	1½			
Removing from the waggon into the boat	0	3			
Freight to Hull from Bolton Percy	4	0	0	12	6
			0	7	6

By this statement it appears there is a clear saving of 7s. 6d. per ton; but should the freight and carriage at present be only 19s. instead of 20s. as before stated, then the saving will be 6s. 6d. which is an object of no small moment, and contributes its full share of recommendation to the project.

STONE FOR BUILDING,

Next claims our attention: It is of various kinds and qualities, some about Birstwith is of a strong coarse grit, will bear an immense pressure, is well adapted for bridges, locks, wiers, &c. but is not to be had in blocks large enough for pier works. There is another kind of stone at Dacre-Pasture, of a much finer grit than the last, paler in colour, and well adapted for finer masonry, such as columns, pediments, &c. Blocks of this kind may be had of large dimensions. Another kind of stone is found at Wilsill, in quality similar to that at Birstwith, but may be risen in much larger blocks. When the Ouse-bridge at York was building, in 1818, the contractors for, or the inspectors of that work, got some stone from this neighbourhood for the piers, and by a letter from Mr. William Craven, one of the inspectors, there is no doubt of its being fit for any kind of public works, as bridges, locks, &c. The expense of land carriage from the quarry to Ripon was the sole cause why a greater quantity was not made use of.

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There is another kind of stone found a little way above Pateley-bridge, well adapted for flags, window heads and soles, staircases, landings, tomb-stones, and grind-stones; but owing to the beds being thin, it is not well adapted for general building purposes.

At Fellbeck, near Smelthouse-mill, a slate quarry has lately been opened, which produces a slate of a darker colour than that of Idle, is very sound, lays well on, and will probably improve in fineness, if pursued to a greater depth. A ton of it will cover about ten square yards.

Another Slate-Quarry, at Bouthwaite, near Pateley-Bridge, has recently been discovered; the produce of which is much superior to that of Idle; a ton of it will cover about 14 square yards.

All this stone and slate is immediately upon the adopted line, or can be brought to it for 4¼d. per foot, which, with the expense of carriage to Bolton-Percy will cost at that place as below:—

	£.	s.	d.
Rail-dues 30 miles, at 1¼d. per ton per mile	0	3	1½
Waggon-dues, do. do.	0	3	1½
	0	6	3
Calculating 16 feet of this stone to weigh one ton, it appears the carriage of each foot will cost	0	0	4¾
And the original cost delivered on the line	0	0	4¼
Cost of this stone at Bolton-Percy per foot	0	0	9

Which if necessity requires, may experience a little reduction. At this time the Bramley-fall stone delivered at Selby, costs 1s. per foot; and at York during the building of Ouse-bridge it cost from

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STONE FOR HIGHWAYS.

This is found in immense quantities at Greenhow-hill, distant from Pateley-bridge two miles, it resembles a grey flint; the road from Pateley-bridge to Skipton is principally composed of it; it is hard but easily broken small, and after a little using almost resembles one entire stone; its use and extraordinary properties are not known to a great distance, particularly towards Ripon or Ripley; this may be accounted for in two ways—first, the hills in either direction are long and steep; and 2dly, other materials are just at hand, of a quality sufficient for a road where the forbidding ascents deny the frequent passing of heavy carriages.

This stone has been compared to that at Middleton-Tyas, near Richmond, and when analysed is found to be exactly of the same quality, although a little lighter in colour; it was compared to this merely to prove a corresponding property.

For it is a certain fact, that the Middleton-Tyas stone has been for some time, and is now, carted from the quarry to Northallerton and Brompton, distant 14 and 15 miles, for the use of their highways, at an expence of 8s. 2d. per ton to the former, and 9s. to the latter place. This fact is the more remarkable, since there has been a quarry open for many years, within 200 yards of Northallerton, but the stone is only of a common kind. From this circumstance, it is fair to expect, that provided the stone of Greenhow-hill can be delivered at Bolton-Percy for 6s. 6d. per ton, and at Cawood, Selby, Booth-Ferry, and Howden for 8s. it will both become an article of tonnage in a descending direction, and a great acquisition to that district; but as that neighbourhood has never been in the habit of paying such a high price for highway materials, it will probably in the first instance meet with many objections, which may be replied to in two ways—1st, that whatever is worth doing, is worth well doing; and that the best materials are the cheapest;—and 2dly, if the surveyors and overseers of Northallerton and Brompton have, by their experience, established the above fact, and found this stone cheaper than that at home, it is reasonable to conclude that the surveyors and overseers of the highways in the neighbourhood of Cawood, Selby, and Howden, may do the same; for the soil of that district is equally fertile and rich as that of Northallerton; and the occupiers of it equally opulent—hence their ability to do well whatever is worth doing.

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The expense of this stone at the before-mentioned places we state below:—

	£.	s.	d.
One ton of stone delivered at Pateley-bridge	0	1	3
33 miles Rail dues at 1d. per ton per mile	0	2	9
33 miles waggon dues, do.	0	2	9
Cost of stone at Bolton-Percy per ton	0	6	9
Removing do. into the boat, do.	0	0	6
Freight of do. Selby, Cawood, or Howden	0	1	0
	0	8	3

It is probable the expense of delivering this stone at Pateley-bridge, might be reduced by the application of a Railway from that place to the quarry; by this estimate horses are expected to be used; it is also possible to remove it from the waggon to the boat at less than is stated above.

The neighbourhood of Pateley-bridge possessing many water-falls on which more mills might be built, gave rise to an idea of cutting this last-mentioned stone by water-sawing, into scantlings for fire-places, hearths, and slabs; but upon an experiment being tried, it was found to contain what is termed the dry heads, which cause a division of the parts when brought into service, otherwise it yields a beautiful polish, and exhibits much of the shell and feather; but notwithstanding this last attempt hath failed to augment its value, another in reserve still remains of no small moment, which is that of the most excellent

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GREENHOW-HILL LIME.

In the district where it has long been used as a manure either for arable or grassing land, no comment on its superior utility is requisite; but to those parts where its presence hitherto hath been forbidden by the rugged and steep hills, and to others at too great a distance to warrant the expense of a long land carriage, something of its superior quality as a manure in this place may not, we hope, be deemed unseasonable, especially as the carriage of it, when the Railway is constructed, will be an object of less notice, and this will be exemplified hereafter.

We have said before, the stone of Greenhow-hill has been submitted to analysis, to prove a corresponding property with that of Middleton-Tyas; this inquiry was extended to ascertain if they produced similar lime, and we have great satisfaction to inform the public this was the case.

We say a great satisfaction, because we have it in proof, that the Middleton-Tyas lime is situated in a country, where a knowledge of its excellence is not confined to narrow limits by steep and forbidding hills, but being more favourably situated, it has been for a great number of years, and

is now, with increasing demand, conveyed generally 17 or 18 miles, and in some instances, into the immediate vicinity of other kilns, even at 24 miles distance.

The reader will be best able to calculate the expense of this lime to the consumer, when he is informed that the cost at the kilns is 12s. per chaldron of 32 bushels Winchester, one of which weighs 7st. 8lb.

Under this view of the case, we hope it may not be deemed impertinent to recommend a trial of this lime, even in districts where lime is plentiful and cheap, and which hath been upon proof hitherto satisfactory; and should it unexpectedly fail upon arable land, we still beg it may be admitted to a trial on grassing land. For the purpose of bleaching it hath been carted to Bilton-cum-Harrogate, and used with satisfaction, and frequently 9 or 10 miles towards Ripley, to places distant from the Nidd lime-kilns only 3 or 3½ miles. To say any thing of this lime for the purpose of building we are completely unable; for whenever it became a topic of conversation, its excellence as a manure alone may be named as one reason, and that of having at Knaresbro' kilns, a kind as well adapted for building as any lime probably can be, and at a rate as reasonable as circumstances will admit of, may be offered as another reason.

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Having ascertained that two tons of this lime stone will make one chaldron of lime, weighing 1 ton 7 cwt. 2qrs. we give below a statement of what it will cost at different points on the line, recommending at the same time on all occasions the lime-stone to meet the coal.

	£.	s.	d.
Cost of the stone at Pateley-bridge, 2 tons	0	2	6
10 miles Rail-dues, at 1d. per ton per mile	0	1	8
10 do. Waggon-dues, do.	0	1	8
7½ bushels of coals, at 7d. per bushel	0	4	4½
Breaking stone and burning	0	1	0
At Killinghall Toll-bar the chaldron of lime is	0	11	2½
5 miles additional tonnage on stone	0	1	8
	0	12	10½
5 miles decrease of tonnage on coal	0	0	7½
At the Bond-End Knaresbro' the lime per chal.	0	12	3
6 miles additional tonnage on stone	0	2	0
	0	14	3
6 miles decrease of Tonnage on coal	0	0	9
	0	13	6

By the above statement it appears the Greenhow-hill lime can be burnt at Ribston, for 13s. 6d. per chaldron, a circumstance not unlikely to make it in great demand, whenever its properties are known for agricultural purposes.

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Adverting now to some articles the exact quantity of which is difficult to ascertain, such as slate, oak bark, wood, Irish flax and linens, ashes and some other kinds of American and colonial produce imported into Liverpool, and which will have a cheap conveyance from Liverpool to Skipton by canal, and naturally become a back carriage from Skipton to Pateley-Bridge; as corn, &c. will move in the other direction, and from Pateley-Bridge to Knaresbro', by the Railway at a much cheaper rate than heretofore, and will as a matter of course, increase the tonnage, as example will prove:

VIA SKIPTON.

	£.	s.	d.
The present cost per ton from Liverpool to Skipton in general Merchandize, is	1	6	8
Do. from Skipton to Knaresbro'	1	7	6
	2	14	2

VIA LEEDS.

The present cost per ton from Liverpool to Leeds	2	0	0
Do. Leeds to Knaresbro'	0	15	0
	2	15	0

VIA RAILWAY.

The present cost per ton at Skipton	1	6	8
Skipton to Pateley-Bridge	0	16	0
Pateley-Bridge to Knaresbro', per Railway, 15 miles, at 3d. per ton, per mile	0	3	9
Waggon dues, 15 miles, at 1½d. per ton, per mile	0	1	10½
	2	8	3½

By the foregoing statement it appears, that when an average of the cost is taken, which the present modes of conveyance afford, and contrasted with the Railway when completed, the latter will have a preference of 6s. 3½d. per ton, being a reduction of more than ten per cent. upon the present charges.

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Having now dwelt on the different articles of tonnage in each direction, with as much accuracy as we are able, and finding the tonnage in the ascending direction amount to 31,735 tons per annum, and that in the contrary to 4,000; and believing from the best information we are able to obtain, that for every two tons moved in an ascending direction, three tons may be moved in the contrary; consequently we look to building stone, stone for highways and lime, and some other articles not enumerated, to make up the quantity of tonnage required to keep the whole waggons in full work; and to produce the greatest possible revenue.

Having enumerated such tonnage as falls within our power of calculation, and named a source with strong probability of much more; we come next to the general summary, and to contrast it with the expense of the project as stated by Mr. Telford, wherein we have no doubt, but every ample consideration is embraced.

COST OF THE RAILWAY.

Bolton Percy to Knaresbro', 18 miles, at £3,000, per mile, double Railway	£54,000
Knaresbro' to Pateley-Bridge, 14¾ miles, with passing places, single Railway	38,830
	92,830

REVENUE ASCENDING.

		£.	s.	d.
21,335	Tons of Coal, see page 15	3503	0	0
3,000	. . . Corn, &c. p. 16	937	10	0
2,440	. . . Flax, p. 17	880	0	0
1,035	. . . Merchandise 21	605	5	0
1,250	. . . Timber and Iron 21	281	5	0
29,060		6207	0	0

REVENUE DESCENDING.

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		£.	s.	d.
2,000	Tons Linens and Yarns, (see page 20)	600	0	0
2,500	. . . Lead . . . 23	515	12	6
4,500		1115	12	6
Total amount of revenue at present estimated		7322	12	6

By the above statements it appears the project will cost £92,830; and the amount of revenue arising from such tonnage as is comprehensible, will amount annually to £7,322. 12s. 6d. which is rather more than 8 per cent. per annum for the shareholders, independent of 39,090 tons more which the works will be able to perform, if required, and which from the low price of one penny per ton for Rail dues, for twenty miles, will amount to £3,257. 10s. 0d. and when only another penny per ton, per mile is estimated for waggon dues, this kind of tonnage will be conveyed at a cheap rate, and delivered in the neighbourhood where it is so much wanted, at prices agreeable to the foregoing estimates; a circumstance of itself likely to improve the value of all estates, containing the articles of stone and lime, and ultimately bring a great increase of tonnage in that direction, most desirable in all Railway projects.

In the foregoing estimates it is calculated that the waggons will be drawn by horses, at the same time we believe, that loco-motive engines might be applied to do the work at a less expense: but not having employed an engineer perfectly acquainted therewith, we are not authorized to say more on the subject.

With regard to the annual repairs of a Rail-way our engineer, Mr. Telford hath not supplied the information; but from other sources we have ascertained the repairs are in proportion to the quantity of business done; upon Rail-ways well constructed, and made strong in the first instance, about 1-8th of the annual proceeds is highly sufficient, but if the castings are light and laid upon timber instead of stone, at least twice that sum will be required.

Having as a Committee, accomplished in the best way we are able, what was originally intrusted to our care, (except deviating from a Canal to a Rail-way;) we now beg leave to lay the subject before the public, not doubting but that public will duly appreciate its utility, and also recommend to the Noblemen and Gentlemen who have estates on the line, to give it such a consideration as a work of this magnitude deserves, either as regards its importance, by the employment it will afford to the partially employed labouring poor, during the time the work is in progress, but more particularly during all the time hereafter; so long as one ton of lead, or stone may be found near the higher end of the line; or the river Nidd flow in its present course; or the neighbourhood of Selby or Howden continue to produce more corn than is sufficient for its population; or as may regard its importance in an agricultural view, a sight of which should never be lost, nor whatever can promote its advancement, be treated with disdain or neglect, but quite the contrary; for upon the best, the cheapest, and most skilful method of causing the earth to bring forth abundantly, depends in a great measure our national prosperity; it gives a plentiful supply at home, will tend to reduce our alarming pauperism, and hence promote peace, the welcome inhabitant of every breast; of every cottage; of every mansion; of every state; and the safest rampart of every throne; for while we consider the soil only as an agent, let us not forget it is one of an incorruptible class; and whatever is skilfully committed to its care is generally repaid tenfold; then it should not be forgotten what was the state of the high-roads in this country eighty years ago, they were chiefly composed of clay; and now contrast that period, with the present, and say how much their improvement hath, or hath not, contributed to the advancement of that ancient, useful, respectable, and princely profession, of agriculture; if this is not denied, then contrast the present highways of the district through which the adopted line will pass, remembering the many steep and rugged hills, with the present much improved Rail-ways where the uniformity of ascent and descent is maintained as a principal object, and permit it to come within your calculating powers to show, what benefit it may contribute to the perfection of a science on which so much wealth and public benefit depend.

Or as may regard its importance by the constant employment it will afford to nearly all ages and classes of people, who may be concerned directly or indirectly in the manufacture of Yarns, Linens, and Cottons, and probably at better wages than are regularly paid at other manufacturing places, for should a considerable saving of carriage be effected, together with the quick dispatch and transport of goods from place to place, as we have contemplated; the profits of the masters would be improved, their business extended, competition created, and hence wages would be advanced; industry would thereby be promoted, and could morality and economy be taught by example, then pauperism would only be known by its name.

If there be any doubt, that the completion of this project will not open new channels for such tillage as the various soils which are contiguous to the line require, we are unacquainted with it; because instead of that, we believe it will not only facilitate the transport of the various limes as may be requisite to suit the different soils, but also afford an opportunity of introducing great quantities of manure from the towns of Leeds and Hull, into places which the present modes in use never will accommodate.

To enumerate all the advantages which a well constructed Rail-way possesses over every other mode of conveyance, on lines where the ascent is great, as in this, would be a work of time, and therefore we shall dismiss it after quoting a passage from Dupini's Report to the French Government:

"The advantages which Iron Rail-ways present are immense.—England owes to them a part of her wealth. Never without them could coal, lime, minerals, and other raw materials have been conveyed to such distances, and at the same time, at so trifling an expense."

To the Noblemen and Gentlemen who have money vested in the security of the tolls, arising from the highways contiguous to the line, we beg to offer some observations, particularly to those who may feel alarm for their interests:—It is the opinion of others, better informed on these subjects than ourselves, that instead of reducing the annual amount of tolls, they have invariably been found to increase, particularly on such roads as cut the line in a transverse direction; but on roads parallel to the line, the increase has not been so great; and when it is remembered the great quantity of tonnage, a project of this kind must require to make it profitable, it must be admitted that a disposal of it in all directions will necessarily be the case; thus it is accounted for why the tolls have increased.

To such Noblemen and Gentlemen who may at some future period (we hope not far distant) form themselves into a Committee to ascertain the merits of this report, we beg to express a request, which we trust will be treated with attention, that they will permit all the money advanced towards the expenses of the survey already made, to become share money, (if the work should go forward) and the subscribers who may not be disposed to purchase shares, to have the option of receiving back the sum or sums so advanced by them.

JOHN ETESON.

MATTHEW OATES.
 WM. THACKWRAY.
 FRANCIS COOPER.
 WM. DRIFFIELD.
 JOHN ELLISON.
 THOMAS SIMPSON.
 LAMBERT ELLISON.
 ROBT. DEARLOVE.
 ISAAC NEWTON.
 MICHAEL MEEK.

An account of the sixty-seven mills named in the preface of this Report, showing how each mill is at this time employed:— p. 35

	Corn.	Flax.	Cotton.	Lead.
Shaw Mills	2	2	0	0
Thornton	0	1	0	0
Wreaks	1	0	1	0
Waite	1	0	0	0
Fewstone	1	0	0	0
West House	1	1	0	0
West End	0	3	0	0
Bramley Head	0	2	0	0
Darley	1	1	0	0
Thornthwaite	1	1	0	0
Summer-bridge	1	1	0	0
Fellbeck	1	0	0	0
Braisty Wood	0	1	0	0
Low Laith	0	1	0	0
Smelt House	0	3	0	0
Glass House	1	1	0	0
Holling House	0	1	0	0
Pateley-Bridge	1	1	0	0
Bridge-house Gate	1	0	0	0
Cockhill	0	0	0	1
Sun Side	0	0	0	1
Scarah	1	0	0	0
Providence	0	0	0	1
Prosperous	0	0	0	1
Merry Field	0	0	0	1
Low Mill	0	0	0	1
Grass Field	0	1	0	1
New Bridge	0	0	0	0
Gouthwaite Hall	1	0	0	0
Ramsgill	1	0	0	0
Killinghall	1	0	0	0
Scotton	0	1	0	0
Knaresbro'	0	1	0	0
Do. Chapman	1	0	0	0
Do. Do. Calverley's	1	0	0	0
Plumpton	1	0	0	0
Goldsbro'	1	0	0	0
Staveley	1	1	0	0
Hunsingore	1	0	0	0
Knox	1	0	0	0

Crimple	0	1	0	0
Spofforth	1	0	0	0
Wetherby	3	0	0	0
Thorp-Arch	2	1	0	0
Tadcaster	1	0	0	0
Clifford	1	1	0	0
	32	27	1	7

Besides the before-named mills, flax is sent from Knaresbro' to be spun at

Scotland Mill, near Leeds.

Mickley Mill, near Ripon.

Bishopton Mill, near Ripon.

Ripon Mill, and

Masham Mill.

N.B. Soon as additional Subscriptions are received, by the Committee, to cover the expenses of the Survey, a list of the same will be printed, and distributed to each Subscriber, setting forth, also, the expenses of the Survey, with every particular.

Edward Baines, Printer, Leeds.

Footnotes:

[vi] The Committee alludes to the immense quantities of excellent stone for highways near Pateley-Bridge, and the great want of it in the neighbourhoods of Howden and Selby; and the surplus produce of the earth in these districts, and the increasing demand for it at Skipton and Pateley, and the Eastern parts of Lancashire.

[12] No surviving copies of this map are known.—DP.

*** END OF THE PROJECT GUTENBERG EBOOK REPORT OF THE KNARESBROUGH RAIL-WAY COMMITTEE ***

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