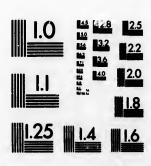


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REPORT

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YORK & CUMBERLAND RAIL ROAD,

ITS

ADVANTAGES AND PROBABLE REVENUE,

WITH STATISTICS OF THE COST AND TRAFFIC OF

NEW YORK & MASSACHUSETTS RAIL ROADS,

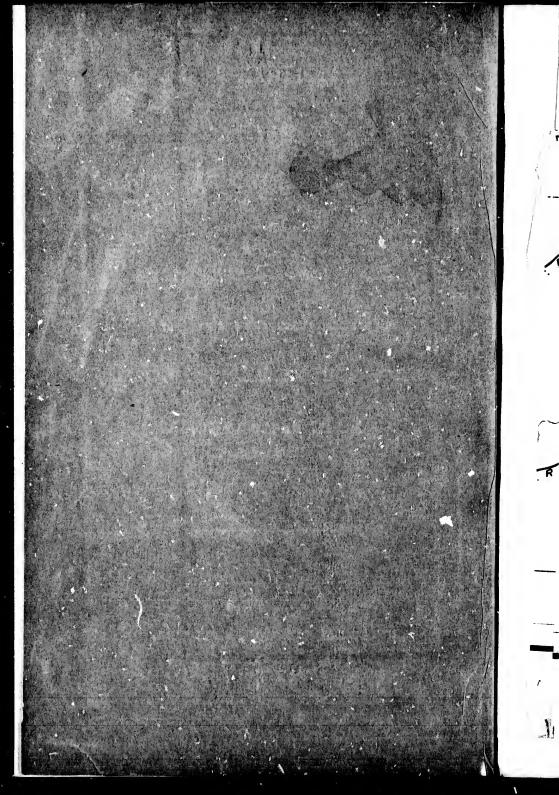
BY A. C. MORTON, consulting engineer.

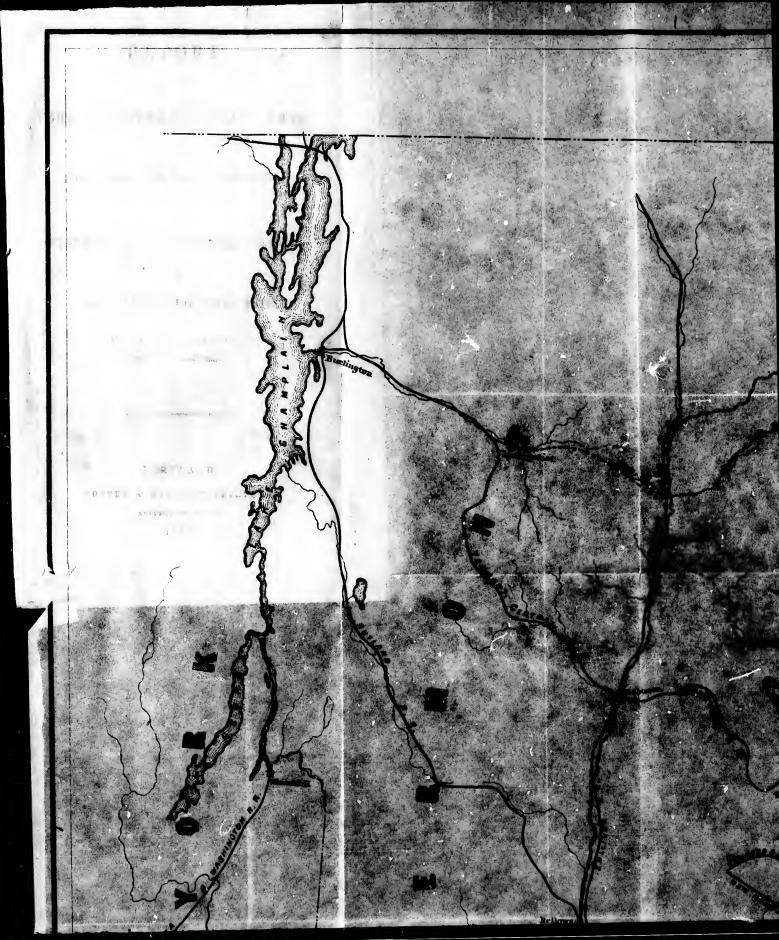
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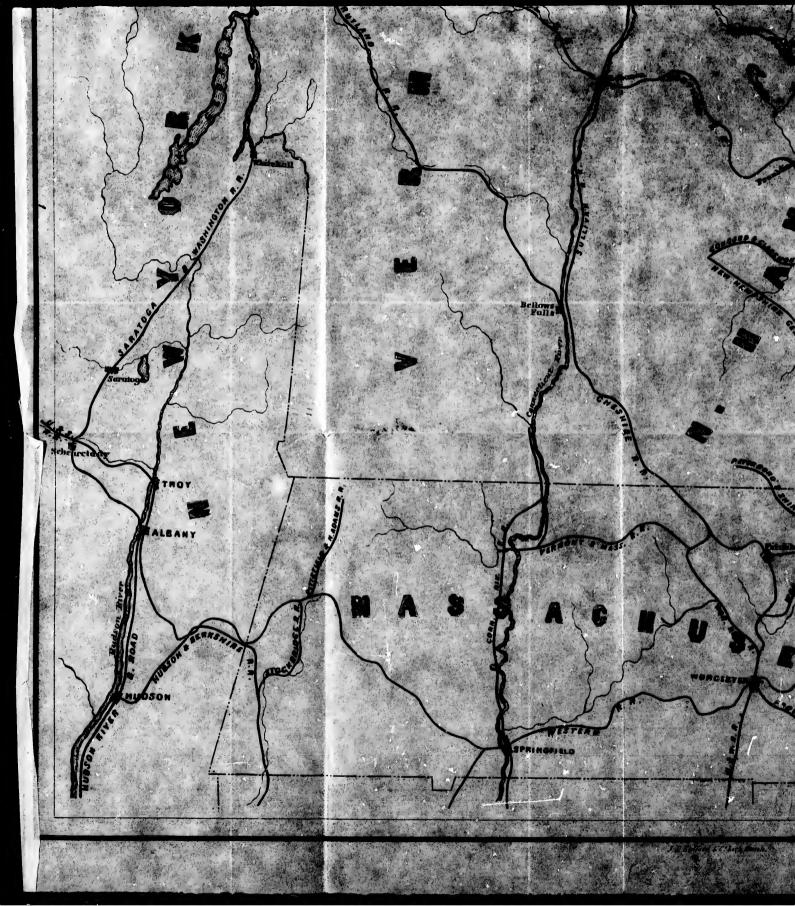
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REPORT

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OF

VARIOUS ROADS IN THE UNITED STATES,

BY A. C. MORTON,

CONSULTING ENGINEER.

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REPORT.

PORTLAND, August 18th, 1849.

To the President and Directors of the York and Cumberland Rail Poad Company,

GENTLEMEN : -

In compliance with your request, I have carefully examined the line of your road, the maps, profiles, &c., and have collected such statistical information as the short time allowed me would permit, and now have the honor to submit a Report relative to its general characteristics and the present state of the work, together with some observations on its connexion with other roads, the resources of the country, and the probable amount of trade that may be derived therefrom.

At an early day the route of your road was regarded as the most favorable for forming a railway connexion between Portland and Boston, and a charter was granted by the Legislature of Maine, for this purpose.

From a variety of causes, which it is not necessary to mention, its construction was delayed till after the expiration of the time named in the original Act for its commencement.

On the commencement however, of the great system of railways in this State, the manifest advantages of your line, and the importance of an interior route from Portland to Boston, by which the large trade of York County and a portion of Cumberland should be accommodated, became apparent, and the friends of the enterprise applied for a Charter, which was granted by the Legislature of 1846. This charter is similar to that of the Atlantic and St. Lawrence Rail Road Co., and is regarded as liberal in all its provisions.

The requisite amount of stock having been subscribed for that

purpose, the Company was organized on the 20th of July 1848, and soon thereafter the whole line was placed under contract and the work commenced.

DISCRIFTION OF THE ROUTE.

Commencing at the foot of Preble Street in the City of Portland, your line follows a Southwesterly course passing through the towns of Westbrook, Gorham, Buxton, Hollis, Waterborough, Alfred North Berwick and Berwick to Salmon Falls, a distance of about 49 miles, where it unites with the Boston and Maine Rail Road.

The topographical features of the country along your line, are somewhat irregular, yet the changes in the surface are gradual, and the uplands are of such gentle slopes, as to add much to the beauty of the country, and the value of the soil; while they interpose no serious obstacles to a favorable location of the road.

Traversing the country as your road does, in a direction nearly parallel to the coast, the principal water courses whire convey the drainage of the country to the sea, have generally a transverse direction to that of your line. This would seem to indicate an unfavorable feature in the topography of the country, precluding in a measure, the location of a road which should possess the essential requisites of favorable allignment, easy grades, and economy in construction. This, however, from the peculiar formation of the country, and the moderate elevation of the grounds dividing these streams, constitutes no material objection to a favorable location of your road. On a portion of the Middle and Western Divisions of the road, the line passes over a succession of sandy plains of moderate width and elevation, skirted by uplands of great fertility, and retaining all the general characteristics of those on other portions of the route.

The soil on that portion of the line between Portland and Gorham is mostly clay, but on attaining the more elevated grounds at that place and descending to the valley of the Saco river, it is of a more favorable character; sand and gravel predominating for a considerable portion of the distance. West of that stream the soil on, and in the immediate vicinity of the line with some exceptions, is of a sandy character.

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The line for a short distance in the town of Hollis, and also approaching Mousam river, passes over ground requiring cuttings of considerable magnitude, with indications of clay and rock.

The rock throughout the whole extent of your line, is of primitive formation, and probably more of this material will be encountered at the abovementioned points, than on all other portions of the route. More extended surveys will doubtless partially relieve this part of the line of its asperities.

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The amount of earth work to be done on the whole line, when a careful location shall have been made, will be about the same as on other roads of medium cost in New England. This will also be the case with the mechanical work, and although a number of bridges are required, yet they are generally favorably located, of moderate elevation, and there are no indications of unusual difficulties in their construction.

The line crosses the Presumpscot river at Congin, and re-crosses at Saccarappa, the bridge at the former point has one span of 140 feet, and at the latter, two spans of 170 1-2 feet each, making a total length of truss bridging on the Eastern Division of 483 linear feet.

The bridge for crossing the Saco, which properly belongs to the Middle Division of the road, will be about 450 feet in length.

Its axis will vary somewhat from a right angle with the course of the stream, and it will be located at a point, where rock, or other favorable materials will be found for the foundations. The other bridges on the line are of less importance; the largest of which is required for crossing Mousam river, having a span of about 120 feet.

COST OF THE ROAD — AND PRESENT STATE OF THE WORK.

The whole of your road is contracted to be built by Messrs. J. G. Myers & Co., on terms which are considered favorable to the Company.

The contract includes every item of expense except land, buildings, and machinery, and for the whole road amounts to \$955,500.

To this must be added the cost of the above men-	
tioned items, and an allowance for the general expen-	
ses of the company, in all probably amounting to the	
sum of \$ 200,	
Which gives as the total cost of the Road, - \$1,155,5	50 0 .
Averaging \$23,514 per mile, [See appendix note A.]	
The contractors subscribe 25 per cent. of the	
amount of their contract in the Capital Stock of the	
Company which amounts to \$238,	
Leaving \$916,	700,
as the amount of means required from other Stock-	
holders.	
Up to the present time there has been subscribed	
exclusive of contractors subscription, \$135,	
Which being deducted leaves \$ 781	,700
as the amount yet to be obtained by su scription, or	
otherwise to complete, and put in operation the	
whole Road.	
It is believed that on the completion of the Eastern division	
the road, which extends from Portland to Saco river, a distant	
17, 81-100 miles, that a handsome revenue will be immedia	ately
derived from the local business of the country. As every co	nsid-
cration renders it desirable that this portion of the road shou	ld be
put in operation at the earliest practicable period, I here ad	
approximate estimate of its cost based on the estimate of quan	
returned by your Engineer, and the contract price of Messrs.	J. G.
Myers, & Co.	
For grading, bridging, fencing and track \$ 377	,750,
Averaging \$21,210, per mile.	
For lands, buildings, general expenses of the com-	
pany, and machinery to operate this part of the road \$97	,000,
Total cost to Saco river, \$474	,750,
Stock subscribed for by contractors, 94	,40 0,
Amount required from other stockholders, 380	,350,
· · · · · · · · · · · · · · · · · · ·	,000,
Leaving \$245	,350,

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erate estim but p Portle to be provided for, to complete the road from from Portland to Saco river, and put it in operation.

The following shows the cost of the road from Portland to Gorham.

For grading, bri	dging, fencing and track,			\$ 251,956,
Averaging \$23	,525, per mile.			
For lands, build	ings, machinery &c.,	•	•	\$67,000,
Total	cost,			\$ 318,956,
Amount of con	tractors stock,	•	•	63,000,
Amount require	d from other stockholders subscribed by "	,	•	\$ 255.956, \$ 135,000,
11mount aneau	subscribed by			\$ 100,000,
*	Leaving -	-	-	\$ 120,956,

as the additional amount to be obtained to complete and put in operation the road from Portland to Gorham.

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In reference to the above estimate, it is proper to observe, that the cost of the several divisions has been deduced from quantities estimated by your Engineer on a preliminary survey of the line from Gorham to its Western terminus, and those of the located line from Portland to Gorham. On a final location of the whole line, the proportionate cost of the several divisions may be somewhat varied, although the total cost of the whole road is determined and fixed by the contract. The estimated cost of land has been made with much care, and from the best information in possession of the Directors, but as there is ... we uncertainty as regards the amount required for damages, &c., it is deemed proper to provide liberally for this item. Relative to the cost of buildings and machinery, there is no difficulty in making a proper estimate. Your station houses are supposed to be constructed of wood, and of moderate dimensions. The amount of machinery embraced in the estimate, is designed to be sufficient to commence operations with, but probably, further additions will soon thereafter be necessary.

The work done on your road, is confined to that portion between Portland and Gorham a distance of 10 3.4 miles,

There have been 77,000 cubic yards of earth, and 7000 cubic yards of rock, removed from cuts and carried into embankments.

One of the abutments of the Congin bridge, and one of the piers of Saccarappa bridge are carried up to the bearing line. The road bridge west of the village of Saccarappa, is completed. The total amount of bridge masonry laid, is 750 cubic yards, and of culvert masonry 1300 yards. The fencing of this part of the road is in progress, nearly half of it is completed, and the materials for the balance delivered.

The iron for 10 miles is contracted for, and will probably soon be delivered at Portland. The sleepers for the same number of miles of track, are purchased, and a large portion delivered.

The contractors are fully prepared to press forward the work, in the most energetic manner to completion, whenever the pecuniary circumstances of the company shall permit. If means are provided for the vigorous prosecution of the work, the road may be completed to the Saco river in the fall of 1850, and the whole road in the fall of 1851.

CONNECTIONS & PROBABLE TRADE OF YOUR ROAD.

The design of your road as before stated, is to connect with the Boston and Maine road, and thus give an interior communication between Portland and Boston and the intermediate towns, furnishing a cheap and expeditious conveyance to market, for the trade of that section of the country through which it passes, while it will open a new and picturesque route for through travel.

But before further discussing the question of connections, we will proceed to a consideration of the local business of your road.

To arrive at a just conclusion as to the amount of this trade, we must have reference to the character of the country along your line its extent, resources and population.

I have complied the following tabular statement from the published statistics of the General Government, showing the population and the agricultural products of each of the towns along the route, or in its vicinity, whose trade will pass over your road.

Population of Portland, 20,000, and Somerxworth at the Western Terminus of the Road, 8090, making a grand total of 69,252 inhabitants.

Names of Towns. Westbrook, Gorham, Standish, Baxton,	Population in 1840. 4,116 3,002 2,198 2,687	Valuation in 1844. 656,403 571,946 326,299 364,317		- A TO S	c) Bushels Bushels Bushels Pounds of		ushels Pounds Tond of of of Corn. Wool. Hay. 3,559 3,269 5,107 8,627 4,441 5,010 9,421 2,992 2,525 9,825 5,516 5,218		No. No. No. No. No. of hor's Cattle. Swine. Sheep. 407 1,329 777 2,233 371 2,013 922 2.612 242 1,312 392 1,937 297 2,219 1,937 3,428	No. of Cattle. 1,329 2,013 1,312	19 13 29 19
Standish,	2,198	326,299		<u> </u>	6,992	9,421	2,992	2,525	242	 }	242 1,312
Baxton,	2,687			13 2 6 -	33 11,169		9,825 5,516 5,218	5,218	29	-1-	297 2,219
Limington,	2,111	324,344	7 1	- 1	129 8,984		13,800 5,856 3,255	3,255	313	<u></u> -	1,619
Lunerick,	1,509	229,30	9 3 —	4 - 23,953	-1		9,138 4,173 2,528	2,528	192	-	192 1,367
Hollis,	2,363	289,087	11 7	17 - 1 1 44,931	31 7,491	11,832	11,832 4,693 3,461	3,461	272		272 2,008
Waterboro',	1,944	209,155	2 3	3 1 1 1 - 30,837	37 3,918	8,298	8,298 4,006 1,954	1,954	211		211 1,719
Alfred,	1,408	208,855	7 8 1 -	3 - 2 - 18,422	22 3,019		5,628 2,950 1,675	1,675	221		987
Lyman,	1,476	194,313	3 1 — —	5 1 19,549	4,325	6,275	2,950	1,696	154		1,221
Cornish,	1,263	160,564	5 - - -	1 - 2 - 26,622	322 4,597		7,021 4,268 1,937	1,937	172		172 1,040
Newfield,	1,354	172,206	2 4	2 - 1 1 24,046	146 4,110		7,195 4,669 1,910	1,910	176		1,494
Parsonsfield,	2,442	369,312	7 4	4 1 4 - 51,863		12,263 17,932 8,878 5,140	8,878	5,140	4+2		4+2 3,635
Shapleigh,	1,510	185,846	4 3 1 —	8 1 2 - 23,687	87 2,596	- 1	5,499 2,812	1,752	150		1,282
Acton,	1,408	198,762	3 4	5 - 2 - 32,673	73 5,192		6,729 4,602 1,978	1,978	160		160 1,507
Berwick,	₹ 1,698	198,702	5 1 - 1-	5 - 4 - 27,387	87 4,131		6,852 3,065 2,180	2,180	187		1,385
Sanford,	1 2,233	320,613	6 2 2 1	2 1 1 1 - 29,117		6,492 10,592 3,860 2,047	3,860	2,047	247		247 1,752
South Berwick,	2,314	366,063	16 5 3 1	5 1 5 - 32,540	45 2,726	5,815	3,036 1,837	1,837	152		1,220
Baldwin,	1,134	172,097	<u> </u>	4 - 1 -	17,753 4,109		5,627 2,890 1,480	1,480	138		789
Sehago,	d 707	74,080	- 2 - -	2 11,941	2,407		2,455 1,569	868	97		495
Hiram,	1 1,242	125,908	3 2	1 1 25,004	04 5,828		5,964 3,594 1,939	1,939	169		923
Porter,	1,133	113,834	1 3	3 - 1 - 16,838	38 4,136		5,001 2,574	1,100	97		741
Total Amount.	1141 252	141.252 5.832.014 146 70 8	146 70 8 5	117 15 42 4 684,731 125,223 173,095 36,663 56,597 4,869 32,057 10,215 42,997	31 125,223	173,095	36,663	6,597	,869		32,057

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The preceding statistics excepting the valuation, were collected in 1840, and are probably much below the actual products at the present time.

The valuation was made out in 1844, for the purpose of assessing the State tax, and this, it is well known, is at least expectation per cent below the present actual value of personal and real estate in these towns. I have also collected from reliable sources in several of these towns, valuable statistical information relative to the busines and probable amount of tonnage from each. The towns whose trade will be tributary to your road, are generally in a high state of cultivation, having a thrifty and enterprising population.

The streams along the line furnish an almost inexhaustible amount of water power, which is already improved to some extent, and will come into immediate use, as soon as the facilities of reaching market are offered by the completion of your railway.

Taking up the question of its local advantages for business I would remark that soon after reaching the flourishing village of Saccarappa, your road will have a very considerable income.

Here the Presumpscot river has a fall of 32 feet, and the water power caused thereby is adequate to operate 100,000 spindles, and at Congin, one mile below Saccarappa, and within a slight distance of the line of your road, there is a fall of 17 feet. Within 6 miles of the City of Portland, you bring into immediate use an extent of water power as great as that now in use at Saco and Biddeford.

It appears a matter of surprise that so great and valuable a water power, so convenient to tide water as this, should remain till this time comparatively unused. There is no other Atlantic City in the United States, (unless perhaps we except Baltimore) that boasts of such unrivalled advantages for manufacturing industry in its immediate vicinity, as the City of Portland.

The Presumpscot river is discharged from Sebago Lake 17 miles from Portland. The latter is elevated 260 feet above tide water, and covers a surface of 100 square miles. Between this Lake and the sea, there are no less than 15 distinct falls, varying from 10 to 32 feet each, having an aggregate of 228 feet. All of these falls are capable of being made valuable for manufacturing purposes,

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and it is not asserting too much, to say that a continuous manufacturing village will eventually extend from where your railway reaches the Presumpscot, to the Outlet of Sebago Lake. There is an even and uniform flow of water in the Presumpscot, from the capacity of its great natural reservoir, Lake Sebago, that insures against the damages of sudden floods, or the evils arising from severe drought in the summer. In this respect, it has capacity and advantages beyond most streams in New England, at present in use, and from the proximity of its water-falls, to a large seaport, may claim to posses advantages no where surpassed.

The only surprise is, considering the density of the population upon the line, the wealth of the inhabitants, and its favorable location for business, that it has not before been brought into greater notice by means of a railway.

To see a Lowell, or a Manchester, within six miles of Portland, at an early day, it needs only the prevalence of the same spirit of enterprise, and the same forecast that has given to the other manufacturing towns of New England their importance.

At Saccarappa there are at present in operation 3 Cotton Mills, having 8700 spindles and employing 350 persons. There is also 1 power loom Harness Factory — 1 Flouring Mill — 2 Shingle and Lath Mills — 2 Machine Shops — 1 Lock Shop — 1 Iron Foundry — 4 Saw Mills, and various other kinds of machinery. There are also 18 Stores.

W. hin the limits of the free grammar school district which extends one mile in each direction from the bridge, there are 2000 inhabitants. It is estimated by intelligent timber merchants that the Saw Mills manufacture 8,000,000, of feet of lumber annually. There are nine lines of Stages running through this place, and an Omnibus running twice daily to Portland.

At Congin, there are 2 Paper Mills — 1 Veneering Mill, and 1 Store.

The present amount of freight from these places amounts to over 15,000 tons annually.

Above Saccarappa there are in use several valuable water powers operating 20 Saws — 1 Cotton Factory and other machinery.

The next important point on the line is Gorham, a rich agricultural town, having a population of over 3000 thhabitants, and containing 12 Stores — 1 Academy, and 1 female Seminary.

From this place to Sebago Lake, the distance is about seven miles, and the construction of a branch from your road to this point, will connect with a Steamboat navigation of 30 miles, in extent, thereby securing the travel of this favorite route to the White Mountains, and the trade of the surrounding towns. There are at the present time, 6 Stage Coaches passing daily through this place.

Your road reaches the Saco river in the town of Buxton, which with the town of Hollis on the opposite side of the river, will furnish for the road a large amount of trade. Bar Mills are situated about a half a mile below the road, where the river has a fall of 20 feet.

At Salmon Falls, about 1 mile below Bar Mills, there is a fell of 30 feet at one point, and an additional fall in a distance of half a mile of probably 30 or 40 feet, the former being improved to some extent. When it is known that the amount of water flowing in the Saco river at these places is very nearly equal to the same stream at Saco, where with a fall of 38 feet it now drives about 100,000 spindles and a large amount of other machinery, some idea may be formed of the value of the water power at the places above mentioned.

Within the limits of these two towns, there are 23 Stores, 30 Saw Mills, 5 Grist Mills, 1 Cotton and 1 Woolen Factory, 4 Lath and 2 Planing Mills, and a considerable amount of other machinery. The amount of lumber annually manufactured exceeds 20 millions of feet, and there is an extensive business carried on in the manufacture of Shingles, Pails, Tubs, Sugar Boxes, Heading, &c.

The value of the articles manufactured being mostly products of the forests, exceeds \$400,000 annually. It will also be observed by reference to the preceeding tabular statement, that the agricultural products and the number of neat cattle and other animals in these towns are large, and compare favorably with other towns in the County of York. In the town of Hollis there are extensive quarries of granite of great beauty and value for building purposes,

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and large quantities will undoubtedly be transported to market when a cheap conveyance is furnished. It is estimated by intelligent business men, that the total amount of freight which will be furnished by these two towns, with the present trade, will exceed 16,000 tons annually.

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The Saco river has its principal source in the Notch of the White Mountains, and flowing in a Southeasterly direction, its volume is increased in the distance of a few miles by its mountain tributaries to that of a large and powerful stream. In its whole length it receives the drainage of a section of country of 650 square miles in extent. After it emerges from the highland district it runs for a distance of 60 miles through a rich agricultural country opening a beautiful and fertile valley through which a large trade flows.

The aggregate amount of fall available for manufacturing purposes at various places, within a distance of 21 miles above the point where your line crosses it, exceeds 200 feet.

It furnishes a highly favorable route for a branch to your road, the construction of which would further develope the capabilities of the country by bringing into use the whole of its valuable water power, and building up manufacturing towns along its banks. The day is probably not far distant when this branch will be extended up the valley of the Saco in a direct line towards the White Mountains, as far as Conway, New Hampshire, where it will meet a line already surveyed from Meredith to the same point, thus connecting your road by another attractive route with the roads of New Hampshire and Vermont.

The towns bordering the Saco and Ossipee rivers, which are tributary to your road, possess great natural resources and at the present time furnish a large and valuable trade. But when your road shall have been opened, it will like all similar works, materially increase the value of lands and the amount of trade, for the reason that it will give to the agriculturalists of this comparatively secluded district, nearly the same facilities of reaching the market, as those more favored towns in the immediate vicinity. It will call into existence new branches of trade, by furnishing a cheap and rapid means of transportation for heavy and bulky articles which at

present are comparatively shut out of market from the great expense of conveyance. The effect of railways is to equalize trade, and the value of commodities in different sections of the country; to reduce the cost of articles drawn from the cities of the seaboard by remote towns and increase the value of the products of the interior by lessening the cost of their delivery in market.

After crossing the Saco river, your road will pass through an agricultural country for the whole distance. On reaching Alfred, the Shire town of York county, you are in the midst of an exceedingly fertile and populous district. It is from this point that I would propose a Branch line, to which allusion will hereafter be made; extending Westerly to Winnipiseogee Lake.

The superiority of Portland, as a market, over any town East of Boston, for York county and the whole region to the North of your line both in Maine and New Hampshire, will with this branch lime, secure to your road nearly the whole of this valuable trade. In Berwick, at Salmon Falls, the point where your road unites with the Boston and Maine road, and in Somersworth on the opposite side of the river, are several Cotton Mills, having at present 37,000 spindles, and a Capital of over one million of dollars. At Great Falls, a short distance above, there are extensive manufacturing establishments, where there are 60,000 spindles in operation.

The large population and extensive manufacturing interests at, and in the immediate vicinity of the Western terminus of your road will naturally add much to the intercourse with the interior, and doubtless contribute largely to your business.

It is unnecessary to pursue the subject of the local trade of your line, further than briefly to allude to some of the leading articles which will constitute the bulk of its freight business.

Among the various advantages which indicate the great superiority of your road, the principal consideration is the fact, that for nearly its whole extent, the country is thickly populated, the soil fertile and in a high state of cultivation.

The surplus productions of agriculturalists must therefore compose a very considerable portion of the tonnage of the road. Large quantities of pressed hay, grain, beef, potatoes, cattle, sheep, &c., will be forwarded to market by this conveyance.

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Year. | Si 1844 | 1845 |

Per cent in four

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Cattle in great numbers are annually driven from various parts of this State, through York county to Brighton market, which together with those forwarded from that county, will of itself constitute a most important branch of business.

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arge &c., Experience both in this country and Europe shows, that the cost of transporting cattle on railways, is small in comparison with the loss of weight, and the time and expenses when driven. Dealers are enabled to take advantage of a favorable state of the market, and deliver their cattle at a given point, arriving with the greatest certainty, and in a saleable and fresh condition.

Immense numbers of cattle are now annually transported to various Atlantic cities of the United States, by railways, and this trade must continue to increase as new avenues are opened and more remote sections of country furnished with these facilities. It only requires the proper accommodations and a reasonable tariff of charges, to insure to your road a large revenue from this source.

Another important article of trade on your road, will be ship Timber, large quantities of which are sent to market annually. It is only the great expense of transportation by teams, that prevents a more extensive trade in this article at the present time. The rapid increase of ship building in the district of Portland, shows the importance of this branch of business, and the great demand for ship timber.

The following table exhibits the tonnage of Shipping owned and built in the State of Maine, and also the same for the District of Portland, from 1844 to 1848.

	PORTLA	ID DISTR	ICT.		ALL OTHER	DISTRIC	TS IN STATE
Year.	Ships owned, Tonnage.	Per cent. increase from year to year.	Ships built Tonnage.	iPr. ct. increase from year to year.	Ships owned. Tonnage.	pr. ct increase from year to year.	Ships built Tonnage.
1844	57,347		3,995		250,084	1	16,205
1845	64,191	12	7,976	100	255,868	21	23,129
1846	66,236	3	9,889	25	291,887	14	39,858
1847	74,046	12			310,312	63	54,511
1848		11	14,413	46	369,967	19	75,561
4	ent increase B	hips owned built a	45 161,		Per cent inc. of Ships owned 48 Per 4 4 Built, 366, in four years.		

The preceeding table shows that the Tonnage owned in Portland, is 18 1-4 per cent — and the Tonnage built is 16 per cent. of all, owned and built in the State.

The transportation of Lumber on your road will be a still more important branch of trade, than that of Ship Timber.

It is estimated by dealers in this article, that the total amount manufactured on the Presumpscot river, is from 8 to 9 millions, and the Saco, 30 to 40 millions of feet.

An immense amount of lumber must pass over your road in each direction from these rivers. To these great productions of the forests must be added, fire wood, headings, shooks, hoop-poles, wooden ware, &c., &c., in large quantities.

Fruit composes one of the articles of trade, of several of the towns, and it is estimated that 5000 barrels of apples are annually sent to market from one town only. The amount of merchandise transported by merchants in the several towns tributary to your road, will not at the present time fall short of 7000 tons annually.

Manufactured goods, together with the raw material will furnish freight in both directions, which now amounts to several thousand tons annually.

With this view of the character, resources, and productions of the country to which you look for local trade, I am decidedly of the opinion that the advantages of your road in this respect, are equal to, if not superior to most of the roads of New England.

Relative to the revenue that you may derive from the transportation of passengers, I will observe that the position and connexions of your road, the character and extent of the population along the route, are such as to give the strongest assurance of a large income from this source.

In addition to the great number of Stage Coaches and private conveyances which arrive at and leave Portland in this direction daily, there are numerous cross lines at Buxton, Alfred and other points which will concentrate the travel from a large section of the country to your road.

On its completion, many of the lines will change their relations, new routes will be opened, extending further into the interior, and

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The it will be of 1840 towns a road, we lation of tribute to

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running to particular stations on your line. By this means a large population will be brought to the support of the road, and the number of passengers greatly increased.

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The total population of the towns along the route of your road, it will be seen by referring to the statistical table, is as per census of 1840—41,000. To this should be added the population of the towns at and in the immediate vicinity of each terminus of the road, which probably is not less than 25,000, making a total population of 65,000 inhabitants, on and near your road, who will contribute to its business.

The following tabular statement shows the comparative density of population of the settied portions of different Counties of this State at the periods named.

	180	D.	1820	0.	1840),
Counties.	Square Miles.	Den-	Square Miles.	Den-	Square Miles.	Den-
York,	817	42	817	56	817	66
*Cumberland,	955	33	988	50	988	54
Lincoln,	950	29	950	49	950	66
Kennebec,	985	18	1047	38	1047	53
Waldo,	440	15	812	27	812	51
Penobscot.	390	8	1143	12	1649	21
Oxford,	623	16	1228	22	1540	24

Average density of population of country tributary to the road including Portland, is 91 per square mile

From the above statement, it will be perceived that York County from the year 1800 to the present time, has maintained a great superiority in the density of its population; no other county reaching it, up to 1848, [leaving the population of Portland out of Cumberland] except Lincoln. Again if we include the population of Portland in the portion of Cumberland, Oxford and York Counties showed on the map as being tributary to your road we find that the average density of population is greatly superior to any other equal portion of the State.

Comparing the population of this district of Maine with that of the State of Massachusetts, we find that the average density of the former 91, and that of the latter is 9% per square mile.

^{*} Not including Portland.

It appears from the reports of the various rail road corporations in the State of Massachusetts for 1848, that the total number of passengers transported by the main lines only, running out of Boston was over five times the population of the whole State, and that the freight transported by these and other lines within the limits of the State was equal to about 1 3-4 tons to each inhabitant.

There is no very great difference in the character of the inhabitants generally of Maine and Massachusetts, and making all due allowance for perhaps a less developement of the resources, and less intercourse in the former, it would appear safe to assume that the number of passengers transported on your road will amount to realy twice the number of the inhabitants tributary to it, or equal to an aggregate of 120,000 through and way passengers annually. From my knowledge of the resources of the country which will contribute to the trade of your road, and the result of rail road enterprises in Maine as well as in Massachusetts, I am led to believe that it will do a large freighting business, and that the amount of this trade will soon reach 60,000 tons per annum.

Applying about the present rates of fare between Portland and. Boston, and a low rate for transportation of freight, and we have the following results.

PROBABLE REVENUE OF THE ROAD.

45,000	Throug.	n passen	gers at	85 cts.	•	• 1	38,250,	
75,000	Way	do	46	75 "		•	56,000,	
60,000	Tons F	reight ce	arried o	ver half	the le	ngth		
	of th	e road,	at \$ 1,2	5, -	•		75,000,	
Mails,	&c.	•		•	•		5,000,	
		Total 1	eceipts,			8	174,250,	
1	Deduct !	50 per c	ent, for	expenses	, -		87,125.	
	٠	N	let recei	pts.,			S7,125,	
Which	is 7 1-2	per cent	on \$ 1,	155,500	, the c	st of th	he Road.	
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road for several years past has been, only abou. 36 per cent. of its receipts, which speaks well of the management of that road.

The expenses of the Boston and Maine road in 1847, were 43 per cent. of its receipts; this road however, carried a much larger amount of freight than the road abovementioned.

Should your road be operated with equal economy at least to that of the Boston and Maine road, the net income with the above amount of trade will be \$ 99,323, or over 8 1-2 per cent on the cost.

In submitting the above estimate, I have had reference not only to the present trade, but to the increase which immediately follows the opening of a new line of railway. Illustrative of this subject, I annex the following tabular statement of several railways in Massachusetts showing the estimated number of passengers before each road was built, and the number transported at different periods after they were put in operation.

.Name of Road.	Estimated No. passengers before opened.	gers soon af-	gers carried
Boston and Worcester, Boston and Lowell, Firehburg, Eastern, Boston and Maine,	23,500 37,400 71,790 121,700	262,830‡ 400,886* 327,034† 488,026† 460,426*	807,143 525,764 745,825 1,021,169 1,057,569

A very great increase of business in every portion of Massachusetts has followed the introduction of railways, and notwiting and ing many of them are competing lines yet the revenue of all has continued to increase rapidly (Note B.)

The new lines have developed the resources and increased the business of the country in a greater ratio than they have provided means for its accommodation.

The amount of travel between Portland and Boston at the sent time is very large, yet is small compared with what it will be, when the numerous lines now in progress shall have been completed.—

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^{*}For the year 1846.

[‡]For the year 1843.

[†]For the first whole year after the road was completed.

Your road will not only add materially to this amount of business, but it will be one of the great thoroughfares over which the rapidly increasing travel of the east and north will pass. It is a fact worthy of notice, that the two main lines running easterly from Boston, transported during the last year 2,078,738 passengers or 39 per cent of the whole number carried by all the lines running out of Boston.

When the great north-western line, reaching to Montreal, and the other trunk lines penetrating the interior of the State of Maine in several directions and extending on towards the Lower Provinces are completed, there will be a vast accession to the trade and travel in the direction of Boston.

It is necessary to anticipate but a few years when these extended lines will be in successful operation all converging to Portland as the chief commercial city of the State, and the important relations which your road sustains in connecting the great railway system of Massachusetts with that of Maine and Canada, will at once be seen. It perfects and forms part of a great line containing two important cities, to each of which, railways converge from almost every direction, concentrating an immense amount of travel.

At the eastern terminus of this line, the benefits of a more recent system of railways are but just beginning to be felt, but as this system is fast developing itself, a rich and an abundant harvest will soon be provided for the railways connecting Maine and Massachusetts.

Allusion has been made in another part of this report, to a proposed branch line to your road, which in its influence, upon your trade and the value of your stock, is scarcely second to your advantages at either terminus. This is a connection with the roads of New Hampshire and V mont, running westerly to Lake Cast plain and northwesterly to the Canada line.

The most natural point of divergence from your line to form this connection appears to be in the town of Alfred, a distance of about 33 miles from Portland and running as nearly in a westerly direction as the ground will permit, to the south end of Winnipiseogee

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Lake in the town of Alton, thence along its southwestern share to Gilford, when it would bear more westerly and probably intersect the Boston, Concord & Montreal Railroad near Meredith.

From this point, looking to a still more westerly connection, the above mentioned road would probably be followed for a number of miles to a point in the town of Northfield, where a branch could be constructed, connecting that with the Northern road at a point in the vicinity of the village of Franklin. This would perfect a direct westerly line of railways from Portland to Burlington on Lake Champlain.

This must be regarded as an important connection and one which not only brings Lake Champlain nearer to Portland than Boston, but also the upper Connecticut and Passumpsic valleys, through the Boston, Concord & Montreal road to Haverhill.

The project of a road from Montpelier, Vermont, to the Connecticut at Wells river village or Bradford, has been much discussed. Should this be constructed, uniting with the Boston, Concord & Montreal road at or in the vicinity of Haverhill, by constructing the other link from the last mentioned road at Winnepiseogee Lake to your road in Alfred, another and more direct line of railway communication from Portland to Lake Champlian at Burlington, would be completed.

This materially reduces the distance below that by the way of the Northern and Central road to Montpelier as above described, and as it strikes the Connecticut valley at a point from 30 to 40 miles above any other road leading from Lake Champlain to the seaboard, it enjoys unusual advantages. It not only presents a much shorter route for the Western trade, but its manifest tendency is to intercept the trade of the upper Connecticut and Passumpsic vallies, turning it into a new and more direct channel to an Atlantic market. Your road would then constitute the last and most important link of this great chain over which the accumulated trade of several of the rich at districts of New England could reach the seaboard. With this view of the question, it appears a proper subject of investigation as showing the favorable position and advanta-

ges of your line for the western trade, and involving considerations of much interest to every friend and stockholder of the road.

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For a more perfect illustration of the advantages of this route, its relative position to the country it is designed to accommodate, and to other channels of trade, 1 refer to the map accompanying this report.

The beneficial effects of rail roads on the value of lands, is a subject with which all are familiar and to which I need hardly here allude. These benefits are not confined to the immediate vicinity of rail roads but extend to large districts of country, considerably remote from the line, where the increased value thus given to lands often far exceeds the cost of the roads.

In the State of Massachusets, the immense increase in the value of real estate, has resulted mainly from the introduction of rail cads, and equally favorable results have followed their construction other parts of the country. The increased valuation of real and personal estate in the city of Boston only, from 1840 to 1848, most of which may be ascribed to the effects of her rail ways, was about sixty millions of dollars, or more than the cost of all the roads in the State.

To the city of Portland, your road will bring advantages far be yound what most of its friends can estimate at this time, not only securing the rich trade of the western part of the State, now in danger of being drawn from us by competing lines, but opening to her a new and favorable route to other States, competing successfully with the most fortunate lines to Boston from the Connecticut valley and Lake Champlain. From her real estate owners and business men, and in fact, from all classes of her citizens, your road should receive a hearty and a liberal support.

Railways have been the great agency that has given to New England her present commercial and political importance. Boston and the State of Massachusetts have given examples in this respect which are worthy of imitation. But we need not go beyond the limits of our own State for proof of prosperity clearly attributable to the influence of rail roads. The most casual observer cannot

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fail to be impressed with the evidences of prosperity at Portland and along the line of the new roads entered upon in Maine within the last four years. The results already reached are but the promises of greater ones yet to come, and hold out to the citizens of Maine the most flattering prospect for the future, and encourage them to perseverance in the noble work of perfecting a great system of railways within her own borders.

Maine has been regarded as behind her sister States in enterprise and capital, mainly from the fact that she has done less for rail roads than most of the States similarly situated. Various causes have conspired to hold in check the spirit of railway enterprise, elsewhere so successful, and among others the want of sympathy between the people of the State and the parties constructing them, has been one chief cause. At the present time however, a different feeling prevails, but it will take years to achieve in Maine what has been done elsewhere as will be seen by the following table showing the comparative extent, population and miles of rail roads finished and in progress in the six New England States.

Name of States.	Square miles.	Population 1840.	R.R. built miles.	R. R. in prog. mils
Maine,	32,628	501,793	159	79
N. Hampshire,	9,491	284,574	296	190
Vermont,	10,212	291,948	142	199
Massachusetts.	7,500	737,699	928	25
Connecticut,	4,764	309,978	336	100
Rhode Island,	1,340	108,830	64	

If however, Maine is behind others in the amount invested in railways she is not wanting in enterprise or public spirit.

With vast commercial and manufacturing advantages she only requires the extension of railways into the remote portions of the interior to become among the first in commercial and political importance. Already she is in advance of every State in the Union in the comparative extent of her interests in shipping and ship building. [Note C.]

With this examination of the merits and advantages of your road

the beneficial effects it will have on the towns and country in its vicinity and the State at large, I can state with great confidence, that I believe it will be among the best paying roads of New England, that its trade will continue to increase till all your great lines are completed and your connections with Canada and the Lower Provinces are perfected.

I have the ho nor to be

Gentlemen,
Your obedient, servant,
A. C. MORTON,

Consulting Engineer.

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NOTE A.

COSTS OF VARIOUS RAIL ROADS IN MASSACHU-SETTS.

Double	length &	Total cost.	Cost per mile.
252 131 152 441 16 17	21,13 27,62 79,84 47,60 66,62 27,80 53,64 52,35 58,07 42,24 56,12 12,35 45,00	600,000 2,013,687 3,571,832 3,031,106 4,650,392 587,116 2,584,143 1,588,184 3,095,393 1,145,982 2,945,630 283,248 2,080,903 1,873,895	28,395 72,907 4£,019 63,678 69,804 21,119 48,177 30,337 53,304 27,130 52,488 22,935 46,246 43,078
	Double Track.	Double length & branches. 21,13 27,62 13½ 79,34 15½ 47,60 44½ 66,62 27,80 53,64 52,35 16 58,07 42,24 17 56,12 12,35 11½ 45,00 £ 43,50	$\begin{array}{ c c c c }\hline Double & length & 3\\ \hline Track. & branches. \\\hline & 21,13 & 600,000\\ 25\frac{3}{4} & 27,62 & 2,013,687\\ 13\frac{1}{4} & 79,34 & 3,571,832\\ 15\frac{3}{4} & 47,60 & 3,031,106\\ 44\frac{1}{4} & 66,62 & 4,650,392\\ 27,80 & 587,116\\ 53,64 & 2,584,143\\ 52,35 & 1,588,184\\ 16 & 58,07 & 3,095,393\\ 42,24 & 1,145,982\\ 17 & 56,12 & 2,945,630\\ 12,35 & 283,248\\ 11\frac{1}{4} & 45,00 & 2,080,903\\ \mathcal{E} & 43,50 & 1,873,895\\ \hline \end{array}$

Average cost per mile of the above roads, - - - 50,621

NOTE B.

STATEMENT SHOWING THE INCREASE OF RECEIPTS ON VARIOUS ROADS.

			Passengers.	Freight.
Western Railroad,	Income	1842,	\$266,447	\$246,351
"	"	1848,	551,038	781,030
		_	rs, 284,591	634,600
Total, 819,290, or 16	0 per cen	t.		
Beston and Worcester,	Income	1840,	170,855	96,691
6.6	"	1848,	332,885	383,398
Inc Total, 448,737, or 16			rs, 162,030	286,707
Boston and Providence,	Income	1840,	134,651	67,950
"	"	1848,	231,262	123,1 I 1
In Total, 151,772, or 75	crease in		ars, 96,611	55,161
Eastern Railroad	- m**	1841,	257,734	41,839
(6	"	1848,	378,068	101,088
Inc Total, 179,583, or 60		-	ars, 120,334	59,249
Nashua and Lowell,	Incomo	1844,	47,165	47,421
"	"	1848,	72,858	97,418
•	Increase	in four y	ears, 25,703	48,997
Total, 74,700, or 79		•		•
Boston and Lowell,	Income	e 1840 ,	127,005	104,569
	"	1848,	201,218	260,129
Total, 229,773, or 99			rears, 74,213	155,560

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6,691 3,398 6,707

57,950 23,111 55,161

11,839 01,088 -----59,249

	Note B continue	ed.	
Boston and Maine,	Income 1846,	223,191	125,943
"	" 1848,	332,161	179,466
Total, 162,493, or 4	Increase in two yo	ears, 108,970	53,523
Fitchburg,	Income 1846,	128,738	157,906
44	" 1848,	220,198	266,065
Total, 199,619, or 6	Increase in two yes 9 per cent.	ars, 91,460	108,159
Baltimore and Ohio,	Income, 1847,	403,812	647,509
66	" 1848,	445,254	717,212
Total, 111,145, or 1	Increase in one y per cent.	ear, 41,442	69,703

TABLE SHOWING THE INCREASE OF PASSENGERS ON VARIOUS ROADS.

Names of Roads.	Year	Number of Pas- sengers.		Number of Passen- gers.	No of yrs	Increase.	Per cen
Boston and Lowell,	1846	400,986	1848	525,764	2	124,918	3
Fitchburg,	1845	196,669		745,825	3	549,156	28
Western,	1842	190,436		405,614	6	215,178	11:
Boston & Worcester,	1843	262,830		807,144	5	544,313	20
Old Colony,	1846	213,144		552,203	2	339,059	15
Eastern,	1842			1,021,169	6	590,160	11
Boston & Maine.	1846	460,426		1,057,569	3	597,143	
Boston & Providence,		476,525		569.127	2	92,612	
Utica & Schenectady,	1843		i	270,413	5	122,545	8
Utica and Syracuse.		114,843		216,807	5	101,964	8
Anburn & Syracuse,	- 1	83,316	i	154,215	5	71,899	8
Auburn & Rochestr.		105,190		209,259	5	104,069	9
Tonawanda,	i	67,604		148,443	5	80,839	12
Attica and Buffalo.	1	68,896		146,235	5	77.339	11
Baltimore and Ohio,	i	149,533	i	270,616	5	121,083	

NOTE C.

TONNAGE OF SHIPS BUILT IN THE PRINCIPAL SHIP BUILDING STATES.

Year.	Penn.	N. York	Mass.	Maine.	exceeds	Maine exceeds NYork	exceeds
1845	15,819	29,342	25,961	31,105	15,286	1,763	5,144
1846	15,784	33,753	24,321	49,747	33,968	16,494	25,426
1847	24,126	50,994	27,769				
1848	29,638	68,434					
Total 4 y		182,023					

Total amount built by these four States in four years, 619,181. Of which Maine has built 234,374—equal to 38 per cent. of the

whole.

TONNAGE OF SHIPPING OWNED IN THE PRINCIPAL COMMERCIAL STATES FROM 1839 TO 1848, INCLUSIVE.

· January and the state of the

Name of State.	188	1844	1845	1846	1847	1848
			625,875			
Massachusetts,	526,364	501,207	524,994	541,520	577,810	641,288
Maine,	282,285	307,431	320,059	358,123	384,353	456,665
Louisiana,	109,076	161,769	170,525	181,258	213,538	227,009
Pennsylvania,	112,359	128,341	147,802	148,069	182,997	211,552

911,78

100,10

SHIP

Taine sceeds Mass. 5,144 25,426 35,779 50,608 6,957

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1848 15,788 11,288 16,665 27,009 11,552

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