HOUSE....No. 214.

Commonwealth of Massachusetts.

IN SENATE, January 13, 1860.

Ordered, That so much of the Governor's Address as relates to the construction of a Ship Canal between Buzzard's Bay and Barnstable Bay, be referred to a Joint Special Committee, to consist of three on the part of the Senate, and seven on the part of the House.

And Messrs. Luce, Fry, and Watson, are appointed on the part of the Senate.

Sent down for concurrence.

S. N. GIFFORD, *Clerk*.

HOUSE OF REPRESENTATIVES, January 14, 1860.

Messrs. Merrill, of Boston;
J. J. Babson, of Gloucester;
Rider, of New Bedford;
Shurtleff, of North Chelsea;
Parker, of Wales;
Horton, of Reading, and
Lewis, of Rochester,

Are joined on the part of the House.

WILLIAM STOWE, *Clerk*.

Commonwealth of Massachusetts.

House of Representatives, March 27, 1860.

The Joint Special Committee, to whom was referred "so much of the Governor's Address as relates to the construction of a ship canal between Buzzard's Bay and Barnstable Bay," together with the accompanying documents, with power to send for persons and papers, have summoned witnesses, heard testimony, examined documentary evidence, and having duly considered all of the same, respectfully submit the following

REPORT:

The documents submitted to the legislature by his Excellency, and referred with his Address to your Committee, are as follows:—

1st. Letters of Professor A. D. Bache, Superintendent of the Coast Survey Department.

From the United States Topographical Bureau:—

1st. A manuscript copy of a Report on the Proposed Canal for connecting Cape Cod and Buzzard's Bays: By the Board of Internal Improvement.

2d. Engraved copy of a Map of the Survey, by Major Perrault, United States Topographical Engineer, accompanying said Report.

From the Coast Survey Office :—

1st. Two engraved sheets of Preliminary Charts of the Coast Survey of Massachusetts, showing the sailing lines from Boston to Buzzard's Bay, outside, and the Canal Route from Sandwich, on Cape Cod Bay, to Back River Harbor, on Buzzard's Bay.

2d. Report of Major P. H. Perrault, Topographical Engineer, of February 15, 1825, embracing a history of the localities, as well as the practicability of the Canal object.

3d. Plan and estimate of the Buzzard and Barnstable Canal, by the Board of Internal Improvement, November 13, 1829. All of which are annexed to this Report, that they may be printed, as recommended by his Excellency. A survey was made for a ship canal to unite Barnstable with Buzzard's Bay in 1818, but no report or maps relating to the same have been obtained.

It appears, however, that from an early period the attention of individuals and of government has been directed to investigate the practicability and necessity of providing a passage through the isthmus of Cape Cod, in order to avoid the dangers of outside navigation, and provide a shorter and better route along our coast for vessels employed in the coasting trade of the United States.

The attention of the Committee was first directed to the saving in distance which might be made by a ship canal or channel at the point proposed, and they have ascertained the comparative distances between the proposed route and that prescribed, by sailing directions, for coasters outside of Cape Cod.

1st. From Boston Light through Vineyard and Nantucket Sounds, around the Cape, to Saughkornet Point, 148 nautical miles.

2d. From Boston Light outside of Nantucket Shoals, and outside of Cape Cod to Saughkornet Point, 198 nautical miles.

3d. From Boston Light by the proposed canal and Buzzard's Bay to Saughkornet Point, 83 nautical miles.

Thus it will be seen that there exists a difference in favor of the canal route, in distance, by way of Vineyard and Nantucket

Sounds, nearly one-half, or 65 miles, and in favor of the canal route, by Nantucket Shoals, more than one-half, or 115 miles.

An approximate estimate of the number of vessels passing over this portion of our coast, which would unquestionably avail themselves of any mode of transit by which their progress would be facilitated, and their safety insured, may be obtained from the following statement of returns received from the Light House Department, Washington :—

Returns of Vessels passing Cape Cod Light House.

During Quarter ending	Steamers.	Sail Vessels.	Total.
June 30, 1857,	88	6,406	6,494
September 30, 1857,	110	6,988	7,098
December 31, 1857,	84	5,521	5,605
March 31, 1858,	83	2,325	2,608
June 30, 1858,	84	5,982	6,066
September 30, 1858,	130	5,851	5,981
December 31, 1858,	112	5,391	5,503
March 31, 1859,	107	2,599	2,706
June 30, 1859,	133	5,293	5,426
September 30, 1859,	117	6,112	6,229
December 31, 1859,	73	6,296	6,369

This number, for the whole of the above period returned, gives an average daily passage of $60\frac{42}{100}$, or of $30\frac{21}{100}$ each way, considerably exceeding the prospective increase of commercial trade, as assumed thirty-five years ago.

In considering localities, and the practicability of constructing a canal to connect Barnstable Bay with Buzzard's Bay, your Committee are not able to present any considerations drawn from recent surveys and exploration, but adopt that route generally conceded to be the best, as "surveyed in 1818 by Col. L. Baldwin, at the instance of Messrs. Israel Thorndike, Thomas Perkins, and other gentlemen of Boston," and by the United States government, in 1825.

This route follows successively from east to west, the valleys of the Scusset and Monumet Rivers. Its whole length is about eight (8) miles. (See map.) Tracing it in a more general man-

ner, as followed by the Board of Internal Improvement in their Report, it departs from Barnstable Bay, at a point about one mile north from Scusset Harbor, and thence following in a southern direction the line between the salt marshes and the foot of a high bank lying to the west, through which the Scusset River winds, extends to the valley of said river; thence following said valley to the head-waters of said river, and crossing the high ground which divides the head-waters of the Scusset from those of the Monumet, to the mouth of Herring Pond Brook; thence following the valley of Monumet River to a point about three-fourths (¾) of a mile from its mouth, and thence southerly, entering Back River Harbor at the mouth of Back River, in Buzzard's Bay.

The ground through which this is laid, is described as offering on its surface a sandy soil, embedding loose stones and gravel, and no great difficulty is anticipated in digging to any depth required for the bottom of the canal. This appears to be satisfactorily established from the result of Major Perrault's experiments in digging wells to ascertain the nature of the ground along the route, minutely described in his report, with this assurance,—"no difficulty is to be encountered in the execution of the intended canal from the nature of the ground itself," which puts beyond doubt the practicability of Barnstable and Buzzard's Bay canal, and that in its construction there is no serious obstacle to be met with.

The Board of Internal Improvement, in a plan and estimate submitted to congress on the 13th of November, 1829, based their hypothesis upon the construction of a canal, suited *not* to any amount or class of coasting trade, but of the following dimensions:—

At water-line or surface, sixty (60) feet in width, thirty-six (36) at the bottom, and eight (8) feet in depth, furnished with regulating tide-locks at each extremity, and the bottom of the canal on a plane of low tide in Barnstable Bay, the water necessary for lockage to be supplied from the tides of said bay. Upon this hypothesis the excavation rendered necessary in constructing said canal would be only about nineteen feet in depth upon an average, but its capacity does not appear adequate to the demands of commercial trade upon this coast, as will be seen

from the following statement of the draught of vessels, steam and sail.

The Baltimore line of side-wheel steamers, from Boston, require a depth of water from thirteen (13) to fifteen (15) feet. The Philadelphia line of propellers from fifteen (15) to seventeen (17) feet. The deepest coastwise sail vessels a depth of water not exceeding fifteen (15) feet, and the majority of coasting vessels from eleven (11) to twelve (12) feet, under freight. It therefore appears quite evident that a canal, such as was proposed, could be of but little use or value, and your Committee are unanimously of opinion that the canal, if constructed, should be of a capacity proportionate to the demands of all our commercial interests, with a depth of water of sixteen (16) or eighteen (18) feet at least, and of other corresponding dimensions. In other respects, the hypothesis above referred to may be adopted. As to the location and construction of locks, Major Perrault states in his report: "there will be no difficulty when the magnitude of the works shall be fixed upon."

At the eastern extremity of the proposed canal in Barnstable Bay, the common rise of tide is ten (10) feet. At its western extremity in Buzzard's Bay, the common rise of tide is four (4) feet eight (8) inches, and upon an average, about three hours earlier in the latter than in the former. The medium of tide-water in Barnstable Bay is nearly on a level with high tide in Buzzard's Bay.

The plane of low tide in Buzzard's Bay is eleven and three-tenths ($11\frac{3}{10}$) inches above the plane of low tide in Barnstable Bay. The tide waters ascend about two (2) miles in Scusset River and four (4) miles in Monumet River, so that there intervenes but about two (2) miles from the head of one bay to the head of the other. From an analysis of the relative position of the tides in Barnstable and Buzzard's Bays as they rise and fall, it may be observed that the water in Barnstable Bay will be above, or higher than the water in Buzzard's Bay, for about seven (7) hours and twenty-five (25) minutes, in each alternate period of twelve (12) hours and twenty-five (25) minutes. The excess, or greatest difference,—as calculated from common tide in each bay,—being seven (7) feet four (4) inches, and from that gradually decreasing to level. In Buzzard's Bay the water will be above that in Barnstable Bay nearly five (5)

hours in each alternate twelve (12) hours and twenty-five (25) minutes, three and one-fourth (3′3″) feet at its highest point, and thence to level. At two different times during the rise and fall of tides, the waters in each bay are at level. From the consideration of this fact, there naturally arises a question as to the practicability of constructing an open ship channel between the two bays unincumbered by locks or obstruction, other than its necessary bridges, viz.: for one railway, and one, or, at most two, roadways.

In this case, as will be readily perceived, the strongest volume of water by far, will in its forced passage through the channel have a general tendency from east to the west, and such tendency for about two-thirds of all the time, which, not only from its natural effect in keeping the channel free from silt, might result in vast benefit toward the improvement if necessary of the channel in Buzzard's Bay, hereafter described, and establishes, certainly, the importance of giving this point a more careful consideration, which can be done only by subsequent surveys and investigation.

It appears from the report of the Board of Internal Improvement, that there is, near the termini of the proposed canal, in either bay, a depth of eight (8) feet of water upon the bars at low tide, viz.: in Barnstable Bay one hundred and twenty yards from the shore, and in Buzzard's Bay one hundred and seventy yards from the shore.

Maj. Perrault differs not materially from this statement. He gives a depth of "ten (10) feet upon the bars which in equinoctial time might be reduced to eight and one-half feet, which limits the navigation to vessels drawing from eight to nine feet." Capt. Samuel B. Buzzey, however, who has been a pilot in Buzzard's Bay for ten years, and Capt. H. G. Packard, of Sandwich, a mariner for twenty-eight years, engaged in the coasting trade, sailing in and out of Back River Harbor for twenty years, both agree as to easy navigation in Buzzard's Bay, and to the existence of a channel which appears not upon the Coast Charts. They have taken vessels of deep draught to Back River Harbor at all stages of the tides.

Capt. Packard sailed a packet from Back River to and from New York for seven (7) years, making four trips in three months, summer and winter; has known vessels drawing twelve

feet water to sail in and out in regular trips, and never knew one to wait for the tide. Last year he sailed his own vessel there at low tide, drawing ten and one-half feet of water. "It was always handed down to him that there was three fathom [18 feet] of water at high tide, and thirteen feet at low tide, from Back River out, and he doubts not its correctness, though the channel is crooked."

Up to Wing's Neck light there is water to any required depth; thence to Back River is seven miles, and between these points occur two bars, lying off Rocky Point, of about thirty feet in width, which it might become necessary to dredge in order to straighten the channel, so as to give it a direct course of the required depth. These two gentlemen concur in the opinion that if such an improvement should be necessary, the channel once dredged, would remain permanent, as the bottom is of mud and clay, upon which the waters have not acted, to produce any change within their recollection. The channel near the entry into Barnstable Bay is intercepted by a bar over which is but eight or nine feet of water at low tide, and which it might become necessary to remove, in the construction of an external harbor opening in deep water. Capt. Pelham Gibbs, master of a vessel for a great number of years, confirms the views above presented, and establishes this further fact that Barnstable Bay, near the proposed terminus, affords an excellent anchorage.

Indeed, both harbors offer in some respects, all the advantages which can be desired. The evidence tends to show that they have one of the most essential requisites for protection to vessels when not at sea, a sound, tenacious bottom of clay or mud, which constitutes the best anchorage. In Buzzard's Bay, Back River harbor is entirely protected from storms by the adjacent coast, so that little or no improvement will be necessary, unless it should be deemed advisible to enlarge its dimensions, which may be easily accomplished.

The improvement of Barnstable Bay harbor is recommended by the "Board of Internal Improvement," "by two wharves projecting in advance of the lock, the western a length of one hundred and ten (110) yards, the other of fifty-seven (57) yards, as assisting vessels in and out of the lock, and the northern will, besides, afford a shelter against the northerly winds,

whilst the peninsular of Cape Cod will be a protection against other winds." Capt. Gibbs is of the opinion that an extension pier of considerable length may be required to form a harbor of sufficient dimensions, and to afford protection against the heavy sea from northerly and north-easterly gales. In which case he believes there would result no silting up of said harbor by the changing of sand banks or deposit of tidal matter, and considers the work of easy construction.

That some outlay will be required, it is quite evident, but great expense is not anticipated. To whatever extent required, the materials for construction are found in abundance, in the immediate vicinity, upon the shore itself.

In regard to the harbor's improvement, it is said in the report of Maj. Perrault, that "there will be no difficulty when its magnitude shall have been fixed, as the soil is extremely favorable for the work."

In addition to the harbors at the termini of said canal, vessels will have on this route other harbors of refuge, viz.:—

Plymouth, Mattapoisett, New Bedford, &c., a comparative clear sea and no dangerous coast.

No evidence appears, to show that the navigation of Barnstable Bay is, at any time, intercepted by ice, and the same may be said of Buzzard's Bay below Wings Neck.

Above this last point, and from that to Back River, the Bay is, according to the severity of winter, several times frozen over, but it is early broken up by a succeeding change of weather.

Capt. Packard, who has for so many years sailed upon the waters of said bay, is of the opinion that the frequent navigation resulting from the construction and use of a canal, will keep it entirely free from ice.

This, in connection with other evidence received in regard to the navigation of a canal in mid winter, by the removal or breaking up of its increasing and accumulating ice, renders it probable that no obstruction will occur in consequence thereof, in the canal or its adjacent bays, at any time when the port of Boston is admissible of entry by shipping.

In order to arrive at an approximation to the cost of construction for a canal suited in capacity to any demand, your Committee have procured the testimony of engineers, and others, acquainted by theory and practice with works of this

nature, who unanimously concur, as to the undoubted practicability of making an adequate canal and suitable harbor improvements.

Estimates have been furnished of its cost, based upon different plans, made up from the government survey maps, but without an examination of the premises or direct knowledge of localities. The amount of estimates differs according to the magnitude of the work assumed, but it is believed that the ultimate cost will not exceed the sum of twelve hundred and fifty thousand [$1,250,000] dollars for a canal adapted in all its requirements to our coasting trade, with all harbor improvements.

This may be considered a trifling sum, when its importance is considered in connection with the history of other works of the kind, in this and in other countries. For example,—the Welland Canal, in Canada, and the Saut St. Marie Canal, in Michigan, works of not greater importance than that under consideration, have been constructed at a far greater expense than this will require. The Delaware and Chesapeake Canal, uniting the Delaware and Chesapeake Bays, extends thirteen and one-half miles, and for three miles requires a deep cut, through a ridge which is eighty-four feet above tide-water, and seventy-six feet above the summit level of the canal.

It has two tide and two lift, and cost $1,354,336.

The Caledonian Canal, in Scotland, is navigable by the largest class vessels, being twenty feet in depth, was built for a more direct inland navigation, and to avoid the dangerous passage by way of the Orkneys. It connects, by a chain of lakes, the Atlantic coast with Murray Frith, in the North Sea, is twenty-two and one half [22½] miles long, and has twenty-seven locks. Loch Oich is its summit height, and is about 215 feet above the outlets.

The Helder, or Great North Holland Canal, in Holland, extends from Amsterdam, northerly to Nieuwedeip, in the Texel, through a low country of alluvial deposit and treacherous soil of about forty feet in depth. The canal is of sufficient capacity to admit the passage of frigates and first-class merchantmen, and is of a width that two can pass each other with ease. Its whole length is fifty-one miles, its width one hundred and twenty-three, and one-half feet at the surface line, thirty-

one at the bottom, and its depth twenty and one-half feet. It has three divisions, with tide and passage-locks, the lock-foundations being forty-three feet in depth, to insure safety. Its summit level is only three feet and eight inches [3.67] above the outlets. Horses are used as a motive power on this canal, and the time required in making its passage varies from ten hours to four days, according to the size of the vessel and the direction of the wind.

Artificial harbors, also, are not an experiment.

An artificial harbor and breakwater in Cape Henlopen Road, Delaware, were completed in 1825 at a cost of $2,500,000. Its site is directly exposed to sea-winds from the Atlantic, with tides of above ten feet.

The artificial harbors of Dunkirk and Toulon, in France, were erected at great expense, the whole system of dams which inclose them being built from the bottom of the sea.

The harbor of the Helder, at the northern termination of the Helder Canal, is formed by ingeniously diverting the flood and ebb currents, from and into the Zuider Zee, in front of the entrance of the great canal.

From the effect thus produced, with dredging, the harbor was first increased to nineteen feet in depth, and subsequently to thirty feet.

There are but few sea ports, perhaps no open tide-harbor for sea-rigged vessels, upon which more or less capital has not been expended for protection and improvement.

In view of the considerations above presented, establishing the entire feasibility of uniting the Bays of Barnstable and Buzzard's by a ship channel or canal, what will be its uses and value to commerce when constructed?

Distance alone considered, there would be, in one year, a saving of nearly 6,886,775 nautical miles transportation of merchandise, along a dangerous coast, by vessels from Boston and the east to southern ports, without taking into consideration any progressive increase of trade.

Its advantages may, however, be best appreciated by contemplating the great mass of dangers through which the largest portion of our commerce passes, and which would be avoided by a canal. These are the numerous shoals extending to the southward and eastward of Nantucket Island eighteen miles seaward, on which the currents are rapid.

The numerous shoals of Monomy Island.

All the easterly approaches to Nantucket Island, and the passages between that and Martha's Vineyard.

Bishop and Clerk's, Horse-Shoe, Wreck Shoal, L'Homme de Dieu, Succonesset, Hedge Fence, Middle Ground, and Spanish Meadow Shoals, dangers which interfere with the navigation of the sound, as indicated upon the Coast Survey Charts.

Capt. Gibbs says, of the navigation around Cape Cod: "It is very difficult and dangerous, more dreaded by mariners than any within his knowledge, and that there is none approximating to it upon the coast of the United States."

The Board of Internal Improvement present in their report, as reasons for the construction of a canal, the following:—

1st. The importance of this link of inland navigation, parallel to the coast.

2nd. The location of the work between growing commercial cities like New York and Boston.

3rd. The progressive increase of population.

4th. The facility which that communication will afford for travelling purposes.

5th. The shorter route it will offer to our coasters, compared with that around Cape Cod; to which must be added, the avoidance of a perilous navigation upon a coast memorable for its disastrous shipwrecks, resulting in so great a loss of life and property.

In this connection, your Committee deemed it important to obtain returns to lay before the legislature, giving statistics of the loss of life and property occurring upon this part of our coast, but no records containing such information are kept in any department of the General Government, and the only means of obtaining it from files of newspapers, in which such statistics were recorded at the time; from citizens resident on and around Cape Cod; from insurance returns or memoranda; keepers of light-houses, and similar sources of information. This, the limited time afforded to the Committee, has not permitted them to do; but the subject, at this stage of the inquiry, hardly needs so fearful a computation, when we have the testimony, in addition to other facts already adverted to, that in one storm, a few years ago, a hundred vessels were cast away

on this shore, nearly all of which were totally wrecked, and the bodies of eighty or more seamen, victims to a dangerous coast, were found scattered on the beaches about Cape Cod.

The matter now under consideration, has been recently the subject of inquiry by the Boston Board of Trade, and your Committee have had the pleasure of a conference with Charles G. Nazro, Esq., chairman of the committee of that body, conducting this inquiry; and he has submitted to your Committee some of the results of their inquiries, embodied in a communication from Hon. Lorenzo Sabine, Secretary of the Boston Board of Trade, which your Committee here present entire, for the purpose of showing how the construction of the proposed canal will probably benefit the trade of our principal seaport.

OFFICE BOARD OF TRADE,
BOSTON, Feb. 20, 1860.

CHARLES G. NAZRO, Esq., *Chairman of the Committee of this Board, on the Cape Cod Ship Canal:*

My Dear Sir,—I regret that no statistics are known to me which will enable me to answer *all* of your inquiries; still, I may give you some information of value.

You ask first—"What number of vessels from southern ports in this country, and elsewhere, come round the Cape?"

To this I answer, that I have ascertained that 33 steamers, 62 ships, 70 barques, 68 brigs and 360 schooners—in all, 593 vessels—arrived at Boston from the South during the months of January, February and March, 1859, which, I need not say, are the stormiest parts of the year. The coastwise entries at the Custom House, in 1859, were 8,415; but, as our laws do not require every vessel employed in the coasting trade to enter, the number of arrivals must have been greater, and probably, quite 10,000. Our own marine reporter, and other reporters consulted by him, estimate the number as even more; and, we all agree in the conjecture that, two-thirds were from ports south of Cape Cod.

You inquire next, the—"Number and character of steamers plying between Boston and southern ports, tonnage, &c."

I give you the particulars, thus:—

On the Philadelphia Line,

The "Kensington," about	1,000 tons.
The "Phineas Sprague," about	1,000 "
The "Cambridge," about	900 "
	2,900 tons.

On the Baltimore Line,

The "Joseph Whitney," about	1,000 tons.
The "William Jenkins," about	1,000 "
	2,000 tons.

From Providence to Baltimore, via Norfolk,

The "S. R. Spaulding," about	1,200 tons.
The "Benjamin Deford," about	1,200 "
	2,400 tons.

On the Norfolk Route, &c.,

The "City of New York," about	575 tons.

In addition, two iron steamers of about 1,100 tons each, will be placed on the line from Boston to Charleston, S. C., as early as July of the present year. So again, as you are aware, a committee of this board have under advisement the construction of two steamers of 1,500 to 1,800 tons each, to ply between this port and New Orleans.

Your third question is the—"Distance which would be saved by the Canal."

I understand, full 120 miles, and perhaps 10 or 15 miles more.

You ask in the fourth place, the "number and character of vessels wrecked between Nantucket Shoals and Boston, in consequence of coming round the Cape?"

To this, as in our conversation, I reply, that the necessary facts can be best ascertained by inquiries of old persons in the different towns on the Cape. If the committee of the legislature will delegate one of their number to visit these towns, a mass of information would be obtained, I cannot doubt.

To your last question, "Is there any other point better calculated for the purpose than the one proposed?" I make no answer, simply because I am not competent to judge, and because the proper place for the canal is to be ascertained only by a careful survey.

As suggested in our interview, I append some statistics of our trade with the South, confining myself, however, to our imports, for the reason that the figures for the value of our exports are to be ascertained with accuracy by personal visits to the dealers in fish, domestic goods, boots and shoes, furniture, &c., &c., who ship merchandise to that section.

Imports in 1859, *by sea.*

COTTON.

	Bales.
From New Orleans,	144,028
Mobile,	54,945

	Bales.
From Charleston,	27,401
Savannah,	28,443
Apalachicola,	25,324
Galveston,	25,520
Wilmington, N. C.,	5,371
Philadelphia,	3,688
Norfolk,	327
Pensacola,	71
Baltimore,	66
Bales,	315,184

CORN.

	Bushels.
From New Orleans,	10,155
Virginia,	433,685
Maryland,	487,408
Pennsylvania,	466,238
Delaware,	113,828
Bushels,	1,511,314

HIDES.

	Number.
From New Orleans,	108,865
other ports, South,	70,473
	179,338

COAL.

	Tons.
From Philadelphia,	370,827
Alexandria,	47,044
Baltimore,	44,851
other places,	107,603
Tons,	570,325

NAVAL STORES.

	Barrels.
From ports in North Carolina and elsewhere, Rosin, Turpentine, Tar, Pitch, &c.,	122,984

RICE.

	Casks.
From Charleston and elsewhere,	8,865

FLOUR.

	Barrels.
From New York and Albany,	65,477
New Orleans,	153,045
Fredericksburg,	6,450
Georgetown,	8,307
Alexandria,	12,162
Richmond,	49,945
Philadelphia,	112,519
Baltimore,	133,533
other places,	12,651
Barrels,	554,089

SUGAR AND MOLASSES.

Sugar, hhds.,	8,711
" barrels,	31,125
" bags,	200
" boxes,	3,551
Molasses, hhds.,	9,571
" barrels,	5,118

TOBACCO.

Hogsheads,	1,447
Bales,	7,382
Boxes and kegs,	64,316

These are the principal imports from the South. Our trade with New Orleans alone cannot be less than twenty-five millions of dollars, annually, and with all the ports of the southern States, must be, I think, full forty millions.

Very truly your friend and servant,

LORENZO SABINE, *Secretary.*

Upon a full consideration of all the matters committed to them, the Committee are of opinion that the construction of a ship channel or canal, with the requisite harbor improvements, at or near the points proposed, of capacity ample to satisfy the requirements of the entire coasting trade of the United States, is a practicable enterprise, quite within the range of this class of improvements; that when constructed, it will become the thoroughfare of the coasting trade, shorten distance, save life and property, and materially reduce the cost of transportation;

that the cost of construction will not be excessive, but will fall far below its value to navigation, when constructed; that while it will benefit all the Atlantic States, engaged in or connected by the coasting trade, and ought therefore to be an object of common interest to them all, and to the Federal Government, yet it is the duty of Massachusetts, especially, within whose territory the proposed route lies, and whose progress it will greatly promote, to take the initiative and make all examinations and investigations necessary to establish the practicability and value of the improvement.

This may be best done, in the opinion of your Committee, by a joint special committee of both branches of the legislature, sitting in the recess, with full authority to employ engineers, make surveys and soundings, collect statistics, examine localities and modes of construction and report the same with plans and estimates for a sufficient ship channel or canal on the best route through the isthmus of Cape Cod, to the next legislature.

Your Committee would further say, that this course meets the views of the committee of the Boston Board of Trade, with whom they have conferred, and that the Board will co-operate in this work with any committee which the legislature may appoint.

They therefore unanimously recommend the adoption of the accompanying Resolve.

For the Committee,

AMOS B. MERRILL.

Commonwealth of Massachusetts.

In the Year One Thousand Eight Hundred and Sixty.

RESOLVE

Concerning a Ship Canal to connect Barnstable Bay and Buzzard's Bay.

Resolved, That there be appointed a committee of two on the part of the senate and five on the part of the house, to sit in the recess, and examine into and consider the subject of connecting Buzzard's Bay with Barnstable Bay by a ship channel or canal, for the purposes of navigation, and that said committee have full power and authority to send for persons and papers, employ engineers, make surveys and soundings, collect statistics, examine localities, and to do all other things necessary to enable them to determine on the practicability of constructing such channel or canal, the best route therefor, the form and cost of constructing it, its value to commerce when constructed, and the means by which it ought to be constructed; and that said committee report the same with plans for its construction on the best route, estimates of its costs, and all other matters necessary to form a judgment on the same, to the next legislature.