

HOUSE No. 1697

The Commonwealth of Massachusetts.

BOSTON, Jan. 5, 1916.

To the Honorable Senate and House of Representatives.

We have the honor to transmit herewith such parts of the annual report of the Directors of the Port of Boston as contain recommendations for legislative action, accompanied by drafts of bills embodying the legislation recommended

Respectfully submitted,

EDW. F. McSWEENEY, *Chairman*

JOSEPH A. CONRY.

LOMBARD WILLIAMS.

RECOMMENDATIONS CONTAINED IN THE ANNUAL
REPORT OF THE DIRECTORS OF THE PORT OF
BOSTON.

SUMMARY.

1. That the Harbor Compensation Fund, amounting to something over \$650,000, be made available for the improvement of Boston Harbor.

2. That the balance of the Commonwealth's Flats Improvement Fund, amounting to about \$37,000, be transferred to the Port of Boston Fund.

3. That a substantial appropriation be made to do immediate and necessary dredging in the Mystic River basin.

4. That an appropriation be made for the purpose of paving and regulating either D or E Street on the Commonwealth's Flats at South Boston.

5. That an appropriation, sufficiently large, be made to enable diamond drill or core borings to be made in different parts of the harbor.

1. HARBOR COMPENSATION FUND.

The Harbor Compensation Fund, created by chapter 149 of the Acts of 1866, has now reached the sum of \$657,328.18, and the income of said fund on the same date had a balance of \$34,447 (Nov. 30, 1915).

By law, the income only of this fund may be expended for the improvement of Boston Harbor.

The Directors hereby recommend that the expenditure of portion of the Harbor Compensation Fund for the improvement of the harbor be authorized.

The Directors have received many requests for dredging and the making of other improvements within the area under their jurisdiction, and while it may not be necessary or expedient that these improvements be made within a year, in their opinion work on certain of these projects should be started during the current year.

The 30-foot channel in the Mystic River now extends a short distance above Mystic Wharf. It is claimed that private projects are now under way which call for the investment of \$8,000,000 along the Mystic River, which, without the deepening of the channel basin and approaches, will be held up. To stimulate the investment of private capital in the water-front property, the Commonwealth and the United States government should deepen this river above Mystic Wharf. A plan attached to the report of the engineer shows the present channel in Mystic River with the proposed extension.

In 1901 the Legislature appropriated from the Commonwealth's Flats Improvement Fund \$1,000,000 for the dredging of an anchorage basin and the construction of narrow mooring piers in Boston Harbor.

An anchorage basin was dredged between Bird Island shoal and the main ship channel between the years 1902 to 1909 at a cost of \$504,268.50. This anchorage basin is now inadequate to accommodate the shipping of Boston Harbor, and the harbor master has petitioned the Directors for its enlargement and extension.

The Directors are of the opinion that the present anchorage basin should be enlarged and extended at this time, utilizing a portion or the whole of the dredged material for the reclamation of the adjacent State flats. A plan attached to the report of the engineer shows the present anchorage basin and its proposed enlargement and extension.

There are demands for smaller amounts of dredging in Weymouth Fore River, Neponset River and along the water front of Boston.

Engineer's Report

Because of the increase in number and size of merchant vessels entering the port of Boston, the Board of Harbor and Land Commissioners were directed by chapter 97 of the Resolves of 1900 to make plans and estimates of cost of an anchorage basin in the harbor.

In 1900 the Harbor and Land Commissioners reported to the Legislature upon the dredging of an anchorage basin and the construction of a series of narrow pile piers extending toward the channel from an area of proposed solid filling.

The project presented to the Legislature by the Harbor and Land Commissioners received the sanction of the Legislature by the enactment of chapter 476 of the Acts of 1901, which authorized an appropriation of \$1,000,000 from the Commonwealth's Flats Improvement Fund.

Contracts for dredging the anchorage basin were awarded in 1902 but work was not completed until 1909, at which time 3,081,853 cubic yards of material had been removed at an average price of 16.4 cents per cubic yard, amounting in total to \$504,268.50. The dredging of the berths and the construction of the narrow pile piers extending out from the solid fill were not constructed, about \$500,000 of the original appropriation not having been used for this purpose.

During the year, Lieut. Ross A. Perry, harbor master, called the attention of the Directors to the increase in volume of shipping entering this port, and stated that existing areas for anchorage were inadequate.

The harbor master suggested the extension of the anchorage basin in a southeasterly direction, past Governor's Island. He suggested that this area be dredged to a depth of 20 feet at low water for the accommodation of barges and vessels of light draft, thus relieving congestion in the present 30-foot anchorage basin.

At the request of the Directors, estimates of cost and amounts of dredging have been made in accordance with the suggestion of the harbor master.

The shoal areas within the proposed extension and widening of the anchorage basin have been divided into sections A to K inclusive. These sections are approximately 1,000 feet in length, and cost and amount of dredging each section has been computed.

The original anchorage basin was dredged at an average cost of 16.4 cents per cubic yard, and the following estimate of cost is based upon that price per cubic yard.

The amounts of dredging are based upon the assumption that ledge rock will not be encountered to the desired depth. Additional information as to sub-surface conditions is necessary to more accurately determine location of ledge rock and character of material which would be excavated within the limits designated.

The dredging of sections A to E inclusive to a depth of 30 feet at low water would increase the area of the present anchorage basin. These areas form the approaches to the proposed piers in East Boston, and dredging here would serve a double purpose.

Slips may be excavated within the proposed dock for the mooring of vessels in a manner similar to that suggested by the Harbor and Land Commissioners in their report of 1900, or dolphins similar to those used in Hamburg could here be built.

These slips would be protected on the north by the proposed filling and by the bulkhead and dike now being constructed for the Directors by the Bay State Dredging and Contracting Company.

A portion of the material excavated from the extension of the anchorage basin and these slips can at an additional cost be deposited by the hydraulic process for the reclamation of the adjacent State flats, and, depending upon the stages of the tide a portion of the material could be deposited directly upon these flats by dumping from scows.

Following is a table showing estimated cost and amount of dredging sections A to K of the proposed extension of anchorage basin as indicated upon the accompanying plan:—

Estimated Volumes and Costs of Excavation for the Proposed Extension of the Anchorage Basin.

SECTION.	Estimated Volume (Cubic Yards).	Estimated Cost.	Total Estimated Volume (Cubic Yards).	Total Estimated Cost.
A.	151,000	\$24,764	151,000	\$24,764
B.	354,000	58,056	505,000	82,820
C.	494,000	81,016	999,000	163,836
D.	561,000	92,004	1,560,000	255,840
E.	505,000	82,820	2,065,000	338,660
F.	383,000	62,812	2,448,000	401,472
G.	770,000	126,280	3,218,000	527,752
H.	563,000	92,332	3,781,000	620,084
I.	743,000	121,852	4,524,000	741,936
J.	840,000	137,760	5,364,000	879,696
K.	319,000	52,316	5,683,000	932,012

2. COMMONWEALTH'S FLATS IMPROVEMENT FUND.

Chapter 663 of the Acts of 1912, which established the Port of Boston Fund, transferred to that fund moneys subsequently received, which under previously existing laws would have been paid into the Commonwealth's Flats Improvement Fund. This resulted in the keeping of two accounts, the balance remaining in the Commonwealth's Flats Improvement Fund and the Port of Boston Fund.

The Directors hereby recommend that the balance in the Commonwealth's Flats Improvement Fund, which on Nov. 30, 1915, amounted to \$36,867.70, be transferred to the Port of Boston Fund.

The Directors desire to extend Northern Avenue from the Fish Pier to the dry dock, regulate and pave D or E Street across their lands at South Boston, reclaim State flats, make sub-surface investigations, and establish by surveys and permanent monuments the harbor lines established by legislative acts, as given more in detail in the report of the engineer.

3. MYSTIC RIVER.

An adequate and safe channel is the first necessity for a steamship route.

The conditions in the Mystic River in that wonderful basin between the Chelsea and Malden bridges are undeveloped. For one-third the cost of one of the steamers coming into this basin the Commonwealth could help to make this one of the busiest water basins in the world.

Large steamers coming into the basin above the Chelsea bridge are sometimes held up hours before the right stage of the tide insures their not being swung on to a shoal. This loss of time means heavy demurrage charges and loss in use of the boat, which is most serious at the present time, when transportation charges are very high.

The Federal government has been criticised for not having done more dredging in Boston Harbor, but in this matter of the Mystic River basin the Federal government has done its share, and only awaits the co-operation of our State government before doing still more.

We strongly recommend the appropriation of an amount sufficient to do the necessary dredging in the Mystic River.

Engineer's Report.

During the year there has been a considerable demand for dredging in Mystic River. The Directors have during this time awarded two contracts for the removal of material from this river, but these contracts have involved the removal of but 72,847 cubic yards of material.

Above Mystic Wharf a large area of shoal water exists within the United States pierhead lines, which are about 1,200 feet apart at this point in the river.

The southerly side of this river, with its rail connections to the Boston & Maine Railroad system, offers excellent opportunities for commercial and industrial developments through the investment of private capital, and a large area of undeveloped property exists on the northerly side of the river at this location.

The United States government channel, 30 feet in depth extends to a point a short distance above Mystic Wharf.

The United States engineer officer has recently made a tentative location of the proposed extension of this channel for a distance of about 3,000 feet. At the request of the Directors an estimate has been made to determine the approximate amount of dredging involved in the removal to a depth of 30 feet at low water of the material between the proposed extension of the United States government and a line 50 feet outside the southerly United States pierhead line of the river, as well as the removal to a depth of 30 feet below low water of the existing shoal lying between Mystic Wharf and the present United States government channel.

The amounts of dredging calculated are based upon the most reliable information now existing and are made on the assumption that ledge rock will not be encountered to the desired depth. Additional surveys and information as to sub-surface conditions are necessary to more accurately determine the amount and character of material which would be encountered within the limits designated and to the desired depth.

The dredging of the area between the proposed extension of

the United States government channel and a line 50 feet north of the southerly United States pierhead line is estimated to involve the removal of about 1,670,000 cubic yards, and the removal of the shoal off Mystic Wharf would involve the dredging of about 420,000 cubic yards of material.

The dredging of both these areas would involve the removal of 2,090,000 cubic yards of material if dredged to a depth 30 feet below the plane of mean low water, at an estimated cost of about \$350,000 which includes an allowance for supervision.

4. REGULATING AND PAVING OF D OR E STREET ON THE COMMONWEALTH'S FLATS AT SOUTH BOSTON.

Engineer's Report.

The Commonwealth owns at South Boston a large area of valuable land lying on the southerly side of Summer Street. This area is about 1,100 feet wide and 2,000 feet in length.

In order to develop this area to the greatest advantage it is advisable that a definite policy be adopted to determine track and street connections to the various parcels.

D and E street cross this property in a northerly direction and directly connect South Boston and Dorchester with Summer Street and the water-front developments of the Commonwealth in South Boston.

In order that proper facilities may be furnished to this area in advance of actual demand, I recommend for the consideration of the Directors the advisability of regulating and paving either of these streets within the near future.

5. DIAMOND DRILL OR CORE BORINGS IN BOSTON HARBOR.

Engineer's Report.

The character of material within the harbor is a determining factor in the definite location of water-front structures.

As the Legislature of 1915 has adopted a comprehensive plan for the future development of Boston Harbor, the general location of piers and docks is determined.

In order to make accurate locations for these water-front structures and harbor channels, and estimate their cost within reasonable limits, it is advisable that more sub-surface investigations be made.

Diamond drill or core borings are necessary to definitely determine the elevation of ledge rock within the harbor limits.

Wash drill borings determine the character of the earth material which they penetrate, but they are unable to pass through boulders or into ledge.

Compared with the value of information obtained from such borings, their cost is negligible as compared with the value of structures and channels, the location of which they might govern, and I recommend for the consideration of the Directors the making of such borings within the areas under their jurisdiction, particularly on the East Boston and South Boston sides of the harbor.

