

BOSTON HARBOR
MYSTIC SOUTH CHANNEL

MASSACHUSETTS

PRELIMINARY EXAMINATION

REVIEW OF REPORTS



CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION, BOSTON, MASS.

FEBRUARY 8, 1957

26

CORPS OF ENGINEERS, U. S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION

150 CAUSEWAY STREET
BOSTON 14, MASS.

ADDRESS REPLY TO:
DIVISION ENGINEER

REFER TO FILE NO.

NEDGW

8 February 1957

SUBJECT: Estimate of Cost for Survey and Improvement of Boston Harbor,
Massachusetts (Mystic South Channel).

TO: The Chief of Engineers
Department of the Army
Washington, D. C.

1. In accordance with paragraph 1-124, Chapter 1, Part C1, Engineering Manual for Civil Works Construction, the following estimates are submitted covering costs for survey and for improvement of Boston Harbor, Massachusetts (Mystic South Channel).

2. The estimated cost for a complete hydrographic survey of the site, using customary methods; of necessary probings; and of office study is \$5,000. It would require about 6 months for completion of field work, office studies and preparation of the report.

3. The improvements desired by local interests consist of a channel 35 feet deep and 150 feet wide extending from the 40-foot main ship channel to the site of the former Chelsea South Bridge, a distance of about 1000 feet; and a channel 30 feet deep and 150 wide extending a further distance of about 1,800 feet above the site of the former bridge. Estimated construction costs for the desired dredging and disposal at sea improvement, based on current prices, are as follows:

a.	Channel 35 feet deep and 150 feet wide from main ship channel to Chelsea South Bridge: 75,000 cubic yards of dredging @ \$1.65 per c.y.	\$124,000
b.	Channel 30 feet deep and 150 feet wide extend- ing from Chelsea South Bridge about 1,800 feet upstream: 94,000 cubic yards of dredging @ \$1.65 per c.y.	\$155,000
	Total project construction cost	\$279,000

It is noted that the estimates of quantity for the proposed channel from the main ship channel to the Chelsea South Bridge exclude material removed by the Commonwealth of Massachusetts within the channel limits in dredging a berth 100 feet wide and 35 feet deep on the south side of Mystic Pier No. 1, the width remaining to be dredged in order to provide the desired 150 foot wide channel being only 80 feet.

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SUBJECT: Estimate of Cost for Survey and Improvement of Boston Harbor, Massachusetts (Mystic South Channel).

4. The estimated annual carrying charges for the desired improvement, based on a 50-year amortization, are as follows:

<u>Improvement</u>	<u>First Cost</u>	<u>Interest and Amortization</u>	<u>Maintenance</u>	<u>Total Cost</u>
35-foot channel to Chelsea South Bridge	\$124,000	\$4,400	\$1,000	\$5,400
30-foot channel 1800 feet upstream from Chelsea South Bridge	\$155,000	\$5,500	\$2,000	\$7,500
	<u>\$279,000</u>	<u>\$9,900</u>	<u>\$3,000</u>	<u>\$12,900</u>

Estimated Total Annual Carrying Charges: \$12,900

5. The proposed improvement below the Chelsea South Bridge would provide benefits to navigation accruing from the provision of additional leeway for deep draft ships to pass one another enroute to the upper channel wharves, and to proceed to a suitable berth at Mystic Pier No. 1. The relatively limited existing and prospective commerce at this pier provides limited benefits accruing from the elimination of such delay. Further, the 40-foot channel extension for Boston Harbor was adopted to serve Mystic Pier No. 1, with the requirements that local interests provide adequate berths and approaches. The Commonwealth of Massachusetts, in partial fulfillment of this requirement has dredged a berth 100 feet wide and 35 feet deep on the south side of Mystic Pier No. 1. Further improvement in this area would constitute the provision of a more adequate approach channel for Mystic Pier No. 1.

6. The proposed improvement above the Chelsea South Bridge would provide benefits to navigation accruing from the provision of additional leeway and the possible elimination of towing charges for docking. The only tidal delays in the channel above the bridge result from inadequate berthing and handling facilities. Since the existing annual tonnage in this area could be handled by about four 30-foot draft vessels, for which the average towing charge would be approximately \$200, the total estimated tangible benefit accruing to this improvement is limited to less than \$1,000. The benefit cost ratio for the improvement is therefore estimated at about 0.12. Further, existing commerce in this area is handled principally by one

concern which has available a berth accommodating vessels of drafts of 25 feet or greater. Such benefits as might accrue, therefore, are partly local in character, and would require financial cooperation for which no offers have been forthcoming.

ROBERT J. FLEMING, JR.
Brigadier General, U.S. Army
Division Engineer

NOT FOR PUBLIC RELEASE

PRELIMINARY EXAMINATION
(REVIEW OF REPORTS)

OF

BOSTON HARBOR (MYSTIC SOUTH CHANNEL), MASSACHUSETTS

SYLLABUS

The Division Engineer is of the opinion that the prospective benefits would not be sufficient to justify the modification of the project for Boston Harbor, Massachusetts, to provide for deepening of the Mystic South Channel and inclusion of that channel within the project. The Division Engineer, therefore, recommends that no survey be made.

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CORPS OF ENGINEERS, U.S. ARMY
OFFICE OF THE DIVISION ENGINEER
NEW ENGLAND DIVISION
150 CAUSEWAY STREET
BOSTON 14, MASS.

8 February 1957

NEDGW

SUBJECT: Preliminary Examination (Review of Reports) of Boston Harbor,
Massachusetts (Mystic South Channel).

TO: Chief of Engineers, Department of the Army, Washington 25, D.C.

AUTHORITY

1. This report is submitted in compliance with the following resolution adopted March 15, 1949 by the Committee on Public Works of the House of Representatives, United States:

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE HOUSE OF REPRESENTATIVES, UNITED STATES, that the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review reports on Boston Harbor, Massachusetts, contained in House Document, numbered 225, Seventy-Sixth Congress, First Session, with a view to determining if the improvement of Mystic South Channel in the interest of navigation is advisable at this time."

2. A report of preliminary examination scope was authorized April 11, 1949 by the Chief of Engineers.

SCOPE OF EXAMINATION

3. In the preparation of this report, office studies were made using data obtained from existing records, local representatives, and as a result of a public hearing. The information obtained from the public hearing has been further supplemented by recent contacts with local interests and by recent investigation of the commercial use of the channel. All changes and improvements which have been proposed subsequent to the public hearing are incorporated and considered in this report.

DESCRIPTION

4. Mystic South Channel, also called Little Mystic River, was originally a part of Mystic River proper, but due to filling in of adjacent areas and construction of wharves it became detached from the river

and is now a small branch channel at the head of Boston Harbor. At a point about 1,100 feet West of its junction with the 40-foot channel in Boston Harbor, the channel is crossed by a fixed high level bridge. Immediately seaward of this bridge are the piers and fenders of a former draw bridge known as Chelsea South Bridge. Further description is provided under the paragraph in this report on "Bridges". The waterway above the bridge is about 2,000 feet long.

5. From the bridge, upstream for a length of about 1,800 feet, the channel has been dredged by the Commonwealth of Massachusetts at various times. The most recent dredging, completed in 1952, provided a channel 28 feet deep at mean low water and 80 feet in width, giving a controlling depth above the bridge of 28 feet. From the bridge downstream to the westerly limit of the 40-foot main ship channel, the Commonwealth of Massachusetts has dredged a berth 100 feet wide along the South side of Mystic Pier 1 to a depth of 35 feet at mean low water and has maintained a depth of 30 feet at mean low water over the remaining width of the channel. Several submarine cables which cross the channel in the vicinity of the bridge have been relocated and lowered to permit dredging to a 30-foot depth.

6. United States harbor lines have been established by the Secretary of War for the Mystic South Channel. Except for the upstream end of the channel where the harbor lines converge, the distance between them is generally 300 feet.

7. The mean range of tide is 9.6 feet and the spring range is 11.0 feet. The locality is shown on United States Coast and Geodetic Charts Nos. 248 and 1207 and on the map accompanying this report.

TRIBUTARY AREA

8. Mystic South Channel is used to a very limited degree in the commerce of the Port of Boston. The Port of Boston is the largest seaport in New England and the most important on the Atlantic seaboard North of New York Harbor. It is the principal distributing point for the commerce of Massachusetts, New Hampshire, and Vermont, and affords the shortest through route between Europe and the interior of the United States and Canada. It serves one of the country's largest industrial areas producing machinery and textile and leather goods, and is the gateway for the receipt of raw materials for these industries. The City of Boston, with a metropolitan population of about 2,355,000 in 1950, is the shopping center and the leading wholesale center of New England. It is the largest wool port and the third largest fish port in the country, and one of the most important shoe and leather centers in the world.

9. The area immediately tributary to the Mystic South Channel is the Charlestown District of the City of Boston, a densely populated section lying between the Charles and Mystic Rivers and fronting on these rivers and the main ship channel. The frontage on the main ship channel is mostly occupied by the Boston Navy Yard.

10. The locality is served by the Boston and Maine Railroad and by city streets leading to main highway routes.

BRIDGES

11. The Mystic South Channel is crossed by a high level fixed span bridge owned by the Mystic River Bridge Authority. This structure, known as Mystic River Bridge, is a continuous high level bridge crossing both the Mystic South Channel and the Mystic River proper. The vertical clearances over the Mystic South Channel are about 109 feet and 100 feet above mean low and mean high water respectively. These clearances prevail for the full distance between harbor lines. The plans for Mystic River Bridge were approved by the Under Secretary of War, May 16, 1947, and the bridge, operated as a toll bridge, was opened to traffic February 27, 1950. Immediately adjacent to the Mystic River Bridge on the seaward side is the location of the former Chelsea South Bridge, a bascule type draw bridge of two spans with a clear opening of 75 feet. This bridge has now been replaced by new highway construction around the channel and the superstructure and draw span have been removed leaving the fender system and bridge piers in place.

PRIOR REPORTS

12. The only prior report on Mystic South Channel, Boston Harbor, Massachusetts, is an unfavorable preliminary examination dated October 27, 1910. This report was made in compliance with the River and Harbor Act of June 25, 1910, and is published in House Document 272, 62nd Congress, 2nd Session. The report considered the improvement of the waterway by dredging a channel 60 feet wide to a depth of 30 feet at mean low water from the limits of the United States Channel, then 35 feet deep, upstream to the drawbridge over the Mystic South Channel, a length of about 1,000 feet. Consideration was also given to providing deeper water for the wharf owners above the bridge on the South side of the channel.

EXISTING PROJECT

13. No project for improvement of the Mystic South Channel has been adopted by the Federal Government.

OTHER IMPROVEMENTS

14. Mystic South Channel has been improved exclusively by the Commonwealth of Massachusetts and by property owners abutting the waterway. At the present time the channel from the main ship channel to the site of the former Chelsea South Bridge has a controlling depth of 30 feet at mean low water, and above the bridge a controlling depth of 28 feet for a width of 80 feet and a distance of 1,800 feet. The Commonwealth of Massachusetts has expended \$144,200 for navigation improvements in this waterway. Records of expenditures by private owners in dredging and maintaining berths at their wharves are not available.

TERMINAL AND TRANSFER FACILITIES

15. Downstream from the bridge on the north side of the channel is located Mystic Pier No. 1 constructed in 1952 by the Port of Boston Authority of the Commonwealth of Massachusetts on the former sites of Mystic Piers 46 and 47. On the south side of the channel is located the northerly side of the Boston Navy Yard. The principal docking facilities of the Navy Yard front on the main ship channel of Boston Harbor and only occasional use is made of the south side of the Mystic Channel for the mooring of shallow draft naval craft. Upstream of the bridges are nine wharves, five of which can handle waterborne commerce although the principal tonnage is handled by one facility for the receipt of coal, lumber and general cargo.

16. Mystic Pier No. 1 is approximately 900 feet long and 468 feet wide with the 900 foot length extending along the north side of Mystic South Channel. The berth along this side of the pier has been dredged to a depth of 35 feet at mean low water for a width of 100 feet. This pier was completed in 1952 at a cost of about \$6,000,000, and is now used for handling general cargo and passengers in foreign and domestic trade.

17. Above the bridge on the north side of the channel is Mystic Pier No. 45, owned by the Boston and Main Railroad. This pier, extending about 1,100 feet along the north side of the channel, consists of a rubble stone retaining wall with a pile and timber apron. The depths along the apron range from 15 to 18 feet at mean low water. The apron and retaining wall are in poor condition and the pier is not now used for waterborne commerce.

18. Beyond Mystic Pier 45 on the north side of the channel is the wharf of the Snider Fuel Corporation. The wharf, extending for a length of 400 feet along the channel, consists of a rubble stone retaining wall with pile and timber apron. The depth alongside is 26 feet below mean low water.

19. The inner wharf on the north side of the channel is occupied by the International Salt Company. This wharf has a frontage of about 350 feet with a depth of 18 feet at mean low water in the berth. The construction is similar to that of the other piers on the north side, consisting of a rubble stone retaining wall with a pile and timber apron. The structure is badly in need of repair and no waterborne commerce is now handled at this wharf.

20. On the south side of the Mystic South Channel are six wharves, three of the solid fill type faced with rubble stone retaining walls and three of the same type but faced with pile and timber aprons. Two of the six wharves are not used for waterborne commerce and have no depth of water in their berths at mean low water. One of these

two properties is used by a trucking concern and the other is used as an area for parking cars. The wharves that are used for water-borne commerce on the south side of the channel are briefly described below.

21. The Holyoke Lumber Corporation wharf located at the foot of Polk Street, is of a solid fill structure with rubble stone retaining walls. The berthing space is about 160 feet in length with a depth of about 5 feet at mean low water. This facility is used occasionally for the receipt of lumber in shallow draft craft.

22. Morse's wharf, located adjacent to Holyoke Lumber Corporation wharf, on the down stream side, is of similar construction but with a pile and timber apron. The wharf has a frontage of 225 feet with a depth of about 9 feet. The wharf is occasionally used by the Cobb Lumber Company for the receipt and storage of lumber.

23. The Palmer and Parker wharf and log boom, located at the foot of Tufts Street, is of solid fill construction with rubble stone retaining wall and pile and timber deck at the lower end and log boom beyond. The berth is 340 feet long with depths varying from 16 to 25 feet at mean low water. The wharf is equipped with handling equipment and is used for the receipt and storage of mahogany logs.

24. The Glendale Coal and Oil Company wharf is at the foot of Freemont Place and is of solid fill construction with rubble stone retaining wall. The berth is about 150 feet long with a depth of about 18 feet at mean low water. The wharf is used only about two or three times a year for the receipt of coal in shallow draft barges. The equipment consists of coal handling machinery with a conveyor to an open storage area in the rear of the wharf which has a capacity of 12,000 tons.

IMPROVEMENT DESIRED

25. In order to obtain the view of interested parties concerning the improvement desired a public hearing was held at Boston, Massachusetts on June 1, 1951. Present at the hearing were representatives of the Maritime Association of the Boston Chamber of Commerce; the Boston Port Authority; the Boston and Main Railroad; the Bridge and Highway Division of the Public Works Department of the City of Boston; the Snider Fuel Corporation; Palmer and Parker Company; the Commandant of the First Naval District; Mystic Steamship Division of the Eastern Gas and Fuel Associates; Massachusetts Warehouse Association; the Foreign Commerce Club; the Mystic Terminal Company; and the Propeller Club of the United States.

26. The improvement desired by proponents and sponsored by the Port of Boston Authority is the modification of the Federal project

for Boston Harbor to include the existing waterway known as Mystic South Channel. Specifically the improvement desired for Mystic South Channel is the provision of a channel about 150 feet wide and 35 feet deep at mean low water from the westerly limit of the Boston Harbor main ship channel to the easterly side of the draw of the former Chelsea South Bridge, thence through the draw of the bridge with a 30-foot depth and continuing along the axis of Mystic South Channel with a depth of 30 feet at mean low water and a width of 150 feet for an approximate distance of 1,800 feet to the westerly end of Snider Fuel Company wharf.

27. A representative of the Boston and Main Railroad spoke in favor of the 35-foot depth below the bridge but cautioned that the wharf construction at Pier 45 above the bridge was not adequate for 30-foot depth along the cap log.

28. The Port of Boston Authority submitted a statement that the Commonwealth of Massachusetts had expended nearly \$95,000 to date for the improvement of this waterway. The Port Authority noted that its Mystic Pier No. 1 abutted the north side of the channel entrance and indicated that the waterway has vast potential for development, being excellently located with respect to railroad and highway transportation.

29. Subsequent to the hearing of June 1, 1951, construction of Mystic Pier 1 has been completed and the Port of Boston Authority has dredged a berth 35 feet deep at mean low water and 100 feet wide for a length of 900 feet along the southerly side of Mystic Pier 1. In view of this work, the completion of the modification requested for this portion of the channel will require the dredging of an additional width of 80 feet to a depth of 35 feet at mean low water to provide a maneuvering area for ships passing upstream. In this deep water berth along the southerly side of Mystic Pier 1 the Port Authority estimates 100,000 tons of deep sea commerce will be handled yearly.

30. There was no offer of financial cooperation made in connection with the desired improvements. During the preparation of this report in September 1956 the Port of Boston Commission and abutters along the channel have been requested to furnish any further information available as to the improvement desired in the channel. In reply, the Port of Boston Commission stated that they have no immediate plans for the expansion of facilities upstream for Mystic Pier 1, but consider the channel has excellent potential for future development. The Palmer and Parker Company have stated that in view of the work done by the Commonwealth of Massachusetts in 1952, further improvement of the channel is not required to meet their needs at this time. The Snider Fuel Company, Cobb Lumber Company and Glendale Coal Company have not indicated any further improvement desired at this time.

COMMERCE

31. Mystic South Channel or Little Mystic River, so called for the purpose of reporting commercial statistics, includes that section of Boston Harbor extending from Chelsea South Bridge about 2,000 feet upstream. The following tables give the comparative statement of traffic for waterborne commerce in tons handled within the above described limits and the freight traffic which constituted the commerce of 1955.

COMPARATIVE STATEMENT OF TRAFFIC

<u>Year</u>	<u>Tons</u>	<u>Year</u>	<u>Tons</u>
1946	50,861	1951	69,747
1947	28,115	1952	66,692
1948	76,787	1953	58,572
1949	28,544	1954	25,521
1950	59,341	1955	29,483

FREIGHT TRAFFIC IN 1955

<u>MATERIAL</u>	<u>TONS</u>
Hides and Skins	8
Cocoa Beans and Shells	84
Logs	7,109
Bit. Coal and Lignite	11,740
Salt	4,816
Aluminum Ore and Scrap	<u>5,996</u>
Total	29,483

VESSEL TRAFFIC

32. The vessel traffic on the Mystic South Channel for the past five years has consisted of towed barges, lighters, or tramp steamers, with draft seldom exceeding 24 feet. In 1955 the only vessels over 24-foot draft reported as using the channel are listed as follows:

<u>DATE (1955)</u>	<u>SHIP</u>	<u>DRAFT</u>	<u>CARGO</u>	<u>DESTINATION</u>
11/14	Rosario	27	Bauxite	Snider Fuel Company
9/6	S.S. Lapland	25	Lolar Salt	Snider Fuel Company

DIFFICULTIES ATTENDING NAVIGATION

33. The difficulty attending navigation on this waterway at the time of the hearing in 1951 was claimed to be lack of sufficient depth for

existing navigation. It was stated that vessels of the "seam" class, engaged in the coal trade, and cargo ships of the "C" class, which have normal draft of 25 feet, could not enter the waterway and dock at all tidal stages. Recent improvements in the channel by the Commonwealth of Massachusetts since the 1951 hearing have now provided depths of 28 to 30 feet in the channel for a width of 80 feet. Difficulties attending navigation at the present time are lack of the desired channel width of 150 feet and insufficient depth in approaches to the berths.

WATER POWER AND OTHER SPECIAL SUBJECTS

34. There are no questions of water power flood control, wild life conservation, pollution abatement, or similar subjects involved in this study.

SHORE LINE CHANGES

35. The desired improvement would not cause any shore line changes. The Commonwealth of Massachusetts has dredged and maintained a 28-foot channel above and a 30-foot channel below the bridge with no evident effect on the adjacent shore line.

DISCUSSION

36. The Mystic South Channel is a small tidal waterway about 300 feet wide and 2,000 feet long leading westerly from the 40-foot main ship channel in Boston Upper Harbor. About 1,000 feet westerly from the entrance, the channel is crossed by the Mystic River Bridge, which is a high level fixed span with a highway clearance of 100 feet over the channel; and the former Chelsea South Bridge which has now been closed to traffic and the superstructure removed leaving piers and fender system in place.

37. The frontage of the channel from its junction with the main ship channel westerly to the bridge is occupied on the north side by Mystic Pier No. 1 and on the south side by the Boston Navy Yard.

38. The frontage on both sides of the channel above the bridge consists of rubble stone walls retaining solid fill wharves with pile and timber decked aprons. There are nine wharves located in this area although only five can now be used for waterborne commerce.

39. A recently completed modification of the Federal Navigation project for Boston Harbor provides an extension to the 40-foot Main Ship Channel in Boston Harbor. This channel extension was authorized to serve the recently completed Mystic Pier 1. In partial compliance with the local requirements of this project, the Commonwealth of Massachusetts has dredged the south berth of Mystic Pier 1 along the Mystic South Channel to a depth of 35 feet at mean low water for a width of 100 feet.

40. It is considered that ocean traffic handled on the south side of Mystic Pier 1 should be credited to the main waterfront of Boston Harbor and not the Mystic South Channel. The only commerce considered applicable to the Mystic South Channel, therefore, is that which is handled above the bridges. The sponsors of the proposed Mystic South Channel project have stated that future port expansion may lead to further extension of the Mystic terminal development along the north side of the channel, but it is not claimed that such terminal development is urgent at this time.

41. At the time of the public hearing in 1951, three of the wharf owners located above the bridges requested channel improvements but during the past two years only one operator has submitted statistical reports indicating use of the channel for waterborne commerce.

42. An analysis of the commerce above the bridges reported for 1955 shows that about 11,800 tons of coal, 7,000 tons of mahogany logs, 5,000 tons of salt, 6,000 tons of aluminum ore and scrap, and about 100 tons of general cargo constituted the total commerce on the waterway during the year. The reported commerce on the Mystic South Channel for the last ten years has averaged less than 50,000 tons annually and although general in character is for the most part attributable to the operation of one concern.

43. The Mystic River Toll Bridge, completed in 1950, is a fixed span with a vertical clearance of 100 feet above mean high water over the Mystic South Channel. The bridge was designed on the basis of providing a vertical clearance of 135 feet above mean high water over the Mystic River proper, a height considered necessary for unrestricted navigation. At the hearing in 1947 to consider approval of plans for the construction of the bridge, the vertical clearance over Mystic South Channel was described as having been based on existing navigation. No evidence was submitted at that time as to any proposed changes in navigation of the Mystic South Channel.

44. The Commonwealth of Massachusetts, through its Port of Boston Authority dredged the portion of Mystic South Channel above the bridge to a depth of 25 feet at mean low water and 150 feet wide in 1951 and later in 1952 dredged the central 80 foot portion of this channel to a depth of 28 feet at mean low water. The remaining portion of the improvement now desired consists of dredging the existing channel above the bridge to 30 feet at mean low water for a width of 150 feet and dredging the portion below the bridge from the Main Ship Channel to the bridge to a depth of 35 feet at mean low water for an additional width of 80 feet.

45. The benefits to be gained by the completion of the improvement desired below the bridge would be the provision of more maneuvering area for vessels docking at the south side of Mystic Pier 1 and greater width

for vessels passing in the channel. The tonnage of waterborne commerce handled through the channel for the past five years requires only a few trips of deep draft vessels yearly. The advantage accruing to a wider channel and reduction of tidal delay is therefore very slight.

46. Although a very considerable increase in waterborne traffic in the channel would be necessary to provide benefits exceeding the cost of the proposed improvement, there appear to be no prospects of any large increase. In 1910, at the time of the prior unfavorable report, annual commerce in the channel was estimated at 500,000 tons. In contrast, the average annual commerce during the past 10 years has been about 50,000 tons, or 10 percent of the estimated annual commerce in 1910. Reported commerce in 1955 was less than 6 percent of the 1910 estimate. It is considered that the decline in commerce is attributable largely to the development of adequate modern coal handling facilities, and deep-draft berths together with ample storage facilities on nearby Mystic River proper, and the more recent reconstruction of the Mystic Piers on the Main Ship Channel. In view of these developments in the immediate vicinity it is not anticipated that any large expansion of commerce on the Mystic South Channel is likely to occur in the foreseeable future.

47. An analysis of vessels presently using the waterway shows that they are either towed barges, lighters, or tramp steamers with draft seldom exceeding 24 feet. The maximum cargo received per vessel is less than 8,000 tons.

48. The benefits to be derived from any improvements to the Mystic South Channel above the bridge must be considered limited and somewhat local in character. At the time of the public hearing in 1951 the chief proponent of improvement above the bridge claimed there were tidal delays of about 8 hours required to dock on some trips. Recent dredging operations by the Commonwealth of Massachusetts and by the chief proponent have now eliminated all tidal delays for ships up to 25-foot draft destined for the proponent's berth. No other berth along the channel can accommodate ships of more than 15-foot draft. Reference was made by one proponent at the hearing to the handling of waterborne commerce by another company, but during the past five years such business has been insufficient to warrant placing dependence upon it, in considering the prospective commerce of the waterway.

49. On the Mystic South Channel below the bridges the berth adjacent to the south side of Mystic Pier 1 has been dredged 35 feet deep at mean low water and 100 feet wide by the Commonwealth of Massachusetts and this berth has proved adequate for the required use since the pier has been in operation. The widening of this channel by 80 feet to provide the 150-foot width proposed does not appear warranted until such time as Mystic Pier 1 might be extended upstream.

CONCLUSION

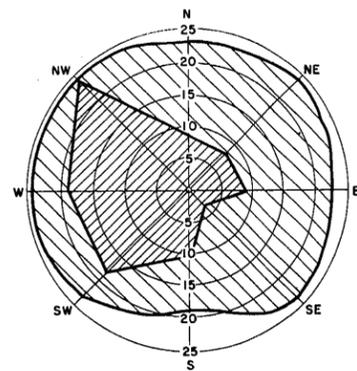
50. In view of the limited commerce handled on upper Mystic South Channel now compared with that of 10 or 50 years ago, and the limited and local character of the benefits which could accrue to the desired improvement; the uncertainty of the future commercial development along the upper Mystic South Channel; the lack of interest by the majority of the wharf owners, and the absence of any offer of local cooperation, the Division Engineer concludes that the improvement by the United States of the upper Mystic South Channel is not warranted at this time. The Division Engineer further concludes that the improvement by the United States of the lower part of the Mystic South Channel to facilitate Mystic Pier No. 1 is not warranted. It is considered that the costs of improvement either above or below the bridge exceed prospective benefits accruing thereto.

RECOMMENDATIONS

51. It is considered that modification of the existing project for Boston Harbor, Massachusetts, to include the improvement of the waterway known as Mystic South Channel or Little Mystic River, is not advisable at this time, and that further study is not warranted. It is recommended that no survey be made at this time.

ROBERT J. FLEMING, JR.
Brigadier General, U. S. Army
Division Engineer

Incl:
1 Map



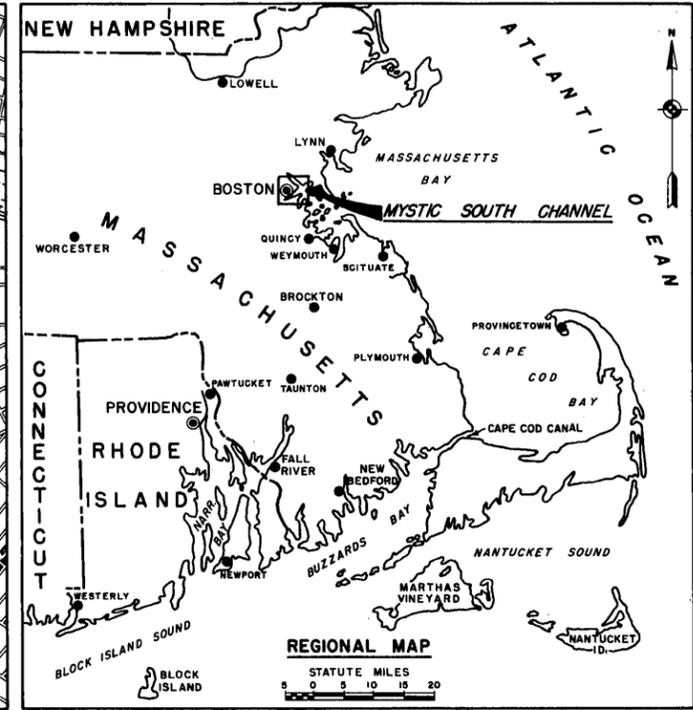
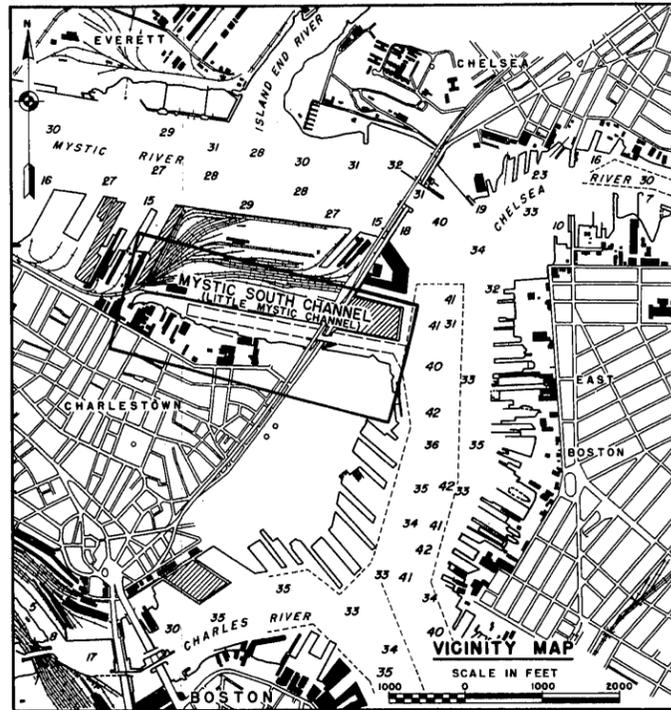
WIND DIAGRAM FOR BOSTON HARBOR, MASS.

LEGEND

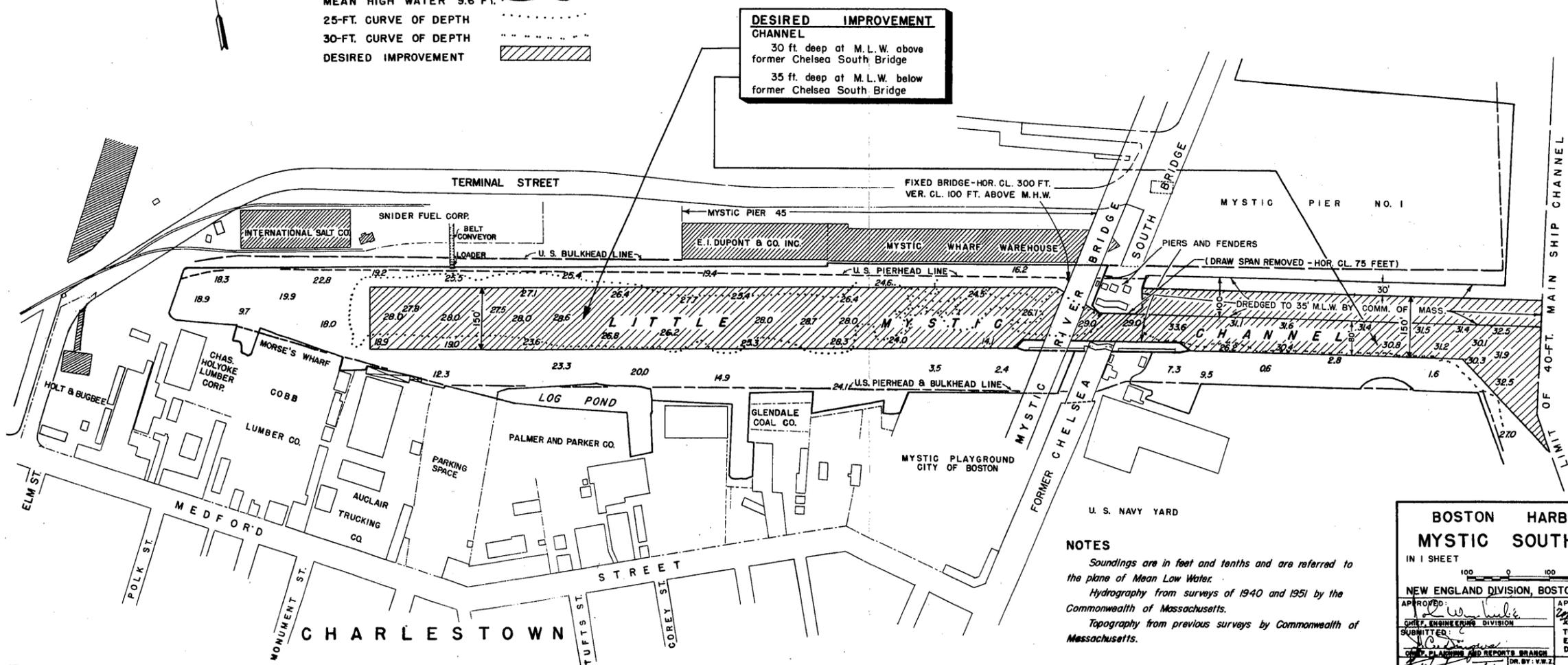
- AVERAGE VELOCITY IN M.P.H. [Symbol: Hatched circle]
- DURATION IN PERCENT OF TIME [Symbol: Solid circle]

LEGEND

- MEAN HIGH WATER 9.6 FT. [Symbol: Wavy line]
- 25-FT. CURVE OF DEPTH [Symbol: Dotted line]
- 30-FT. CURVE OF DEPTH [Symbol: Dashed line]
- DESIRED IMPROVEMENT [Symbol: Hatched rectangle]



DESIRED IMPROVEMENT CHANNEL
 30 ft. deep at M.L.W. above former Chelsea South Bridge
 35 ft. deep at M.L.W. below former Chelsea South Bridge



NOTES
 Soundings are in feet and tenths and are referred to the plane of Mean Low Water.
 Hydrography from surveys of 1940 and 1951 by the Commonwealth of Massachusetts.
 Topography from previous surveys by Commonwealth of Massachusetts.

BOSTON HARBOR, MASS.
MYSTIC SOUTH CHANNEL
 IN 1 SHEET SCALE IN FEET
 NEW ENGLAND DIVISION, BOSTON, MASS.

APPROVED: [Signature]	APPROVED: [Signature]
CHIEF, ENGINEERING DIVISION	AT COL., C.E., DIVISION ENGINEER
SUBMITTED: [Signature]	TO ACCOMPANY PRELIMINARY EXAMINATION REPORT
DATE: [Signature]	DATED FEB. 8, 1957
CHIEF, RIVER HARBOR SECT.	FILE NO. 356 DR. 50