PORTSMOUTH HARBOR &
PISCATAQUA RIVER
MAINE AND NEW HAMPSHIRE

SURVEY
(REVIEW OF REPORTS)

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASS. 02154

U. S. ARMY ENGINEER DIVISION, NEW ENGLAND
CORPS OF ENGINEERS
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ADDRESS REPLY TO:
DIVISION ENGINEER

REFER TO FILE NO. NEDED-R

11 February 1966

SUBJECT: Survey (Review of Reports) on Portsmouth Harbor and Piscataqua River, New Hampshire and Maine

TO: Chief of Engineers
ATTN: ENGCW-PD

SYLLABUS

Under the authority of Section 107 of the 1960 River and Harbor Act, the Chief of Engineers on 26 July 1965 approved a Federal project for improvements for navigation in the back channel area of Portsmouth Harbor. This area comprises the upper end of Little Harbor, Sagamore Creek and the channel between the mainland and a group of islands on the south side of Portsmouth Harbor, New Hampshire. Formal adoption as a Federal project was made on 23 December 1965. The Division Engineer finds that no further navigation improvement in addition to that so authorized is warranted at this time.

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1. This report is submitted in compliance with Resolutions of the Committee on Public Works of the United States Senate and House of Representatives, adopted 18 November 1958 and 3 June 1959.

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, that the Board of Engineers for Rivers and Harbors, created under Section 3 of the River and Harbor Act approved 13 June 1902, be, and is hereby requested to review the report of the Chief of Engineers on Portsmouth Harbor and Piscataqua River, Maine and New Hampshire, published as House Document No. 556, Eighty-Second Congress, Second Session, with a view to determining whether any modification of the existing project is advisable at the present time."

submitted in compliance with the aforementioned Resolutions, and deals with proposals for shallow draft navigation improvements in the back channels.

8. The Section 107 navigation project starts at the head of

"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 the reports on Portsmouth Harbor and Piscataqua River, Maine and New Hampshire, submitted in House Document No. 556, 83rd Congress, 2nd Session, and prior reports with a view to determining whether modification of the existing project in any way is advisable at this time."

channel, 100 feet wide and 12 feet deep extending from the entrance between Frost Point and Jaffrey Point into the harbor, a distance of 3,000 feet. Also included in the project are an anchorage area adjacent to the channel of 40 acres, 12 feet deep and two breakwaters at the harbor entrance.

DIFFICULTIES ATTENDING NAVIGATION

9. The Piscataqua River and Portsmouth Harbor, through which the extensive tidal basin of Great Bay and its six main tributary streams are funneled, has one of the swiftest tidal currents of any harbor in northeastern United States. The main flow of this current passes north and east of Pierces and New Castle Islands. Irregularities of width and depth plus abrupt directional changes in the main course result in strong cross currents and eddy conditions that hamper small boat navigation. Under various wind conditions tidal rips form at the entrance to Portsmouth Harbor which endanger small craft operation. To avoid these hazards and to shorten the distance traveled, the smaller commercial and recreational craft use the back channels behind the islands. This passage can only be attempted at the higher stages of the tide.

10. Due to the increased recreational boating and lobstering in the Portsmouth Harbor area, anchorage areas for small craft have become overcrowded to the point where boat owners can no longer obtain mooring or berthing space on the New Hampshire side of the main harbor.

PROPOSED IMPROVEMENT

11. At the public hearing held in Portsmouth on 24 May 1960, local interests requested dredging the channels and existing mudflats adjacent to the channels between the islands so as to enlarge the navigable water areas for small boats at low tide, and to provide a channel from Sagamore Creek and Little Harbor to Portsmouth Harbor. The initial proposal was for a depth of 8 feet and continuous channels. Local interests later indicated acceptability of a 6-foot depth and channels in the back area only, due to vertical clearance limitations imposed by bridges over the waterways.

shown on the attached map, would provide for (a) a channel six feet deep, 100 feet wide extending from Little Harbor through the Rye-New Castle drawbridge and then in a northerly direction between the mainland and Leach's Island to deep water in the vicinity of Shapleigh and Goat Islands; (b) a channel 75 feet wide, 6 feet deep up Sagamore Creek to a public landing on the downstream side of the Sagamore Avenue bridge and a 75-foot wide, 6-foot deep anchorage strip, totalling 3 acres, adjacent to the channel in Sagamore Creek.

13. The plan represents the most economical and practical development for permitting increased use of the waterway by commercial fishermen and expansion of recreational boating activity. The scope and cost of the plan are of such magnitude as to make the plan eligible for accomplishment under the general authority of Section 107 of the 1960 River and Harbor Act as amended.

14. All Federal, State, and local agencies thought to be interested or affected by the proposed navigation improvements were consulted during the study and they have concurred in the project plan. By letter dated 24 February 1965 and 2 March 1965, State and local officials respectively, commented on the adequacy of the proposed plan for meeting their navigational needs. They also indicated that they would be willing to meet the requirements of local cooperation, subject to action by the State Legislature and City Council. By letter of 20 October 1965, the Governor of New Hampshire gave his approval of the project.

15. Accordingly, under authority of Section 107 of the 1960 River and Harbor Act, modification of the existing project to provide the recommended improvement was formally adopted on 23 December 1965.

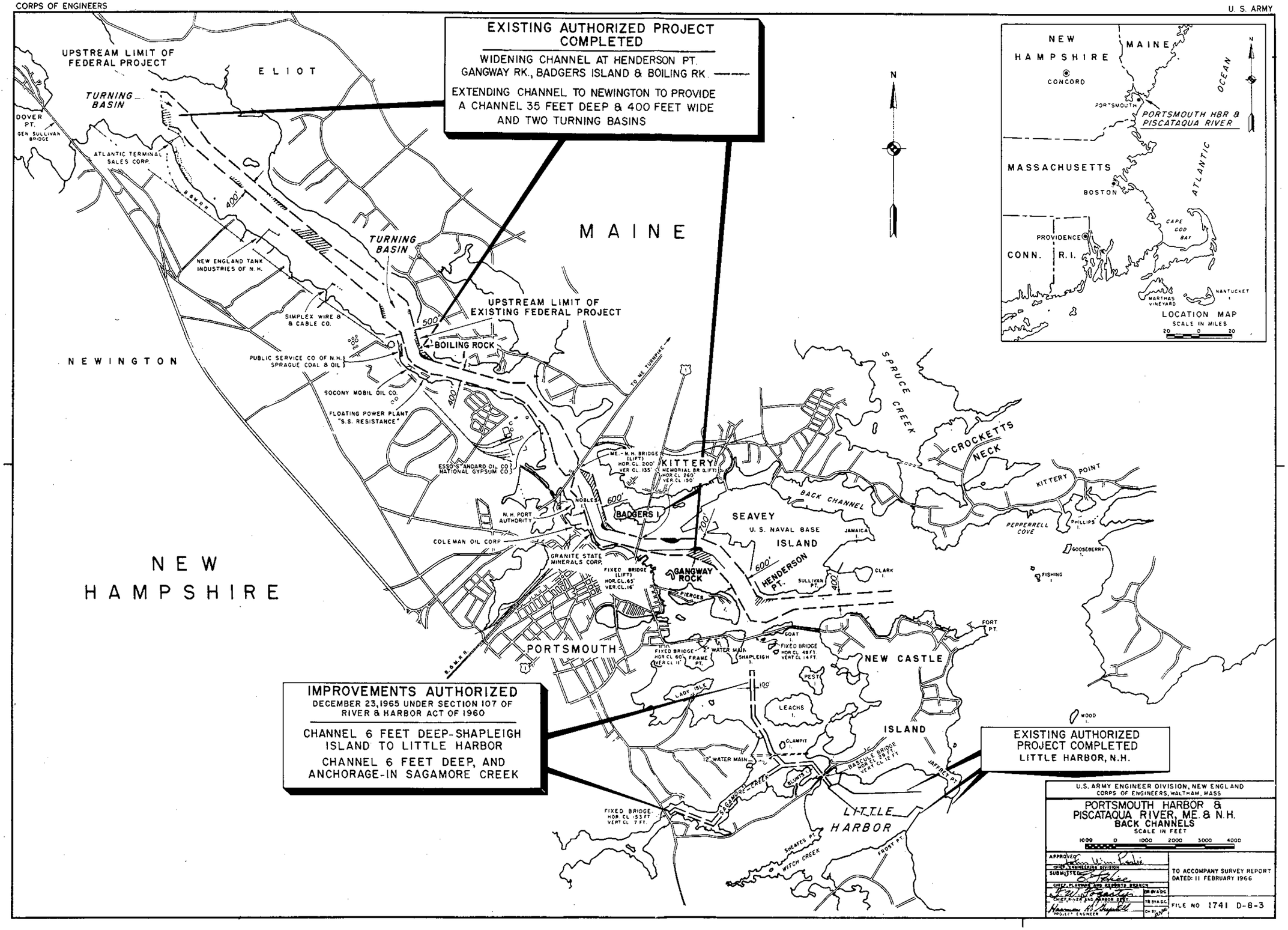
16. In view of the above action, the Division Engineer concludes that the needs of present and prospective navigation in Portsmouth Harbor have been met and therefore recommends no further navigation improvement of Portsmouth Harbor and Piscataqua River at this time.

Incl
Map

REMI O. RENIER
Colonel, Corps of Engineers
Acting Division Engineer

CORPS OF ENGINEERS

U. S. ARMY



PORTSMOUTH HARBOR, NEW HAMPSHIRE

Information Called for by Senate Resolution 148, 85th Congress
Adopted 28 January 1958

1. This study considered the need and justification for providing navigation improvement for recreational and fishing craft using the small boat channels in the upper reach of Little Harbor, the area between the mainland and islands on the south side of Portsmouth Harbor and in Sagamore Creek.

2. Navigation of small craft in the Piscataqua River and Portsmouth Harbor is severely hampered by rapid tidal currents. The irregularities of width and depth plus the abrupt directional changes of course result in strong cross currents and eddy conditions, tidal velocities range from 2.6 to 4.0 knots. These current velocities are confined to the main river passing north and east of Pierce and New Castle Islands. Under various wind conditions tidal rips form at the entrance to Portsmouth Harbor which endanger small craft operation in the area. To avoid these hazards and to shorten the distance traveled, commercial fishermen and other boatmen returning to the docks along the city waterfront take advantage of the sheltered waters of Little Harbor and the back channels behind the islands on the south side of Portsmouth Harbor. This passage can only be attempted at the higher stages of the tide. Local interests have stated that small craft have suffered damages from striking rocks in the vicinity of the bascule bridge and have grounded on shoals in Sagamore Creek and in the channels leading to Portsmouth.

3. Due to the increase of recreational boating and lobstering in the Portsmouth Harbor area, anchorage areas for small craft have become overcrowded to the point where boats can no longer obtain berths or mooring areas on the New Hampshire side of the main harbor. Local interests requested consideration be given to dredging the channels and mud-flats between the islands and to providing a small boat channel from Sagamore Creek to Little Harbor. The study found that Federal improvement of Portsmouth Harbor in this area is warranted.

4. As a result of the study, the Chief of Engineers approved for accomplishment an improvement for Portsmouth Harbor, Back Channel Area, under authority of Section 107 of the 1960 River and Harbor Act. The improvement was formally adopted as a Federal project on 23 December 1965 and provides for:

(1) a channel 100 feet wide, 6 feet deep from Little Harbor through the Rye-New Castle drawbridge and then in a northerly direction between the mainland and Leachs Island to the natural deep water anchorage area south of the bridge between Shapleigh (Marvin) and Goat Islands.

(2) a channel 75 feet wide, 6 feet deep up Sagamore Creek to the Sagamore Avenue Bridge with anchorage in strips 75 feet wide, 6 feet deep, totalling 3 acres adjacent to the upper reach of the channel.

It is considered that the project dimensions as approved would be sufficient to meet the needs of the existing and prospective commercial fishing fleet and recreational fleet.

5. Local interests concur that the plan of improvement authorized would meet the needs of present and prospective navigation, and have stated a willingness and ability to meet the requirements of local cooperation in connection with the project.

6. In view of the above provisions for small craft navigation in the "Back Channels" of Portsmouth Harbor, no further Federal improvement beyond that presently authorized is recommended.