



**Project Name:** ME-NH Connections Study

**FHWA No:** PR-1681(700X)

**MaineDOT PIN:** 16817.00

**NHDOT PIN:** PK 13678E

**Prepared by (Name/Firm):** Lauren Meek, P.E., HNTB

**Contract Number:** 2009032500000005165

**Technical Memorandum No.:** 3 - Navigational Needs of the Piscataqua River

**Date (month/year):** August, 2009

**Subject:** Navigational Data for the Sarah Mildred Long and Portsmouth Memorial Bridges

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## **Background**

This Tech Memo is a supplement to a 2006 HNTB memo that identified issues and preferences for users of the Piscataqua River during the rehabilitation of the Portsmouth Memorial Bridge based on a mail-back navigational survey. This 2006 memo is attached as Appendix A.

## **Purpose**

The purpose of this memorandum is to:

- a.) summarize the existing horizontal and vertical clearances and identify the minimum required bridge lifts versus the actual number of bridge lifts of the Sarah Mildred Long and Portsmouth Memorial Bridges;
- b.) identify the users of the river;
- c.) analyze the bridge lift records;
- d.) summarize feedback from users of the river and those responsible for the river's operation.

Additionally, a survey to address the current and future uses has been sent to users of the river. A separate technical memorandum will be prepared with the analysis of the responses when received.

## Methodology

### a. Existing Clearances and Frequency of Lifts

Table 1 provides the clearances for the three lower Piscataqua River bridges as identified on the National Oceanic and Atmospheric Administration (NOAA) Chart 13283, 20<sup>th</sup> Edition. The vertical clearance is the distance between mean high water and the underside of the bridge. The Portsmouth Memorial and Sarah Mildred Long Bridges have lift spans that provide additional vertical clearance when opened. The Sarah Mildred Long Bridge also provides a movable span for the lower rail level that is not in the main ship channel but in shallower water close to the Kittery shore. The I-95 High Level Bridge is fixed providing a 135' vertical clearance.

**Table 1 Bridge Horizontal and Vertical Clearances**

Bridge		Horizontal	Vertical	
			Open	Closed
Portsmouth Memorial Bridge		260 ft	150 ft	19 ft
Sarah Mildred Long Bridge	Lift	200 ft	135 ft	10 ft
	Movable Span	70 ft	36 ft	5 ft
I-95 High Level Bridge		440 ft	135 ft	

Source: NOAA Chart 13283

Table 2 summarizes the federal regulations 33 CFR §117.531 that govern the frequency of lifts for the Piscataqua River Bridges. The complete section is in Appendix B. Generally, the lift spans in the main channel are opened upon the vessel's signal except for recreational and small commercial vessels which during certain time periods must wait for a lift that occurs twice an hour or pass under with a vessel that is not required to wait.

**Table 2 Bridge Lift Opening Frequency for  
Portsmouth Memorial and Sarah Mildred Long Bridges**

(Main Ship Channel Lifts Only)

Type of Vessel	May 15 - Oct 31 (7a.m. - 7p.m.)	All Other Times
Portsmouth Memorial and Sarah Mildred Long Bridges (Main Ship Channel - Lift Spans)		
<ul style="list-style-type: none"> <li>Public U.S. vessels</li> <li>Commercial Vessels &gt; 100 Gross Tons</li> <li>Inbound Ferry and Commercial Fishing Vessels</li> </ul>	Opens As Soon As Possible	
<ul style="list-style-type: none"> <li>Recreational Vessels</li> <li>Commercial Vessels &lt; 100 Gross Tons</li> <li>All Other Vessels</li> </ul>	Twice an Hour at Specified Times if Needed	Opens As Soon As Possible
Sarah Mildred Long Bridge (Recreational Movable Span)		
<ul style="list-style-type: none"> <li>All Vessels</li> </ul>	Left Open all hours	Not required to be left open

Source: 33 CFR §117.531

*b. Navigational Users of the River*

A wide-ranging list of vessels passing under the Sarah Mildred Long and/or Portsmouth Memorial Bridges has been compiled into Table 3. The names are from a list of users identified in the 2005 HNTB Navigational Survey, the Army Corps of Engineers List of Ports on the Piscataqua River and the Port of New Hampshire's Marine Directory.

**Table 3 List of Navigational Users**

- Atlantic Fishing Fleet, Inc.
- Atlantic Fuels, Inc.
- Badger's Island Marina
- Black Dog Charters
- Cap'n Sav's Charters
- Cape Ann Charters, Inc.
- Cape Island Seafood
- Captain Bill Charters
- Captain Bob's
- Charles Robert Radzik
- dba Taylor'd Charters, LLC
- Gauron Fisheries, Inc.
- Geno's Lobster Pound
- George Philbrick Charters from Rye
- Granite State Minerals, Inc.
- Granite State Whale Watch, Inc.
- Great Bay Marine
- Great Cove Boat Club
- Gundalow Company
- Hampton Harbor Tackle
- Hanscom's Truck Stop, Inc.
- Harvester Ocean Charter Fishing
- Independent Boat Hauler's
- Irving Oil Corporation
- Island Cruises, Inc.
- Isles of Shoals Steamship Company
- Kittery Harbormaster
- Little Bay Marina
- Lucas Marine, LLC
- Moran Towing Corporation
- Morrison's Lobsters
- N.H. Seacoast Cruises, Inc.
- National Gypsum Company
- New Hampshire Port Authority
- Northeast Charter Boat Company
- Patten's Yacht Yard
- Pease Development Authority
- Pickering Marine Corp.
- Platypus Tours, LLC
- Portsmouth Harbor Cruises, Inc.
- Portsmouth Harbor Towing/Harbour Place Marina
- Portsmouth Harbormaster
- Portsmouth Pilots, Inc.
- Public Service of New Hampshire, Schiller Station
- Rolling Stone (lobsterboat)
- Rye Fuel Inc.
- Rye Harborside Food Concessions
- Rye Lobster
- Sail Amaryllis
- Sanders Lobster Company
- Sassy II, Inc.
- Sea-3 Inc.
- Seafari Charters
- Shaftmaster Fleet Services/ Lordco Associates/ Little Bay Lobster
- Smith & Gilmore Fishing Peir, Inc.
- Sprague Energy of New England
- Star Island Corporation
- Sushi Hunter Charters Inc.
- Tontine Fishing, Inc.
- Tyco Telecommunications
- Union Oil Company
- Yellow Bird Charters

*c. Analysis of Bridge Lift Records*

The New Hampshire Department of Transportation (NHDOT) has provided a copy of the log books for the lift spans of Sarah Mildred Long and Portsmouth Memorial Bridges. HNTB entered a portion of the 2008 records into a database to analyze data such as number of lifts by month, height of lifts, number of passing under vessels, and time span for the bridge lift.

The following Table 4 provides a breakdown of lifts for each bridge by month. Lifts in which a vessel did not pass underneath but had a purpose such as testing, maintenance, and training have been separated. The Sarah Mildred Long Bridge has considerable more lifts attributed to such activities. The Portsmouth Memorial Bridge has more lifts in the summer months while the

Sarah Mildred Long Bridge does not experience much of a seasonal increase. The Portsmouth Memorial Bridge has a “closed” vertical clearance nine feet more than the Sarah Mildred Long Bridge. However, due to the number of lifts for navigational users located between the two bridges, Portsmouth Memorial Bridge, opens about 25% more frequently than the Sarah Mildred Long Bridge even though it has the higher “closed” vertical clearance. The 2008 totals for the Portsmouth Memorial Bridge and Sarah Mildred Long Bridge are 4,023 and 3,178 respectively.

**Table 4 Number of Lifts for 2008**

Month	Sarah Mildred Long Bridge		Portsmouth Memorial Bridge	
	Lift for Vessel to Pass Under	Lift for Testing, Maintenance, Training, etc.	Lift for Vessel to Pass Under	Lift for Testing, Maintenance, Training, etc.
January	239	3	271	7
February	189	15	216	16
March	182	51	189	15
April	231	29	179	46
May	258	29	297	9
June	232	79	451	23
July	274	52	525	5
August	248	46	488	3
September	226	70	427	3
October	196	82	357	3
November	137	17	246	4
December	225	68	234	9
<b>Subtotal</b>	<b>2637</b>	<b>541</b>	<b>3880</b>	<b>143</b>
<b>Total</b>	<b>3178</b>		<b>4023</b>	

The following Figures 1 and 2 provide a summary of the lift height for both bridges. Again, the lifts for testing, maintenance, and training have been excluded from Figures 1 and 2. These charts show the number of lifts for ranges of lift heights along with a cumulative total of the number of lifts. From this cumulative line, the number of lifts not needed if the bridge clearance vertical were to be increased can be read. For instance, if the vertical clearance of the closed position for the Sarah Mildred Long Bridge were increased by 20’, about 200 or 8% of the lifts would not have been required in 2008. More than a third of the lifts for the Sarah Mildred Long Bridge are between 46’ and 50’ high. For the Portsmouth Memorial Bridge, more than a third of the lifts are between 36’ and 40’ high. This difference in range of heights can be attributed to the Portsmouth Memorial Bridge having a “closed” clearance nine feet higher than the Sarah Mildred Long Bridge. The Sarah Mildred Long Bridge accommodates a railroad line underneath the roadway deck.

Figure 1 Height of Lifts for Sarah Mildred Long Bridge

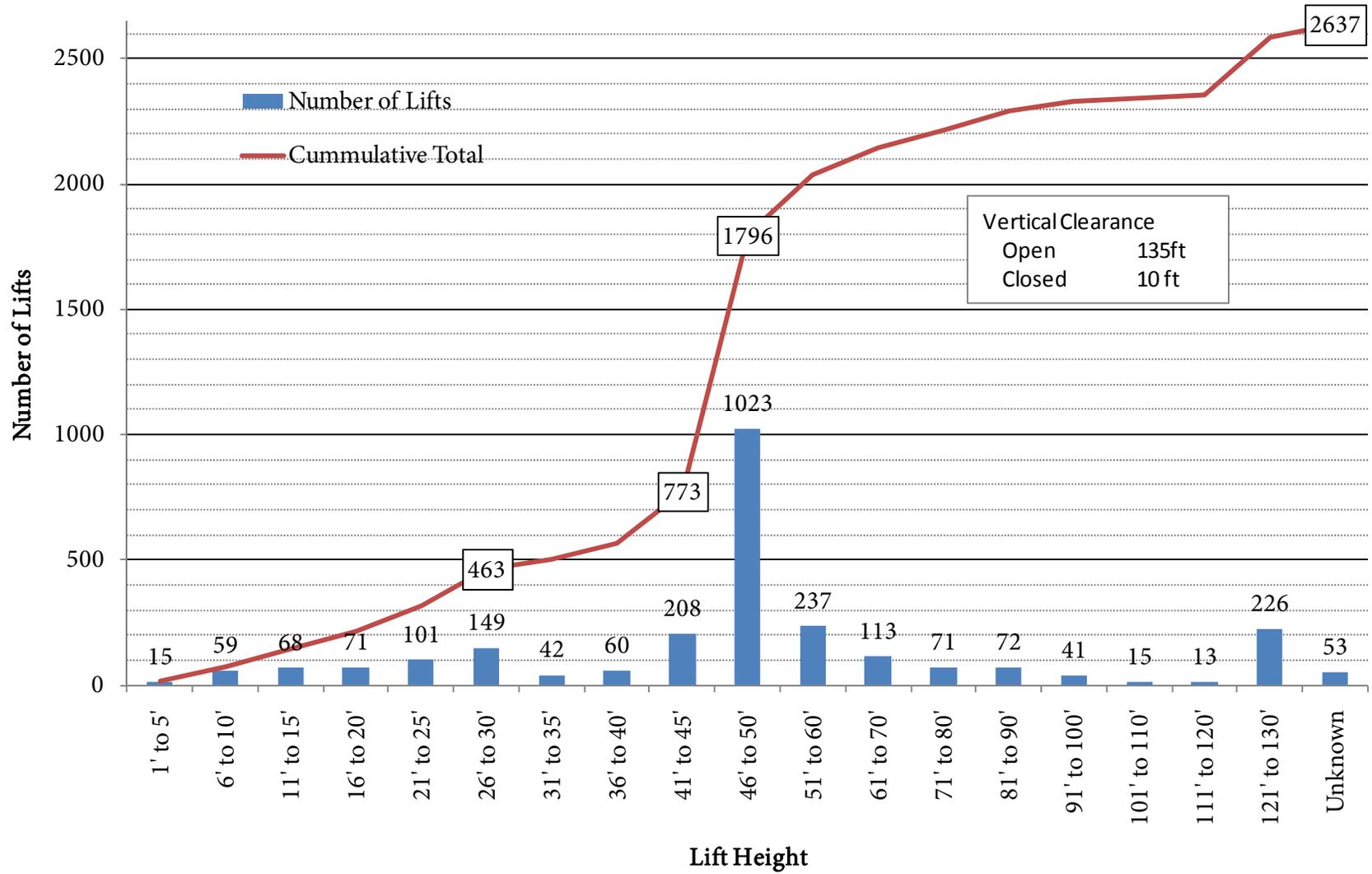
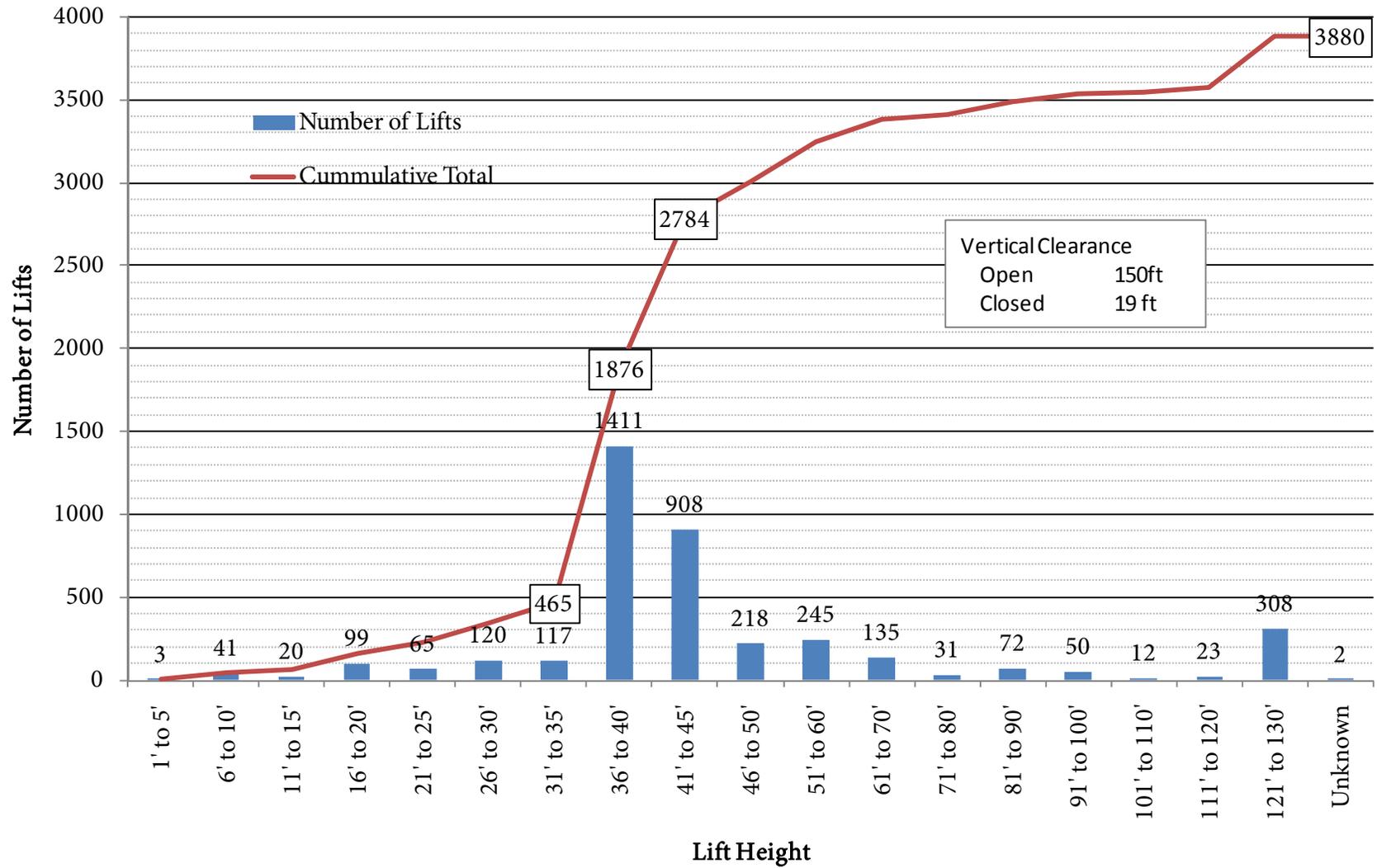


Figure 2 Height of Lifts for  
Portsmouth Memorial Bridge



The following Table 5 presents July 2008 data regarding number of vessels passing under either bridge during a lift. For both bridges, about 70% of the lifts serve one vessel and a little more than 20% serve two vessels.

**Table 5 Number of Vessels Passing Under  
(July 2008)**

		Sarah Mildred Long Bridge		Portsmouth Memorial Bridge	
Number of Vessels During Lift	1	198	72%	364	69%
	2	59	22%	110	21%
	3	11	4%	35	7%
	4	5	2%	10	2%
	5	1	0%	3	1%
	6	0	0%	0	0%
	7	0	0%	0	0%
	8	0	0%	2	0%
Total		274	100%	524	100%

Table 6 deals with the actual time that the roadways are closed due to lifts for river traffic. The data is for July 2008 and excludes lifts with the sole purpose of testing, maintenance, training, etc. The lift logs of the bridges provided the “Time Span Open” and “Time Span Closed” and the bridges take one to two minutes for the bridge to lift up or down depending on the height of the bridge. To calculate the length of the roadway closure, three minutes were added to the difference of “Time Span Open” and “Time Span Closed”. The average closure time for the roadways over the Sarah Mildred Long and Portsmouth Memorial Bridges are 9.5 and 8.9 minutes respectively. Most ( 79% for Sarah Mildred Long Bridge and 85% for Portsmouth Memorial Bridge) of the lifts closed the road for seven to ten minutes.

**Table 6 Length of Roadway Traffic  
(July 2008)**

	Sarah Mildred Long Bridge		Portsmouth Memorial Bridge		
<b>Minutes Road Closed</b>	5	1	0.4%	0	0.0%
	6	8	2.9%	16	3.1%
	7	10	3.7%	87	16.8%
	8	115	42.3%	239	46.1%
	9	55	20.2%	81	15.6%
	10	36	13.2%	36	6.9%
	11	12	4.4%	19	3.7%
	12	6	2.2%	5	1.0%
	13	1	0.4%	8	1.5%
	14	5	1.8%	5	1.0%
	15	4	1.5%	1	0.2%
	16	6	2.2%	2	0.4%
	17	2	0.7%	6	1.2%
	18	4	1.5%	4	0.8%
	19	2	0.7%	2	0.4%
	≥20	5	1.8%	8	1.5%
	Total	272	100.0%	519	100.0%
	<b>Average Time</b>	<b>9.5 Minutes</b>		<b>8.9 Minutes</b>	
	<b>Median Time</b>	<b>9 Minutes</b>		<b>8 Minutes</b>	

*d. Summary of Feedback from navigational users and those responsible for the river's operation* HNTB met on June 16, 2009 with users of the Piscataqua River and the United States Coast Guard (USCG). A summary of the meeting is attached in Appendix C. The consensus of this group was that if the horizontal and vertical clearances of the Sarah Mildred Long Bridge were increased to match the Portsmouth Memorial Bridge and the skew of the bridge with the river's channel were reduced or eliminated, this would be a notable improvement to the users.

Additionally, HNTB was provided from the U.S. Coast Guard the report "Water and Analysis Management System" (WAMS) for the Piscataqua River. This survey ensures that the current system of navigational aids is effective and does not provide information relevant to this Technical Memorandum.

**Conclusions**

The two lower bridges crossing the Piscataqua River, the Portsmouth Memorial and Sarah Mildred Long Bridges, do present an obstacle to the navigational users as well as the roadway users. The vertical clearances of 10 and 19 feet are much smaller than the 135 clearance provided by the I-95 High Level Bridge. Because of these low clearances, both bridges must have lift spans to allow vessels to pass under. For the busiest month, July, the Portsmouth Memorial Bridge opens an average of about 17 times a day with an average 9 minute roadway closure. The vertical "closed" clearances would have to be raised significantly to reduce the openings. For instance,

the clearance for the Sarah Mildred Long Bridge would have to be increased by more than 40 feet to reduce the number of lifts by 25%. The navigational needs of the river present many challenges to addressing the overall transportation needs of the Kittery and Portsmouth.

**Appendix A**

**2006 HNTB Navigational Memo**

**INTEROFFICE  
CORRESPONDENCE**



**To**  
Nancy Mayville, NHDOT

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**From**  
John Watters/Addie Kim

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**Cc**  
Kevin Nyhan, NHDOT

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**Subject**  
Memorial Bridge (U.S. Route 1)  
Rehabilitation Project-P-K 13678  
Summary of Navigational Survey

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**Date**  
April 4, 2006

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This memo summarizes results from the navigational survey conducted in November 2005. The intent of the navigational survey was to identify issues of concern and preferences for construction closures for rehabilitation of the Memorial Bridge.

**Navigational Survey Methods**

The navigational survey was conducted through mailings to navigational users. Approximately 24 surveys were mailed on November 1, 2005 to navigational users, including industrial users (National Gypsum, Irving Oil, Granite State Minerals, Sea-3 Inc., Public Service of New Hampshire, Sprague Energy of New England, Tyco Telecommunications), the New Hampshire Port Authority, towing companies and pilots, boatyards, marinas, a boat hauler, commercial fisheries, and tourism-related uses (Isles of Shoals Steamship Company, Sail Amaryllis, Star Island Corporation). Surveys were distributed with letters describing the project and return envelopes with postage.

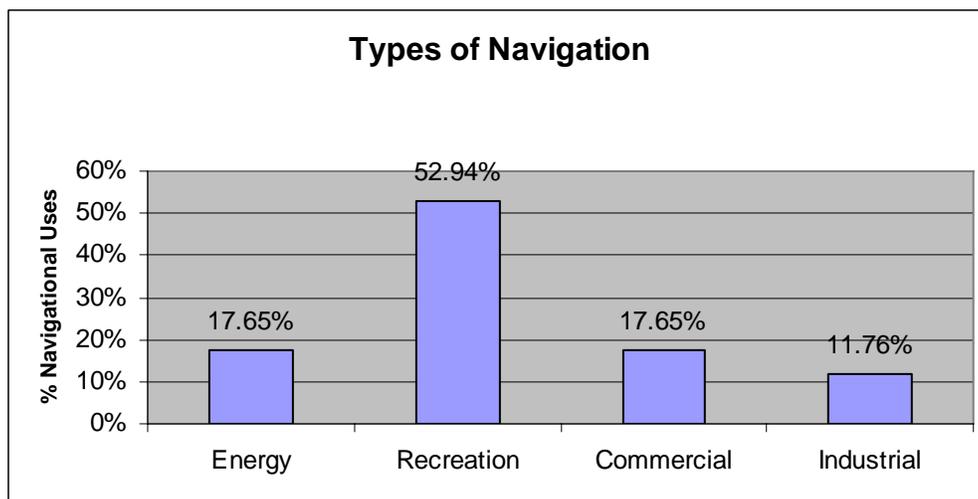
**Navigational Survey Results**

Seventeen responses were received. The results of the navigational surveys are summarized below.

### Locations/Types of Businesses

The majority of survey responses received were from Portsmouth. Eleven were from Portsmouth, three were from Newington, two were from Elliot, and one was from Dover.

Approximately half of the responses represented the recreation industry (marinas, tourism), roughly 18% of the respondents were energy companies, roughly 18% were commercial, and 12% characterized their business as industrial in nature.



### Seasonal Businesses

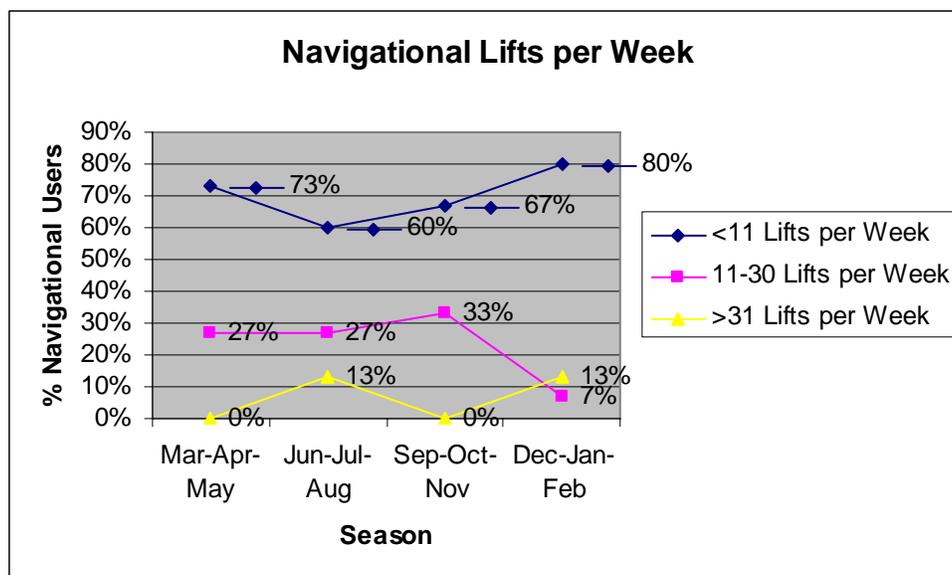
Several questions addressed business closures or seasonal use, and responses to these were as follows:

- 75% of businesses were not closed for a portion of the year. Of the 25% of businesses reported being closed, the majority were tourism related or a boat hauler that were closed from November-February to March-April.
- 41% reported not being seasonal businesses, and 59% were seasonal businesses. Other seasonal uses included tug boat pilots, marinas, boatyards, an island-based conference center/hotel operator, and an education user.
- The most important months for business were reported to extend from:
  - April, May, or June to
  - September, October, November, and December.

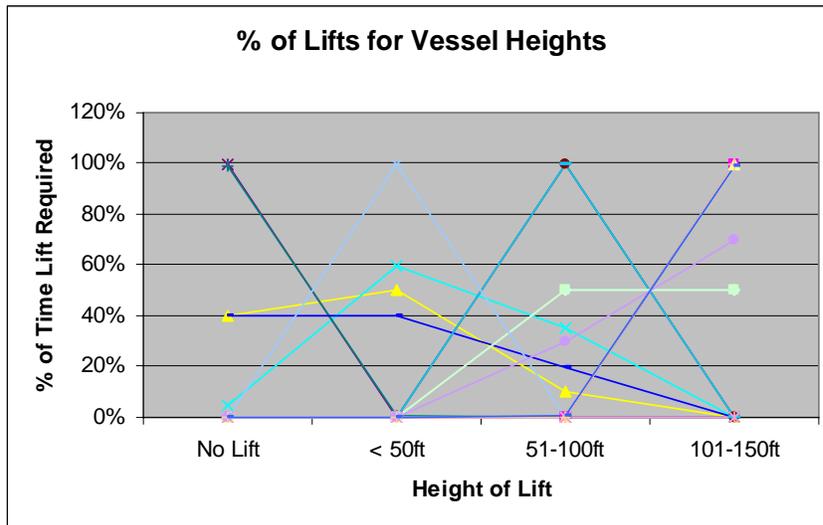
One energy company reported September to May as being the key months for energy deliveries.

### Use of Bridge by Navigational Users

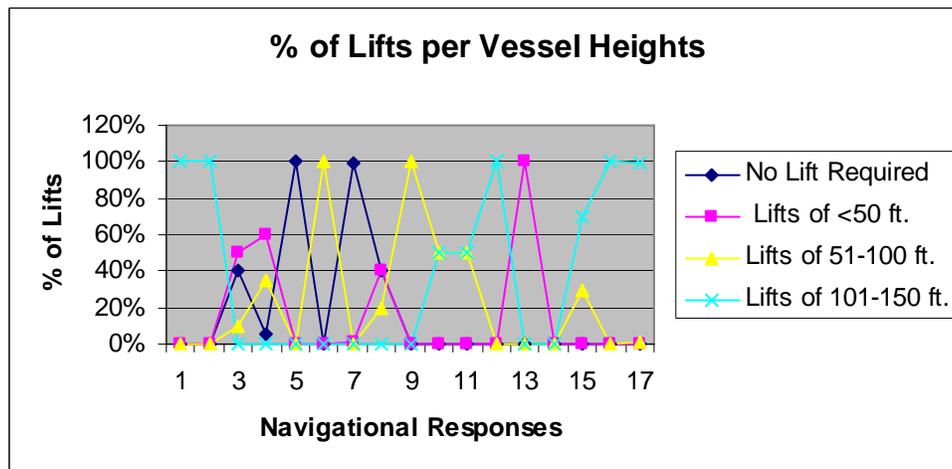
The number of navigational lifts required per week were reported to be less than eleven by most users (60% to 80%) for most months of the year. The chart below reports the number of lifts by percentage of respondents and season. The percentage of respondents requiring 11 to 30 lifts per week varied between roughly 7% and 33% throughout the year. No survey respondents required more than 31 lifts per week in the spring (March to May) or fall (September to November), but 13% required more than 31 lifts per week in the summer and winter months.



The following charts present the results of the responses received on the percentages of time that various lift heights are required. These are charted in terms of the seventeen individual responses received.

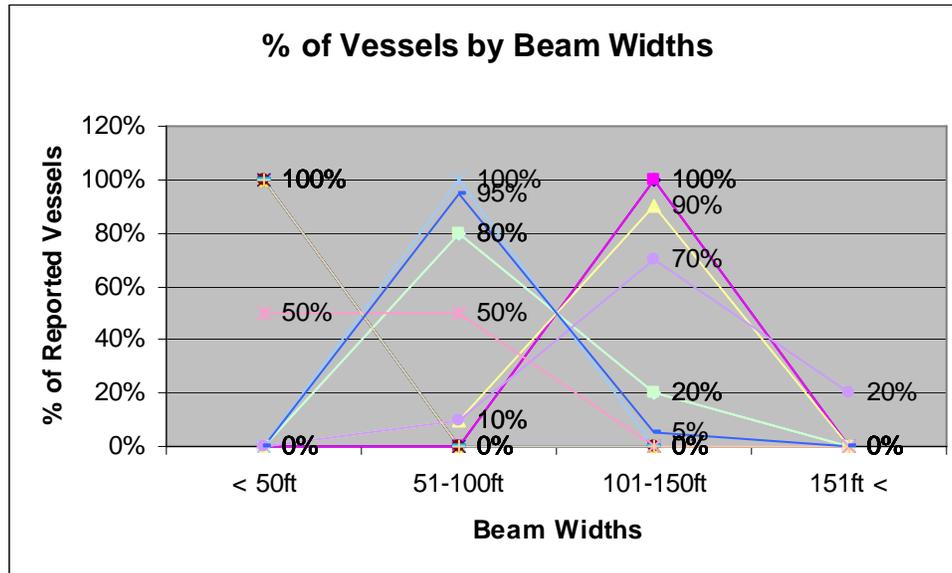


The chart below tracks results from each survey respondent (numbered from 1 to 17).

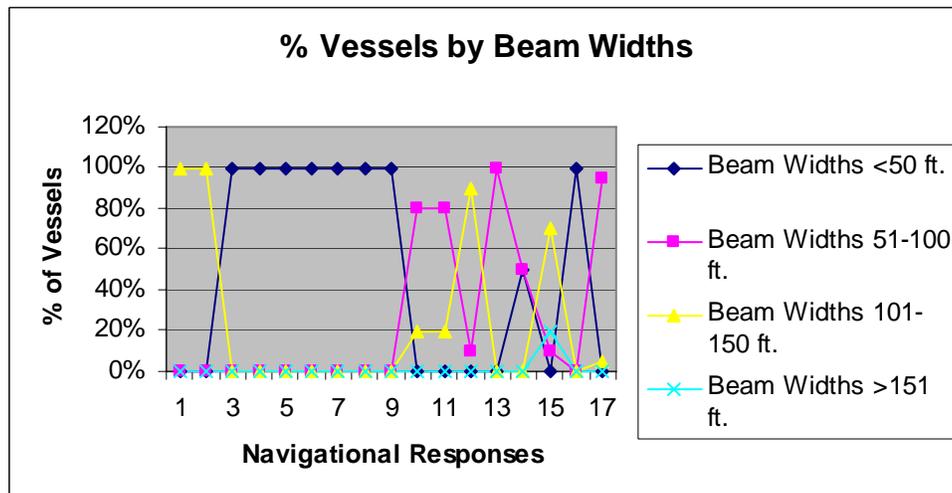


Five respondents reported needing no navigational lifts between 5% and 100% of the time. Five respondents reported that navigational lifts of less than 50 feet were required, with the percentages reported for this lift height varying between 1% and 100%. Nine respondents reported that lifts of between 51 feet and 100 feet were required, and percentages for these lifts were reported as varying between 1% and 100%. Eight respondents required lifts of between 101 feet to 150 feet (with percentages reported varying between 50% and 100% for this lift height).

The following charts present the results of the responses received on the percentages of time that various beam widths for navigational vessels are required. These are charted in terms of the seventeen individual responses received.



The chart below tracks results from each survey respondent (numbered from 1 to 17).



Eight respondents required beam widths of less than 50 feet 100% of the time, with one respondent requiring a beam width of less than 50 feet 50% of the time. Two respondents required beam widths of between 51 to 100 feet 10% of the time, one respondent required a 51-foot to 100-foot beam width 50% of the time, and four respondents required this beam width between 80% and 100% of the time. Four

respondents required beam widths of 101 feet to 150 feet 70% to 100% of the time, with three respondents requiring this beam width 5% or 20% of the time. One survey respondent reported requiring a beam width of greater than 150 feet 20% of the time.

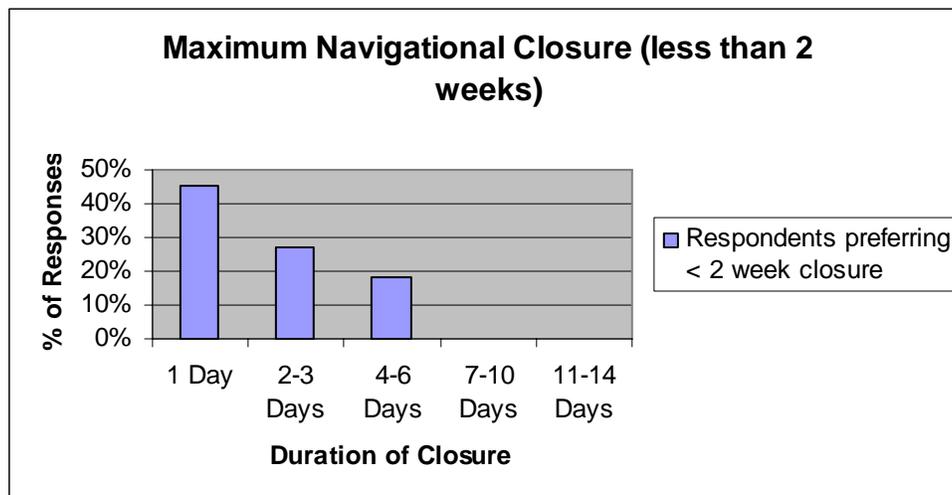
### Effects on Navigational Uses

Roughly half of the survey respondents had experienced previous closure of the Memorial Bridge. Most of these respondents did not report a problem, with the exception of a commercial fishery and an energy company. These outages were reported to interrupt shipments of freshly caught fish and fuel.

Roughly 79% anticipated an impact from a temporary navigational bridge closure, compared to 21% that did not anticipate an impact. Approximately 44% anticipated an impact from a vehicular bridge traffic detour, compared to 56% that did not anticipate an impact.

### Navigational Closures

Approximately 35% of respondents could accommodate a navigational closure of 2 weeks or more, compared to 65% that could not accommodate a 2-week closure. Of the respondents surveyed, the maximum length of time for a navigational closure that each business could accommodate is shown in the chart below. Forty-five percent reported that a closure of 1 day could be accommodated, 27% could accommodate a closure of 2 to 3 days, and 18% could accommodate a 4 to 5 day closure. No respondents reported being able to accommodate closures with lengths of 7 to 10 days or 11 to 14 days.



**Comments Received**

The comments that were received are presented in the following table:

**Navigational Survey Comments Received**

Manufacturing	Can accommodate 2-week closure if given sufficient (60 to 90 days) notice. There is only negative potential for impact, disruption of primary raw material. If there are extensive closures precluding shipping activity.
Public Utility	Coal shipments require bridge lifts
Full Service Marina	One day navigational closure at most during Apr-December. Negative effect of temporary navigational closure - many customers would not have access to open waters causing them to rethink storing with us.
Boat Hauling	No effect to business due to temporary navigational closure.
Commercial/Recreational Public-Charter Company	Leave river on daily basis with fishing clients. Negative effect of temporary navigational closure - loss of business to other charterboats.
Recreation (Sailing Charters)	Business in tourism based, operate every day weather allows. Any closures affecting navigation would shut down our business for the duration of the closure. We depend on pedestrian and vehicular traffic as a convenient means of accessing our place of business. Alternating one-way traffic would allow clients to reach our business directly and negatively, as our business utilizes the Memorial Bridge during every trip. If we were provided dockage at Prescott Park during navigational closures, we would be able to continue our business, with adequate nearby parking becoming the next major challenge to overcome.
Conference Center at Isles of Shoals	1) Our business as of right now could accommodate a 2 week navigational closure of the Memorial Bridge, as long as one of the spans is free of scaffolding. Our boat makes two trips a day from Burge Dock out to Isles of Shoals, though it does not require a bridge lift at certain tides the antennas are close to hitting the bridge. Thus if there was scaffolding across all three spans at one time we would have difficulties continuing on our schedule. 2) The effect of temporary navigational closure on our business would be that basically we could not get food out to the island (we have about 260 guests and 120 workers), we could not remove trash daily from the island, and also our staff would not be able to get off the island for their days off. Though we could get around all this is we had advanced warning and was able to use another dock before

	the Memorial Bridge. 3) The time of rehabilitation of the Memorial Bridge shouldn't really have an impact on our business other than the amount of navigational closures, and when those occur.
Marine Towing & Salvage/Marina	No effect of closure on business.
Commercial Fishing	As much advanced notice of a closure as possible will help, but once loaded, boats, will have to land ASAP. Our boats carry a perishable product (lobsters and fish). Inability to land and offload in a timely manner will be catastrophic. Our vessels work in 4 different fisheries and use the bridge daily or weekly depending upon the type of fishery and location of the fish when caught. We can accommodate short closures of up to a day or so, provided there is enough advance notice to plan fishing trips around them. We operate 12 boats, each with its own schedule, working 7 days/week year-round.
Ship Docking	Negative effect on business if closed more than 3-4 days, loss business. Need bridge to lift to transport goods. How about replacing the bridge and leaving center span out until last. When entire bridge has been replaced, float in new center span and attach cables. Have counter weights and cables pre-run so bridge is not closed so many days. We do not want to lose any business because of bridge being closed for extended period. The business on the river would have to send trucks to Portland and Boston if they run out of cargo. We would hate that because we are already competing with them.
River Piloting Service	Negative effect of temporary bridge closure - lost revenue. Need bridge open for vessel traffic.
Propane Import & Distribution	Negative effect of temporary bridge closure - vessel delay and product shortage.
Nonprofit	Need to know schedule of closure months in advance to plan accordingly.
Boat Storage & Repair	Do not schedule bridge closure during May to mid-July and not during September through November, would lose a tremendous amount of business, especially September to November.
State Marine Terminal	We would need to schedule around it, may cost money while a vessel is anchorage or at the pier.

Passenger Sightseeing Cruise Boat	Need lifts for mid-June to mid-October. Our entire business is based on the ability to get under the Memorial Bridge. All of our tours public, school fieldtrips, etc. are sold as including the sights of Portsmouth Harbor and the Isles of Shoals. All of our weddings want to go this route, and even our fall foliage cruises go to the entrance as everyone loves the lighthouses. The lighthouses, forts, naval yard, old port waterfront, etc. are critical to providing the product our customers are willing to pay for. From June to Labor Day we operate 3 trips almost every day that require 2 lifts each. September, October, and May our schedule is lighter. We seldom do cruises in April and early May is light. Additionally, we are much slower after Columbus Day and do not need to cruise the entire month of November. December we offer limited Christmas parties, but this could be flexible. Understanding the importance of the project we are certainly open to trying to work a different schedule during the slower months, but we could honestly only do this for 2 days out of the week where we might not offer tours. But, closing the lift for one week, let alone two would cause extreme hardship on a business that is challenging enough due to the weather and economy.
Petroleum products storage and distribution	Can only schedule June-July-August when demand for product is lowest. Negative effect of temporary navigational closure-Possible inventory depletion. This facility is a key factor in distribution of petroleum products (including heating oils) in this region. Any closure that delayed ships from delivering those products to this terminal could create severe shortages in this region. Thank you for allowing us the opportunity to provide input to this process.

**Appendix B**

**33 CFR §117.531**

## **Title 33: Navigation and Navigable Waters**

### **PART 117—DRAWBRIDGE OPERATION REGULATIONS**

#### **Subpart B—Specific Requirements**

##### **Maine**

#### **§ 117.531 Piscataqua River.**

(a) The following requirements apply to all bridges across the Piscataqua River:

(1) Public vessels of the United States, state and local vessels used for public safety, vessels in distress, commercial vessels over 100 gross tons, inbound ferry service vessels and inbound commercial fishing vessels shall be passed through the draws of each bridge as soon as possible without delay at any time. The opening signal from these vessels is four or more short blasts of a whistle, horn or a radio request.

(2) The owners of these bridges shall provide and keep in good legible condition clearance gauges for each draw with figures not less than 18 inches high designed, installed and maintained according to the provisions of §118.160 of this chapter.

(3) Trains and locomotives shall be controlled so that any delay in opening the draw shall not exceed five minutes. However, if a train moving toward the bridge has crossed the home signal for the bridge before the signal requesting opening of the bridge is given, that train may continue across the bridge and must clear the bridge interlocks before stopping.

(4) Except as provided in paragraphs (b) through (c) of this section the draws shall open on signal.

(b) The draw of the Memorial (US 1) bridge, mile 3.5, shall open on signal; except that from 15 May through 31 October, from 7 a.m. to 7 p.m., the draw need be opened only on the hour and half hour for recreational vessels and commercial vessels less than 100 gross tons except as provided in (a)(1).

(c) The draw of the Sarah M. Long (Route 1 Bypass) bridge, mile 4.0, shall open as follows:

(1) The main ship channel draw shall open on signal; except that from 15 May through 31 October, from 7 a.m. to 7 p.m., the draw need be opened only at quarter of and quarter after the hour for recreational vessels and commercial vessels less than 100 gross tons except as provided in (a)(1).

(2) The secondary recreation draw shall be left in the fully open position from 15 May through 31 October except for the crossing of a train in accordance with (a)(3) above.

[CGD1-89-111, 55 FR 13275, Apr. 10, 1990]

**Appendix C**

**Navigation Needs Meeting  
June 16, 2009**

## MEETING NOTES



**Date:** June 16, 2009

**HNTB Project No.** 49244-PL-001-001

**Meeting Name:** Maine-New Hampshire Connections Study

**Location:** Westbrook, Maine

**Purpose:** Review and Discuss Navigational Needs and Opportunities

**Attending:** (see attached sign in sheet)

### I. Study Overview

- HNTB provided an overview of the Study, tasks, and schedule
- HNTB reviewed importance of navigational needs and opportunities to Study

### II. Summary of Discussion

- USCG (John Mauro) identified that they were going to conduct a survey this summer. The Waterways, Analysis and Management (WAM) survey is an outreach effort conducted every 5 years to mariners. The last one was conducted in 2004 and will be conducted again in 2009.
- Group discussed navigational needs - focused on Sarah Long bridge as this bridge is the most constrained as shown below.

#### **Bridge Horizontal and Vertical Clearances**

	Horizontal	Vertical (full lift)
Memorial Bridge	260 ft	150 ft
Sarah Long Bridge	200 ft	135 ft
I-95 Bridge	440 ft	135 ft

Note: clearance is in reference to mean high water

- Sarah Long bridge is also at a skew to the river channel
- Portsmouth Pilots (Dick Holt) identified that Panamax is the biggest vessel currently being accommodated through the two bridges (750' length, 108' beam, 135' air draft)
- I-95 high level bridge was noted to have been struck numerous times
- Sarah Long bridge needs fender system
- Group identified "ideal" improvements to be considered as part of this study. These improvements were:
  - Extra 15' in vertical clearance on Long (to match Memorial)
  - Extra 60' horizontal on Long (to match Memorial)
  - Lessen bridge skew on Long
- According to the group, Sarah Long bridge plans were developed in the 1980's that incorporated many of these improvements

- USCG (John McDonald) acknowledged that they would issue the permit for any bridge construction
- ACOE would issue evaluate environmental impacts
- Tracy Shattuck (NH Port Authority) provided post meeting comments on HNTB's river users list which have been incorporated.
- MaineDOT, NHDOT, and HNTB concluded post meeting that a navigational survey was not required. Needed information will come from Long and Memorial Bridge logs and WAM survey.

### III. Action Items

- John Butler will have the log books from Long and Memorial scanned for HNTB use (completed)
- HNTB to contact John Mauro at USCG to get copy of most recent WAM and to determine process to include Study questions on upcoming WAM

This is our understanding of items discussed and decisions reached. Please contact us if there are changes or additions.

Submitted by,

HNTB CORPORATION

Paul T. Godfrey, PE  
Study Manager

cc: Attendees  
File

# NAVIGATIONAL MEETING ATTENDANCE

6/16/09

<u>Name</u>	<u>Affiliation</u>	<u>Phone / e-mail</u>
Paul Godfrey	LINTB	207-774-5755
Bron Pike	Kittery Harbor master	207-451-0829 kpk@kittery.me.org
Milton HALL	Kittery Port Auth.	207-439-2346
DICK HOLT JR.	Portsmouth Pilots/Tugboats	603-436-1209 Dick.Holt@Morantug.co
Tracy Shattuck	NH Port Authority	603 436 8500 t.shattuck@peaseport.nh.gov
Gerry Audibert	Maine DOT	207 624-3315 gerry.audibert@maine.gov
<u>Bob Landry</u>	NH DOT	603 927 13725 RLandry@dot.state.nh.us
TERENCE LEAHY	U.S. COAST GUARD	TERENCE.O.LEAHY@USCG.mil
John Mauro	USCG	John.J.Mauro@USCG.mil
Gene Popien	NH DOT - Bridge Maint	603-396-4644
John McDonald	USCG	617 223 8364 John.W.McDonald@USCG.mil
John Butler	NH DOT	jbutler@dot.state.nh.us 603-271-7420