



Where's the shoreline?

Sources of historical high water lines developed in the context of Massachusetts coastal regulations.

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Cyprian Southack, 1734

Overview

1. Shorelines, Tidal Datums, & Boundaries
2. Public and Private Rights in Tidelands: The Public Trust Doctrine
3. The Massachusetts Historical Shoreline Mapping Project

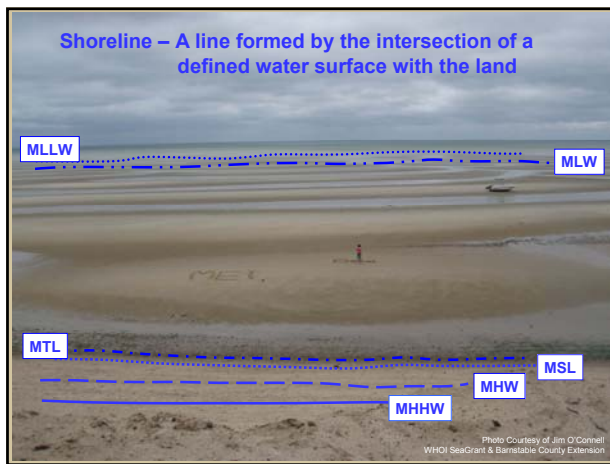
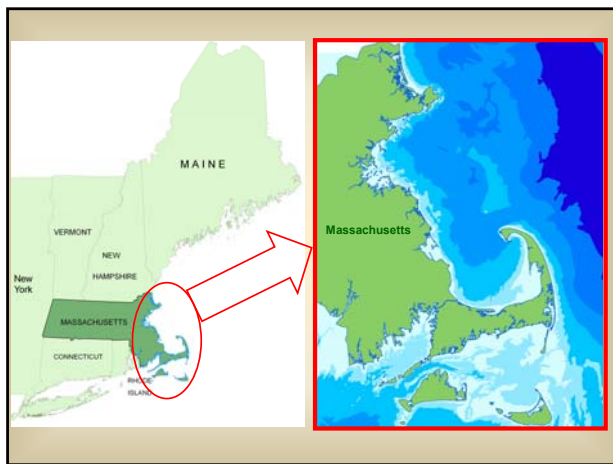
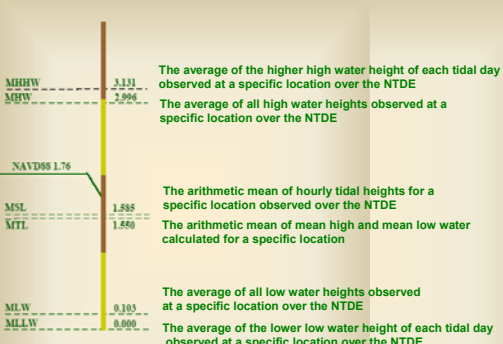


Photo Courtesy of Jim O'Connell
WHOI SeaGrant & Barnstable County Extension

Boston Harbor Tidal Datums



(Elevations of tidal datums referred to Mean Lower Low Water (MLLW), in meters)

Station Name: Boston Harbor, MA
Station ID Number: 8443978
National Tidal Datum Epoch: 1983 - 2001
Mean Range (Mn): 3.04 ft. (MHW - MLW)

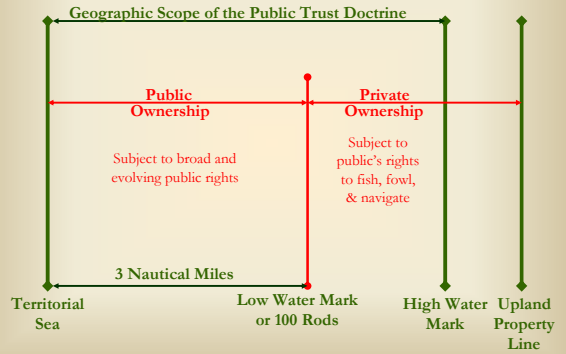
The Public Trust Doctrine

- Public has basic rights & interests in natural resources such as sea and adjoining shores
- State, as trustee, charged with responsibility of protecting public's right to use tidelands for all lawful purposes

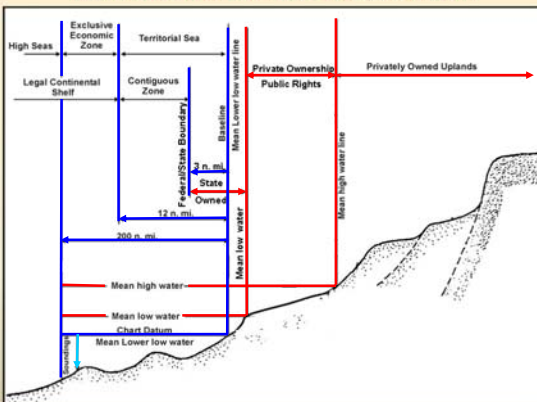
The Public Trust Doctrine

- **Tidelands property ownership in U.S. rooted in principles of English common & property law**
 - Originally private ownership in Massachusetts extended only to High Water Mark
 - 1640's – private ownership extended by Legislature to Low Water Mark, or 100 rods from HWM, whichever more landward (“...where the sea doth not ebb above a hundred rods, and not more wheresoever it ebbs farther.”)

The Public Trust Doctrine in Massachusetts



Datums & Boundaries in Massachusetts

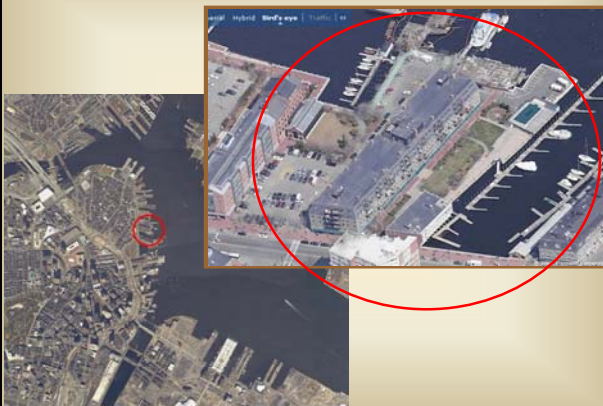


18th and 19th Century Developments

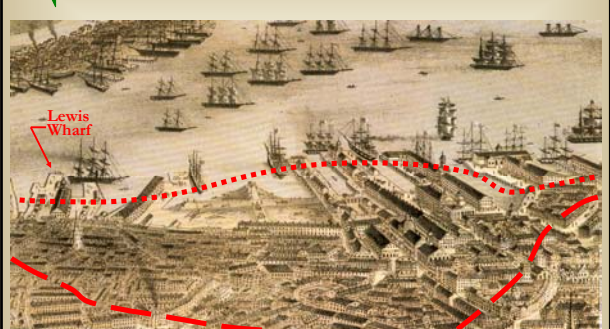
- Until 1941 licenses thought to be irrevocable
- Wharfing out continued with legislation enacted on a case-by-case basis
 - ✓ Presumed to make licenses irrevocable
- 1979 - Mass SJC brings Public Trust Doctrine to forefront of waterfront development community on Lewis Wharf



Lewis Wharf



Lewis Wharf



View of Boston, July 4, 1870
Source: *Mapping Boston*

Lewis Wharf

- Boston Waterfront Development Corp. v. Comm. (378 Mass. 629 (1979))
- In 1979 MA SJC rules that “Wharfing Statutes” not a fee simple absolute conveyance of title
- Filling of or wharfing out over tidelands, even if authorized by special legislation, did not extinguish public rights inherent in underlying tidelands

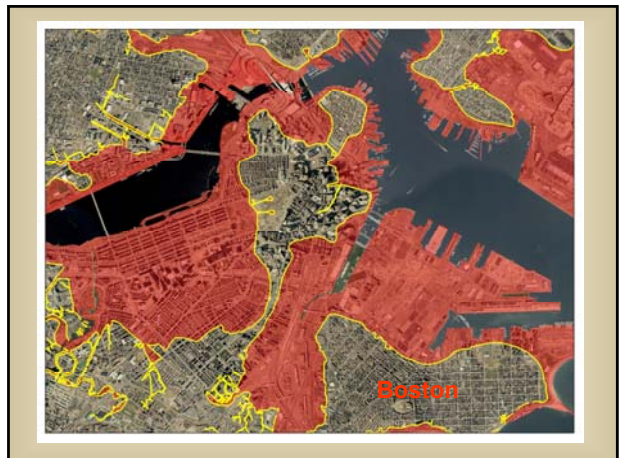
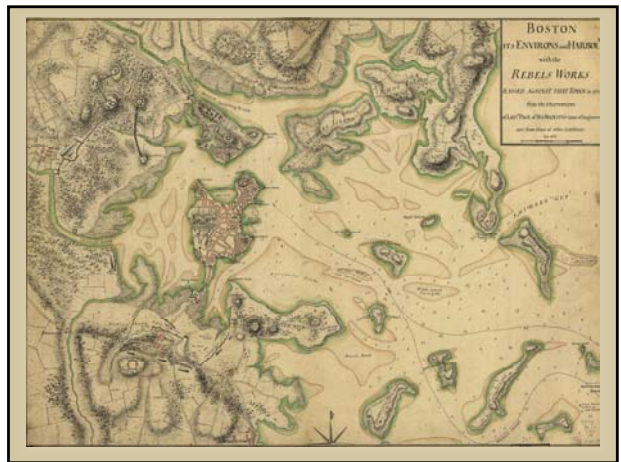
Historic High Water Mark (310 CMR 9.02)

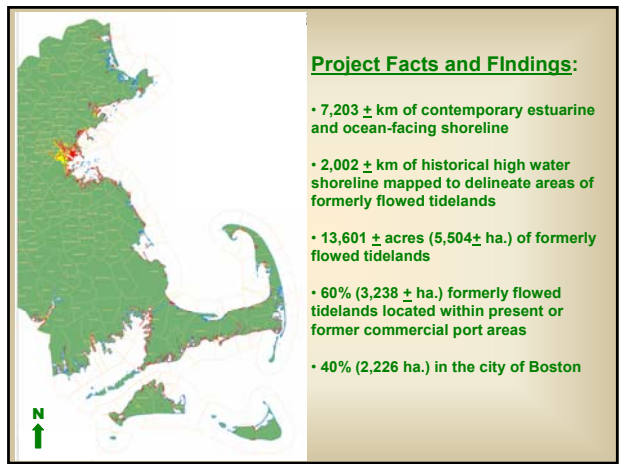
... the high water mark which existed prior to human alteration of the shoreline...

[The regulations]...presume the historic high water mark is the farthest landward former shoreline...[from] topographic or hydrographic surveys...and other historic maps or charts...

Project Goal

- To employ a **Plan-Based approach** to develop **Presumptive** line(s) of tidelands jurisdiction for the entire coast.
- In areas of **filled tidelands**:
 - Lines must be credible and justifiable
 - Technically sound and defensible
 - Based on “best available” historic shoreline information
 - Methodology must provide reasonable assurance that lines established in accordance with contemporary surveying, mapping, and cartographic principles and standards
- All lines are “rebuttable”





I went along shore, and ... delineated the true shape of every head land, island, point, bay, rock above water, etc and every winding and irregularity of the coast...

Joseph F. W. DesBarres to Lord Colville, May 1765
Adm. Sec. in Letters (Adm.1-482)

"It is not down in any map; true places never are."

Herman Melville, *Moby Dick*