

LONG ISLAND SOUND BLUE PLAN 2019



The following is an extract from Section 3.3 of the Final Draft Version of the Blue Plan (version 1.2 dated September 2019) describing the process to create the Blue Plan Policy Area and Area of Interest.



Long Island Sound Blue Plan

Report presented by the:

Connecticut Department of
Energy and Environmental Protection



Version 1.2
September 2019

Long Island Sound Blue Plan

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Committee

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SIGNATURE OF ADOPTION:



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The following is an extract from Section 3.3 of the Final Draft Version of the Blue Plan (version 1.2 dated September 2019) describing the process to create the Blue Plan Policy Area and Area of Interest.

3.3 Long Island Sound Areas Subject to the Blue Plan

The Blue Plan statute, CGS § 25-157t(c), identifies the following areas:

For the purposes of this section, the submerged lands and waters subject to the commissioner's planning, management and coordination authority under the Long Island Sound Blue Plan shall include Long Island Sound and its bays and inlets from the mean high-water line, as defined by the most recent data of the National Oceanic and Atmospheric Administration, to the state's waterward boundaries with the states of New York and Rhode Island. Any siting policies, identification of locations, or performance standards for

activities, uses and facilities under the Long Island Sound Blue Plan shall apply in a spatial planning area located seaward of the bathymetric contour of minus ten feet North American Vertical Datum to the state's waterward boundaries with the states of New York and Rhode Island provided such planning area shall not extend into any river that flows into the sound beyond the first motor vehicle bridge or railroad bridge that crosses such river or area along such river that is authorized by the Commissioner of Economic and Community Development, pursuant to section 32-70 of the general statutes, to be an enterprise zone that shall be known as a defense plant zone. Such spatial planning area shall be designated on a map to be prepared by the advisory committee established pursuant to subsection (a) of this section.

❖ Area of Interest

When considering how to apply the wide array of human use and ecological data contained in the Long Island Sound Resource and Use Inventory (and further expanded upon in subsequent stages of the Blue Plan effort), the PDT found it necessary to look beyond the boundaries defined within the Blue Plan statutory language above. For example, there are upland areas that are (1) potentially relevant to activities that may occur within the policy area (such as the location of energy facilities that could impact cable or pipeline landings) and (2) represent significant ecological connectivity between the upland and the Sound (such as tidal wetlands). As a result, the PDT developed the Blue Plan “Area of Interest,” which illustrate the geographic extent of the human use and ecological resource data used in the Blue Plan. ***It is important to note that the concept of an Area of Interest in the context of the Blue Plan is simply used as a convenience to establish the extent of the data sources used. It does not in any way affect the area where Blue Plan policies and performance standards apply, or the policies and performance standards themselves.***

In establishing the Area of Interest, the PDT included not only the waters of Long Island Sound defined in CGS § 25-157t(c) but also the upland areas in both Connecticut and New York that are defined by their respective coastal town boundaries.

To develop the “Long Island Sound” Area of Interest, the PDT used CT DEEP geospatial mapping data representing the boundaries of Connecticut, New York, and Rhode Island land and waters¹³ as a proxy for representing the land/water interface (shoreline). The approximate boundary limit for crossing all rivers, streams, inlets, bays, harbors, etc., was established by using the first upstream obstruction from Long Island Sound (e.g., roadway, railway, bridge, etc.) as depicted in publicly accessible aerial photography and manually added to the shoreline. All shorelines upstream of these obstructions were removed.

The PDT defined the westernmost limit by using the bridge at Throg’s Neck, which connects the mainland to Long Island in New York (Figure 3-2). In the best professional judgment of the

¹³ Political Boundaries - From the Northeastern United States State Boundary layer, published by CT DEEP. Source map scale is 1:24,000

Team, this represented a reasonable and defensible boundary for use within the context of the Blue Plan.

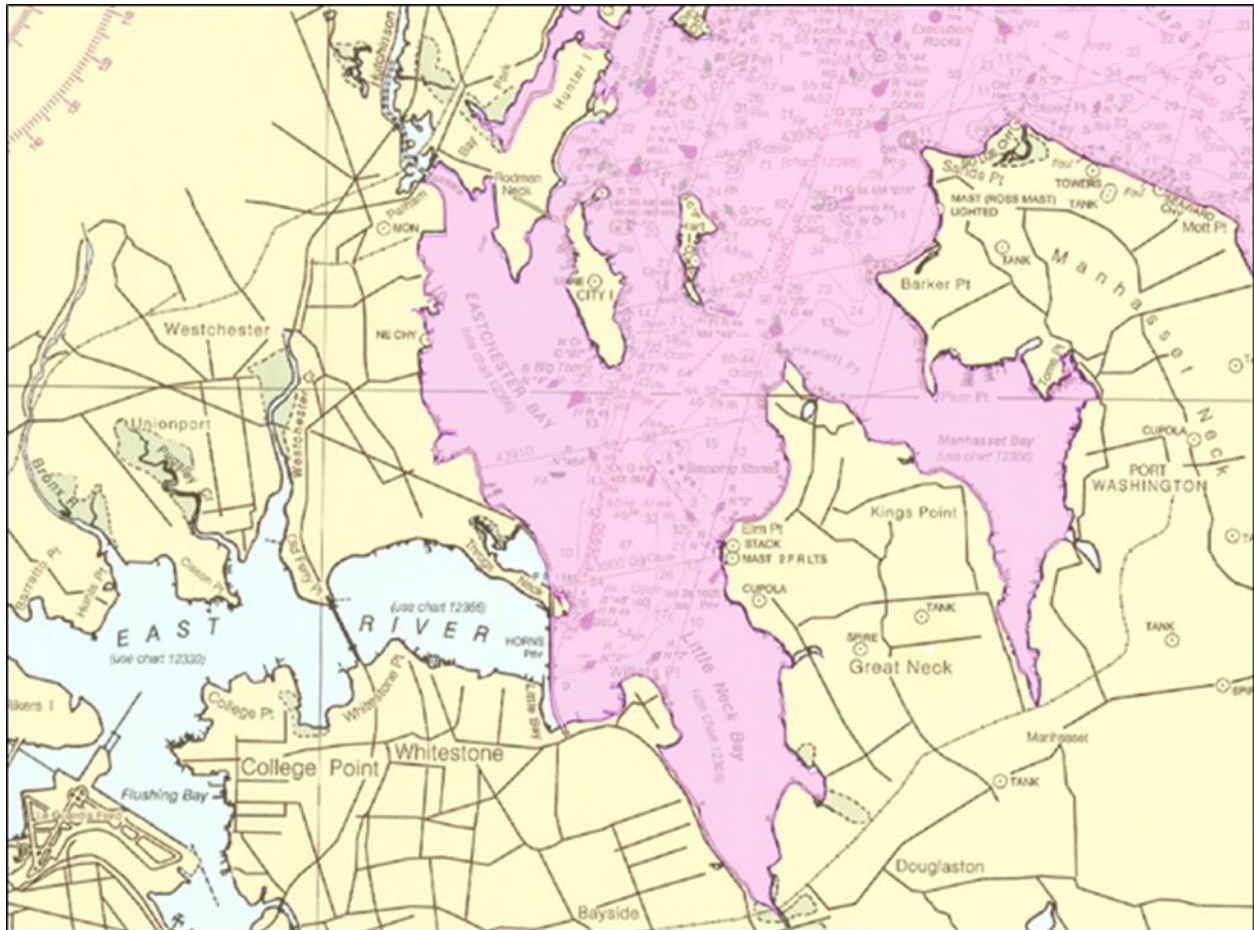


Figure 3-2. The western boundary for considering Long Island Sound (shown in purple) uses the Throg's Neck bridge in New York to separate Long Island Sound from the East River. NOAA Nautical chart data represents the basemap.

On the opposite side of the Sound, the Connecticut state line south of the Route 1 bridge across the Pawcatuck River serves as the easternmost boundary between Connecticut and Rhode Island in the Pawcatuck River, through Little Narragansett Bay, and around Sandy Point, NY (Figure 3-3).

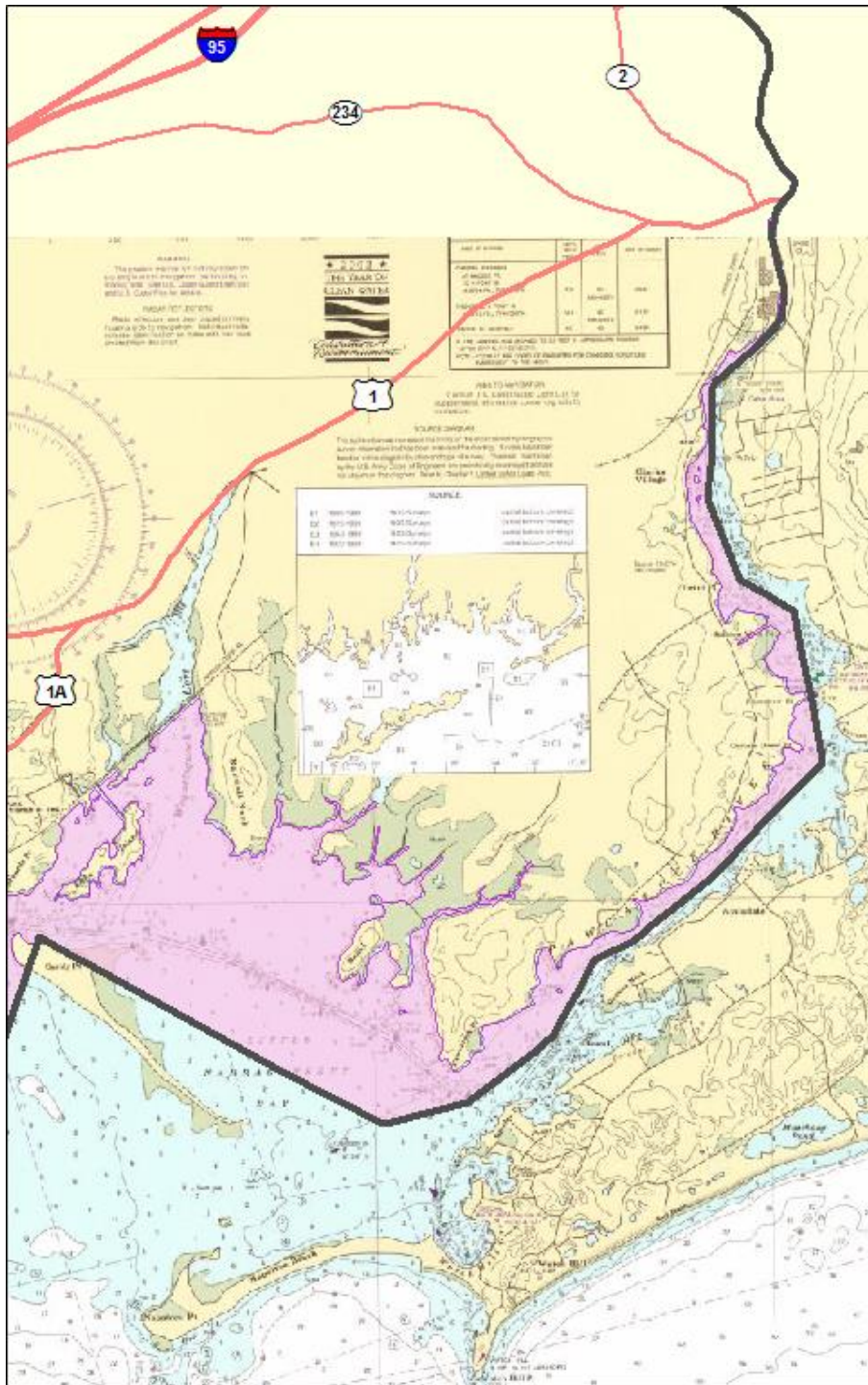


Figure 3-3. The easternmost border, showing the Connecticut state line through the Pawcatuck River, Little Narragansett Bay, and Sandy Point.

To complete the eastern boundary area and represent relevant New York waters, the PDT used the EPA Long Island Sound Study National Estuary Program Ecoregion Boundary (Figure 3-4).

The PDT again felt this federally recognized entity working in a bi-state capacity with Connecticut and New York provided a reasonable and defensible approach. The Ecoregion Boundary, which extends from Orient Point, New York to include Plum, Great Gull, Little Gull, and Fishers Islands, was joined to the Connecticut state line data at a point roughly halfway between Fishers Island, New York and Napatree Point, Rhode Island. The complete extent of Long Island Sound in consideration for Blue Plan development can be found in Figure 3-5.

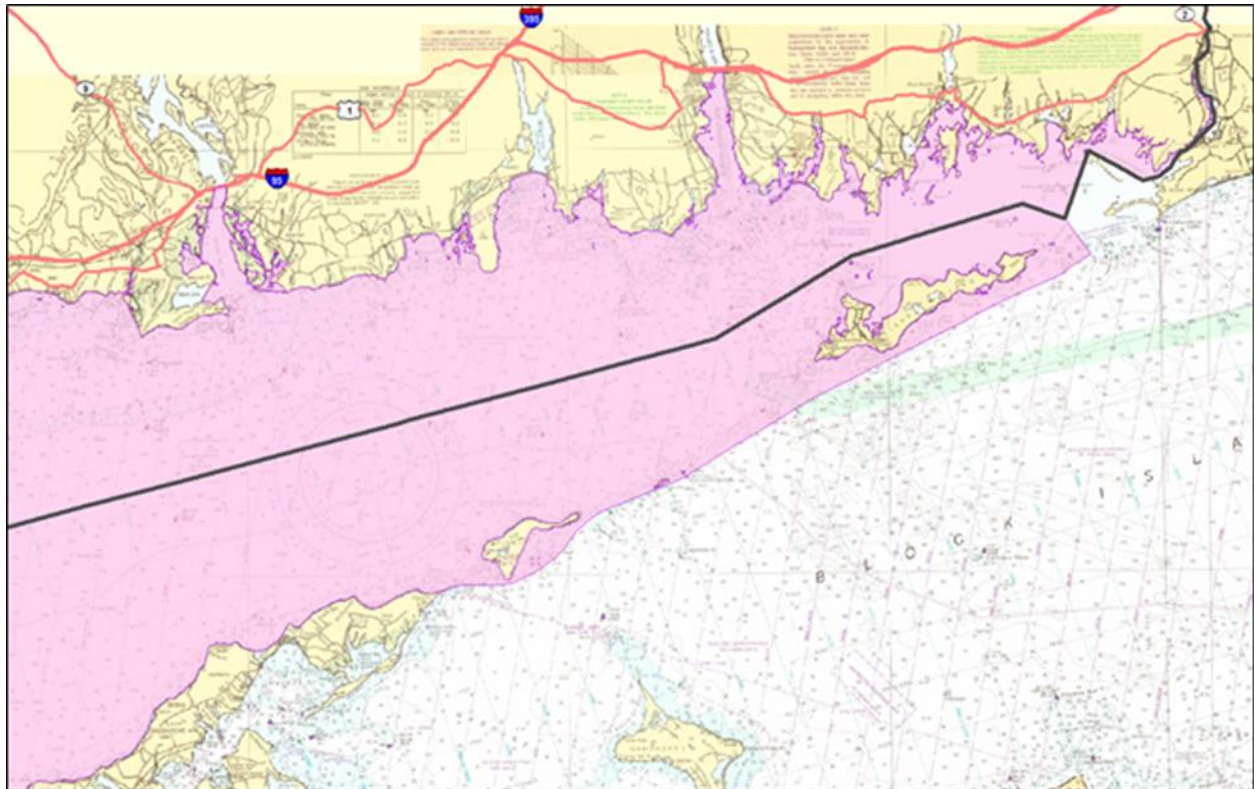


Figure 3-4. The complete eastern Long Island Sound boundary using both the EPA Long Island Sound Study Ecoregion area as well as the state lines between Connecticut, New York and Rhode Island.

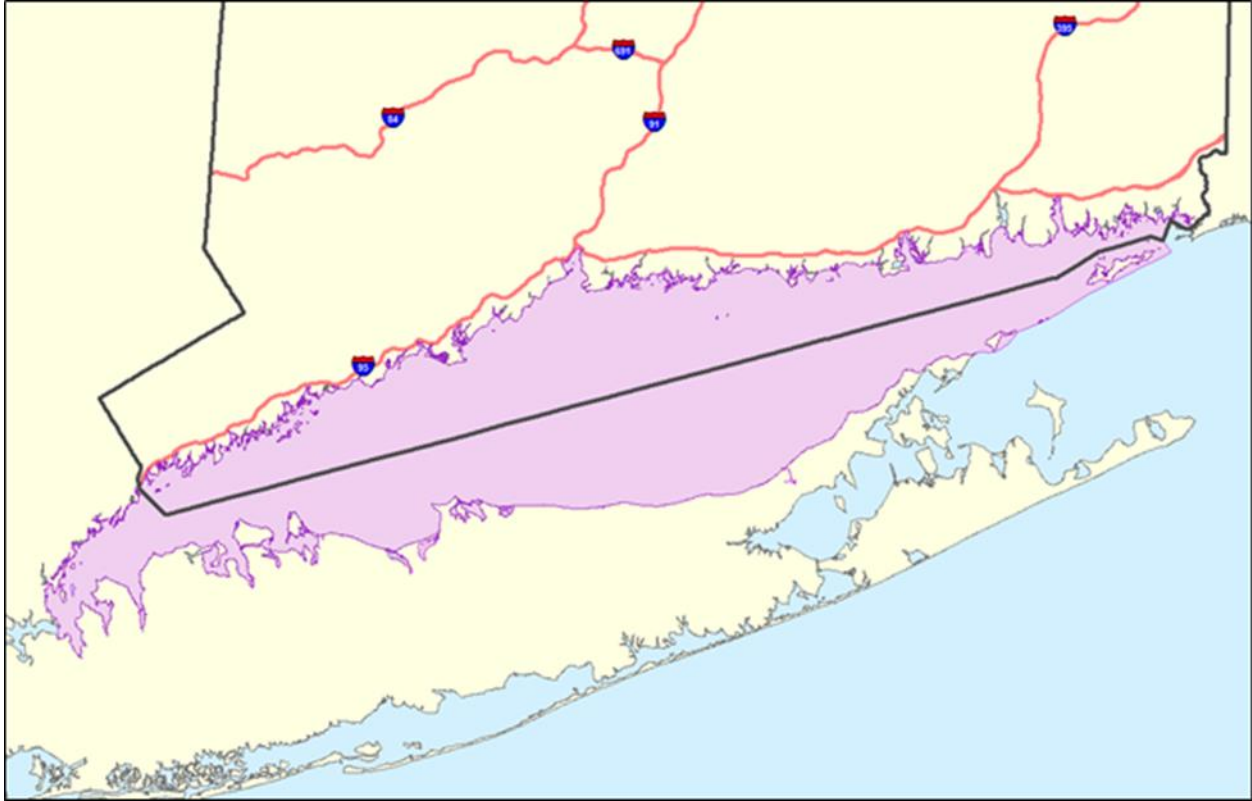


Figure 3-5. The complete extent of Long Island Sound for consideration within the Blue Plan.

To develop the Coastal Upland AOI, the PDT referred back to CT DEEP geospatial mapping data representing the boundaries of Connecticut and New York, and simply extracted those towns which were adjacent to the AOI for Long Island Sound. (These town boundaries are inclusive of, but do not explicitly delineate, many local villages, boroughs, districts, and other similar subsets.)

Figure 3-6 illustrates the complete Blue Plan Areas of Interest for Coastal Uplands and Long Island Sound.

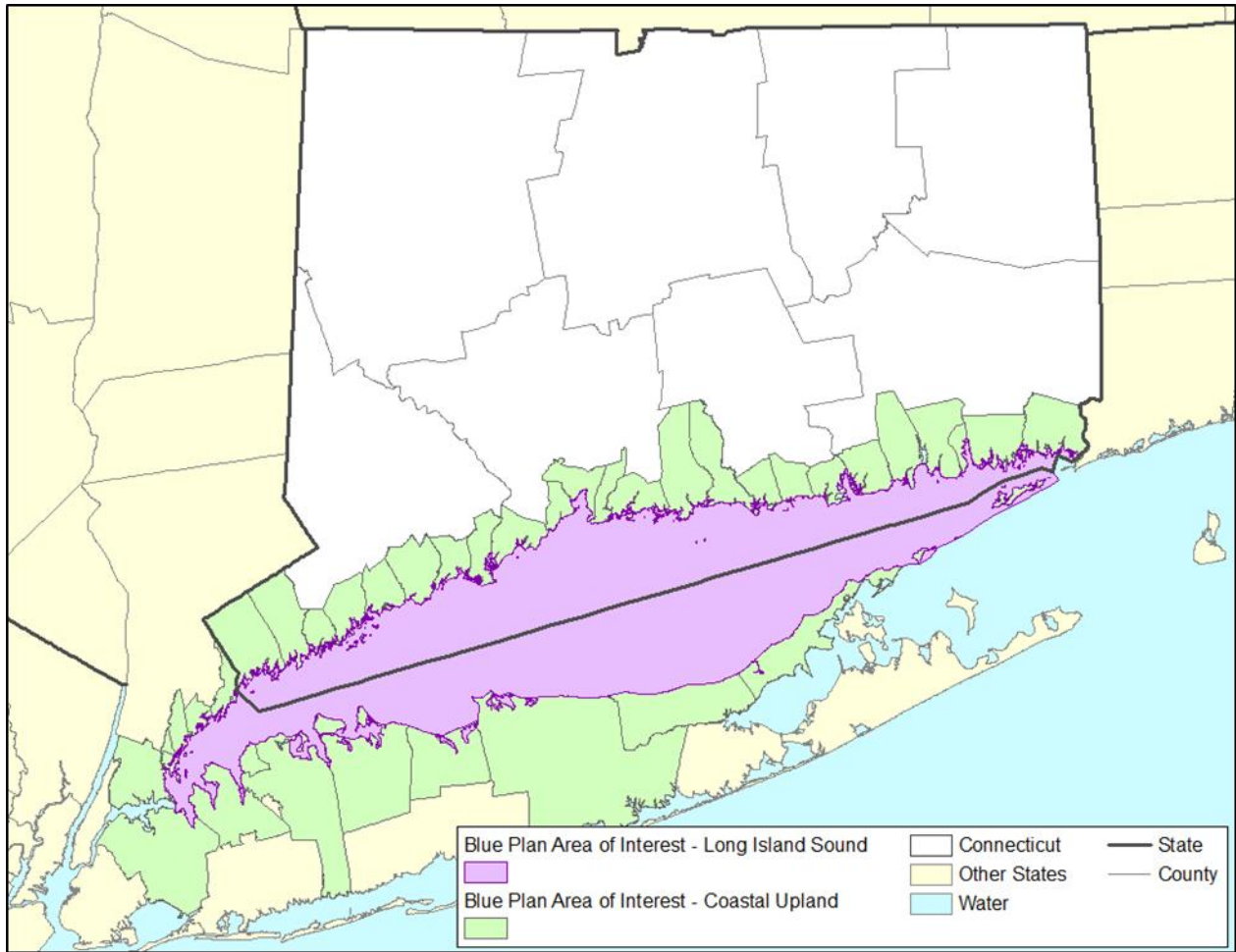


Figure 3-6. Areas of Interest for Long Island Sound and Coastal Uplands.

NOTE: The state-level data sources used were either based directly on Digital Line Graph (DLG) files produced by the U.S. Geological Survey (USGS) or created by State governmental agencies that digitized and attributed town boundaries typically published on 1:24,000-scale USGS topographic quadrangle maps. Therefore, it must be noted that these boundaries, while suitable for planning purposes, do not depict official state delineations established by the respective state and municipal governments, and may contain boundary line errors.

❖ Policy Area

The Blue Plan Policy Area within Long Island Sound uses a statutorily defined bathymetric depth contour as the landward boundary delimiter. Unfortunately, the most definitive and well-maintained sources of bathymetric data, NOAA Nautical Charts, do not show values that reflect the North American Vertical Datum of 1988 (NAVD88) as set in statute. Charting depths use a different datum (effectively the “floor” or “0” value), typically Mean Lower Low Water (MLLW), and not a geodetic datum such as NAVD88. There is, however, an online tool called

[VDatum](#) provided by the NOAA National Ocean Service that can convert depth values between datums (NOAA, 2018) which makes it possible to convert the -10ft NAVD88 value to MLLW and thus use nautical charting data to help identify the boundary.

General Approach:

First, the relationship between the datums of MLLW and NAVD88 were established at multiple locations across the Connecticut coast. These relationships also accounted for unit changes between source information from the Nautical Charts in meters to the statutory requirements in feet. Table 3-1 illustrates these relationships.

Table 3-1. Establishing equivalent relationships between vertical datums and units

	<i>NAVD88 (ft)</i>	<i>MLLW (ft)</i>	<i>MLLW (m)</i>
<i>Bridgeport</i>	<i>-10</i>	<i>-6.1</i>	<i>-1.9</i>
<i>New Haven</i>	<i>-10</i>	<i>-6.4</i>	<i>-2</i>
<i>CT River mouth</i>	<i>-10</i>	<i>-7.8</i>	<i>-2.4</i>
<i>New London</i>	<i>-10</i>	<i>-8.2</i>	<i>-2.5</i>

Using these results, the PDT compared these values to the depth contours available from the geospatial data provided by NOAA Electronic Nautical Charts. Since no depth contours provided an exact match, a value of -3.6m MLLW was selected since it was the closest option to the statutory language while also ensuring that no locations violated the statutory language by being shallower than -10 ft NAVD88. Table 3-2 compares the result of this choice.

Table 3-2. Comparison of equivalent datum values and the relationship between statutory and the Policy Line depths.

	NAVD88 (ft)	MLLW (ft)	MLLW (m)	Best option NOAA depth contour (m MLLW *)	Best option NOAA depth contour (ft NAVD88)
Bridgeport	-10	-6.1	-1.9	-3.6	-15.6
New Haven	-10	-6.4	-2	-3.6	-15.4
CT River mouth	-10	-7.8	-2.4	-3.6	-14.0
New London	-10	-8.2	-2.5	-3.6	-13.7

* the depth contour value from the Nautical Charts that is closest in value to the statutory limit.

Note that the proposed demarcation of the policy area of -3.6 m MLLW (“Best option NOAA depth contour - ft NAVD88”) exceeds (i.e., is deeper than) the -10ft NAVD88 boundary by at least 3.7 ft (or slightly over 1 (one) meter.) **Put another way, the effective Policy Area boundary has been established more conservatively than the statute calls for.** In doing so, the PDT has defined an area that is consistent with the intent of CGS § 25-157t(c) by using the best information available and locating a defensible boundary as close to the intended depth without encroaching landward.

Policy Area Revisions:

In response to comments received on the draft version of the plan, the PDT removed all navigation channels delineated from NOAA ENC data outside of (i.e., shallower than) the policy area as well as portions of the harbors of Bridgeport, New Haven, and Stonington and the Connecticut and Thames Rivers landward/north of reasonable and identifiable landmarks (either jetties, breakwaters, points on land, or a combination thereof.) The goal in removing these areas is that, although they meet the *letter* of the statute, they may not be the most consistent with the *intent* of the statute and/or cause undue confusion.

As a result and in summary:

- The Policy Area only applies to the State of Connecticut;
- The Policy Area as called for in CGS § 25-157(t)(c), exists seaward of (i.e., **no shallower than**) -10ft NAVD88, and **this area (not areas defined by the actual physical location of a line of -10ft NAVD88) will be the defining boundary of where Blue Plan policies will or will not apply.** No area landward of the -10ft NAVD88 line will be subject to the

Blue Plan policies, and no one can “dredge themselves in” by deepening an isolated basin or channel to below -10ft NAVD88.

- Regulated activities covered under the programs specified by CGS §25-157(t)(h) within areas **that are outside or otherwise excluded from the Policy Area, even though they may in fact be deeper than the -10ft NAVD88 threshold, are not required** to implement policies that are called for by the Plan.
- There will be no need to ground-truth the exact location of -10ft NAVD88 to determine whether Plan policies may apply. Further, the Policy Area will be available as a boundary reference and justification for users to access digitally and integrate spatially within plans, proposals or other efforts.

Figure 3-7 shows the Blue Plan Policy Area as an overlay on top of the Areas of Interest for Long Island Sound and the adjacent Coastal Uplands.

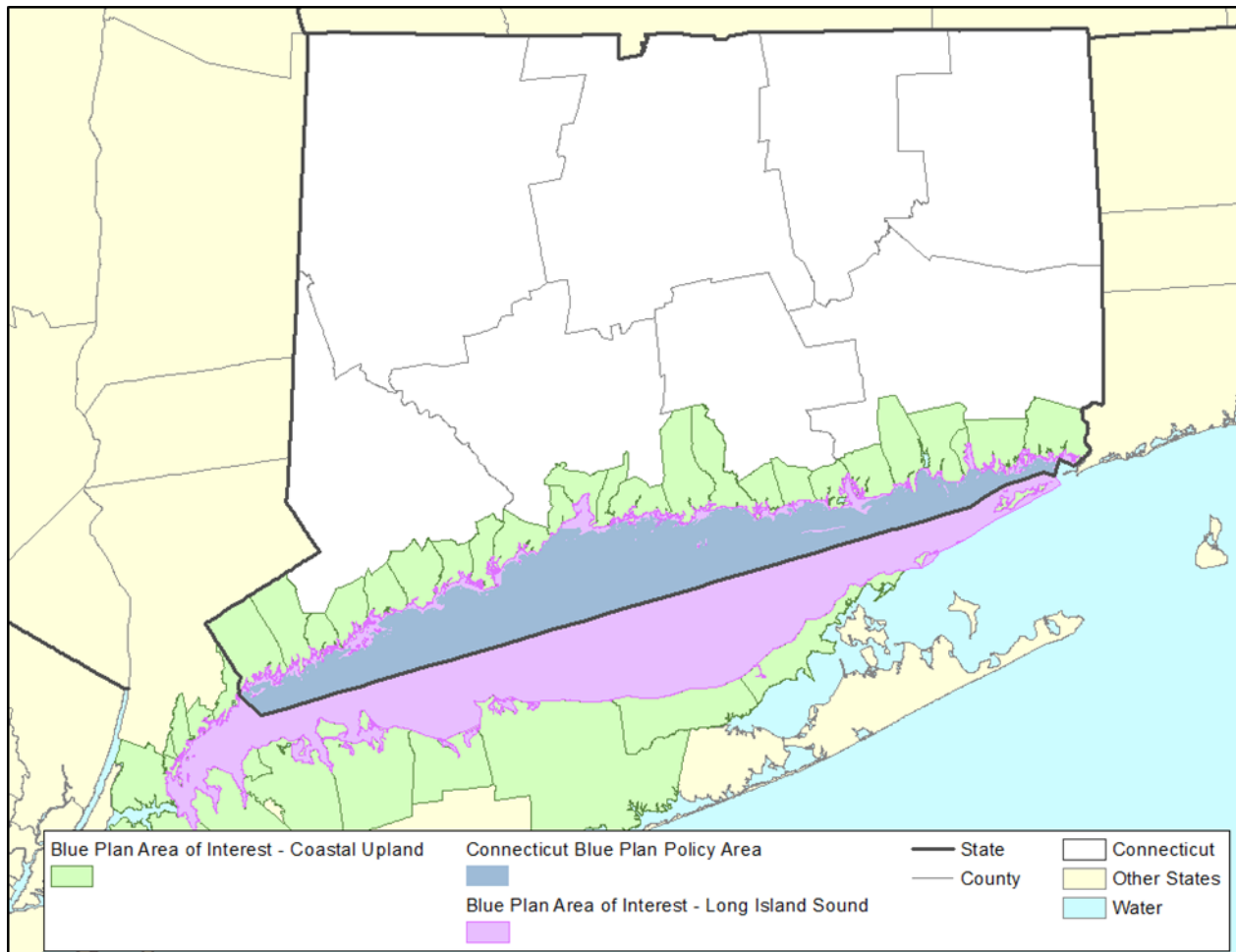


Figure 3-7. The Blue Plan Policy Area (in blue) shown in conjunction with the Blue Plan Areas of Interest for Long Island Sound (purple) and coastal uplands (green).

The following examples highlight several locations along the Connecticut coastline to show in greater detail areas that are included and excluded from the Blue Plan Policy Area (Figures 3-8 to 3-12). The color coding defines:

- **Blue** colors as areas **included** in the Policy Area;
- **Dark Blue** colors as channel areas that extend into the Blue Policy Area and are thus **included**;
- **Light Pink** colors as shallow areas that are **excluded** from the Policy Area;
- **Pink** colors as areas that are deeper than the Policy Area depth value, but surrounded by shallow areas and are thus **excluded** from the Policy Area,
- **Dark Red** colors as harbor or channel areas that are **excluded** from the Policy Area.

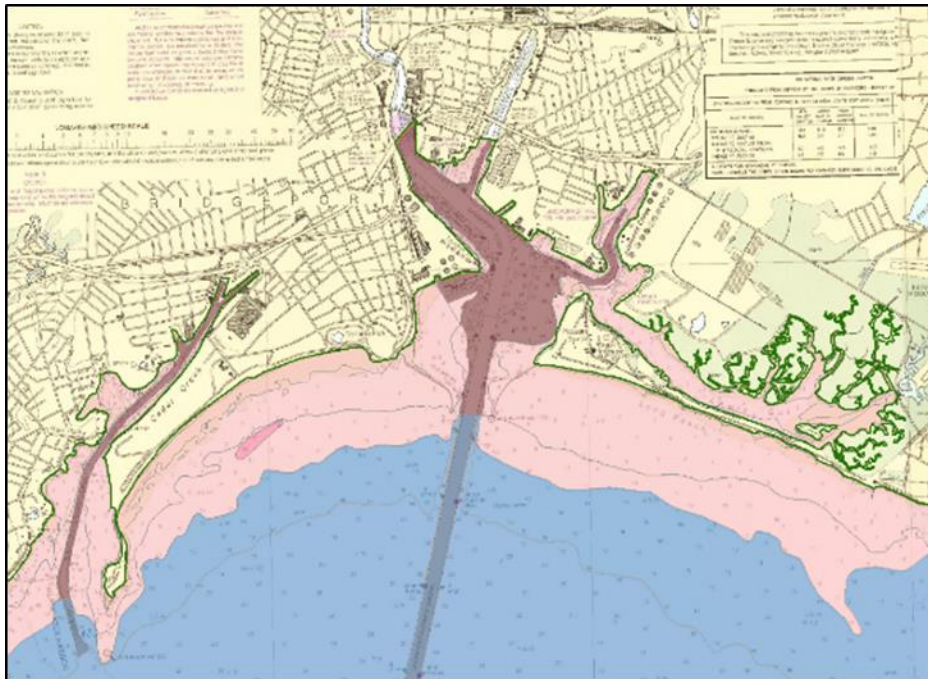


Figure 3-8. Bridgeport Harbor

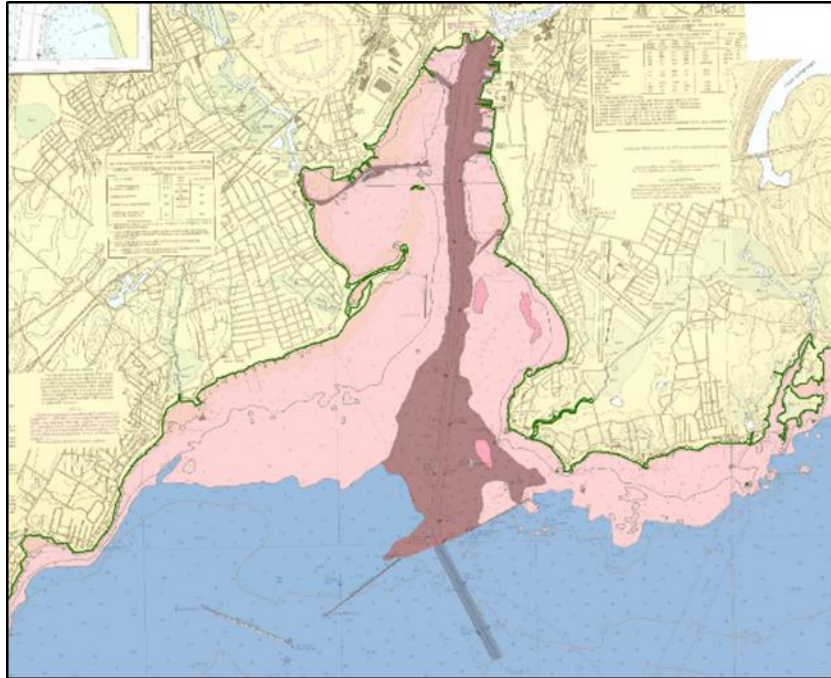


Figure 3-9. New Haven Harbor

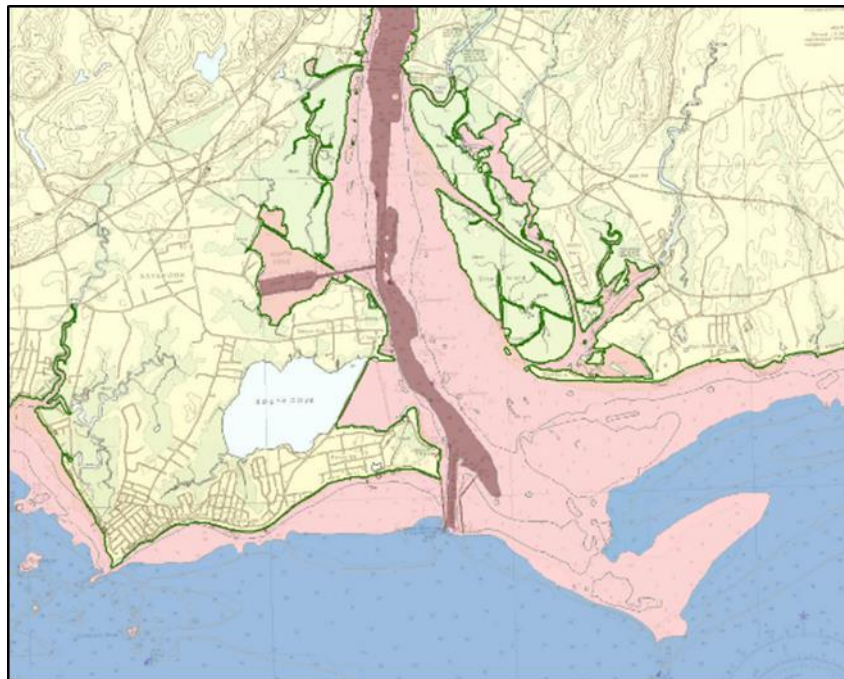


Figure 3-10. Lower Connecticut River Area

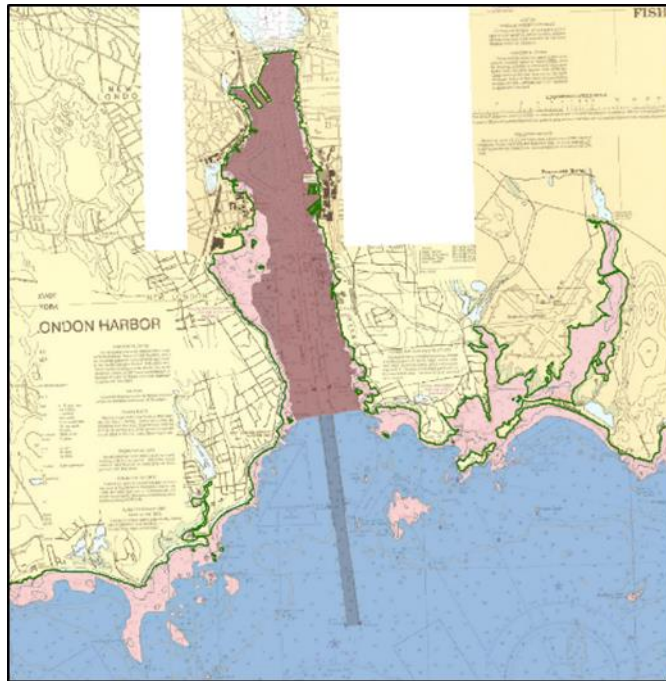


Figure 3-11. Lower Thames River Area

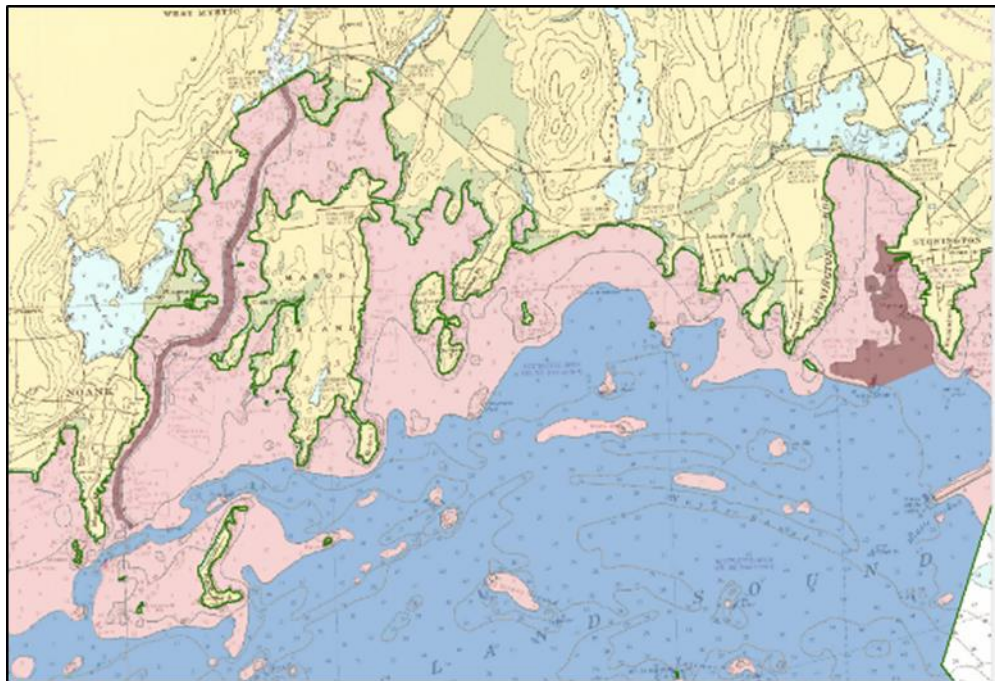


Figure 3-12. Mystic River and Stonington Harbor Area