



COASTAL INSTITUTE

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Shoreline Access Study Commission
C/O Michael Hogan
Rhode Island State House
82 Smith Street
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Dear Members of the Commission:

On October 14, 2021, we were the two geologists who gave a presentation to the Shoreline Access Study Commission regarding coastal processes in Rhode Island and the implications for alongshore access under the state's current case law. This letter summarizes key points from our presentation that we hope will assist you as you prepare legislative recommendations for the General Assembly.

As you are aware, much of the debate about shoreline privileges in Rhode Island stems from a 1982 RI Supreme Court decision – *State v. Ibbison* – a case of alleged criminal trespass which found its way to the RI Supreme Court. The court in its wisdom dismissed the charges and determined the need to define a fixed legal boundary along the shore where private property ends and public land begins. Prior to the Ibbison decision, a public right of passage and other shoreline privileges were assumed to exist between the water and the seaweed line on the beach (or as this feature is referred to in coastal geology, the *last high tide swash*). With the Ibbison decision, the court sought to more definitively rely on science to establish the boundary between shoreline access and private property and did so by selecting the mean high water line, an invisible “line in the sand” that represents the elevation of the ocean.

Mean high water is a *tidal datum* – a precise elevation calculated from water level measurements inside of a tide gauge. More specifically, it's an average of all the high tides, two per day in Rhode Island, over a 19-year period called the National Tidal Datum Epoch. The mean high water line is the location where this elevation intersects the beach. It is not a water mark or debris line that can be seen on the beach. It is a calculation with no visible marker and no way for the shoreline to reveal its presence.

In their decision, the RI Supreme Court reasoned that using the mean high water line would establish a boundary that can be determined with great scientific certainty and would also provide alongshore access most times, balancing the interests of property owners and the public. Unfortunately, this seemingly logical and precise scientific measurement has added to confusion on both sides as to where the public can access the shore. How can the public know where to legally walk, or private property owners know where to exclude trespassers, if neither side can identify a visible boundary? This lack of visual cues underscores the need for new policy that relies on easily identifiable features on the beach, i.e., the seaweed line.

Such a change in policy is readily supported by science. As coastal geologists with the URI Coastal Institute, we have been measuring water levels along our south shore beaches for several months using precise surveying equipment. Our data confirm with precision what has been commonly understood all along – there are many practical flaws in using the mean high water line (or any tidal datum for that matter) to define the shoreline. More importantly, our data also reveal substantial limitations to the public’s right to use the shore under the current law. Below, we list five key points from our presentation that may be relevant for your legislative recommendations.

1. The mean high water (MHW) line cannot be seen on the beach. It is an elevation, like a contour line. In order to find the MHW line, you must use surveying tools.
2. The MHW line is not where most people think it is. In fact, the MHW line is routinely confused with the seaweed line on the beach but our data coupled with long-term beach profiles collected by other URI scientists show that the MHW line is usually 40-60 feet seaward of this feature.
3. Even when the MHW line can be found through precise surveying, as we have done, its position changes constantly as wind and waves rearrange sand on the beach. The same URI data show that the location of the MHW line on the beach can change by more than 100 feet from normal cycles of erosion and accretion.
4. While it’s true that mean high water can be calculated with great precision, the calculations are backward looking. Today’s MHW datum is calculated from historical measurements between 1983-2001. Local sea level has risen approximately 5 inches since that time resulting in a present-day decision being made on an outdated dataset.
5. The MHW line is based on measurements collected inside a tide gauge, an instrument that filters out factors like wind and waves – natural features

that push water up the beach. For this reason, the MHW line is underwater on the Rhode Island shoreline most of the day, meaning the public must wade into the ocean to legally walk along the shore at a depth that could range from inches to feet of water.

The graphic attached to this letter illustrates this last point.

In summary, while the Ibbison decision correctly pointed out that the MHW line can be determined with great precision, the RI Supreme Court failed to consider that waves and shifting sand play a major part in where this boundary lies on any given day.

The URI Coastal Institute applauds the work this commission has completed to date by securing expertise and engaging a range of stakeholders to find a balance that preserves the rights of the public and of private owners. It is encouraging to see consensus building around a fair and practical resolution, i.e., using the last high tide swash (or seaweed line) with some reasonable buffer above it to ensure that alongshore passage can always be ascertained and accessible. This feature may change often but it is visible, and at most times, above the reach of the waves. It also accommodates sea level rise, storms that reshape the beach, and normal cycles of sand moving offshore and onshore.

In conclusion, it is our science-based opinion that the citizens of Rhode Island are collectively best served with a policy that acknowledges an observable truth: The coast is an everchanging environment, one where boundaries cannot be fixed, no matter how precisely they can be calculated.

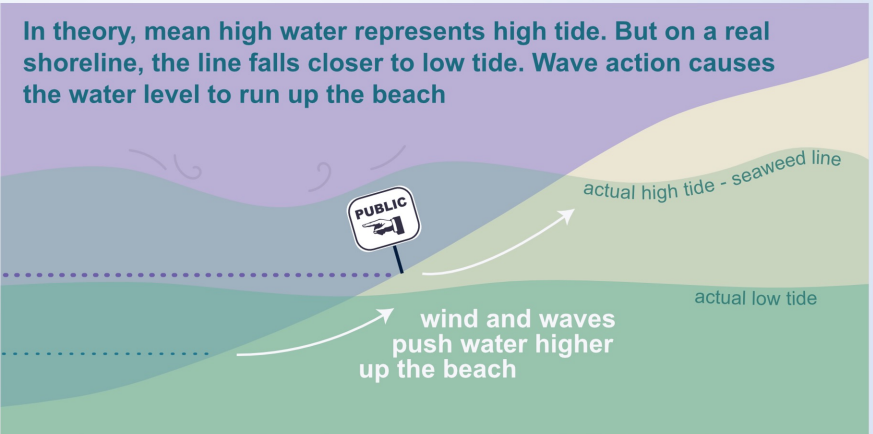
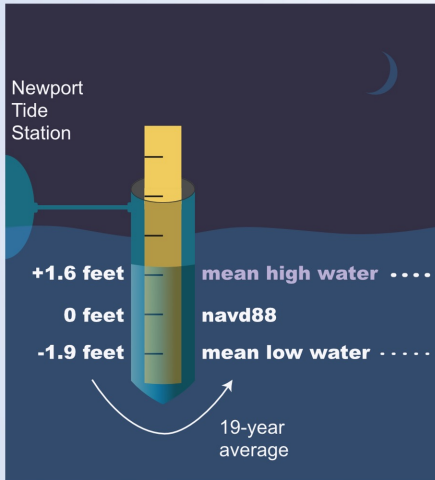
Sincerely,

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Janet Freedman, MS
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Tidal datums can't be seen on the beach



What can be seen is the Last High Tide Swash, also called

- seaweed line
- wrack line
- high water line
- high tide mark