

Water Advisory Committee
Website Text Explaining Quantitative Aquifer Metrics & Most Recent Data
DRAFT 2/16/26

[This text and graph would be prominently placed on the WAC website and updated monthly]

Insert Graph
Seasonally Adjusted Aquifer Height Over Mean Sea Level
Expressed as a Percentile
2002 – Present

[Print “25 Year Average” on 50th Percentile Line]

[Print “25% Percentile” on 25% Percentile Line]

[Print x% as a text bubble at most recent reading]

Data Explanation

This graph shows the average height over mean sea level of freshwater in the four wells identified below expressed as a percentile on a seasonally adjusted basis over the last 25 years. For example, a 50% reading for January 2026 would indicate average levels compared to the last twenty-five January's. A 25% reading for January 2026 would indicate a level of about 50% of average compared to the last twenty-five January's.

WAC's Assessment of Most Recent Data

The percentile for the most recent month (January 2026) is 24%, which is just less than 50% (one-half) of the average over the last twenty-five January's.

This January 2026 data concerns the WAC because we are headed into spring & summer, our period of higher withdrawals, with less water “in the bank” than usual. We will need substantial precipitation after the ground thaws in the spring to recharge the aquifer; otherwise, we could face a very dry summer.

How This Metric is Calculated

The US Geological Survey (USGS) obtains this data from four wells located at the following locations: (1) Goat Hill; (2) Congdon Road; (3) Manwaring Road; and (4) Manhansett Road. Each month, the USGS monitoring equipment records the height (in feet) of freshwater in each well above mean sea level, which provides a common base line. The freshwater level is reported electronically to WAC member Greg Toner who then computes the average level for the four wells and calculates the percentiles to update the chart shown above.

What This Metric Means

This metric tells us water levels in the aquifer at these four locations relative to 25 years of history. The data is seasonally adjusted which attempts to account for the annual patterns of aquifer recharge (generally in the fall, winter, and spring) and aquifer withdrawal (generally in the summer when rainfall is less frequent and water use is highest). Simply stated, if the percentile data reported in January 2026 was 25%, the most recent water levels in these four wells would be about 50% (one-half) of the level in those wells over the last twenty-five January's. Further, if the most recent reading was 50%, we would be right on the twenty-five year average.

What This Metric Does NOT Mean

While this metric does provide freshwater levels in the aquifer relative to a common baseline over time, this metric does not:

- Measure the amount of freshwater in the aquifer. We do not know the bottom of the freshwater aquifer relative to mean sea level.
- Measure the amount of freshwater at any location other than the location of the four specific wells. We know that Shelter Island's aquifer is not a single uniform underground sponge. The aquifer's depth and capacity is very different in the center of the Island compared to the shore. Further, the porosity of the aquifer and the direction and speed of water flow differ from place to place. This can impact the location of the saltwater/freshwater interface along the shore which is important because substantial summertime withdrawals occur along the shore. This metric does not capture any of this variation.
- Address freshwater quality or whether the water is safe to drink.