

**SHELTER ISLAND WATER ADVISORY COMMITTEE –  
June 2023, Height data report DRAFT**

**Summary/Conclusion - “Guarded”**

Islanders should maintain *voluntary water conservation measures*.

**Discussion:**

**Section 1A and 1B - National Drought Monitoring and OUTLOOK Forecasting:**

June 22 issue date - This week Suffolk County drought intensity was increased from “Abnormally Dry” to “Moderate Drought D1” status. Other changes in this issue are additions that classify all of Connecticut as Abnormally Dry and an increase in the intensity of the drought status in Northern New Jersey to Moderate Drought. Not good news.

A forecast is not yet available as the NIDIS [National Integrated Drought Information System] system issues their report on a monthly basis and does not forecast changes for areas in the “D0 Abnormally Dry” status.

**Section 2 – Chart showing “ranking of monthly well heights by percentile of historic values.”**

*The chart is a graphic of the data for the Big Four feeder wells showing the percentile rank for the current month versus history for each month.*

The percent rank of three of the Big 4 wells dropped this month – Manwaring down to the 11<sup>th</sup>, Goat Hill to 17<sup>th</sup>, and Congdon to 20<sup>th</sup> percentile. Manhasset improved from last month to the 38<sup>th</sup> percentile (from last month’s 24<sup>th</sup>). As a result of the gain with this well the Big 4 average increased from the 19<sup>th</sup> percentile last month to the 21<sup>st</sup> percentile this month.

**Section 3 - Table of well readings compared to historic and median values.**

*Table “Well readings compared to the month’s Median for each well.” Current month readings compared to the month history for each well in the month.*

A surprising pattern in this month’s readings. Despite the lack of rainfall many of the shallower wells increased from last month. This is typical for the Ram wells, which can be strongly impacted by tides, but the increase in the other wells (including Manhasset) – no explanation.

**Section 4 - “Comparison of the size of the change in current well readings compared to the historic Median change for that month.”** *Table showing the current month’s change in well height from previous and comparison to change history.*

The chart illustrates an unusual month-to-month change in many wells. Typically, 10 of the wells height drops in June, with the two Ram wells gaining height as outliers. This month 6 wells increased in height, including the Ram wells with strong increases.

**Section 5 – Raw well height readings for the Big 4 wells**

*Raw well height graph is independent of the median history. It presents a direct comparison of aquifer heights.*

The raw well height data shows a drop in all 4 wells in June. The recharge this year was weak. This is very concerning as the “peak” of this year’s recharge level is lower than the previous five years, increasing the potential of saltwater intrusion in the near shore areas during the summer draw down.



**Rainfall Status: Ken Reports:**

Precipitation Report – Date: June, 2023						
Year	2023	2022	2021	2020	2019	2018
Month to date	0.49"	3.17"	1.18"	1.15"	4.59"	2.58"
Year to date	17.49"	20.63"	19.88"	16.96"	26.90"	22.08"

According to The Weather Channel's Montclair Colony's Station, the precipitation forecast to the end of the month of June is for an additional 1.53" bringing the monthly total to 2.02" and the total for the year to end of June to 19.51". This still would only a little over the least amount of rain we have had in the last 5 years by the end of June which was in 2020. Drought conditions.

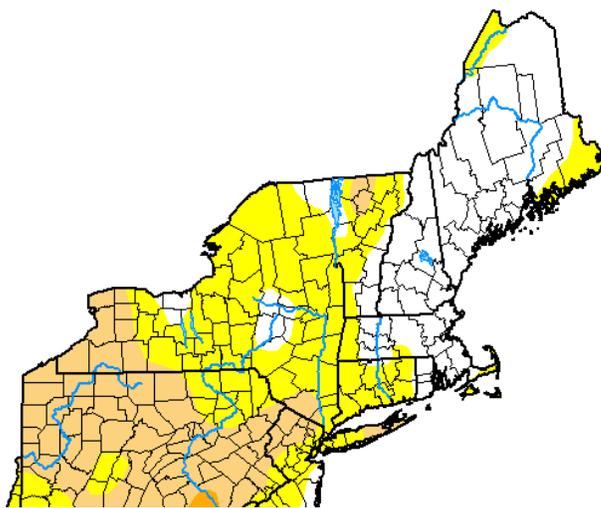
Shelter Island Water Advisory Committee **June 23, 2023**

**Section 1 National Drought Monitoring**

**A: CURRENT CONDITONS:** June 22 issue date - June 22 issue date - This week Suffolk County drought intensity was increased from “Abnormally Dry” to “Moderate Drought D1” status. Other changes in this issue are additions that classify all of Connecticut as Abnormally Dry and an increase in the intensity of the drought status in Northern New Jersey to Moderate Drought. Not good news.

**U.S. Drought Monitor  
Northeast**

**June 20, 2023**  
(Released Thursday, Jun. 22, 2023)  
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	28.52	71.48	34.13	1.52	0.00	0.00
<b>Last Week</b> 06-13-2023	27.85	72.15	32.00	0.00	0.00	0.00
<b>3 Months Ago</b> 03-21-2023	95.91	4.09	0.00	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-03-2023	90.64	9.36	0.21	0.00	0.00	0.00
<b>Start of Water Year</b> 09-27-2022	69.23	30.77	12.95	3.83	0.14	0.00
<b>One Year Ago</b> 06-21-2022	82.62	17.38	2.38	0.00	0.00	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

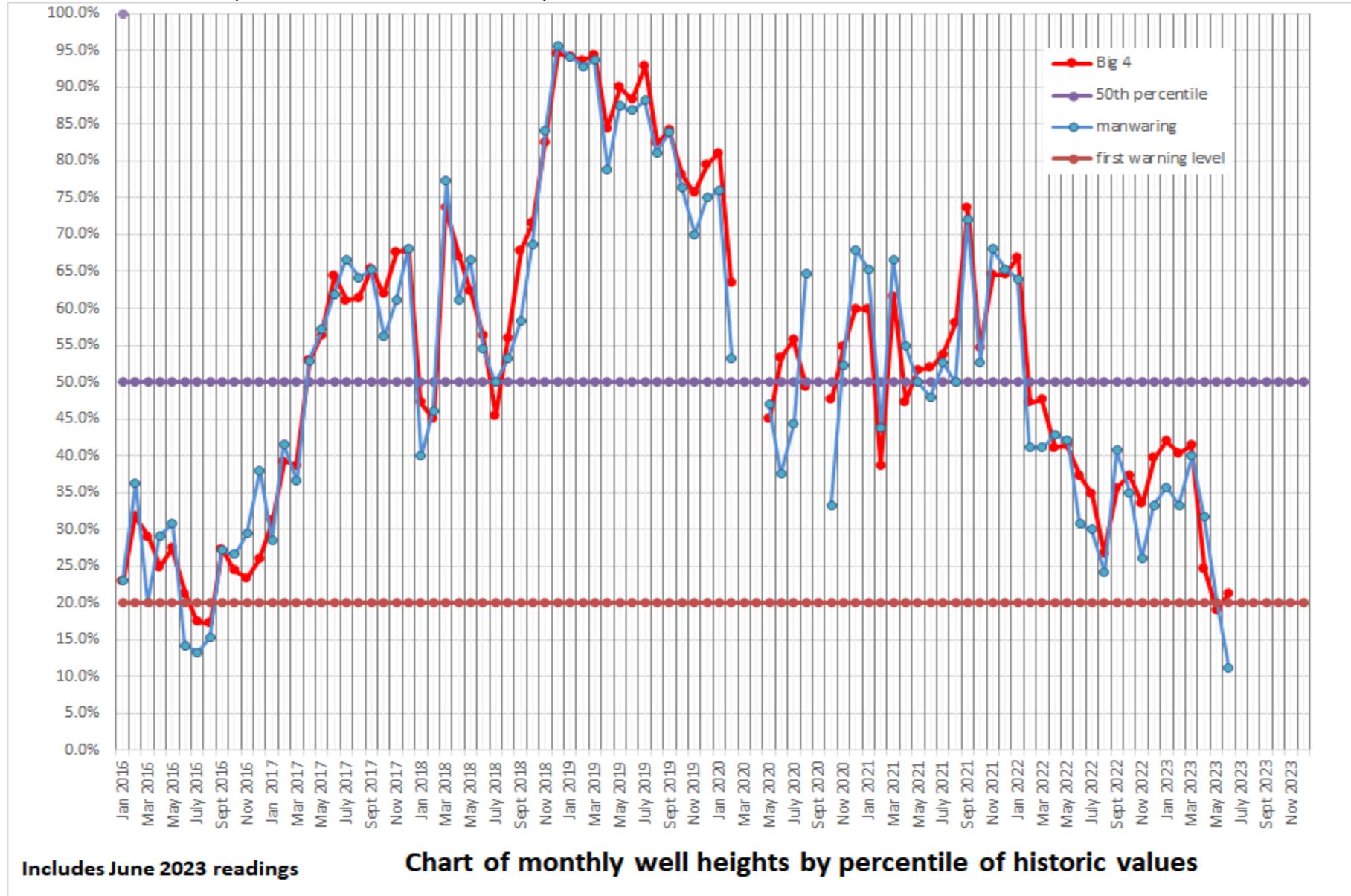
**B: ONE- and THREE-MONTH DROUGHT OUTLOOK:**

[Forecast per NIDIS [National Integrated Drought Information System]]

A forecast is not yet available as the NIDIS [National Integrated Drought Information System] system issues their report on a monthly basis and does not forecast changes for areas in the “D0 Abnormally Dry” status.

**Section 2 - Ranking of monthly well heights by percentile of historic values.**

The percent rank of three of the Big 4 wells dropped this month – Manwaring down to the 11<sup>th</sup>, Goat Hill to 17<sup>th</sup>, and Congdon to 20<sup>th</sup> percentile. Manhasset improved from last month to the 38<sup>th</sup> percentile (from last month’s 24<sup>th</sup>). As a result of the gain with this well the Big 4 average increased from the 19<sup>th</sup> percentile last month to the 21<sup>st</sup> percentile this month.



Includes June 2023 readings

**Chart of monthly well heights by percentile of historic values**

### Section 3 – Comparison showing readings for the month compared to the median value history

A surprising pattern in this month's readings. Despite the lack of rainfall many of the shallower wells increased from last month. This is typical for the Ram wells, which can be strongly impacted by tides, but the increase in the other wells (including Manhasset) – no explanation.

June 15 Well readings compared to Median	Manhasset, Well #1	Rocky Point Ave/Belvedere Well #2	Big Ram Island Well #3	Manwaring Rd Well #4	Congdon Well #5	Brander/Lilliput Well #6	Menantic Rd Well #7	Deer Park Lane Well #8	LITTLE RAM Well #9	DERING HARBOR Well #10	HAY BEACH Well #11	Goat Hill Well #12	SHOREWOOD Well #13	
<b>Median Value</b>	<b>3.56</b>	<b>2.11</b>	<b>1.63</b>	<b>4.79</b>	<b>6.08</b>	<b>1.94</b>	<b>1.86</b>	<b>3.52</b>	<b>1.48</b>	<b>2.02</b>	<b>2.63</b>	<b>6.71</b>	<b>1.62</b>	
Reading JUNE 15 2023	3.21	2.30	2.08	4.06	4.98	2.05	2.05	3.30	1.91		2.65	6.00	1.79	
Previous Month reading	3.27	2.1	1.63	4.19	5.55	2.21	1.87	3.75	1.45		2.58	6.35	1.64	
Change from prev. month	(0.06)	0.20	0.45	(0.13)	(0.57)	(0.16)	0.18	(0.45)	0.46		0.07	(0.35)	0.15	
	Big 4			Big 4	Big 4							Big 4		
					8.73									
	5.2				8.44									
	4.9				8.31									
	4.86				8.08									
	4.86				7.95									
	4.85				7.75									
	4.45				7.37									
	4.35	3.61		7.7	7.31	4.72								
	4.34	2.62		7.14	6.96	2.9		6.22						
	4.14	2.52		6.52	6.83	2.83		5.05						
	4.11	2.5		6.21	6.79	2.44		4.4			3.23			
	4.1	2.38	2.08	6.08	6.78	2.37	2.46	4.33			3.22			
	3.98	2.31	2.02	5.68	6.68	2.23	2.42	4.09			2.99	9.46	2.21	
	3.92	2.30	1.98	5.61	6.66	2.17	2.32	4.06			2.91	8.18	2.06	
	3.9	2.29	1.96	5.58	6.62	2.08	2.3	4.05			2.87	7.56	1.95	
	3.78	2.27	1.83	5.37	6.57	2.05	2.05	3.99	1.91	2.4	2.87	7.46	1.82	
	3.77	2.2	1.77	5.25	6.45	2.04	2.05	3.81	1.74	2.38	2.75	7.29	1.79	
	3.72	2.16	1.74	5.12	6.38	2.04	1.95	3.78	1.73	2.2	2.69	7.26	1.76	
	3.68	2.14	1.74	5	6.32	2.02	1.94	3.78	1.63	2.14	2.67	6.87	1.74	
	3.61	2.14	1.67	4.98	6.3	1.97	1.92	3.76	1.54	2.12	2.65	6.81	1.74	
	3.59	2.12	1.67	4.83	6.13	1.95	1.87	3.56	1.5	2.05	2.64	6.73	1.71	
<b>Median Value</b>	<b>3.56</b>	<b>2.09</b>	<b>1.63</b>						<b>1.48</b>	<b>2.02</b>		<b>6.71</b>	<b>1.62</b>	
	3.51	2.07	1.61	4.74	6.02	1.92	1.85	3.48	1.45	2.02	2.61	6.59	1.6	
	3.41	2.04	1.57	4.66	5.97	1.86	1.8	3.47	1.39	1.96	2.57	6.55	1.58	
	3.39	1.95	1.54	4.65	5.95	1.85	1.73	3.46	1.37	1.94	2.55	6.47	1.55	
	3.33	1.91	1.52	4.49	5.81	1.83	1.72	3.45	1.32	1.91	2.55	6.42	1.52	
	3.21	1.89	1.5	4.49	5.65	1.79	1.71	3.35	1.18	1.87	2.51	6.07	1.49	
	3.2	1.87	1.49	4.38	5.54	1.78	1.52	3.35	1.17	1.79	2.33	6.00	1.47	
	3.19	1.86	1.47	4.26	5.43	1.68	1.51	3.30		1.72	2.3	5.37	1.37	
	3.16	1.82	1.42	4.18	5.38	1.63	1.37	3.22		1.63	2.3	5.27	1.35	
current month value	3.11	1.77	1.4	4.17	5.23	1.6	1.29	3.19			2.25	5.16	1.26	
	3.1	1.64	1.3	4.16	5.13	1.59	1.16	3.1			2.23			
	3.08	1.61		4.06	5.13	1.57		3.03			2.19			
	2.92	1.57		3.63	5.02	1.45		3						
	2.81	1.57		3.07	4.98	1.41		2.93						
	2.78			2.84	4.96	1.35								
	2.7				4.95									
	2.49				4.82									
	2.3				4.57									
	2.23				4.47									
	2.13				4.24									
	2.08				4.15									
	Big 4			Big 4	Big 4							Big 4		
<b>CURRENT MONTH ANALYSIS</b>														
percentrank current read to historic range	38%	78%	100%	11%	20%	70%	74%	24%	100%	#N/A	57%	17%	78%	21%
Current month well reading compared to median (in feet)	-0.35	0.20	0.45	-0.73	-1.10	0.12	0.19	-0.22	0.43	-2.02	0.02	-0.71	0.17	

**Section 4 - "Comparison of the size of the change in current well readings compared to the historic Median change for that month."**

Table showing the current month's change in well height from previous and comparison to change history.

The chart illustrates an unusual month-to-month change in many wells. Typically, 10 of the wells height drops in June, with the two Ram wells gaining height as outliers. This month 6 wells increased in height, including the Ram wells with strong increases.

June 2023 SIZE OF CHANGE FROM PREVIOUS MONTH													
Values in Feet	Manhansett, Well #1	Rocky Point Ave/Belvedere Well #2	Big Ram Island Well #3	Manwaring Rd Well #4	Congdon Well #5	Brander/Liliput Well #6	Menantic Rd Well #7	Deer Park Lane Well #8	Little Ram Well #9	Dering Harbor Well #10	Hay Beach Well #11	Goat Hill Well #12	Shorewood Well #13
Well #	1	2	3	4	5	6	7	8	9	10	11	12	13
Change v previous	(0.06)	0.20	0.45	(0.13)	(0.57)	(0.16)	0.18	(0.45)	0.46		0.07	(0.35)	0.15
Med Change	(0.06)	(0.07)	0.12	(0.07)	(0.17)	(0.23)	0.00	(0.31)	0.04	(0.00)	(0.01)	(0.21)	(0.13)
	Big 4			Big 4	Big 4							Big 4	
	0.30					1.00		0.63					
Gain in well heights (good) >>>>	0.19	0.46	1.61	1.29	0.77	0.45	0.84	0.36					0.67
	0.18	0.37	0.73	0.34	0.23	0.23	0.52	0.20			0.30	0.37	0.23
	0.18	0.25	0.49	0.31	0.17	0.13	0.32	0.16			0.27	0.21	0.15
	0.17	0.20	0.46	0.25	(0.02)	0.07	0.21	0.08	0.68	0.53	0.25	0.09	0.10
	0.12	0.09	0.45	0.20	(0.05)	0.01	0.18	(0.05)	0.47	0.52	0.24	(0.11)	0.08
	0.09	0.08	0.41	0.14	(0.05)	(0.16)	0.16	(0.19)	0.46	0.11	0.18	(0.12)	(0.02)
	0.08	0.07	0.19	0.09	(0.05)	(0.16)	0.10	(0.23)	0.30	0.09	0.12	(0.16)	(0.06)
	0.03	(0.03)	0.18	0.06	(0.11)	(0.18)	0.05	(0.24)	0.27	0.08	0.07	(0.18)	(0.07)
	(0.02)	(0.03)	0.18	0.01	(0.13)	(0.19)	0.04	(0.26)	0.07	0.02	0.02	(0.18)	(0.09)
	(0.05)	(0.05)	0.16	0.00	(0.14)	(0.22)	0.04	(0.29)	0.05	0.01	0.02	(0.18)	(0.13)
<b>MEDIAN</b>	<b>(0.06)</b>	<b>(0.07)</b>	<b>0.12</b>		<b>(0.17)</b>	<b>(0.23)</b>	<b>0.00</b>		<b>0.04</b>	<b>(0.02)</b>		<b>(0.21)</b>	<b>(0.13)</b>
	(0.12)	(0.11)	0.08	(0.13)	(0.22)	(0.27)	(0.04)	(0.33)	(0.10)	(0.04)	(0.03)	(0.26)	(0.14)
<<<< Loss in well height (bad)	(0.14)	(0.13)	0.08	(0.14)	(0.23)	(0.28)	(0.09)	(0.33)	(0.14)	(0.06)	(0.08)	(0.30)	(0.16)
	(0.22)	(0.18)	0.05	(0.16)	(0.27)	(0.31)	(0.10)	(0.34)	(0.21)	(0.09)	(0.11)	(0.34)	(0.17)
	(0.23)	(0.19)	(0.04)	(0.23)	(0.43)	(0.35)	(0.12)	(0.35)	(0.22)	(0.12)	(0.13)	(0.35)	(0.23)
	(0.24)	(0.22)	(0.07)	(0.28)	(0.46)	(0.37)	(0.15)	(0.35)	(0.50)	(0.24)	(0.15)	(0.36)	(0.24)
	(0.26)	(0.24)	(0.17)	(0.29)	(0.57)	(0.40)	(0.15)	(0.36)	(0.80)	(0.34)	(0.15)	(0.46)	(0.28)
	(0.30)	(0.30)	(0.32)	(0.31)	(0.71)	(0.41)	(0.29)	(0.38)			(0.17)	(0.54)	(0.41)
	(0.35)	(0.34)	(0.38)	(0.41)	(0.85)	(0.45)	(0.48)	(0.41)			(0.23)	(0.61)	(0.42)
	(0.45)	(0.36)	(0.41)	(0.58)	(0.89)	(0.47)	(0.61)	(0.45)			(0.39)	(1.91)	(0.48)
	(0.78)	(0.38)	(0.50)	(0.73)	(1.43)	(0.49)	(0.94)	(0.53)					
	(1.11)							(0.65)					
	Big 4			Big 4	Big 4							Big 4	

The blue shaded boxes are the changes in well height from the PREVIOUS to THIS month. Higher (positive) values reflect a GAIN in well height level

**Section 5 - "Raw" aquifer readings for the Big 4 wells.**

The raw well height data shows a drop in all 4 wells in June. This is very concerning as the "peak" of this year's recharge level is lower than the previous five years, increasing the potential of saltwater intrusion during the summer draw down.

