QUARTERLY REPORT

July 1 – September 30, 2025

Hampton Roads Sanitation District

1434 Air Rail Avenue

Virginia Beach, VA 23455

November 24, 2025

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1. Introduction and Purpose

On September 26, 2007, the Hampton Roads Sanitation District (HRSD) entered into a Special Order by Consent (SOC) with the Virginia Department of Environmental Quality (DEQ) and thirteen (13) area Localities for the purpose of resolving certain alleged violations of environmental laws and regulations related to Sanitary Sewer Overflows (SSOs). On February 23, 2010, HRSD entered into an Amended Consent Decree ("Consent Decree") with the United States of America and the Commonwealth of Virginia for the purpose of fulfilling the objectives of the Clean Water Act and the Virginia State Water Control Law. This Consent Decree has been modified six times by agreement of all parties in 2011, 2013, 2014, 2017, 2022, and 2024. In December 2014, the SOC was eliminated by DEQ and HRSD is no longer under state enforcement. On February 8, 2022, the Fifth Amendment to the Consent Decree was entered.

The Fifth Amendment to the Consent Decree requires:

"HRSD will submit quarterly SSO reports to VADEQ and EPA, in which HRSD will identify all SSOs, SSDs, Prohibited Bypasses, or unauthorized discharges from the HRSD SS System or the HRSD STPs. HRSD will identify those SSOs, SSDs, Prohibited Bypasses, or unauthorized discharges for which it asserts a claim of force majeure. If HRSD asserts a force majeure claim, it shall document the basis for such claim in the quarterly SSO reports. It will pay the associated undisputed stipulated penalties for all SSOs, SSDs, Prohibited Bypasses, or unauthorized discharges for which it did not assert a claim of force majeure within 90 days of the close of each calendar quarter. In addition, HRSD will submit all of HRSD's post-storm synopses reports for rain events during the quarterly reporting period to VADEQ and EPA as part of the quarterly reports for rain events that satisfy HRSD's current criteria for publishing a post-storm analysis, i.e.: (a.) one or more rain gauge sites meet a two-year or greater rainfall recurrence interval and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater; (b.) a rain gauge meets a five-year or greater rainfall recurrence interval; or (c.) a weather-related SSO occurs."

This quarterly report is submitted pursuant to Section XVII.D of the Consent Decree. HRSD has prepared this quarterly report in accordance with the above requirements to apprise the EPA (representing the United States of America) and the DEQ (representing the Commonwealth of Virginia) of steps taken toward meeting the obligations of the Consent Decree. Specifically, this quarterly report summarizes all Sanitary Sewer Overflows (SSOs), Sanitary Sewer Discharges (SSDs), Prohibited Bypasses, or unauthorized discharges from the HRSD Sanitary Sewer System or the HRSD Sewage Treatment Plants from July 1, 2025, through September 30, 2025, the associated post-storm synopses reports, claims of force majeure, and undisputed stipulated penalties.

During the reporting period, there were a total of six (6) SSOs, SSDs, Prohibited Bypasses, and unauthorized discharges from the HRSD SS System or the HRSD STPs. These are summarized in Tables 1 & 2.

2. Claim of Force Majeure

2.1. Sanitary Sewer Overflow

There were two (2) SSOs from the HRSD SS System during the 3-month reporting period. HRSD asserts a force majeure claim for zero (0) of the SSOs.

2.1.1. Basis of Claim

A description of the circumstances supporting a claim of force majeure is included in Table 1.

2.2. Unusual Discharges (Sanitary Sewer Discharge, Prohibited Bypasses, Unauthorized Discharge)

There were four (4) unusual discharges from the HRSD SS System or the HRSD STPs during the 3-month reporting period. HRSD asserts a force majeure claim for three (3) Unusual Discharges that were non potable water, final effluent or there was no discharge to waters of Virginia or the United States.

2.2.1. Basis of Claim

A description of the circumstances supporting a claim of force majeure is included in Table 2.

3. Undisputed Stipulated Penalties

3.1. Sanitary Sewer Overflow

There were two (2) SSOs from the HRSD SS System during the 3-month reporting period. HRSD will pay undisputed stipulated penalties in the amount of $9,400 for two (2) SSOs.

3.1.1. Basis of Undisputed Stipulated Penalties
Calculation of undisputed stipulated penalties is outlined in Section XX "Stipulated Penalties" paragraph 110 of the Consent Decree. The calculated stipulated penalties are shown in Table 1.

Volume of the SSD or Prohibited Bypass	Penalty from the date of entry
Less than 100 gallons	$ 100
100 to 2,499 gallons	$ 750
2,500 to 9,999 gallons	$ 1,250
10,000 to 99,999 gallons	$ 4,700
100,000 to 999,999 gallons	$ 10,000
1,000,000 gallons or greater	$ 15,000

3.2. Unusual Discharges (Sanitary Sewer Discharge, Prohibited Bypasses, Unauthorized Discharge)
There were four (4) unusual discharges from the HRSD SS System or the HRSD STPs during the 3-month reporting period. HRSD will pay undisputed stipulated penalties in the amount of $10,000 for one (1) Unusual Discharges.

3.2.1. Basis of Undisputed Stipulated Penalties

Calculation of undisputed stipulated penalties is outlined in Section XX "Stipulated Penalties" paragraph 110 of the Consent Decree. The calculated stipulated penalties are shown in Table 2.

Volume of the SSD or Prohibited Bypass	Penalty from the date of entry
Less than 100 gallons	$ 100
100 to 2,499 gallons	$ 750
2,500 to 9,999 gallons	$ 1,250
10,000 to 99,999 gallons	$ 4,700
100,000 to 999,999 gallons	$ 10,000
1,000,000 gallons or greater	$ 15,000

4. Post-Storm Synopses Reports

Post-Storm Synopses Reports are generated when:

- One or more rain gauge sites meet a two year or greater rainfall recurrence interval and 50% of sites receive one inch or greater rainfall
- A rain gauge meets a five-year or greater rainfall recurrence interval or
- A capacity related wet weather SSO occurs

There were nine (9) Post-Storm Synopses Reports for the 3-month reporting period.

Table 1. Detailed Listing of HRSD SSOs

(July 1, 2025 to September 30, 2025)

Date and Time of Incident	Location	Sewer System Component	Potential Receiving Waters	Spilled In Jurisdiction	SSO Classification	Description of Incident from SSORS	SSO Duration	Action Taken and Explanation of SSO	Discharge Quantity (gallons)**	Amount Reaching State Waters (gallons)**	DEQ IR	Force Majeure Rationale or Stipulated Penalty
7/31/2025 11:59:00 PM	1136 Saunders Drive, Suffolk, VA	Suffolk PS siphon chamber	Shingle Creek to Nansemond River	Suffolk	Infrastructure	An emergency pump failed at the pump station, after the permanent pumps failed to start, leading to an overflow at the station's siphon chamber in Shingle Creek. The spill was occurring at an estimated rate of 500 gallons per minute.	1 hour(s) 4 minute(s)	HRSD staff attempted to fix the pump issues to stop the overflow. The interim pump at the station also faltered and was unable to keep up with high flows from storms that coincided with the spill. HRSD interceptor staff restored the interim pump to working order, allowing the spill to stop. -----August 1, 2025 08:25 AM-----	32,000	32,000	SSORS#2026-T-106637	$4,700
9/16/2025 10:48:00 PM	79 E. College Pl.	NF-133	Ditch to Hampton River	Hampton	Capacity-Weather Related	The standpipe overflowed due to increased system flow from wet weather/rainfall, and was exacerbated by significant rag and debris accumulation on the bar screen at Bridge St. PS. Bayshore PS RG saw a maximum rainfall of 0.25” in 15 minutes (9/16/25 at 13:45 pm), with a total of 0.49” falling in 1 hour, and a total rainfall of 4.35”. This event also brought Moderate Tidal Flooding of 5.5 feet at Sewells Point.	1 hour(s) 22 minute(s)	NS personnel verified the pump at the site and Bridge St. PS were operating, pulled rags from the Bridge St. wet well bar screen, and monitored the overflow. The site was cleaned of debris and lime was distributed to the affected area. -----September 19, 2025 03:25 PM-----	12,300	12,300	0	$4,700

Table 2. Detailed Listing of HRSD Treatment Plant Unusual Discharges

(July 1, 2025 to September 30, 2025)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Force Majeure Rationale Or Stipulated Penalty
7/5/2025	James River	A 4-inch Non-Potable Water (NPW) line bursts between Grit Tanks 2 and 3. The NPW line feeds the Scrubbers and Primary spray water.	38	The burst NPW line was identified and secured.	2090	2090	Non-Potable Water (NPW)	River	NPW
7/27/2025	James River	At 1933 the shift operator reported both in-service bar screens tripped after a power blip during a thunderstorm and observed raw wastewater influent (RWI) flowing out of the headworks building onto the ground. The operator also reported that the screens could not be operated by local control.	26	The plant headworks bypass gate was fully open by 1944, reducing the amount of water flowing onto the ground. The lead operator on-call was able to reset the screens around 1959, at which point the overflow stopped.	157000	157000	Raw Influent (RWI)	Ground	10,000
7/30/2025	York River	A line break occurred on an 8-inch process force main while under pressure, spilling Non-Potable Water (NPW) onto the ground.	55	The NPW pumps were secured, stopping the majority of the flow. A small amount of NPW continued to flow until the break could be completely isolated by 20:40 on 7/30/25. HRSD staff are scheduled to make repairs on the damaged line in the coming week.	31645	31645	Non-Potable Water (NPW)	Ground to Back Creek	NPW
9/29/2025	Nansemond	Contractor hit NPW line while digging by final effluent pump building	27	Closed NPW line to building.	2700	2700	Non-Potable Water (NPW)	ground, storm water drain	NPW

Note: NPW (non-potable water) is fully treated and chlorinated final effluent.

Appendix A. Post-Storm Synopses Reports

There were nine (9) qualifying events this quarter.

Appendix B. Definitions

"Bypass" shall mean the intentional diversion of waste streams from any portion of a treatment facility, as defined by 40 C.F.R. § 122.41(m).

"HRSD SS System" or "HRSD Sanitary Sewer System" shall mean the wastewater collection and transmission systems, including all pipes, Force Mains, Gravity Sewer Lines, lift stations, Pumping Stations, Pressure Reducing Stations, manholes, and any other appurtenances thereto, which are owned or operated by HRSD as of the Effective Date of this Consent Decree, and which serve the Localities. It does not include the portions of the sewer system that serves the Middle Peninsula communities within King William County, King and Queen County, Middlesex County, and Mathews County.

"Non-potable water (NPW)" is fully treated and chlorinated final effluent.

"Prohibited Bypass" shall mean a Bypass within the meaning of 40 C.F.R § 122.41(m)(4).

"Sanitary Sewer Overflow" or "SSO" shall mean an overflow, spill, diversion, or release of wastewater from or caused by the Regional SS System. This term shall include: (i) discharges to waters of the State or United States from the Regional SS System and (ii) any release of wastewater from the Regional SS System to public or private property that does not reach waters of the United States or the State, including Building/Private Property Backups.

"Sanitary Sewer Discharge" or "SSD" shall mean any discharge to waters of the State or the United States from the HRSD SS System through a point source not authorized in any Permit.

Hampton Roads Sanitation District

Post-Storm Report

7/9/2025 – 7/10/2025

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About the information on this HRSD server

This report is intended to provide the HRSD regional community summary information about the HRSD system during select wet weather events/anomalies. The attached report contains a selection of *official* Interceptor and Treatment data, as well as other environmental and meteorological data provided through other services. In an effort to enhance the HRSD system, the attached products have been made accessible on this server and care must be taken when using such products as they are intended for informational and not operational, legal, or other purposes.

This report is located on an HRSD server and is intended to be available 24 hours a day, seven days a week. However, timely availability and/or delivery of data and products from this server through the Internet is subject to numerous potential constraints and is, therefore, not guaranteed. Official HRSD dissemination of information is available only through a written response to a formal written request for data from the user.

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Before using information obtained from this server special attention should be given to the date & time of the data and products being displayed. HRSD makes best efforts to provide accurate date & time data but given the sheer volume of data we manage, there may be errors and you should not rely absolutely on any such data.

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Summary

From July 9th through July 10th , there was an approximate 26-hour rainfall event that resulted in 10 sites on the South Shore that met a 1 to 50-year rainfall recurrence interval throughout the HRSD rain gauge network. Showers began late in the evening of the 9th when a large band of rain moved into the area from the west but this first bit of rain weakened as it passed through. The following afternoon into the evening heavier downpours and some thunderstorms brought significant rain especially to the Virginia Beach area with flash flood warnings being issued for several locations. South Shore sites averaged around 0.98 inches. This report will be for South Shore only. There was minimal impact on groundwater levels compared to July 2024. See Appendix C for the Historical Shallow Well comparison.

No HRSD interceptor weather-related overflow(s) were reported.

HRSD flow and pressure meters met data reliability requirements per the MOM program. For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 90% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 90.08%
- Aggregate pressure meter validity: 93.71%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Treatment Plant Data: *(Data obtained from Telog Database)*
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
7/9/2025 – 7/10/2025

South Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Army Base	7/9/2025	10.27	20:00	0.02
	7/10/2025	14.60	17:00	0.57
Atlantic	7/9/2025	58.52	21:00	0.00
	7/10/2025	84.63	16:00	1.80
Nansemond	7/9/2025	21.44	21:00	0.10
	7/10/2025	21.66	21:00	0.47
VIP	7/9/2025	27.41	21:00	0.04
	7/10/2025	40.51	17:00	1.14

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	DNQ	NORF
Taussig Blvd PS	DNQ	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	DNQ	CHES
Chesapeake PS 243	1-year (1hr)	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	DNQ	VAB
Elbow Rd PRS	25- to 50-year (1hr)	CHES
John B. Dey MLV-AT side	5- to 10-year (2hr)	VAB
Hickory EOL	DNQ	CHES
Kempsville PRS	1-year (3hr)	VAB
Lagomar IFM at Atlantic TP	DNQ	VAB
Laskin Rd PRS	DNQ	VAB
Pine Tree PRS	DNQ	VAB
Shipps Corner PRS	2- to 5-year (1hr)	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	DNQ	CHES
Independence PRS	1- to 2-year (2hr)	VAB
Northampton Blvd at Wesleyan Dr	5- to 10-year (3hr)	NORF
Providence PRS	DNQ	VAB
Shore Dr @ Jack Frost	5-year (6hr)	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	DNQ	CHES
Cedar Lane PS	DNQ	PORT
Cedar Rd at Dominon Blvd	DNQ	CHES
Chesapeake PS 20	DNQ	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	DNQ	SUFF
Deep Creek PRS	DNQ	CHES
Hill Point Rectifier	DNQ	SUFF
Lake Kilby WTP	DNQ	SUFF
Nansemond Main Flow (Effluent)	25-year (1hr)	SUFF
Pagan River Rectifier	DNQ	IOW
Pughsville PS	DNQ	SUFF
Route 337 PRS	DNQ	CHES
Smithfield High School	DNQ	IOW
Suffolk PS	DNQ	SUFF
Suffolk PS 81	DNQ	SUFF
Suffolk PS 87	DNQ	SUFF

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Windsor Duke St PS	Disconnected	IOW
VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	1-year (1hr)	NORF
Ferebee Avenue PS	DNQ	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	DNQ	PORT
Va Beach Blvd PS	DNQ	NORF
VIP Main Flow (Effluent)	DNQ	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
7/9/2025	33 mph	23 mph	14 mph	NE	0.00
7/10/2025	32 mph	22 mph	7 mph	NE	1.83

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.25 foot storm surge was observed.

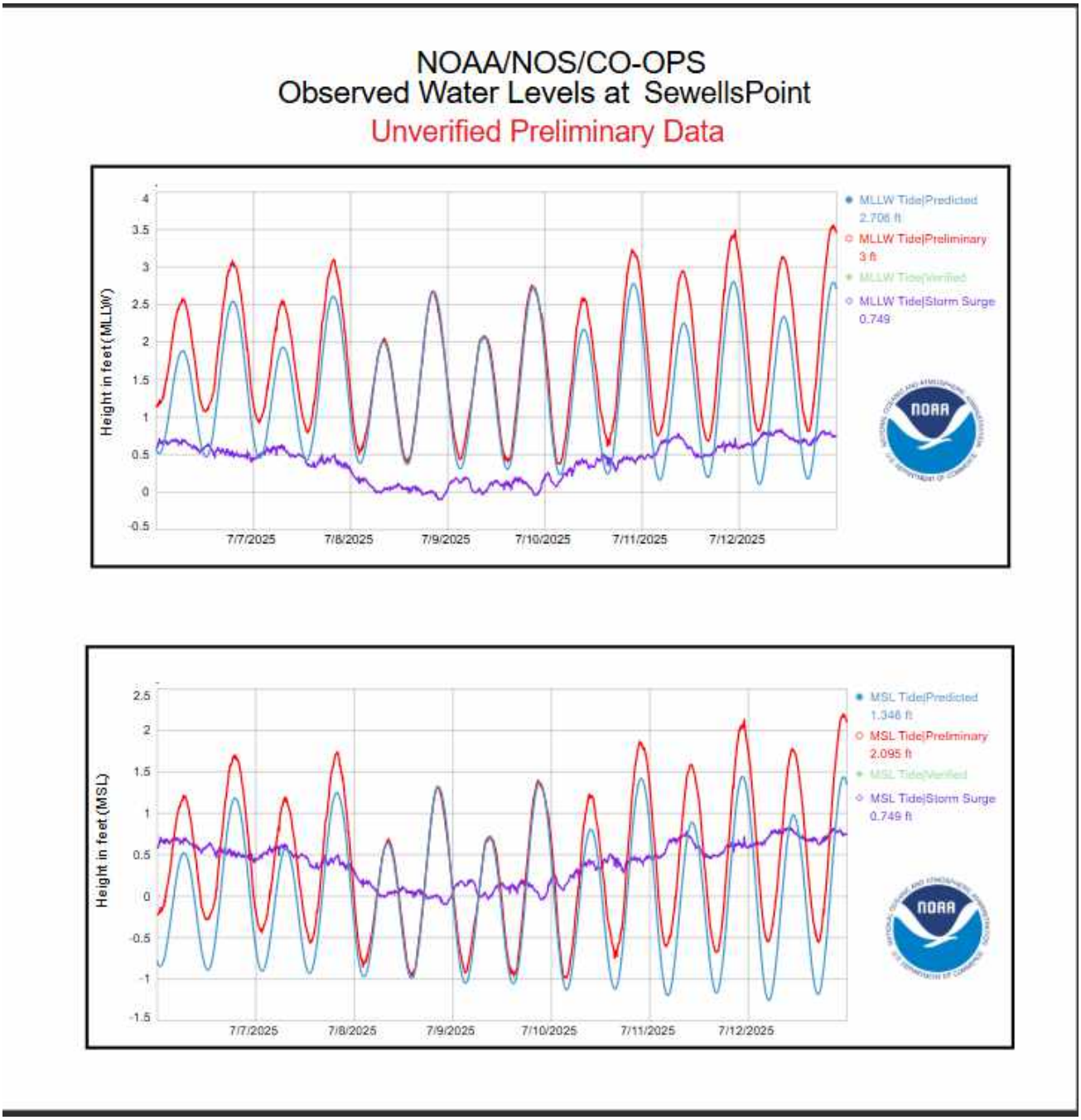


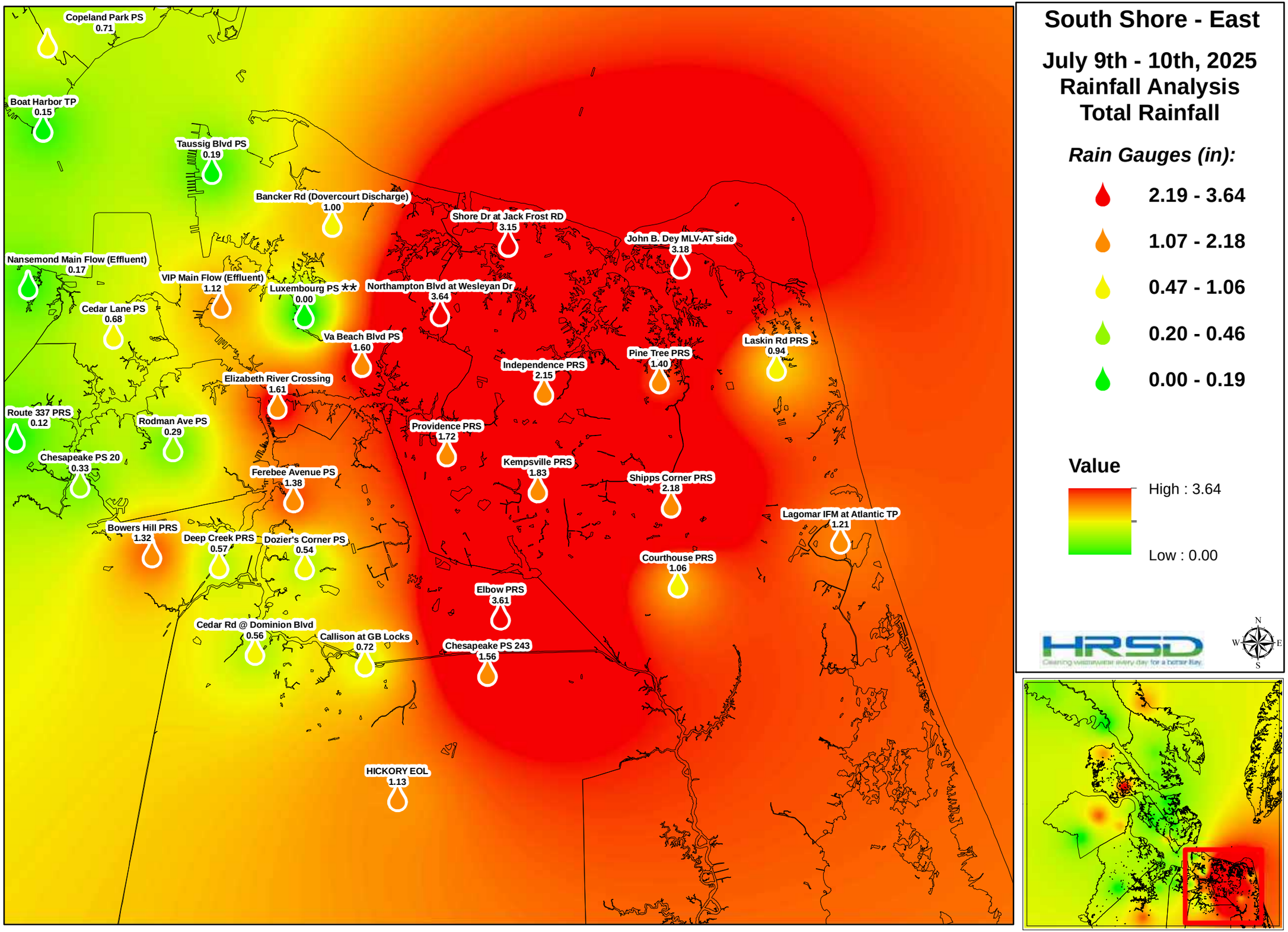
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

Shallow Well Analysis:

Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

HRSD Rain Gauge Network
Rainfall Totals



South Shore - East

July 9th - 10th, 2025
Rainfall Analysis
Total Rainfall

Rain Gauges (in):

- **2.19 - 3.64**
- **1.07 - 2.18**
- **0.47 - 1.06**
- **0.20 - 0.46**
- **0.00 - 0.19**

Value

High : 3.64

Low : 0.00

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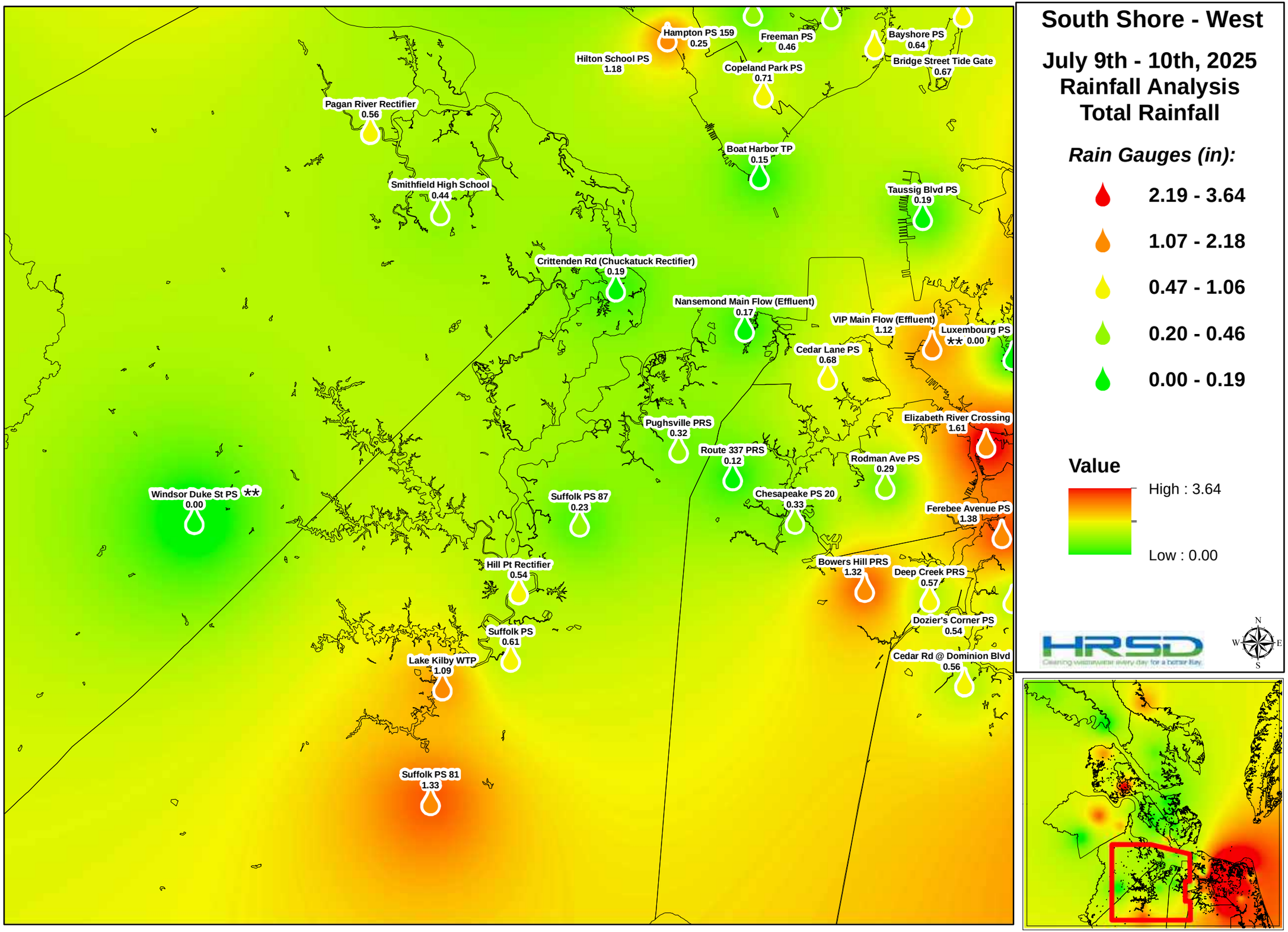
N W E S

*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event



South Shore - West

July 9th - 10th, 2025
Rainfall Analysis
Total Rainfall

Rain Gauges (in):

- **2.19 - 3.64**
- **1.07 - 2.18**
- **0.47 - 1.06**
- **0.20 - 0.46**
- **0.00 - 0.19**

Value

High : 3.64

Low : 0.00

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N W E S

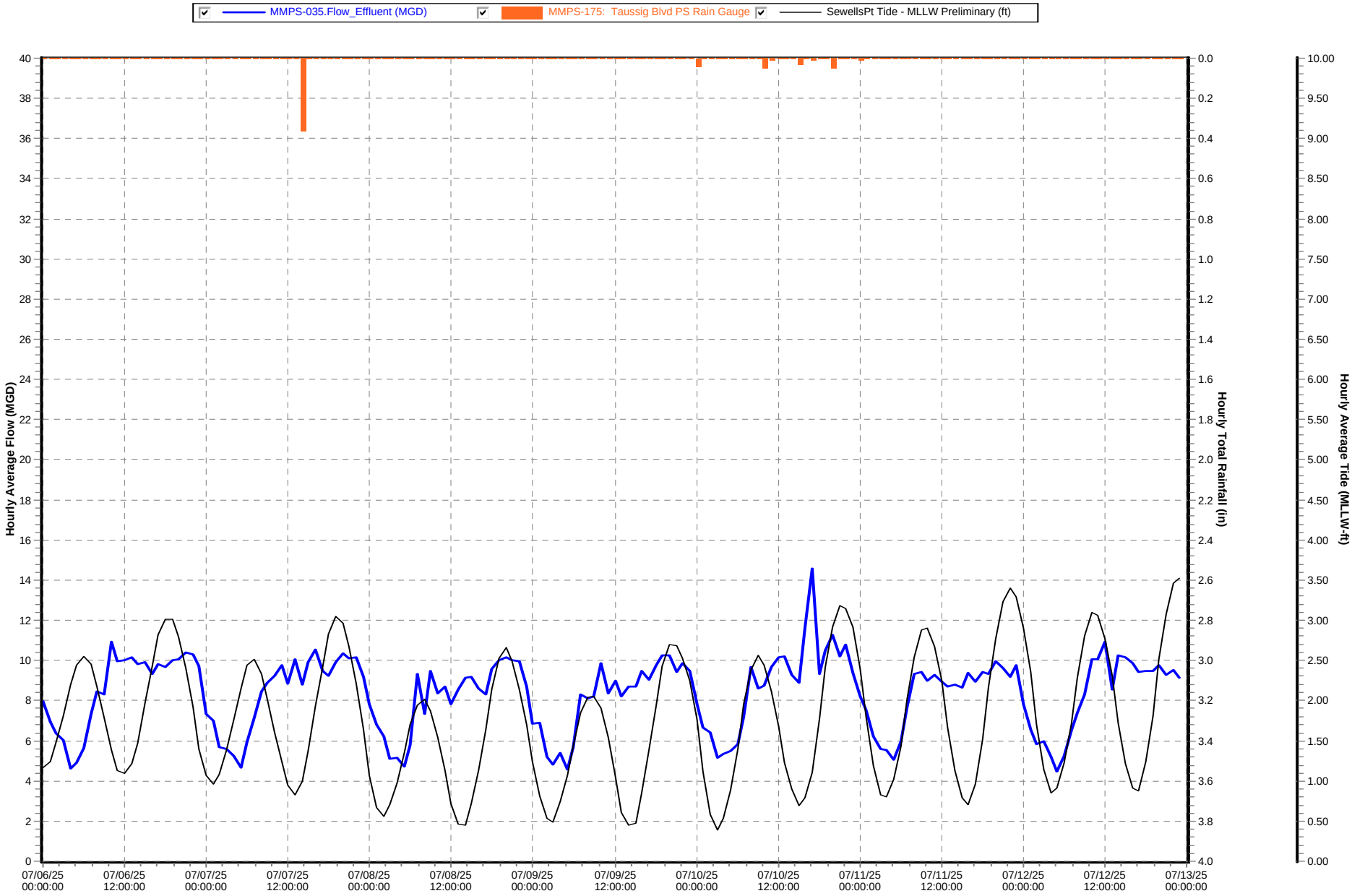
*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event

Appendix B

HRSD Treatment Plant Flows

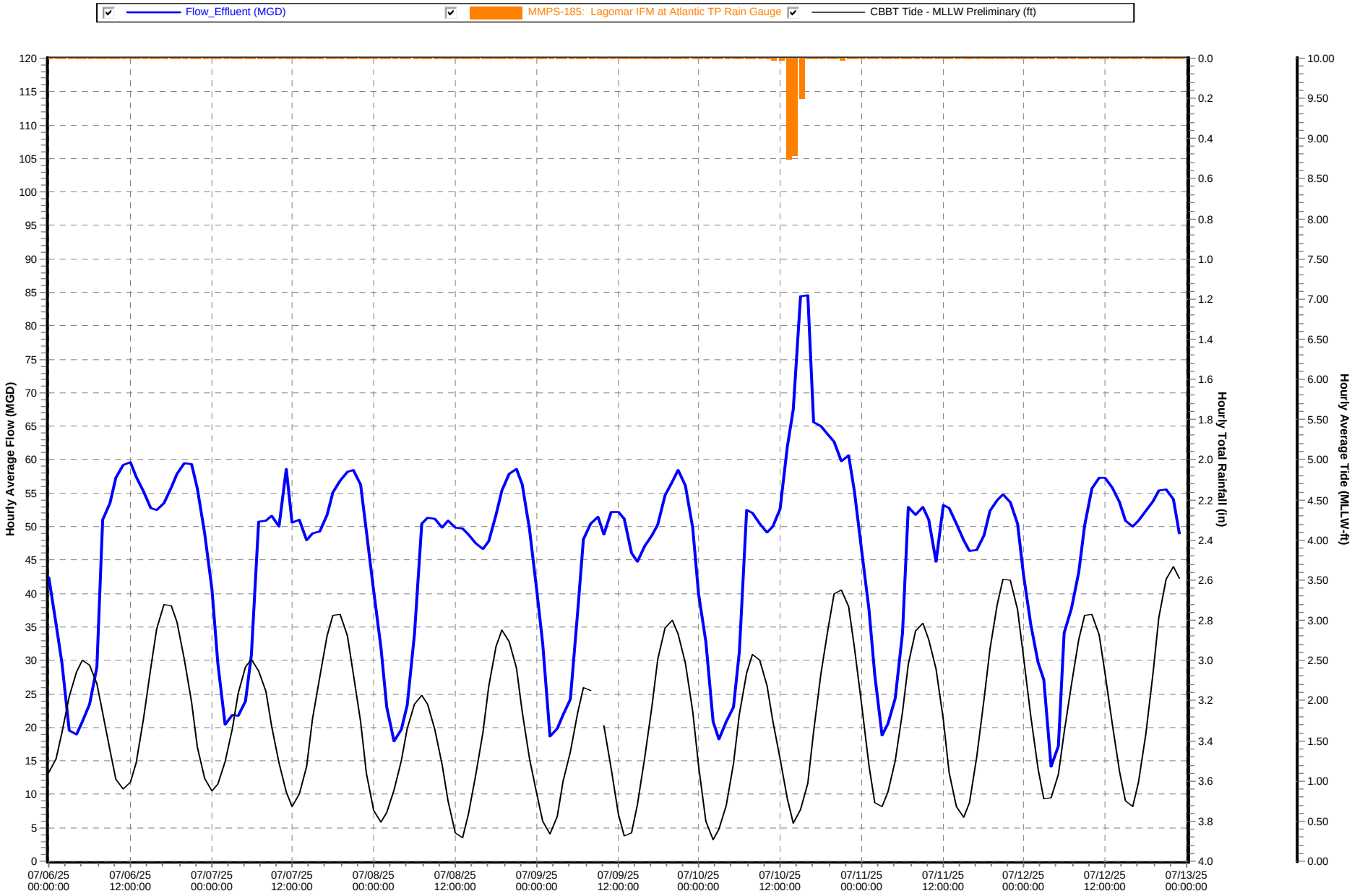
Army Base Treatment Plant

MMPS-035 (07/06/25 to 07/13/25)



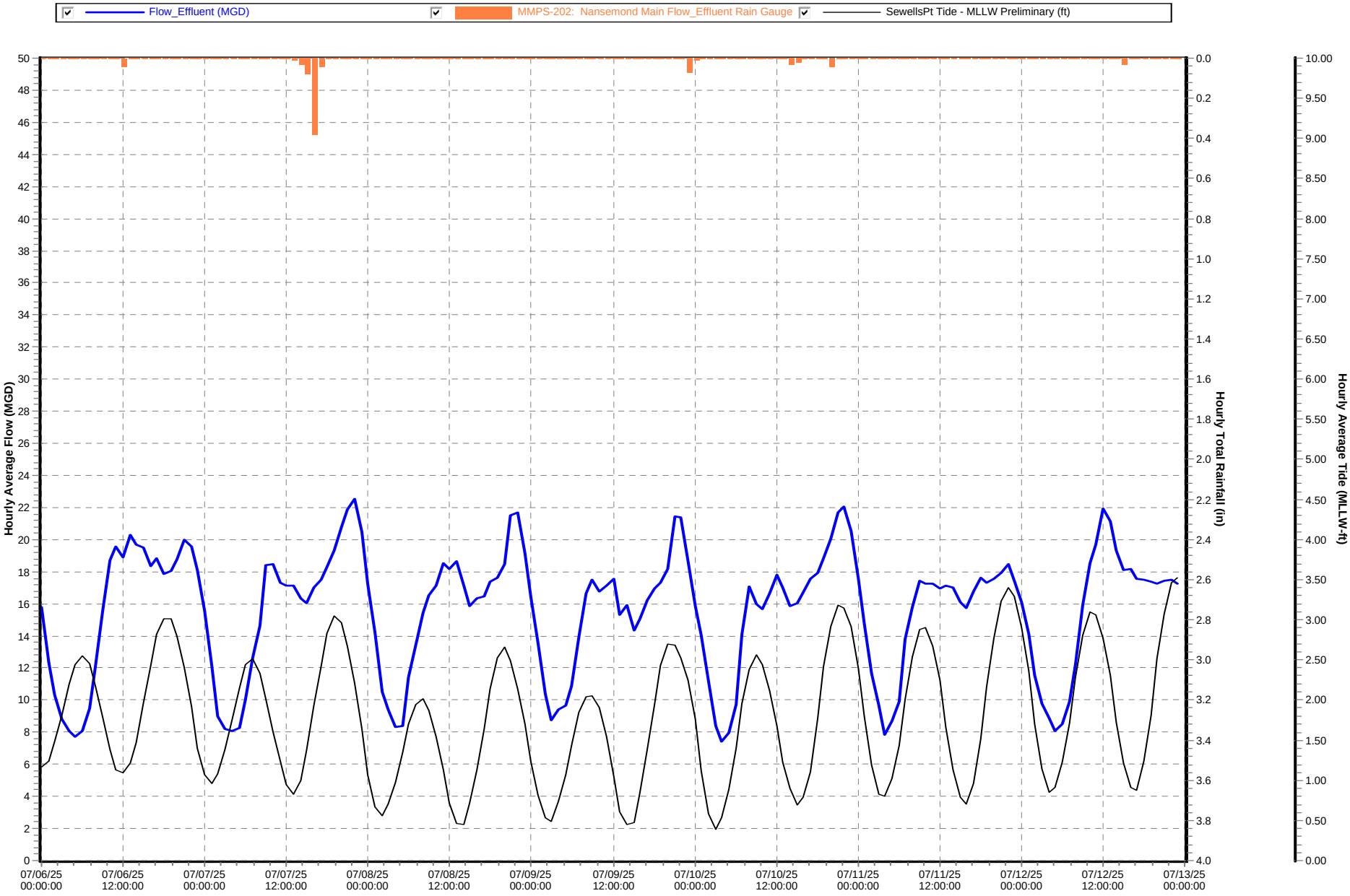
Atlantic Treatment Plant

MMPS-071 (07/06/25 to 07/13/25)



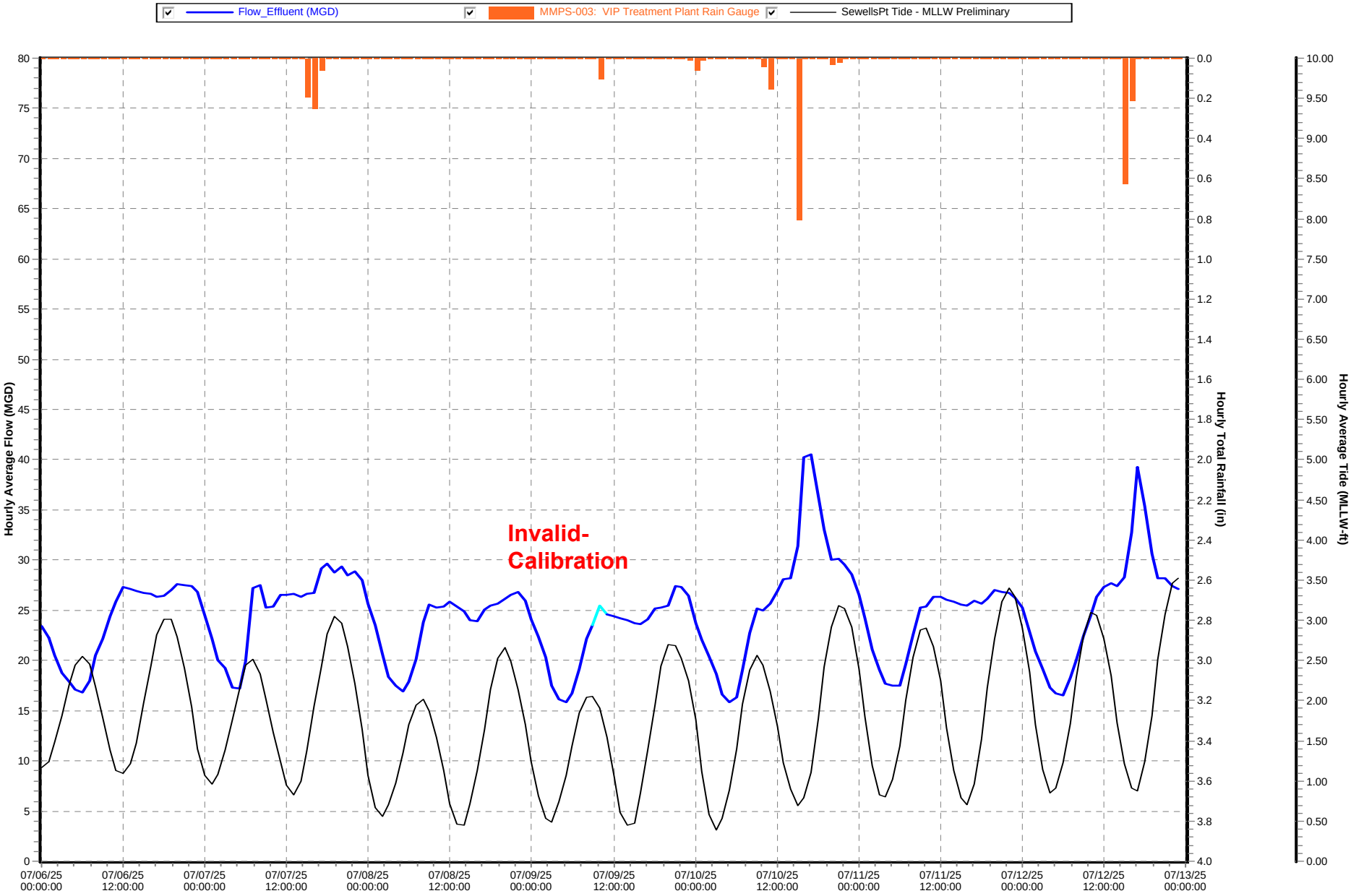
Nansemond Treatment Plant

MMPS-202 (07/06/25 to 07/13/25)



VIP Treatment Plant

MMPS-003 (07/06/25 to 07/13/25)



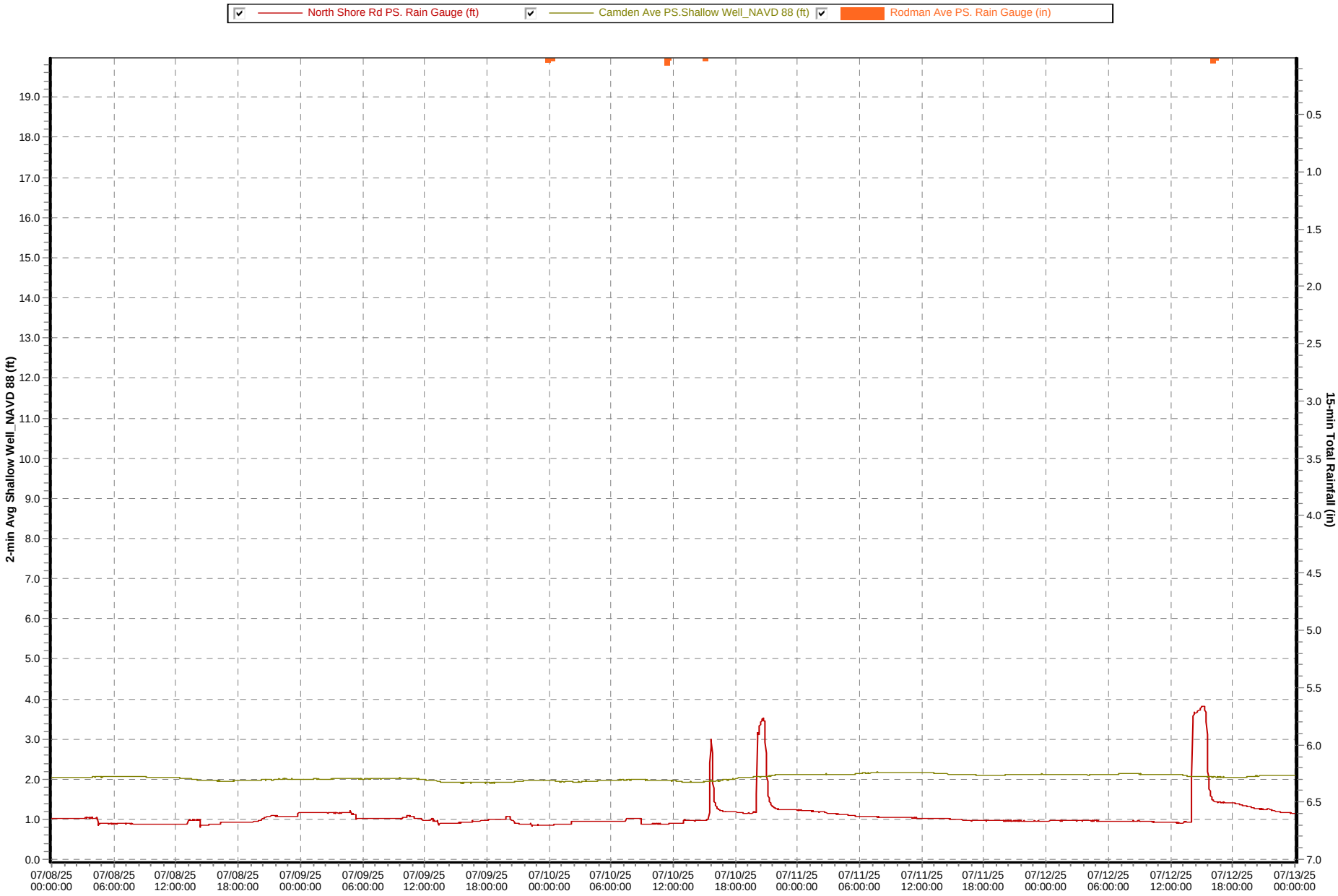
Appendix C

Shallow Well Analysis

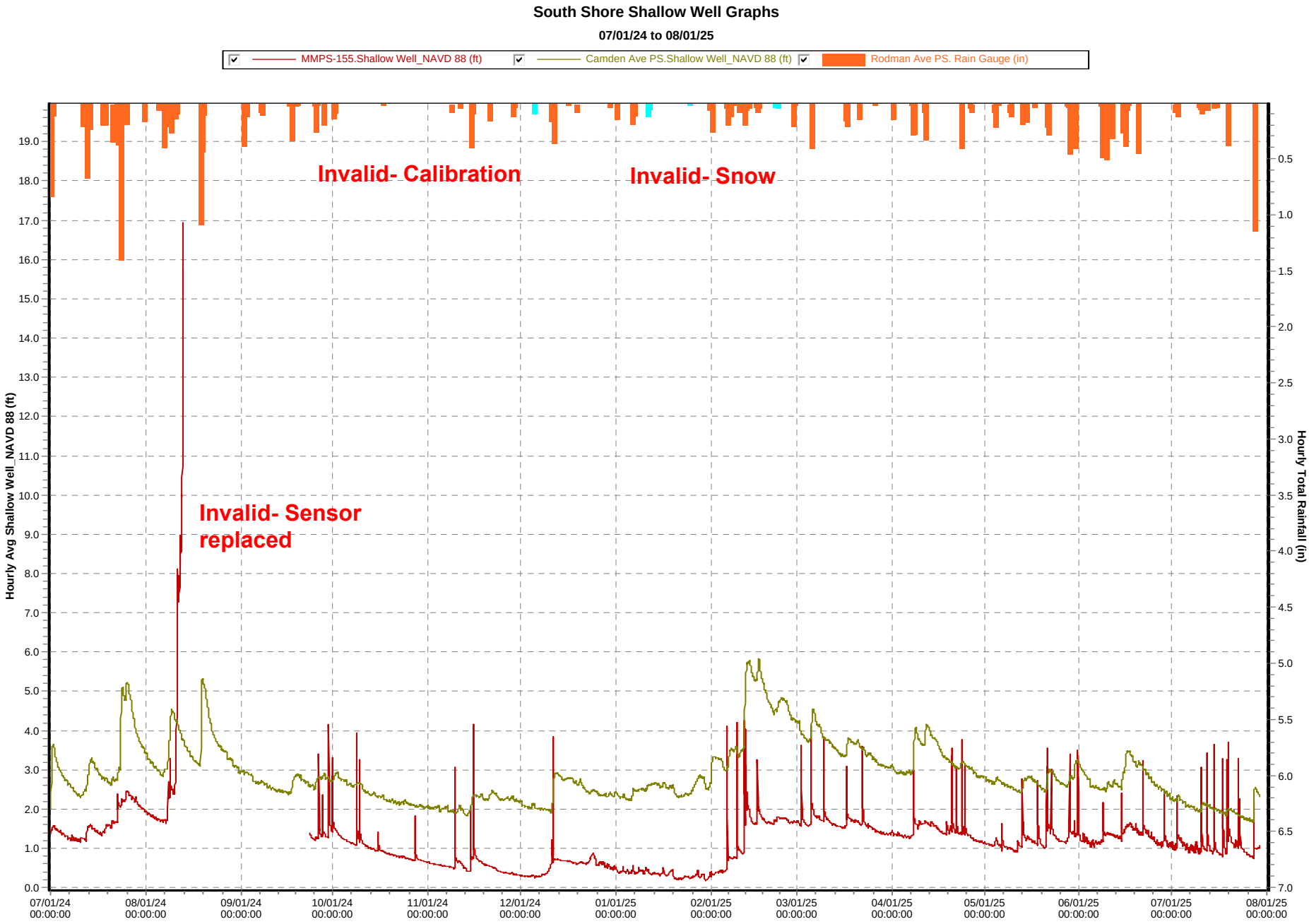
5 Day

South Shore Shallow Well Graphs

07/08/25 to 07/13/25



1 Year


South Shore Shallow Well Graphs
07/01/24 to 08/01/25
MMPS-155.Shallow Well_NAVD 88 (ft)
Camden Ave PS.Shallow Well_NAVD 88 (ft)
Rodman Ave PS. Rain Gauge (in)
Invalid- Calibration
Invalid- Snow
Invalid- Sensor replaced
Hourly Avg Shallow Well_NAVD 88 (ft)
Hourly Total Rainfall (in)
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
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07/01/24 00:00:00
08/01/24 00:00:00
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08/01/25 00:00:00

Hampton Roads Sanitation District

Post-Storm Report

7/14/2025 – 7/15/2025

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Summary
From July 14th through July 15th, there was an approximate 29-hour rainfall event that resulted in 7 sites on the South Shore that met a 1 to 50-year rainfall recurrence interval throughout the HRSD rain gauge network. There were scattered showers and storms starting in the afternoon continuing into the evening. The following day flash flood warnings were issued for the entire area in anticipation of more showers. These showers moved east across the region bring a few inches of rain. Showers dissipated in the evening. Temperatures were in the low 90s with heat index near 100 both days. South Shore sites averaged around 0.86 inches. There was minimal impact on groundwater levels compared to July 2024 . See Appendix C for the Historical Shallow Well comparison. This report will be for South Shore only.

HRSD flow and pressure meters met data reliability requirements per the MOM program. For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 88% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 87.92%
- Aggregate pressure meter validity: 97.71%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Treatment Plant Data: *(Data obtained from Telog Database)*
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
7/14/2025 – 7/15/2025

South Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Army Base	7/14/2025	11.74	20:00	0.06
	7/15/2025	11.49	18:00	0.43
Atlantic	7/14/2025	76.90	14:00	0.96
	7/15/2025	73.87	19:00	0.56
Nansemond	7/14/2025	21.08	22:00	0.00
	7/15/2025	20.18	11:00	0.35
VIP	7/14/2025	42.32	15:00	0.58
	7/15/2025	29.11	19:00	0.25

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	DNQ	NORF
Taussig Blvd PS	DNQ	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	DNQ	CHES
Chesapeake PS 243	2- to 5-year (1hr)	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	DNQ	VAB
Elbow Rd PRS	50-year (1hr)	CHES
John B. Dey MLV-AT side	DNQ	VAB
Hickory EOL	DNQ	CHES
Kempsville PRS	2- to 5-year (1hr)	VAB
Lagomar IFM at Atlantic TP	DNQ	VAB
Laskin Rd PRS	DNQ	VAB
Pine Tree PRS	DNQ	VAB
Shipps Corner PRS	DNQ	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	DNQ	CHES
Independence PRS	5- to 10-year (1hr)	VAB
Northampton Blvd at Wesleyan Dr	1-year (1hr)	NORF
Providence PRS	DNQ	VAB
Shore Dr @ Jack Frost	DNQ	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	DNQ	CHES
Cedar Lane PS	DNQ	PORT
Cedar Rd at Dominon Blvd	DNQ	CHES
Chesapeake PS 20	DNQ	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	DNQ	SUFF
Deep Creek PRS	DNQ	CHES
Hill Point Rectifier	DNQ	SUFF
Lake Kilby WTP	DNQ	SUFF
Nansemond Main Flow (Effluent)	DNQ	SUFF
Pagan River Rectifier	DNQ	IOW
Pughsville PS	DNQ	SUFF
Route 337 PRS	DNQ	CHES
Smithfield High School	DNQ	IOW
Suffolk PS	DNQ	SUFF
Suffolk PS 81	DNQ	SUFF
Suffolk PS 87	1-year (1hr)	SUFF

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Windsor Duke St PS	Disconnected	IOW
VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	DNQ	NORF
Ferebee Avenue PS	DNQ	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	DNQ	PORT
Va Beach Blvd PS	1- to 2-year (1hr)	NORF
VIP Main Flow (Effluent)	DNQ	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
07/14/2025	20 mph	13 mph	7 mph	SE	0.71
07/15/2025	21 mph	15 mph	5 mph	S	0.02

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.96 foot storm surge was observed.

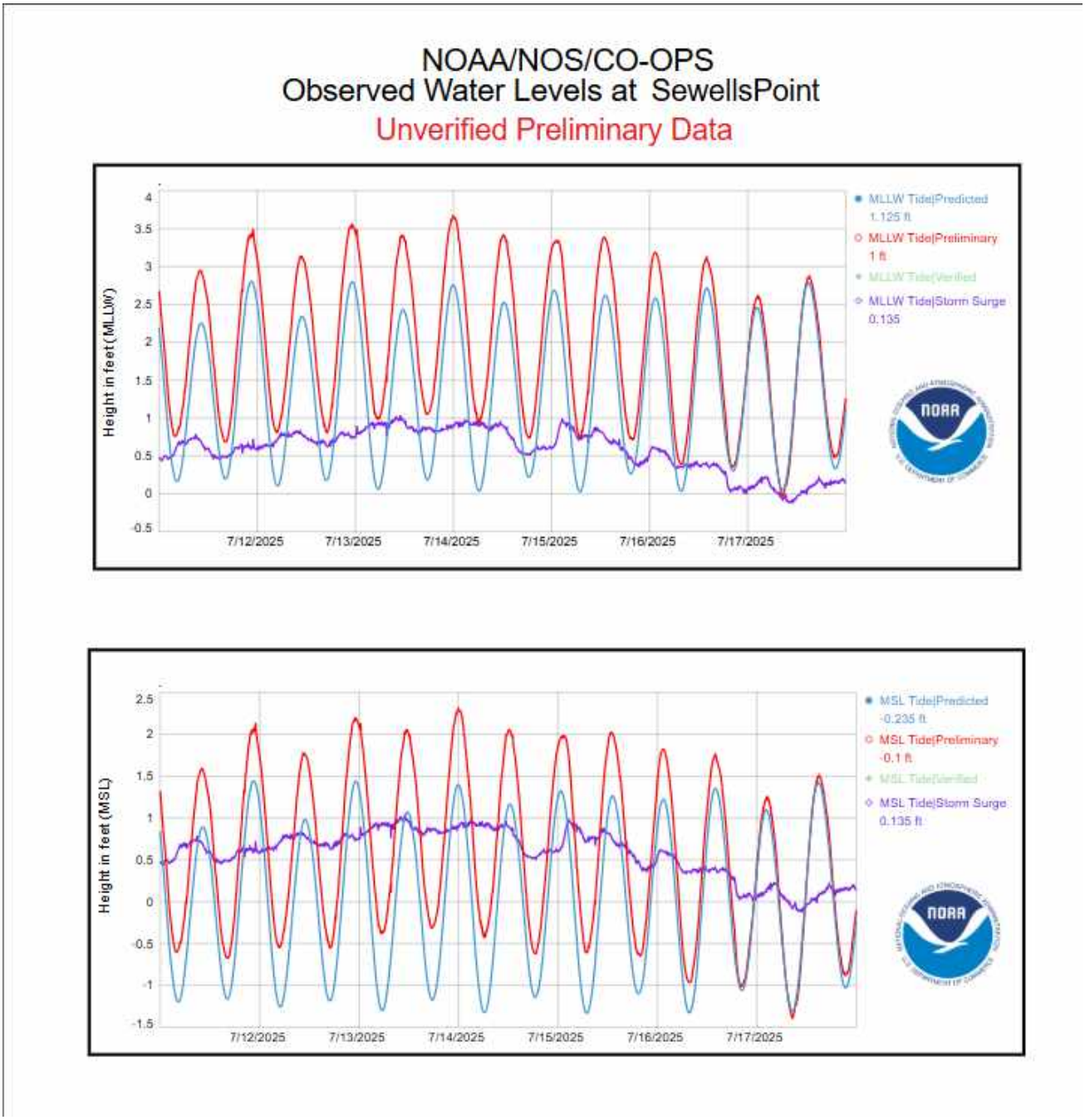


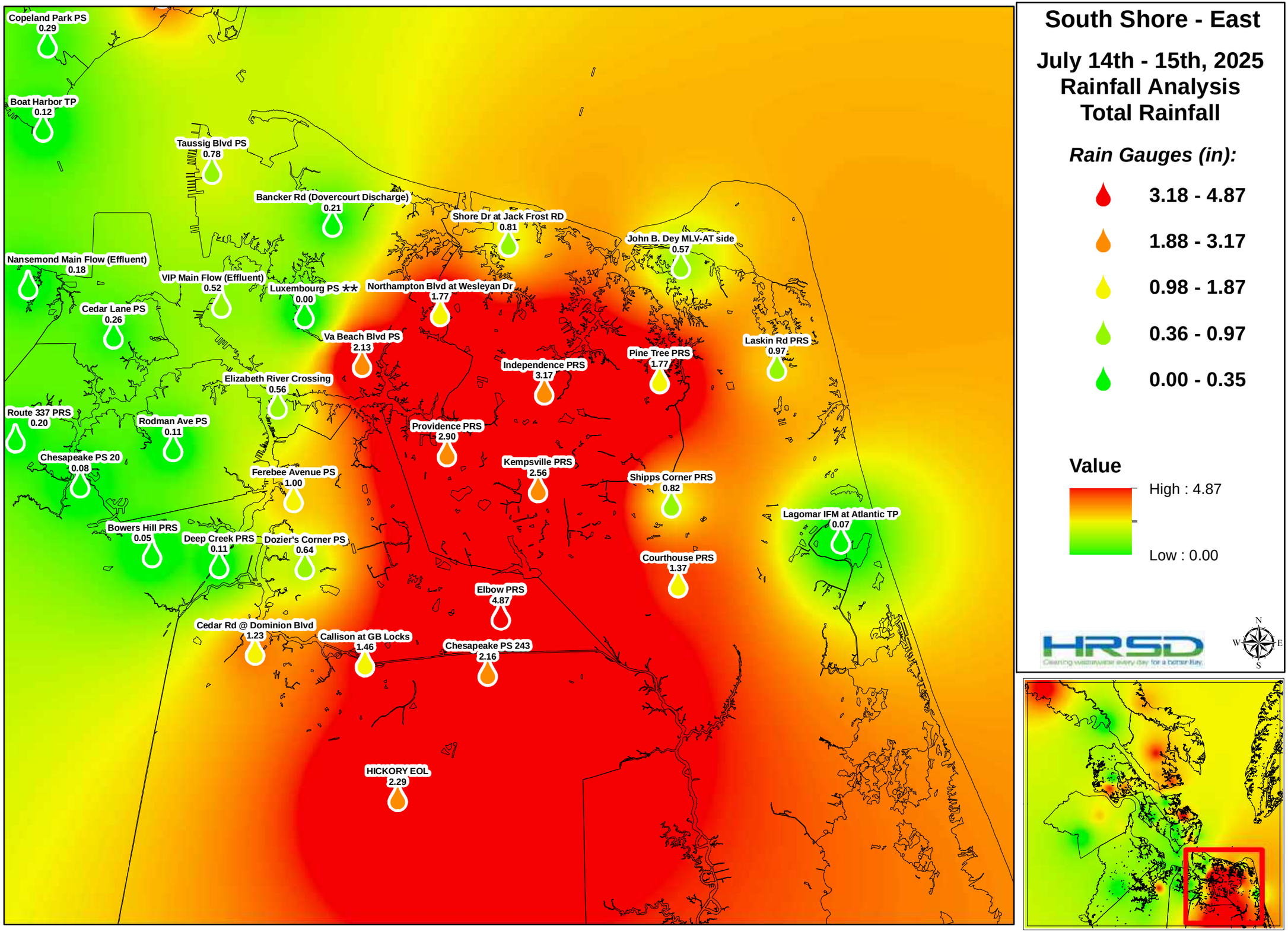
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

Shallow Well Analysis:

Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

HRSD Rain Gauge Network
Rainfall Totals



South Shore - East

July 14th - 15th, 2025 Rainfall Analysis Total Rainfall

Rain Gauges (in):

- 3.18 - 4.87
- 1.88 - 3.17
- 0.98 - 1.87
- 0.36 - 0.97
- 0.00 - 0.35

Value

High : 4.87

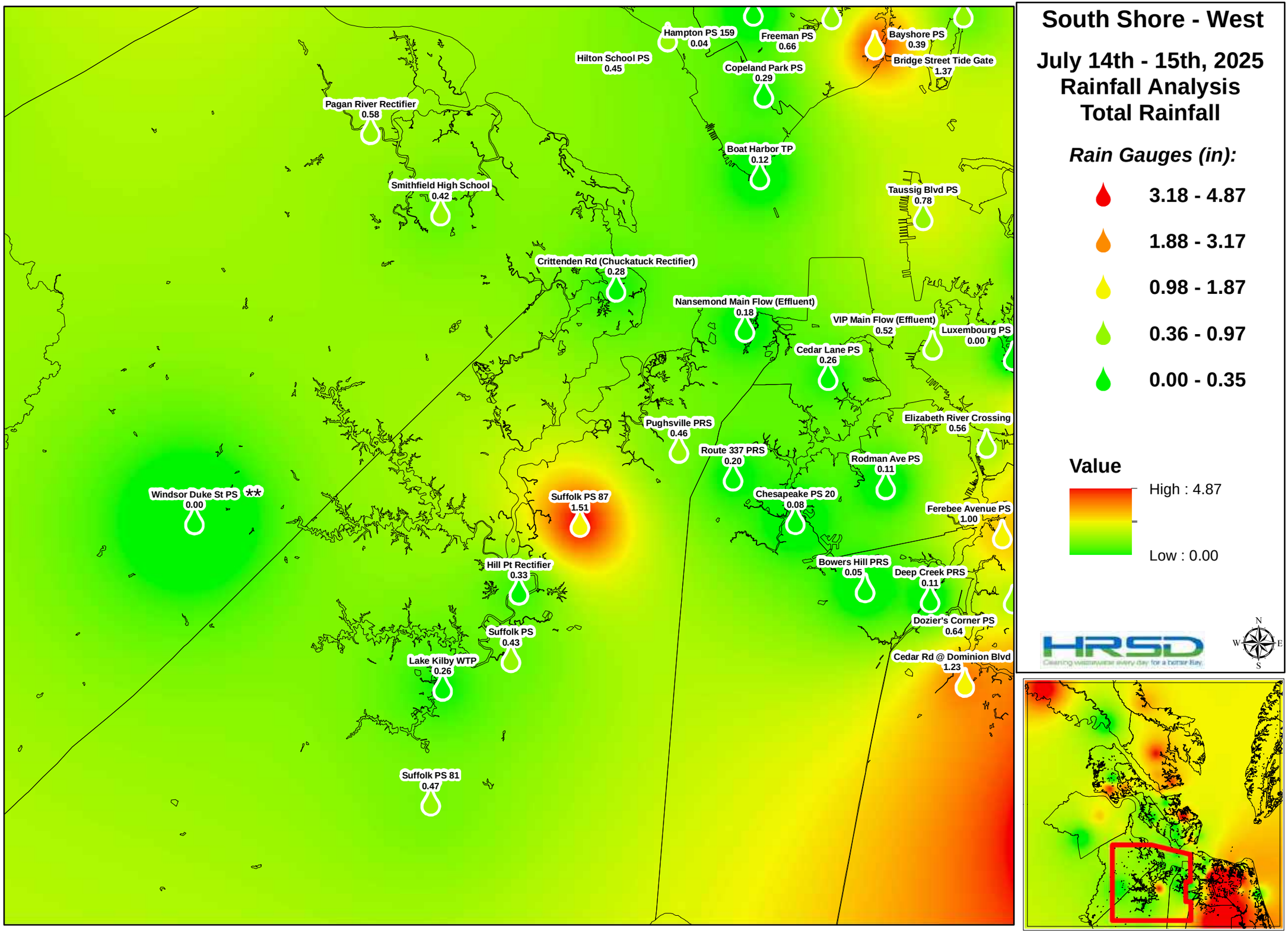
Low : 0.00

HRSD

Cleaning wastewater every day for a better Bay.

N W E S

*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



South Shore - West

July 14th - 15th, 2025 Rainfall Analysis Total Rainfall

Rain Gauges (in):

- **3.18 - 4.87**
- **1.88 - 3.17**
- **0.98 - 1.87**
- **0.36 - 0.97**
- **0.00 - 0.35**

Value

High : 4.87

Low : 0.00

HRSD

Cleaning wastewater every day for a better Bay.

N W E S

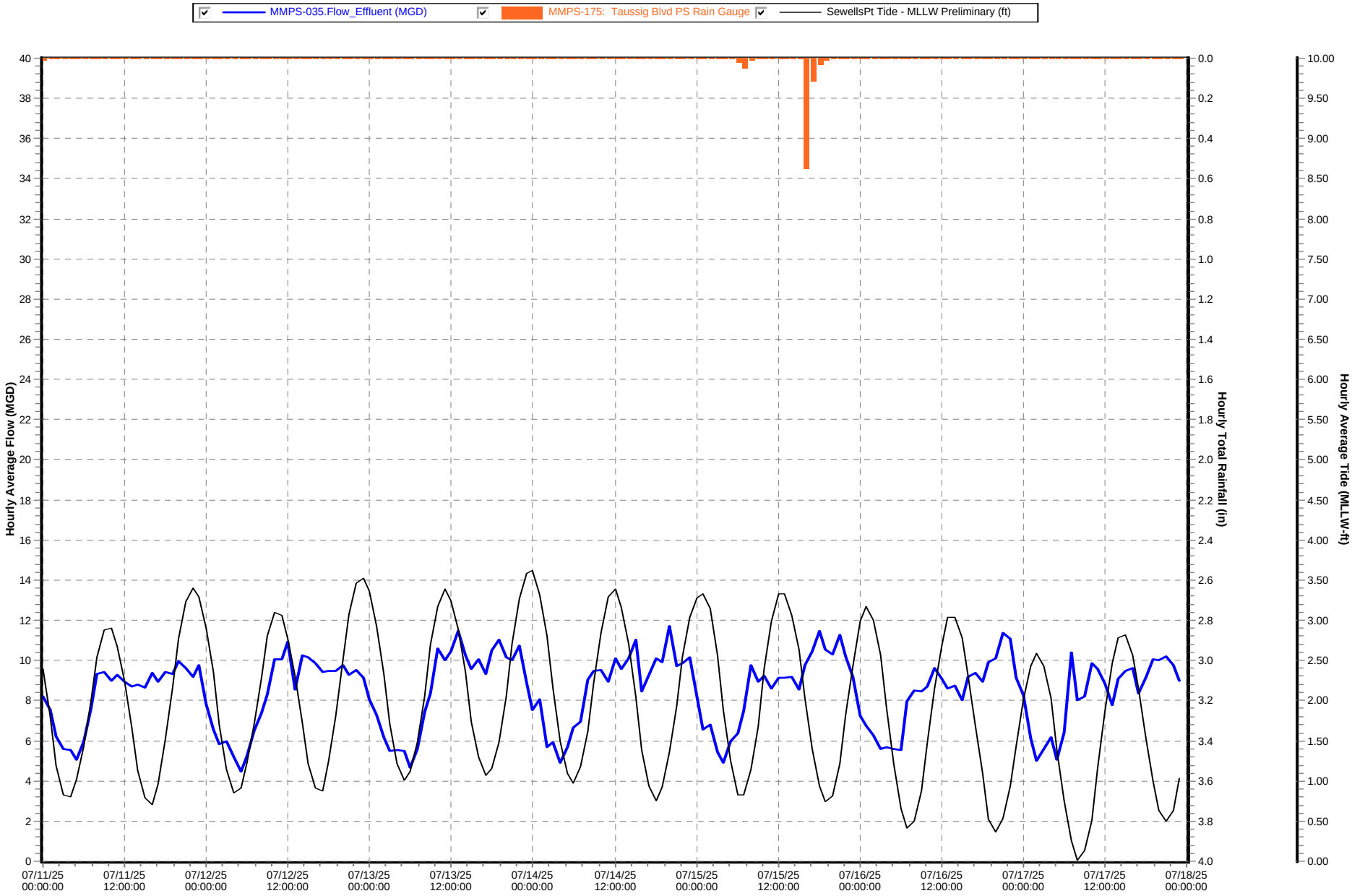
*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used

Appendix B

HRSD Treatment Plant Flows

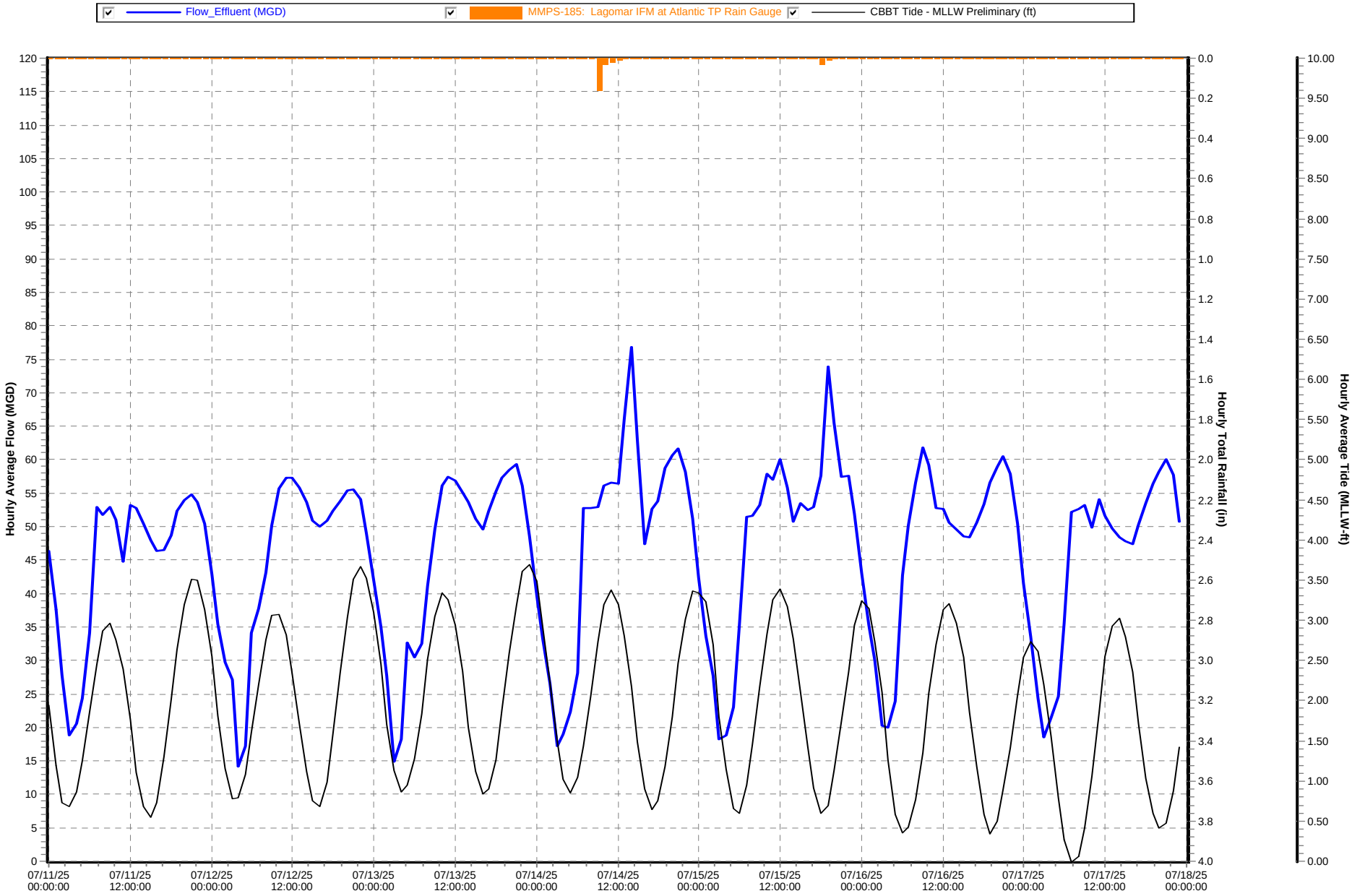
Army Base Treatment Plant

MMPS-035 (07/11/25 to 07/18/25)



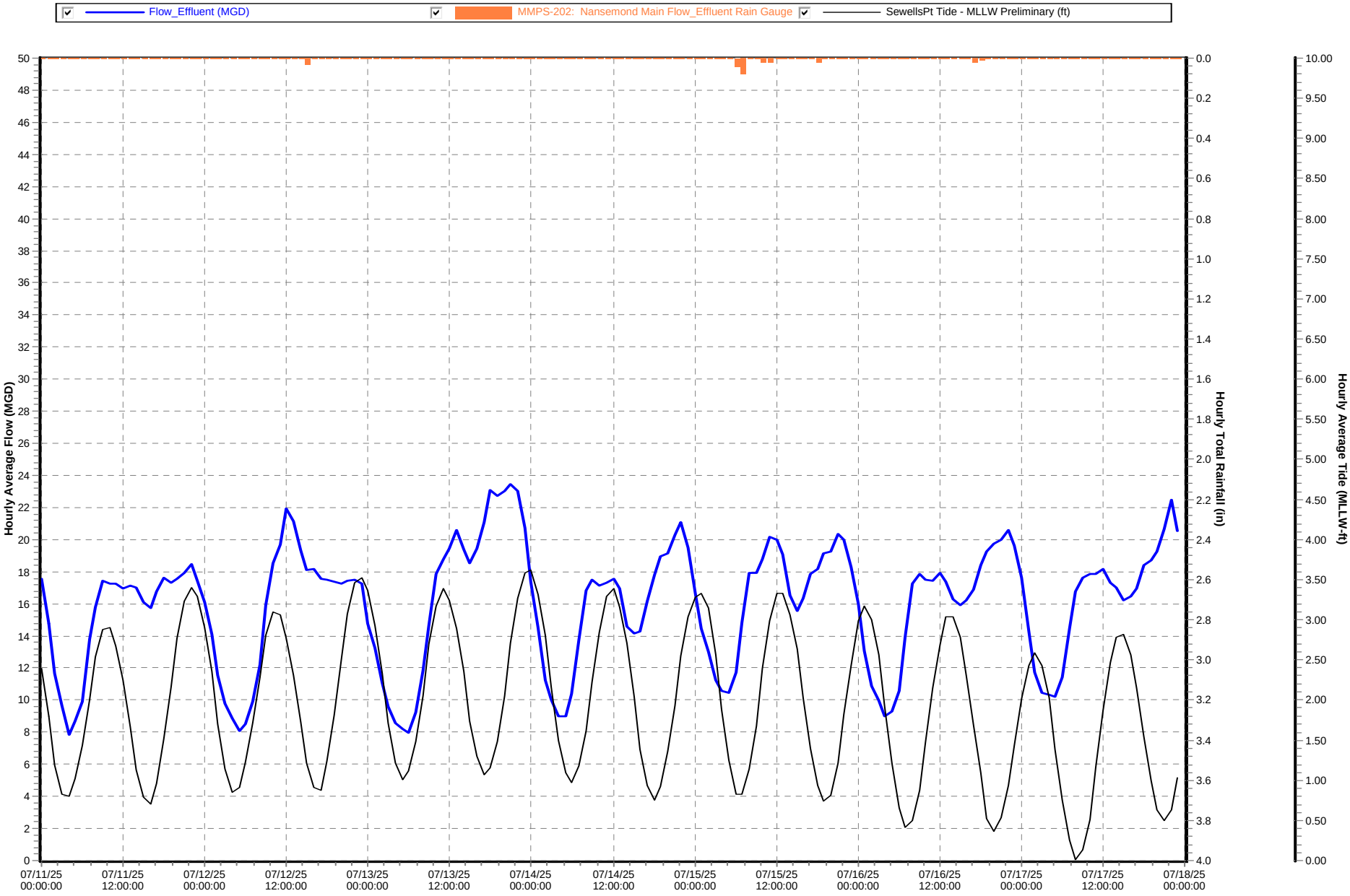
Atlantic Treatment Plant

MMPS-071 (07/11/25 to 07/18/25)



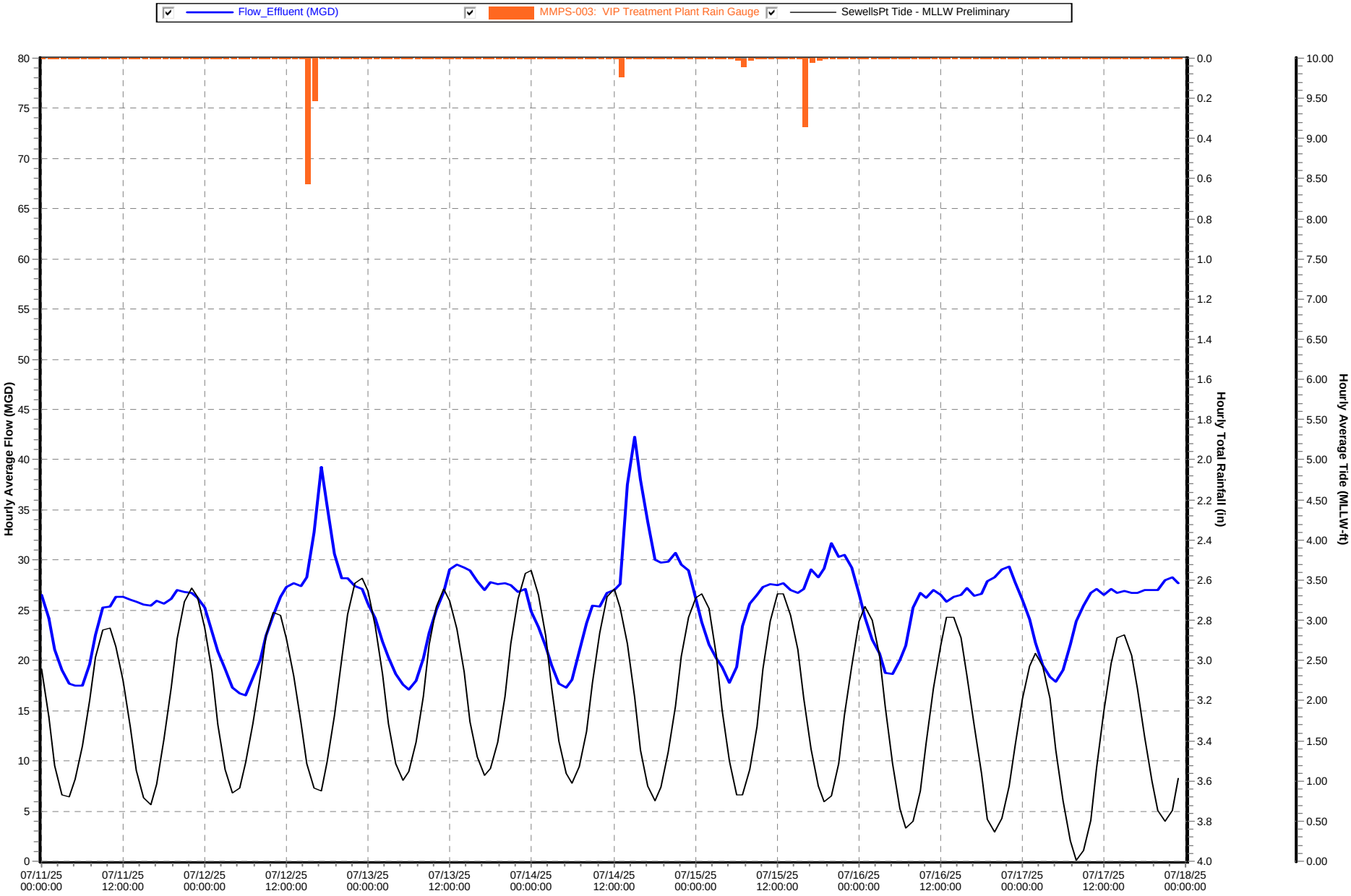
Nansemond Treatment Plant

MMPS-202 (07/11/25 to 07/18/25)



VIP Treatment Plant

MMPS-003 (07/11/25 to 07/18/25)



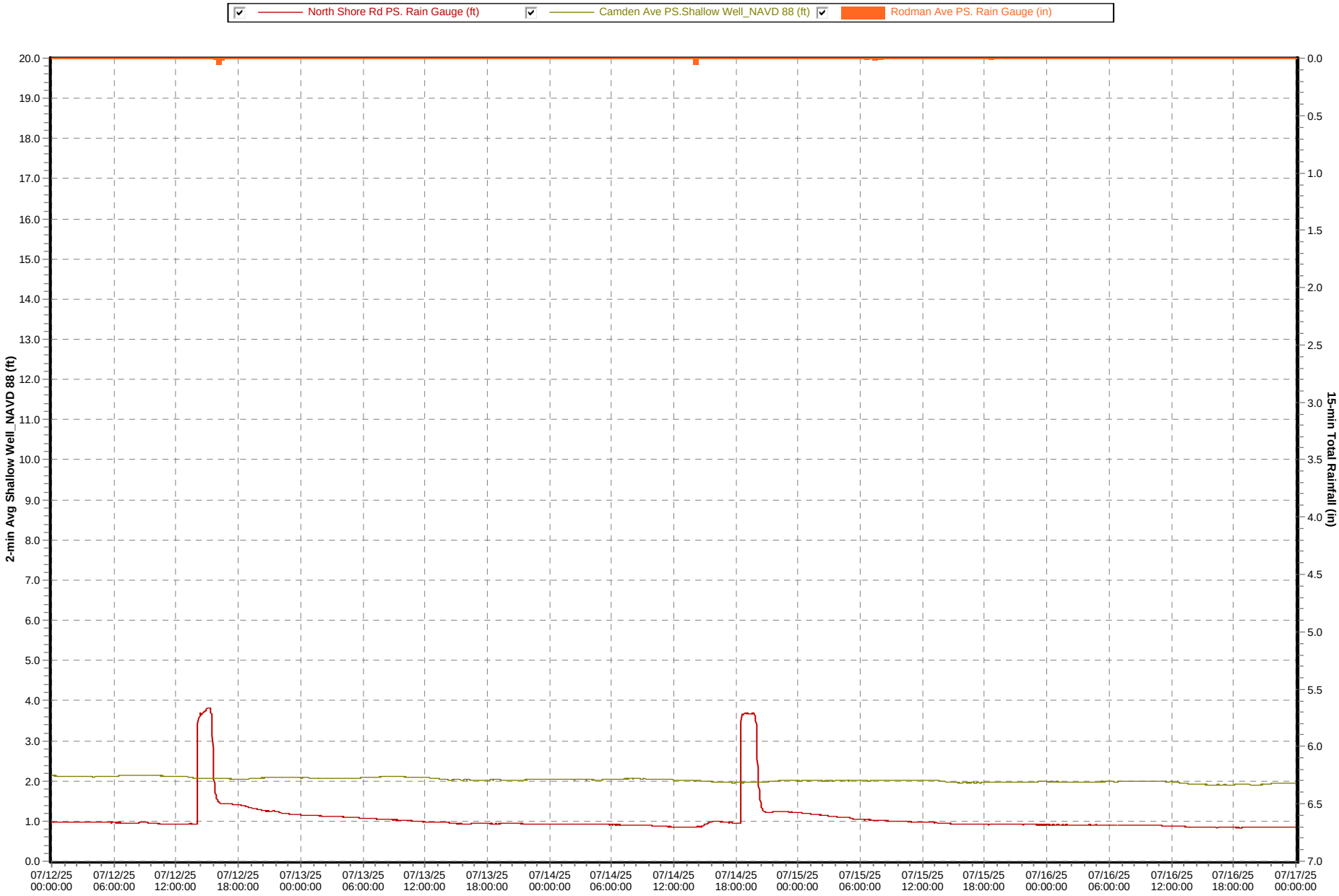
Appendix C

Shallow Well Analysis

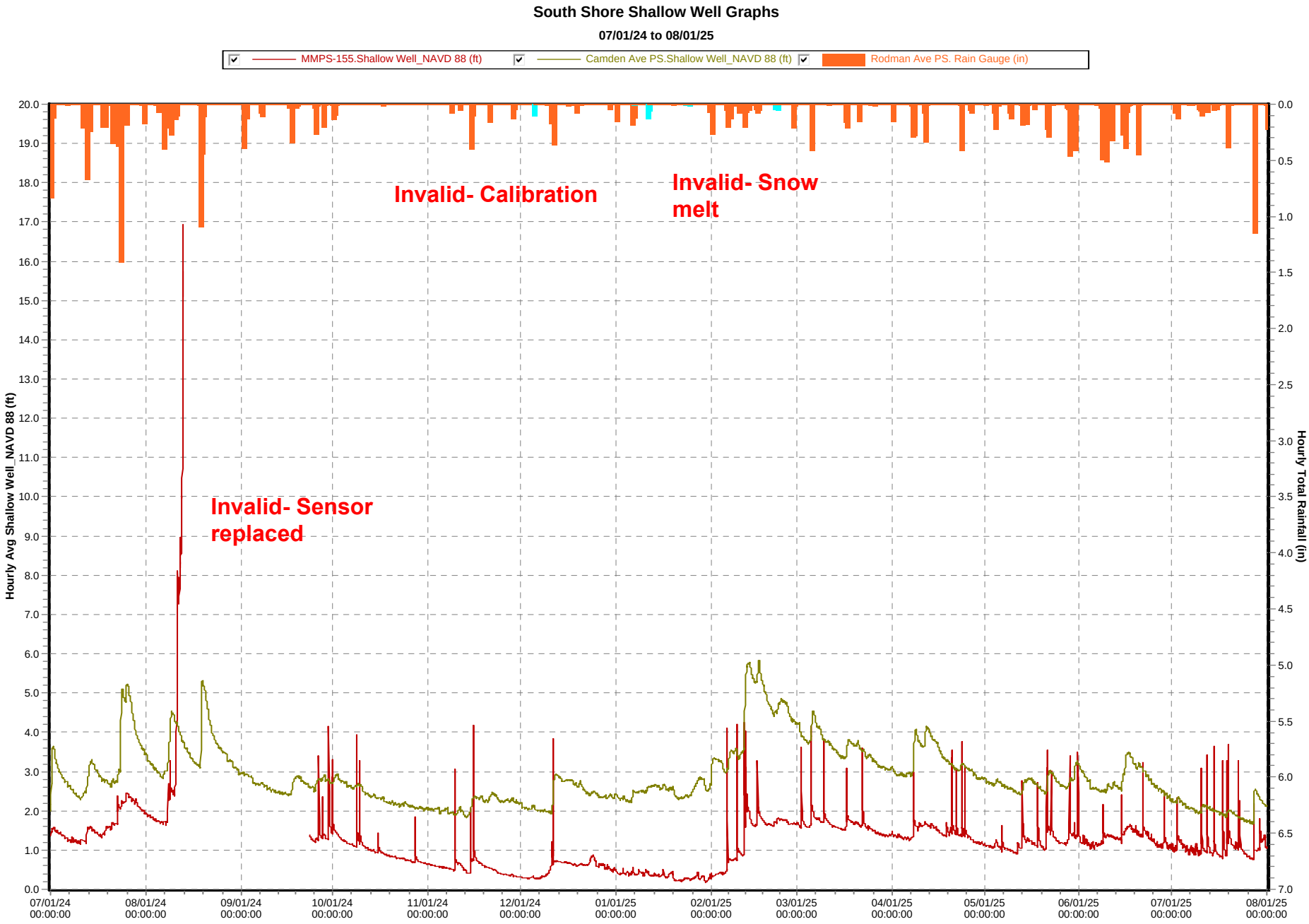
5 Day

South Shore Shallow Well Graphs

07/12/25 to 07/17/25



1 Year


South Shore Shallow Well Graphs
07/01/24 to 08/01/25
MMPS-155.Shallow Well_NAVD 88 (ft)
Camden Ave PS.Shallow Well_NAVD 88 (ft)
Rodman Ave PS. Rain Gauge (in)
Invalid- Calibration
Invalid- Snow melt
Invalid- Sensor replaced
Hourly Avg Shallow Well_NAVD 88 (ft)
Hourly Total Rainfall (in)
20.0
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0
07/01/24 00:00:00
08/01/24 00:00:00
09/01/24 00:00:00
10/01/24 00:00:00
11/01/24 00:00:00
12/01/24 00:00:00
01/01/25 00:00:00
02/01/25 00:00:00
03/01/25 00:00:00
04/01/25 00:00:00
05/01/25 00:00:00
06/01/25 00:00:00
07/01/25 00:00:00
08/01/25 00:00:00

Hampton Roads Sanitation District

Post-Storm Report

July 18-19, 2025

HRSD
Sustainable, Innovative Wastewater Treatment

DISCLAIMER:

About the information on this HRSD server

This report is intended to provide the HRSD regional community summary information about the HRSD system during select wet weather events/anomalies. The attached report contains a selection of *official* Interceptor and Treatment data, as well as other environmental and meteorological data provided through other services. In an effort to enhance the HRSD system, the attached products have been made accessible on this server and care must be taken when using such products as they are intended for informational and not operational, legal, or other purposes.

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Summary
From July 18th through July 19th, there was an approximate 22-hour rainfall event that resulted in 0 sites on the North Shore and 5 sites on the South Shore that met a 1 to 5-year rainfall recurrence interval throughout the HRSD rain gauge network. A cool front came from the North running into a humid air mass and bringing scattered showers and storms in the afternoon. Most of the region saw a level 2 risk of strong storms as well as a flood watch. This front stalled out and brought another round of heavy thunderstorms the following evening. North Shore sites averaged around 0.53 inches of rain while South Shore sites averaged around 0.69 inches. There was minimal impact on groundwater levels compared to July 2024. See Appendix C for the Historical Shallow Well comparison. This report will be for South Shore only.

For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 88% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 88.12%
- Aggregate pressure meter validity: 99.99%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Treatment Plant Data: ***(Data obtained from Telog Database)***
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
7/18/2025 – 7/19/2025

South Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Army Base	7/18/2025	14.43	23:00	0.96
	7/19/2025	11.44	18:00	0.10
Atlantic	7/18/2025	57.29	23:00	0.44
	7/19/2025	59.94	11:00	0.07
Nansemond	7/18/2025	35.17	22:00	1.98
	7/19/2025	24.79	00:00	0.10
VIP	7/18/2025	39.12	23:00	0.84
	7/19/2025	37.42	00:00	0.10

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	DNQ	NORF
Taussig Blvd PS	DNQ	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	DNQ	CHES
Chesapeake PS 243	DNQ	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	DNQ	VAB
Elbow Rd PRS	DNQ	CHES
John B. Dey MLV-AT side	DNQ	VAB
Hickory EOL	DNQ	CHES
Kempsville PRS	DNQ	VAB
Lagomar IFM at Atlantic TP	DNQ	VAB
Laskin Rd PRS	DNQ	VAB
Pine Tree PRS	DNQ	VAB
Shipps Corner PRS	DNQ	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	DNQ	CHES
Independence PRS	DNQ	VAB
Northampton Blvd at Wesleyan Dr	DNQ	NORF
Providence PRS	DNQ	VAB
Shore Dr @ Jack Frost	DNQ	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	DNQ	CHES
Cedar Lane PS	1- to 2-year (1hr)	PORT
Cedar Rd at Dominon Blvd	DNQ	CHES
Chesapeake PS 20	DNQ	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	DNQ	SUFF
Deep Creek PRS	DNQ	CHES
Hill Point Rectifier	Invalid	SUFF
Lake Kilby WTP	DNQ	SUFF
Nansemond Main Flow (Effluent)	1- to 2-year (1hr)	SUFF
Pagan River Rectifier	DNQ	IOW
Pughsville PS	2- to 5-year (1hr)	SUFF
Route 337 PRS	1- to 2-year (1hr)	CHES
Smithfield High School	DNQ	IOW
Suffolk PS	DNQ	SUFF
Suffolk PS 81	DNQ	SUFF
Suffolk PS 87	1-year (1hr)	SUFF
Windsor Duke St PS	Disconnected	IOW

VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	DNQ	NORF
Ferebee Avenue PS	DNQ	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	DNQ	PORT
Va Beach Blvd PS	DNQ	NORF
VIP Main Flow (Effluent)	DNQ	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
07/18/2025	26 mph	9 mph	6 mph	W	0.24
07/19/2025	20 mph	7 mph	3 mph	S	0.37

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.6 foot storm surge was observed.

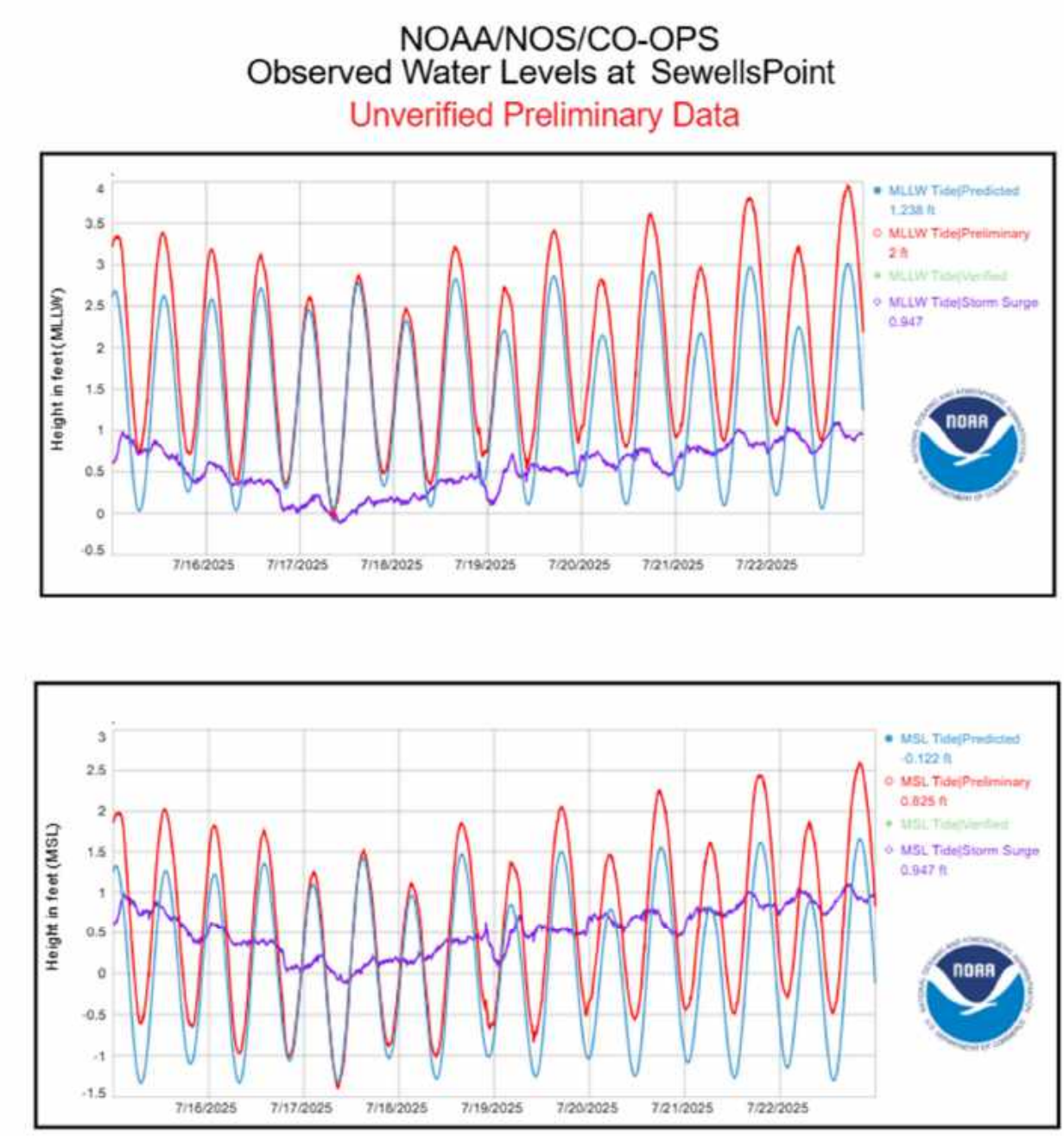


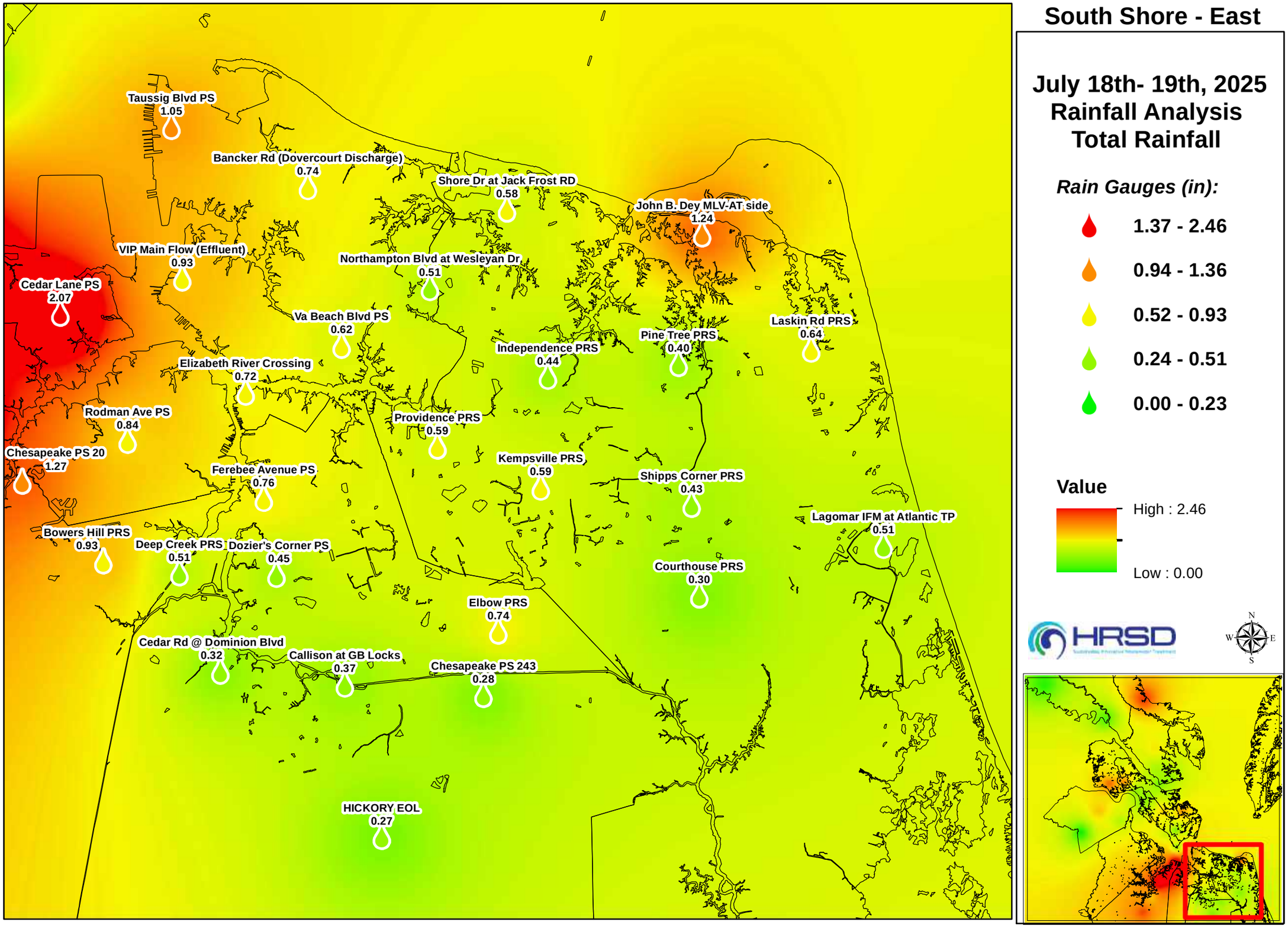
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

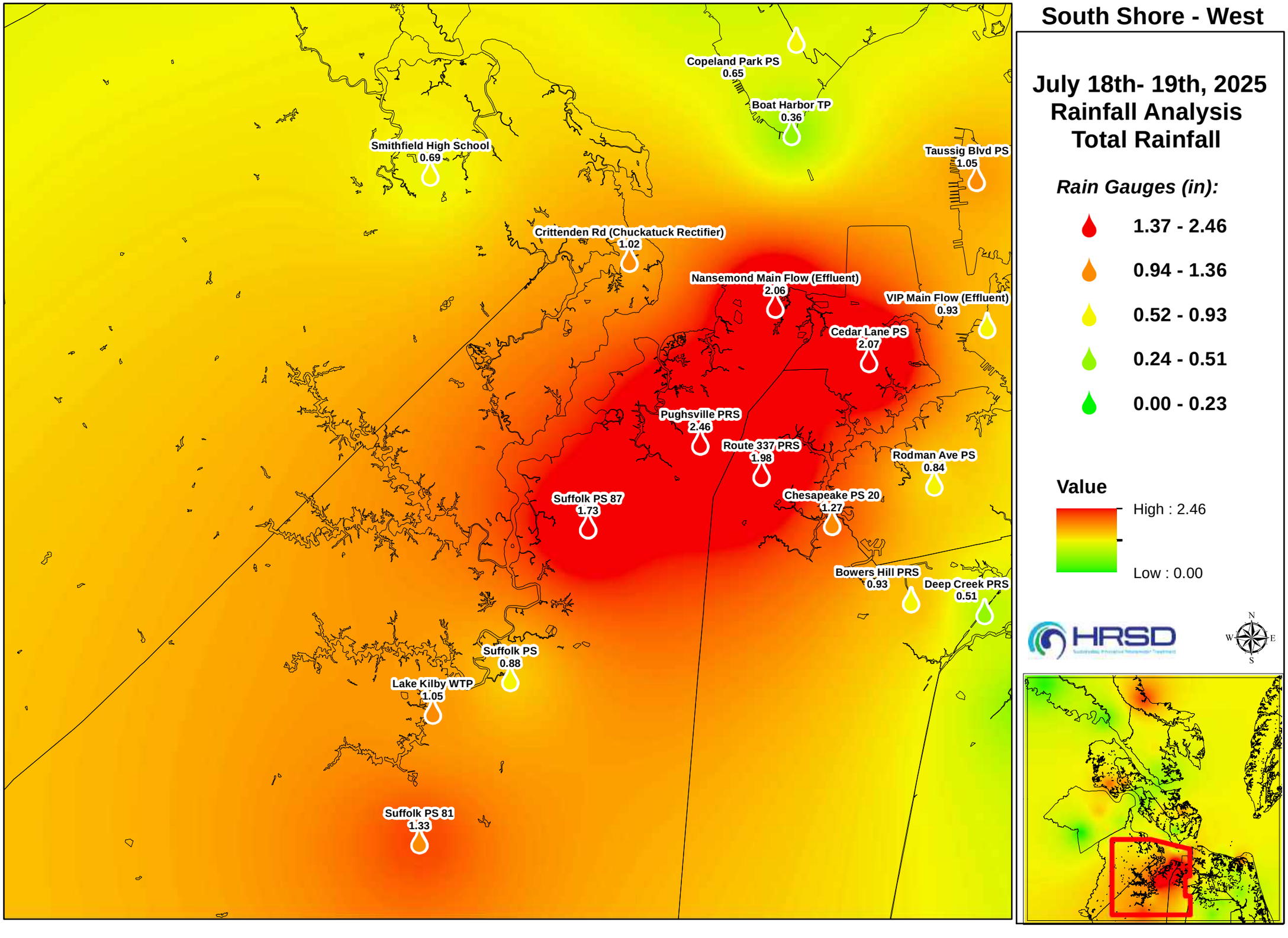
Shallow Well Analysis:

Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

HRSD Rain Gauge Network
Rainfall Totals


South Shore - East
July 18th- 19th, 2025
Rainfall Analysis
Total Rainfall
Rain Gauges (in):
1.37 - 2.46
0.94 - 1.36
0.52 - 0.93
0.24 - 0.51
0.00 - 0.23
Value
High : 2.46
Low : 0.00
HRSD
N
W
E
S
Taussig Blvd PS 1.05
Bancker Rd (Dovercourt Discharge) 0.74
Shore Dr at Jack Frost RD 0.58
John B. Dey MLV-AT side 1.24
VIP Main Flow (Effluent) 0.93
Northampton Blvd at Wesleyan Dr 0.51
Cedar Lane PS 2.07
Va Beach Blvd PS 0.62
Laskin Rd PRS 0.64
Pine Tree PRS 0.40
Independence PRS 0.44
Elizabeth River Crossing 0.72
Rodman Ave PS 0.84
Providence PRS 0.59
Chesapeake PS 20 1.27
Kempsville PRS 0.59
Ferebee Avenue PS 0.76
Shipps Corner PRS 0.43
Lagomar IFM at Atlantic TP 0.51
Bowers Hill PRS 0.93
Deep Creek PRS 0.51
Dozier's Corner PS 0.45
Courthouse PRS 0.30
Elbow PRS 0.74
Cedar Rd @ Dominion Blvd 0.32
Callison at GB Locks 0.37
Chesapeake PS 243 0.28
HICKORY EOL 0.27

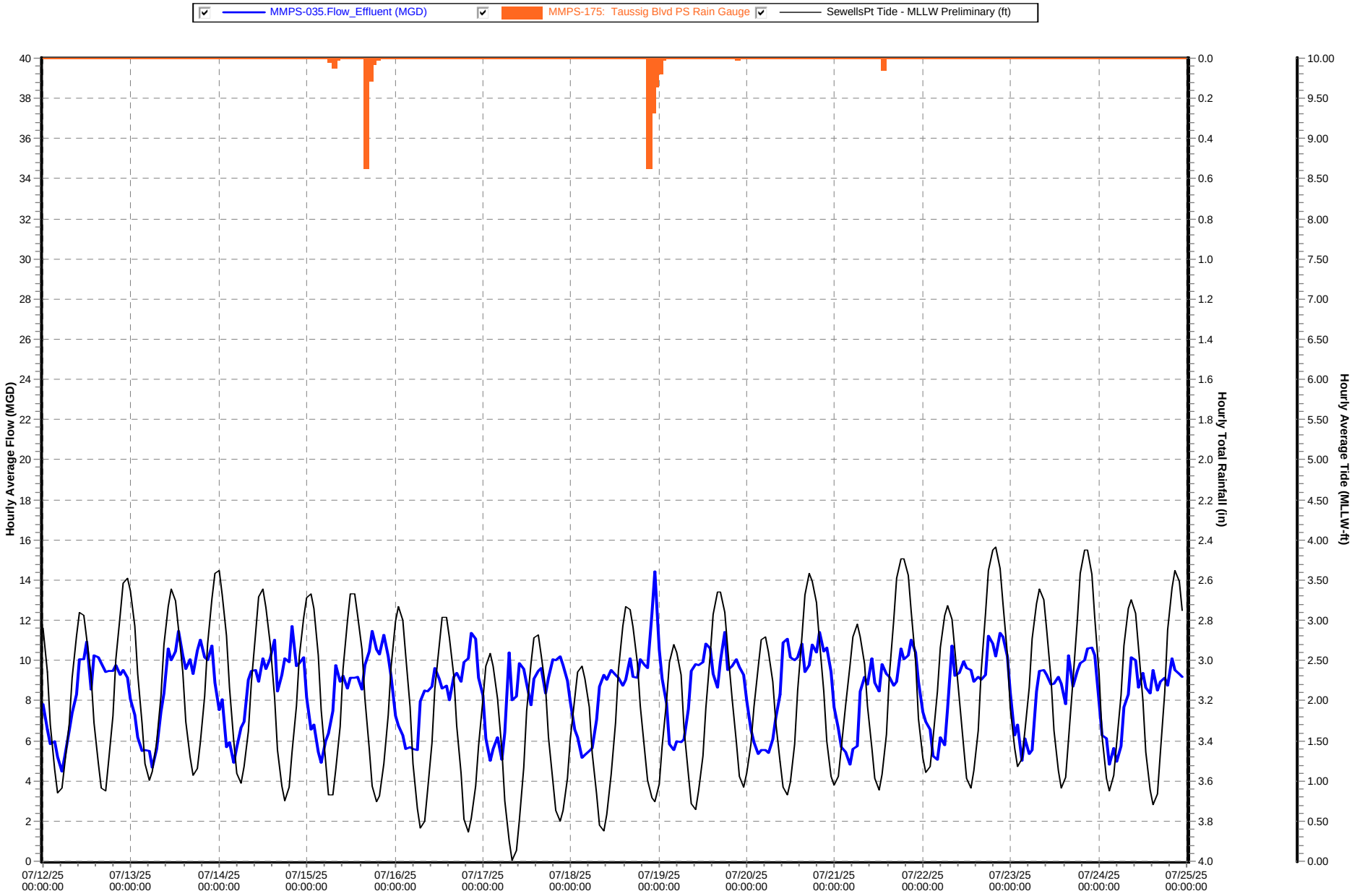

South Shore - West
July 18th- 19th, 2025
Rainfall Analysis
Total Rainfall
Rain Gauges (in):
1.37 - 2.46
0.94 - 1.36
0.52 - 0.93
0.24 - 0.51
0.00 - 0.23
Value
High : 2.46
Low : 0.00
HRSD
N
W
E
S
Copeland Park PS
0.65
Boat Harbor TP
0.36
Smithfield High School
0.69
Taussig Blvd PS
1.05
Crittenden Rd (Chuckatuck Rectifier)
1.02
Nansemond Main Flow (Effluent)
2.06
VIP Main Flow (Effluent)
0.93
Cedar Lane PS
2.07
Pughsville PRS
2.46
Route 337 PRS
1.98
Rodman Ave PS
0.84
Suffolk PS 87
1.73
Chesapeake PS 20
1.27
Bowers Hill PRS
0.93
Deep Creek PRS
0.51
Suffolk PS
0.88
Lake Kilby WTP
1.05
Suffolk PS 81
1.33

Appendix B

HRSD Treatment Plant Flows

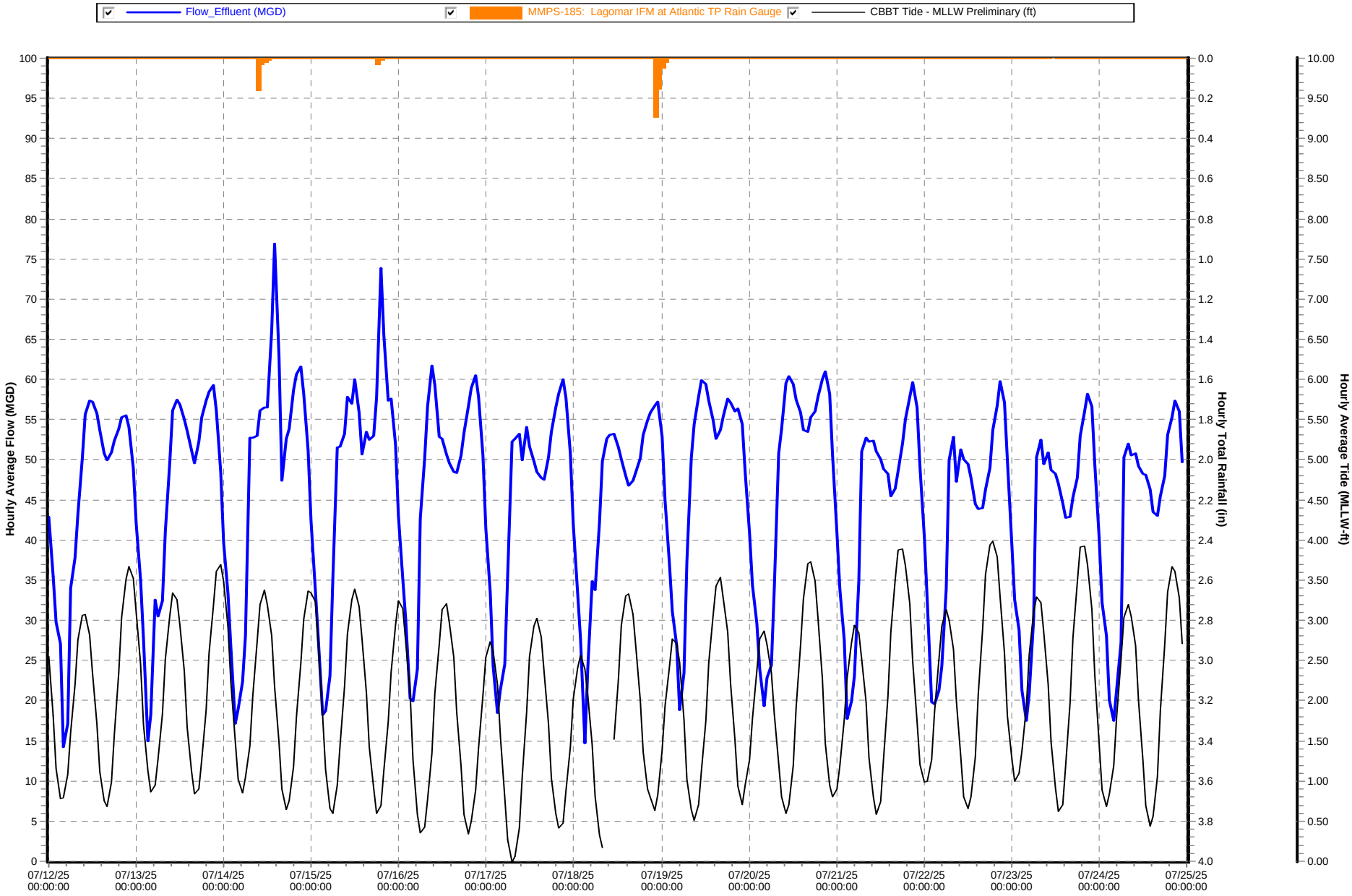
Army Base Treatment Plant

MMPS-035 (07/12/25 to 07/25/25)



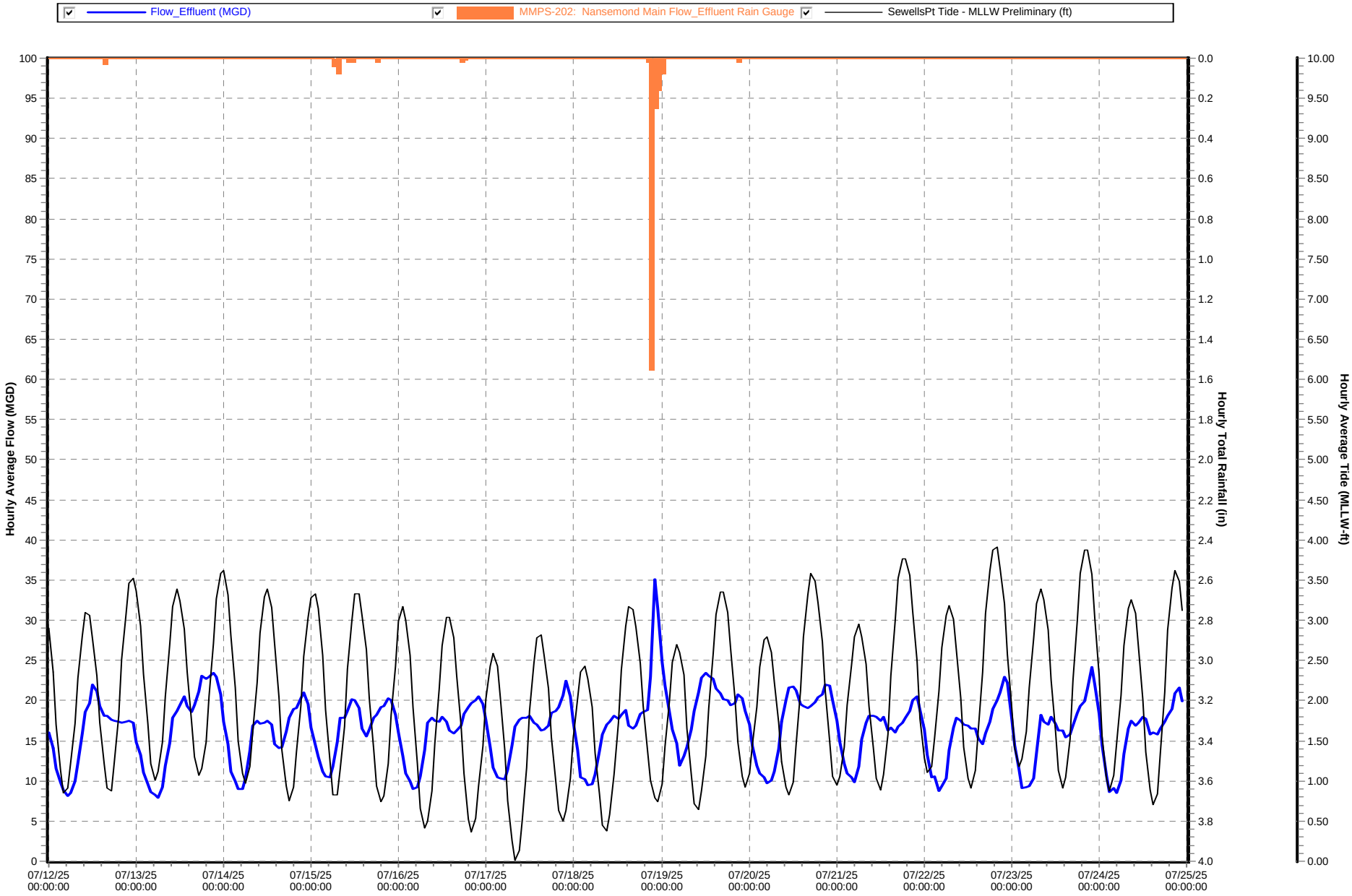
Atlantic Treatment Plant

MMPS-071 (07/12/25 to 07/25/25)



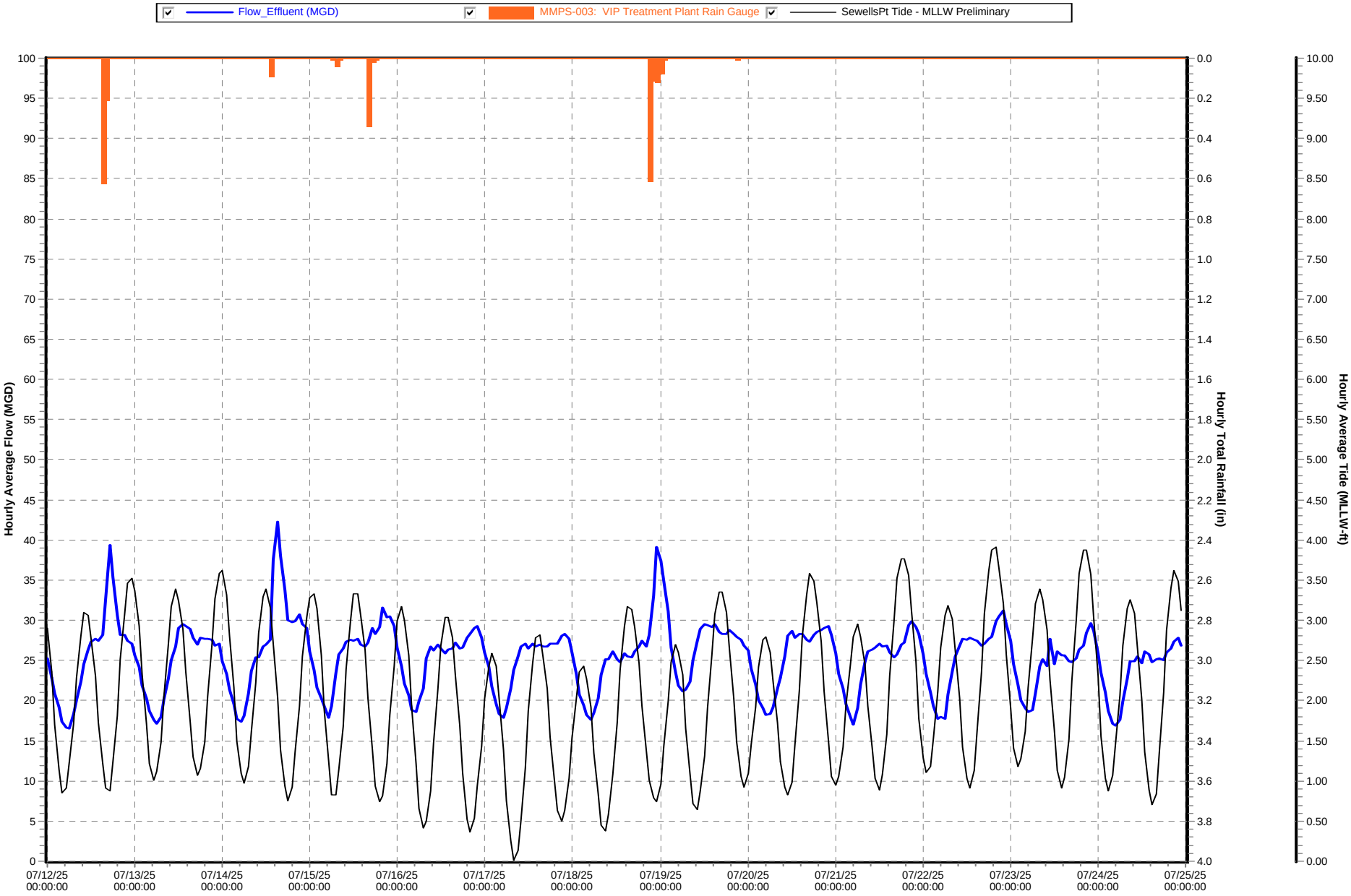
Nansemond Treatment Plant

MMPS-202 (07/12/25 to 07/25/25)



VIP Treatment Plant

MMPS-003 (07/12/25 to 07/25/25)



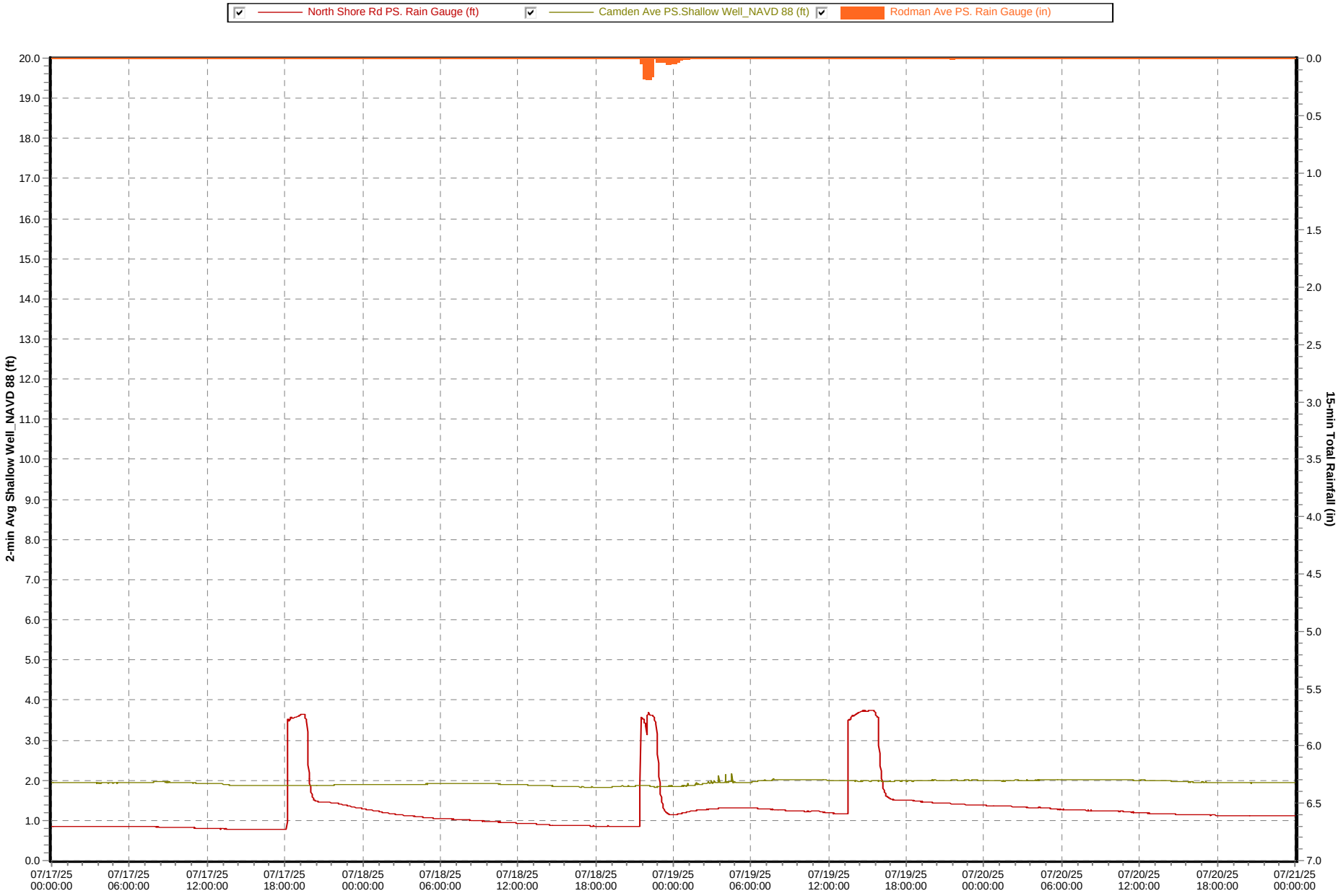
Appendix C

Shallow Well Analysis

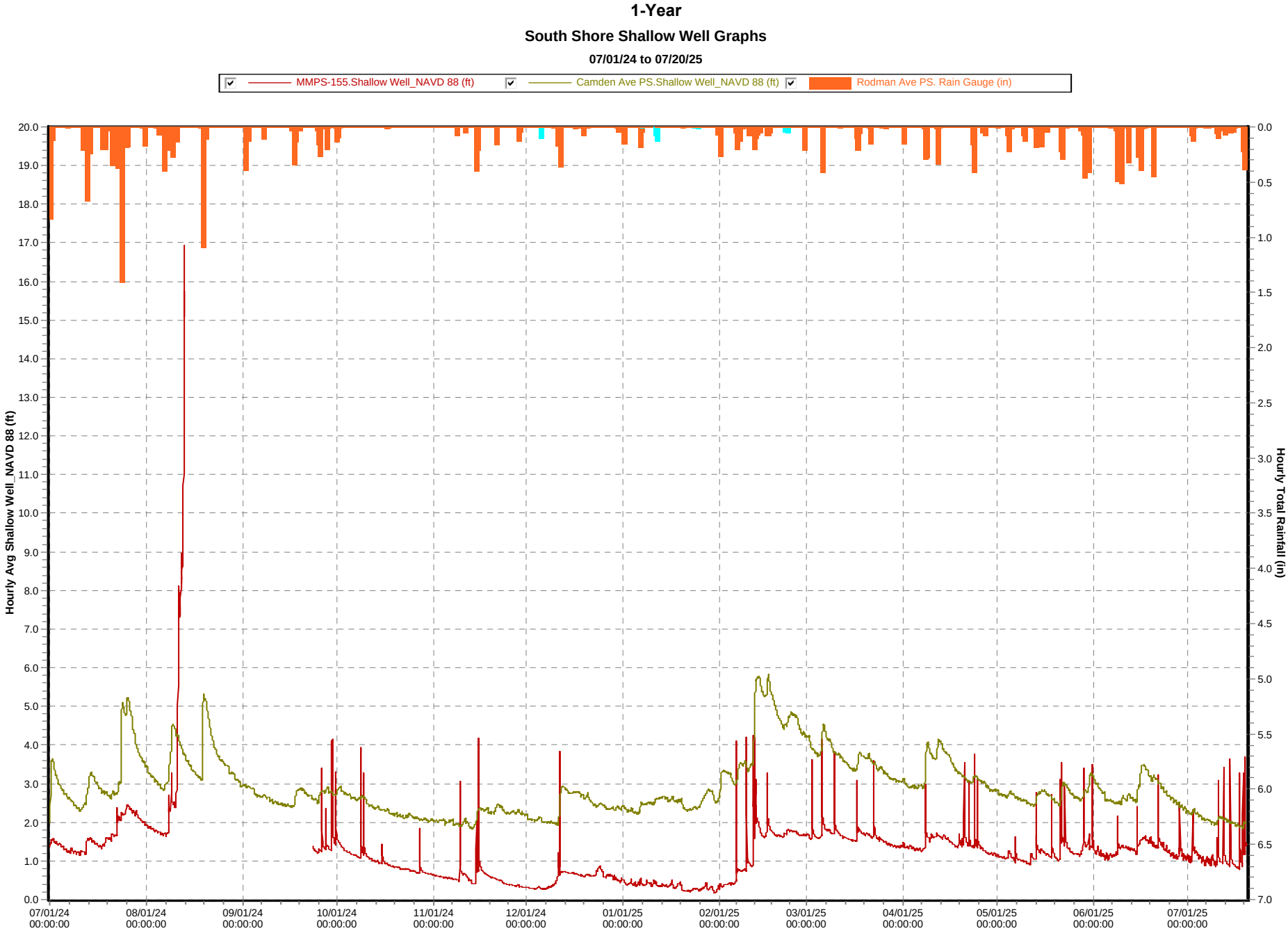
5-Day

South Shore Shallow Well Graphs

07/17/25 to 07/21/25



Teal shows invalid rain gauge data



Hampton Roads Sanitation District

Post-Storm Report

July 27th, 2025

HRSD
Sustainable, Innovative Wastewater Treatment

DISCLAIMER:

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This report is intended to provide the HRSD regional community summary information about the HRSD system during select wet weather events/anomalies. The attached report contains a selection of *official* Interceptor and Treatment data, as well as other environmental and meteorological data provided through other services. In an effort to enhance the HRSD system, the attached products have been made accessible on this server and care must be taken when using such products as they are intended for informational and not operational, legal, or other purposes.

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Summary

On July 27th, there was an approximate 12-hour rainfall event that resulted in 11 sites on the North Shore and 17 site on the South Shore that met a 1 to 100-year rainfall recurrence interval throughout the HRSD rain gauge network. There was an extreme heat warning throughout the area during this event with heat index estimated between 110 and 115 degrees. A warm front moving north is what triggered thunderstorms in the area later in the day. Rain began as small clusters but there was a large rain band that moved through the area that brought the majority of the rain. With these storms there were also strong winds that caused some damage. North Shore sites averaged around 1.27 inches of rain while South Shore sites averaged around 1.18 inches. There was minimal impact on groundwater levels compared to July 2024 . See Appendix C for the Historical Shallow Well comparison.

HRSD flow and pressure meters met data reliability requirements per the MOM program. For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 90% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 92.12%
- Aggregate pressure meter validity: 98.22%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Treatment Plant Data: *(Data obtained from Telog Database)*
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
7/27/2025

North Shore

Treatment Plant	Date of Peak Hourly Flow	Peak Hourly Flow (MGD)	Peak Hour	TPSA Total Rainfall Avg (in)
Boat Harbor	7/27/2025	25.03	21:00	0.91
James River	7/27/2025	32.34	19:00	1.54
Williamsburg	7/27/2025	22.67	19:00	0.95
York River	7/27/2025	21.14	19:00	1.20

HRSD Treatment Plant Data
7/27/2025

South Shore

Treatment Plant	Date of Peak Hourly Flow	Peak Hourly Flow (MGD)	Peak Hour	TPSA Total Rainfall Avg (in)
Army Base	7/27/2025	16.45	20:00	1.23
Atlantic	7/27/2025	90.11	20:00	1.43
Nansemond	7/27/2025	30.17	21:00	1.56
VIP	7/27/2025	50.73	21:00	1.68

North Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Boat Harbor Treatment Plant Service Area[1]		
Bayshore PS	DNQ	HAMP
Bridge Street Tide Gate	DNQ	HAMP
Boat Harbor	DNQ	NEWP
Copeland Park PS	1- to 2-year (2hr)	NEWP
Hampton PS 159	DNQ	HAMP
James River Treatment Plant Service Area[1]		
Hilton School PS	2-year (1hr)	NEWP
James River Main Flow (Influent)	2- to 5-year (1hr)	NEWP
Lee Hall PRS	DNQ	NEWP
Lucas Creek PS	Disconnected	NEWP
Morrison PS	1-year (1hr)	NEWP
Williamsburg Treatment Plant Service Area[1]		
Ford's Colony	DNQ	JCSA
Fort Eustis PS	DNQ	NEWP
Greensprings PS	1- to 2-year (1hr)	JCA
Solarex	DNQ	JCSA
Williamsburg Main Flow (Effluent)	1-year (1hr)	JCSA
Williamsburg PS	DNQ	WILL
York Skimino Hills PS	DNQ	YORK
York River Treatment Plant Service Area[1]		
Big Bethel PRS	Disconnected	HAMP
Freeman PS	DNQ	HAMP
Gloucester Court House	DNQ	GLOU
Guinea Rd at Maryus Rd	DNQ	GLOU
Ordinary PCV	DNQ	GLOU
Poquoson PS 6	25- to 50-year (1hr)	POQ
Wolf Trappe PCV	2-year (1hr)	YORK
York Kiln Creek 1 PS	1- to 2-year (1hr)	YORK
York PS 15	1- to 2-year (1hr)	YORK
York River Main Flow (Influent)	5-year (2hr)	YORK
York River Crossing (York River Rectifier)	2- to 5-year (1hr)	GLOU

Note:

1. Typical treatment plant service area.

Newport News-Williamsburg International (PHF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
7/27/2025	39 mph	17 mph	6 mph	E	1.32

Tide:

- Yorktown USCG Training Center:
  - Storm Surge: An approximate 0.77-foot storm surge was observed.

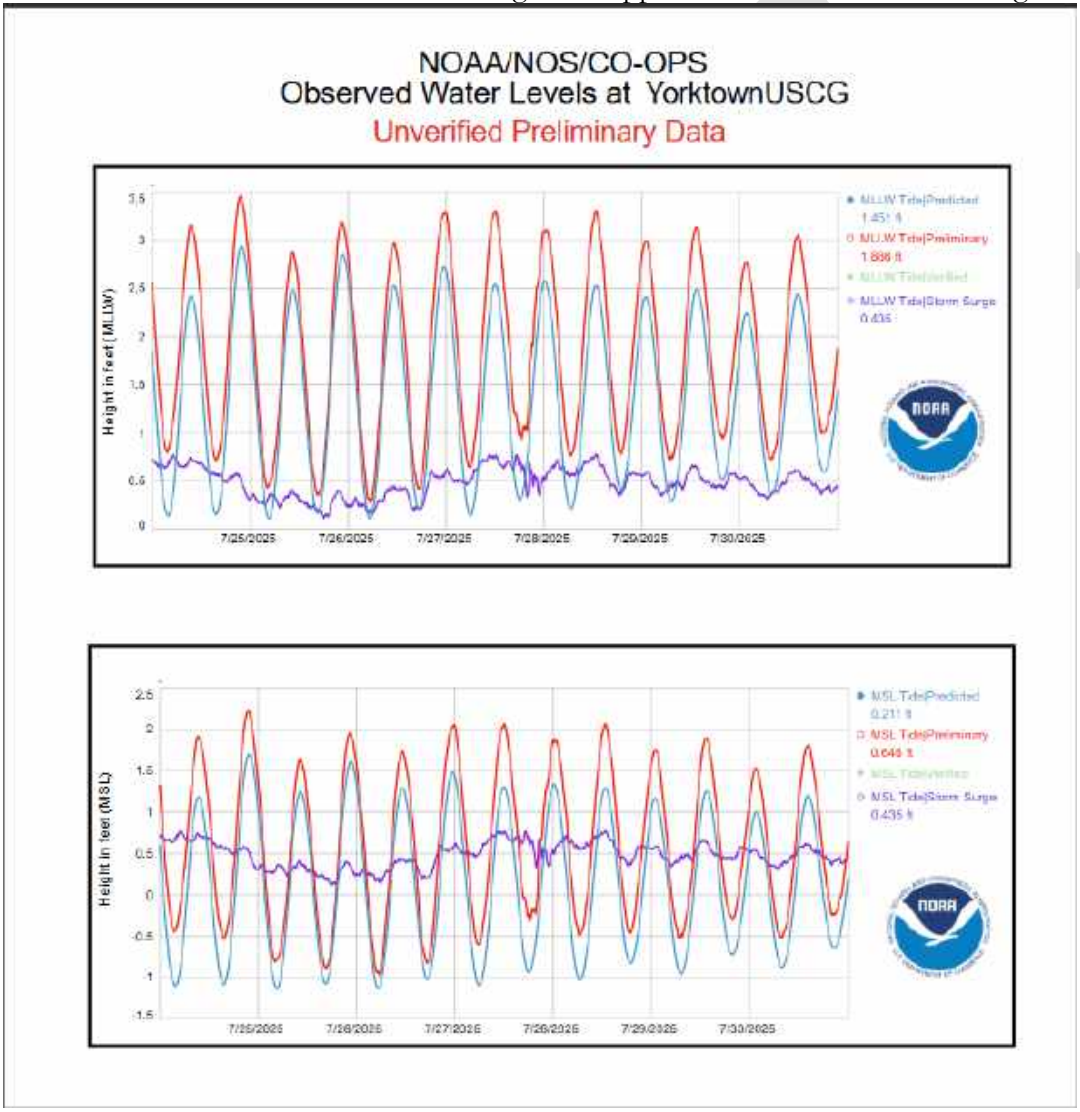


Figure 1. Preliminary data obtained from NOAA and a connection with Open Weather

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.80 foot storm surge was observed.

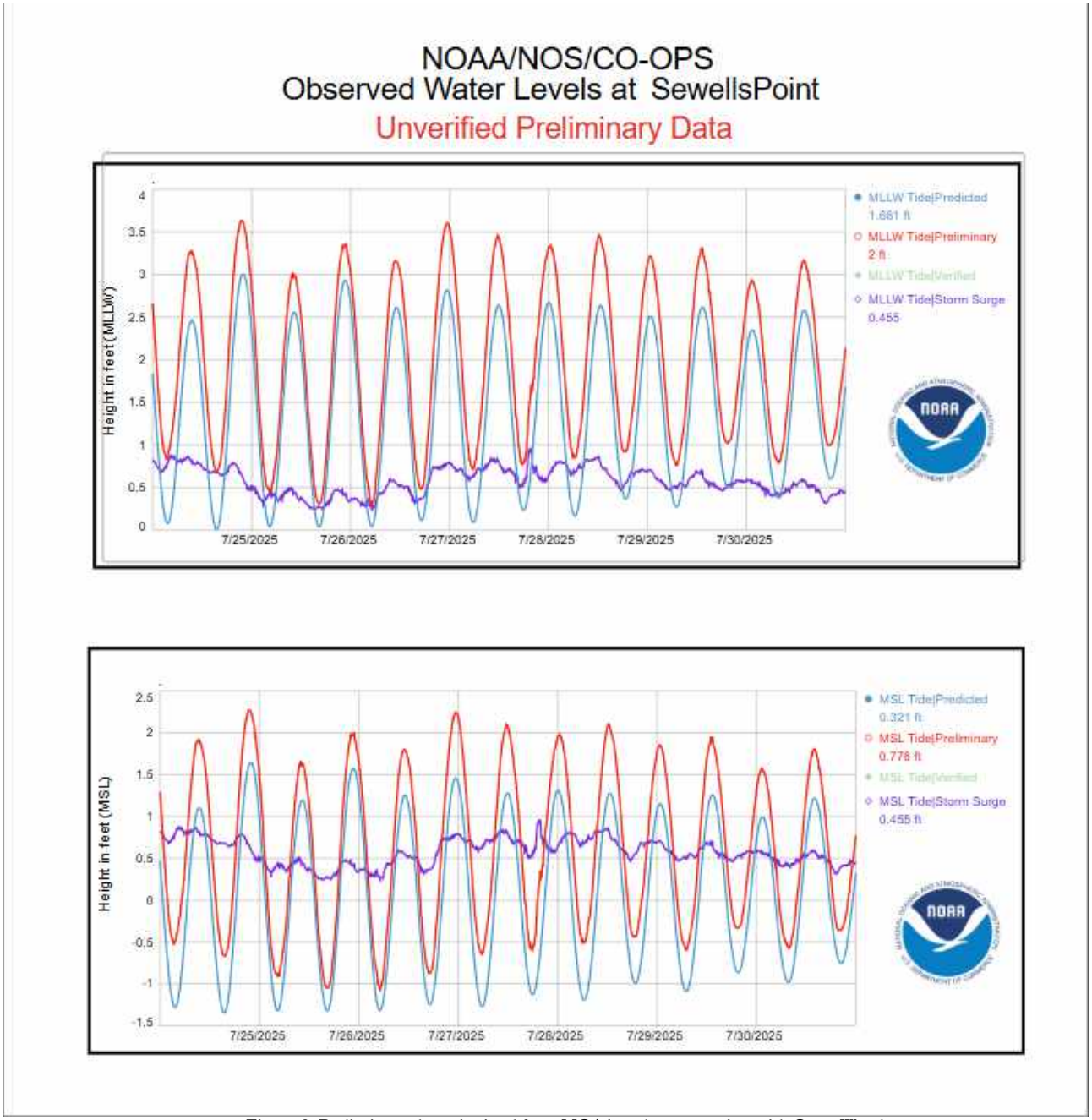


Figure 2. Preliminary data obtained from NOAA and a connection with Open Weather

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	DNQ	NORF
Taussig Blvd PS	DNQ	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	1- to 2-year (1hr)	CHES
Chesapeake PS 243	5-year (1hr)	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	DNQ	VAB
Elbow Rd PRS	100-year (1hr)	CHES
John B. Dey MLV-AT side	DNQ	VAB
Hickory EOL	1- to 2-year (1hr)	CHES
Kempsville PRS	5- to 10-year (1hr)	VAB
Lagomar IFM at Atlantic TP	2- to 5-year (1hr)	VAB
Laskin Rd PRS	DNQ	VAB
Pine Tree PRS	DNQ	VAB
Shipps Corner PRS	DNQ	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	DNQ	CHES
Independence PRS	25-year (1hr)	VAB
Northampton Blvd at Wesleyan Dr	1- to 2-year (1hr)	NORF
Providence PRS	DNQ	VAB
Shore Dr @ Jack Frost	DNQ	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	2-year (1hr)	CHES
Cedar Lane PS	DNQ	PORT
Cedar Rd at Dominon Blvd	1- to 2-year (1hr)	CHES
Chesapeake PS 20	5-year (1hr)	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	DNQ	SUFF
Deep Creek PRS	2- to 5-year (1hr)	CHES
Hill Point Rectifier	DNQ	SUFF
Lake Kilby WTP	5-year (1hr)	SUFF
Nansemond Main Flow (Effluent)	DNQ	SUFF
Pagan River Rectifier	Invalid	IOW
Pughsville PS	DNQ	SUFF
Route 337 PRS	1-year (1hr)	CHES
Smithfield High School	DNQ	IOW
Suffolk PS	1-year (1hr)	SUFF
Suffolk PS 81	1-year (1hr)	SUFF
Suffolk PS 87	DNQ	SUFF

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Windsor Duke St PS	Disconnected	IOW
VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	1- to 2-year (1hr)	NORF
Ferebee Avenue PS	DNQ	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	DNQ	PORT
Va Beach Blvd PS	DNQ	NORF
VIP Main Flow (Effluent)	DNQ	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
7/27/2025	36 mph	23 mph	6 mph	N	0.23

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.80 foot storm surge was observed.

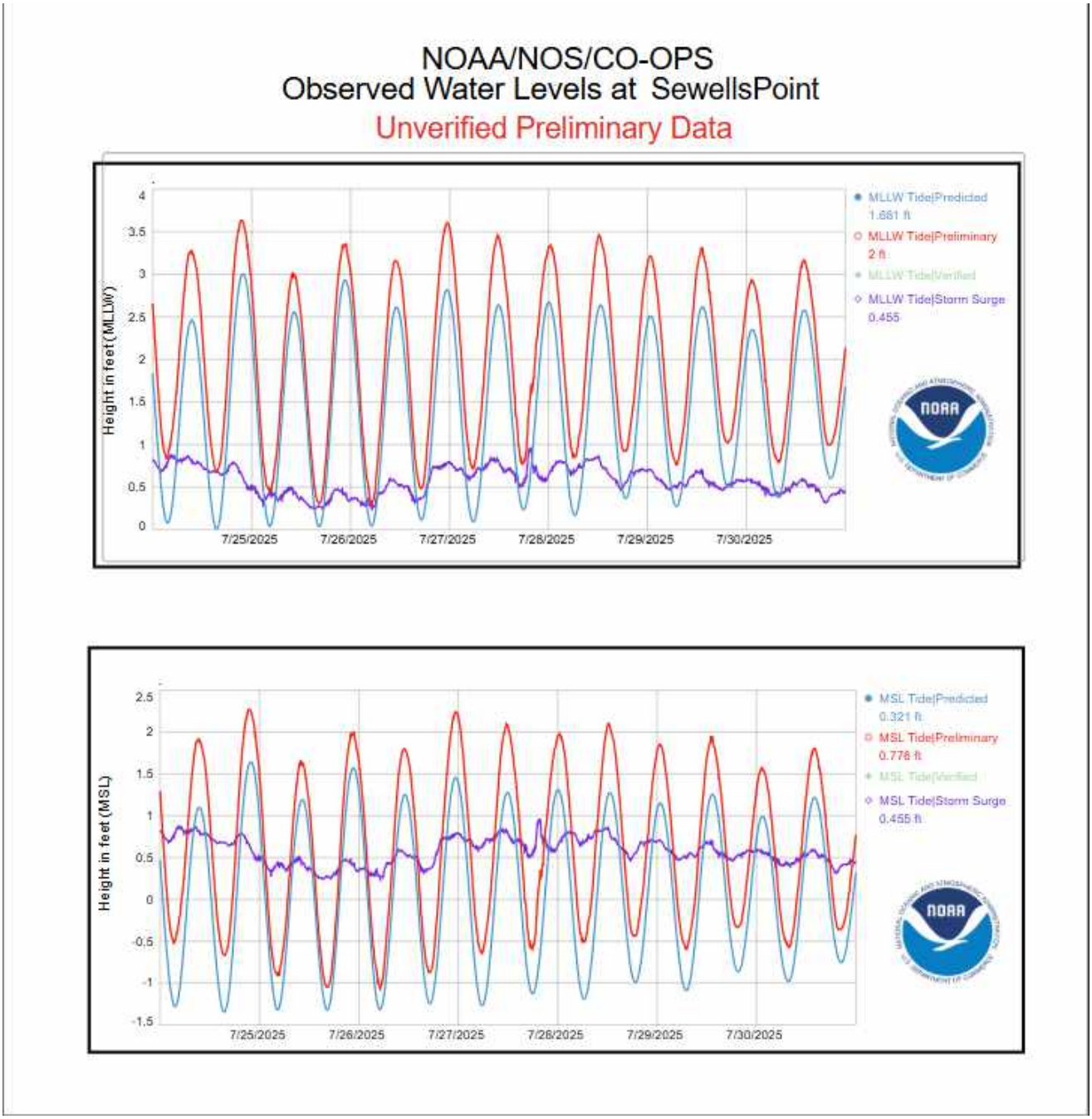


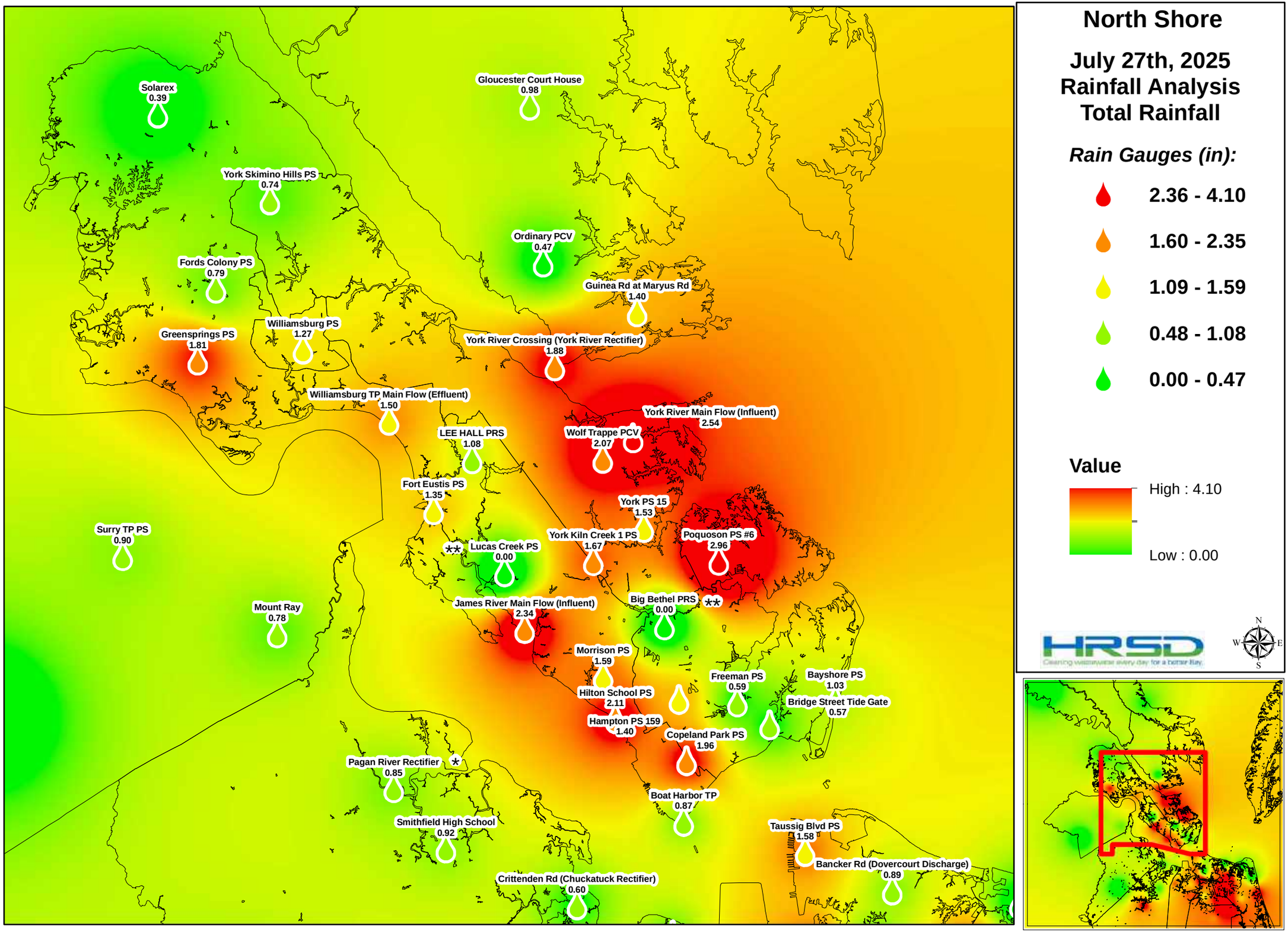
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

Shallow Well Analysis:

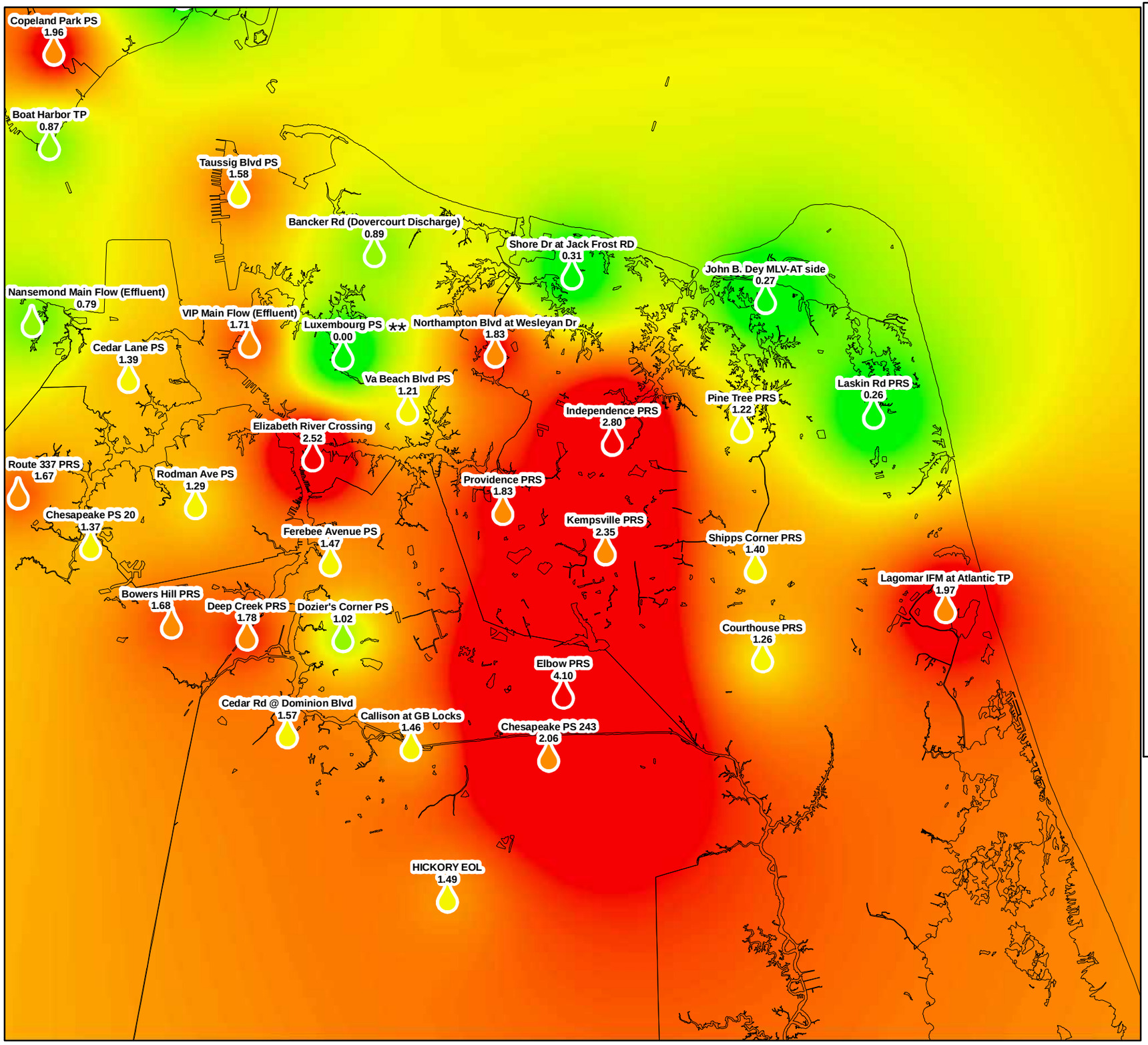
Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

HRSD Rain Gauge Network
Rainfall Totals



*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



South Shore - East

July 27th, 2025
Rainfall Analysis
Total Rainfall

Rain Gauges (in):

- **2.36 - 4.10**
- **1.60 - 2.35**
- **1.09 - 1.59**
- **0.48 - 1.08**
- **0.00 - 0.47**

Value

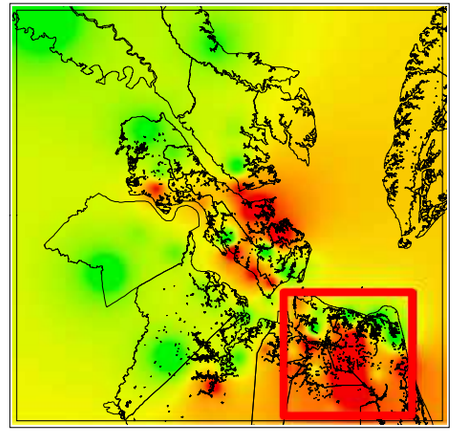
High : 4.10

Low : 0.00

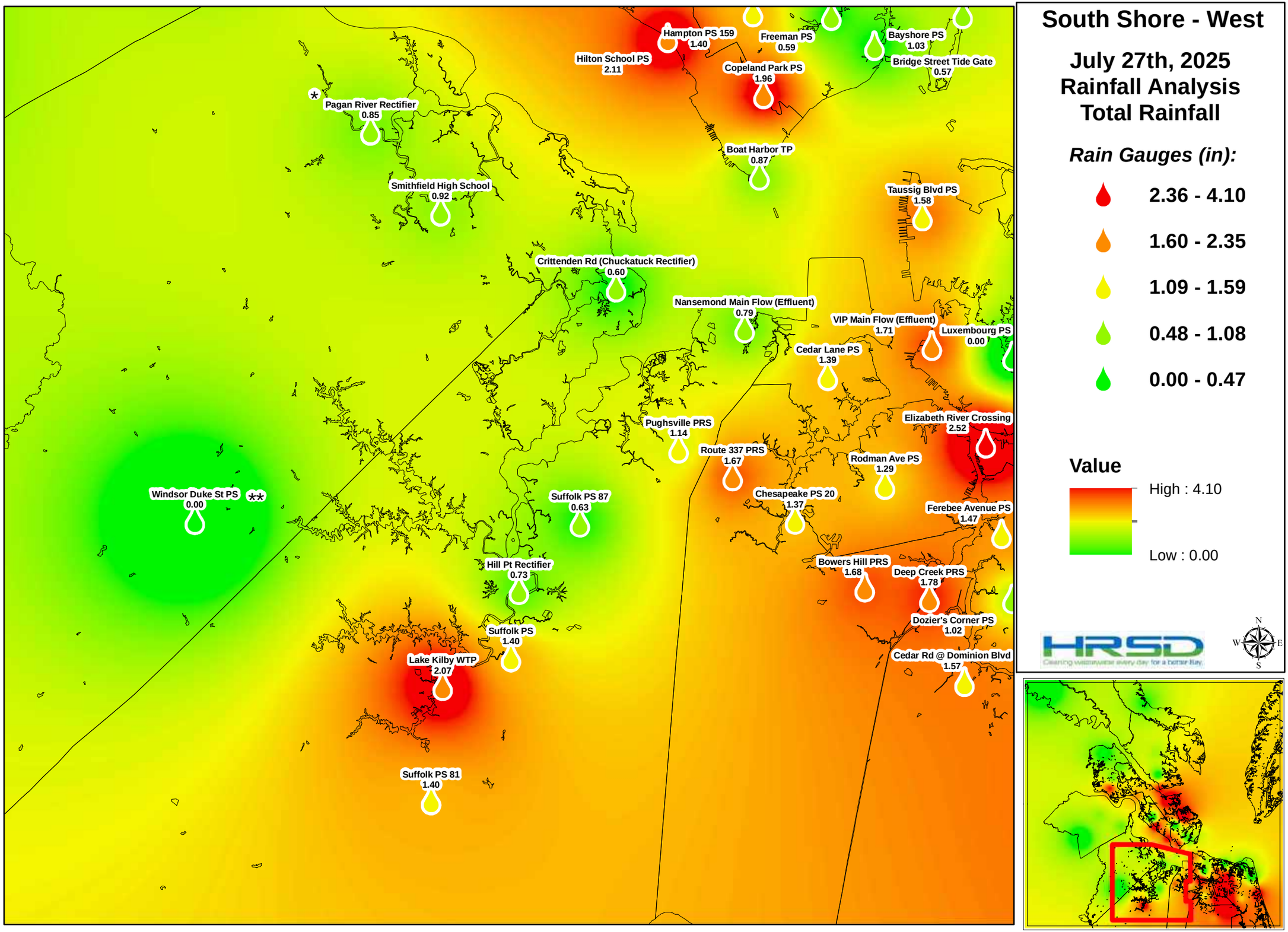
HRSD

Cleaning wastewater every day for a better Bay.

N W E S



*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



South Shore - West

July 27th, 2025 Rainfall Analysis Total Rainfall

Rain Gauges (in):

- **2.36 - 4.10**
- **1.60 - 2.35**
- **1.09 - 1.59**
- **0.48 - 1.08**
- **0.00 - 0.47**

Value

High : 4.10

Low : 0.00

HRSD

Cleaning wastewater every day for a better Bay.

N W E S

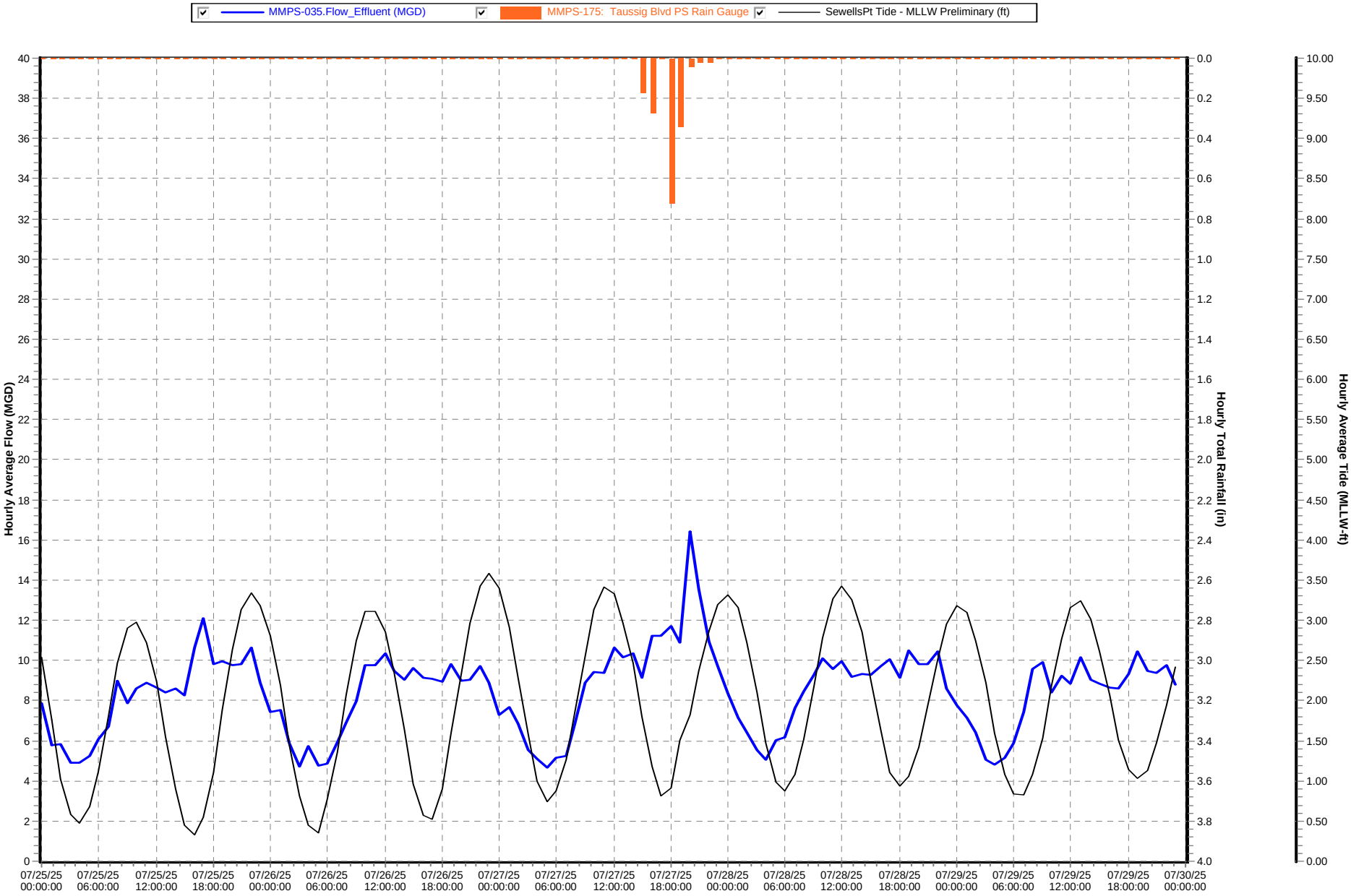
*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used

Appendix B

HRSD Treatment Plant Flows

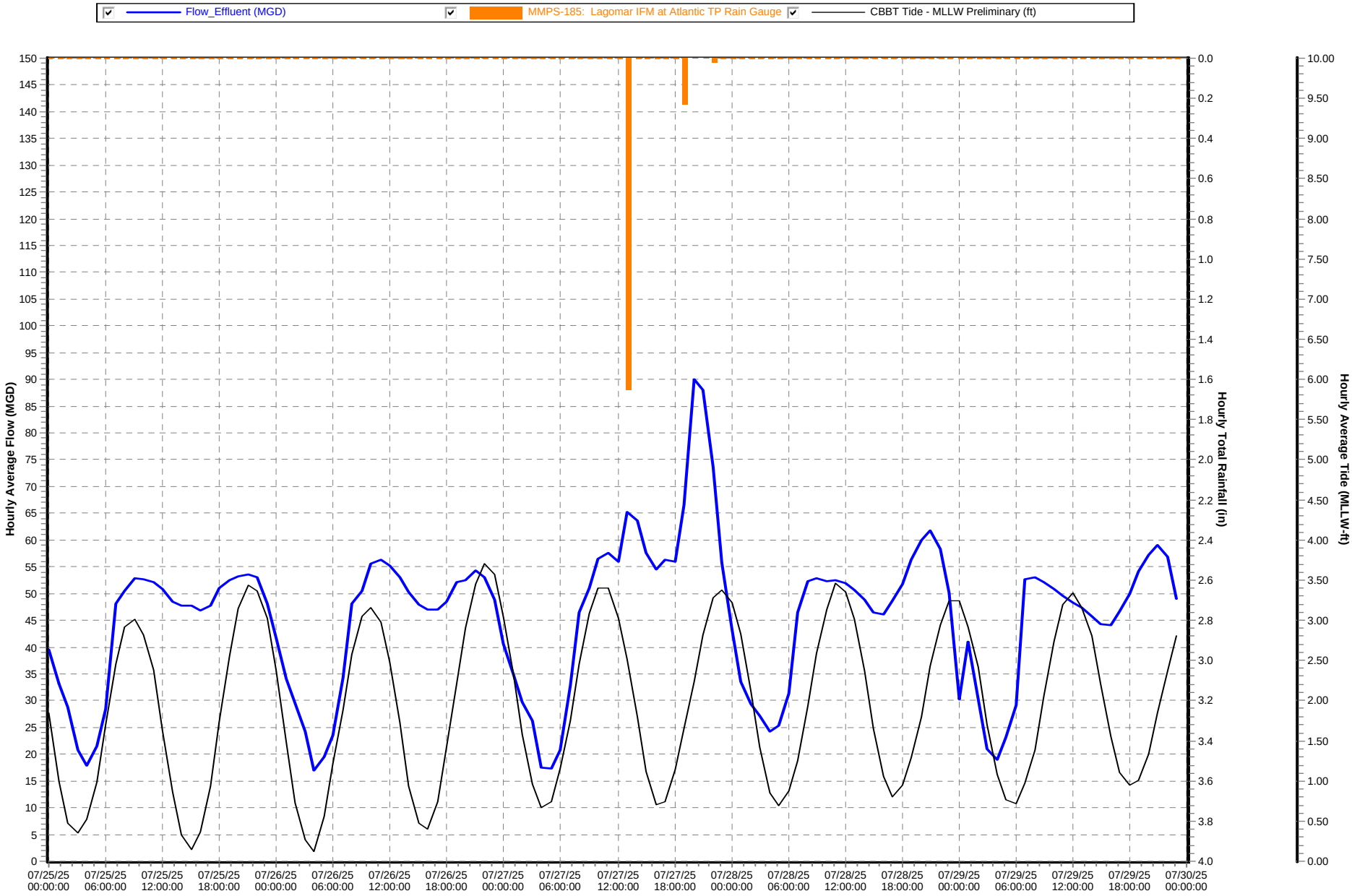
Army Base Treatment Plant

MMPS-035 (07/25/25 to 07/30/25)



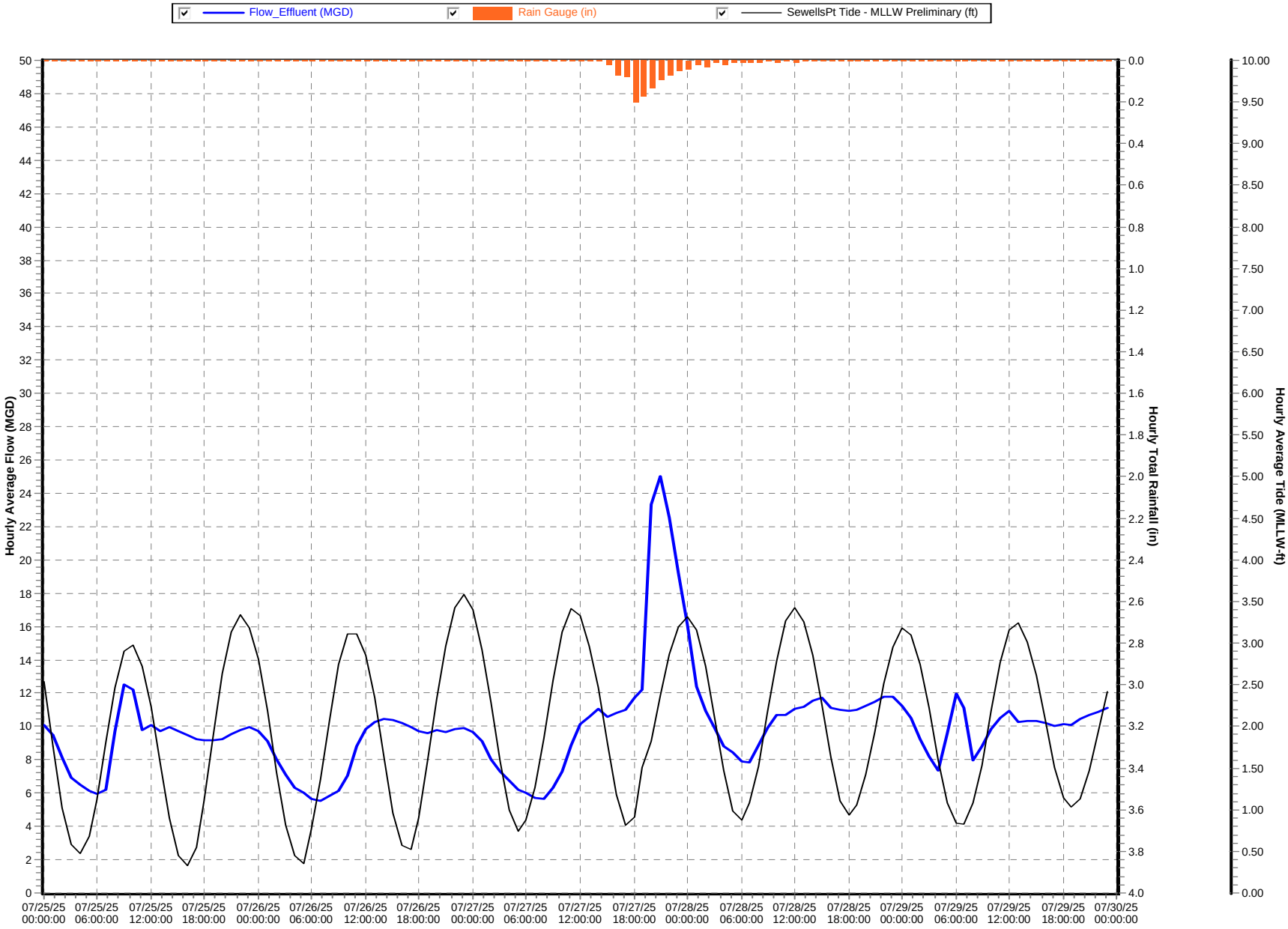
Atlantic Treatment Plant

MMPS-071 (07/25/25 to 07/30/25)



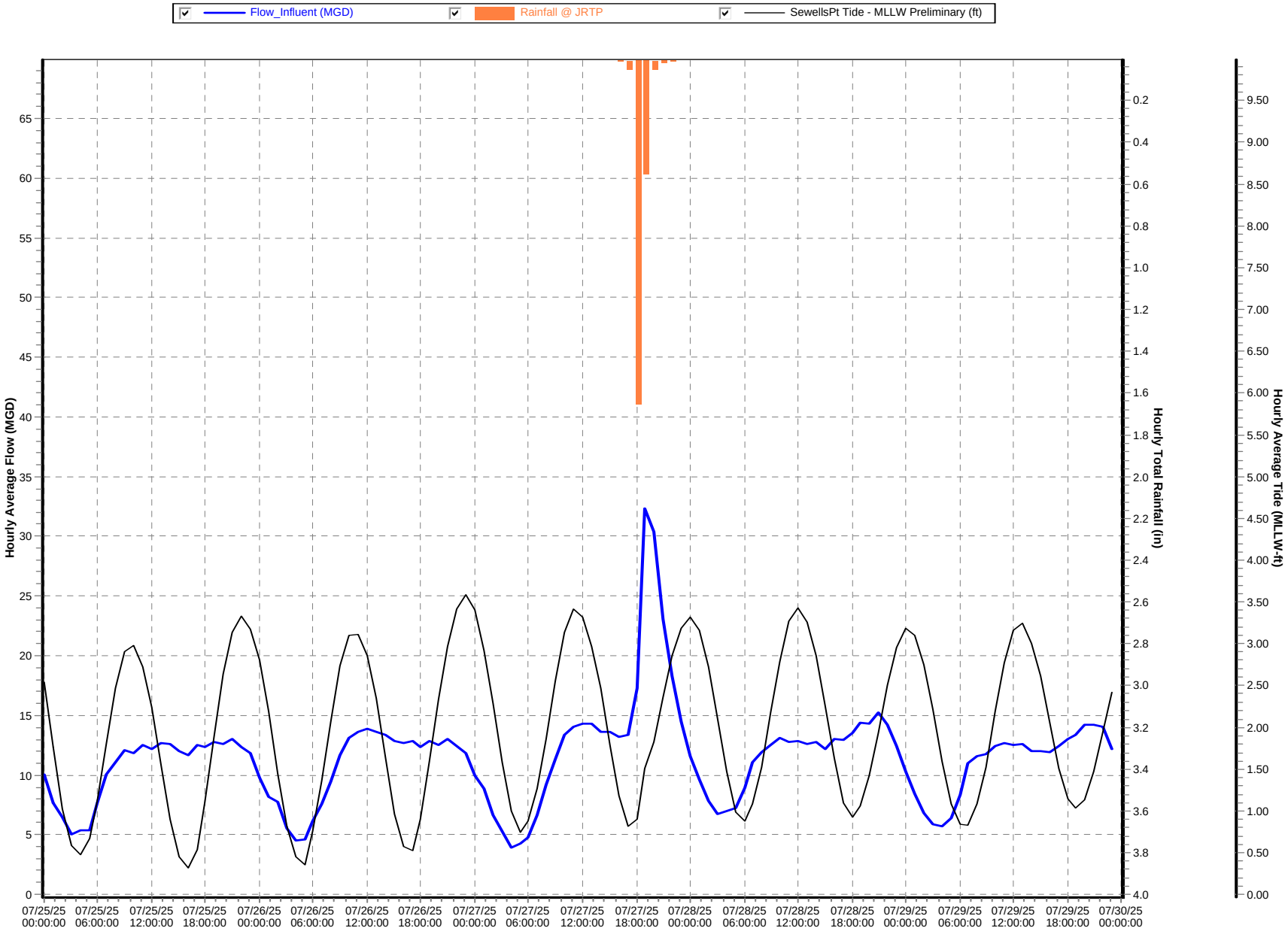
Boat Harbor Treatment Plant

MMPS-075 (07/25/25 to 07/30/25)



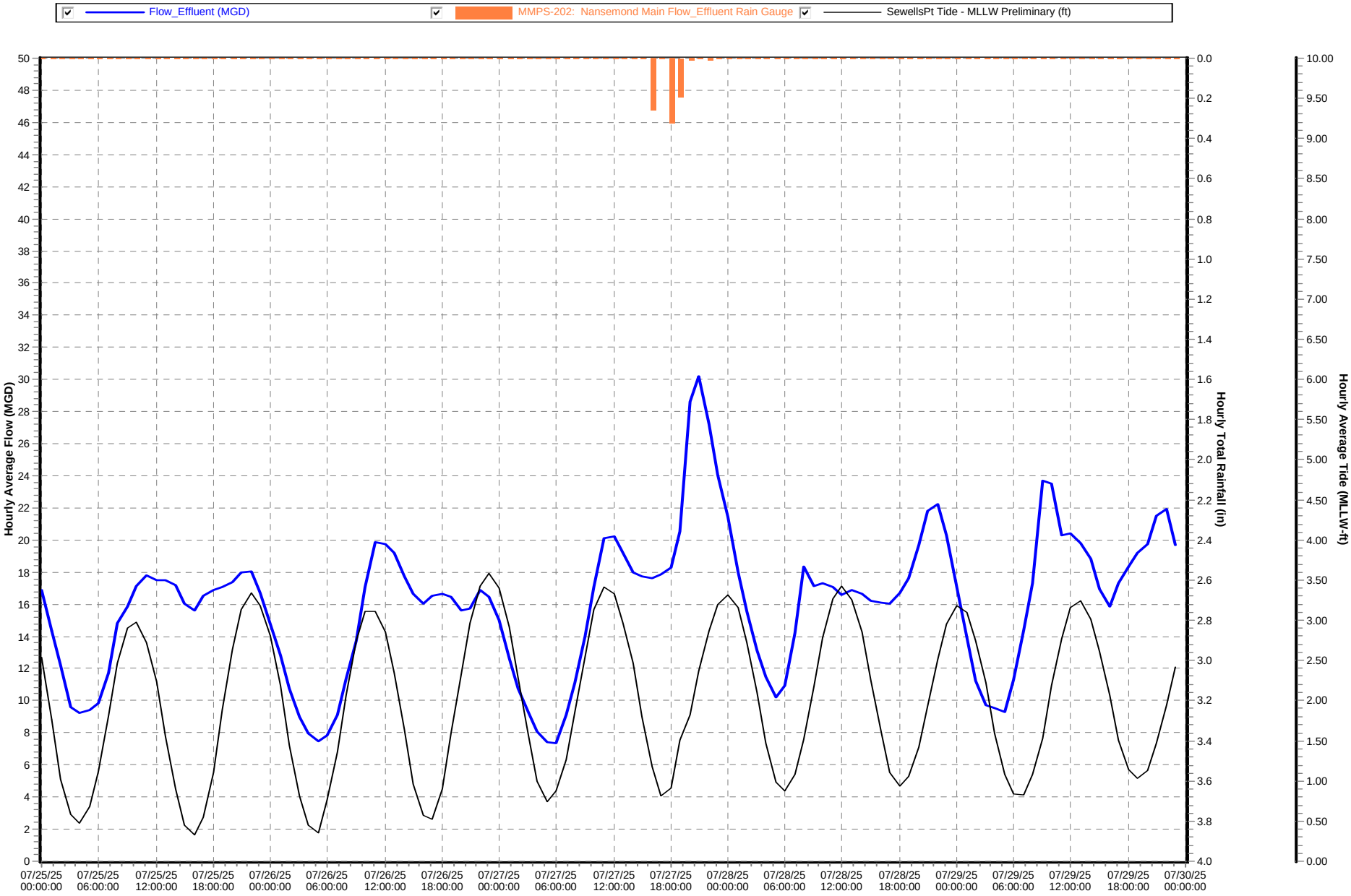
James River Treatment Plant

MMPS-184 (07/25/25 to 07/30/25)



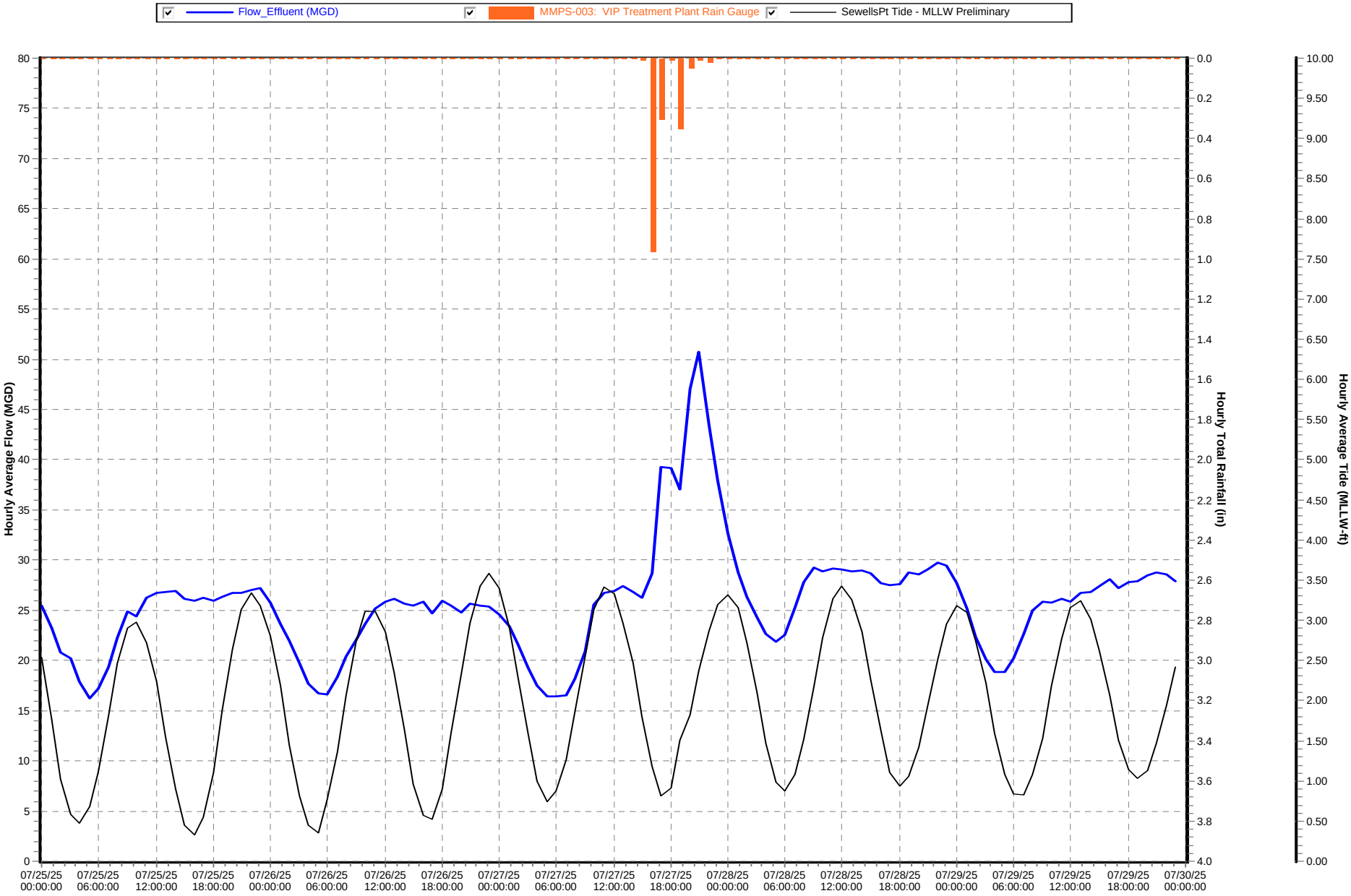
Nansemond Treatment Plant

MMPS-202 (07/25/25 to 07/30/25)



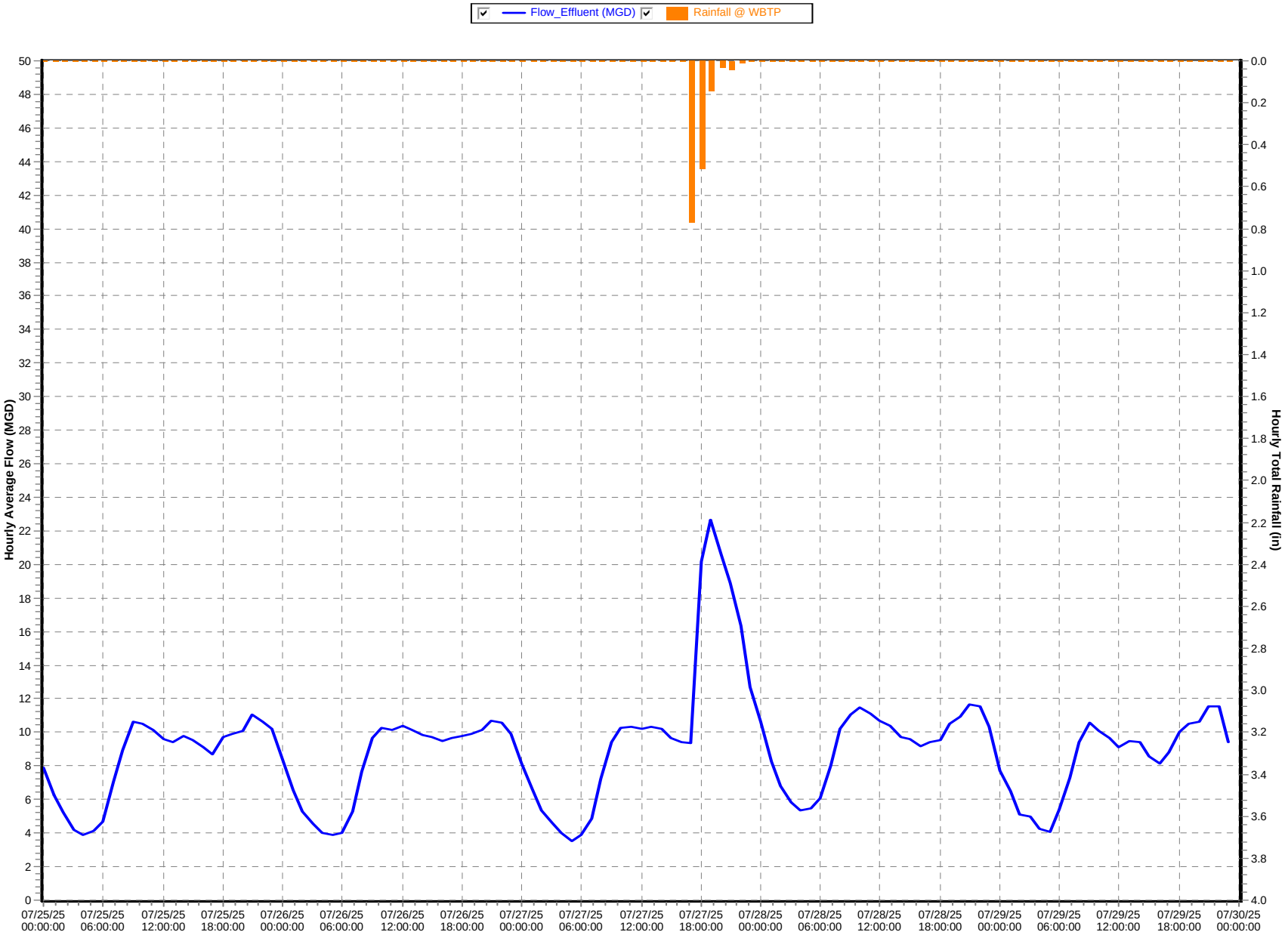
VIP Treatment Plant

MMPS-003 (07/25/25 to 07/30/25)



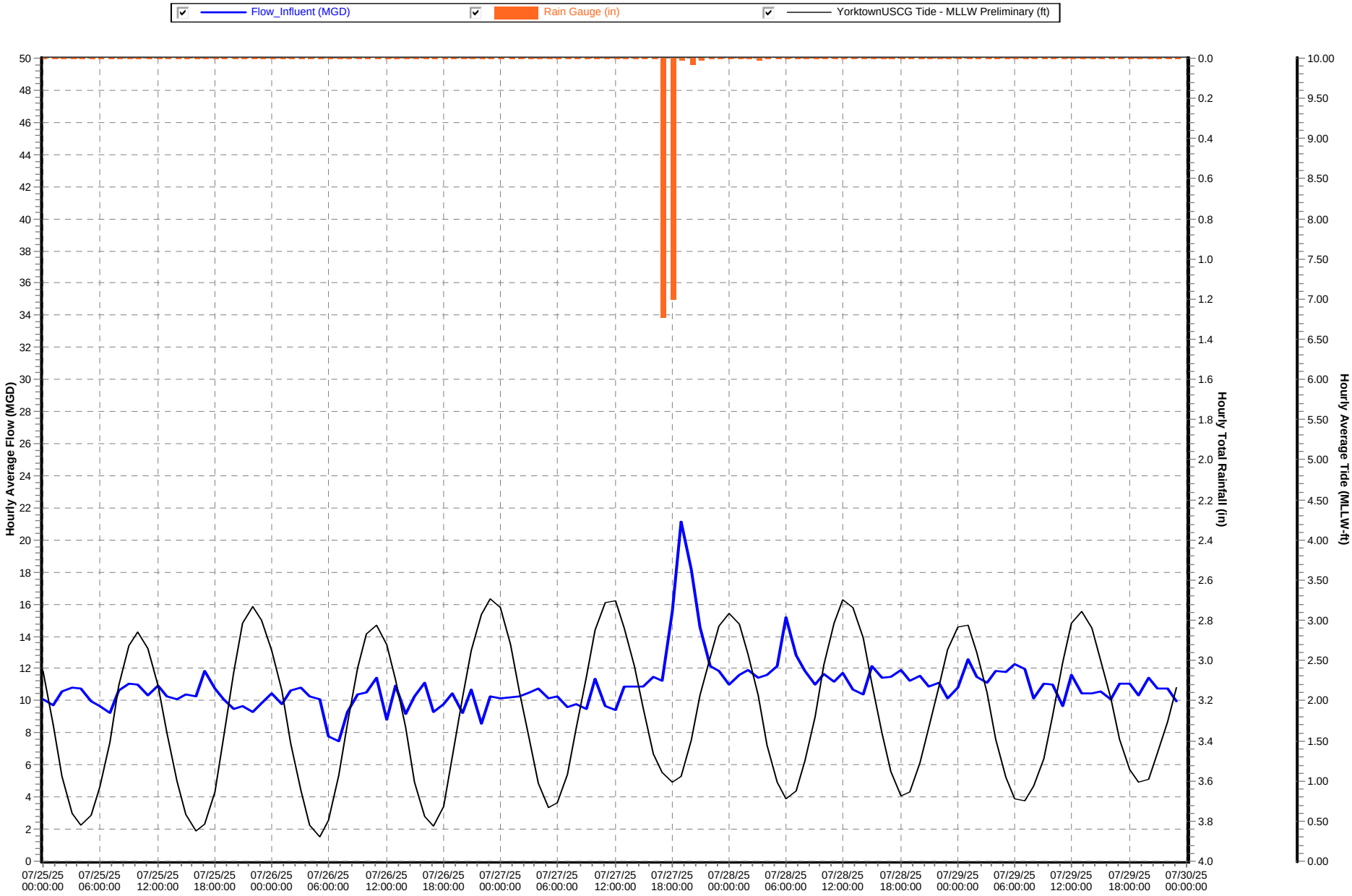
Williamsburg Treatment Plant

MMPS-222 (07/25/25 to 07/30/25)



York River Treatment Plant

MMPS-235 (07/25/25 to 07/30/25)



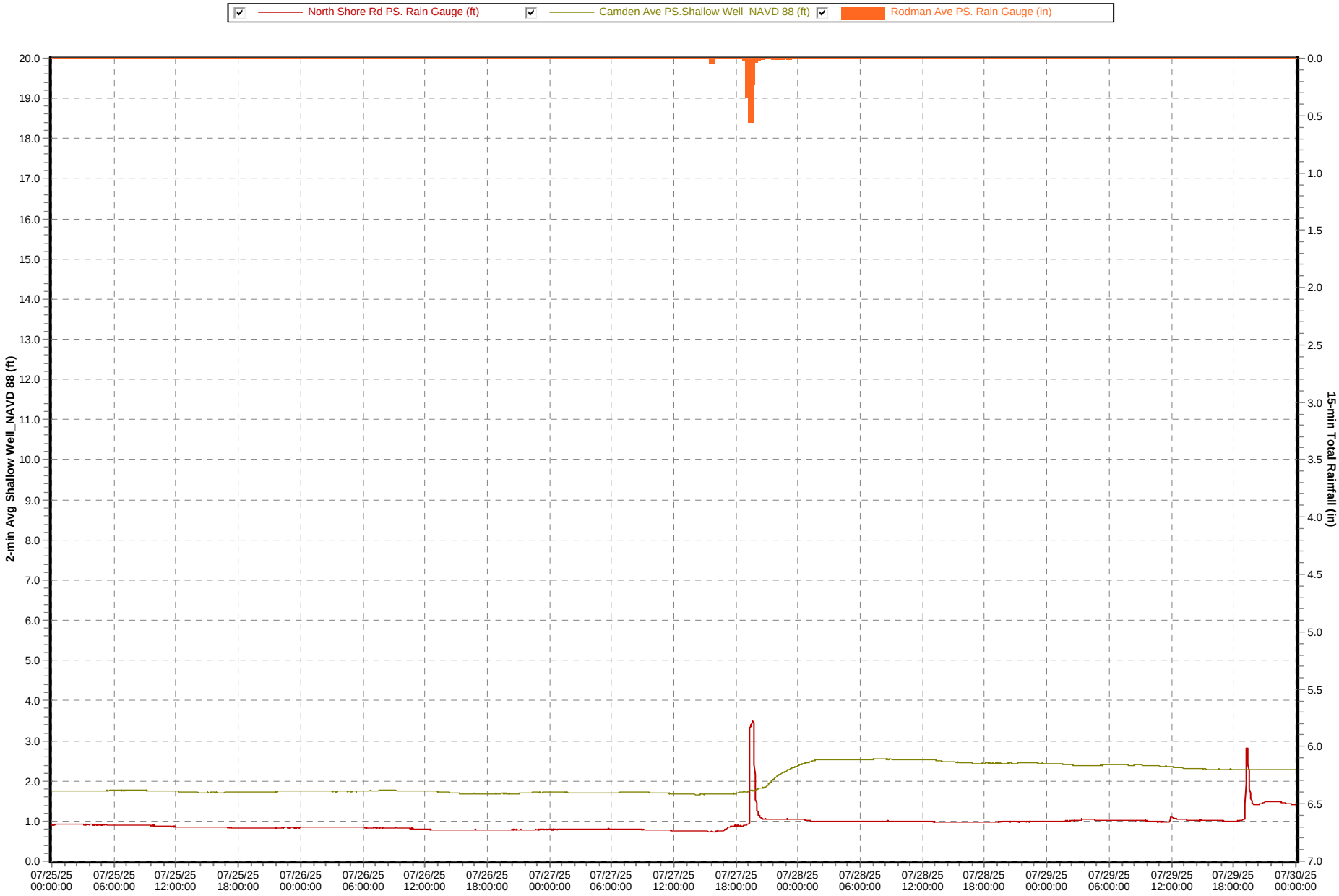
Appendix C

Shallow Well Analysis

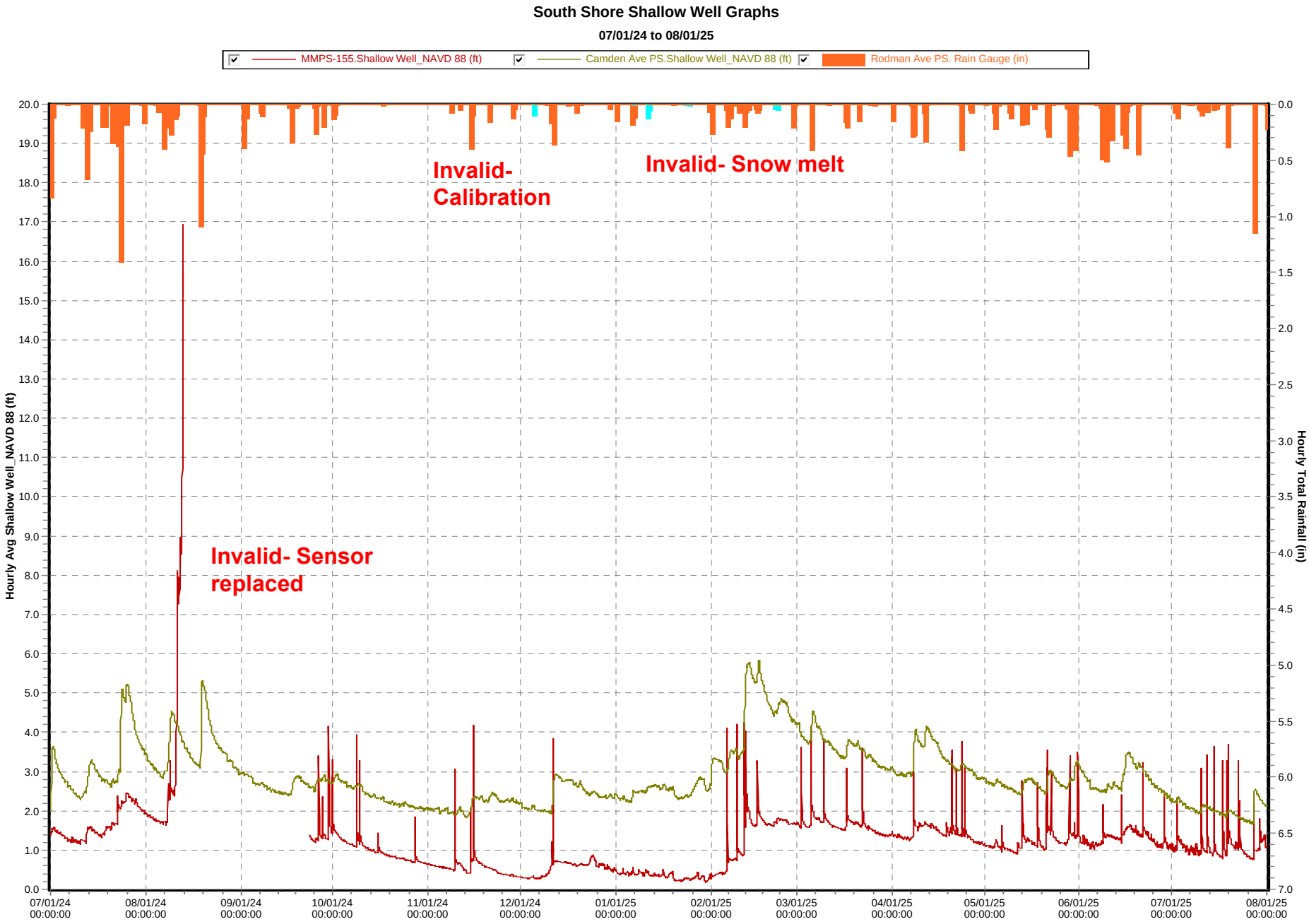
5 Day

South Shore Shallow Well Graphs

07/25/25 to 07/30/25



1 Year


South Shore Shallow Well Graphs
07/01/24 to 08/01/25
MMPS-155.Shallow Well_NAVD 88 (ft)
Camden Ave PS.Shallow Well_NAVD 88 (ft)
Rodman Ave PS. Rain Gauge (in)
Invalid- Calibration
Invalid- Snow melt
Invalid- Sensor replaced
Hourly Avg Shallow Well_NAVD 88 (ft)
Hourly Total Rainfall (in)
20.0
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
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3.0
2.0
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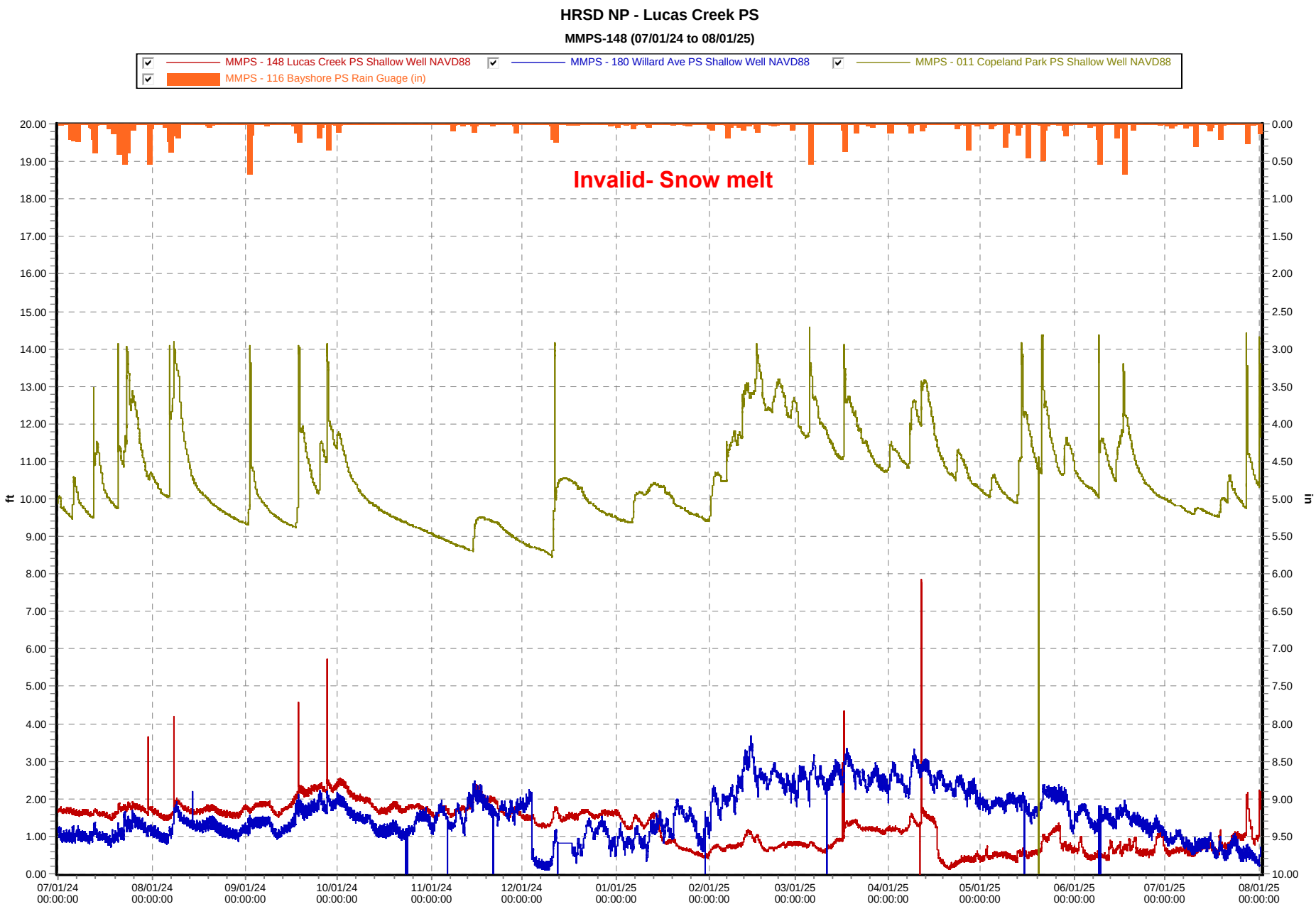
6.0
6.5
7.0
07/01/24 00:00:00
08/01/24 00:00:00
09/01/24 00:00:00
10/01/24 00:00:00
11/01/24 00:00:00
12/01/24 00:00:00
01/01/25 00:00:00
02/01/25 00:00:00
03/01/25 00:00:00
04/01/25 00:00:00
05/01/25 00:00:00
06/01/25 00:00:00
07/01/25 00:00:00
08/01/25 00:00:00

5 Day

North Shore Shallow Well Graphs

07/25/25 to 07/30/25

1 Year


HRSD NP - Lucas Creek PS
MMPS-148 (07/01/24 to 08/01/25)
MMPS - 148 Lucas Creek PS Shallow Well NAVD88
MMPS - 180 Willard Ave PS Shallow Well NAVD88
MMPS - 011 Copeland Park PS Shallow Well NAVD88
MMPS - 116 Bayshore PS Rain Guage (in)
Invalid- Snow melt
ft
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20.00
19.00
18.00
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09/01/24 00:00:00
10/01/24 00:00:00
11/01/24 00:00:00
12/01/24 00:00:00
01/01/25 00:00:00
02/01/25 00:00:00
03/01/25 00:00:00
04/01/25 00:00:00
05/01/25 00:00:00
06/01/25 00:00:00
07/01/25 00:00:00
08/01/25 00:00:00

Hampton Roads Sanitation District

Post-Storm Report

7/31/2025 - 8/2/2025

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Sustainable, Innovative Wastewater Treatment

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Summary

From July 31st through August 2nd, there was an approximate 41-hour rainfall event that resulted in 10 sites on the North Shore and 10 site on the South Shore that met a 1 to 25-year rainfall recurrence interval throughout the HRSD rain gauge network. There were high temperatures in the region with the heat index over 100. Heavy showers came through the area at night with some strong gusts causing property damage. The following morning a cold front moved through the area pushing south with some rain showers reforming along the front. Showers were lighter on this second day into overnight as the front continued to push south bringing drier air with it. North Shore sites averaged around 1.32 inches of rain while South Shore sites averaged around 1.05 inches. There was minimal impact on groundwater levels compared to July 2024 . See Appendix C for the Historical Shallow Well comparison.

1 HRSD interceptor weather-related overflows(s) were reported

2 Locality interceptor weather-related overflow(s) were reported

HRSD flow and pressure meters met data reliability requirements per the MOM program. For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 90% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 91.65%
- Aggregate pressure meter validity: 98.69%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Sanitary Sewer Overflows:

Locality

Location	Jurisdiction	Start Date
5349 Rockingham Dr	James City	7/31/2025
174 Forest Heights Rd	James City	7/31/2025

HRSD

Location	Jurisdiction	Start Date
1136 Saunders Drive	Suffolk	7/31/2025

Treatment Plant Data: *(Data obtained from Telog Database)*
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
7/31/2025 – 8/2/2025

North Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Boat Harbor	7/31/2025	15.05	23:00	0.01
	8/1/2025	16.90	02:00	0.24
	8/2/2025	11.20	00:00	0.95
James River	7/31/2025	33.96	21:00	0.10
	8/1/2025	36.04	00:00	0.05
	8/2/2025	11.22	00:00	0.76
Williamsburg	7/31/2025	18.44	22:00	0.14
	8/1/2025	13.43	00:00	0.69
	8/2/2025	8.60	00:00	0.20
York River	7/31/2025	16.74	21:00	0.14
	8/1/2025	16.65	00:00	0.47
	8/2/2025	12.64	01:00	0.86

HRSD Treatment Plant Data
7/31/2025 – 8/2/2025

South Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Army Base	7/31/2025	15.79	23:00	0.27
	8/1/2025	11.23	00:00	0.58
	8/2/2025	7.57	00:00	0.72
Atlantic	7/31/2025	65.12	23:00	0.04
	8/1/2025	55.12	10:00	0.61
	8/2/2025	40.10	00:00	0.29
Nansemond	7/31/2025	24.63	23:00	0.04
	8/1/2025	25.01	09:00	0.67
	8/2/2025	18.52	00:00	0.54
VIP	7/31/2025	38.26	23:00	0.03
	8/1/2025	34.81	00:00	0.34
	8/2/2025	25.83	00:00	0.69

North Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Boat Harbor Treatment Plant Service Area[1]		
Bayshore PS	DNQ	HAMP
Bridge Street Tide Gate	DNQ	HAMP
Boat Harbor	DNQ	NEWP
Copeland Park PS	DNQ	NEWP
Hampton PS 159	DNQ	HAMP
James River Treatment Plant Service Area[1]		
Hilton School PS	DNQ	NEWP
James River Main Flow (Influent)	2- to 5-year (3hr)	NEWP
Lee Hall PRS	1-year (1hr)	NEWP
Lucas Creek PS	Disconnected	NEWP
Morrison PS	2-year (3hr)	NEWP
Williamsburg Treatment Plant Service Area[1]		
Ford's Colony	2-year (1hr)	JCSA
Fort Eustis PS	2-year (1hr)	NEWP
Greensprings PS	Invalid	JCA
Solarex	DNQ	JCSA
Williamsburg Main Flow (Effluent)	1-year (1hr)	JCSA
Williamsburg PS	Invalid	WILL
York Skimino Hills PS	2- to 5-year (1hr)	YORK
York River Treatment Plant Service Area[1]		
Big Bethel PRS	Disconnected	HAMP
Freeman PS	DNQ	HAMP
Gloucester Court House	1-year (1hr)	GLOU
Guinea Rd at Maryus Rd	DNQ	GLOU
Ordinary PCV	DNQ	GLOU
Poquoson PS 6	DNQ	POQ
Wolf Trappe PCV	2- to 5-year (3hr)	YORK
York Kiln Creek 1 PS	DNQ	YORK
York PS 15	DNQ	YORK
York River Main Flow (Influent)	2- to 5-year (3hr)	YORK
York River Crossing (York River Rectifier)	DNQ	GLOU

Note:

1. Typical treatment plant service area.

Newport News-Williamsburg International (PHF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
7/31/2025	41 mph	29 mph	8 mph	NW	2.36
8/1/2025	24 mph	16 mph	7 mph	NE	0.08
8/2/2025	31 mph	21 mph	11 mph	NE	0.01

Tide:

- Yorktown USCG Training Center:
  - Storm Surge: An approximate 1.88-foot storm surge was observed.

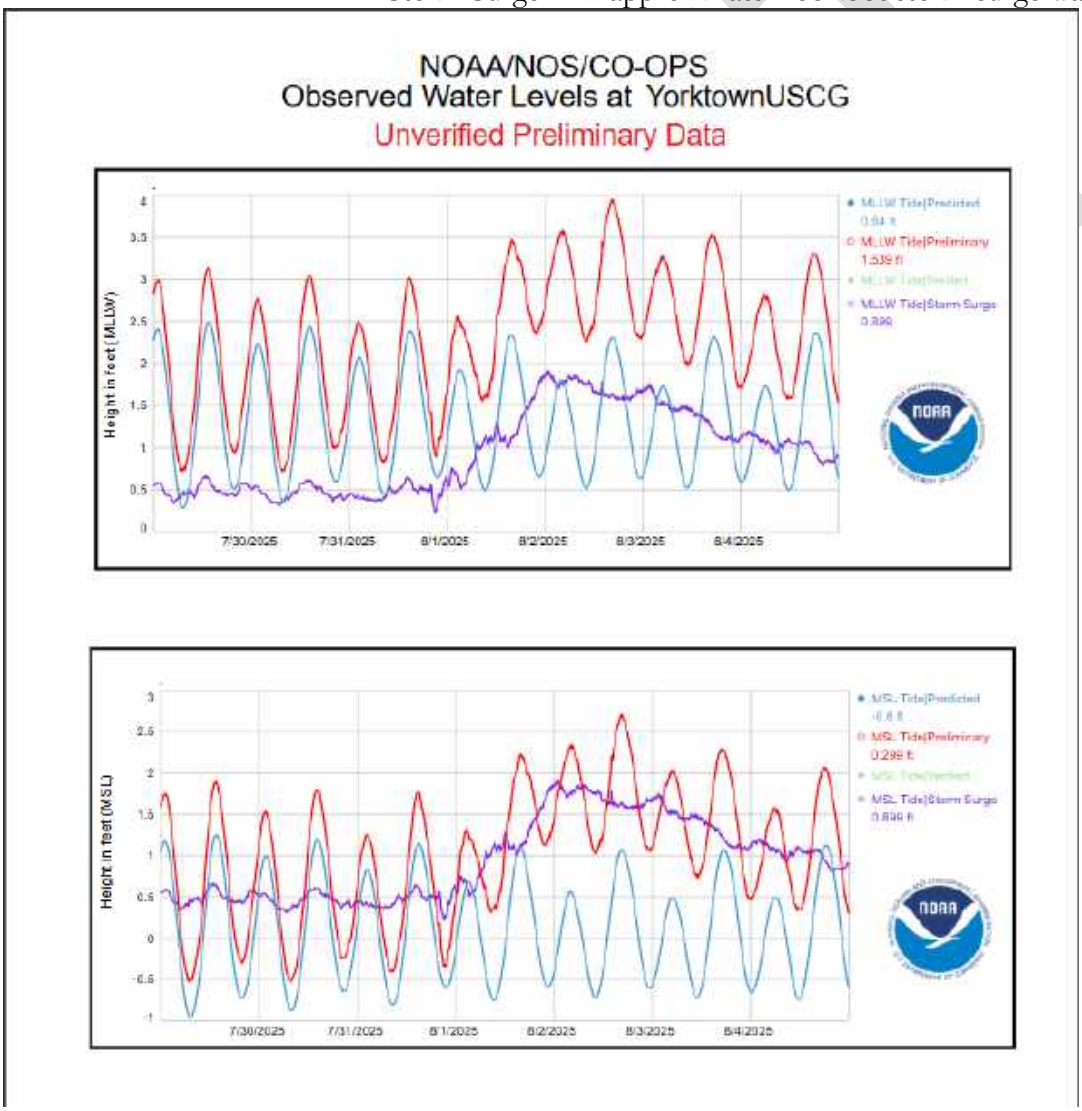


Figure 1. Preliminary data obtained from NOAA and a connection with Open Weather

- Sewells Point Tide Station:
  - Storm Surge: An approximate 2.08 foot storm surge was observed.

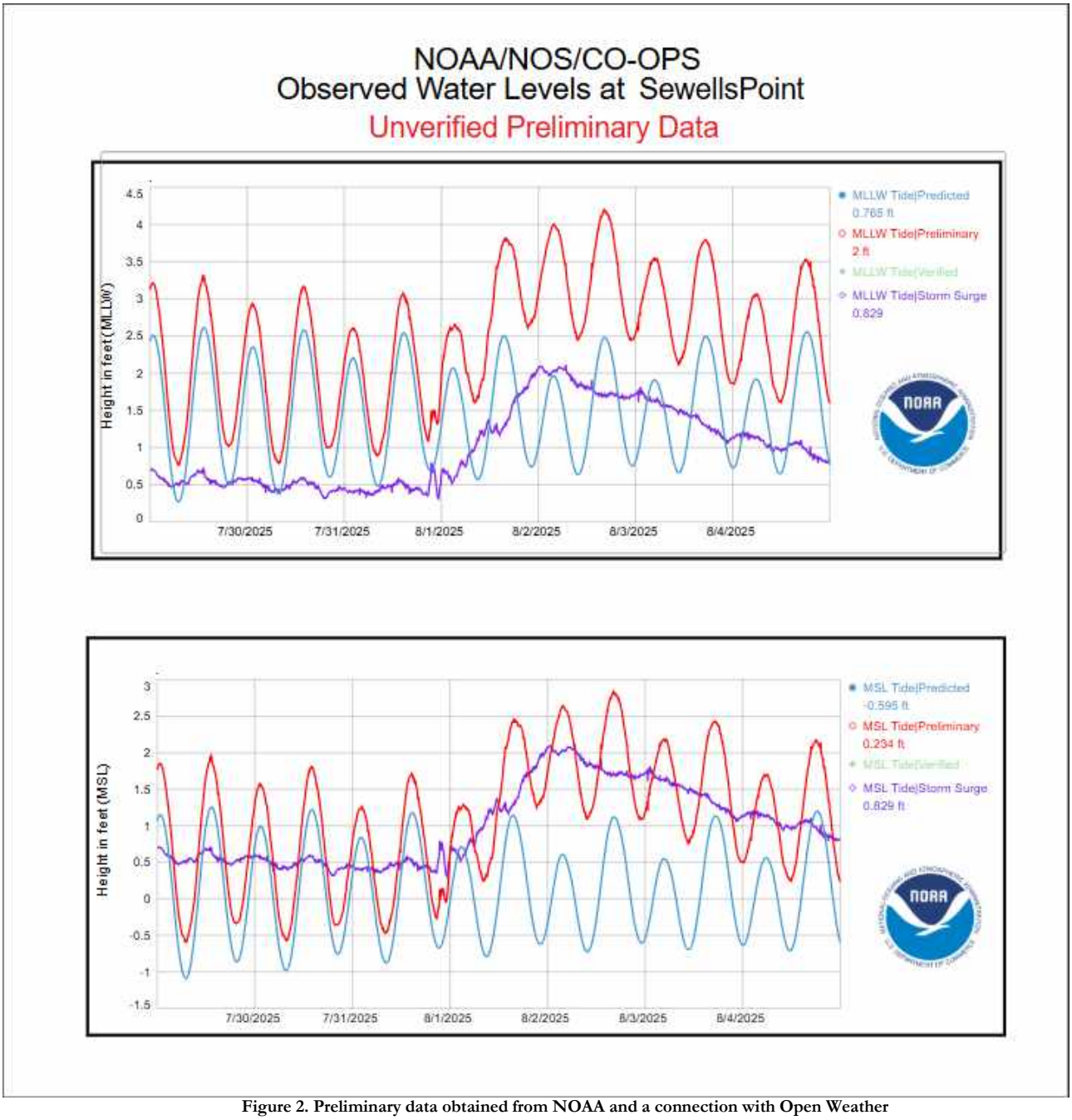


Figure 2. Preliminary data obtained from NOAA and a connection with Open Weather

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	1-year (1hr)	NORF
Taussig Blvd PS	DNQ	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	DNQ	CHES
Chesapeake PS 243	DNQ	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	DNQ	VAB
Elbow Rd PRS	DNQ	CHES
John B. Dey MLV-AT side	DNQ	VAB
Hickory EOL	DNQ	CHES
Kempsville PRS	DNQ	VAB
Lagomar IFM at Atlantic TP	DNQ	VAB
Laskin Rd PRS	DNQ	VAB
Pine Tree PRS	DNQ	VAB
Shipps Corner PRS	DNQ	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	DNQ	CHES
Independence PRS	DNQ	VAB
Northampton Blvd at Wesleyan Dr	DNQ	NORF
Providence PRS	DNQ	VAB
Shore Dr @ Jack Frost	1- to 2-year (1hr)	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	DNQ	CHES
Cedar Lane PS	DNQ	PORT
Cedar Rd at Dominon Blvd	DNQ	CHES
Chesapeake PS 20	10-year (1hr)	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	DNQ	SUFF
Deep Creek PRS	DNQ	CHES
Hill Point Rectifier	10- to 25-year (2hr)	SUFF
Lake Kilby WTP	10-year (1hr)	SUFF
Nansemond Main Flow (Effluent)	DNQ	SUFF
Pagan River Rectifier	Disconnected	IOW
Pughsville PS	1-year (1hr)	SUFF
Route 337 PRS	DNQ	CHES
Smithfield High School	5-year (1hr)	IOW
Suffolk PS	2-year (1hr)	SUFF
Suffolk PS 81	5-year (1hr)	SUFF
Suffolk PS 87	1-year (1hr)	SUFF

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Windsor Duke St PS	Disconnected	IOW
VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	DNQ	NORF
Ferebee Avenue PS	DNQ	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	DNQ	PORT
Va Beach Blvd PS	DNQ	NORF
VIP Main Flow (Effluent)	DNQ	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
7/31/2025	32 mph	20 mph	8 mph	NW	1.22
8/1/2025	33 mph	24 mph	11 mph	NE	0.14
8/2/2025	34 mph	24 mph	18 mph	NE	0.00

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 2.08 foot storm surge was observed.

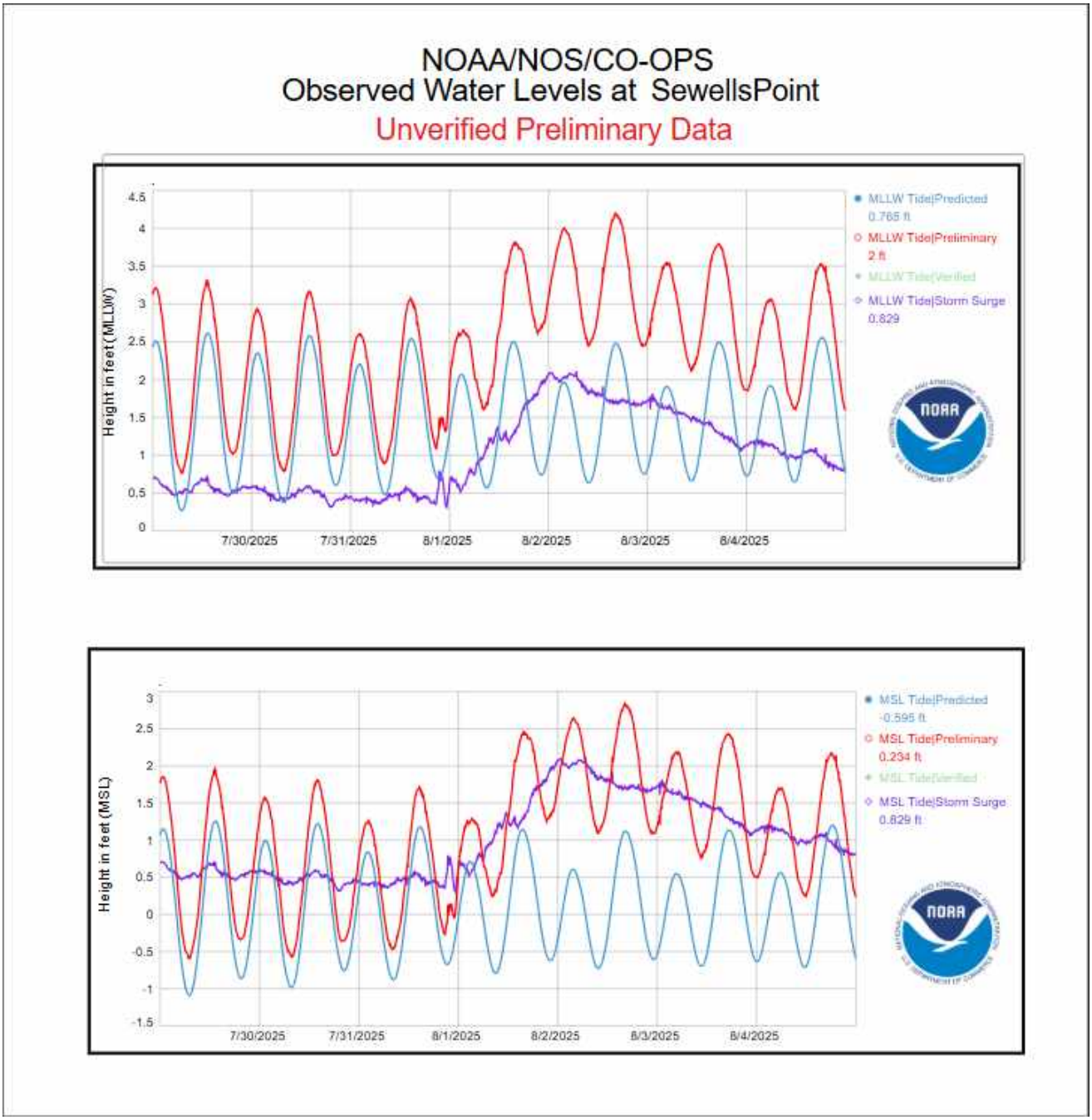


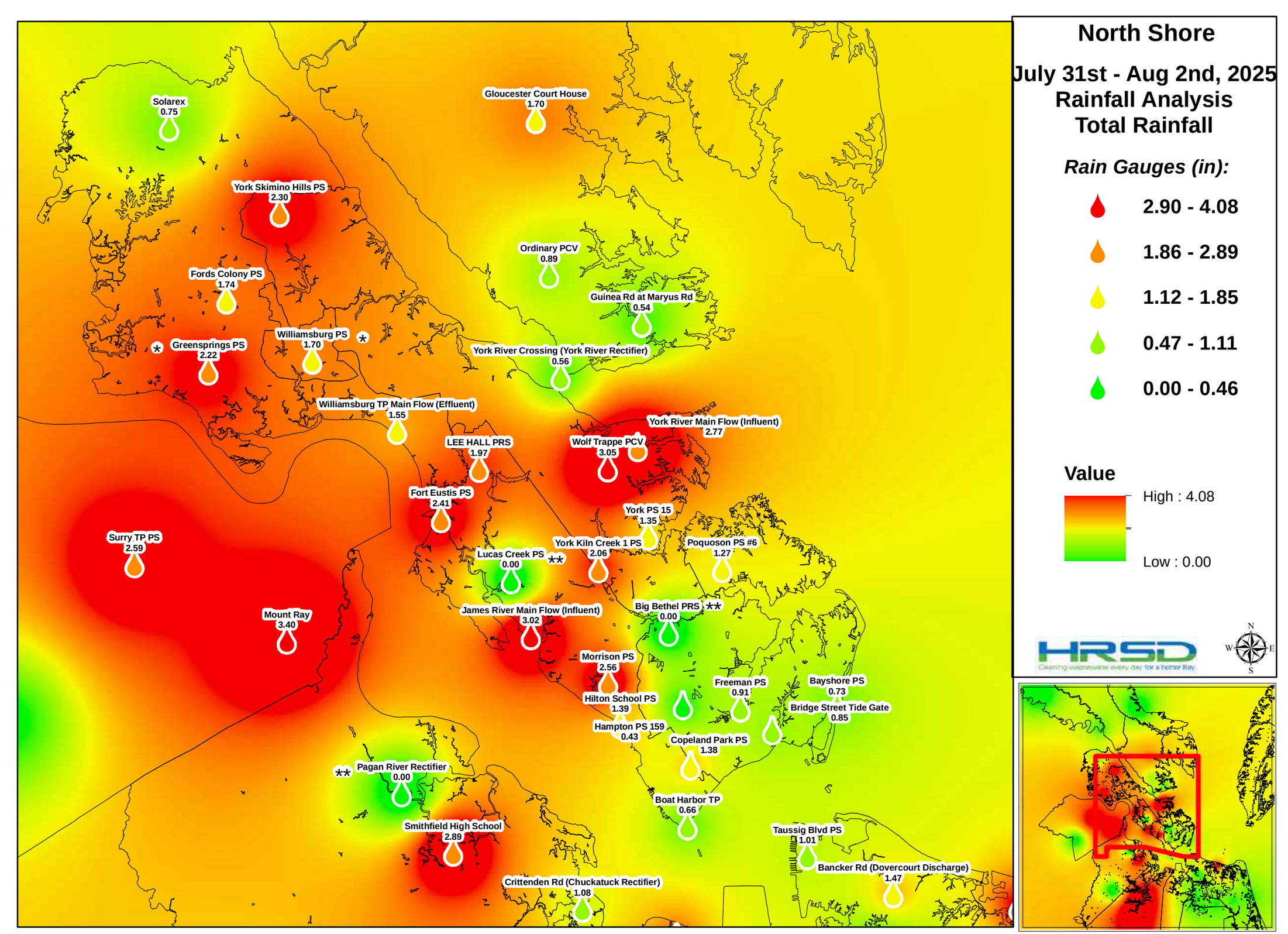
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

Shallow Well Analysis:

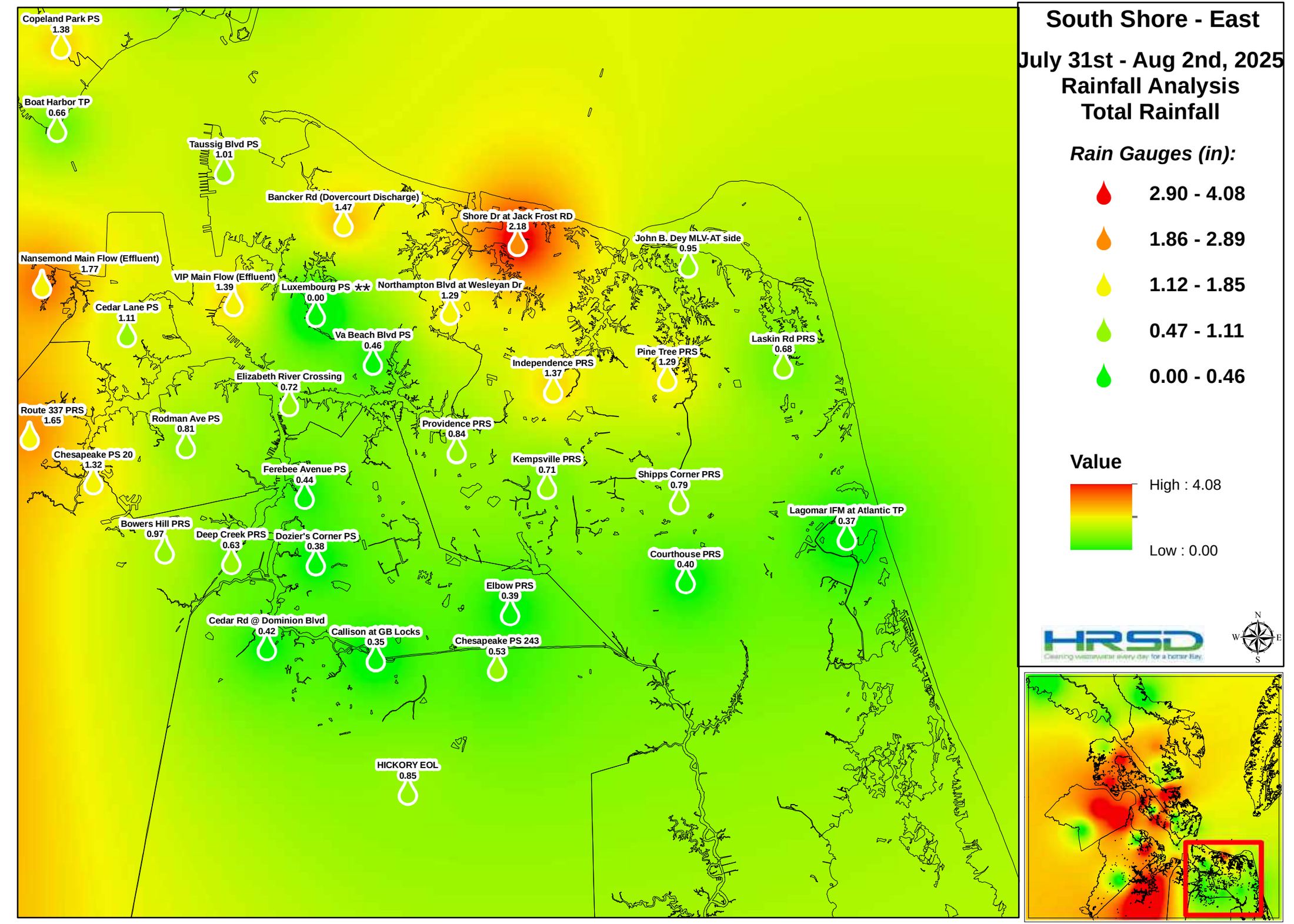
Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

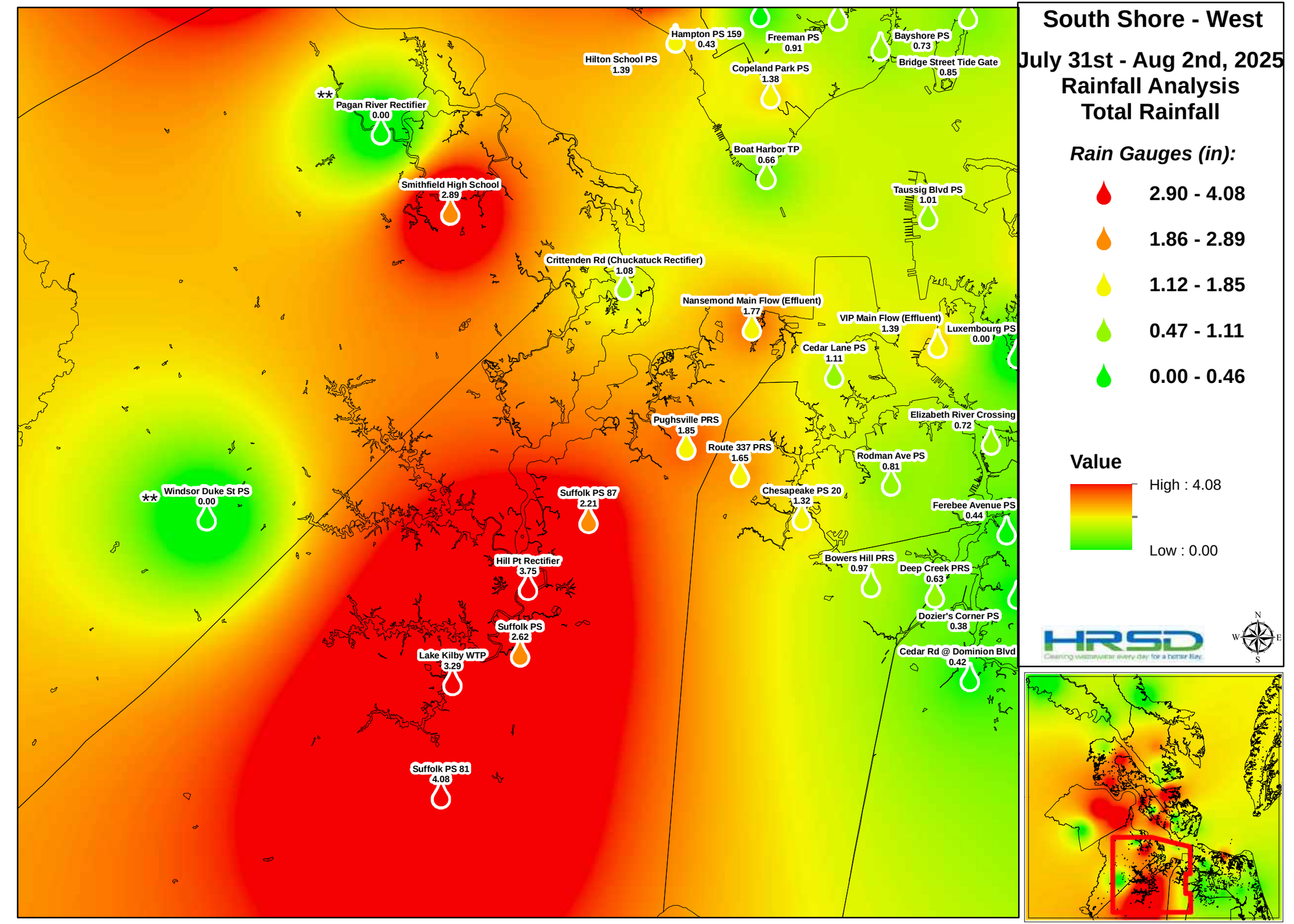
HRSD Rain Gauge Network
Rainfall Totals



*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



South Shore - West

July 31st - Aug 2nd, 2025
Rainfall Analysis
Total Rainfall

Rain Gauges (in):

- **2.90 - 4.08**
- **1.86 - 2.89**
- **1.12 - 1.85**
- **0.47 - 1.11**
- **0.00 - 0.46**

Value

High : 4.08

Low : 0.00

HRSD

Cleaning wastewater every day for a better Bay.

N W E S

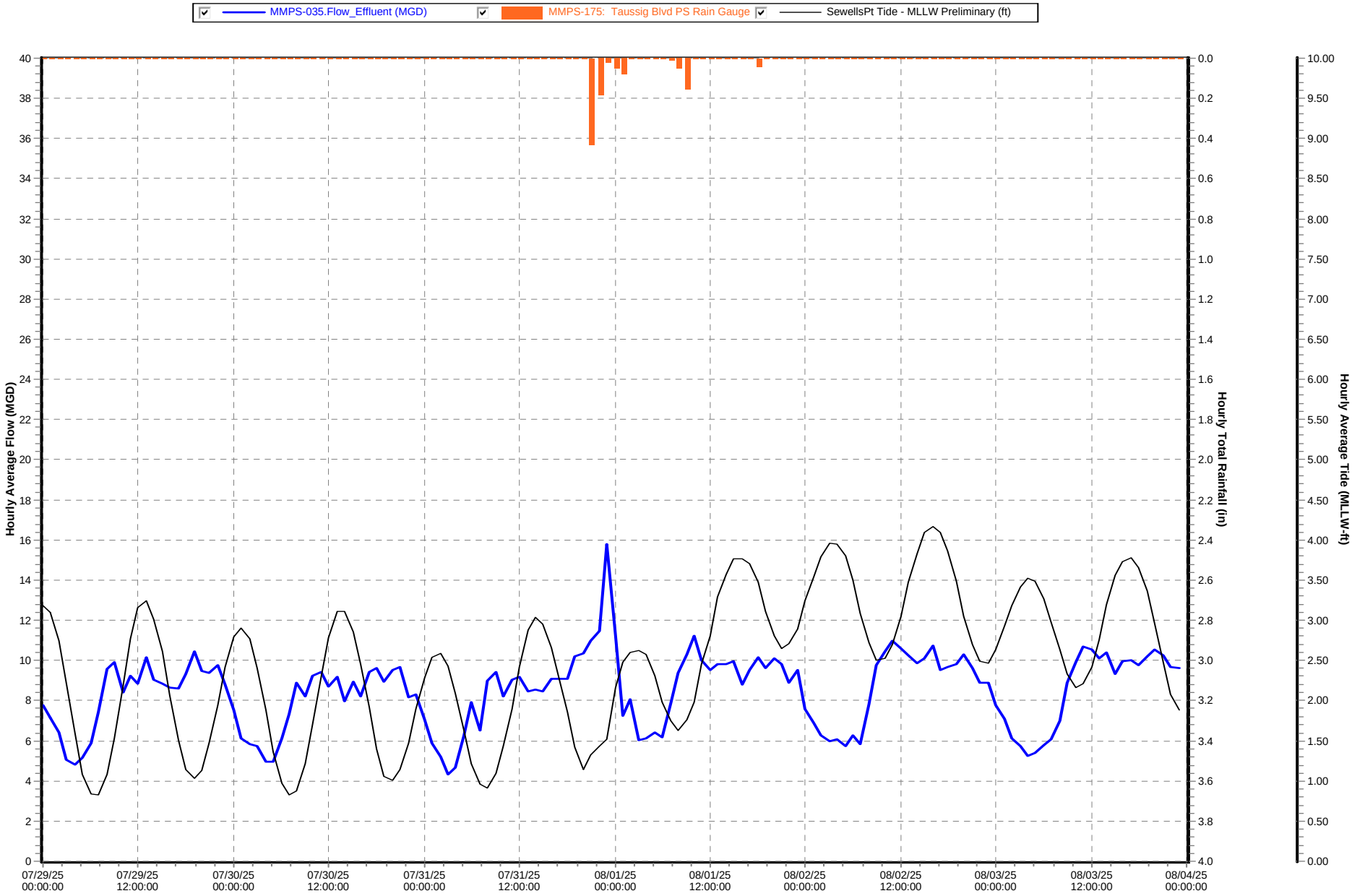
*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used

Appendix B

HRSD Treatment Plant Flows

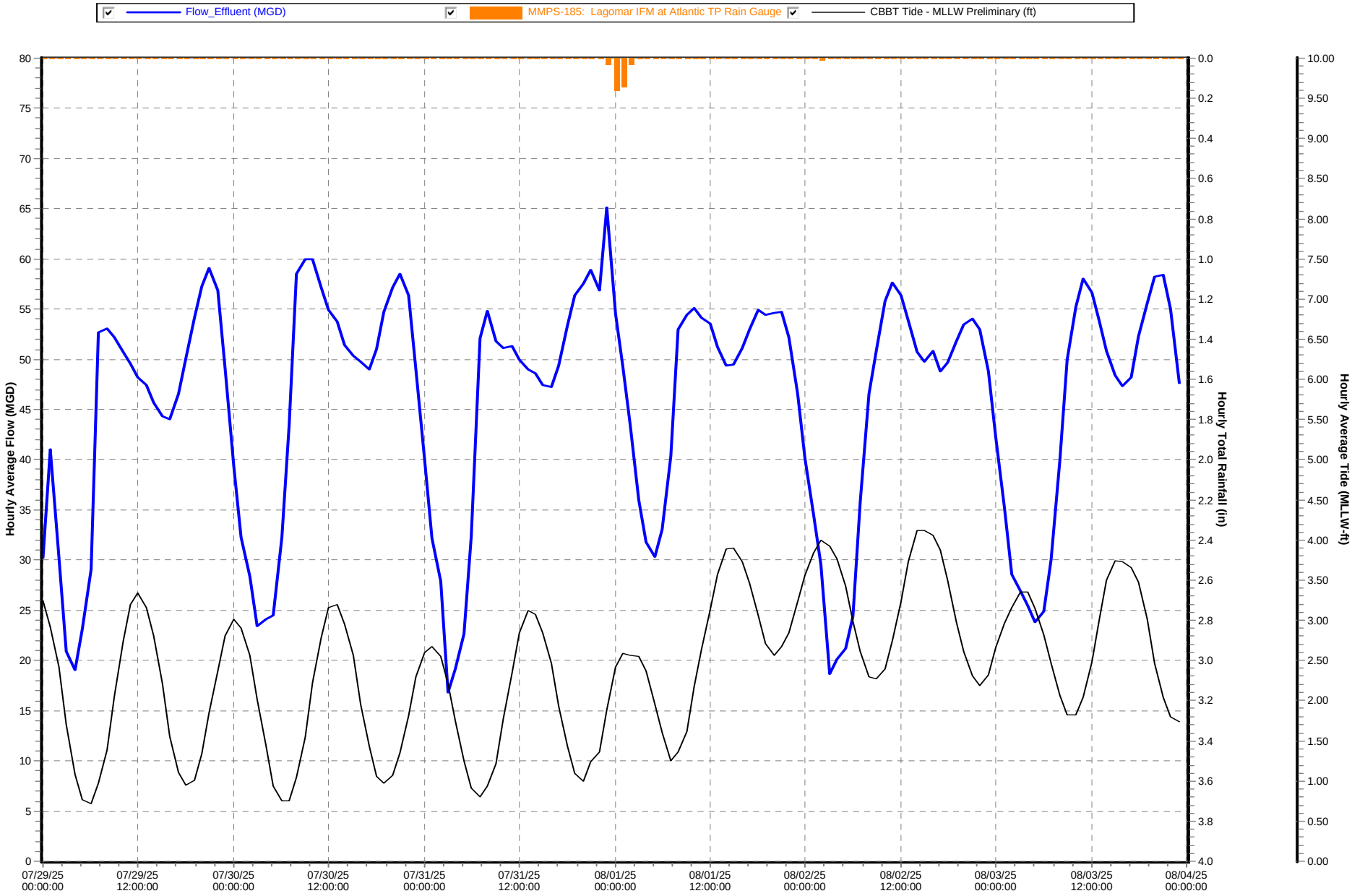
Army Base Treatment Plant

MMPS-035 (07/29/25 to 08/04/25)



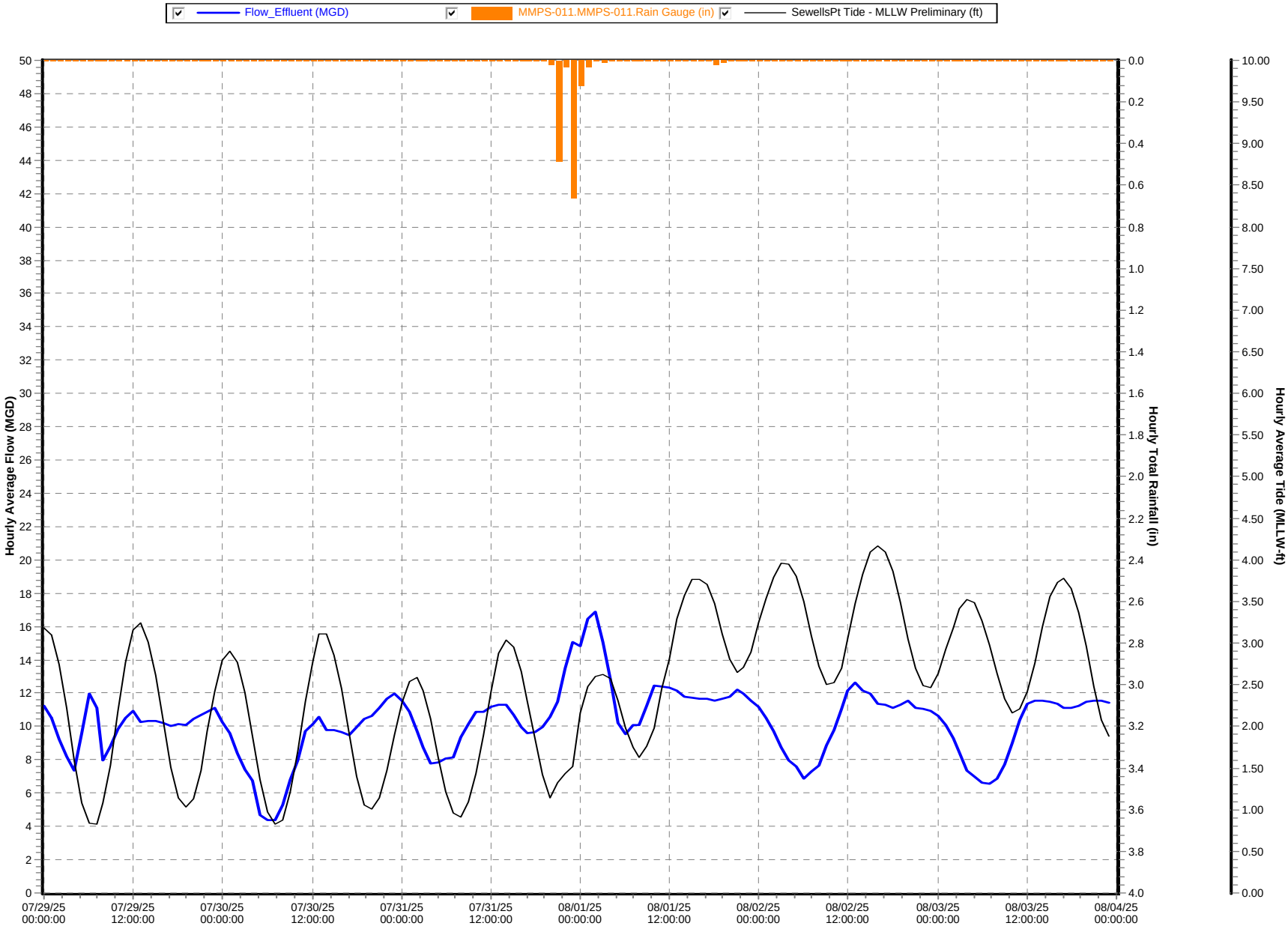
Atlantic Treatment Plant

MMPS-071 (07/29/25 to 08/04/25)



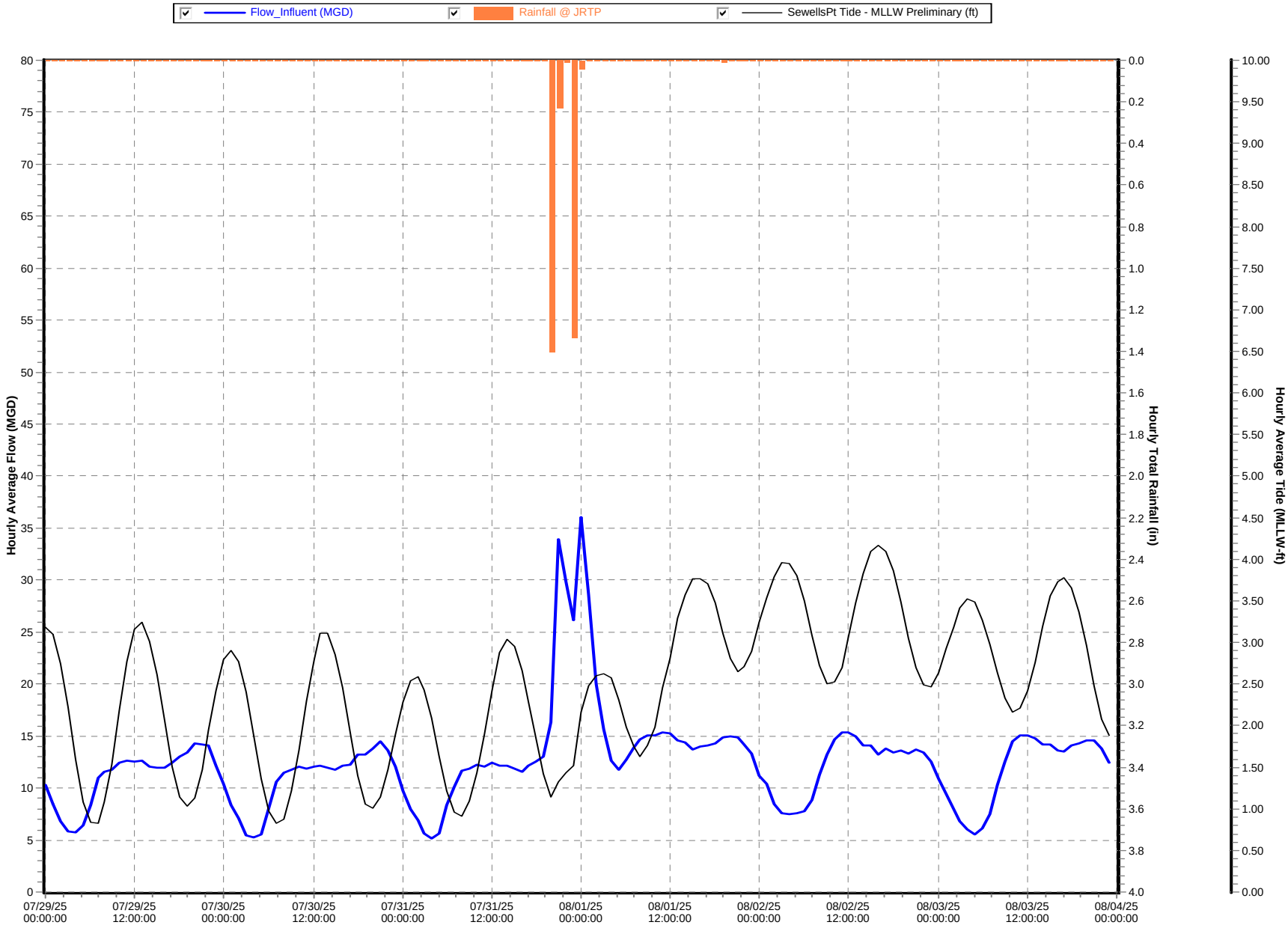
Boat Harbor Treatment Plant

MMPS-075 (07/29/25 to 08/04/25)



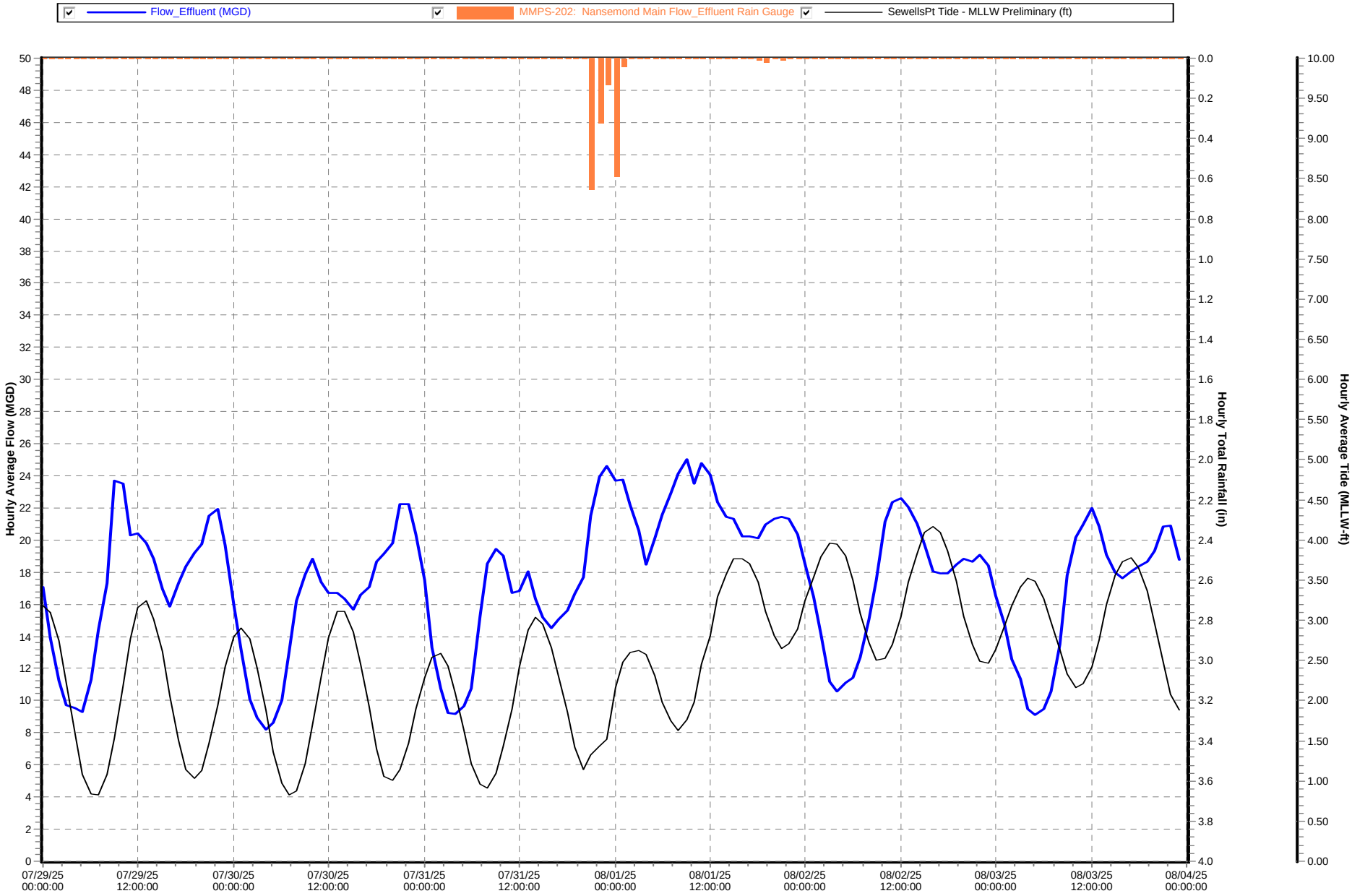
James River Treatment Plant

MMPS-184 (07/29/25 to 08/04/25)



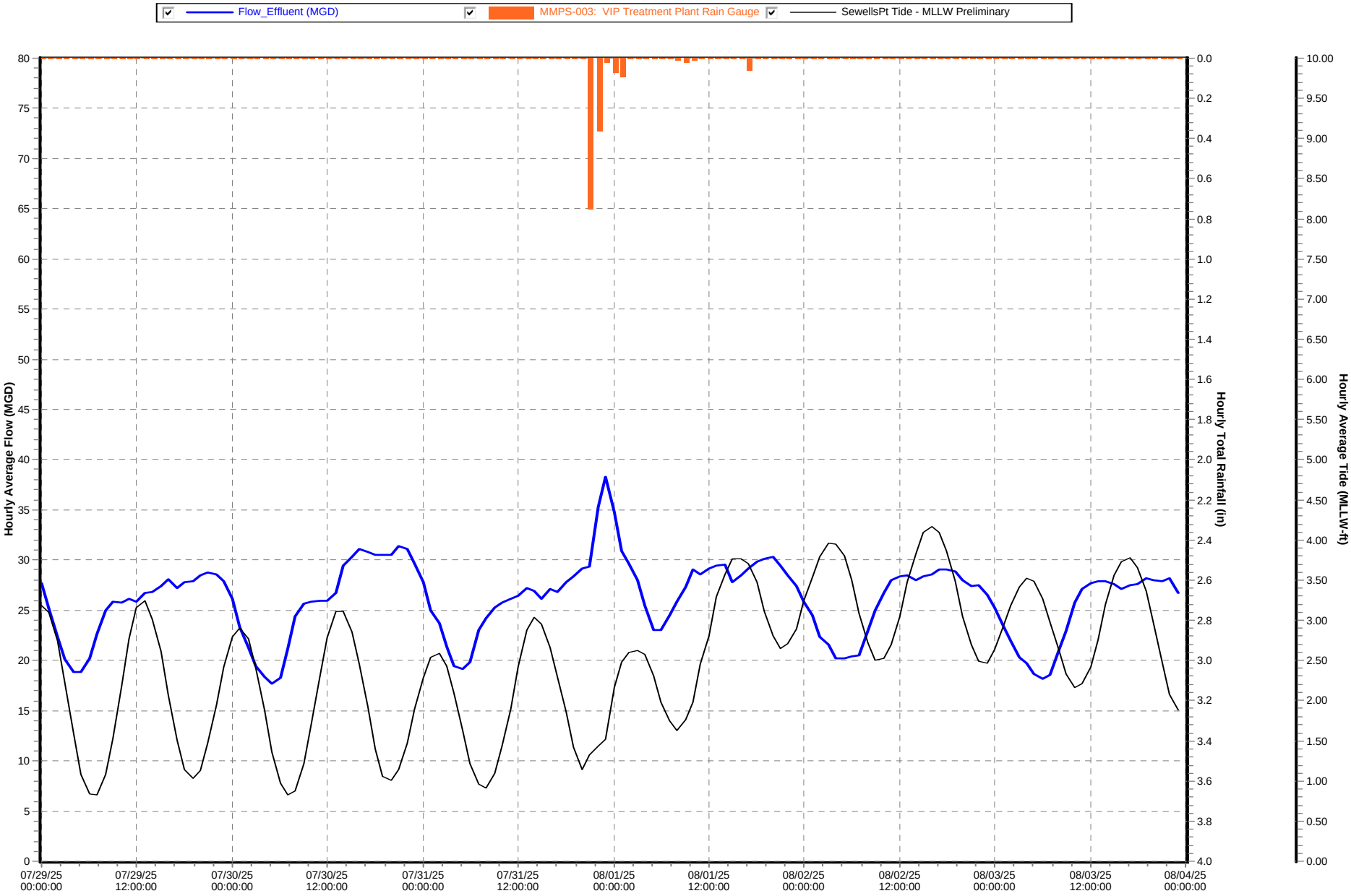
Nansemond Treatment Plant

MMPS-202 (07/29/25 to 08/04/25)



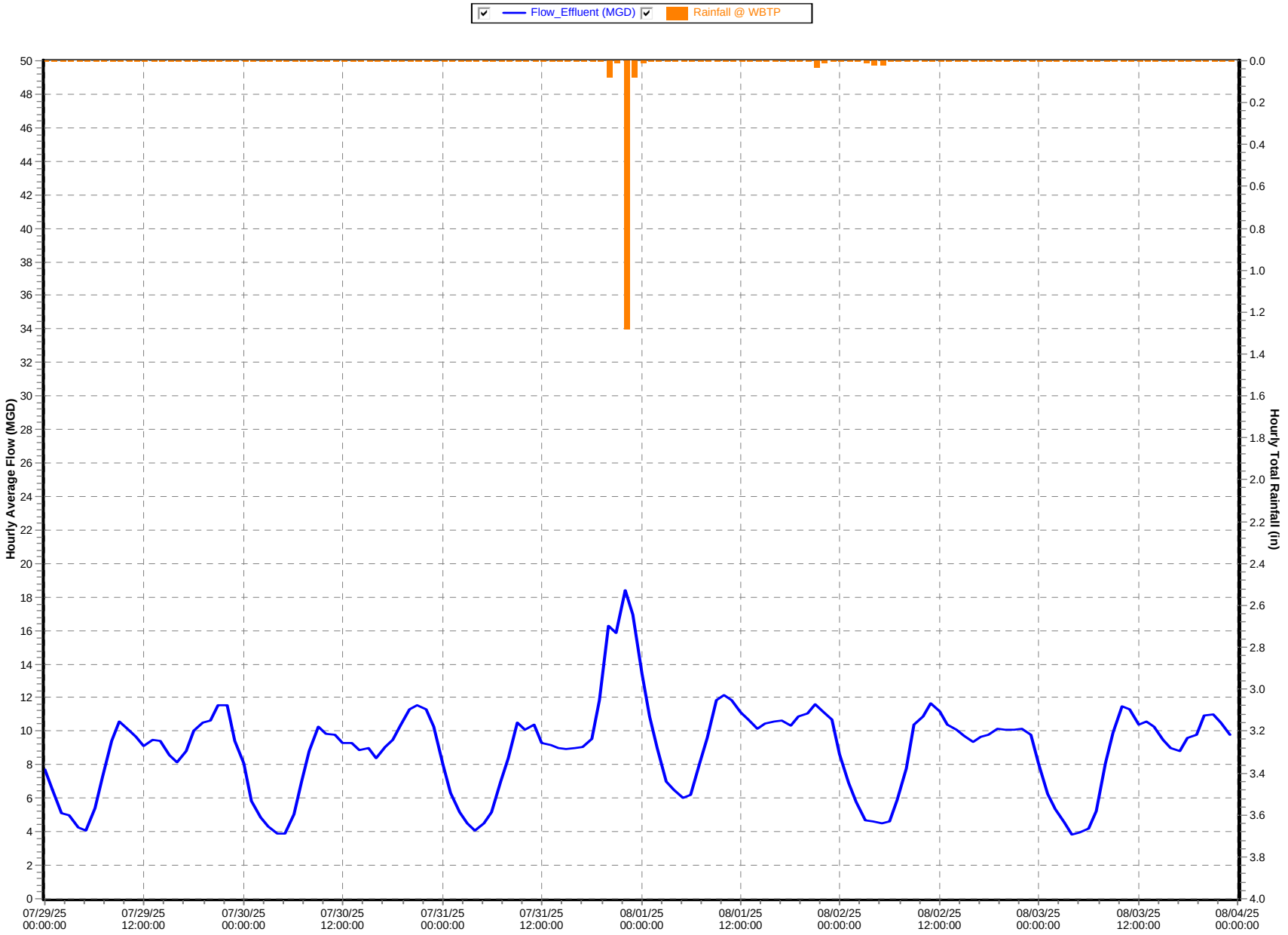
VIP Treatment Plant

MMPS-003 (07/29/25 to 08/04/25)



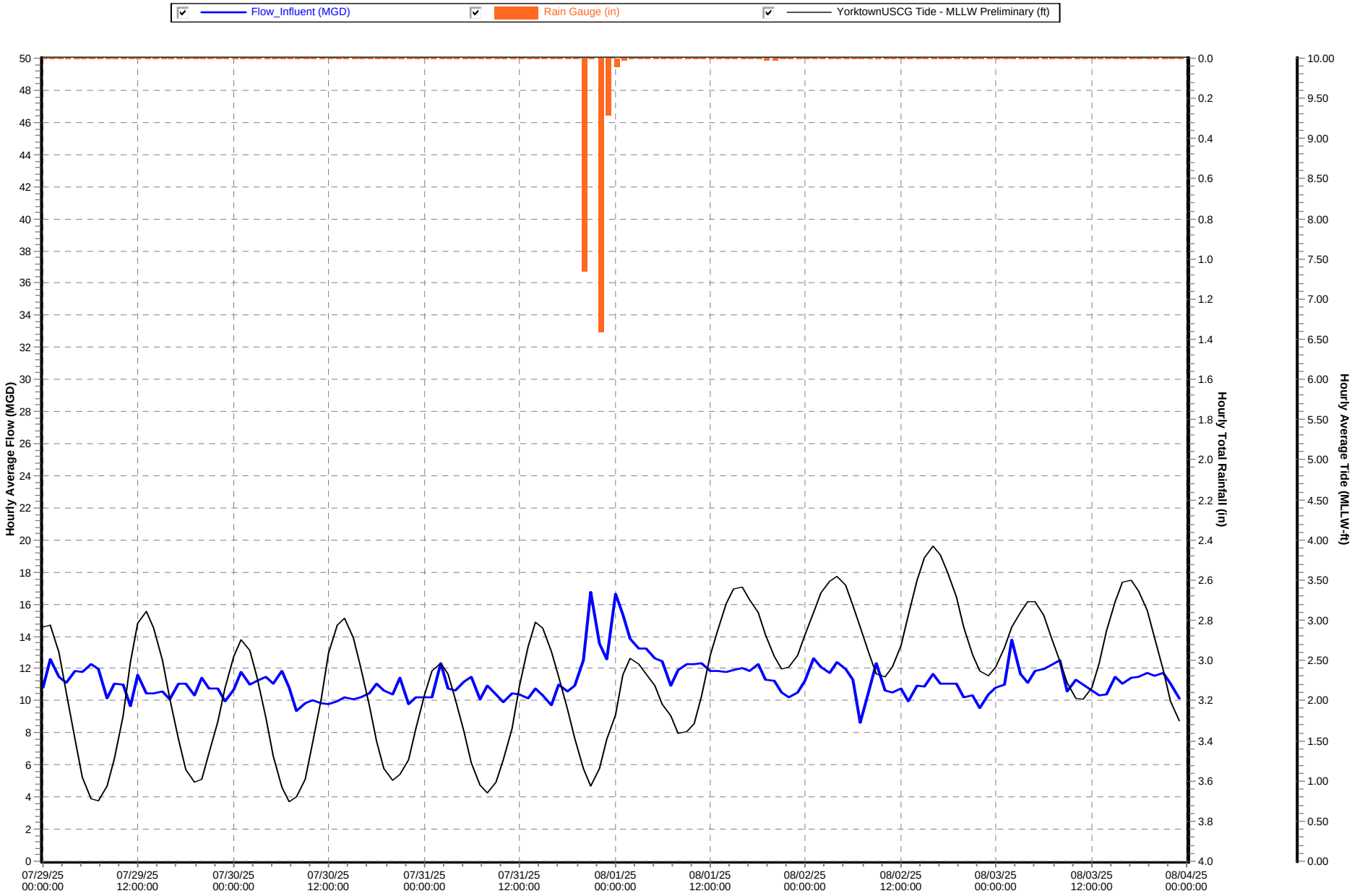
Williamsburg Treatment Plant

MMPS-222 (07/29/25 to 08/04/25)



York River Treatment Plant

MMPS-235 (07/29/25 to 08/04/25)



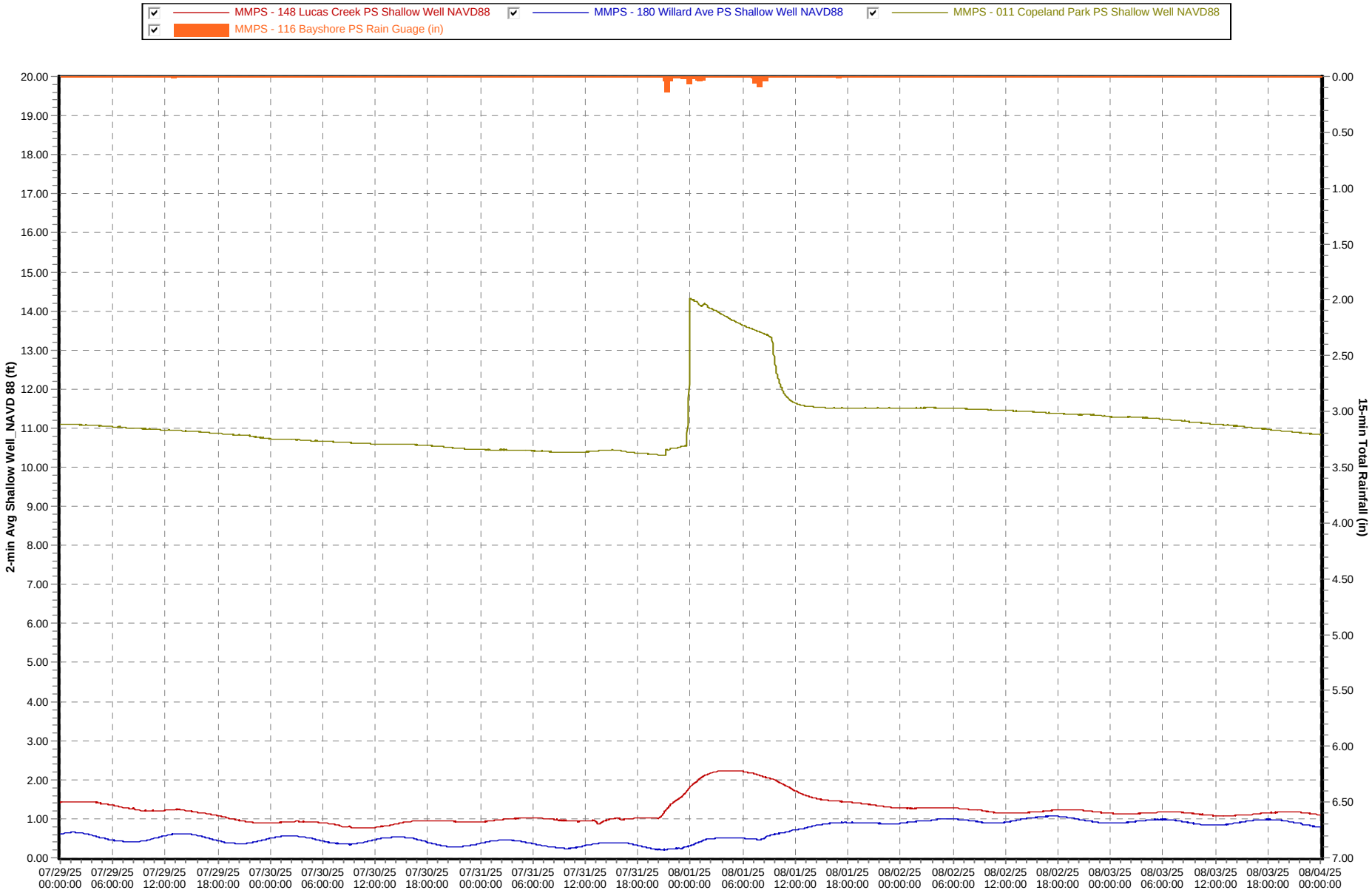
Appendix C

Shallow Well Analysis

5 Day

North Shore Shallow Well Graphs

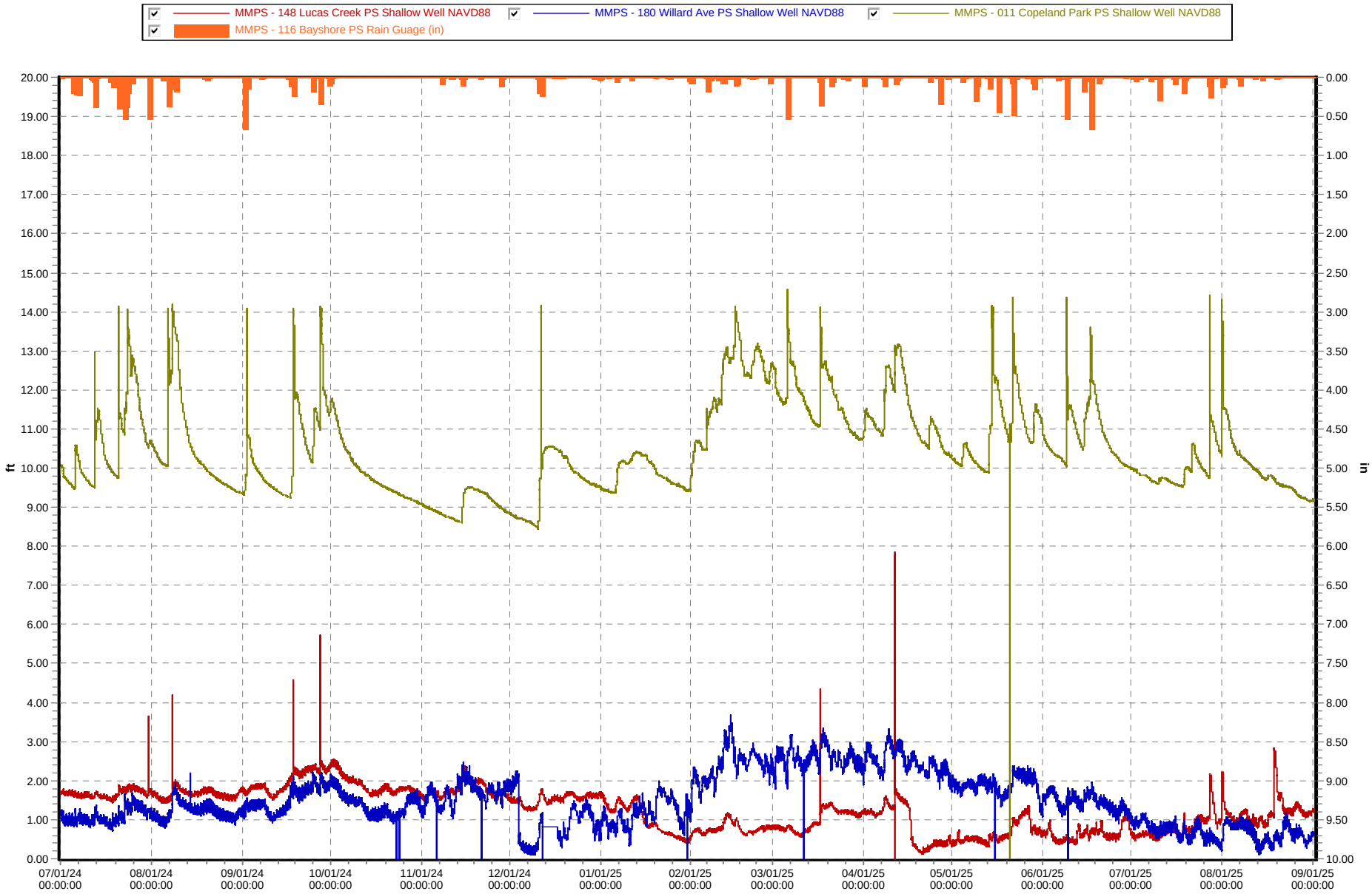
07/29/25 to 08/04/25



1 Year

North Shore Shallow Well Graph

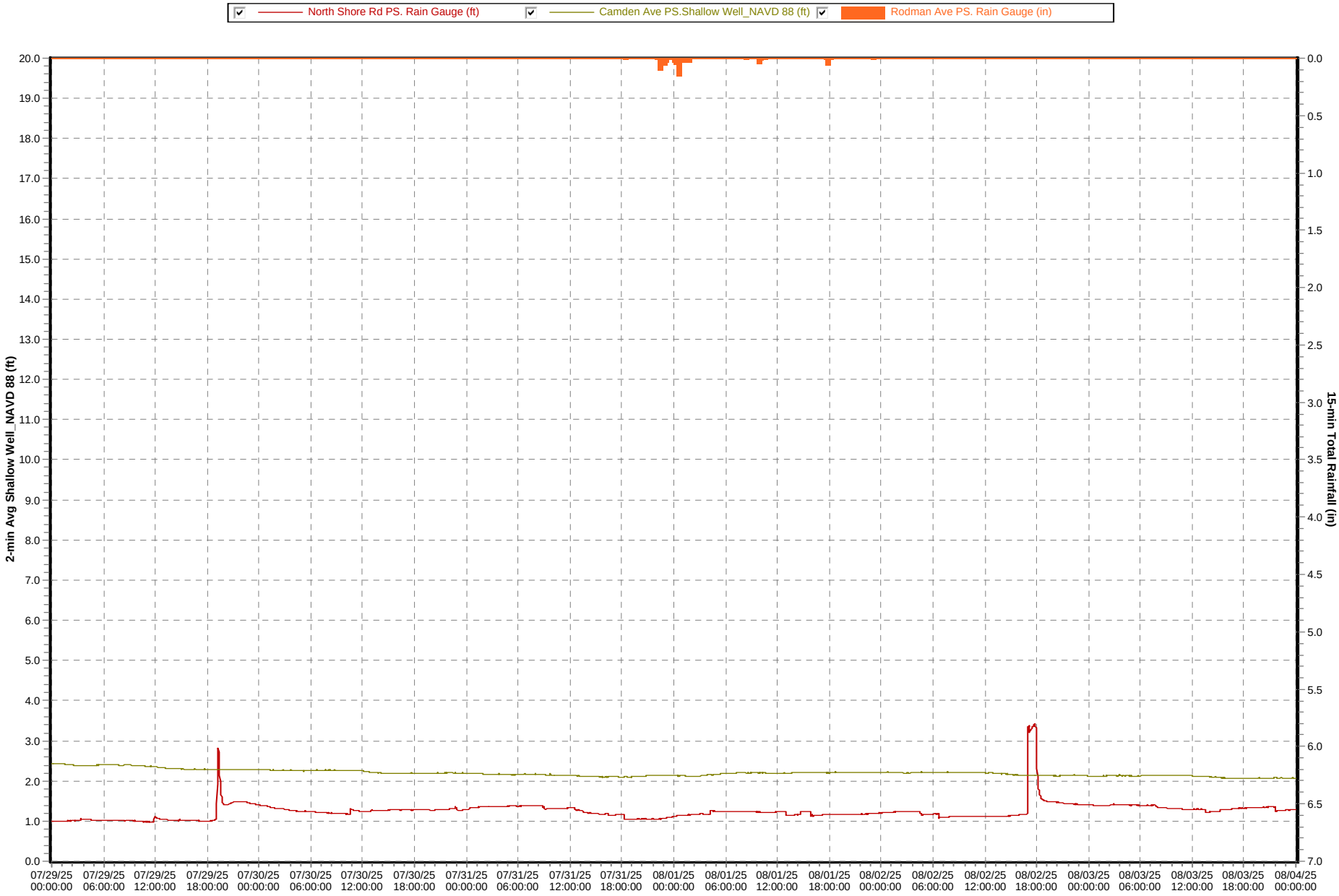
MMPS-148 (07/01/24 to 09/01/25)



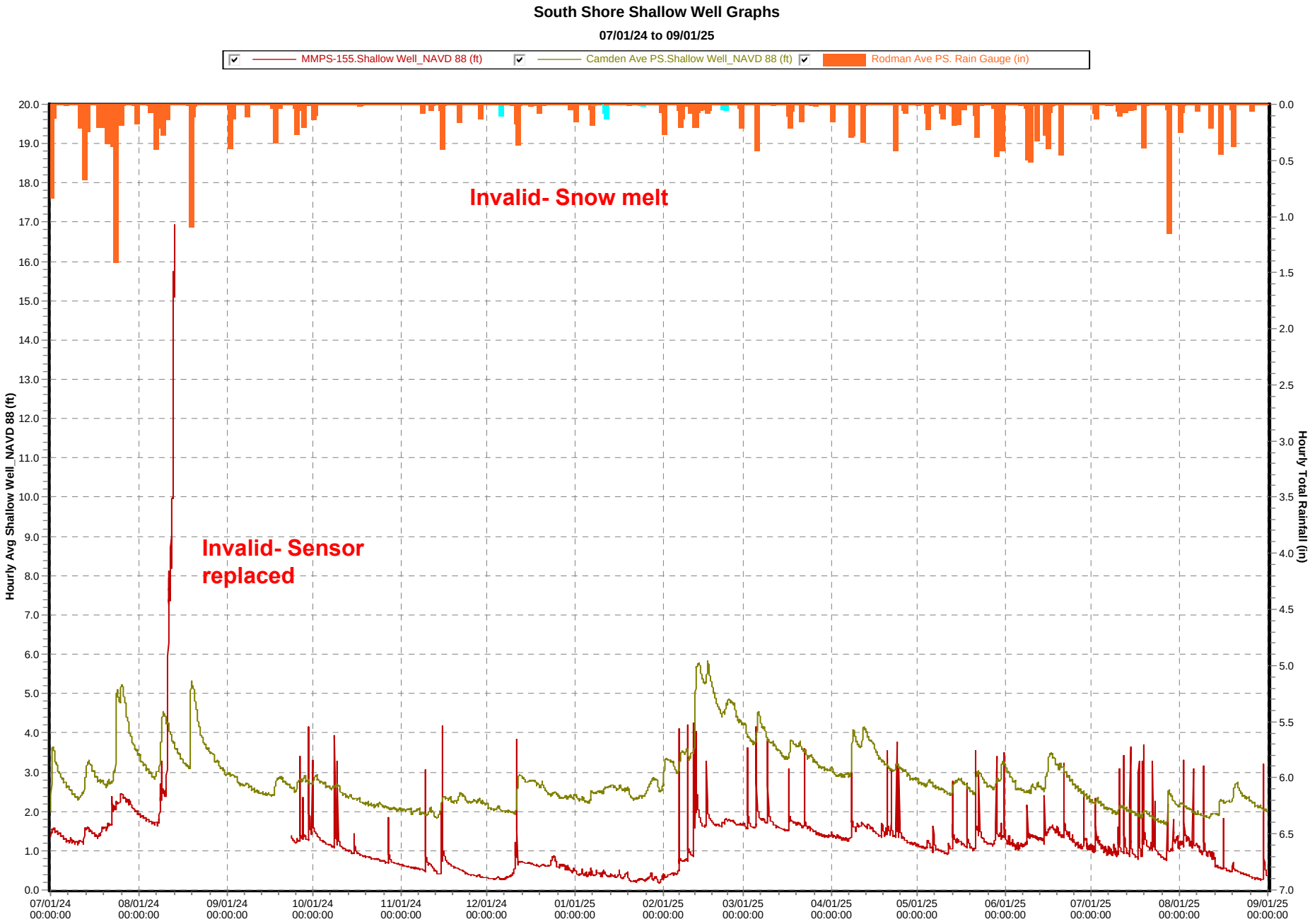
5 Day

South Shore Shallow Well Graphs

07/29/25 to 08/04/25



1 Year


South Shore Shallow Well Graphs
07/01/24 to 09/01/25
MMPS-155.Shallow Well_NAVD 88 (ft)
Camden Ave PS.Shallow Well_NAVD 88 (ft)
Rodman Ave PS. Rain Gauge (in)
Invalid- Snow melt
Invalid- Sensor replaced
Hourly Avg Shallow Well_NAVD 88 (ft)
Hourly Total Rainfall (in)
20.0
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0
07/01/24 00:00:00
08/01/24 00:00:00
09/01/24 00:00:00
10/01/24 00:00:00
11/01/24 00:00:00
12/01/24 00:00:00
01/01/25 00:00:00
02/01/25 00:00:00
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04/01/25 00:00:00
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06/01/25 00:00:00
07/01/25 00:00:00
08/01/25 00:00:00
09/01/25 00:00:00

Hampton Roads Sanitation District

Post-Storm Report

August 14, 2025

HRSD
Sustainable, Innovative Wastewater Treatment

DISCLAIMER:

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This report is intended to provide the HRSD regional community summary information about the HRSD system during select wet weather events/anomalies. The attached report contains a selection of *official* Interceptor and Treatment data, as well as other environmental and meteorological data provided through other services. In an effort to enhance the HRSD system, the attached products have been made accessible on this server and care must be taken when using such products as they are intended for informational and not operational, legal, or other purposes.

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Summary

On August 14th, there was an approximate 7-hour rainfall event that resulted in 4 sites on the North Shore and 11 sites on the South Shore that met a 1 to 100-year rainfall recurrence interval throughout the HRSD rain gauge network. The day started with high heat and humidity in the area with heat indexes hitting near 100. This was followed by a cool front that moved in from the North in the afternoon bringing about instability with thunderstorms and heavy rainfall. While rainfall was low in some parts, there were isolated areas in Hampton Roads that saw much heavier rainfall North Shore sites averaged around 0.62 inches of rain while South Shore sites averaged around 0.86 inches. There was minimal impact on groundwater levels compared to August 2024. See Appendix C for the Historical Shallow Well comparison.

HRSD flow and pressure meters met data reliability requirements per the MOM program. For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 90% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 90.00%
- Aggregate pressure meter validity: 99.92%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Treatment Plant Data: ***(Data obtained from Telog Database)***
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
8/14/2025

North Shore

Treatment Plant	Date of Peak Hourly Flow	Peak Hourly Flow (MGD)	Peak Hour	TPSA Total Rainfall Avg (in)
Boat Harbor	8/14/2025	11.39	23:00	0.07
James River	8/14/2025	16.88	21:00	0.24
Williamsburg	8/14/2025	23.09	20:00	0.61
York River	8/14/2025	14.60	21:00	0.79

HRSD Treatment Plant Data
8/14/2025

South Shore

Treatment Plant	Date of Peak Hourly Flow	Peak Hourly Flow (MGD)	Peak Hour	TPSA Total Rainfall Avg (in)
Army Base	8/14/2025	9.81	19:00	0.11
Atlantic	8/14/2025	95.33	19:00	1.71
Nansemond	8/14/2025	23.43	21:00	0.65
VIP	8/14/2025	35.55	22:00	0.40

North Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Boat Harbor Treatment Plant Service Area[1]		
Bayshore PS	DNQ	HAMP
Bridge Street Tide Gate	DNQ	HAMP
Boat Harbor	DNQ	NEWP
Copeland Park PS	DNQ	NEWP
Hampton PS 159	DNQ	HAMP
James River Treatment Plant Service Area[1]		
Hilton School PS	DNQ	NEWP
James River Main Flow (Influent)	DNQ	NEWP
Lee Hall PRS	DNQ	NEWP
Lucas Creek PS	Disconnected	NEWP
Morrison PS	DNQ	NEWP
Williamsburg Treatment Plant Service Area[1]		
Ford's Colony	DNQ	JCSA
Fort Eustis PS	DNQ	NEWP
Greensprings PS	DNQ	JCA
Solarex	DNQ	JCSA
Williamsburg Main Flow (Effluent)	DNQ	JCSA
Williamsburg PS	1-year (1hr)	WILL
York Skimino Hills PS	DNQ	YORK
York River Treatment Plant Service Area[1]		
Big Bethel PRS	DNQ	HAMP
Freeman PS	DNQ	HAMP
Gloucester Court House	DNQ	GLOU
Guinea Rd at Maryus Rd	DNQ	GLOU
Ordinary PCV	DNQ	GLOU
Poquoson PS 6	1-year (1hr)	POQ
Wolf Trappe PCV	10- to 25-year (1hr)	YORK
York Kiln Creek 1 PS	DNQ	YORK
York PS 15	DNQ	YORK
York River Main Flow (Influent)	DNQ	YORK
York River Crossing (York River Rectifier)	2-year (1hr)	GLOU

Note:

1. Typical treatment plant service area.

Newport News-Williamsburg International (PHF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
08/14/25	22 mph	10 mph	4 mph	WSW	0.77

Tide:

- Yorktown USCG Training Center:
  - Storm Surge: An approximate 0.85-foot storm surge was observed.

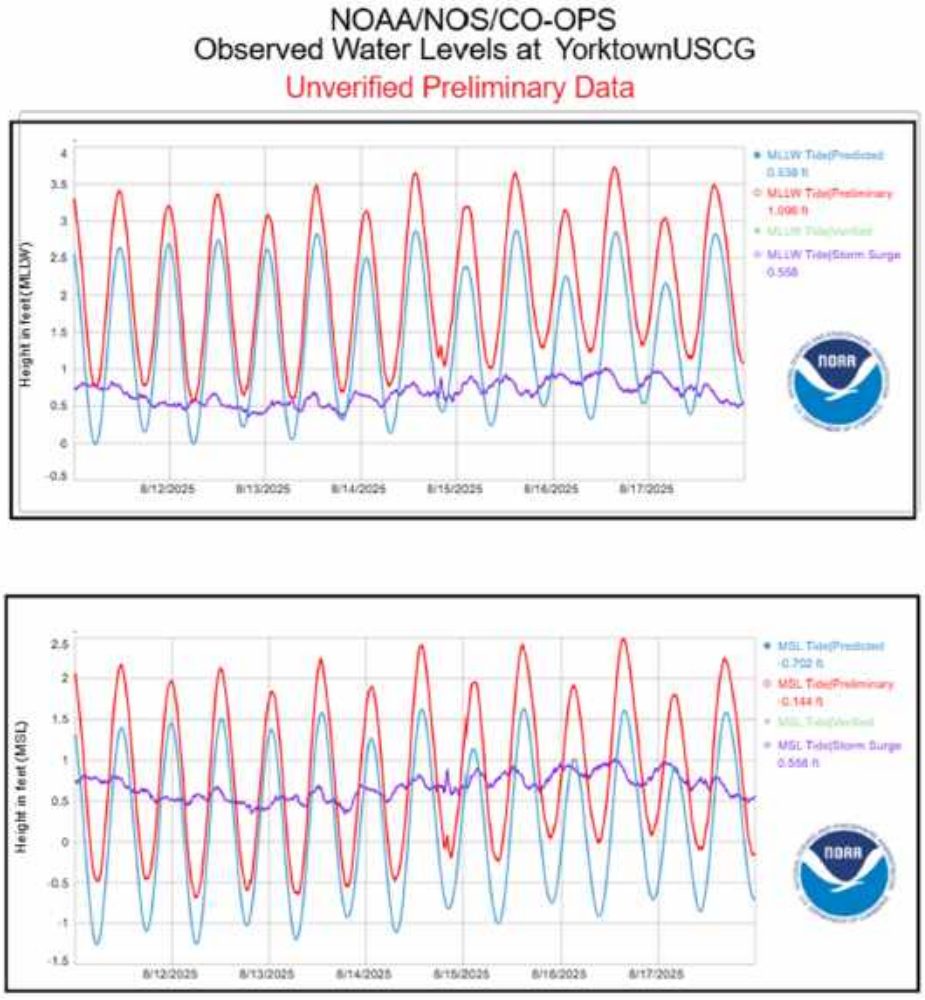


Figure 1. Preliminary data obtained from NOAA and a connection with Open Weather

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.75 foot storm surge was observed.

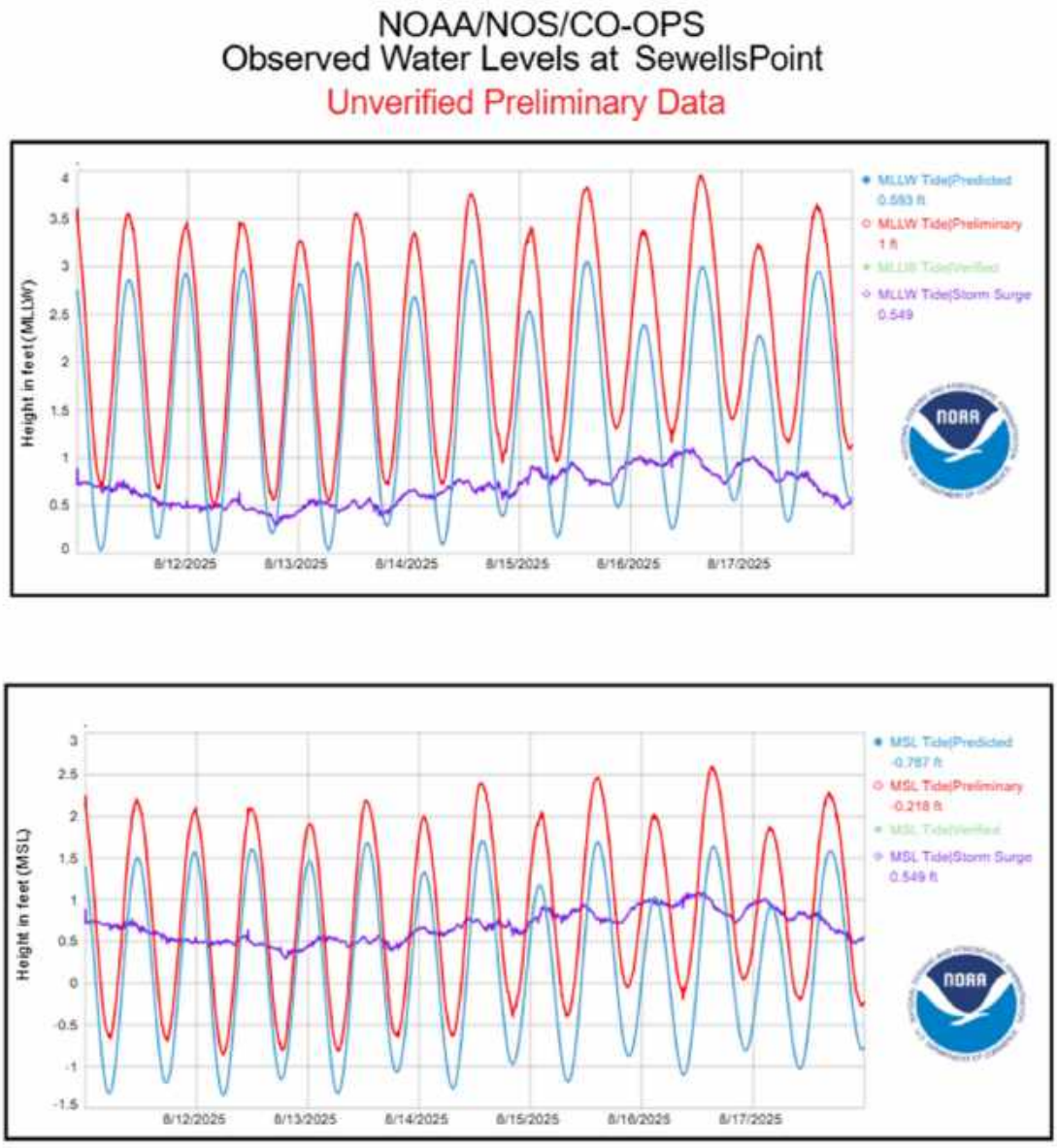


Figure 2. Preliminary data obtained from NOAA and a connection with Open Weather

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	DNQ	NORF
Taussig Blvd PS	DNQ	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	DNQ	CHES
Chesapeake PS 243	DNQ	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	DNQ	VAB
Elbow Rd PRS	DNQ	CHES
John B. Dey MLV-AT side	DNQ	VAB
Hickory EOL	1-year (3hr)	CHES
Kempsville PRS	25-year (2hr)	VAB
Lagomar IFM at Atlantic TP	1- to 2-year (1hr)	VAB
Laskin Rd PRS	DNQ	VAB
Pine Tree PRS	2-year (1hr)	VAB
Shipps Corner PRS	100-year (2hr)	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	2-year (1hr)	CHES
Independence PRS	5- to 10-year (1hr)	VAB
Northampton Blvd at Wesleyan Dr	DNQ	NORF
Providence PRS	2-year (1hr)	VAB
Shore Dr @ Jack Frost	DNQ	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	2-year (2hr)	CHES
Cedar Lane PS	DNQ	PORT
Cedar Rd at Dominon Blvd	1-year (3hr)	CHES
Chesapeake PS 20	DNQ	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	DNQ	SUFF
Deep Creek PRS	2- to 5-year (2hr)	CHES
Hill Point Rectifier	DNQ	SUFF
Lake Kilby WTP	DNQ	SUFF
Nansemond Main Flow (Effluent)	DNQ	SUFF
Pagan River Rectifier	DNQ	IOW
Pughsville PS	DNQ	SUFF
Route 337 PRS	DNQ	CHES
Smithfield High School	DNQ	IOW
Suffolk PS	DNQ	SUFF
Suffolk PS 81	DNQ	SUFF
Suffolk PS 87	DNQ	SUFF

Windsor Duke St PS	Disconnected	IOW
VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	DNQ	NORF
Ferebee Avenue PS	DNQ	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	DNQ	PORT
Va Beach Blvd PS	DNQ	NORF
VIP Main Flow (Effluent)	DNQ	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
08/14/2025	29 mph	15 mph	5 mph	WSW	0.63

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.75 foot storm surge was observed.

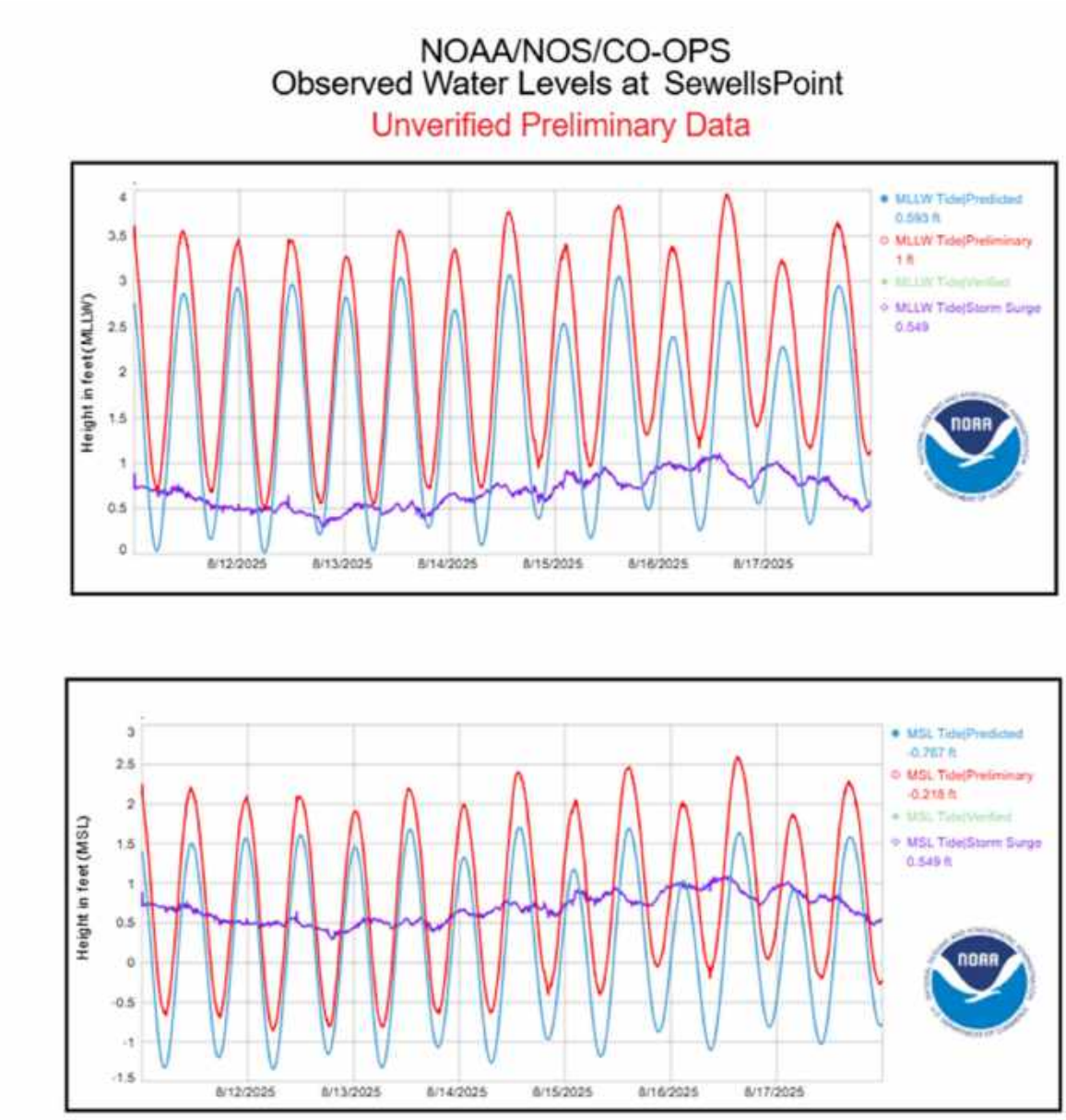


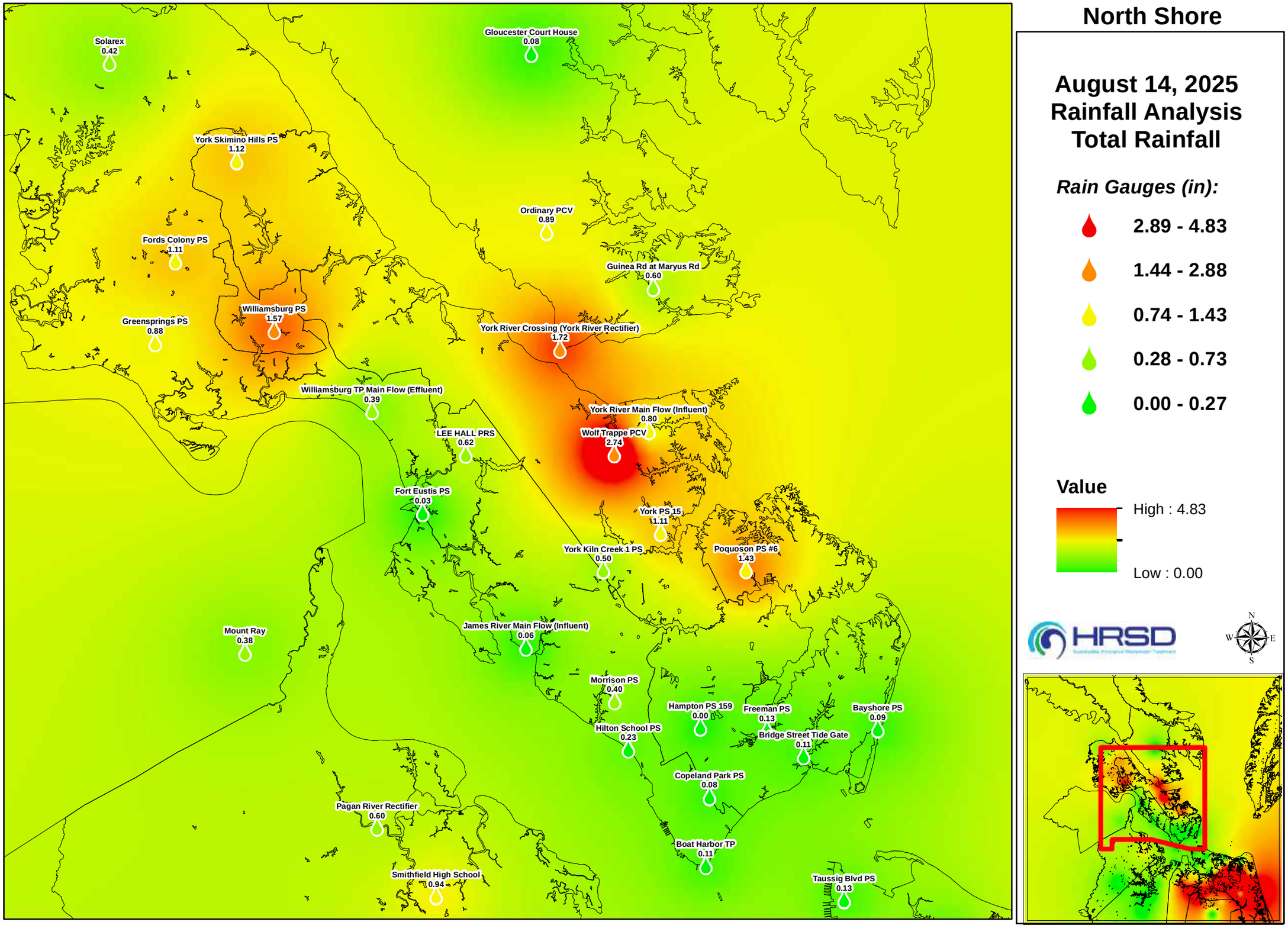
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

Shallow Well Analysis:

Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

HRSD Rain Gauge Network
Rainfall Totals



North Shore

August 14, 2025 Rainfall Analysis Total Rainfall

Rain Gauges (in):

- **2.89 - 4.83**
- **1.44 - 2.88**
- **0.74 - 1.43**
- **0.28 - 0.73**
- **0.00 - 0.27**

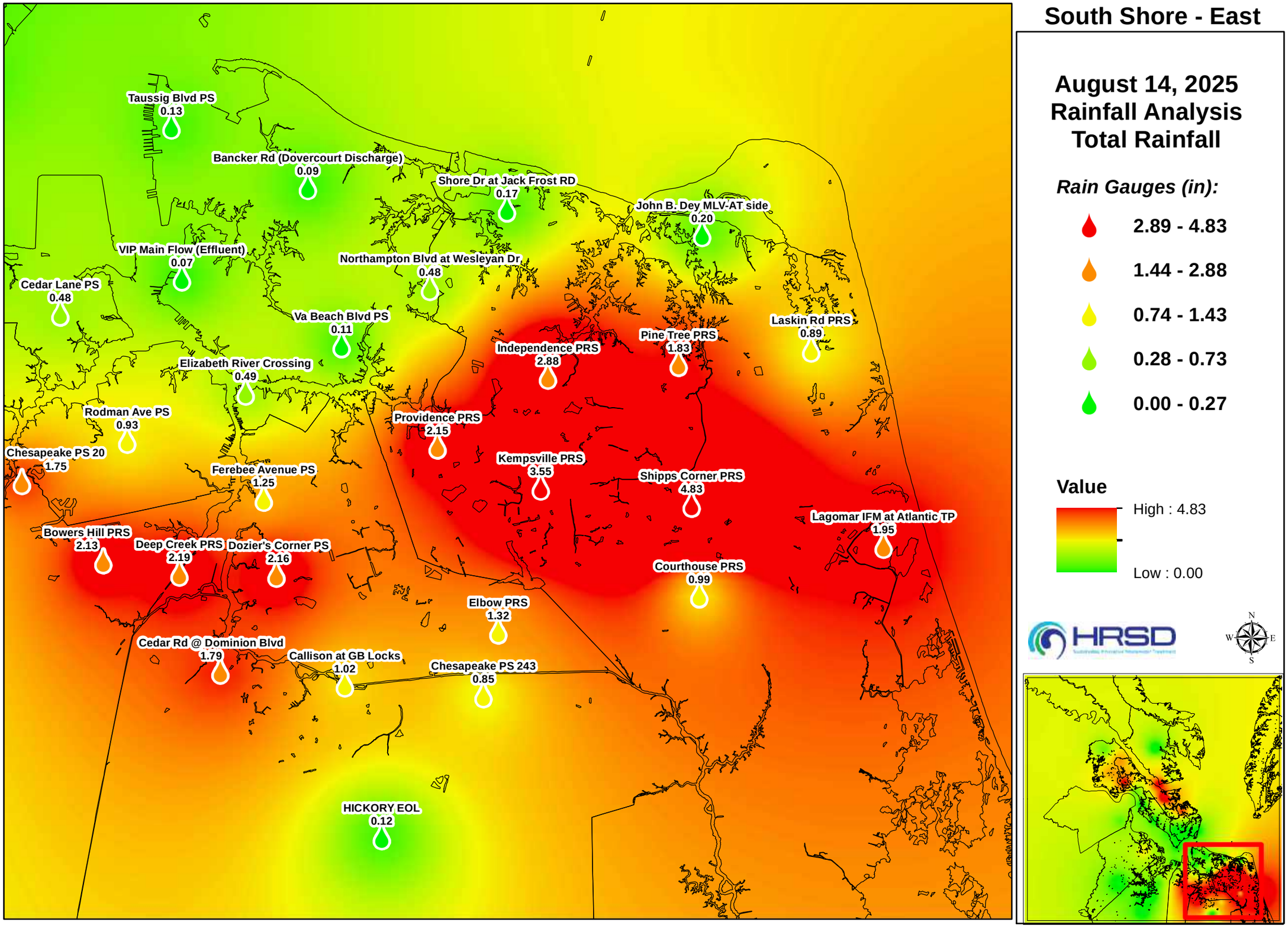
Value

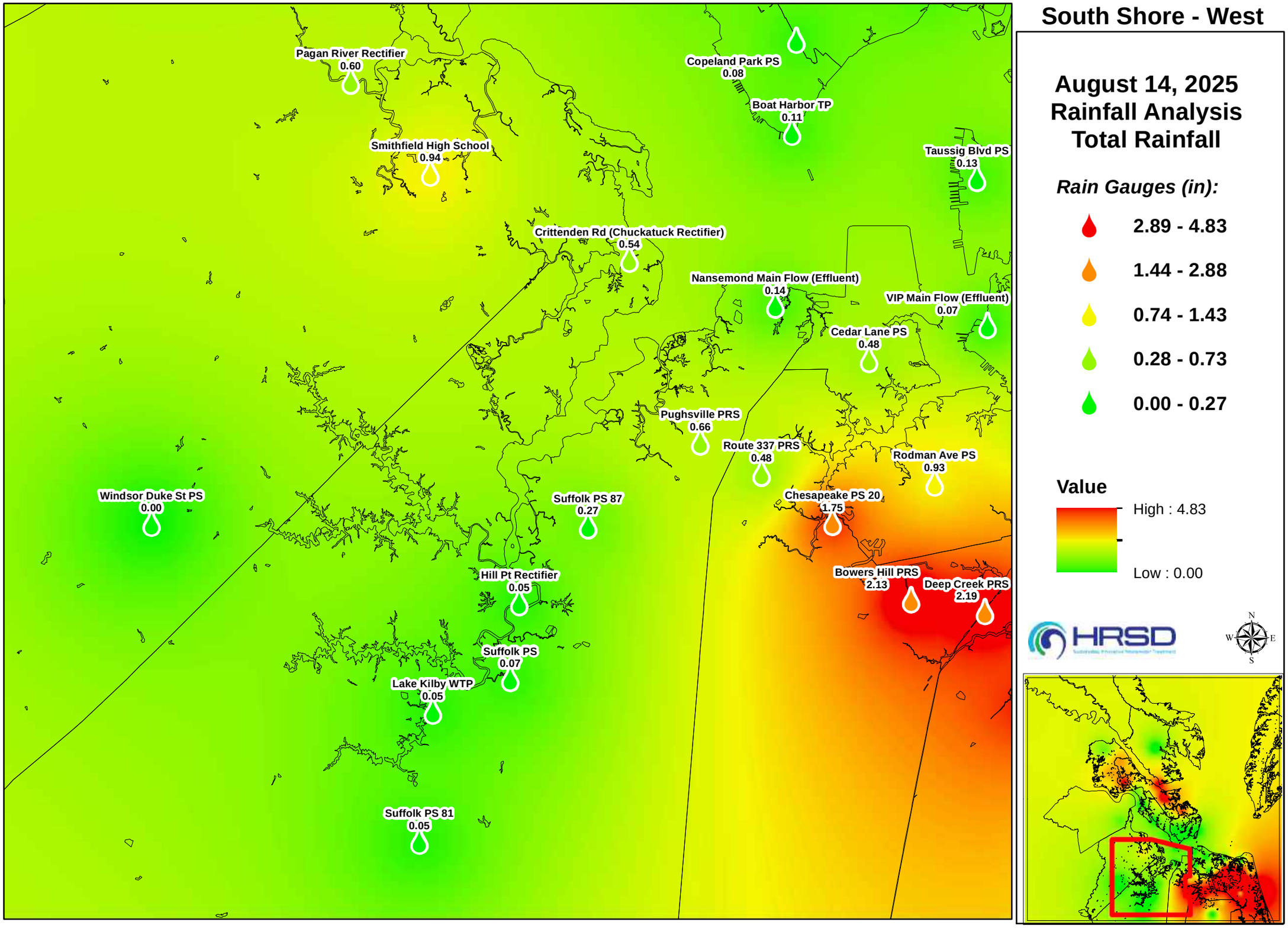
High : 4.83

Low : 0.00

HRSD

N
W E
S


South Shore - East
August 14, 2025
Rainfall Analysis
Total Rainfall
Rain Gauges (in):
2.89 - 4.83
1.44 - 2.88
0.74 - 1.43
0.28 - 0.73
0.00 - 0.27
Value
High : 4.83
Low : 0.00
HRSD
N
W
E
S
Taussig Blvd PS 0.13
Bancker Rd (Dovercourt Discharge) 0.09
Shore Dr at Jack Frost RD 0.17
John B. Dey MLV-AT side 0.20
VIP Main Flow (Effluent) 0.07
Northampton Blvd at Wesleyan Dr 0.48
Cedar Lane PS 0.48
Va Beach Blvd PS 0.11
Laskin Rd PRS 0.89
Pine Tree PRS 1.83
Independence PRS 2.88
Elizabeth River Crossing 0.49
Rodman Ave PS 0.93
Providence PRS 2.15
Chesapeake PS 20 1.75
Kempsville PRS 3.55
Ferebee Avenue PS 1.25
Shipps Corner PRS 4.83
Lagomar IFM at Atlantic TP 1.95
Bowers Hill PRS 2.13
Deep Creek PRS 2.19
Dozier's Corner PS 2.16
Courthouse PRS 0.99
Elbow PRS 1.32
Cedar Rd @ Dominion Blvd 1.79
Callison at GB Locks 1.02
Chesapeake PS 243 0.85
HICKORY EOL 0.12

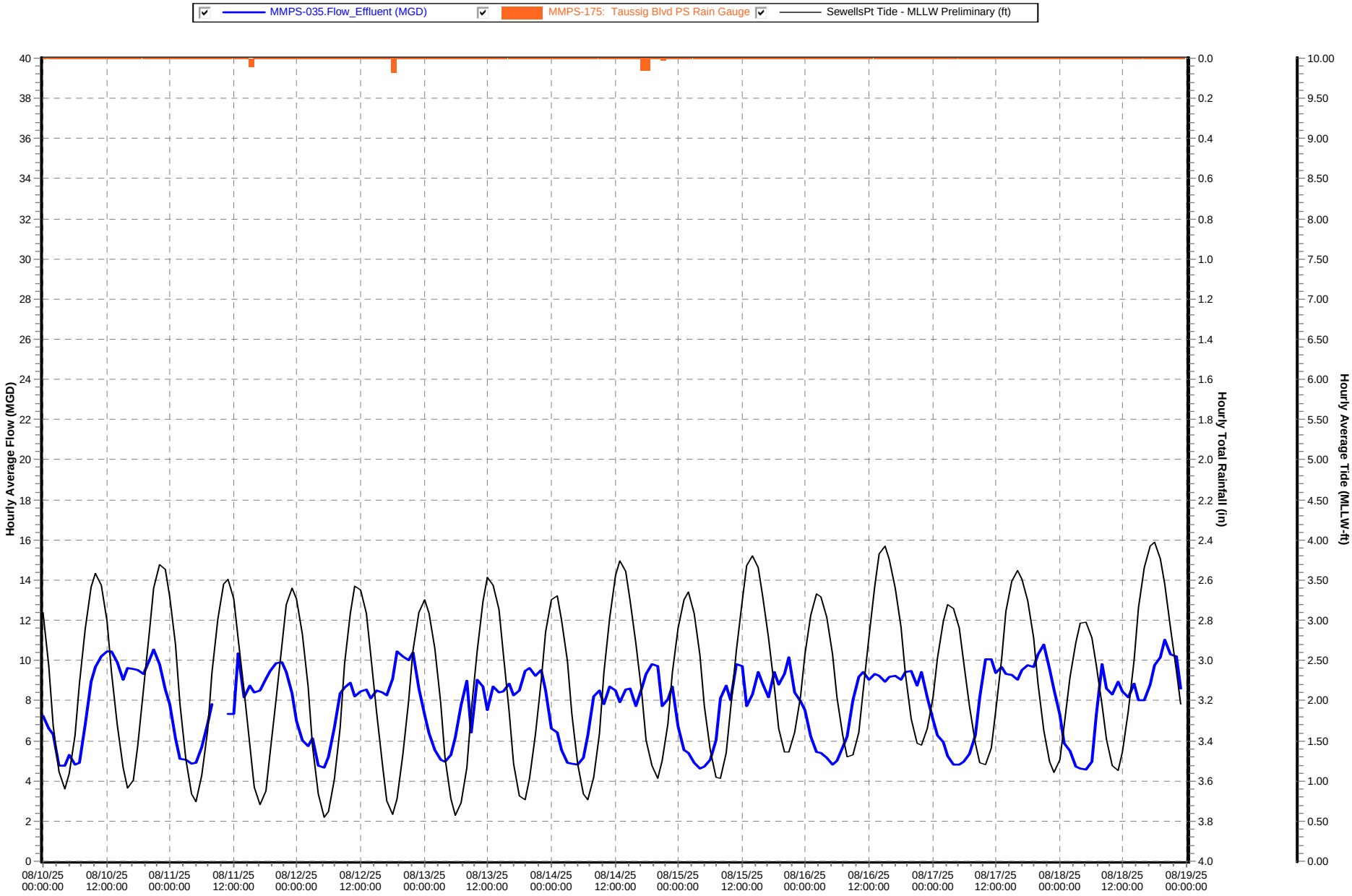

South Shore - West
August 14, 2025
Rainfall Analysis
Total Rainfall
Rain Gauges (in):
2.89 - 4.83
1.44 - 2.88
0.74 - 1.43
0.28 - 0.73
0.00 - 0.27
Value
High : 4.83
Low : 0.00
HRSD
N
W
E
S
Pagan River Rectifier 0.60
Copeland Park PS 0.08
Boat Harbor TP 0.11
Smithfield High School 0.94
Taussig Blvd PS 0.13
Crittenden Rd (Chuckatuck Rectifier) 0.54
Nansemond Main Flow (Effluent) 0.14
VIP Main Flow (Effluent) 0.07
Cedar Lane PS 0.48
Pughsville PRS 0.66
Route 337 PRS 0.48
Rodman Ave PS 0.93
Windsor Duke St PS 0.00
Suffolk PS 87 0.27
Chesapeake PS 20 1.75
Hill Pt Rectifier 0.05
Bowers Hill PRS 2.13
Deep Creek PRS 2.19
Suffolk PS 0.07
Lake Kilby WTP 0.05
Suffolk PS 81 0.05

Appendix B

HRSD Treatment Plant Flows

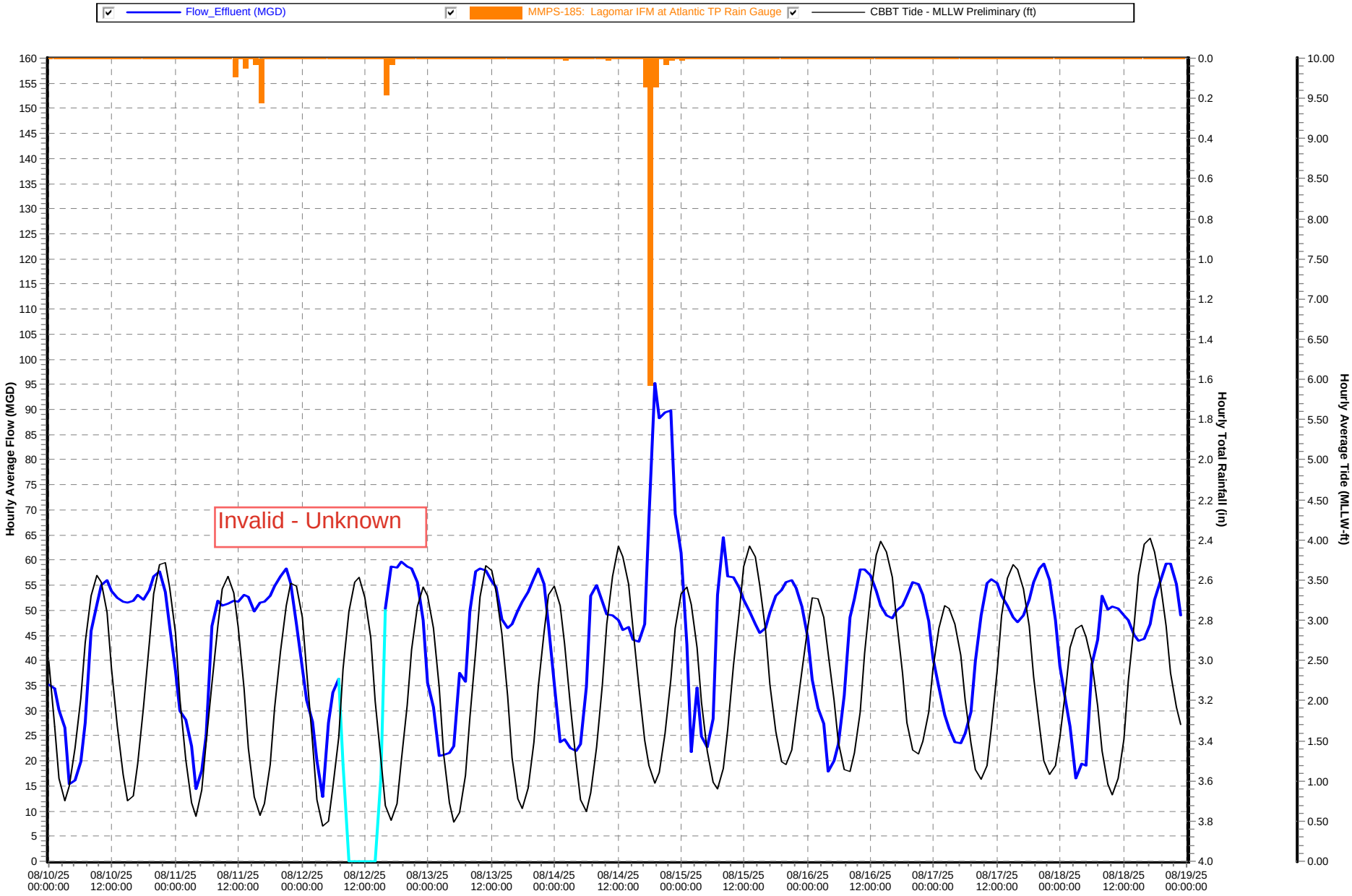
Army Base Treatment Plant

MMPS-035 (08/10/25 to 08/19/25)



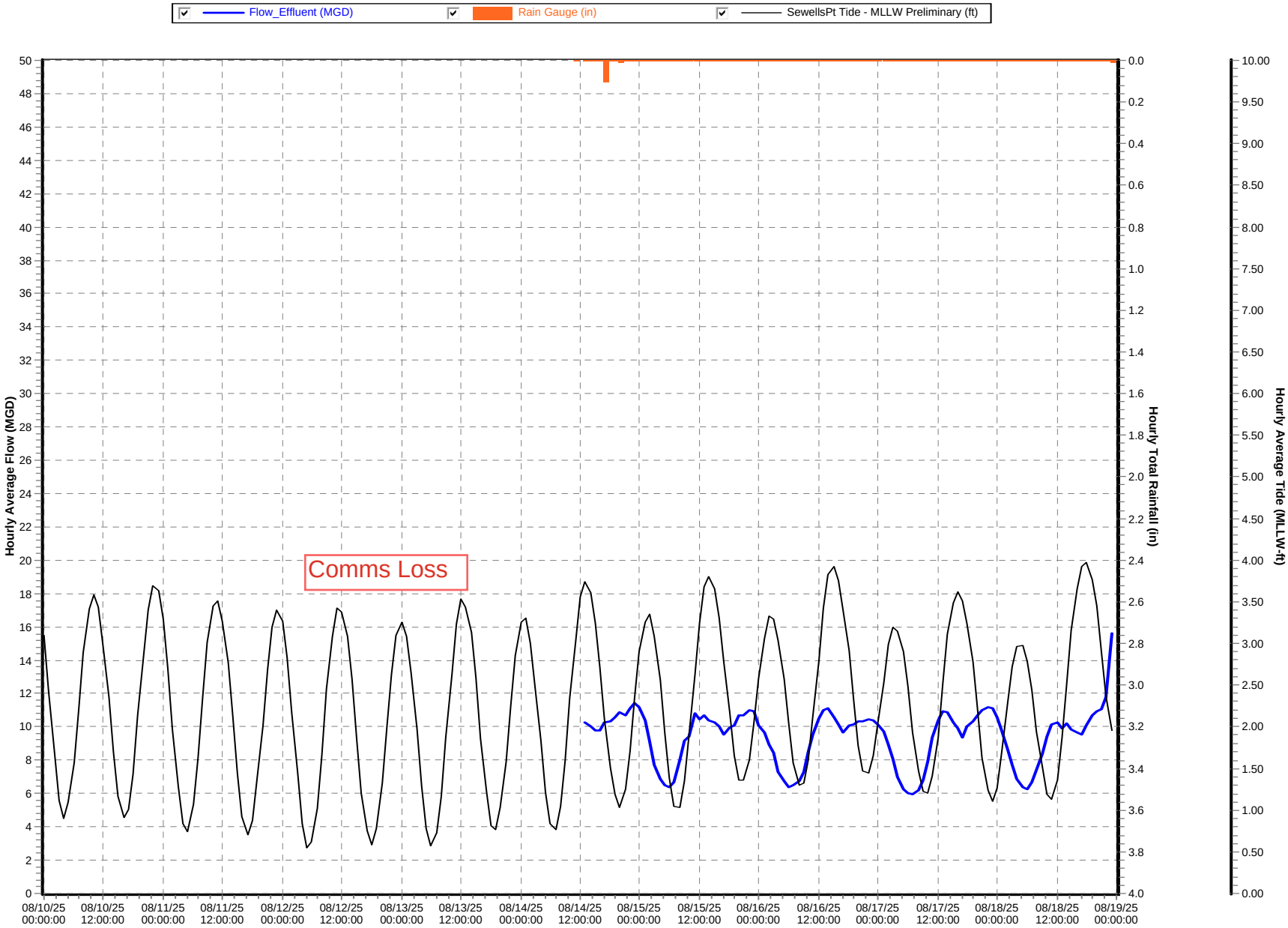
Atlantic Treatment Plant

MMPS-071 (08/10/25 to 08/19/25)



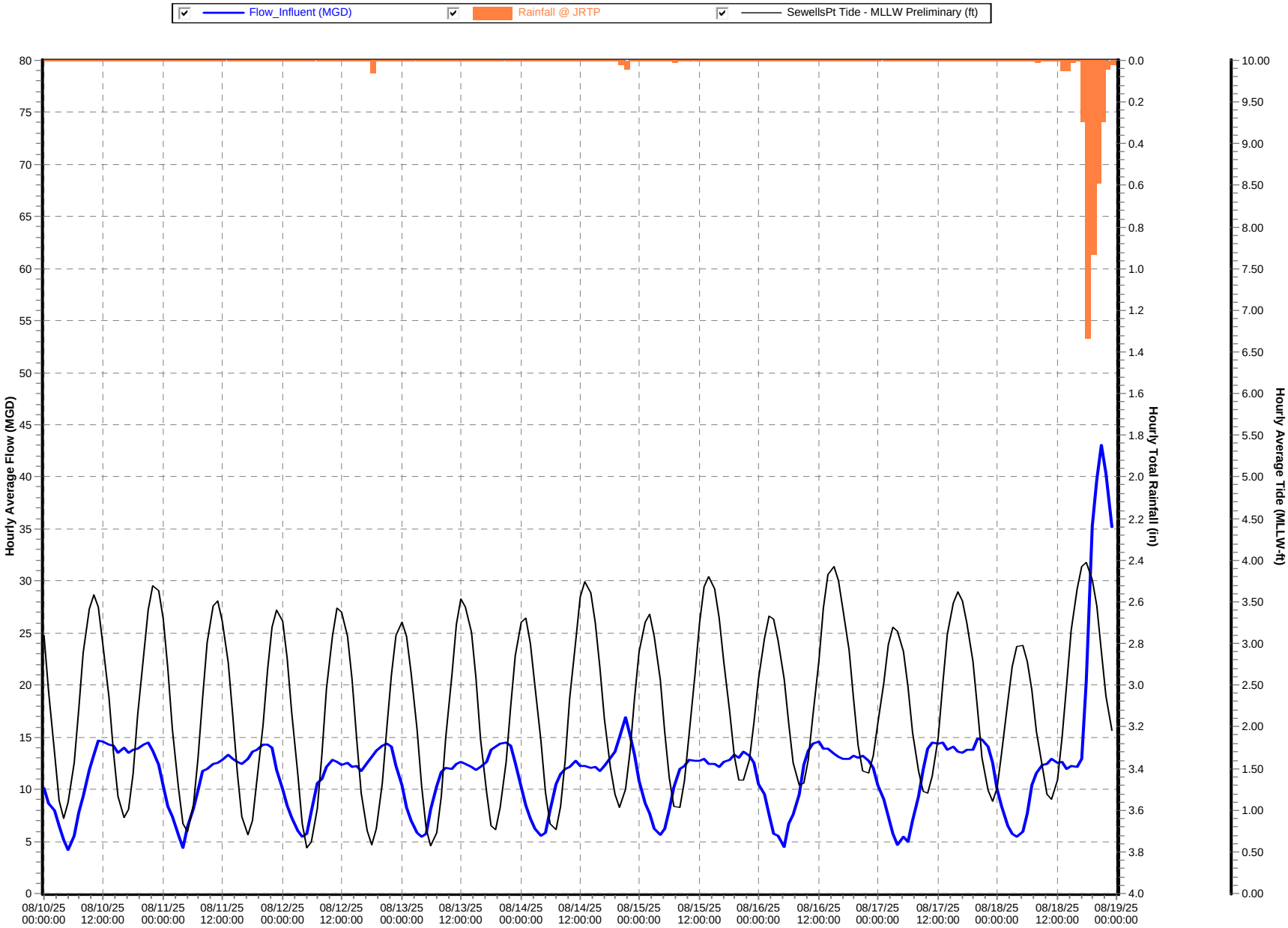
Boat Harbor Treatment Plant

MMPS-075 (08/10/25 to 08/19/25)



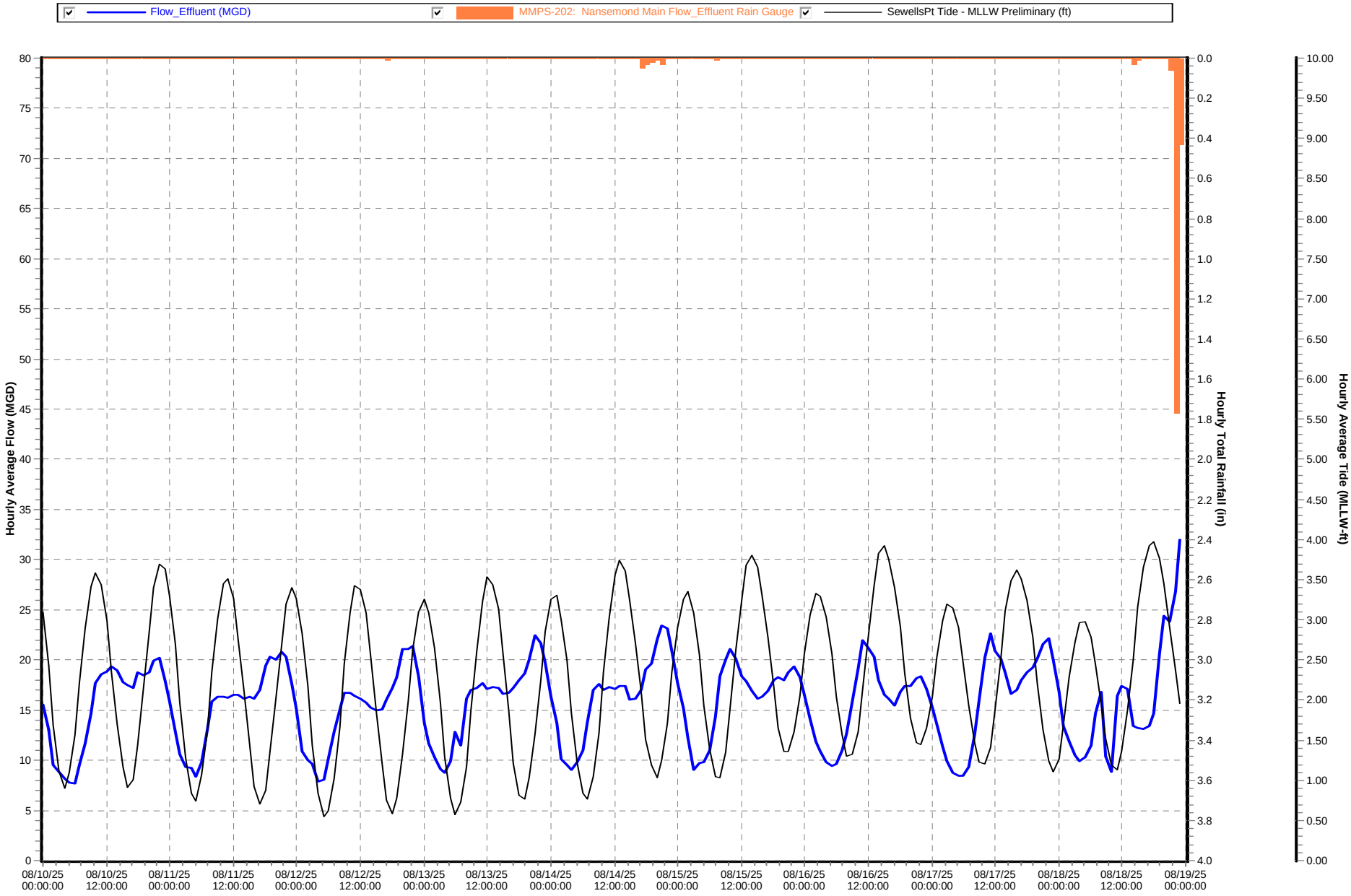
James River Treatment Plant

MMPS-184 (08/10/25 to 08/19/25)



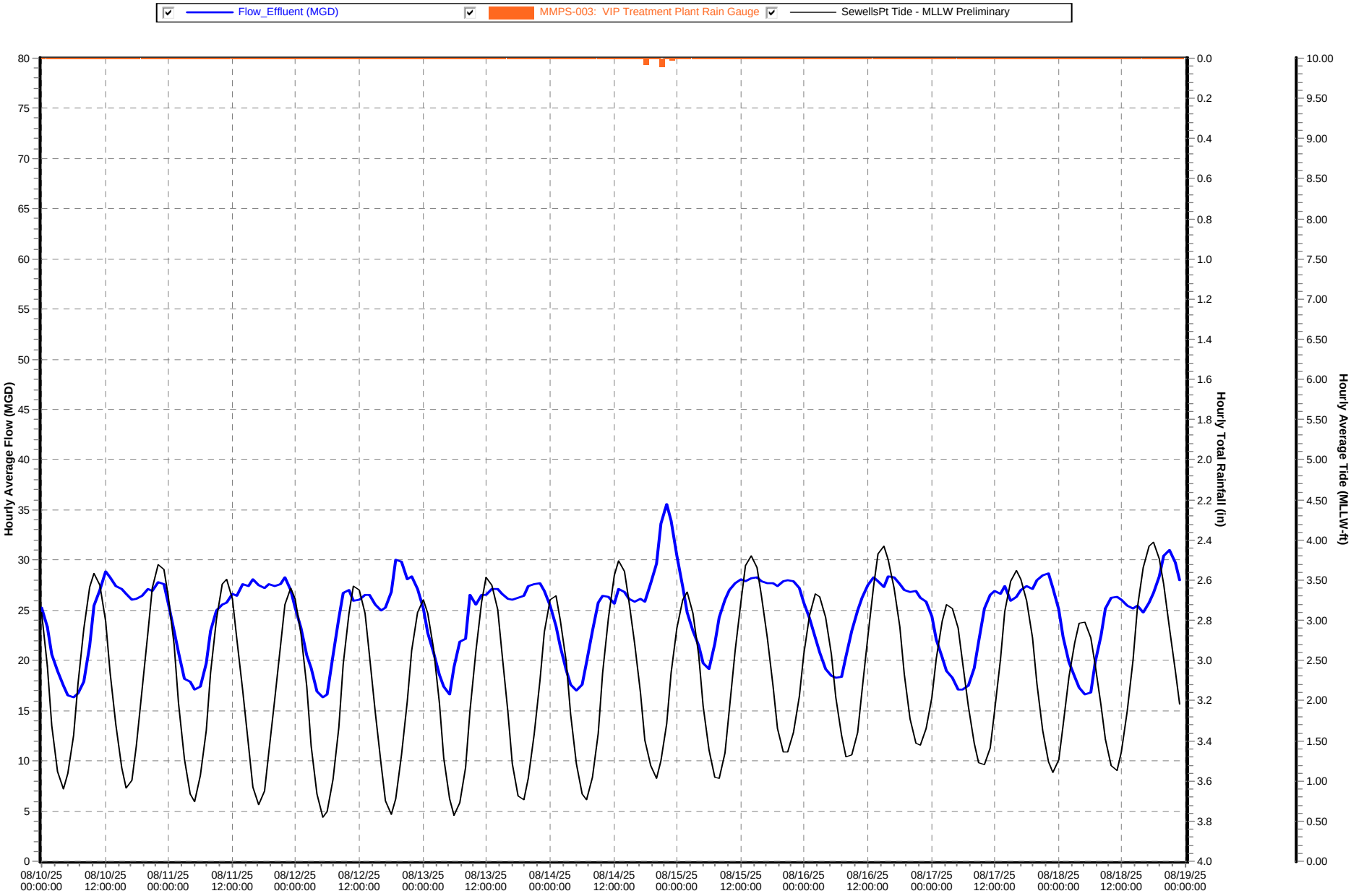
Nansemond Treatment Plant

MMPS-202 (08/10/25 to 08/19/25)



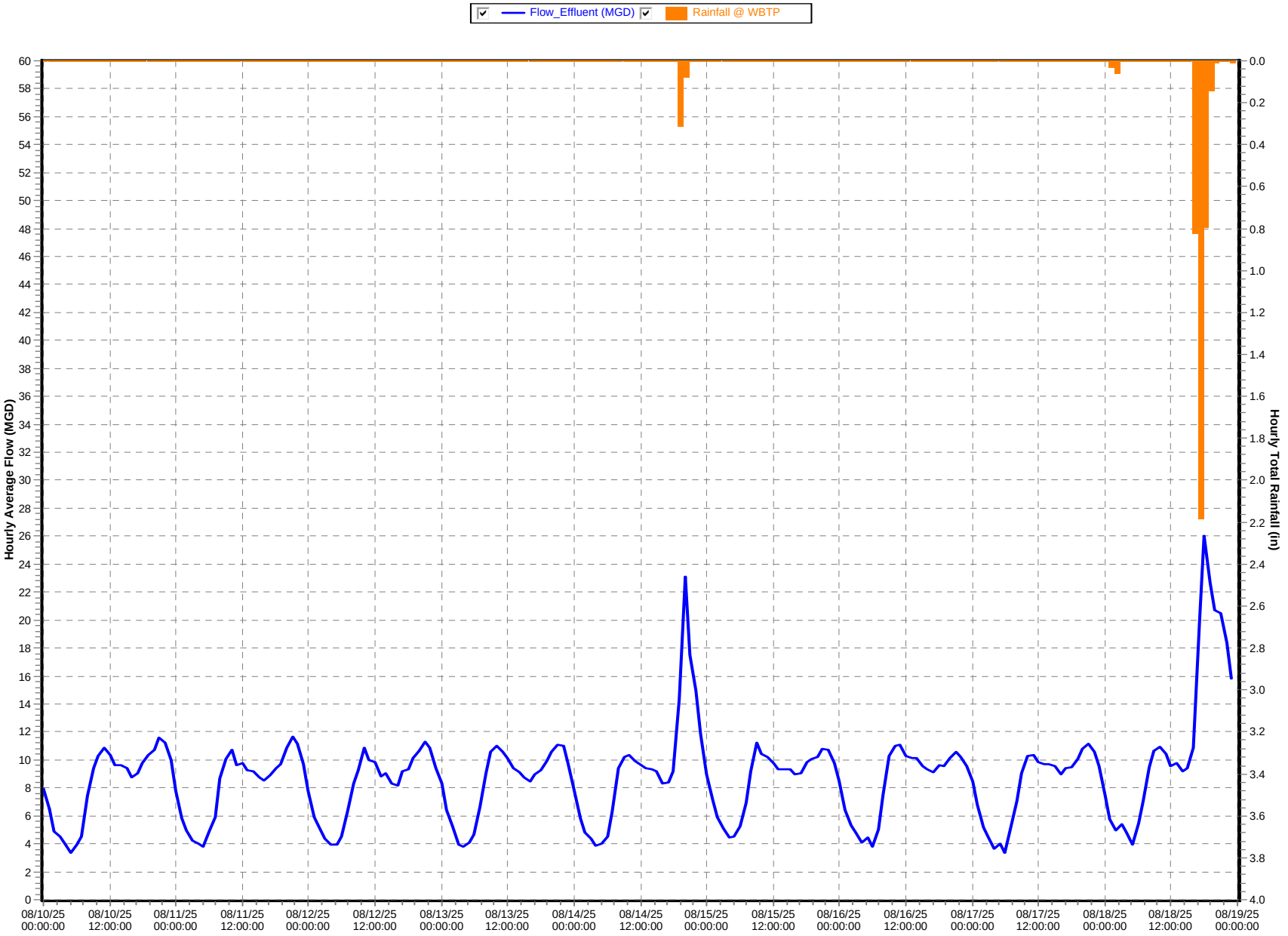
VIP Treatment Plant

MMPS-003 (08/10/25 to 08/19/25)



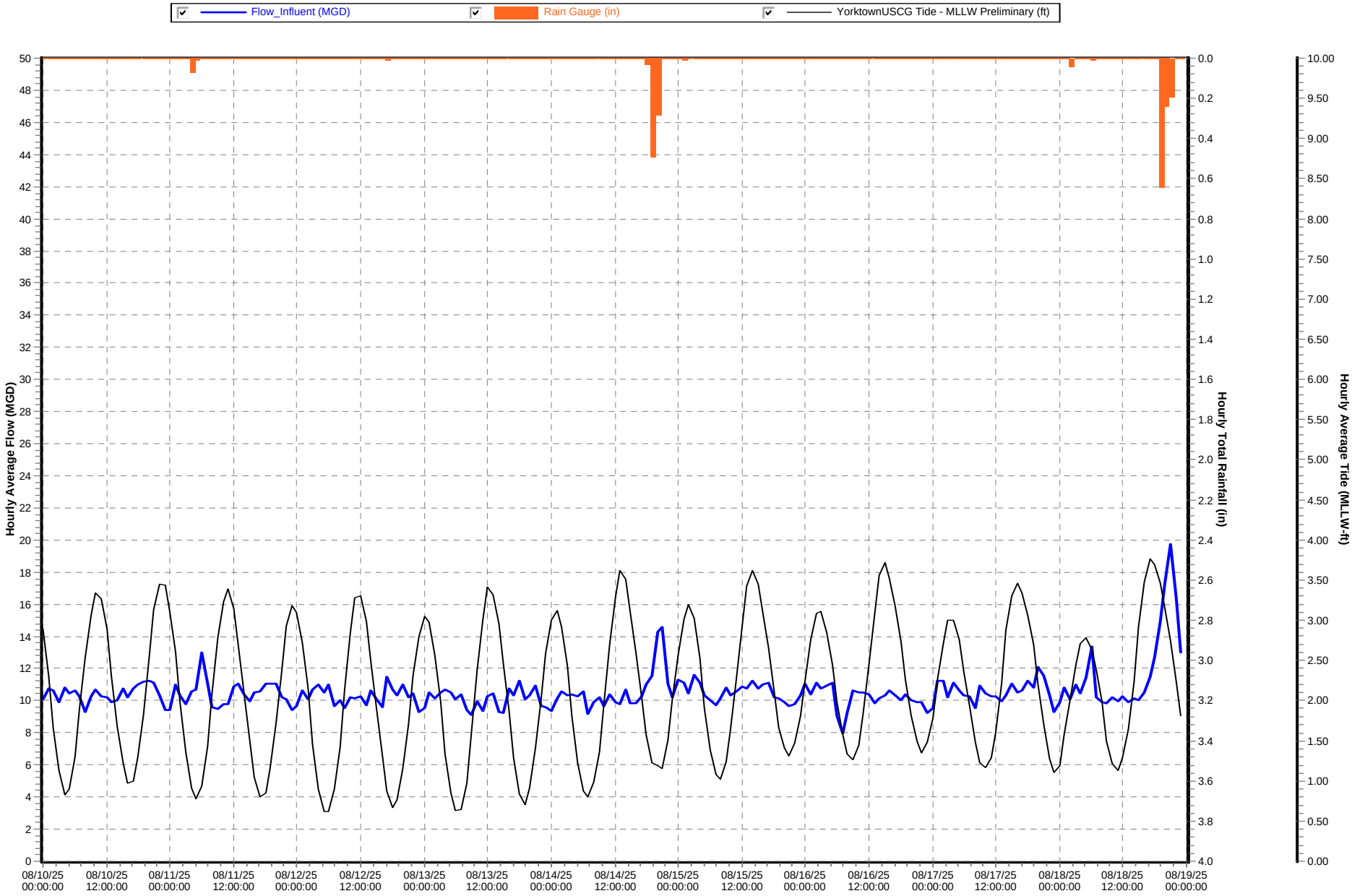
Williamsburg Treatment Plant

MMPS-222 (08/10/25 to 08/19/25)



York River Treatment Plant

MMPS-235 (08/10/25 to 08/19/25)



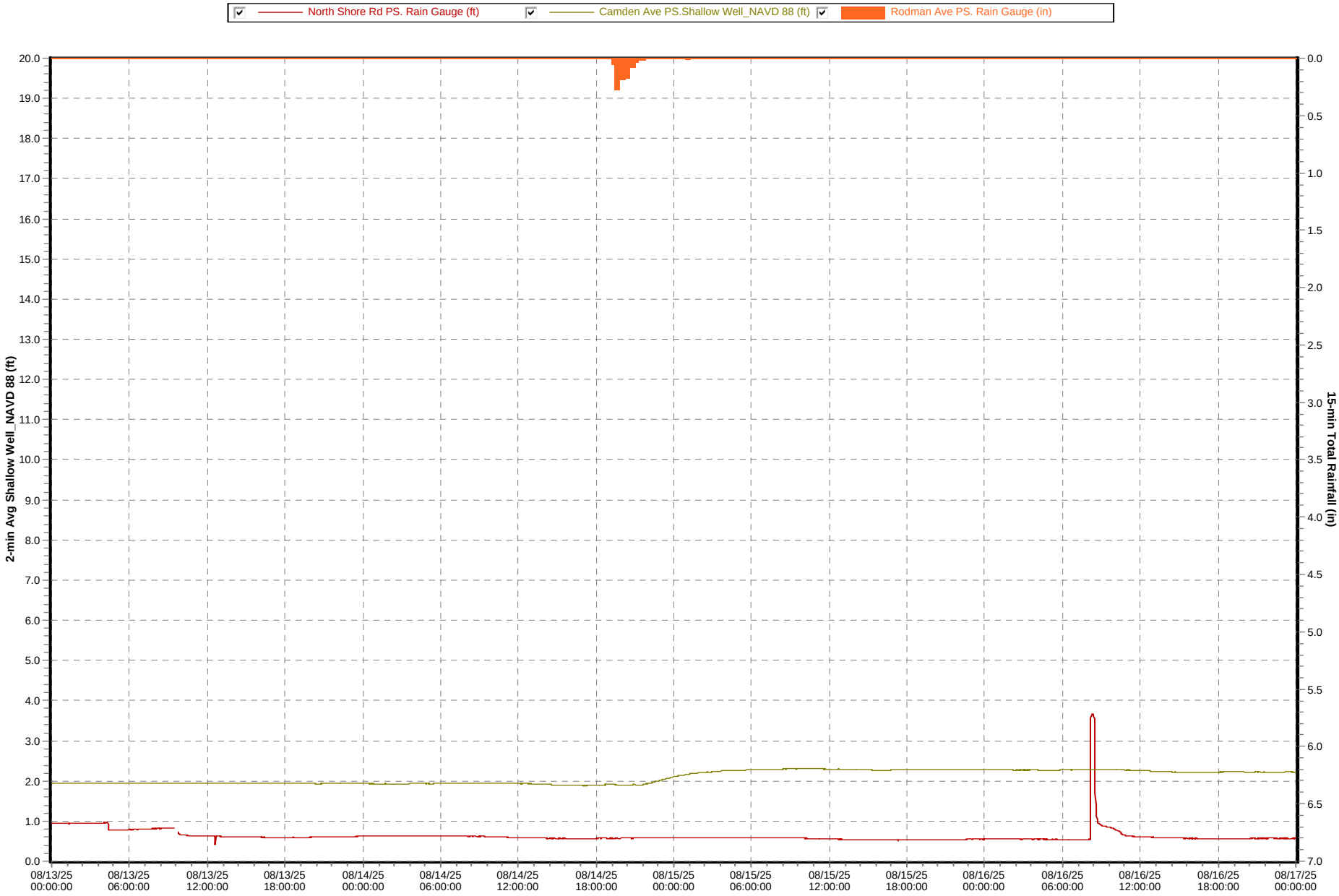
Appendix C

Shallow Well Analysis

5 - Day

South Shore Shallow Well Graphs

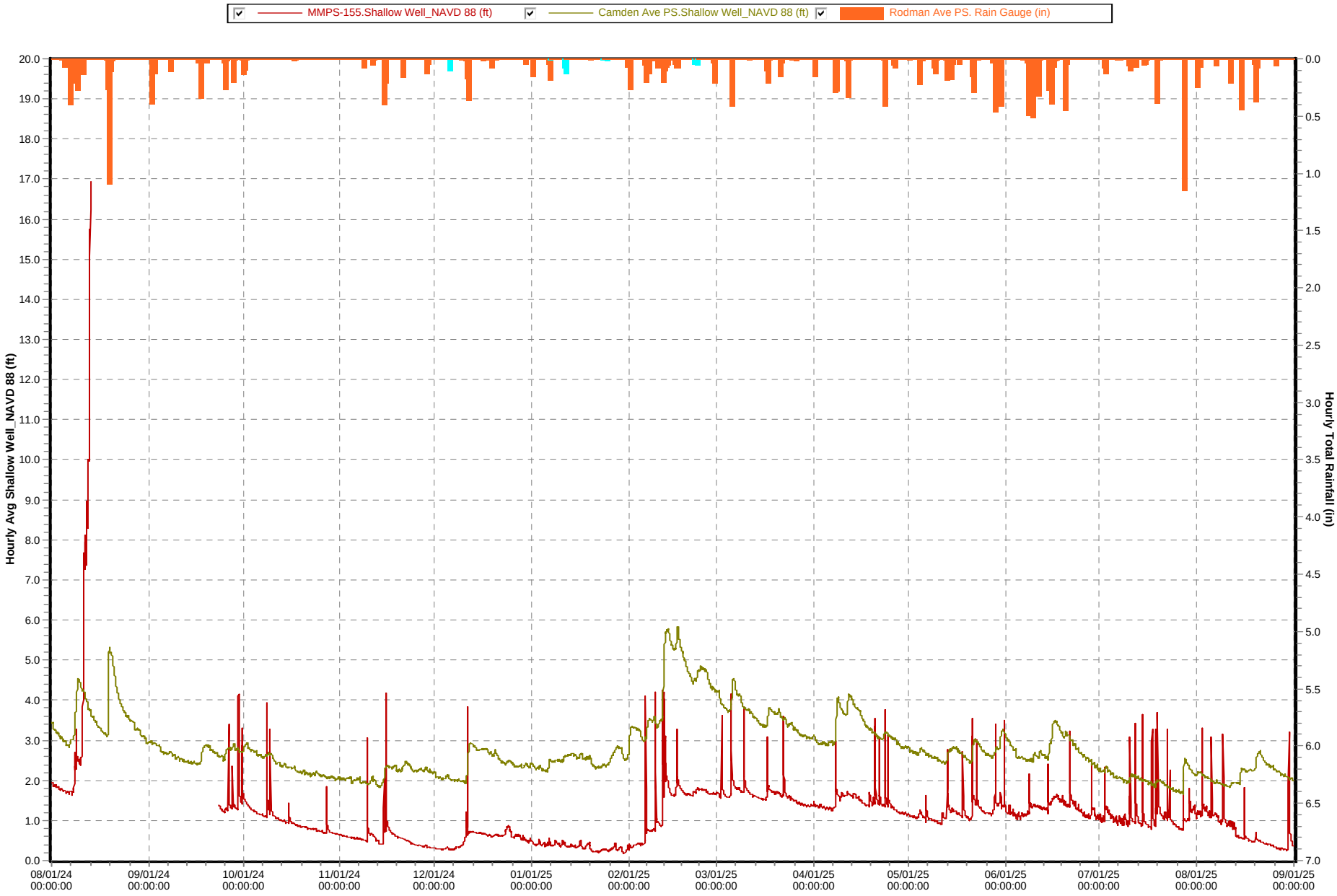
08/13/25 to 08/17/25



1 - year

South Shore Shallow Well Graphs

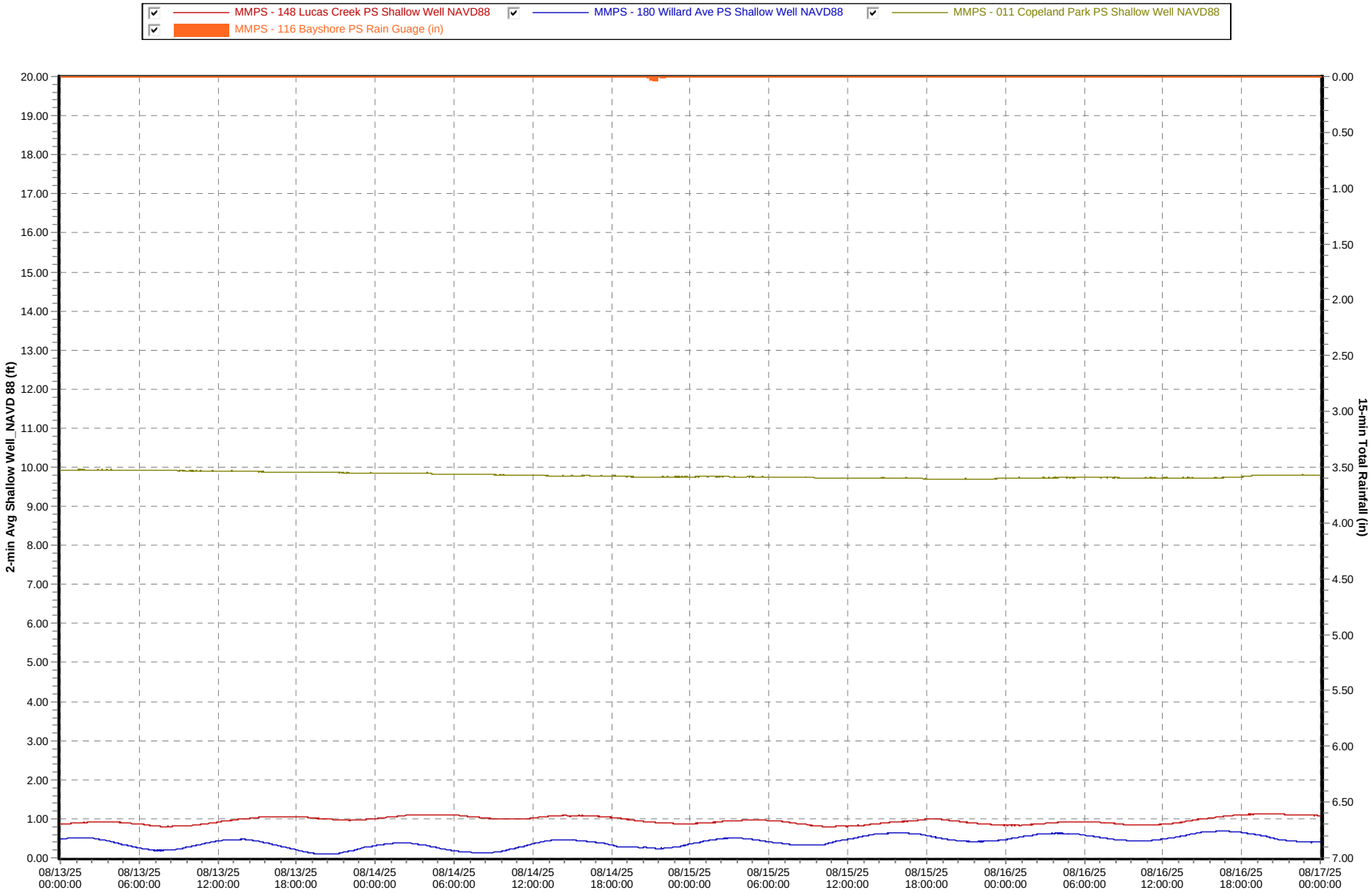
08/01/24 to 09/01/25



5 - Day

North Shore Shallow Well Graphs

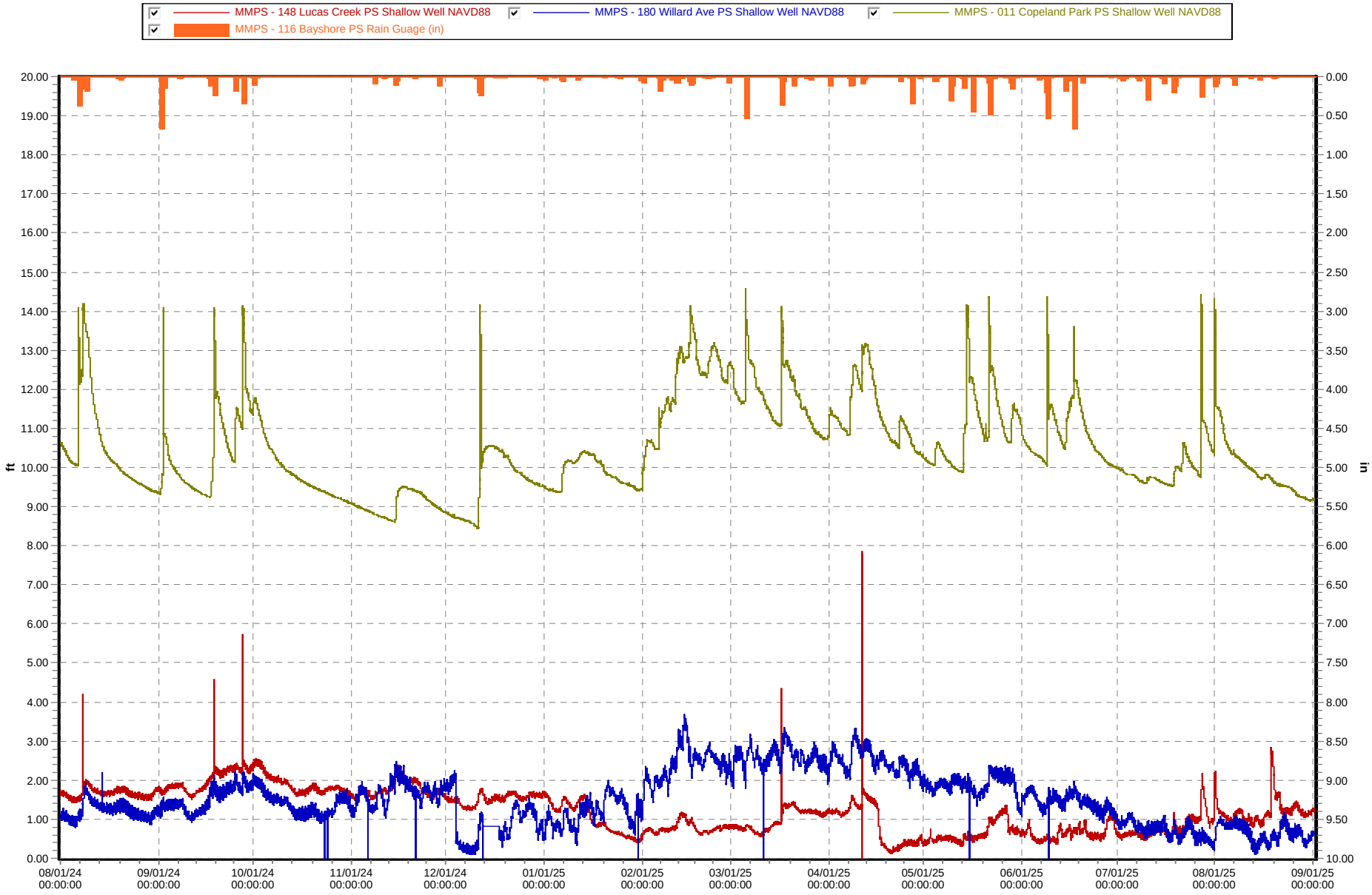
08/13/25 to 08/17/25



1 - Year

North Shore Shallow Well Graphs

MMPS-148 (08/01/24 to 09/01/25)



Hampton Roads Sanitation District

Post-Storm Report

8/18/2025 - 8/19/2025

HRSD
Sustainable, Innovative Wastewater Treatment

DISCLAIMER:

About the information on this HRSD server

This report is intended to provide the HRSD regional community summary information about the HRSD system during select wet weather events/anomalies. The attached report contains a selection of *official* Interceptor and Treatment data, as well as other environmental and meteorological data provided through other services. In an effort to enhance the HRSD system, the attached products have been made accessible on this server and care must be taken when using such products as they are intended for informational and not operational, legal, or other purposes.

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These data are part of HRSD’s governmental function and HRSD reserves all rights and immunities relating to these data and the terms and manner in which it is made available.

Summary

From August 18th through August 19th, there was an approximate 30-hour rainfall event that resulted in 9 sites on the North Shore and 8 sites on the South Shore that met a 1 to 100-year rainfall recurrence interval throughout the HRSD rain gauge network. Two weather systems coincided for this rainfall event. First a stalled front and area of low pressure brought heavy rain and flooding to the Peninsula and the Eastern Shore. Separate from this local rain system the next day Hurricane Erin was having some effects on the region as it passed offshore with some winds gusting to 30mph. Hurricane Erin also contributed to some higher tides and wave heights and brought some light rain to the area. North Shore sites averaged around 1.93 inches of rain while South Shore sites averaged around 1.12 inches. There was noticeable impact on groundwater levels compared to August 2024 . See Appendix C for the Historical Shallow Well comparison.

1 HRSD interceptor weather-related overflows(s) were reported

HRSD flow and pressure meters met data reliability requirements per the MOM program. For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 90% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 92.49%
- Aggregate pressure meter validity: 99.33%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Sanitary Sewer Overflows:

Locality

Location	Jurisdiction	Start Date
75 Jan Rae Circle	James City	08/19/2025

Treatment Plant Data: *(Data obtained from Telog Database)*
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
8/18/2025 – 8/19/2025

North Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Boat Harbor	8/18/2025	15.61	23:00	0.01
	8/19/2025	15.95	00:00	0.08
James River	8/18/2025	43.04	21:00	2.49
	8/19/2025	29.83	00:00	0.07
Williamsburg	8/18/2025	26.06	18:00	1.89
	8/19/2025	22.13	06:00	0.89
York River	8/18/2025	19.72	21:00	1.03
	8/19/2025	15.69	06:00	0.65

HRSD Treatment Plant Data
8/18/2025 – 8/19/2025

South Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Army Base	8/18/2025	11.03	20:00	0.00
	8/19/2025	14.36	19:00	0.46
Atlantic	8/18/2025	59.38	21:00	0.39
	8/19/2025	62.82	20:00	0.55
Nansemond	8/18/2025	31.95	23:00	1.74
	8/19/2025	29.18	00:00	0.43
VIP	8/18/2025	30.99	21:00	0.04
	8/19/2025	42.57	19:00	0.75

North Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Boat Harbor Treatment Plant Service Area[1]		
Bayshore PS	DNQ	HAMP
Bridge Street Tide Gate	DNQ	HAMP
Boat Harbor	DNQ	NEWP
Copeland Park PS	DNQ	NEWP
Hampton PS 159	DNQ	HAMP
James River Treatment Plant Service Area[1]		
Hilton School PS	5- to 10-year (2hr)	NEWP
James River Main Flow (Influent)	5- to 10-year (3hr)	NEWP
Lee Hall PRS	50- to 100-year (2hr)	NEWP
Lucas Creek PS	Disconnected	NEWP
Morrison PS	10- to 25-year (3hr)	NEWP
Williamsburg Treatment Plant Service Area[1]		
Ford's Colony	DNQ	JCSA
Fort Eustis PS	25- to 50-year (2hr)	NEWP
Greensprings PS	DNQ	JCA
Solarex	DNQ	JCSA
Williamsburg Main Flow (Effluent)	25- to 50-year (2hr)	JCSA
Williamsburg PS	DNQ	WILL
York Skimino Hills PS	DNQ	YORK
York River Treatment Plant Service Area[1]		
Big Bethel PRS	Disconnected	HAMP
Freeman PS	DNQ	HAMP
Gloucester Court House	DNQ	GLOU
Guinea Rd at Maryus Rd	DNQ	GLOU
Ordinary PCV	5-year (3hr)	GLOU
Poquoson PS 6	DNQ	POQ
Wolf Trappe PCV	DNQ	YORK
York Kiln Creek 1 PS	2- to 5-year (3hr)	YORK
York PS 15	DNQ	YORK
York River Main Flow (Influent)	DNQ	YORK
York River Crossing (York River Rectifier)	1-year (2hr)	GLOU

Note:

1. Typical treatment plant service area.

Newport News-Williamsburg International (PHF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
08/18/2025	22 mph	12 mph	7 mph	N	2.72
08/19/2025	18 mph	12 mph	6 mph	N	0.17

Tide:

- Yorktown USCG Training Center:
  - Storm Surge: An approximate 1.34-foot storm surge was observed.

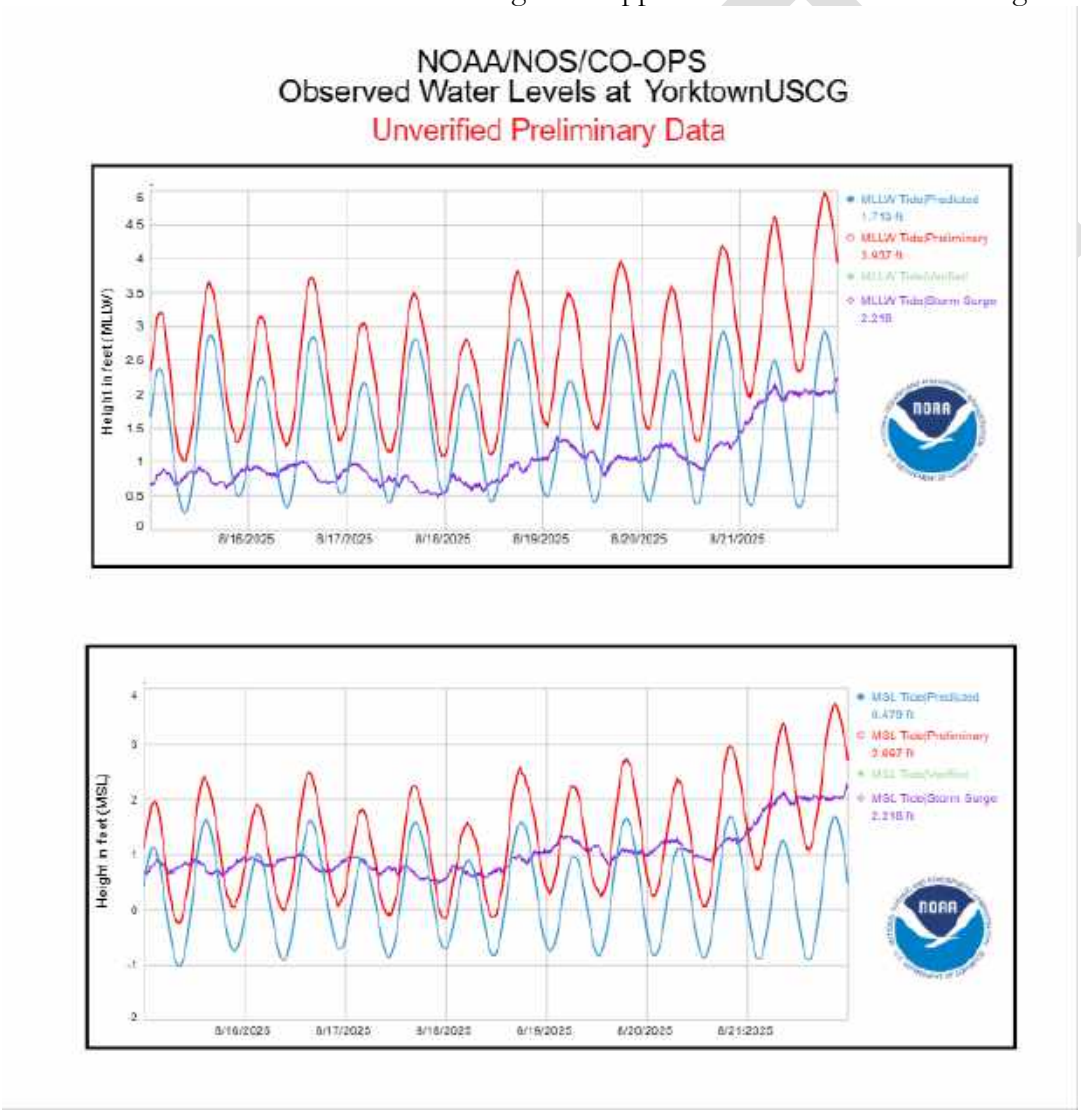


Figure 1. Preliminary data obtained from NOAA and a connection with Open Weather

- Sewells Point Tide Station:
  - Storm Surge: An approximate 1.49 foot storm surge was observed.

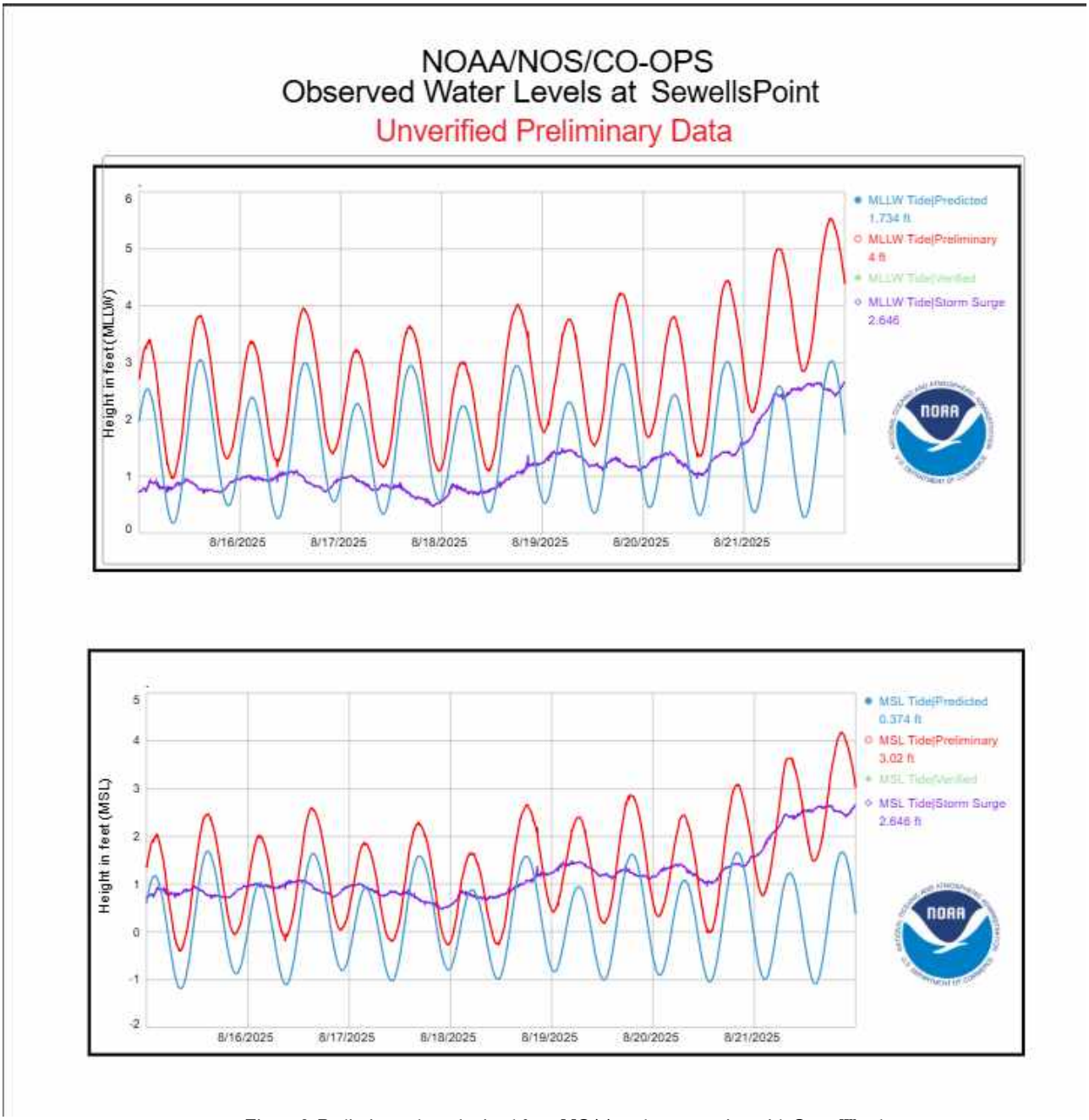


Figure 2. Preliminary data obtained from NOAA and a connection with Open Weather

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	DNQ	NORF
Taussig Blvd PS	DNQ	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	DNQ	CHES
Chesapeake PS 243	DNQ	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	DNQ	VAB
Elbow Rd PRS	DNQ	CHES
John B. Dey MLV-AT side	DNQ	VAB
Hickory EOL	DNQ	CHES
Kempsville PRS	DNQ	VAB
Lagomar IFM at Atlantic TP	DNQ	VAB
Laskin Rd PRS	DNQ	VAB
Pine Tree PRS	DNQ	VAB
Shipps Corner PRS	DNQ	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	DNQ	CHES
Independence PRS	DNQ	VAB
Northampton Blvd at Wesleyan Dr	DNQ	NORF
Providence PRS	DNQ	VAB
Shore Dr @ Jack Frost	DNQ	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	5- to 10-year (3hr)	CHES
Cedar Lane PS	1-year (3hr)	PORT
Cedar Rd at Dominon Blvd	DNQ	CHES
Chesapeake PS 20	DNQ	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	1-year (3hr)	SUFF
Deep Creek PRS	1-year (1hr)	CHES
Hill Point Rectifier	DNQ	SUFF
Lake Kilby WTP	DNQ	SUFF
Nansemond Main Flow (Effluent)	2- to 5-year (2hr)	SUFF
Pagan River Rectifier	DNQ	IOW
Pughsville PS	DNQ	SUFF
Route 337 PRS	DNQ	CHES
Smithfield High School	50- to 100-year (3hr)	IOW
Suffolk PS	DNQ	SUFF
Suffolk PS 81	2-year (2hr)	SUFF
Suffolk PS 87	2-year (3hr)	SUFF

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Windsor Duke St PS	Disconnected	IOW
VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	DNQ	NORF
Ferebee Avenue PS	DNQ	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	DNQ	PORT
Va Beach Blvd PS	DNQ	NORF
VIP Main Flow (Effluent)	DNQ	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
08/18/2025	23 mph	20 mph	7 mph	NE	0.12
08/19/2025	16 mph	12 mph	4 mph	NE	0.36

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 1.49 foot storm surge was observed.

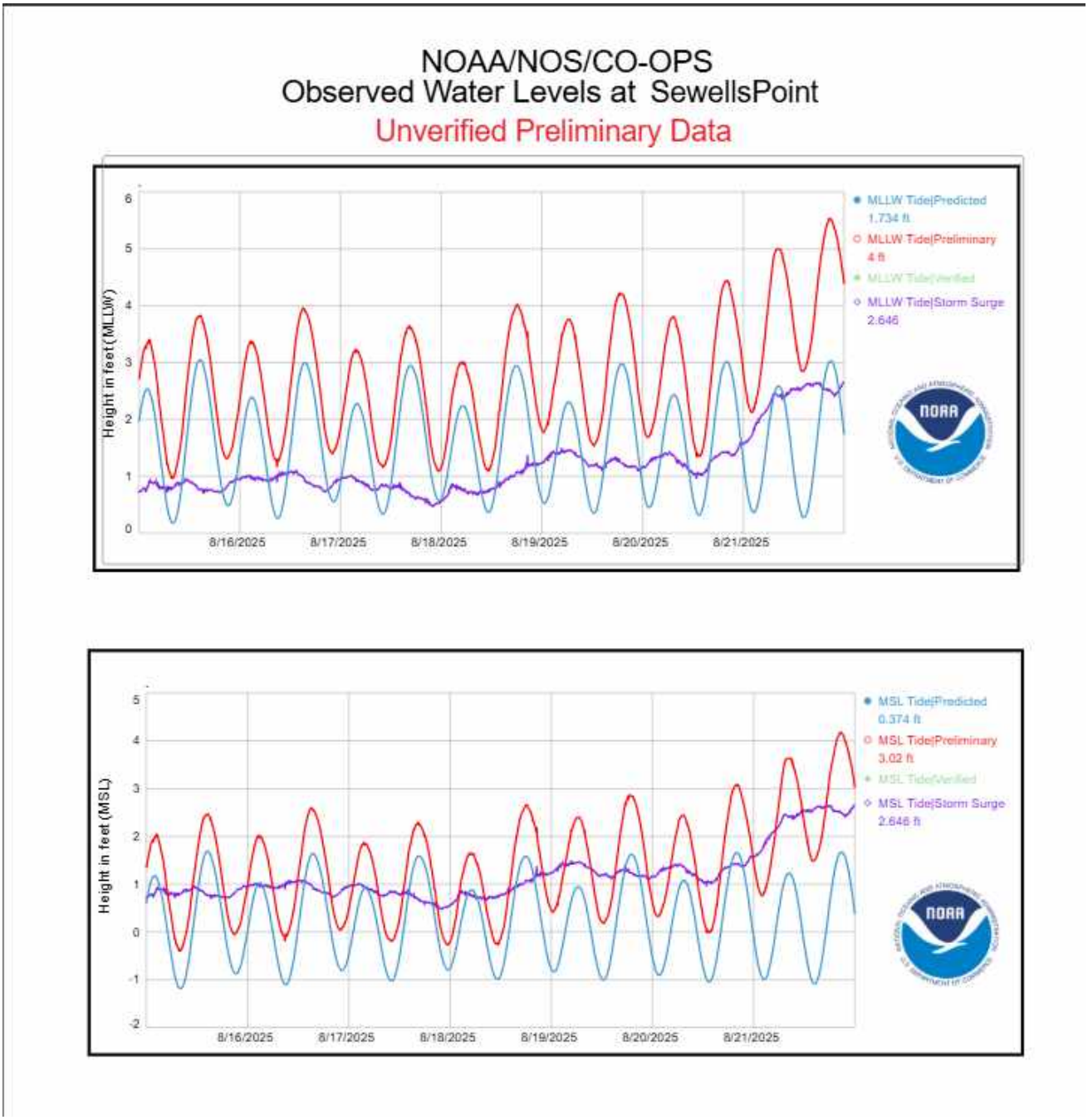


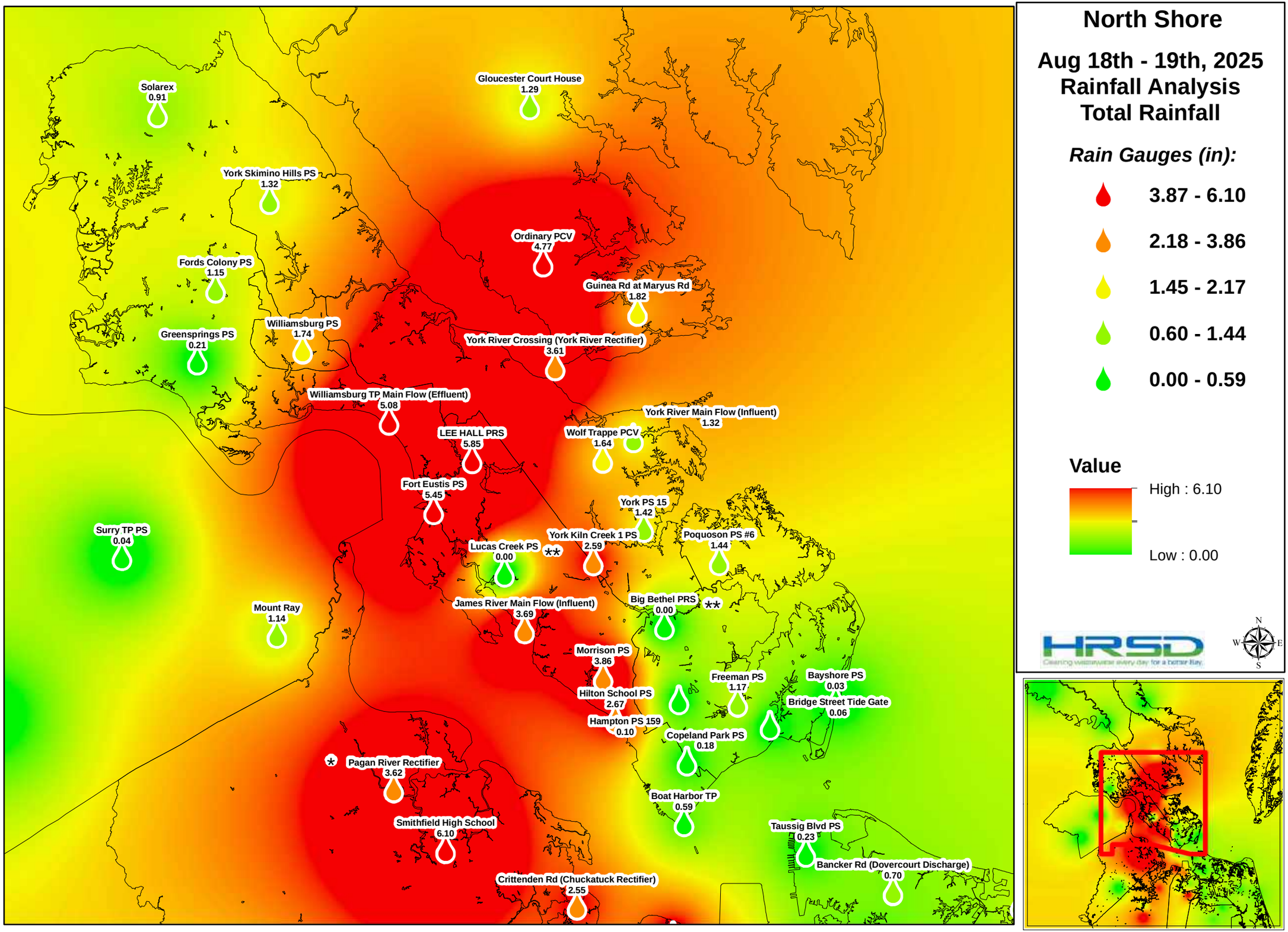
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

Shallow Well Analysis:

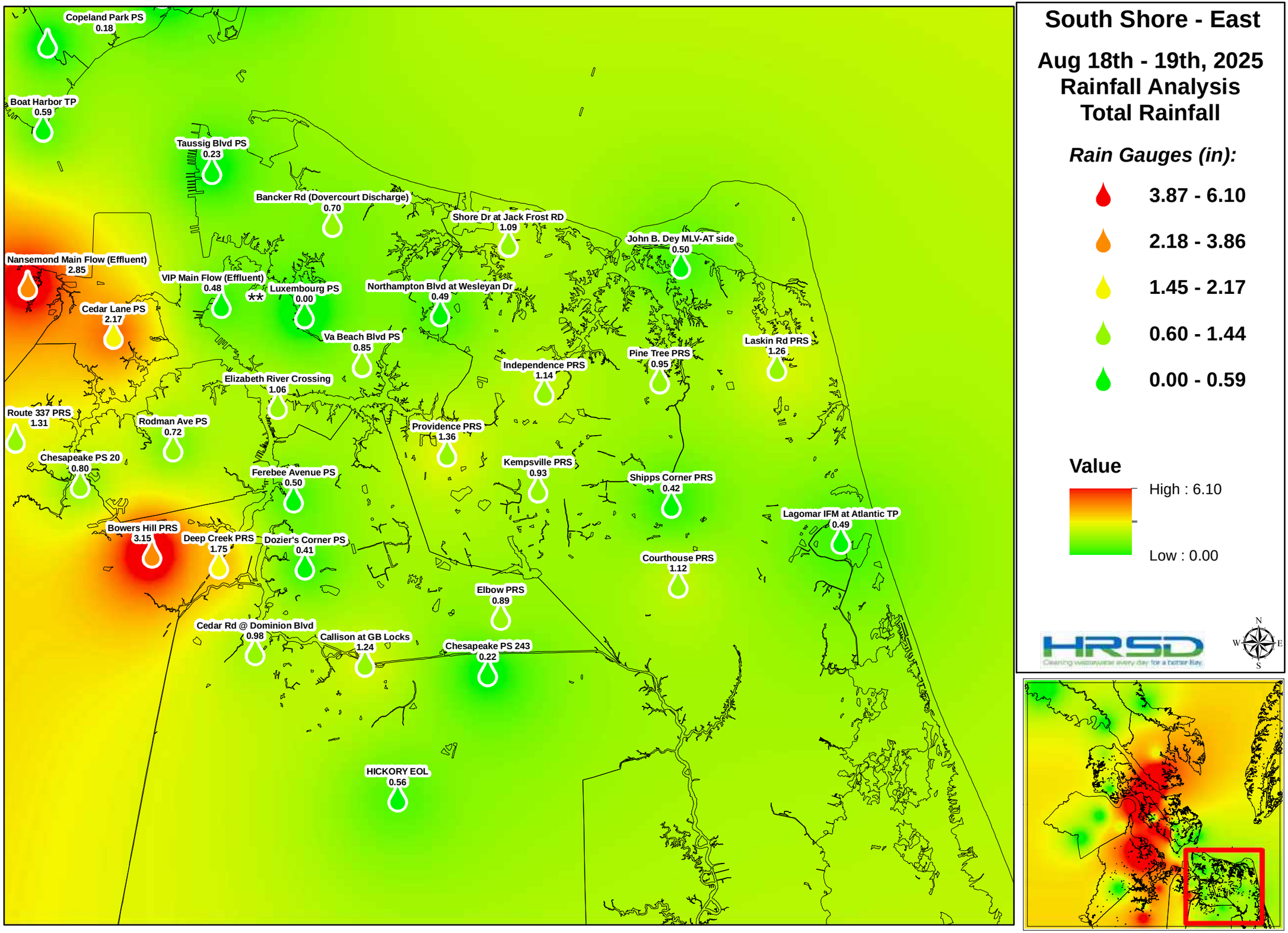
Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

HRSD Rain Gauge Network
Rainfall Totals



*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



South Shore - East

Aug 18th - 19th, 2025 Rainfall Analysis Total Rainfall

Rain Gauges (in):

- **3.87 - 6.10**
- **2.18 - 3.86**
- **1.45 - 2.17**
- **0.60 - 1.44**
- **0.00 - 0.59**

Value

High : 6.10

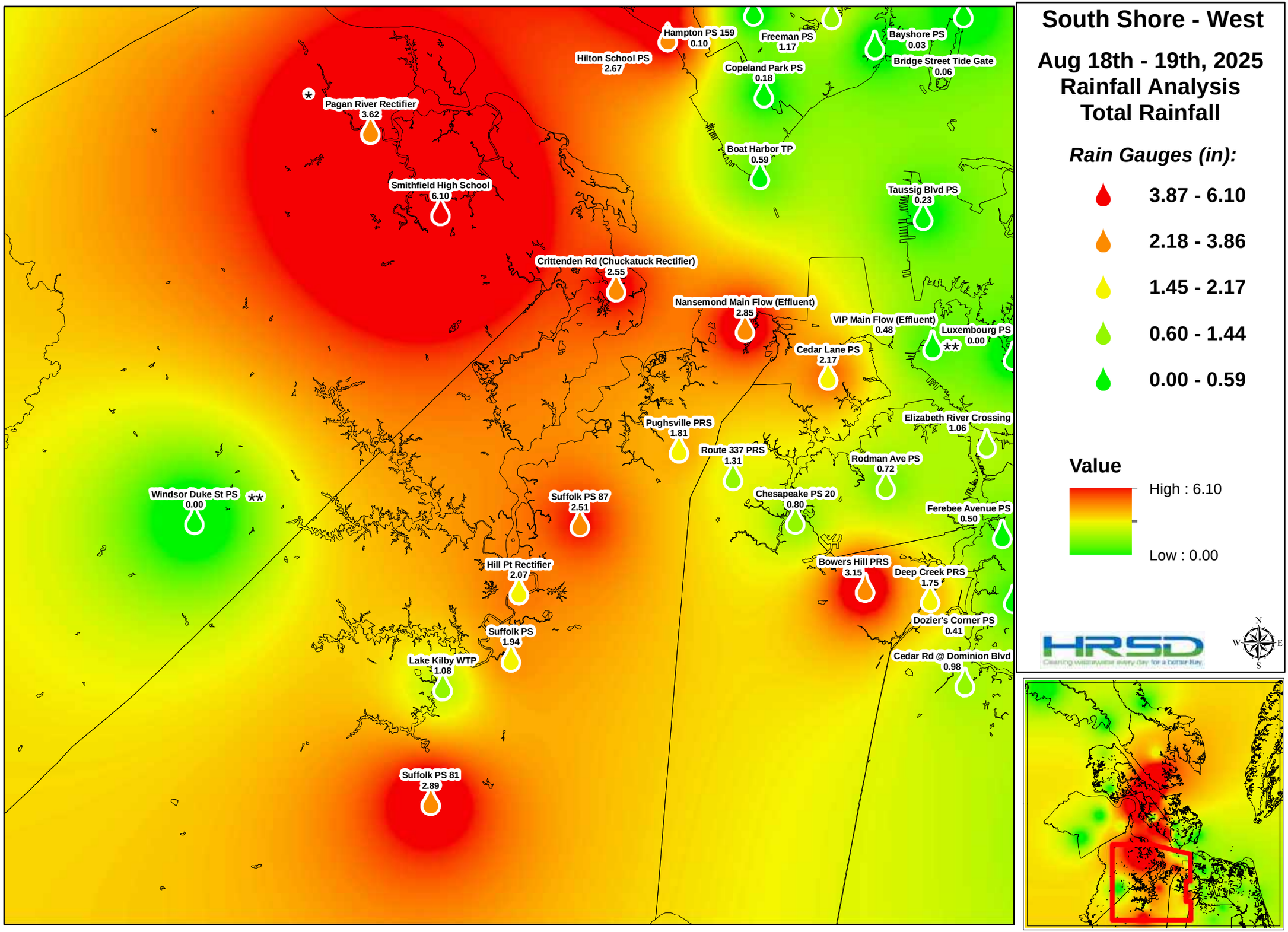
Low : 0.00

HRSD

Cleaning wastewater every day for a better Bay.

N W E S

*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



South Shore - West

Aug 18th - 19th, 2025 Rainfall Analysis Total Rainfall

Rain Gauges (in):

- **3.87 - 6.10**
- **2.18 - 3.86**
- **1.45 - 2.17**
- **0.60 - 1.44**
- **0.00 - 0.59**

Value

High : 6.10

Low : 0.00

HRSD

Cleaning wastewater every day for a better Bay.

N W E S

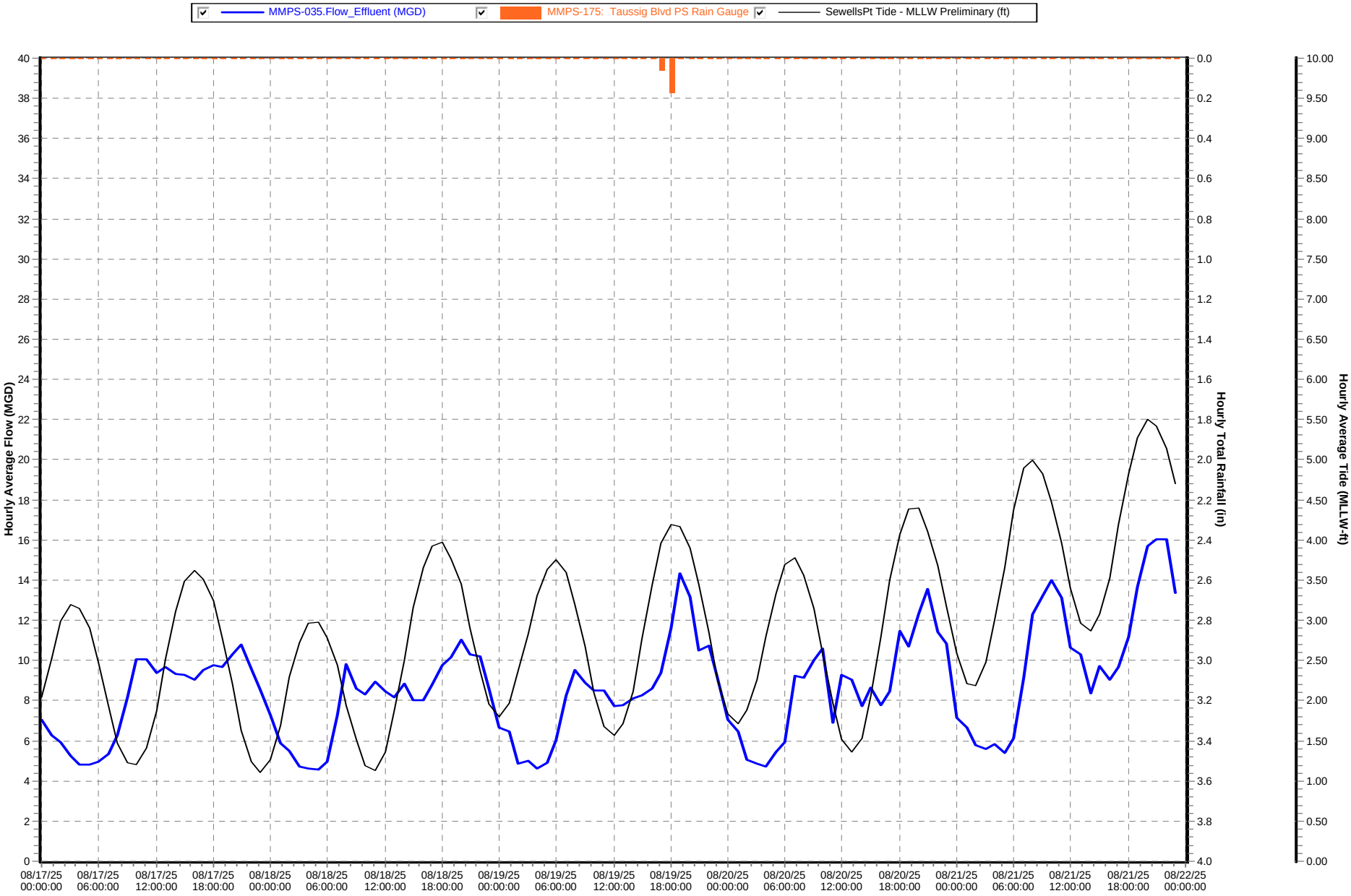
*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used

Appendix B

HRSD Treatment Plant Flows

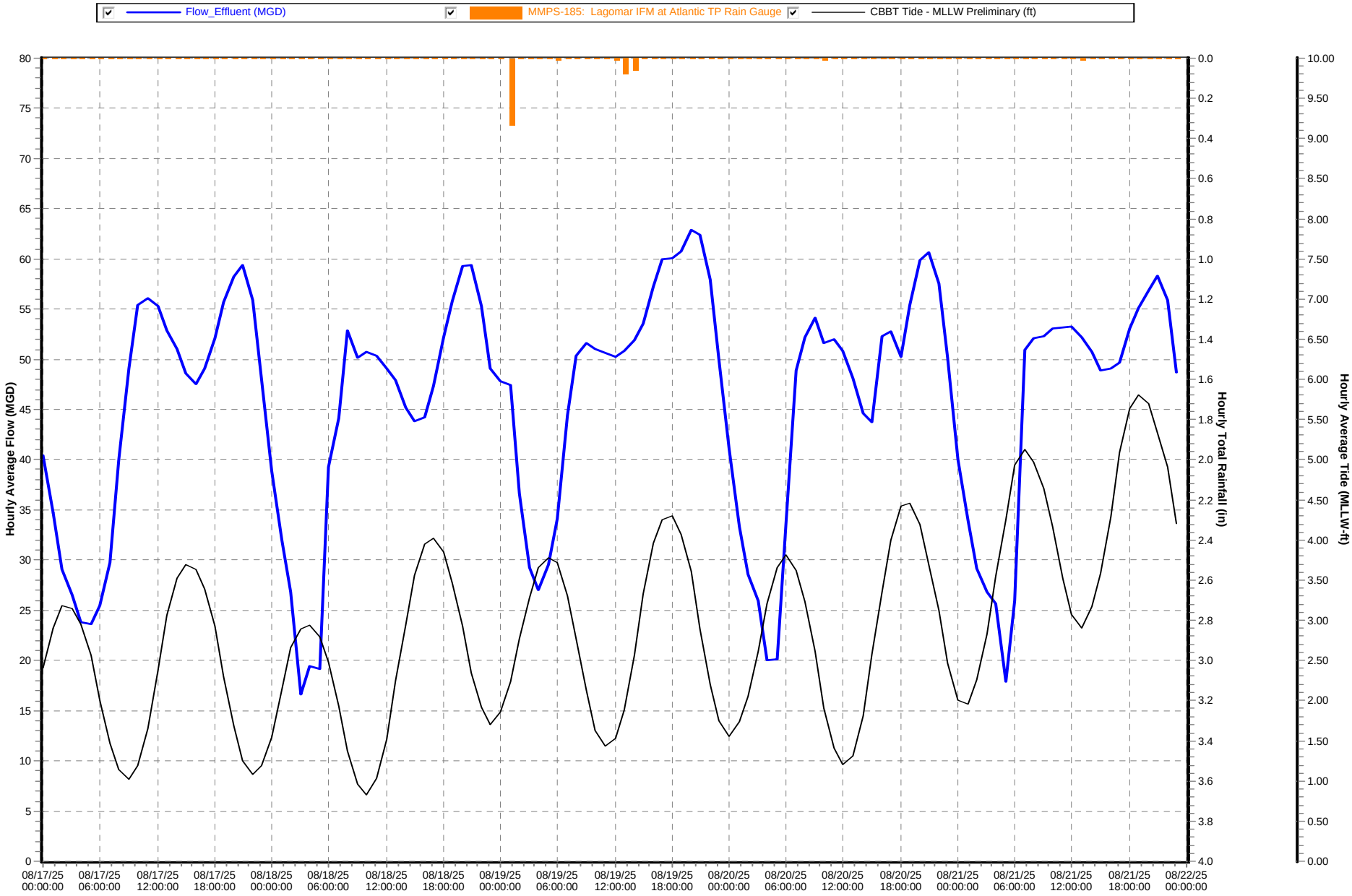
Army Base Treatment Plant

MMPS-035 (08/17/25 to 08/22/25)



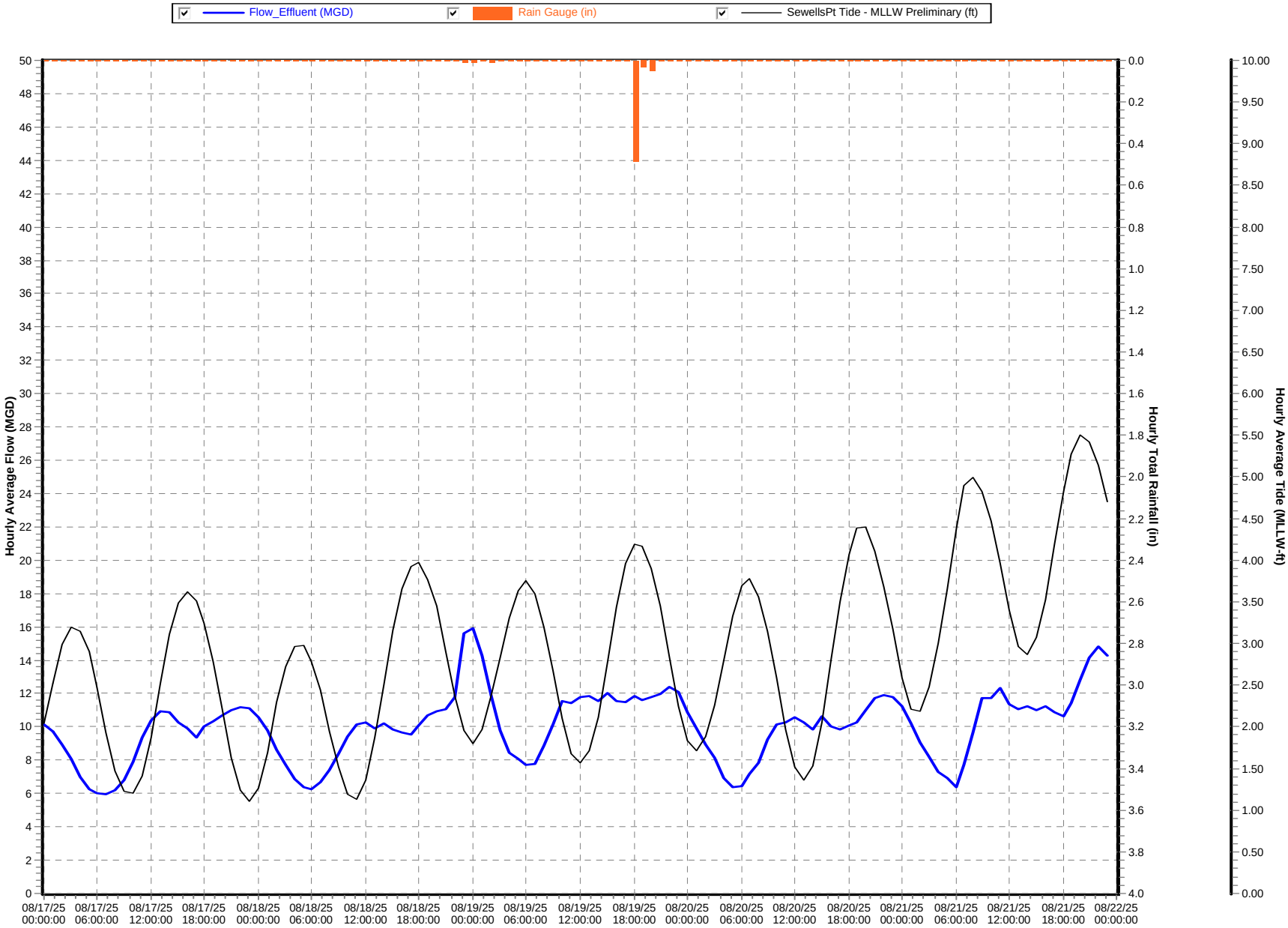
Atlantic Treatment Plant

MMPS-071 (08/17/25 to 08/22/25)



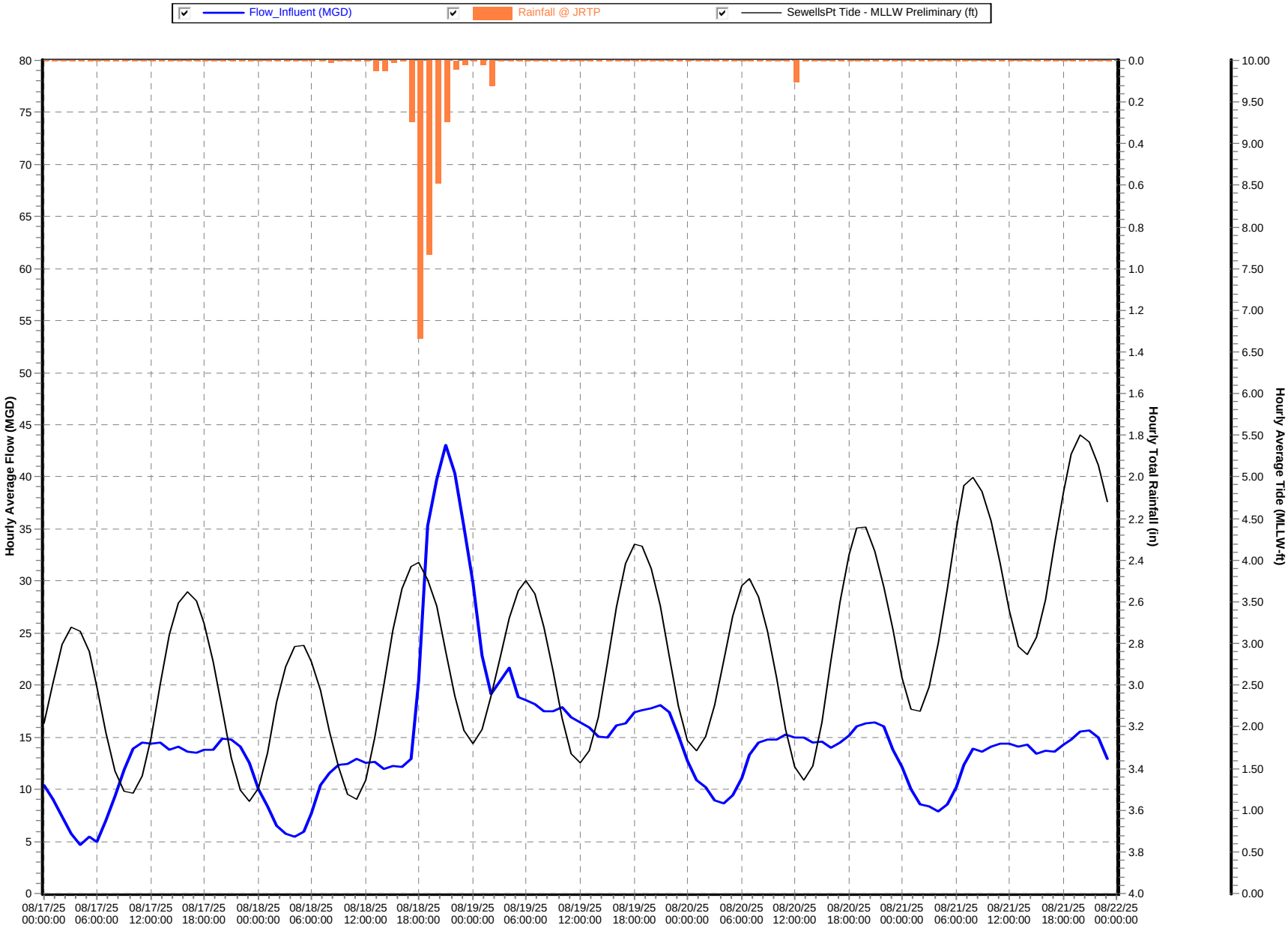
Boat Harbor Treatment Plant

MMPS-075 (08/17/25 to 08/22/25)



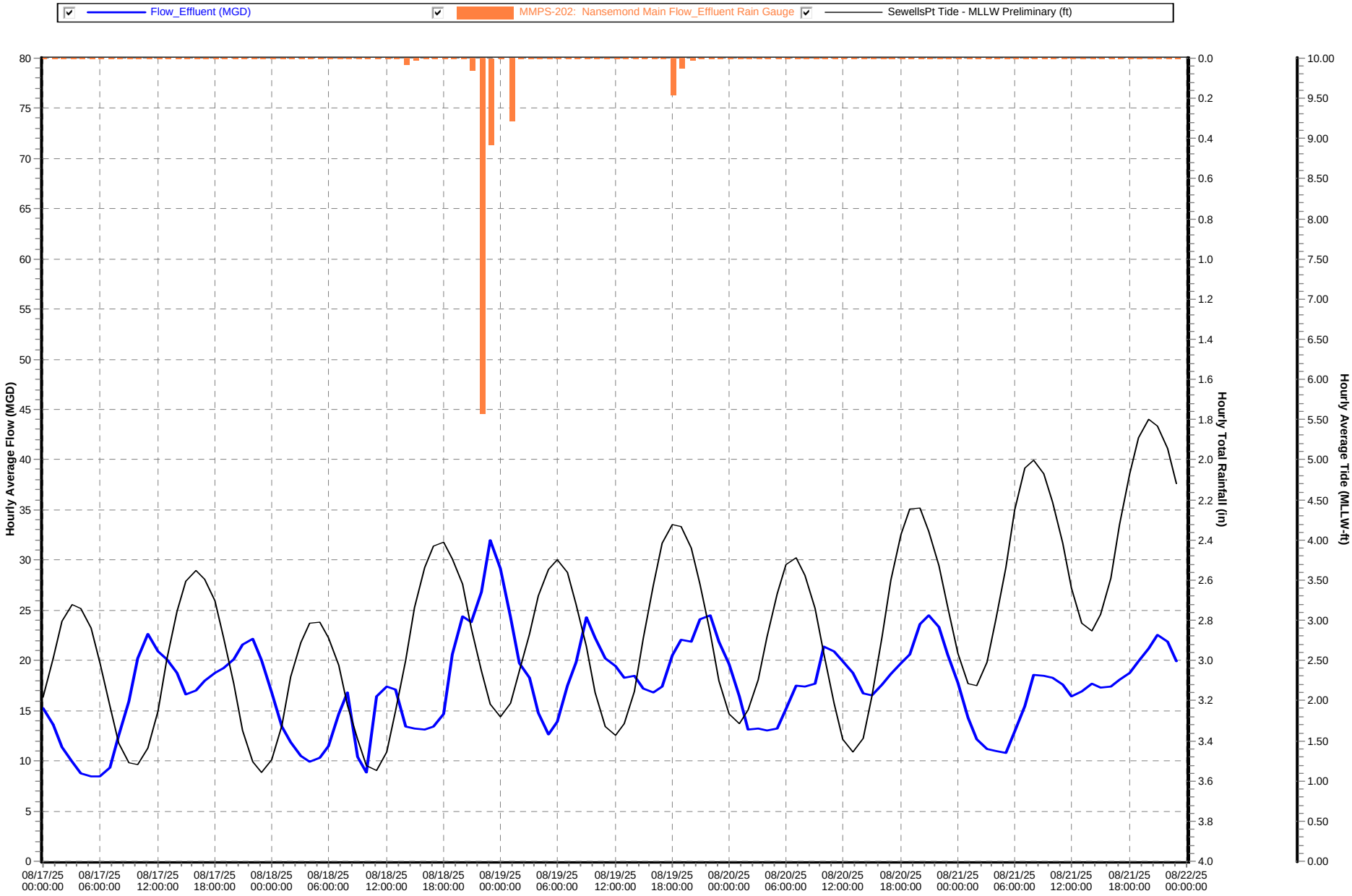
James River Treatment Plant

MMPS-184 (08/17/25 to 08/22/25)



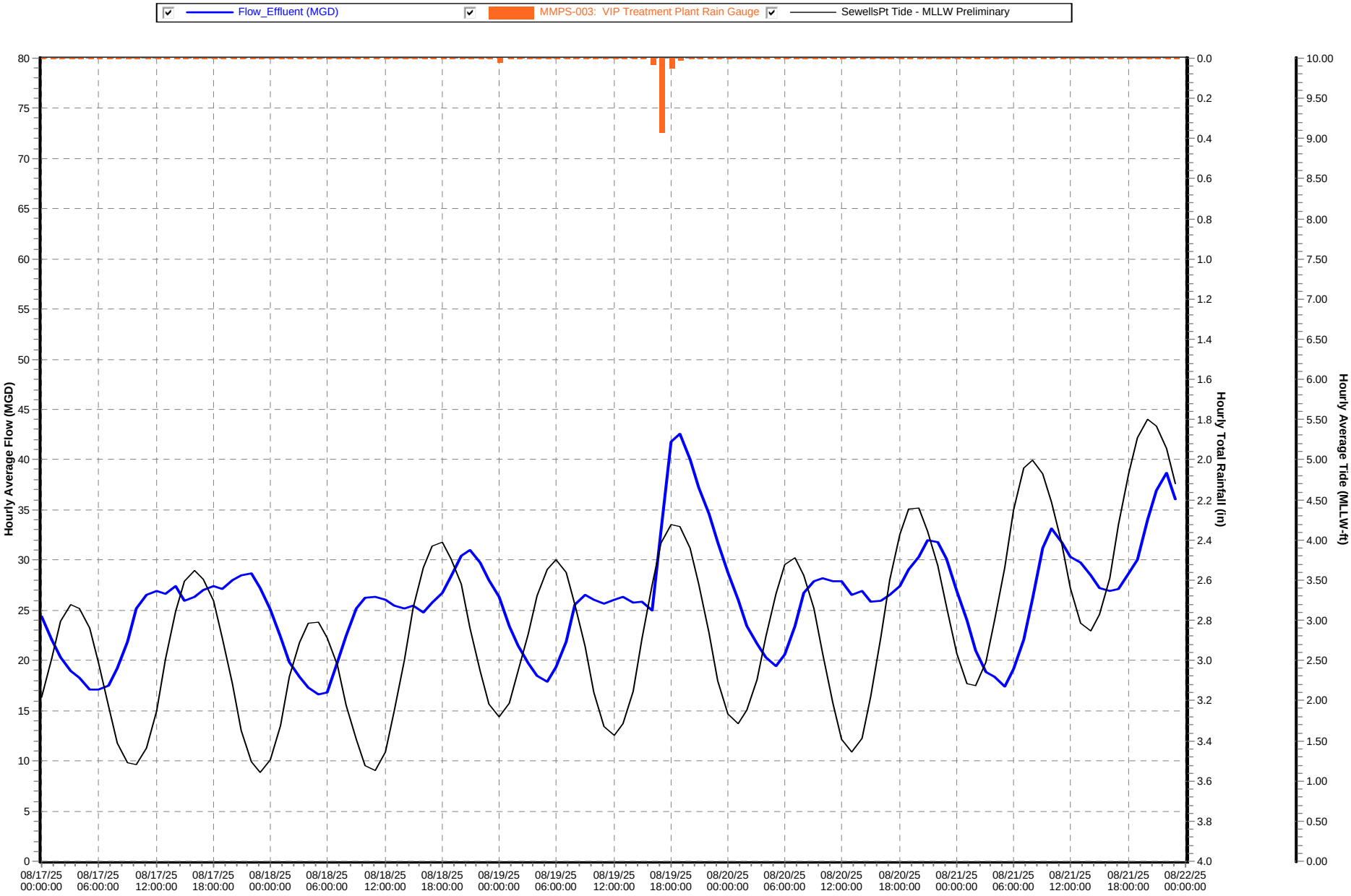
Nansemond Treatment Plant

MMPS-202 (08/17/25 to 08/22/25)



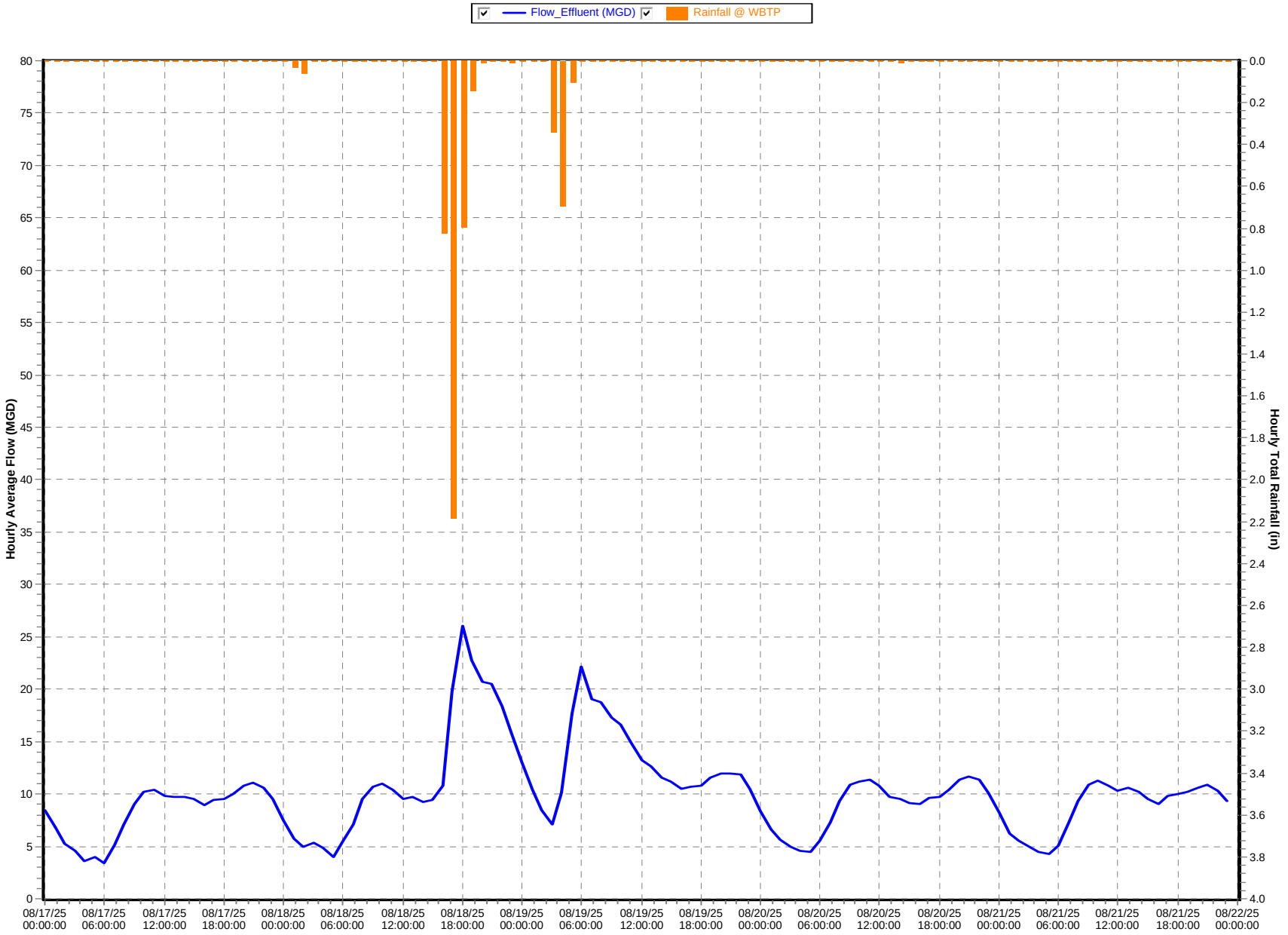
VIP Treatment Plant

MMPS-003 (08/17/25 to 08/22/25)



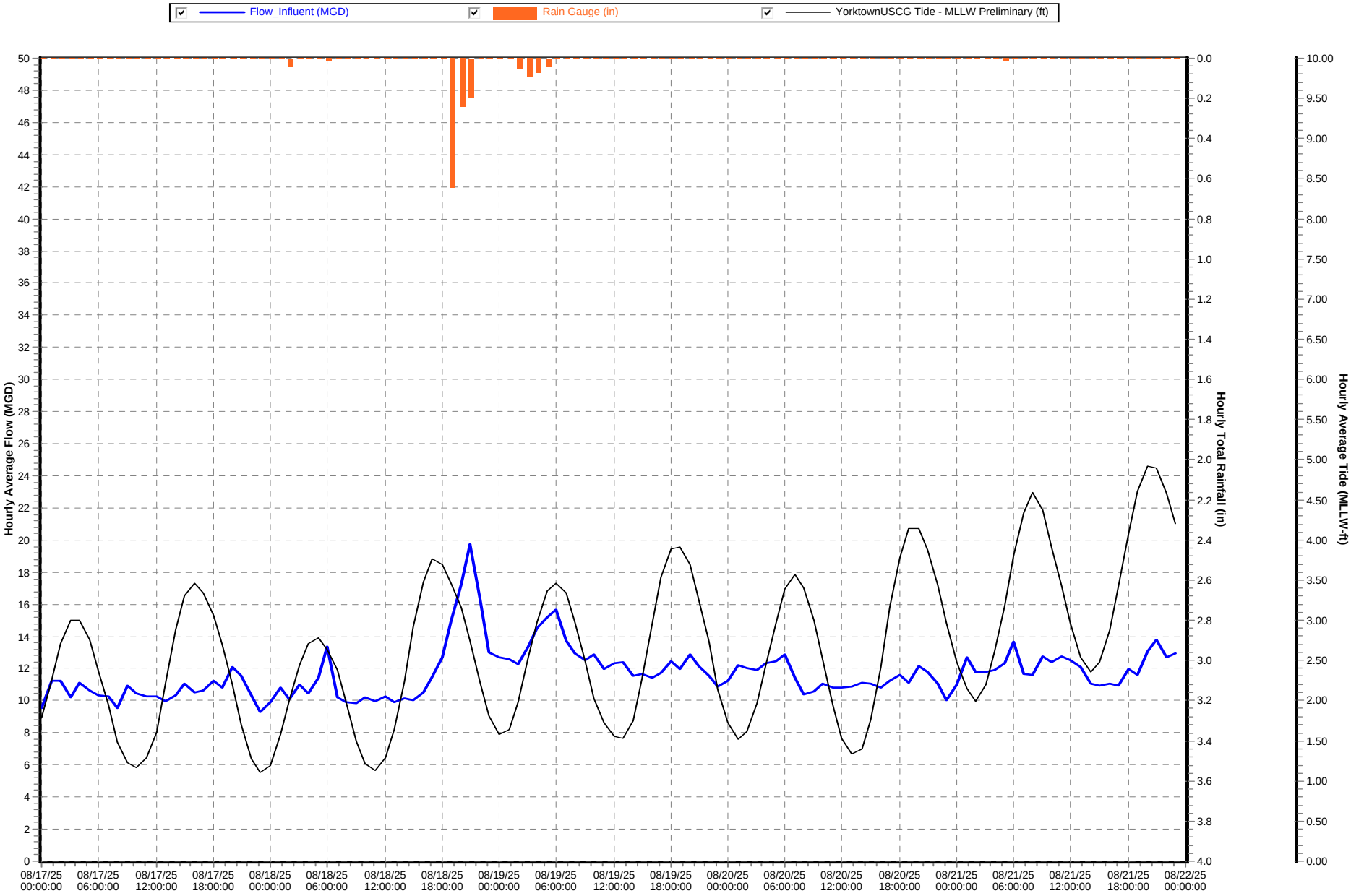
Williamsburg Treatment Plant

MMPS-222 (08/17/25 to 08/22/25)



York River Treatment Plant

MMPS-235 (08/17/25 to 08/22/25)



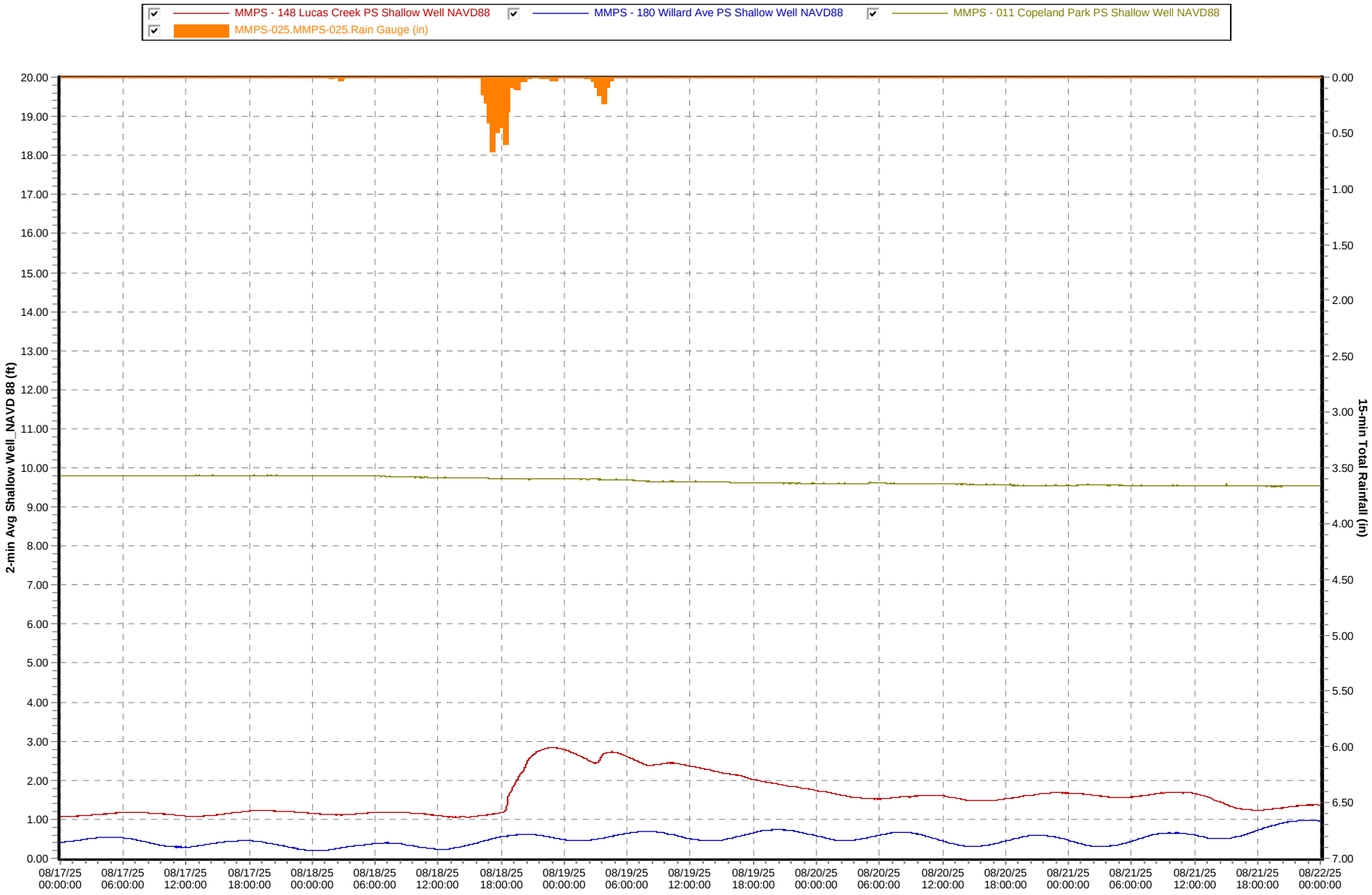
Appendix C

Shallow Well Analysis

5 Day

North Shore Shallow Well Graphs

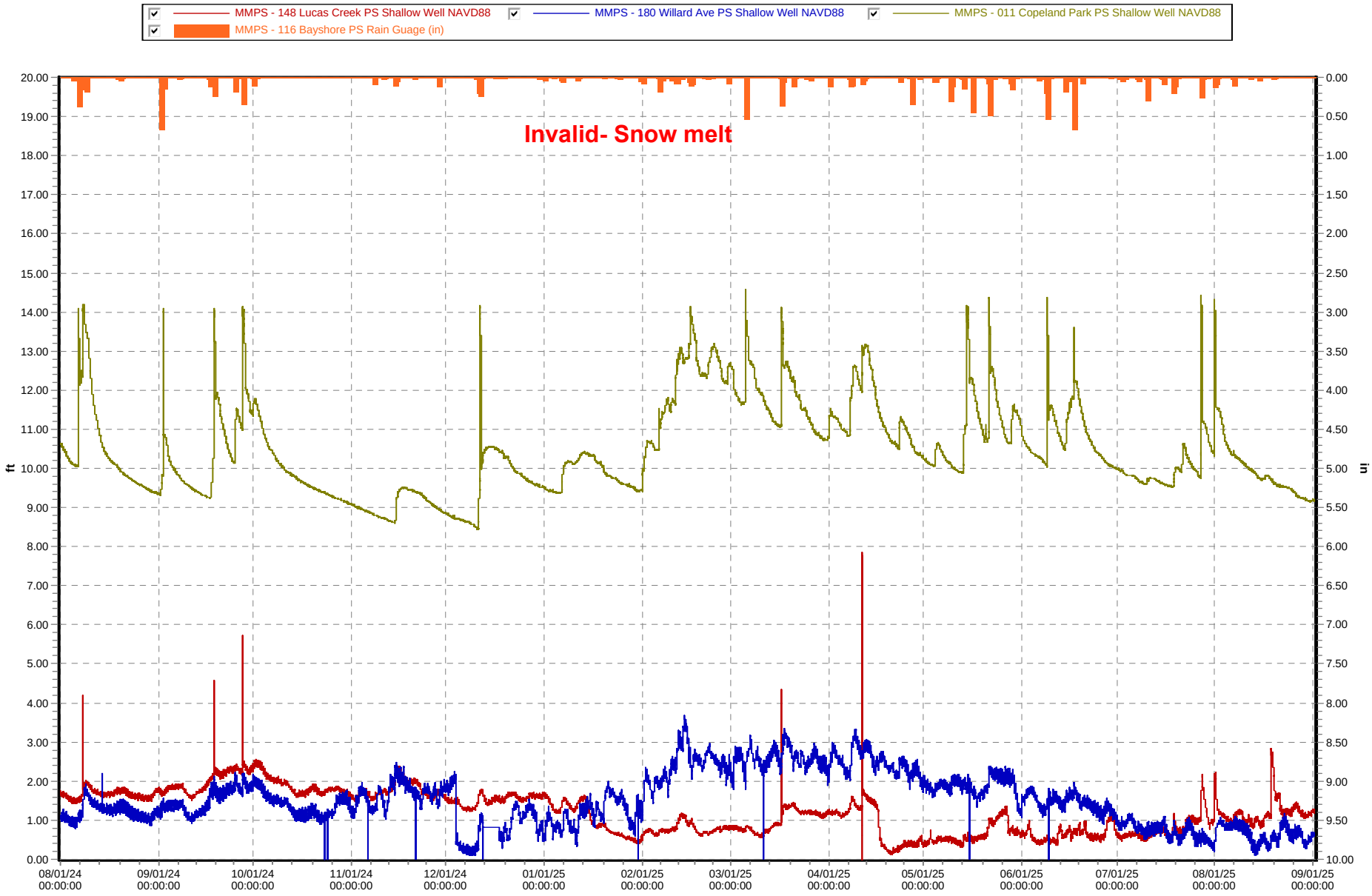
08/17/25 to 08/22/25



1 Year

North Shore Shallow Well Graphs

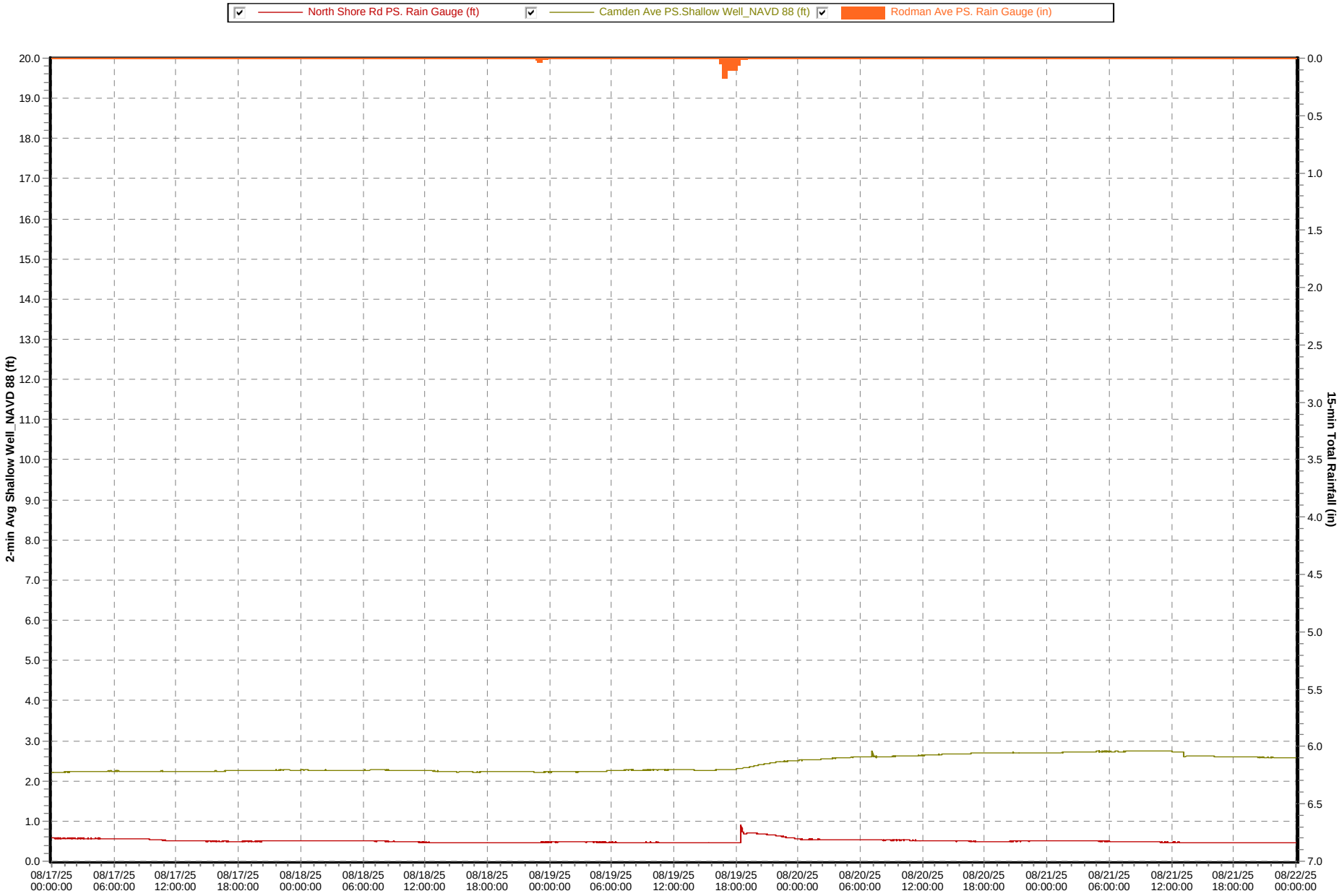
MMPS-148 (08/01/24 to 09/01/25)



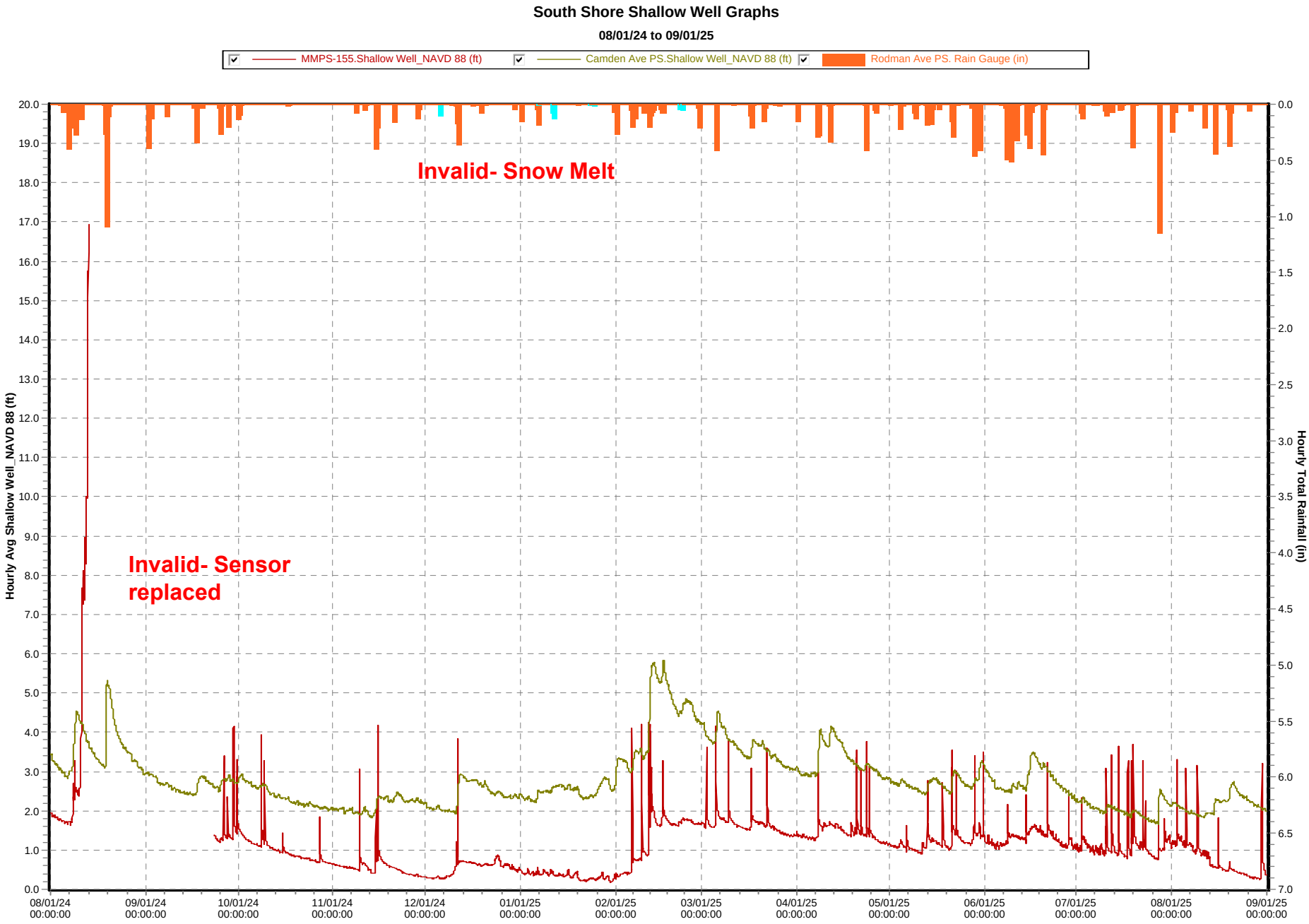
5 Day

South Shore Shallow Well Graphs

08/17/25 to 08/22/25



1 Year


South Shore Shallow Well Graphs
08/01/24 to 09/01/25
MMPS-155.Shallow Well_NAVD 88 (ft)
Camden Ave PS.Shallow Well_NAVD 88 (ft)
Rodman Ave PS. Rain Gauge (in)
Invalid- Snow Melt
Invalid- Sensor replaced
Hourly Avg Shallow Well_NAVD 88 (ft)
Hourly Total Rainfall (in)
20.0
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
6.5
7.0
08/01/24 00:00:00
09/01/24 00:00:00
10/01/24 00:00:00
11/01/24 00:00:00
12/01/24 00:00:00
01/01/25 00:00:00
02/01/25 00:00:00
03/01/25 00:00:00
04/01/25 00:00:00
05/01/25 00:00:00
06/01/25 00:00:00
07/01/25 00:00:00
08/01/25 00:00:00
09/01/25 00:00:00

Hampton Roads Sanitation District

Post-Storm Report

9/15/2025 - 9/18/2025

HRSD
Sustainable, Innovative Wastewater Treatment

DISCLAIMER:

About the information on this HRSD server

This report is intended to provide the HRSD regional community summary information about the HRSD system during select wet weather events/anomalies. The attached report contains a selection of *official* Interceptor and Treatment data, as well as other environmental and meteorological data provided through other services. In an effort to enhance the HRSD system, the attached products have been made accessible on this server and care must be taken when using such products as they are intended for informational and not operational, legal, or other purposes.

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Summary

From September 15th through September 18th, there was an approximate 68-hour rainfall event that resulted in 20 sites on the North Shore and 35 sites on the South Shore that met a 1 to 100-year rainfall recurrence interval throughout the HRSD rain gauge network. An area of low pressure offshore was the catalyst for this rain event. It brought gusts of 25 to 35mph and scattered showers on the first day. Throughout this event there was also minor flooding experienced by some parts of the region. The next day the area of low-pressure shifted northwest closer to shore and brought heavy downpours to the area especially around the Virginia Beach area. This low-pressure system interacting with a high-pressure system more northwest continued causing strong gusts. A flood watch was issued for most of the region until late in the night some areas in South Shore experiencing flooding due to heavy rainfall coinciding with high tide. As the area of low pressure slowly moved north and offshore it brought a few scattered showers on the final day before the weather cleared up. North Shore sites averaged around 3.23 inches of rain while South Shore sites averaged around 3.33 inches. There was significant impact on groundwater levels compared to September 2024. See Appendix C for the Historical Shallow Well comparison.

1 HRSD interceptor weather-related overflows(s) were reported

1 Locality interceptor weather-related overflows(s) were reported

HRSD flow and pressure meters met data reliability requirements per the MOM program. For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 90% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 91.82%
- Aggregate pressure meter validity: 99.37%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Sanitary Sewer Overflows:

HRSD

Location	Jurisdiction	Start Date
79 E. College Pl	Hampton	09/16/2025

Locality

Location	Jurisdiction	Start Date
304 Water Fowl Drive	York	09/17/2025

Treatment Plant Data: *(Data obtained from Telog Database)*
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
9/15/2025 – 9/18/2025

North Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Boat Harbor	9/15/2025	11.05	22:00	0.10
	9/16/2025	30.97	21:00	2.48
	9/17/2025	32.38	00:00	0.01
	9/18/2025	13.15	00:00	0.00
James River	9/15/2025	15.72	21:00	0.16
	9/16/2025	43.57	21:00	3.04
	9/17/2025	32.43	00:00	0.02
	9/18/2025	16.11	07:00	0.01
Williamsburg	9/15/2025	9.77	11:00	0.02
	9/16/2025	*	*	*
	9/17/2025	14.79	11:00	0.14
	9/18/2025	8.88	00:00	0.03
York River	9/15/2025	11.80	19:00	0.07
	9/16/2025	25.86	20:00	3.69
	9/17/2025	23.43	00:00	0.10
	9/18/2025	18.53	06:00	0.01

*Communications loss at Williamsburg

HRSD Treatment Plant Data
9/15/2025 – 9/18/2025

South Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Army Base	9/15/2025	13.52	18:00	0.25
	9/16/2025	25.69	19:00	3.42
	9/17/2025	14.39	20:00	0.04
	9/18/2025	10.15	07:00	0.00
Atlantic	9/15/2025	56.84	13:00	0.26
	9/16/2025	120.22	17:00	4.95
	9/17/2025	77.58	00:00	0.04
	9/18/2025	55.46	07:00	0.00
Nansemond	9/15/2025	22.95	13:00	0.45
	9/16/2025	24.63	15:00	2.66
	9/17/2025	25.48	00:00	0.02
	9/18/2025	20.50	07:00	0.00
VIP	9/15/2025	32.84	12:00	0.35
	9/16/2025	60.19	19:00	3.12
	9/17/2025	45.98	00:00	0.02
	9/18/2025	30.07	00:00	0.00

North Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Boat Harbor Treatment Plant Service Area[1]		
Bayshore PS	2- to 5-year (24hr)	HAMP
Bridge Street Tide Gate	Invalid	HAMP
Boat Harbor	DNQ	NEWP
Copeland Park PS	2-year (24hr)	NEWP
Hampton PS 159	Invalid	HAMP
James River Treatment Plant Service Area[1]		
Hilton School PS	1- to 2-year (24hr)	NEWP
James River Main Flow (Influent)	1- to 2-year (24hr)	NEWP
Lee Hall PRS	Invalid	NEWP
Lucas Creek PS	Disconnected	NEWP
Morrison PS	2- to 5-year (24hr)	NEWP
Williamsburg Treatment Plant Service Area[1]		
Ford's Colony	1-year (24hr)	JCSA
Fort Eustis PS	1- to 2-year (24hr)	NEWP
Greensprings PS	1- to 2-year (24hr)	JCA
Solarex	DNQ	JCSA
Williamsburg Main Flow (Effluent)	Invalid	JCSA
Williamsburg PS	2- to 5-year (24hr)	WILL
York Skimino Hills PS	2- to 5-year (24hr)	YORK
York River Treatment Plant Service Area[1]		
Big Bethel PRS	Disconnected	HAMP
Freeman PS	2- to 5-year (24hr)	HAMP
Gloucester Court House	2- to 5-year (24hr)	GLOU
Guinea Rd at Maryus Rd	2- to 5-year (24hr)	GLOU
Ordinary PCV	2- to 5-year (24hr)	GLOU
Poquoson PS 6	2- to 5-year (24hr)	POQ
Wolf Trappe PCV	5- to 10-year (24hr)	YORK
York Kiln Creek 1 PS	5- to 10-year (24hr)	YORK
York PS 15	2- to 5-year (24hr)	YORK
York River Main Flow (Influent)	2- to 5-year (24hr)	YORK
York River Crossing (York River Rectifier)	1- to 2-year (24hr)	GLOU

Note:

1. Typical treatment plant service area.

Newport News-Williamsburg International (PHF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
9/15/2025	13 mph	9 mph	-	NE	0.16
9/16/2025	18 mph	12 mph	-	SW	4.19
9/17/2025	16 mph	6 mph	-	S	0.00
9/18/2025	7 mph	4 mph	-	SW	0.03

Tide:

- Yorktown USCG Training Center:
  - Storm Surge: An approximate 1.69-foot storm surge was observed.

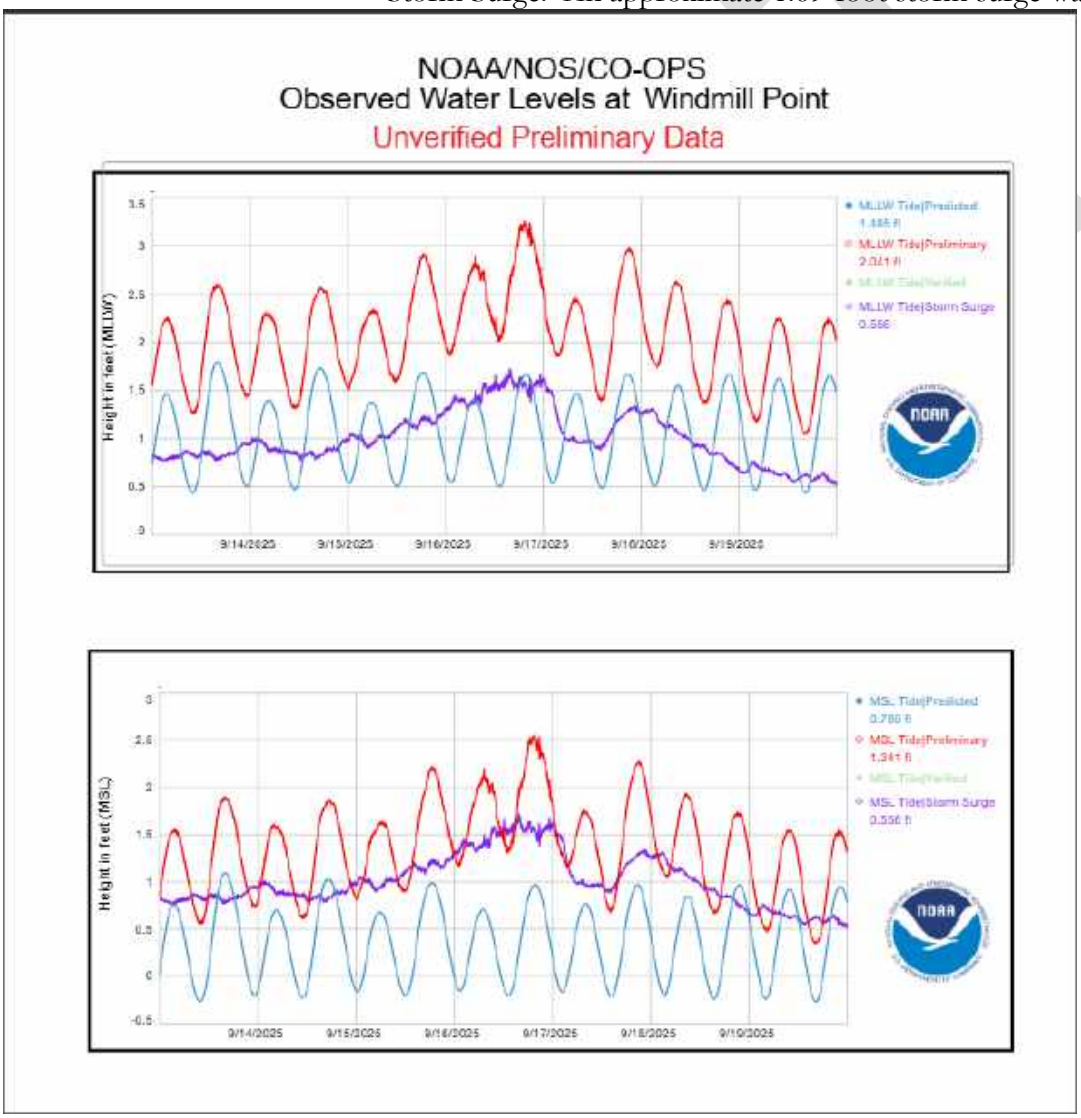


Figure 1. Preliminary data obtained from NOAA and a connection with Open Weather

- Sewells Point Tide Station:
  - Storm Surge: An approximate 2.58 foot storm surge was observed.

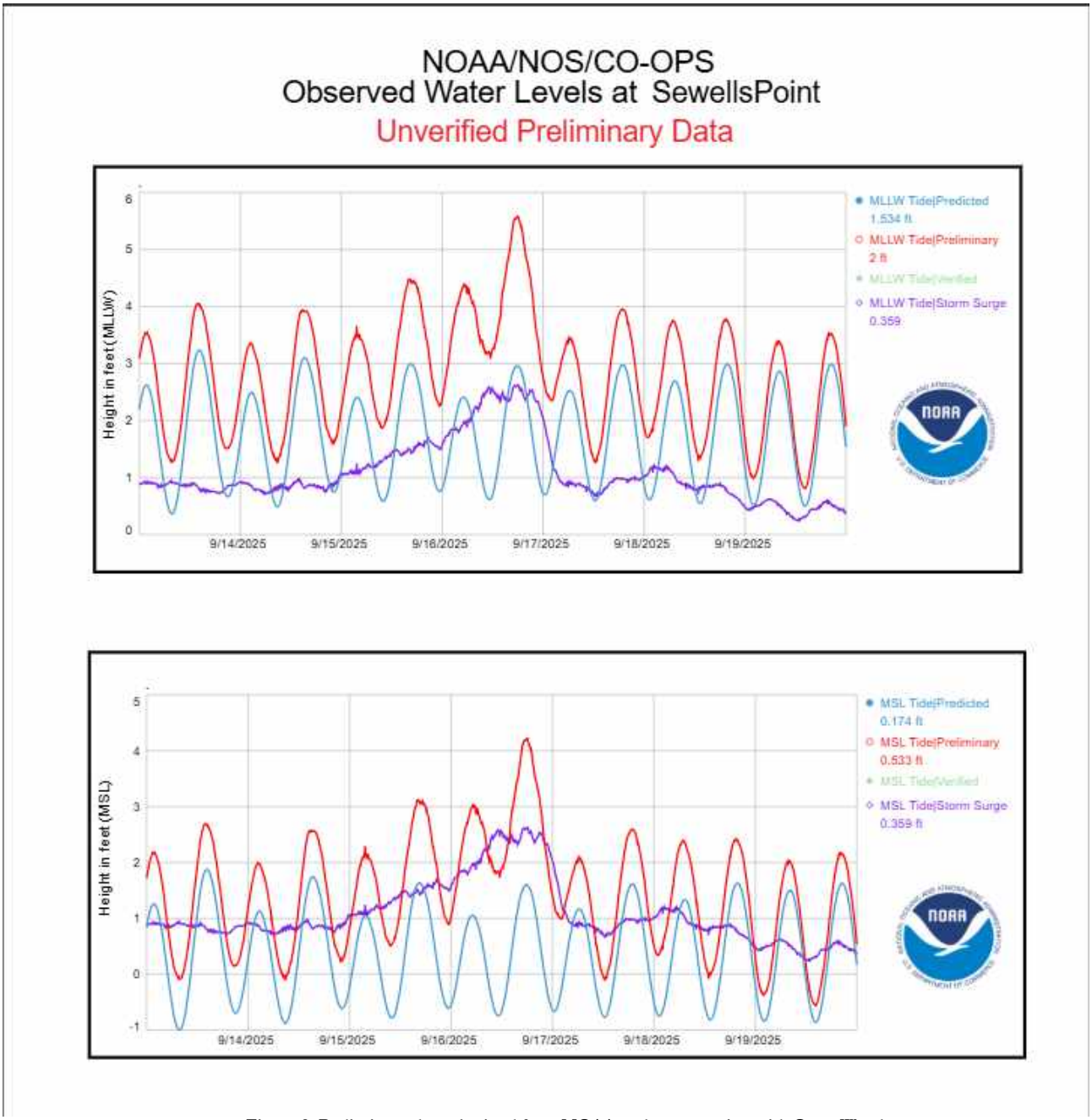


Figure 2. Preliminary data obtained from NOAA and a connection with Open Weather

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	2- to 5-year (24hr)	NORF
Taussig Blvd PS	2-year (24hr)	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	1-year (24hr)	CHES
Chesapeake PS 243	2- to 5-year (24hr)	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	10- to 25-year (12hr)	VAB
Elbow Rd PRS	2- to 5-year (12hr)	CHES
John B. Dey MLV-AT side	10-year (6hr)	VAB
Hickory EOL	1-year (24hr)	CHES
Kempsville PRS	10-year (12hr)	VAB
Lagomar IFM at Atlantic TP	10- to 25-year (12hr)	VAB
Laskin Rd PRS	5-year (12hr)	VAB
Pine Tree PRS	50- to 100-year (12hr)	VAB
Shipps Corner PRS	5- to 10-year (12hr)	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	DNQ	CHES
Independence PRS	25-year (12hr)	VAB
Northampton Blvd at Wesleyan Dr	5- to 10-year (24hr)	NORF
Providence PRS	50- to 100-year (12hr)	VAB
Shore Dr @ Jack Frost	2- to 5-year (12hr)	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	1- to 2-year (24hr)	CHES
Cedar Lane PS	2-year (24hr)	PORT
Cedar Rd at Dominon Blvd	1- to 2-year (24hr)	CHES
Chesapeake PS 20	DNQ	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	2-year (24hr)	SUFF
Deep Creek PRS	1- to 2-year (24hr)	CHES
Hill Point Rectifier	1- to 2-year (24hr)	SUFF
Lake Kilby WTP	DNQ	SUFF
Nansemond Main Flow (Effluent)	2-year (24hr)	SUFF
Pagan River Rectifier	2- to 5-year (24hr)	IOW
Pughsville PS	1- to 2-year (24hr)	SUFF
Route 337 PRS	1- to 2-year (24hr)	CHES
Smithfield High School	2- to 5-year (24hr)	IOW
Suffolk PS	1-year (24hr)	SUFF
Suffolk PS 81	DNQ	SUFF
Suffolk PS 87	1-year (24hr)	SUFF

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Windsor Duke St PS	Disconnected	IOW
VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	2-year (24hr)	NORF
Ferebee Avenue PS	1- to 2-year (24hr)	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	1- to 2-year (24hr)	PORT
Va Beach Blvd PS	2- to 5-year (24hr)	NORF
VIP Main Flow (Effluent)	1- to 2-year (24hr)	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
9/15/2025	24 mph	20 mph	-	NE	0.42
9/16/2025	31 mph	18 mph	-	S	3.45
9/17/2025	14 mph	7 mph	-	SE	0.02
9/18/2025	5 mph	1 mph	-	NW	0.01

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 2.58 foot storm surge was observed.

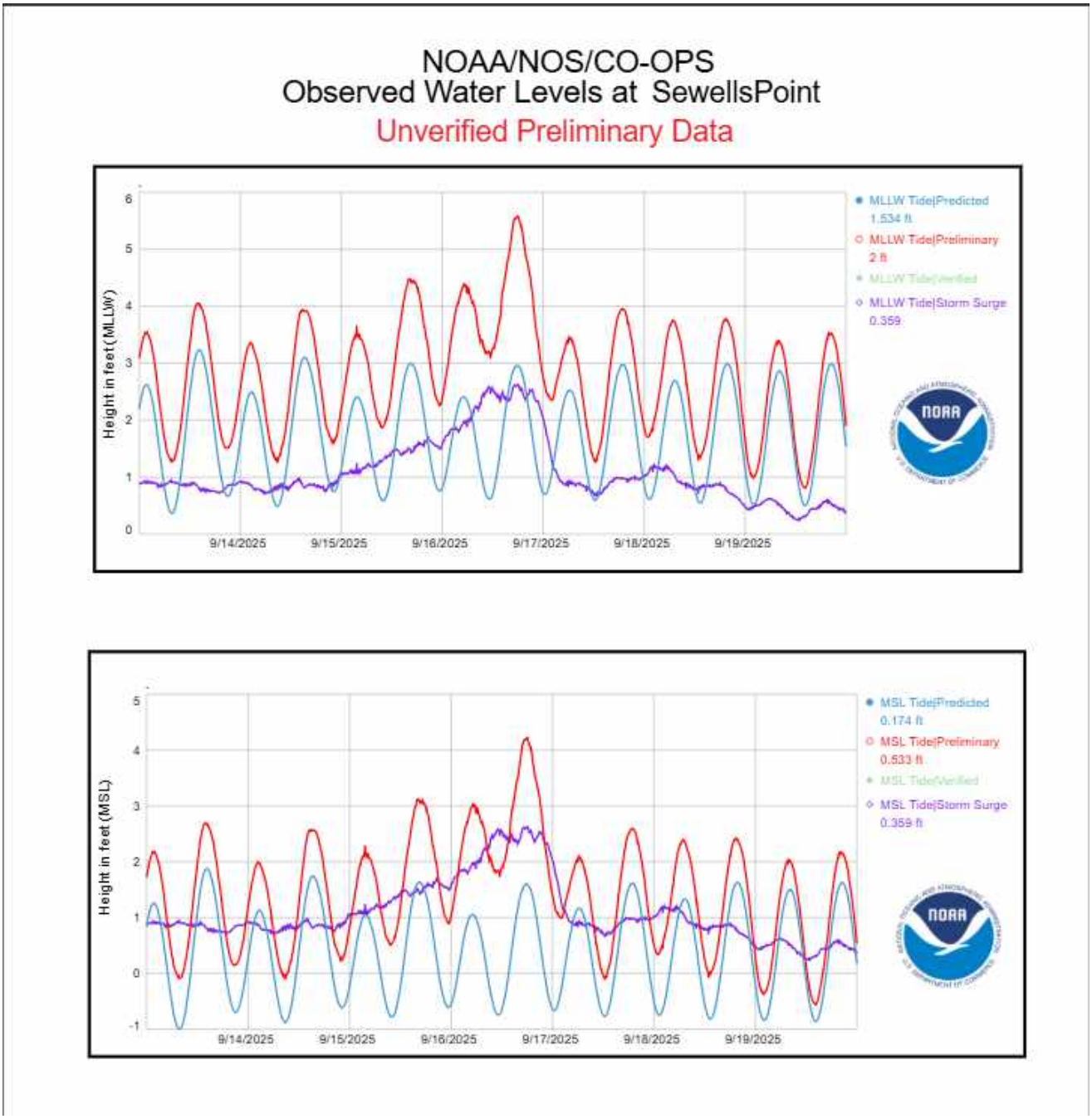


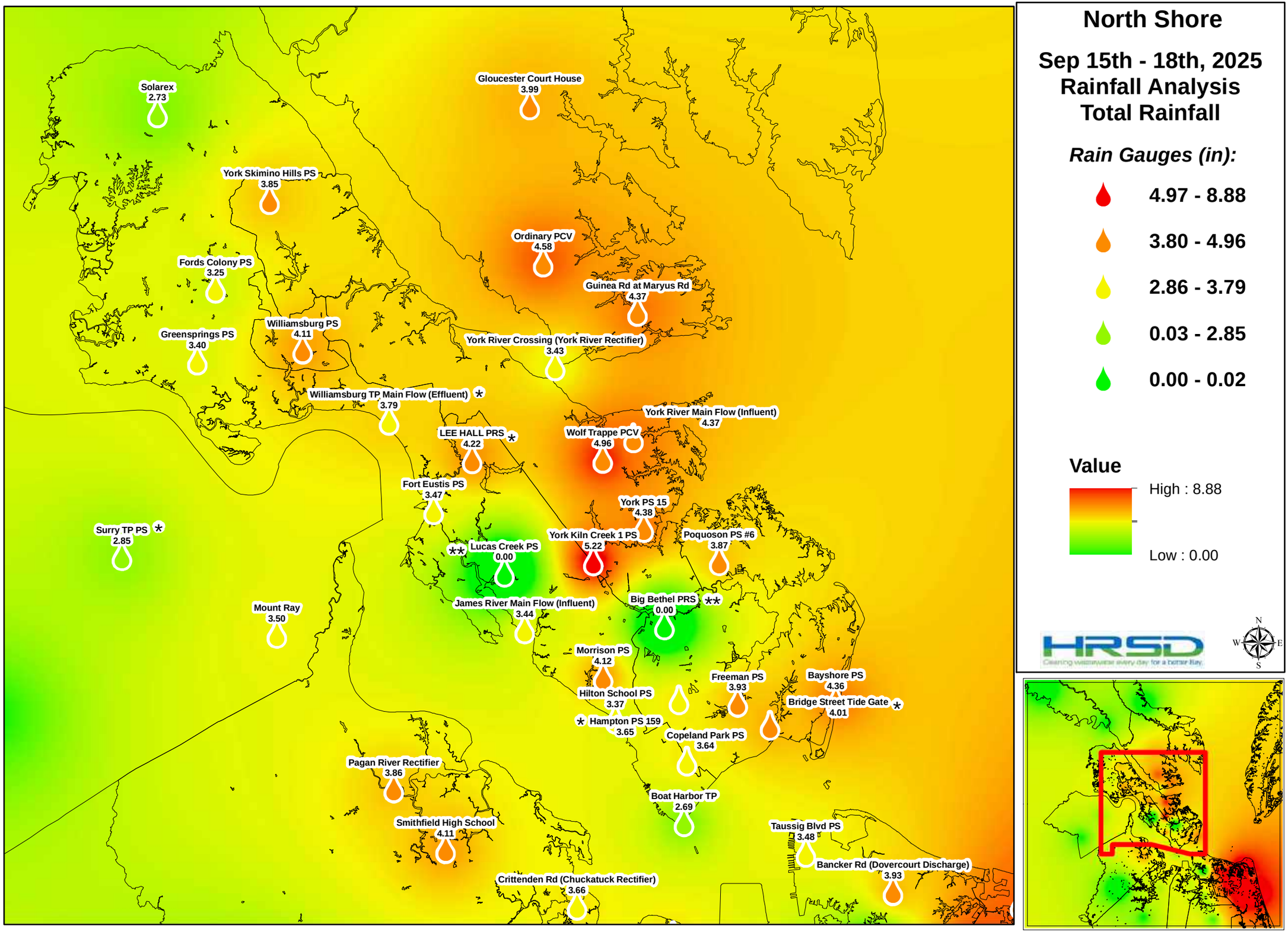
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

Shallow Well Analysis:

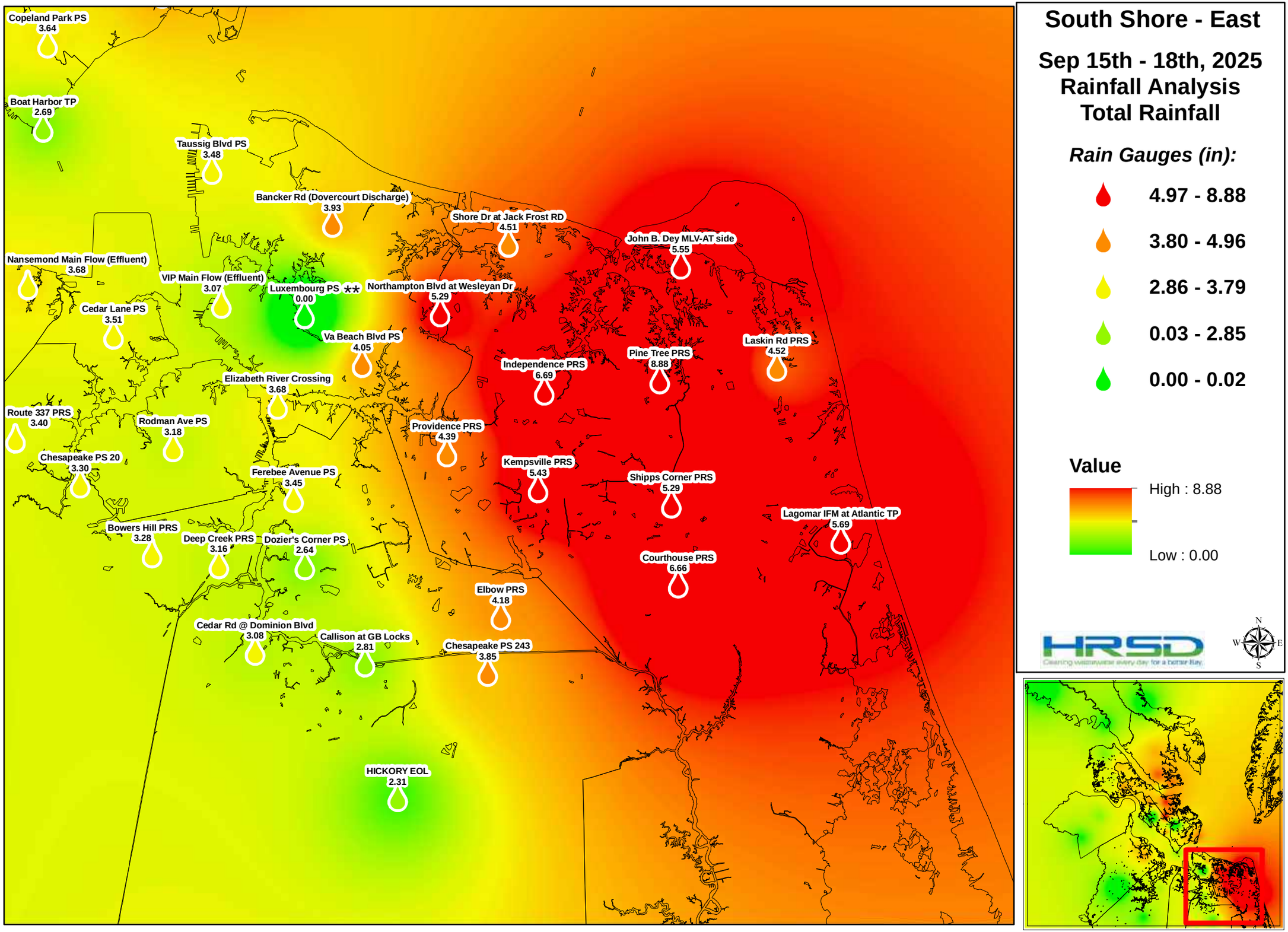
Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

HRSD Rain Gauge Network
Rainfall Totals



*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



South Shore - East

Sep 15th - 18th, 2025 Rainfall Analysis Total Rainfall

Rain Gauges (in):

- 4.97 - 8.88
- 3.80 - 4.96
- 2.86 - 3.79
- 0.03 - 2.85
- 0.00 - 0.02

Value

High : 8.88

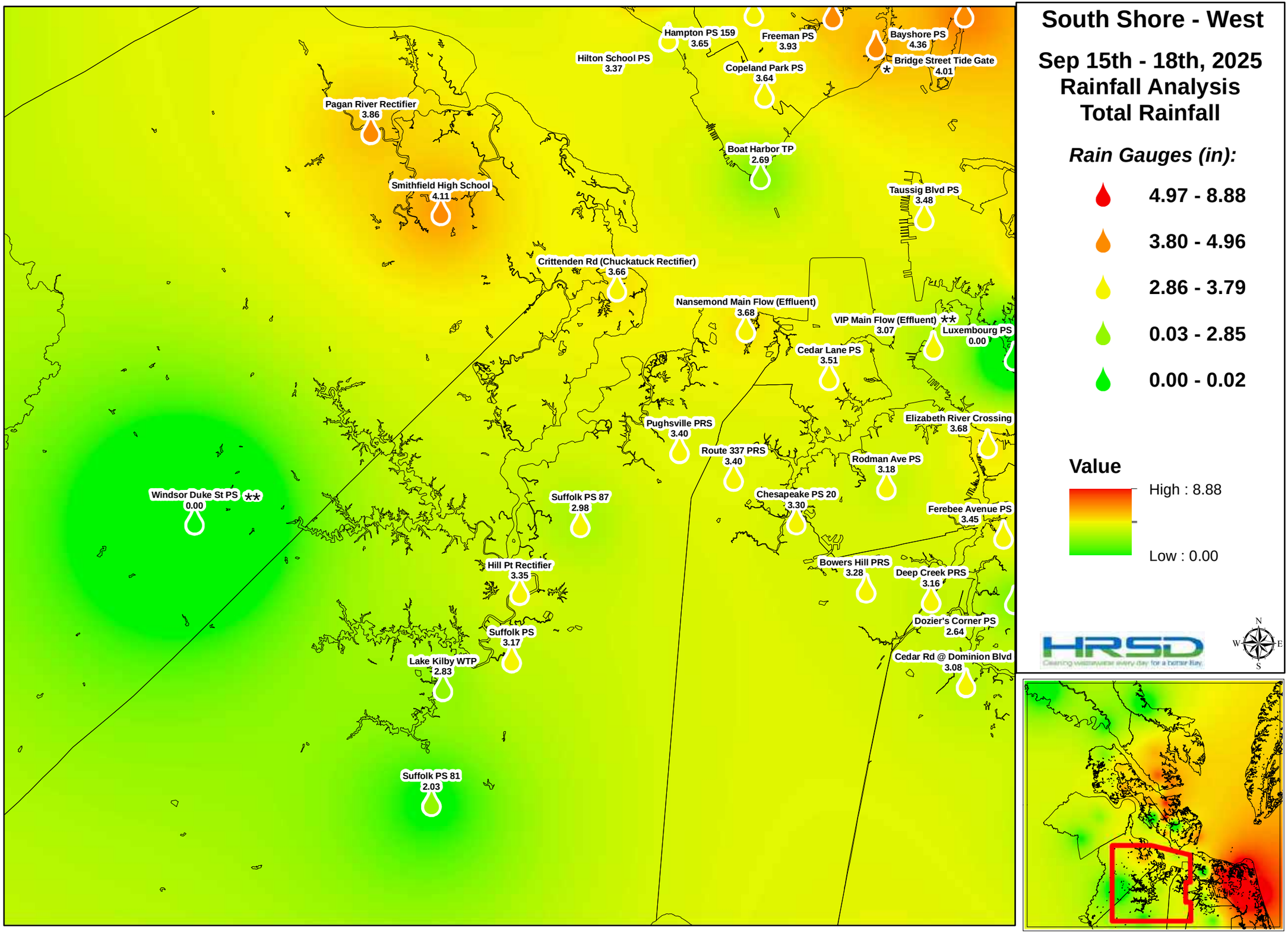
Low : 0.00

HRSD

Cleaning wastewater every day for a better Bay.

N W E S

*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used



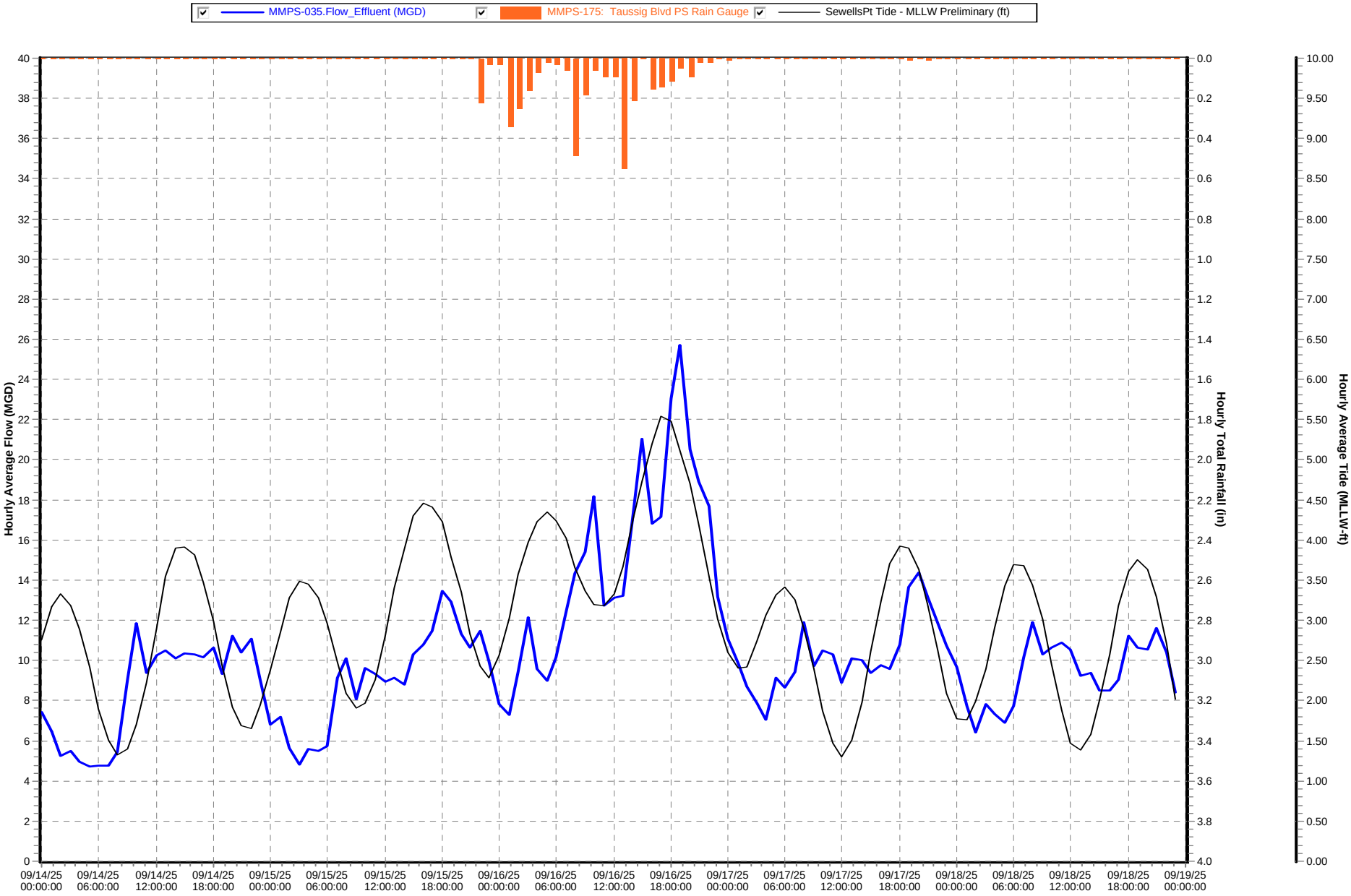
*Note: Rain Gauge was invalid for event and an average of surrounding sites was used. **Rain Gauge disconnected during event. ***Data from NOAA used

Appendix B

HRSD Treatment Plant Flows

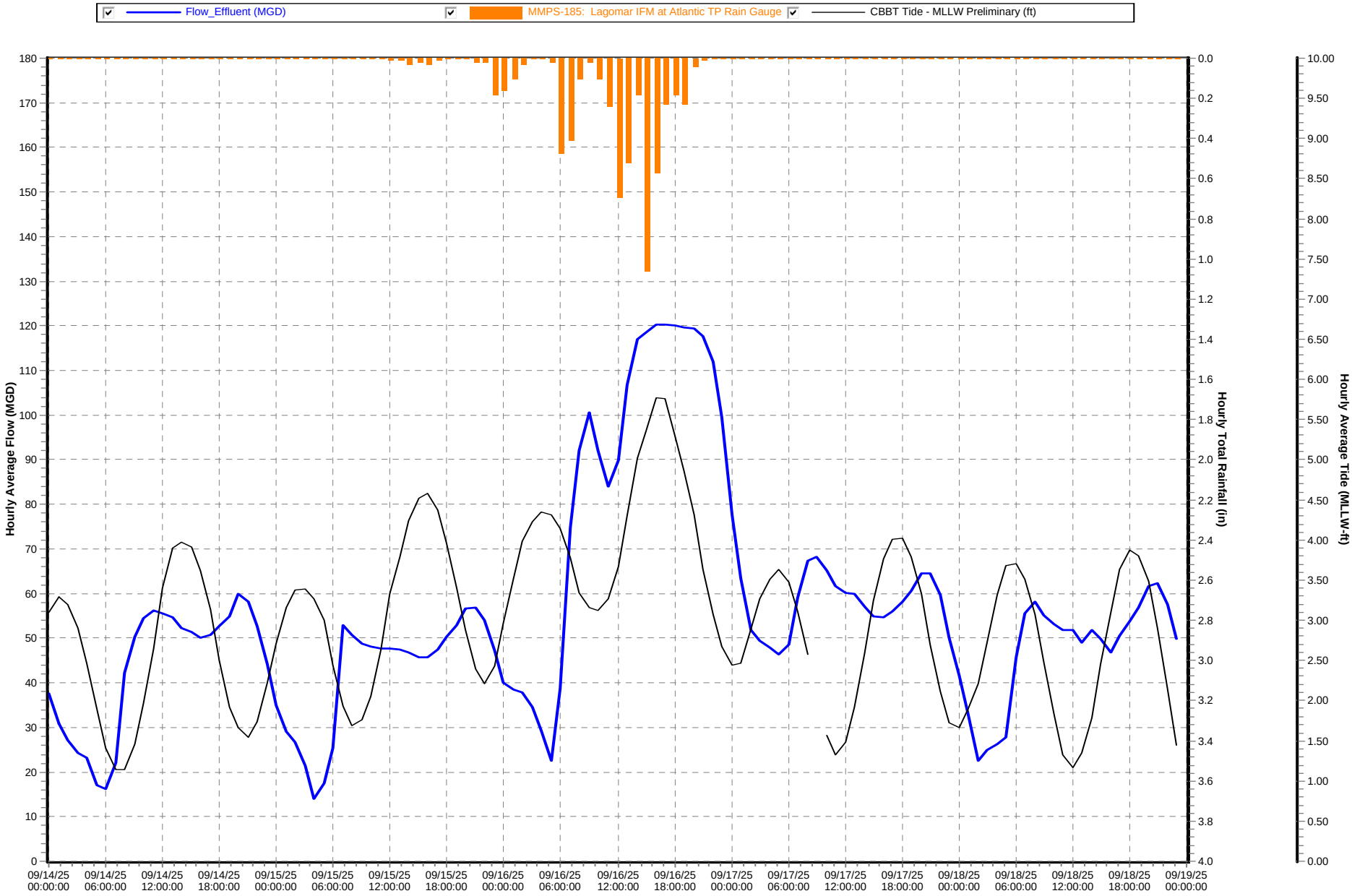
Army Base Treatment Plant

MMPS-035 (09/14/25 to 09/19/25)



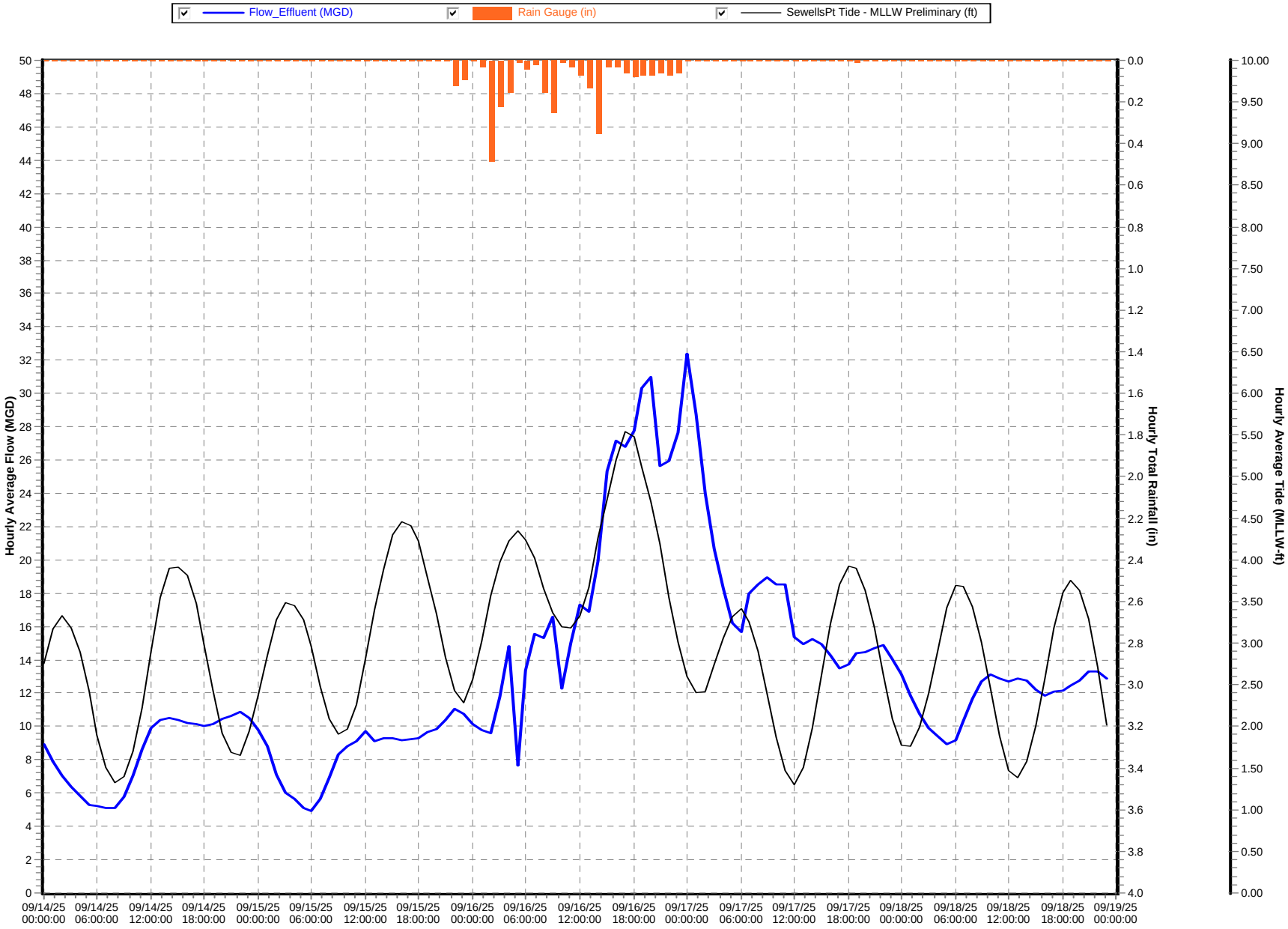
Atlantic Treatment Plant

MMPS-071 (09/14/25 to 09/19/25)



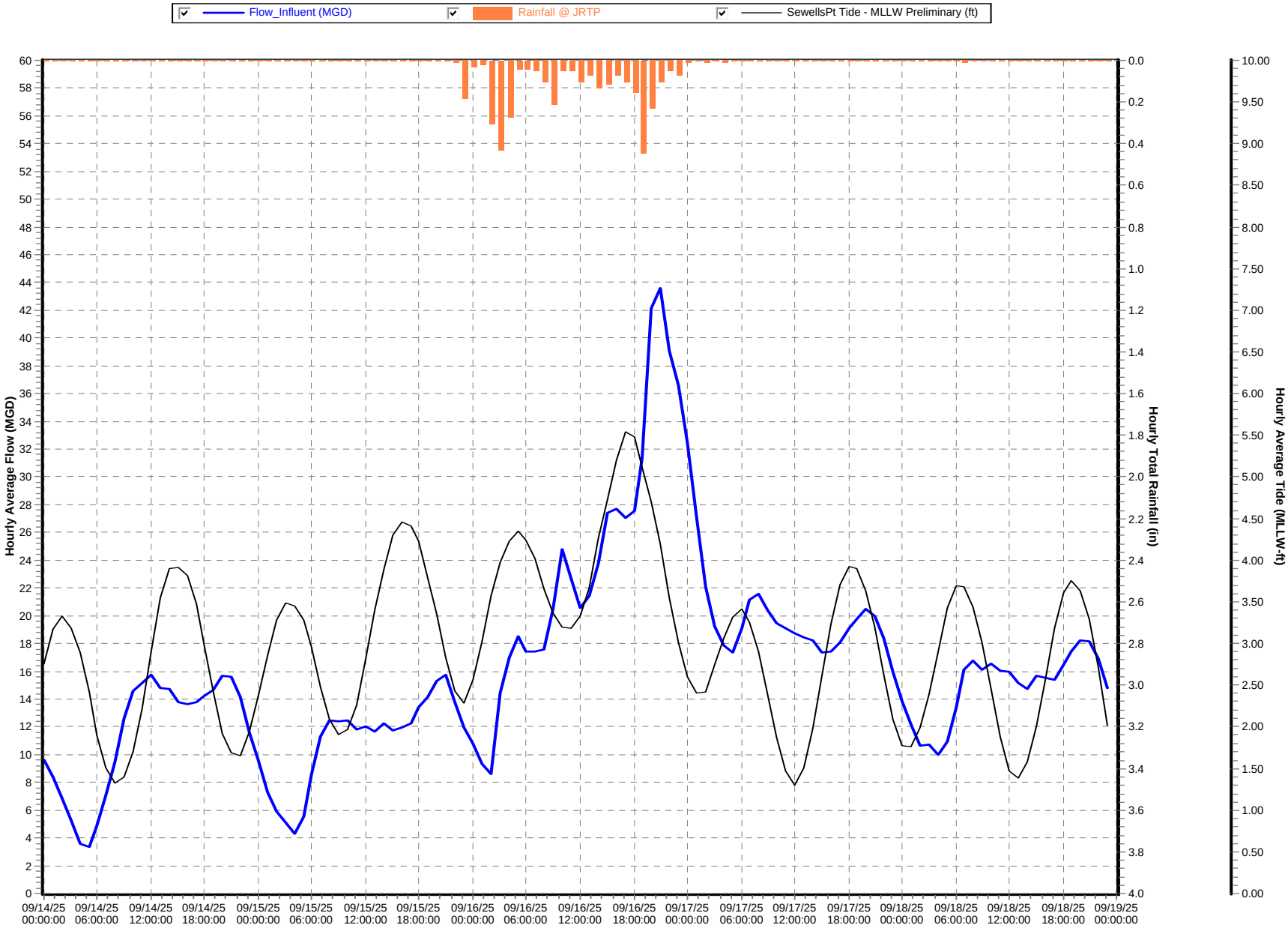
Boat Harbor Treatment Plant

MMPS-075 (09/14/25 to 09/19/25)



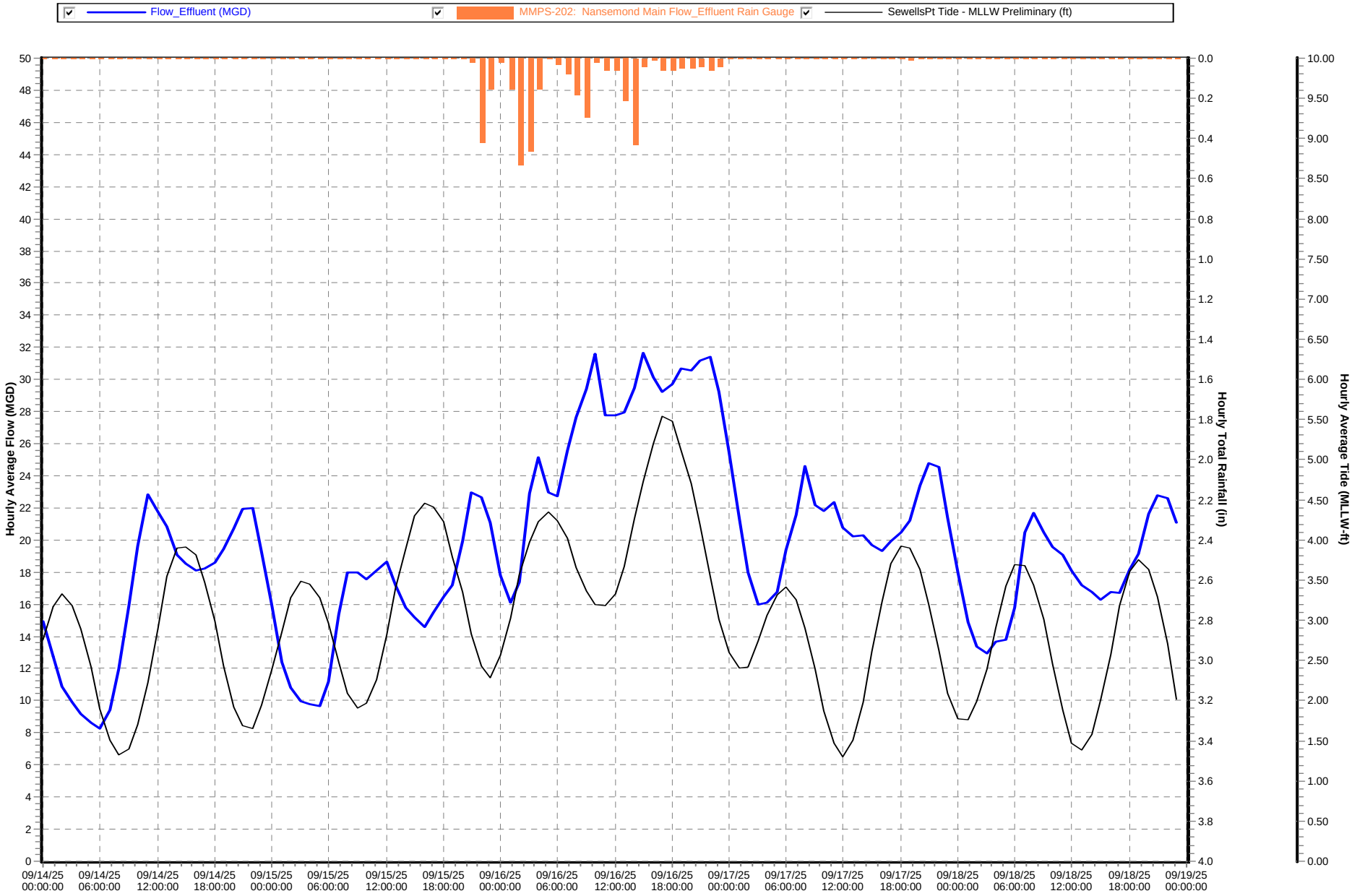
James River Treatment Plant

MMPS-184 (09/14/25 to 09/19/25)



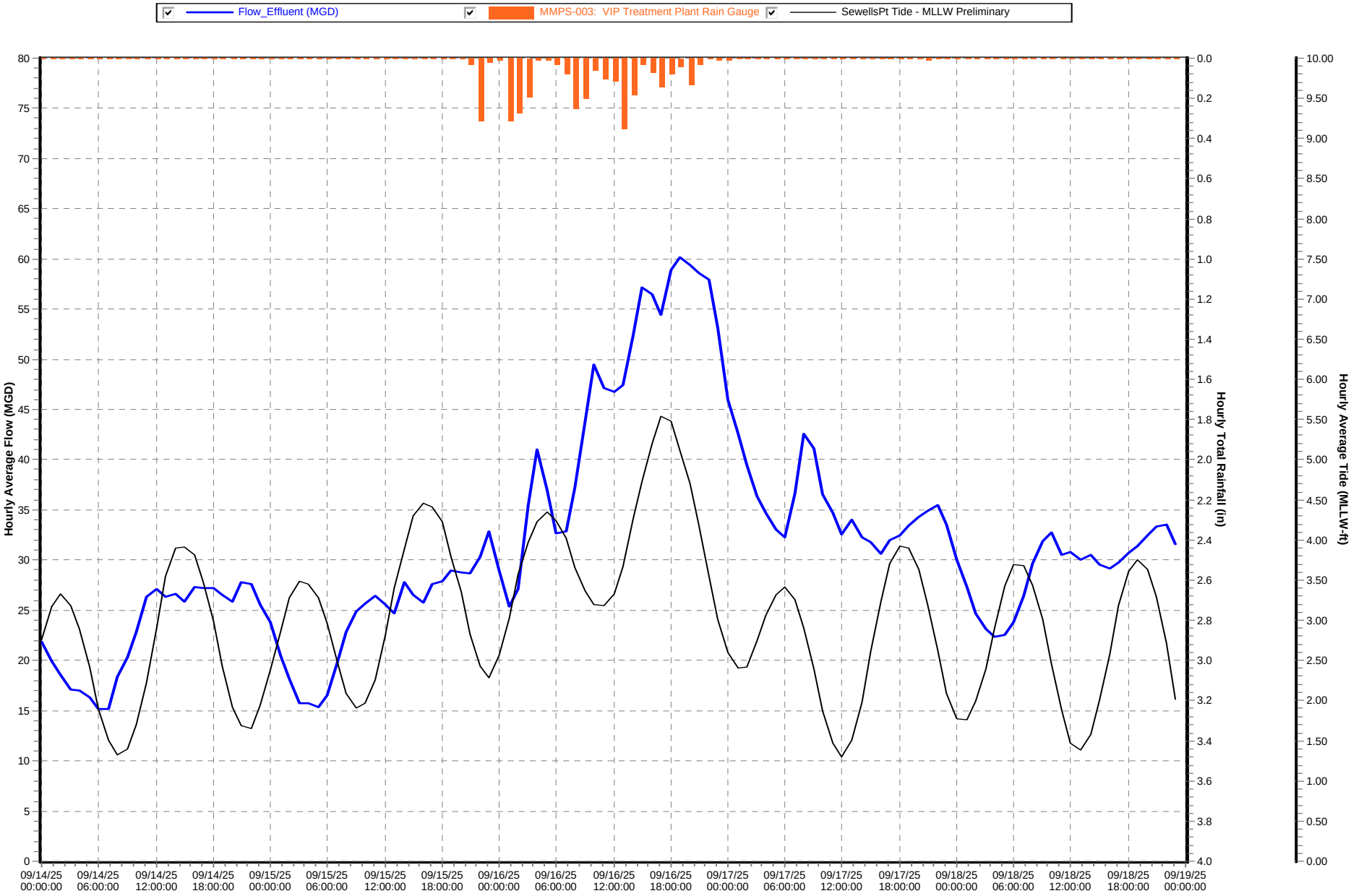
Nansemond Treatment Plant

MMPS-202 (09/14/25 to 09/19/25)



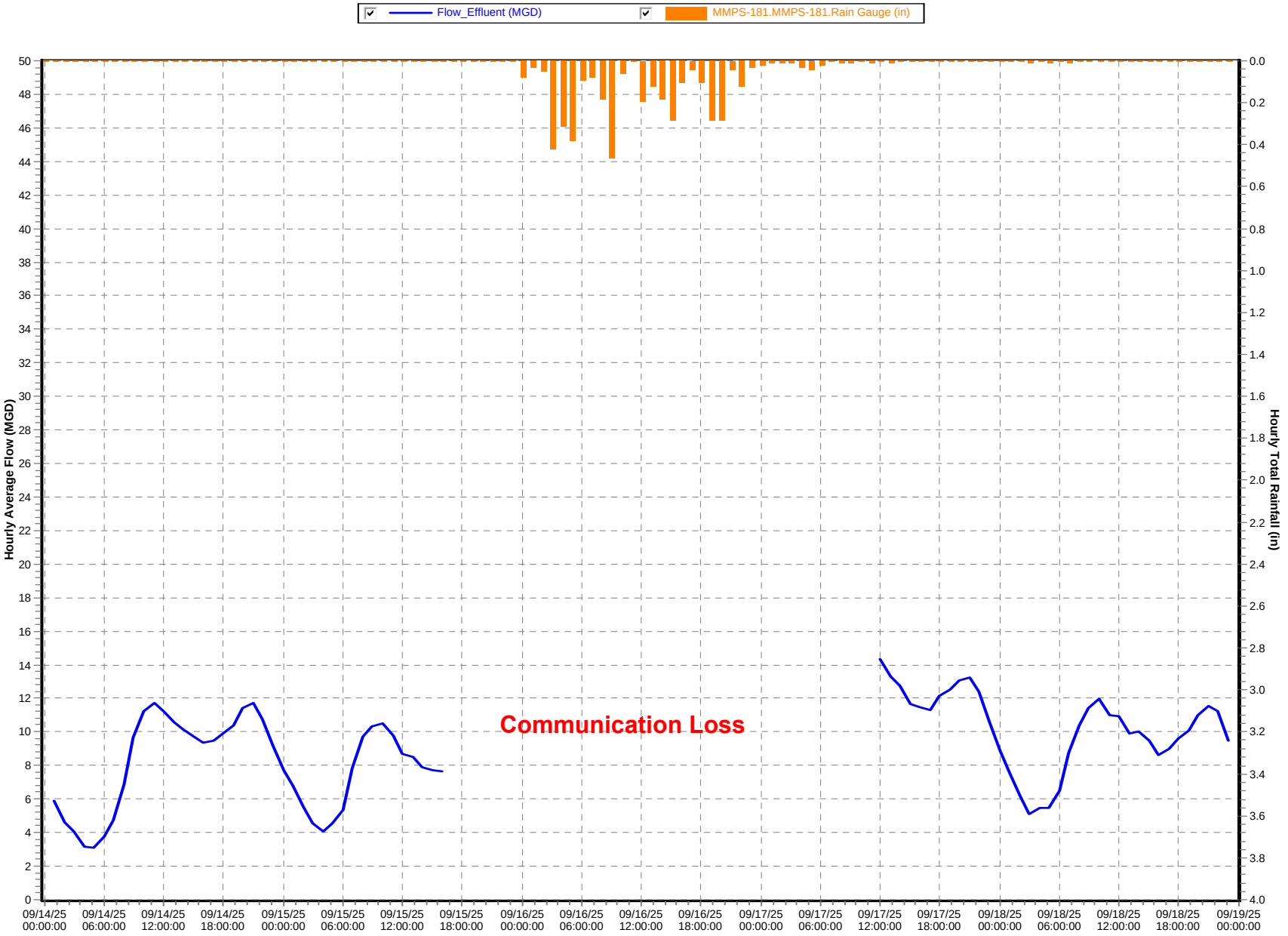
VIP Treatment Plant

MMPS-003 (09/14/25 to 09/19/25)



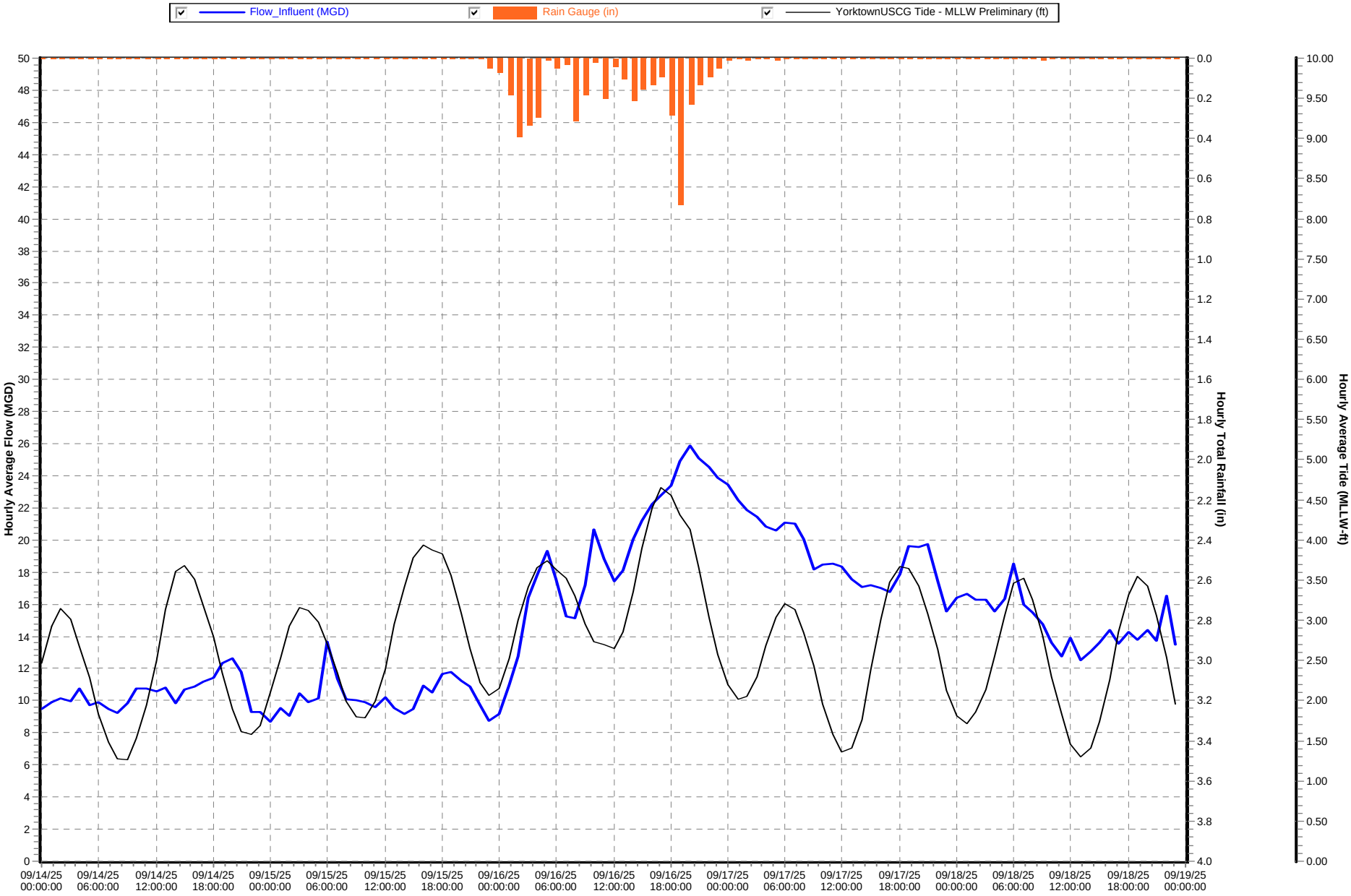
Williamsburg Treatment Plant

MMPS-222 (09/13/25 to 09/18/25)



York River Treatment Plant

MMPS-235 (09/14/25 to 09/19/25)



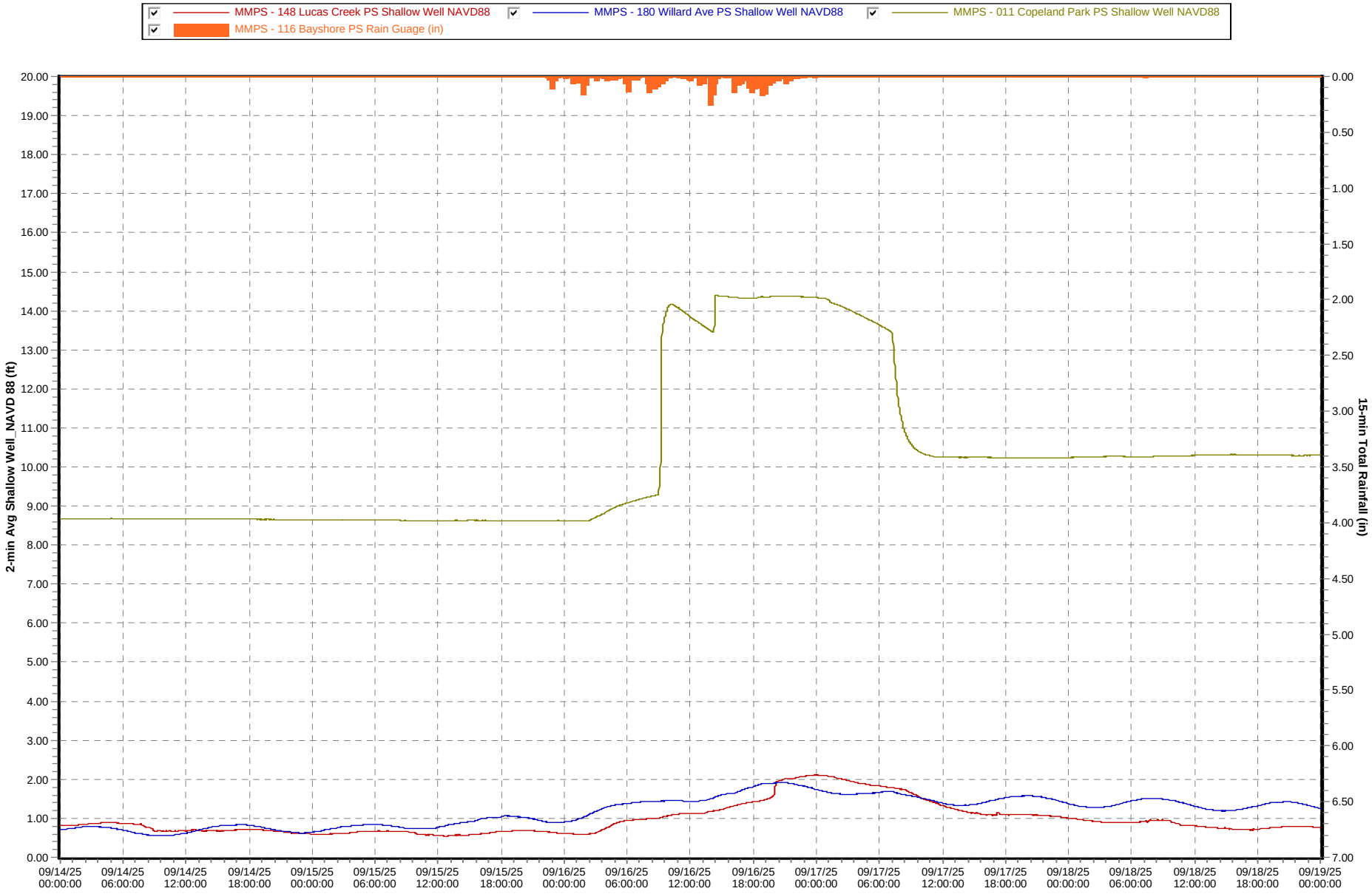
Appendix C

Shallow Well Analysis

5 Day

North Shore Shallow Well Graphs

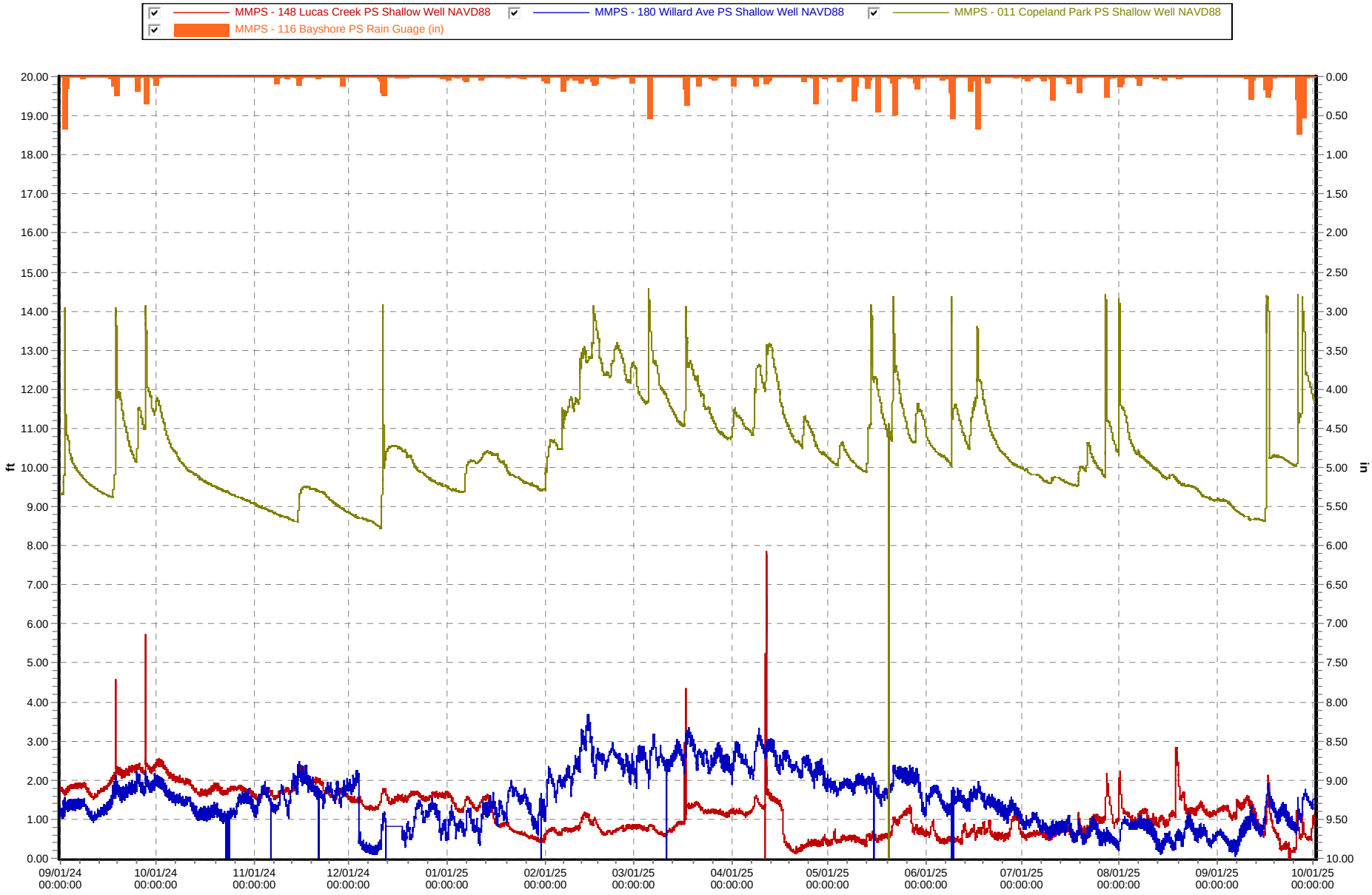
09/14/25 to 09/19/25



1 Year

North Shore Shallow Well Graphs

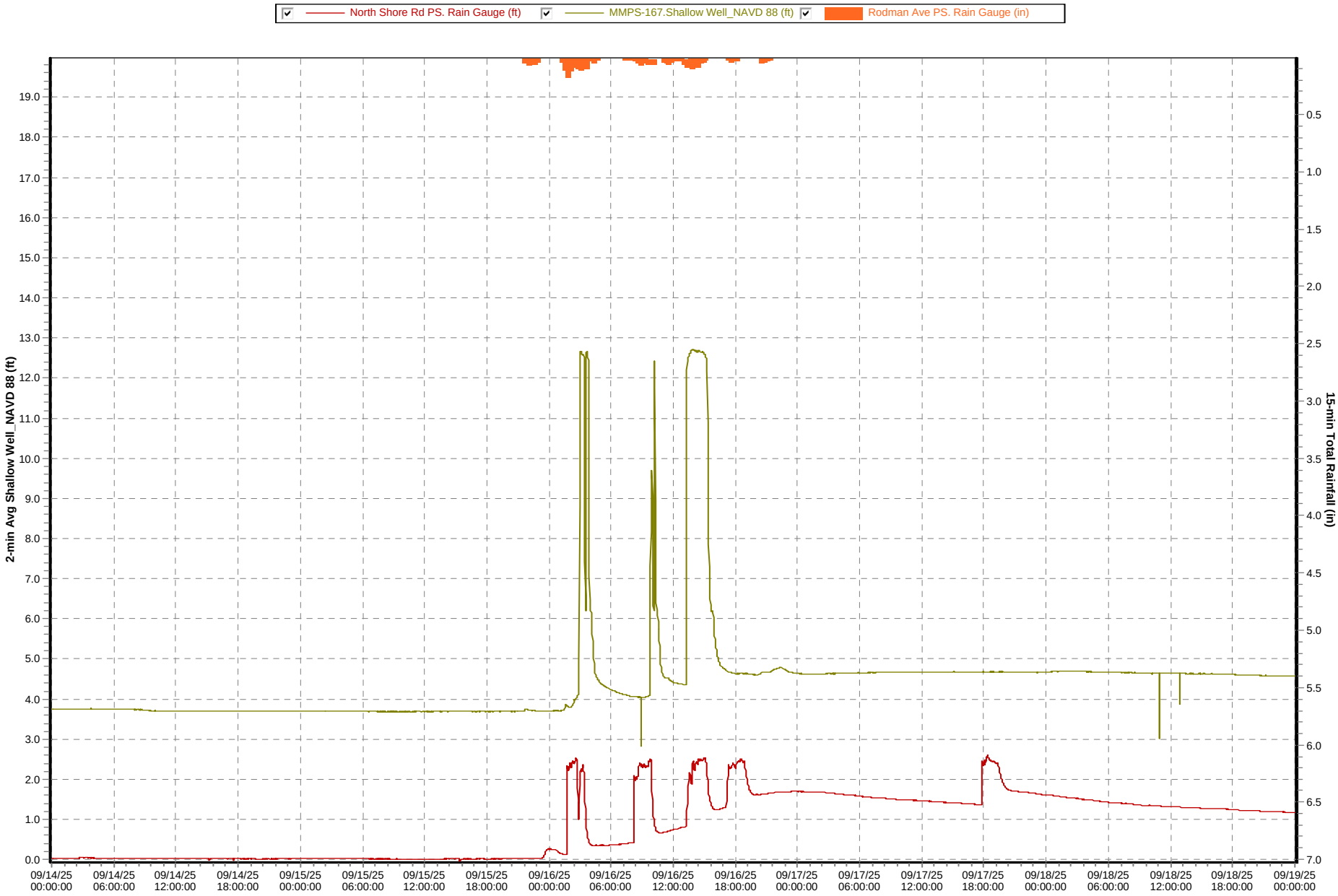
MMPS-148 (09/01/24 to 10/01/25)



5 Day

South Shore Shallow Well Graphs

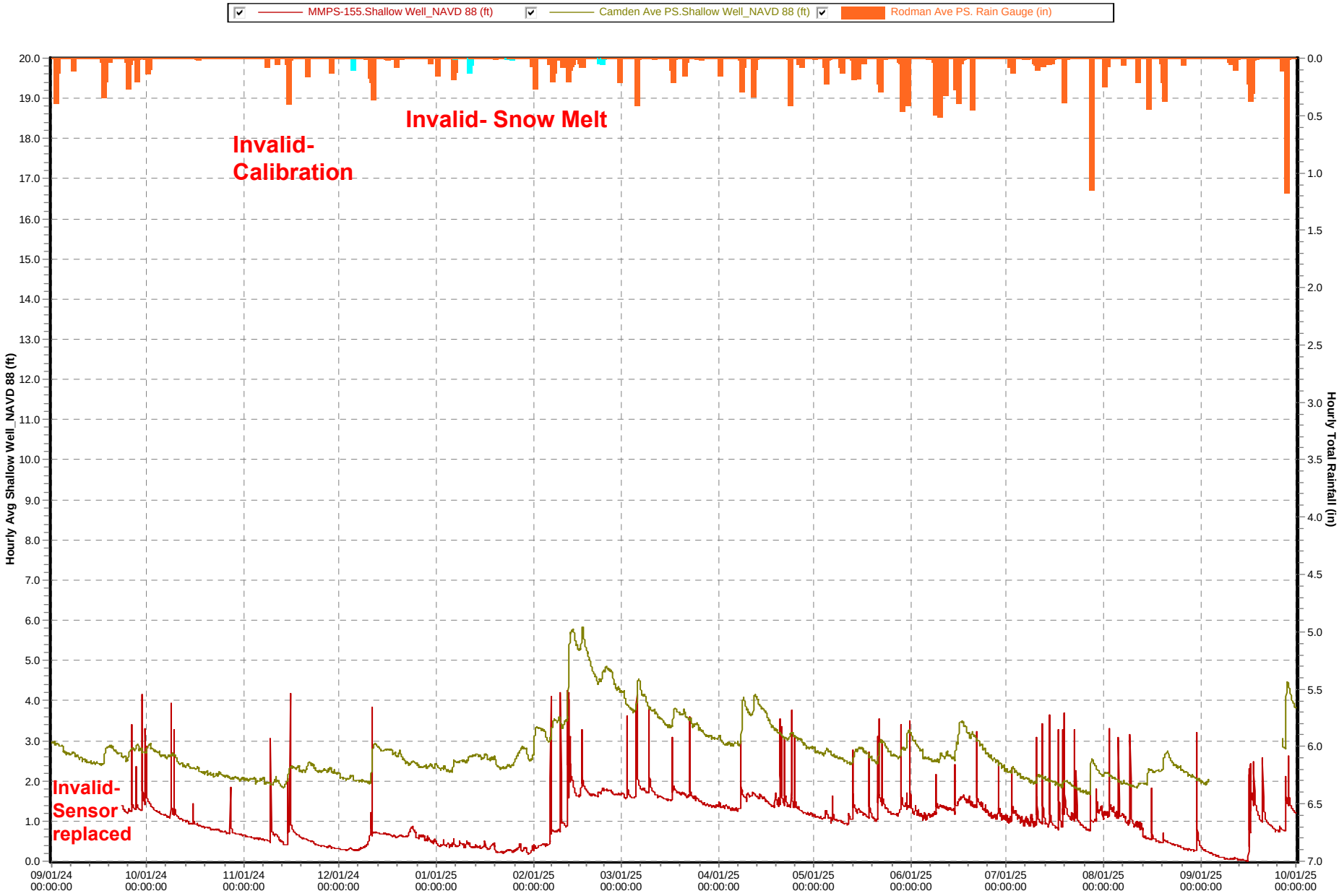
09/14/25 to 09/19/25



1 Year

South Shore Shallow Well Graphs

09/01/24 to 10/01/25



Hampton Roads Sanitation District

Post-Storm Report

September 25-27, 2025

HRSD
Sustainable, Innovative Wastewater Treatment

DISCLAIMER:

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This report is intended to provide the HRSD regional community summary information about the HRSD system during select wet weather events/anomalies. The attached report contains a selection of *official* Interceptor and Treatment data, as well as other environmental and meteorological data provided through other services. In an effort to enhance the HRSD system, the attached products have been made accessible on this server and care must be taken when using such products as they are intended for informational and not operational, legal, or other purposes.

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Summary

From September 25th through September 27th, there was an approximate 60-hour rainfall event that resulted in 8 sites on the North Shore and 22 sites on the South Shore that met a 1 to 10-year rainfall recurrence interval throughout the HRSD rain gauge network. Hot and humid weather followed by a cool front brought a few rounds of heavy rain and thunderstorms into our region on Friday evening. The cool front eventually stalled out, bringing even more heavy rainfall and thunderstorms to our area both Saturday and Sunday. North Shore sites averaged around 2.69 inches of rain while South Shore sites averaged around 1.75 inches. There were impacts on groundwater levels compared to June 2024, especially for North Shore. See Appendix C for the Historical Shallow Well comparison.

One HRSD interceptor weather-related overflow(s) was reported.

One Locality weather-related overflow(s) was reported.

HRSD flow and pressure meters met data reliability requirements per the MOM program. For all pressure meters in the aggregate and all pressure-side flow meters in the aggregate for each treatment plant service area listed below, at least 90% reliable data was achieved, based on the duration of system response to this rainfall event. The data reliability for the gravity flow meters is not included in this synopsis.

- Duration of system response: See Table Below
- Aggregate flow meter validity: 90.75%
- Aggregate pressure meter validity: 99.13%

Currently, rainfall recurrence intervals are only analyzed for a maximum of 96-hours. Rainfall analysis begins after 0.1 inches of rain has occurred. A 72-hour dry period of less than 0.1 inches of rain is typically used to signify two separate events. However, if a site returns to "dry weather" conditions prior to the next rainfall that occurs within 72 hours of the previous event, it is also considered for separate analysis. See Appendix A for the Rainfall Total System Maps.

The current criteria for publishing a post-storm analysis are the following:

- One or more rain gauge sites meet a two-year or greater RRI (rainfall recurrence interval) and at least 50% of sites in any treatment plant service area receive one inch of rainfall or greater,
- A rain gauge site meets a five-year or greater RRI, or
- A weather-related SSO occurs.

Sanitary Sewer Overflows:

HRSD – North Shore

Location	Jurisdiction	Start Date
907 Colleen Drive	Newport News	09/26/2025

Locality

Location	Jurisdiction	Start Date
179 Red Oak Landing Rd	James City	09/27/2025

Treatment Plant Data: ***(Data obtained from Telog Database)***
See Appendix B for HRSD Treatment Plant Flows

HRSD Treatment Plant Data
9/25/2025 – 9/27/2025

North Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Boat Harbor	9/25/2025	12.19	19:00	0.21
	9/26/2025	20.26	10:00	0.74
	9/27/2025	34.84	20:00	1.13
James River	9/25/2025	20.05	23:00	1.00
	9/26/2025	25.27	07:00	0.65
	9/27/2025	39.97	17:00	1.37
Williamsburg	9/25/2025	10.72	21:00	0.11
	9/26/2025	14.02	08:00	0.99
	9/27/2025	26.60	16:00	0.94
York River	9/25/2025	18.50	23:00	0.64
	9/26/2025	23.76	06:00	0.74
	9/27/2025	25.09	17:00	1.65

HRSD Treatment Plant Data
9/25/2025 – 9/27/2025

South Shore				
Treatment Plant	**Date of Peak Hourly Flow**	**Peak Hourly Flow (MGD)**	**Peak Hour**	**TPSA Total Rainfall Avg (in)**
Army Base	9/25/2025	10.07	20:00	0.07
	9/26/2025	10.74	08:00	0.32
	9/27/2025	24.51	18:00	1.68
Atlantic	9/25/2025	61.58	20:00	0.00
	9/26/2025	54.57	20:00	0.02
	9/27/2025	109.20	21:00	2.24
Nansemond	9/25/2025	22.63	21:00	0.15
	9/26/2025	19.91	08:00	0.27
	9/27/2025	29.48	20:00	1.43
VIP	9/25/2025	30.75	21:00	0.00
	9/26/2025	27.54	13:00	0.09
	9/27/2025	60.92	19:00	1.95

North Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

North Shore Table

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Boat Harbor Treatment Plant Service Area[1]		
Bayshore PS	DNQ	HAMP
Bridge Street Tide Gate	Invalid	HAMP
Boat Harbor	DNQ	NEWP
Copeland Park PS	DNQ	NEWP
Hampton PS 159	DNQ	HAMP
James River Treatment Plant Service Area[1]		
Hilton School PS	DNQ	NEWP
James River Main Flow (Influent)	2-year (60hr)	NEWP
Lee Hall PRS	DNQ	NEWP
Lucas Creek PS	Disconnected	NEWP
Morrison PS	DNQ	NEWP
Williamsburg Treatment Plant Service Area[1]		
Ford's Colony	Invalid	JCSA
Fort Eustis PS	DNQ	NEWP
Greensprings PS	DNQ	JCA
Solarex	DNQ	JCSA
Williamsburg Main Flow (Effluent)	DNQ	JCSA
Williamsburg PS	DNQ	WILL
York Skimino Hills PS	DNQ	YORK
York River Treatment Plant Service Area[1]		
Big Bethel PRS	Invalid	HAMP
Freeman PS	1-year (6hr)	HAMP
Gloucester Court House	DNQ	GLOU
Guinea Rd at Maryus Rd	2-year (48hr)	GLOU
Ordinary PCV	DNQ	GLOU
Poquoson PS 6	1-year (3hr)	POQ
Wolf Trappe PCV	1- to 2-year (48hr)	YORK
York Kiln Creek 1 PS	5-year (60hr)	YORK
York PS 15	5- to 10-year (60hr)	YORK
York River Main Flow (Influent)	2- to 5-year (48hr)	YORK
York River Crossing (York River Rectifier)	DNQ	GLOU

Note:

1. Typical treatment plant service area.

Newport News-Williamsburg International (PHF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
09/25/2025	24 mph	14 mph	5 mph	SSW	Trace
09/26/2025	-	8 mph	1 mph	SSW	0.00
09/27/2025	-	10 mph	4 mph	NE	1.22

Tide:

- Yorktown USCG Training Center:
  - Storm Surge: An approximate 0.80-foot storm surge was observed.

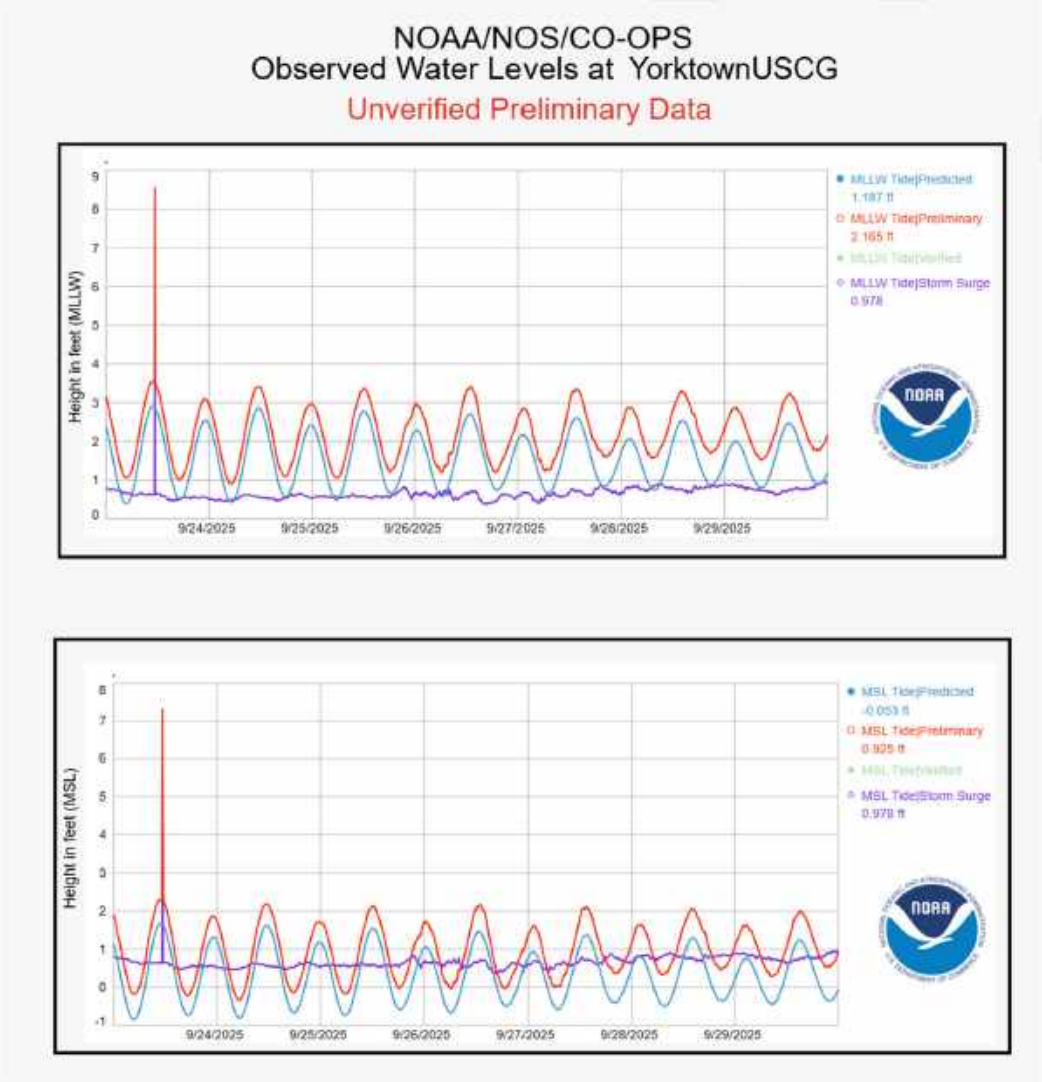


Figure 1. Preliminary data obtained from NOAA and a connection with Open Weather

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.75 foot storm surge was observed.

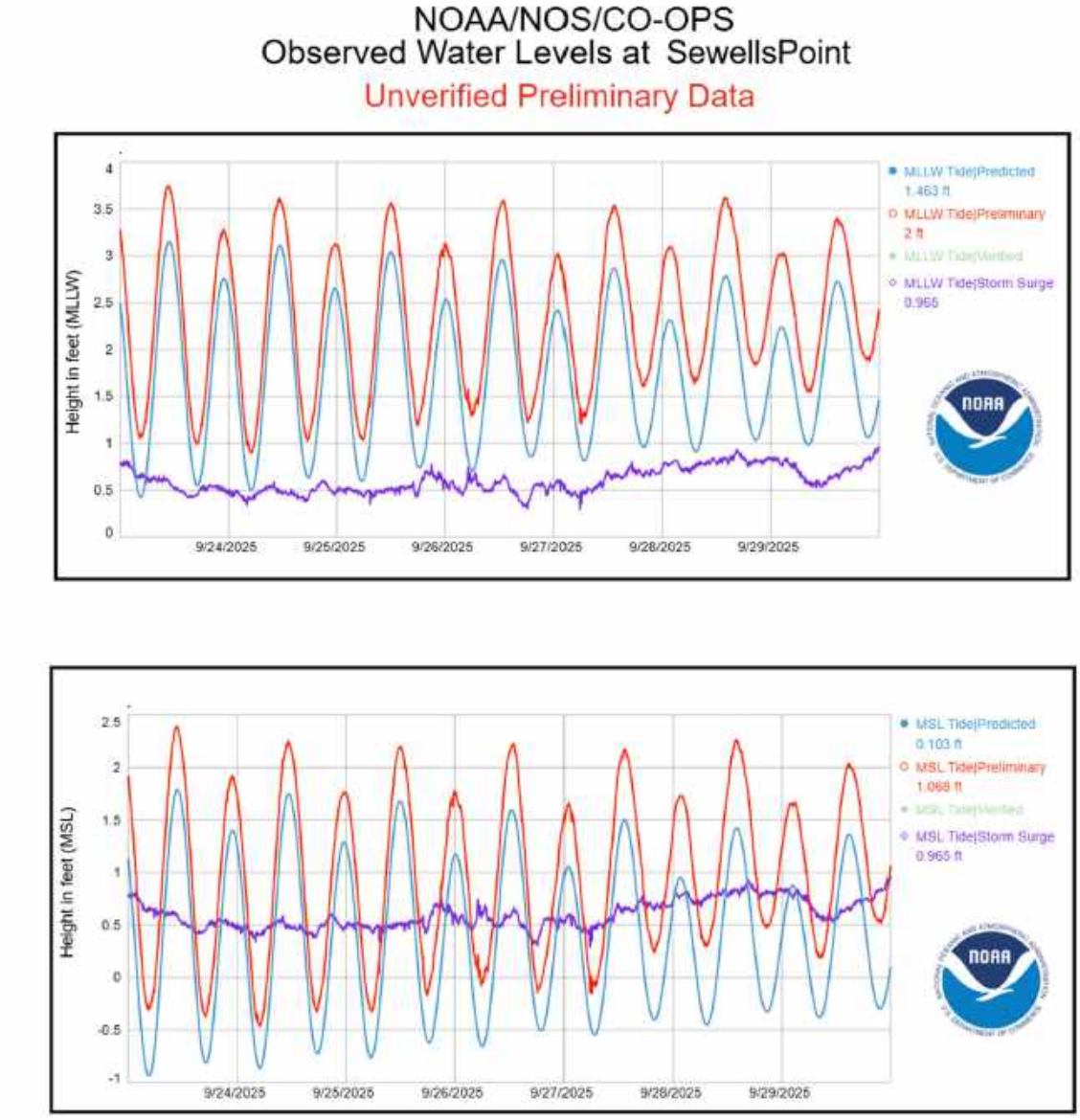


Figure 2. Preliminary data obtained from NOAA and a connection with Open Weather

South Shore

Weather:

Rainfall (HRSD Rainfall Gauges): *Recurrence intervals based on NOAA Atlas 14*

South Shore Table

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Army Base Treatment Plant Service Area[1]		
Bancker Rd (Dovercourt Discharge)	1- to 2-year (2hr)	NORF
Taussig Blvd PS	DNQ	NORF
Atlantic Treatment Plant Service Area[1]		
Callison at GB Locks	1- to 2-year (6hr)	CHES
Chesapeake PS 243	1- to 2-year (3hr)	CHES
Chesapeake PS 254	Disconnected	CHES
Courthouse PRS	DNQ	VAB
Elbow Rd PRS	2- to 5-year (3hr)	CHES
John B. Dey MLV-AT side	Invalid	VAB
Hickory EOL	1-year (3hr)	CHES
Kempsville PRS	2- to 5-year (2hr)	VAB
Lagomar IFM at Atlantic TP	DNQ	VAB
Laskin Rd PRS	1- to 2-year (2hr)	VAB
Pine Tree PRS	1- to 2-year (3hr)	VAB
Shipps Corner PRS	2- to 5-year (3hr)	VAB
Ches-Liz Treatment Plant Service Area[1]		
Dozier's Corner PS	2- to 5-year (1hr)	CHES
Independence PRS	5-year (3hr)	VAB
Northampton Blvd at Wesleyan Dr	2- to 5-year (2hr)	NORF
Providence PRS	1- to 2-year (3hr)	VAB
Shore Dr @ Jack Frost	2- to 5-year (2hr)	CHES
Nansemond Treatment Plant Service Area[1]		
Bowers Hill PRS	2-year (3hr)	CHES
Cedar Lane PS	DNQ	PORT
Cedar Rd at Dominon Blvd	1-year (3hr)	CHES
Chesapeake PS 20	DNQ	CHES
Chesapeake PS 238	Disconnected	CHES
Crittenden Rd_Chuckatuck Rectifier	DNQ	SUFF
Deep Creek PRS	1-year (3hr)	CHES
Hill Point Rectifier	DNQ	SUFF
Lake Kilby WTP	DNQ	SUFF
Nansemond Main Flow (Effluent)	DNQ	SUFF
Pagan River Rectifier	5-year (48hr)	IOW
Pughsville PS	DNQ	SUFF
Route 337 PRS	DNQ	CHES
Smithfield High School	DNQ	IOW
Suffolk PS	DNQ	SUFF

Rain Gauge Site	Peak Rainfall RI (Duration)	Locality
Suffolk PS 81	DNQ	SUFF
Suffolk PS 87	1-year (3hr)	SUFF
Windsor Duke St PS	Disconnected	IOW
VIP Treatment Plant Service Area[1]		
Elizabeth River Crossing_Eastern Branch	DNQ	NORF
Ferebee Avenue PS	1- to 2-year (1hr)	CHES
Luxembourg Avenue PS	Disconnected	NORF
Rodman Ave PS	2-year (3hr)	PORT
Va Beach Blvd PS	2- to 5-year (2hr)	NORF
VIP Main Flow (Effluent)	DNQ	NORF

Note:

1. Typical treatment plant service area.

*Duration represents the minimum amount of time it took to reach the specified RRI.

Norfolk International Airport (ORF)

- Wind and Rainfall (daily total):

Date	Gust (max)	Sustained (max)	Sustained (avg)	Direction	Rainfall (in)
09/25/2025	28 mph	16 mph	10 mph	SSW	0.00
09/26/2025	20 mph	10 mph	4 mph	SSW	0.07
09/27/2025	-	9 mph	5 mph	NE	2.29

Tide:

- Sewells Point Tide Station:
  - Storm Surge: An approximate 0.75 foot storm surge was observed.

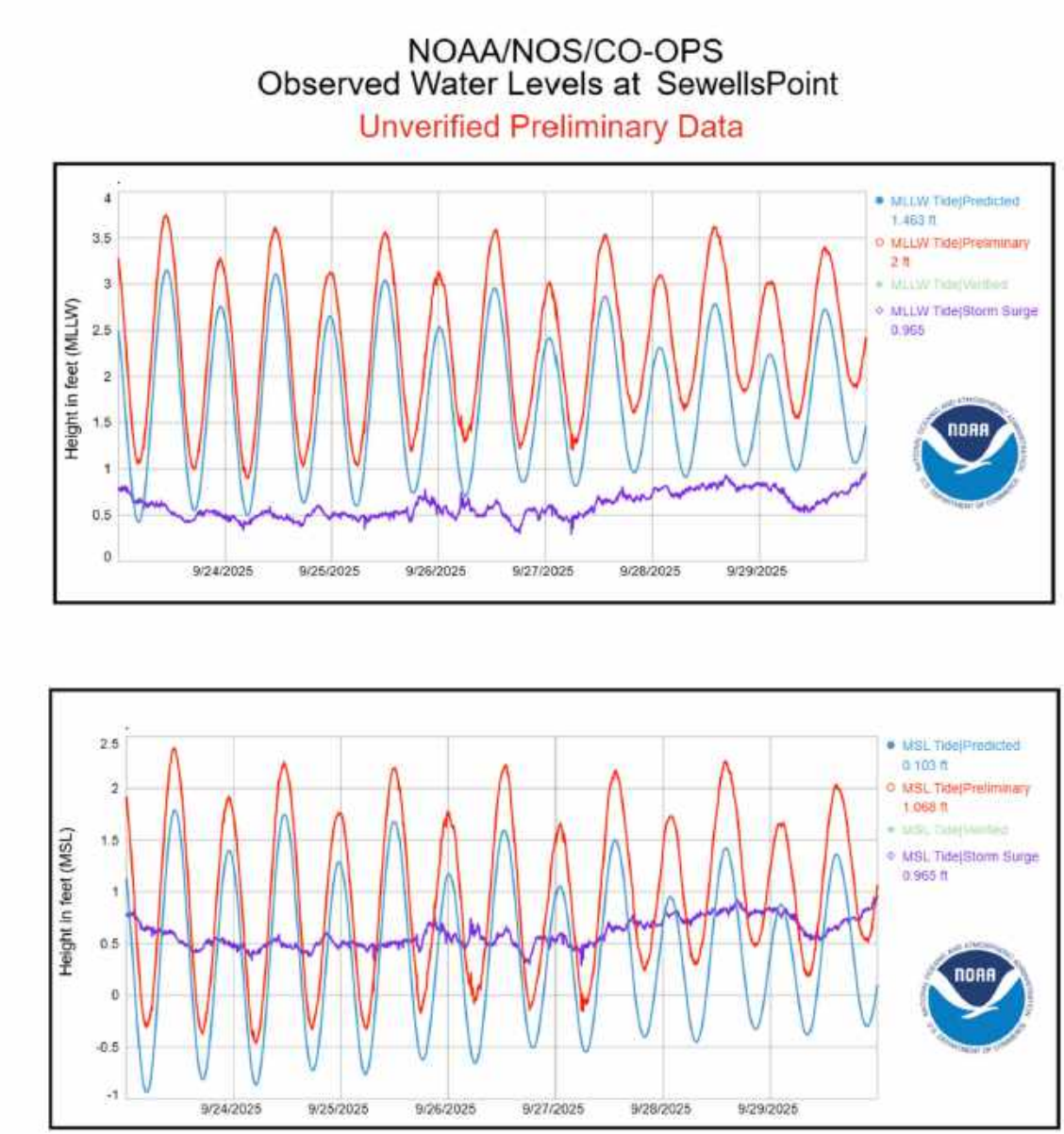


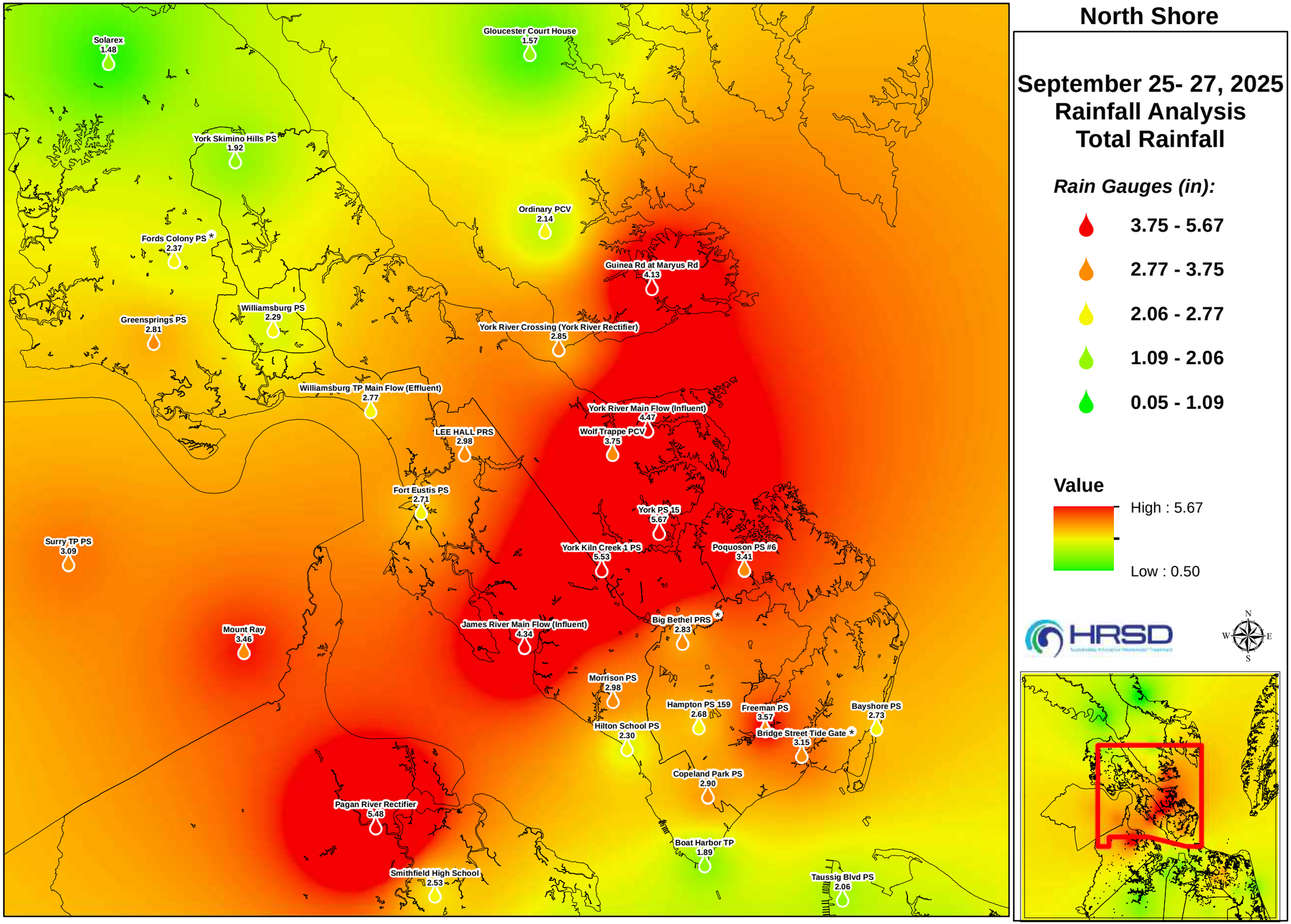
Figure 3. Preliminary data obtained from NOAA and a connection with Open Weather

Shallow Well Analysis:

Shallow wells are located at/or near HRSD Pump Stations to measure groundwater levels. The water column is measured using a pressure transducer located near the bottom of the well. The installed sensor measures gauge pressure in inches of water. The Shallow Well_NAVD88 measurement referenced in Appendix C refers to the elevation (referenced as NAVD 88) of the sensor plus the gauge measurement in feet.

Appendix A

HRSD Rain Gauge Network
Rainfall Totals



North Shore

September 25- 27, 2025 Rainfall Analysis Total Rainfall

Rain Gauges (in):

- **3.75 - 5.67**
- **2.77 - 3.75**
- **2.06 - 2.77**
- **1.09 - 2.06**
- **0.05 - 1.09**

Value

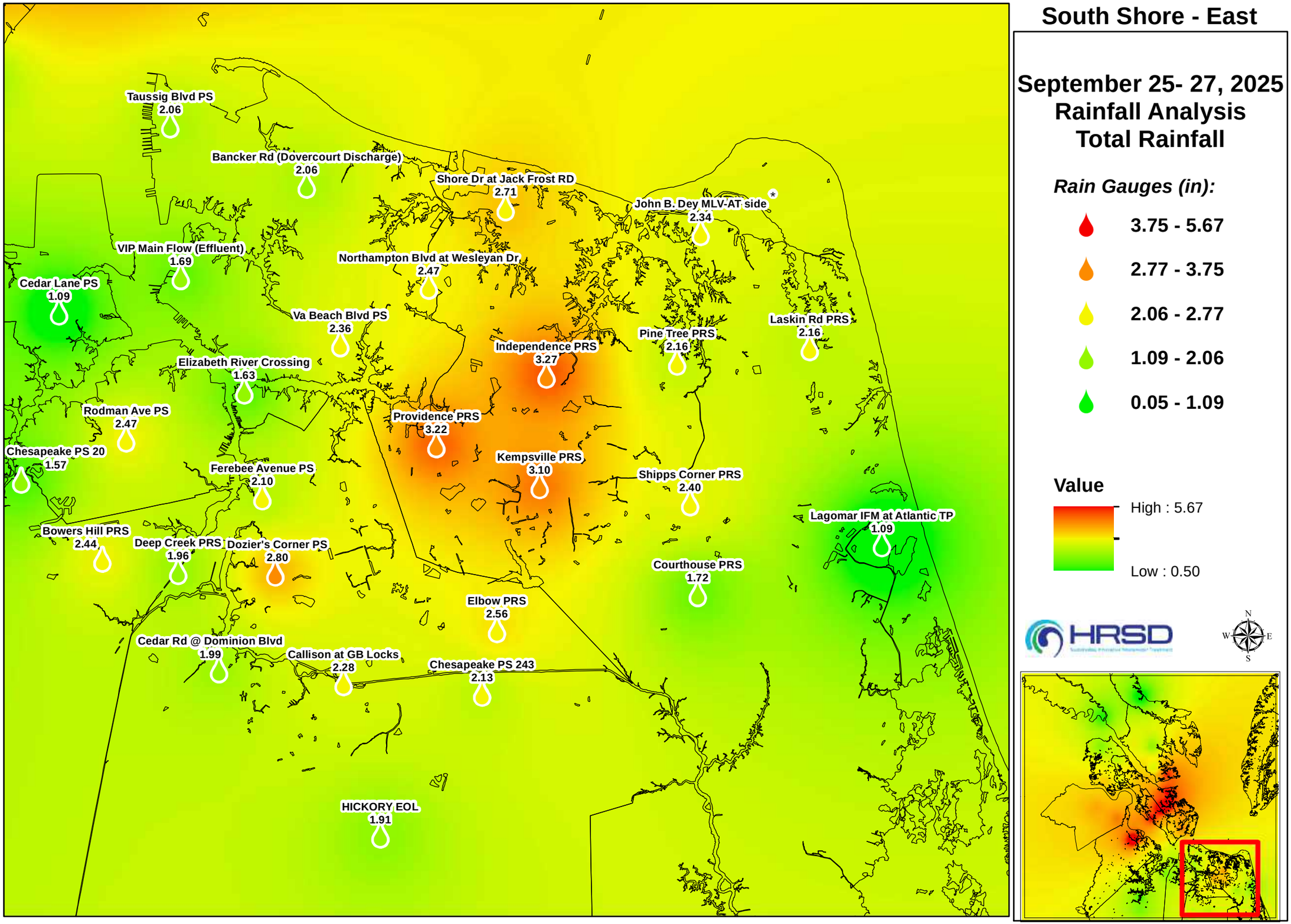
High : 5.67

Low : 0.50

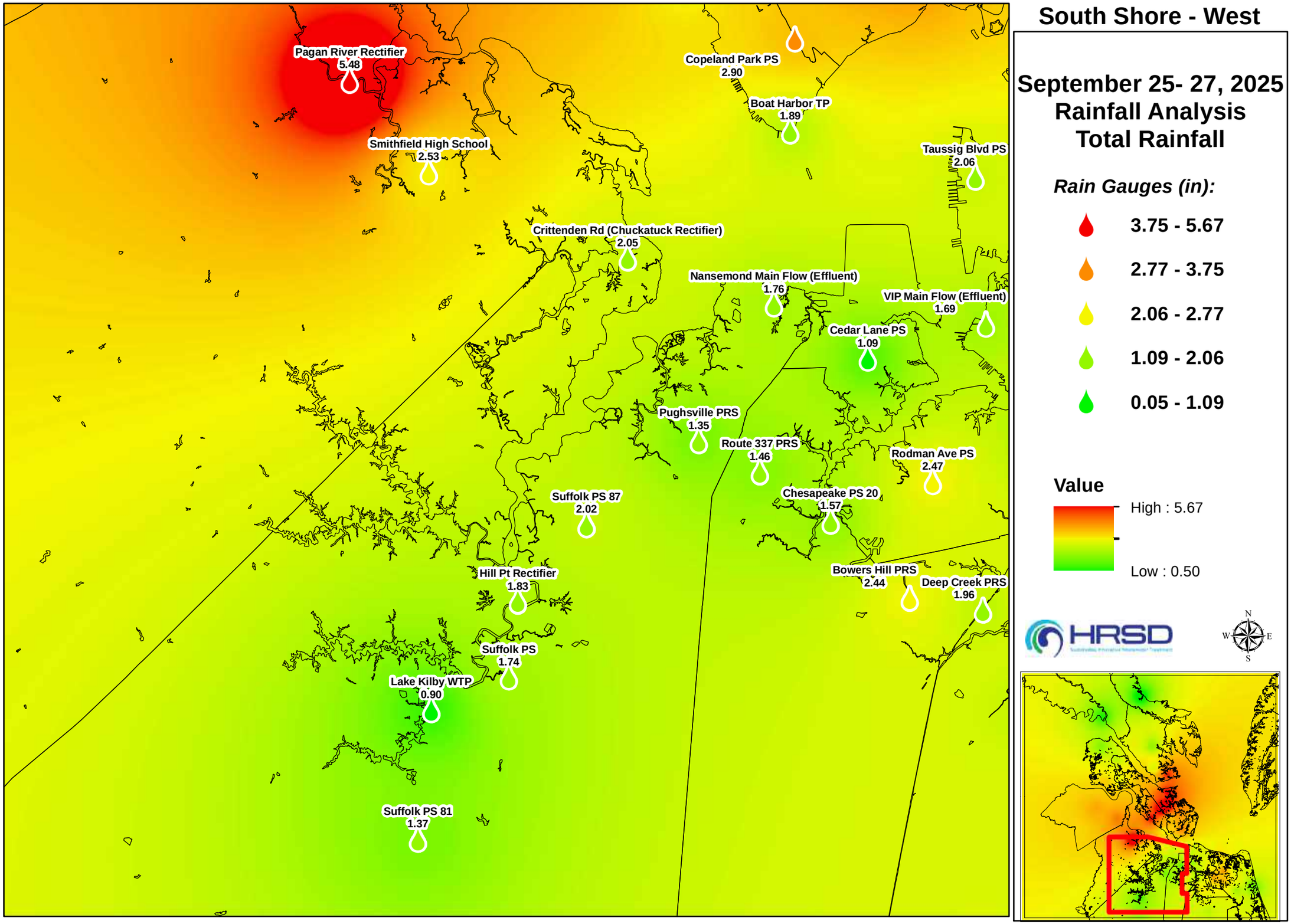
HRSD

N W E S

*Note: Rain Gauge was invalid for event and an average of surrounding sites was used.



*Note: Rain Gauge was invalid for event and an average of surrounding sites was used.



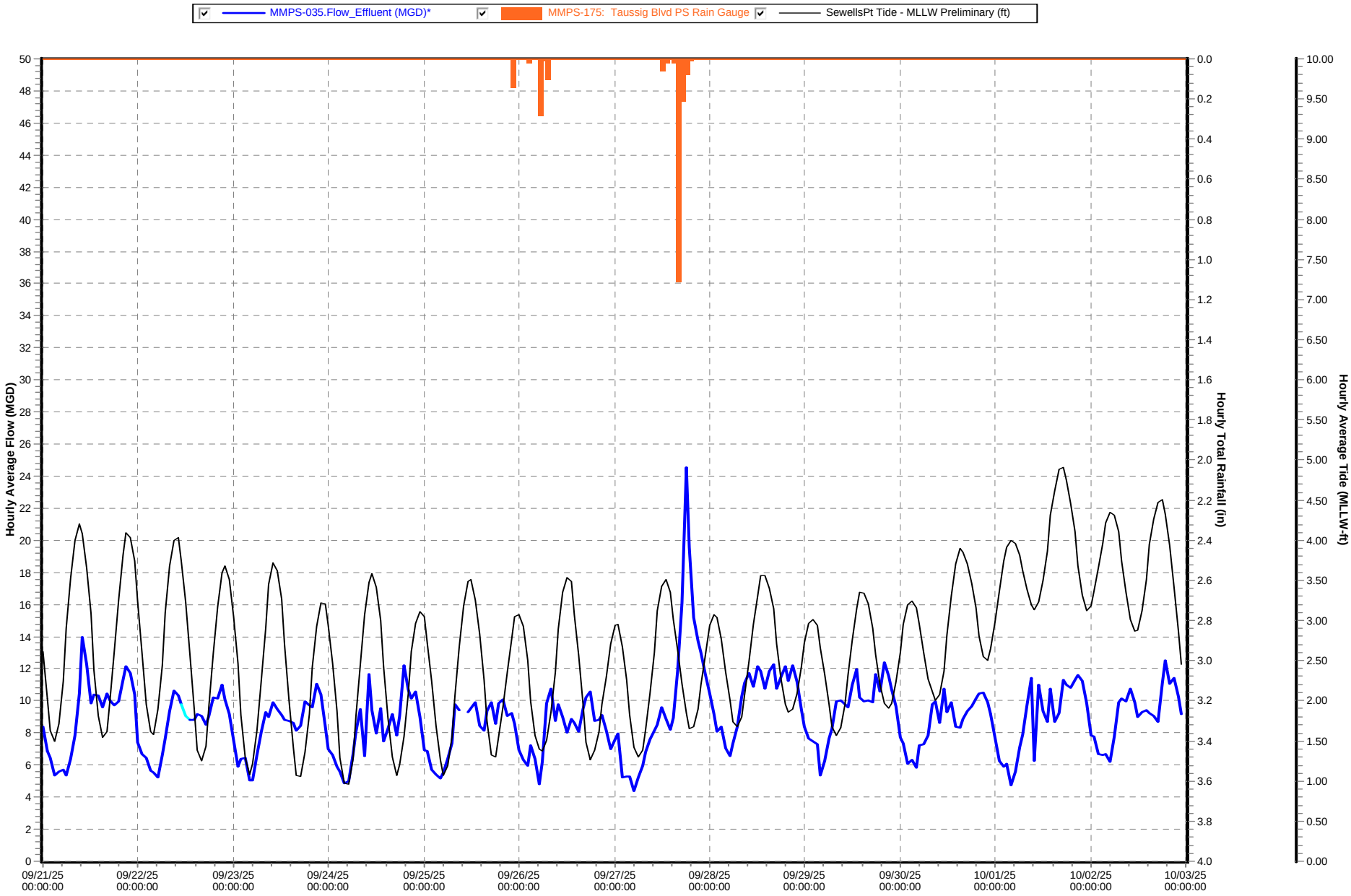
*Note: Rain Gauge was invalid for event and an average of surrounding sites was used.

Appendix B

HRSD Treatment Plant Flows

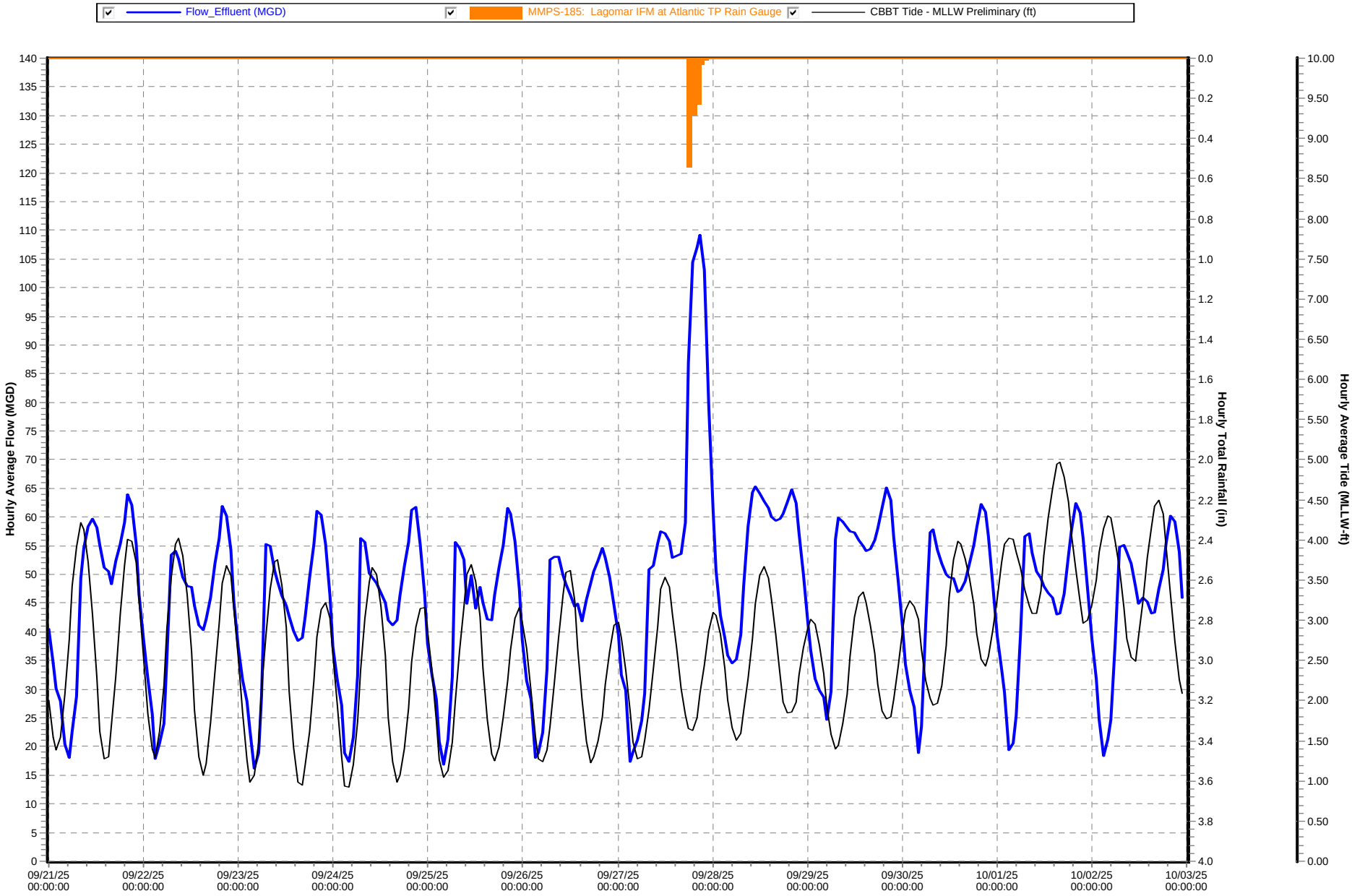
Army Base Treatment Plant

MMPS-035 (09/21/25 to 10/03/25)



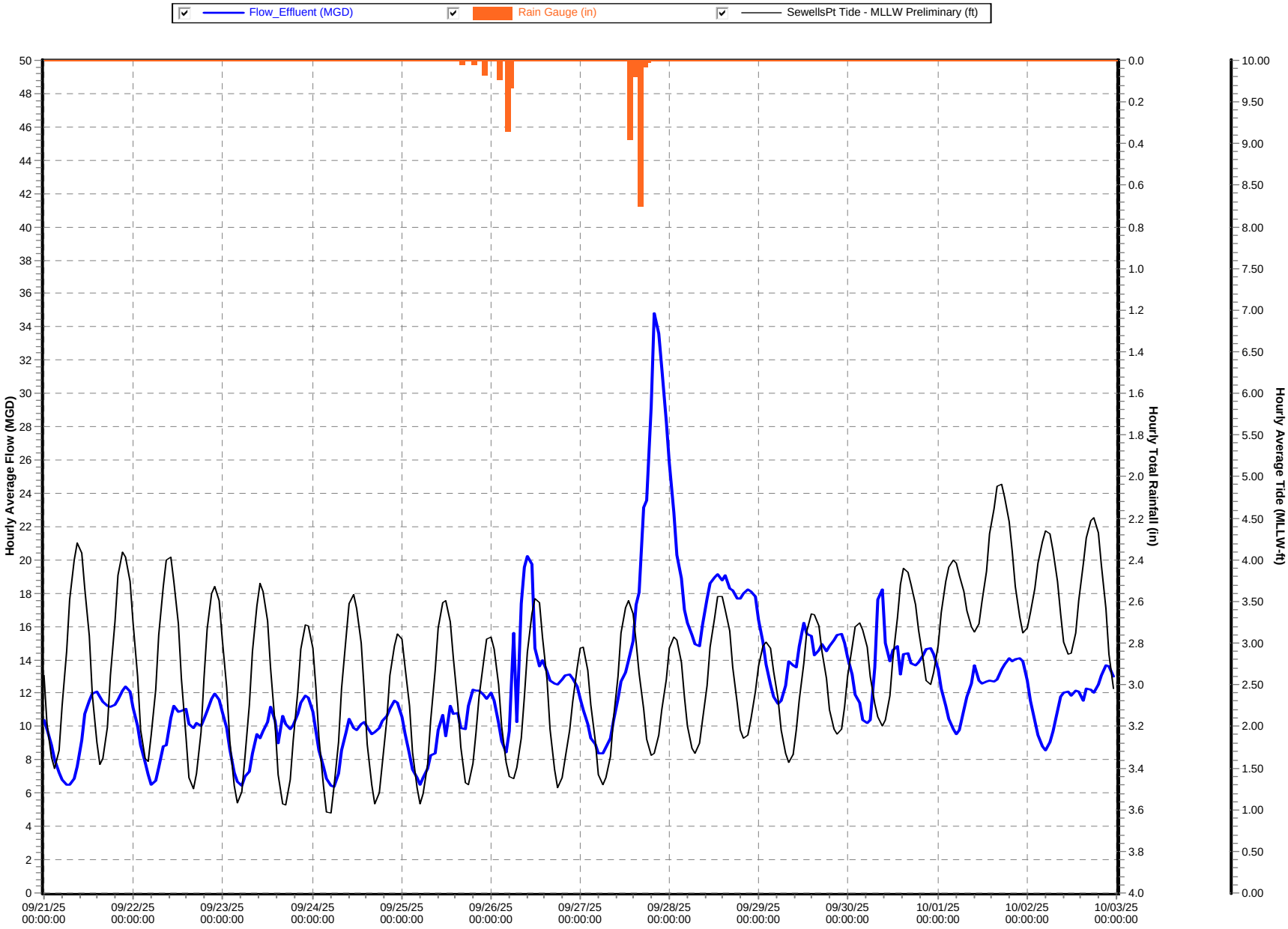
Atlantic Treatment Plant

MMPS-071 (09/21/25 to 10/03/25)



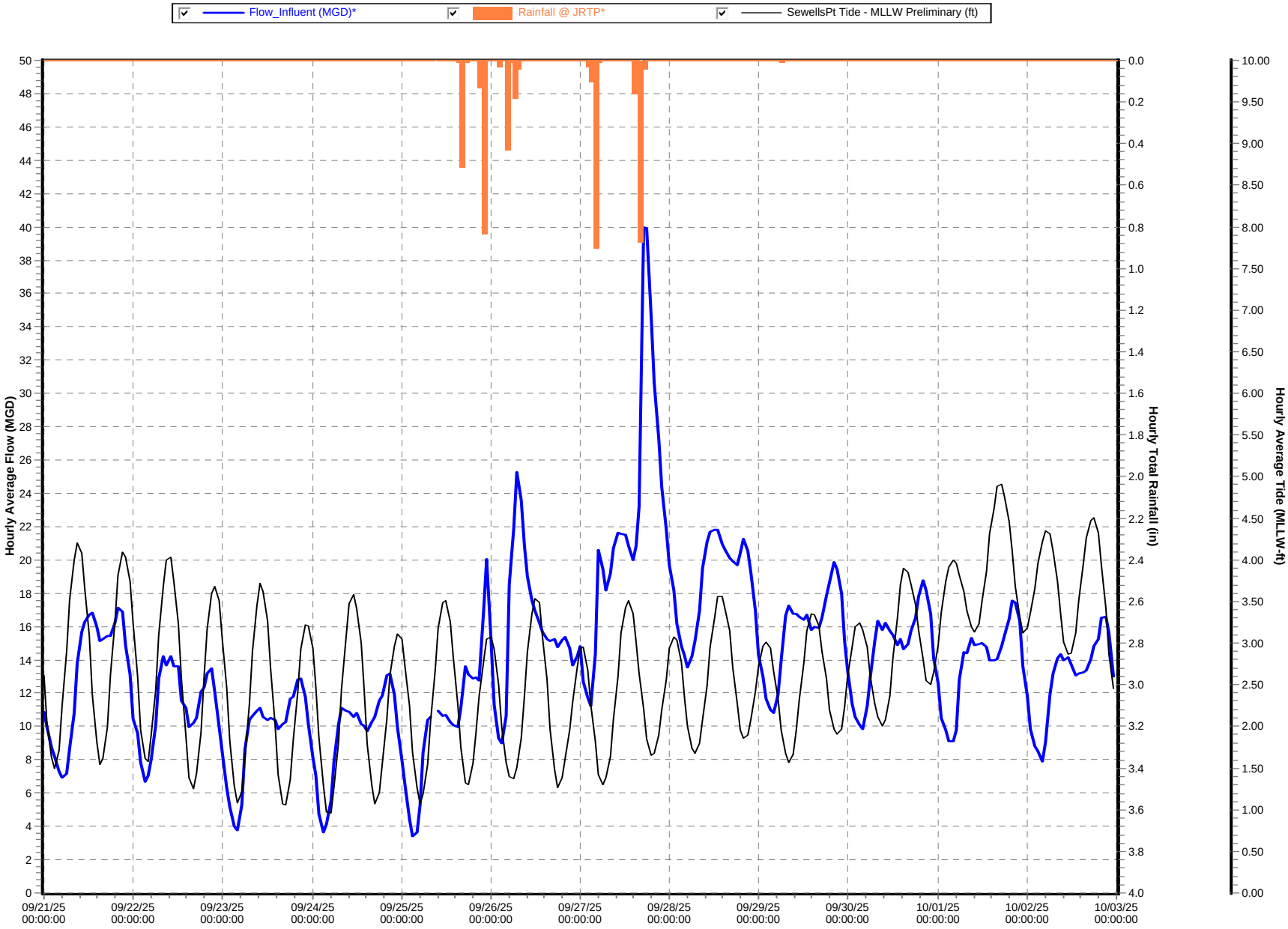
Boat Harbor Treatment Plant

MMPS-075 (09/21/25 to 10/03/25)



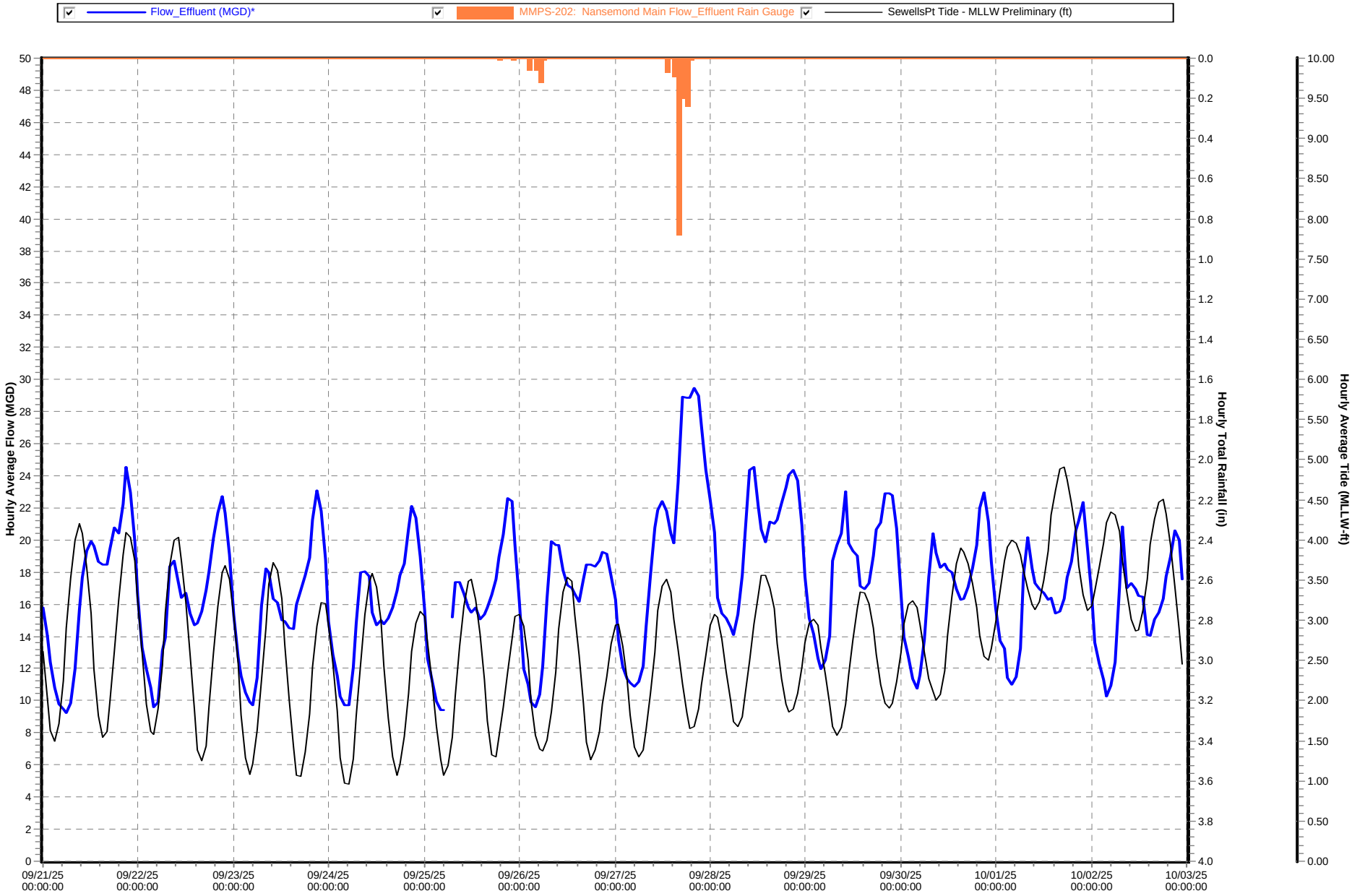
James River Treatment Plant

MMPS-184 (09/21/25 to 10/03/25)



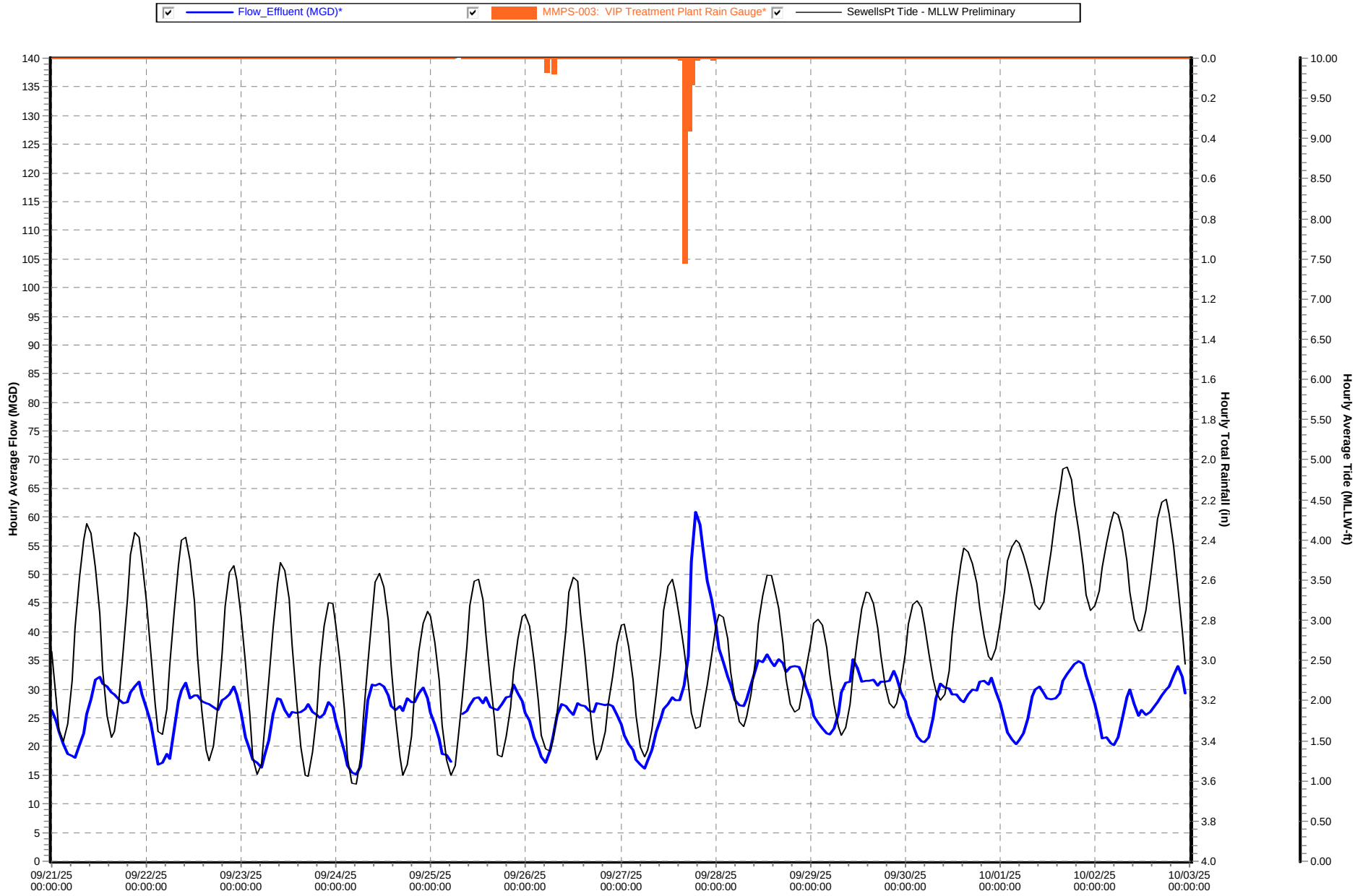
Nansemond Treatment Plant

MMPS-202 (09/21/25 to 10/03/25)

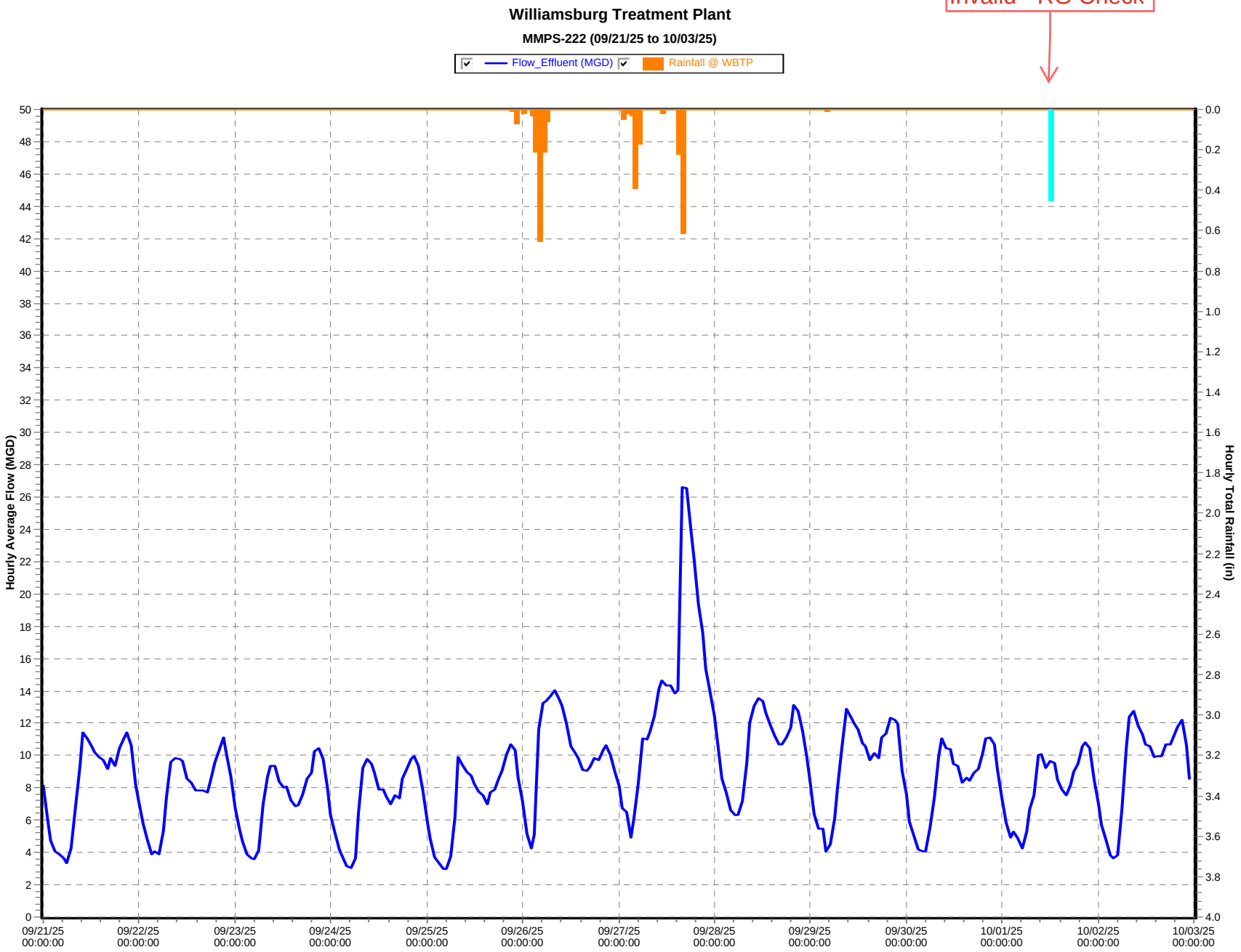


VIP Treatment Plant

MMPS-003 (09/21/25 to 10/03/25)

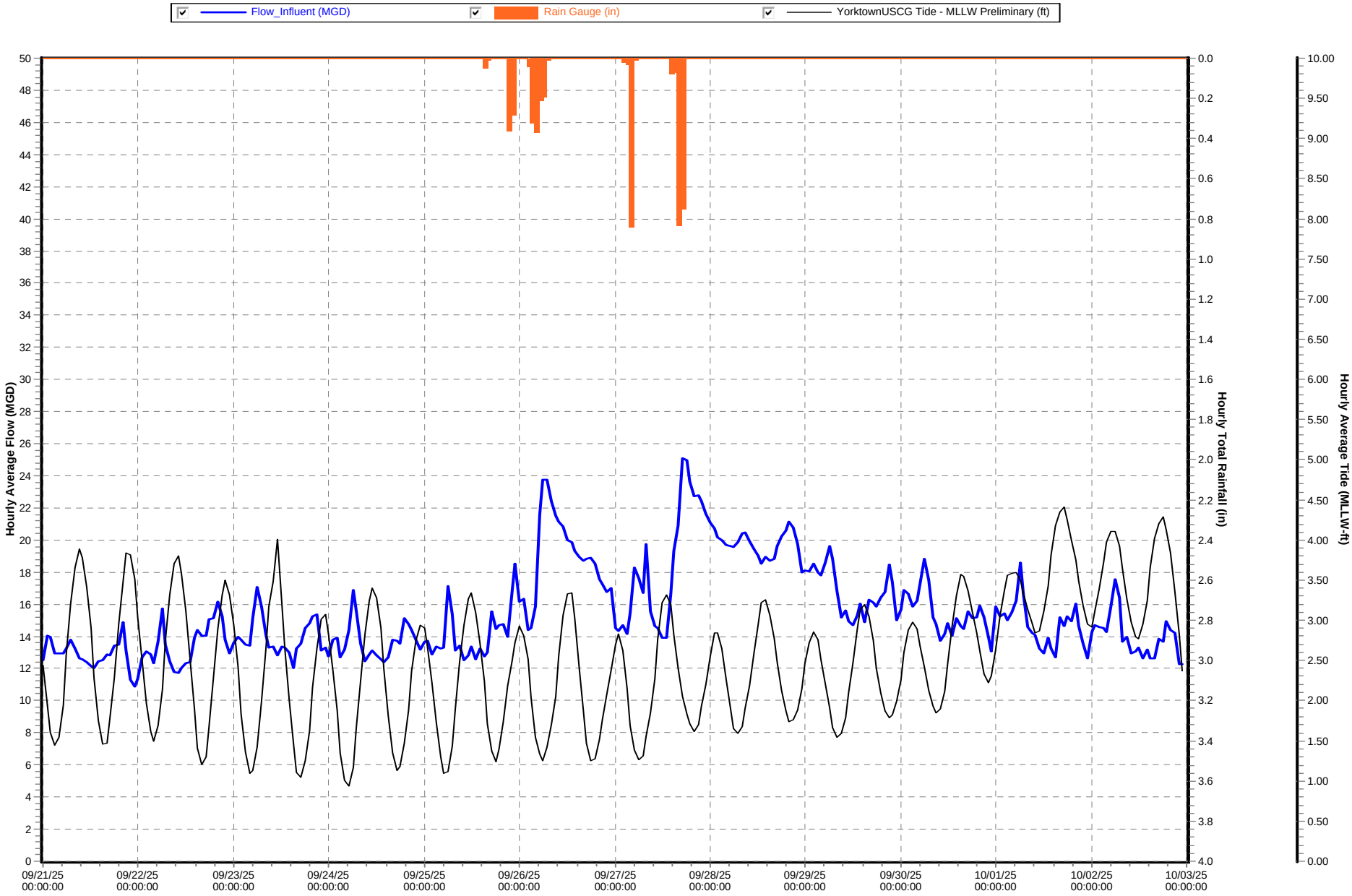


Invalid - RG Check



York River Treatment Plant

MMPS-235 (09/21/25 to 10/03/25)



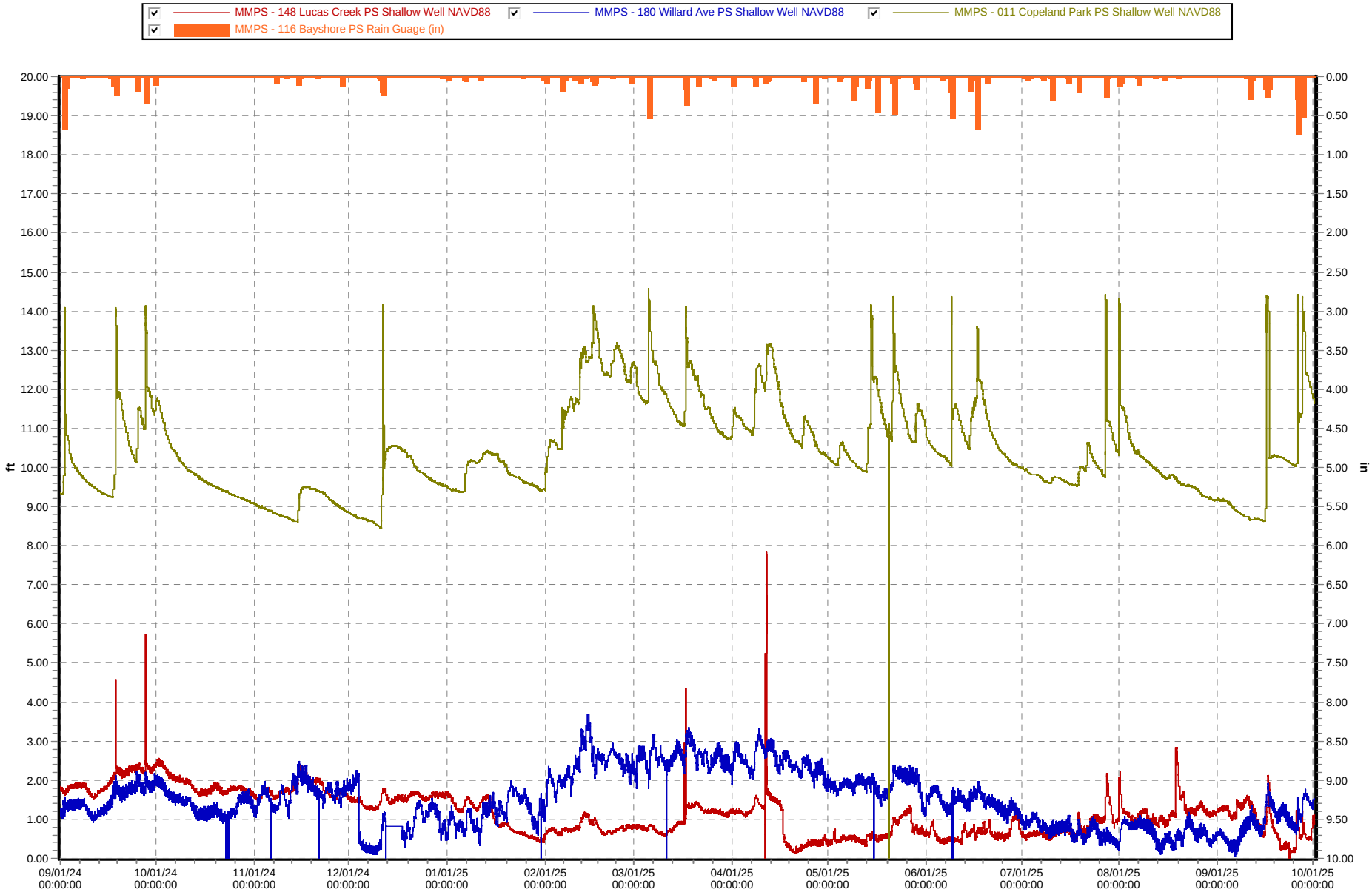
Appendix C

Shallow Well Analysis

1 - Year

North Shore Shallow Well Graphs

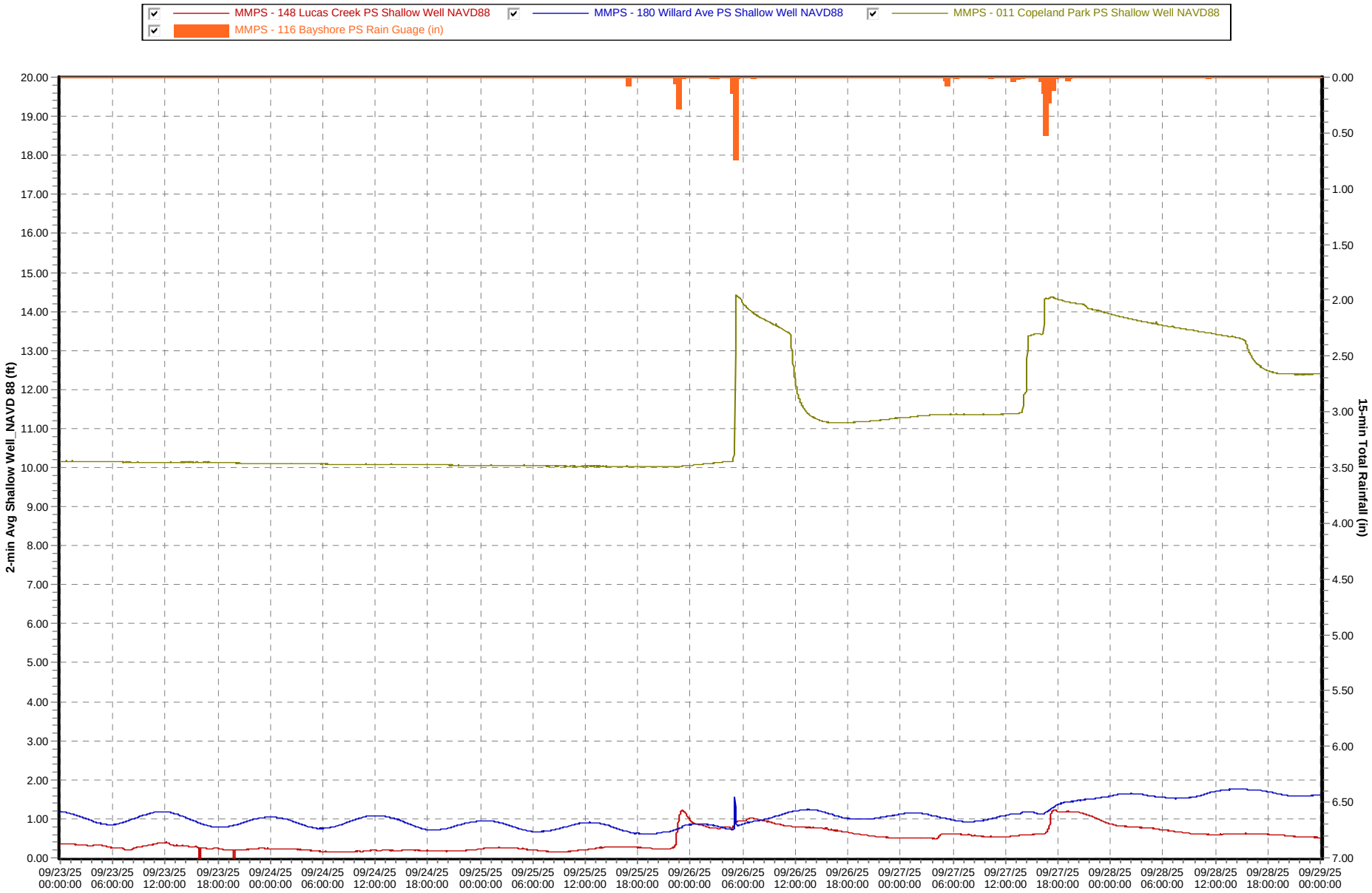
MMPS-148 (09/01/24 to 10/01/25)



5 - Day

North Shore Shallow Well Graphs

09/23/25 to 09/29/25

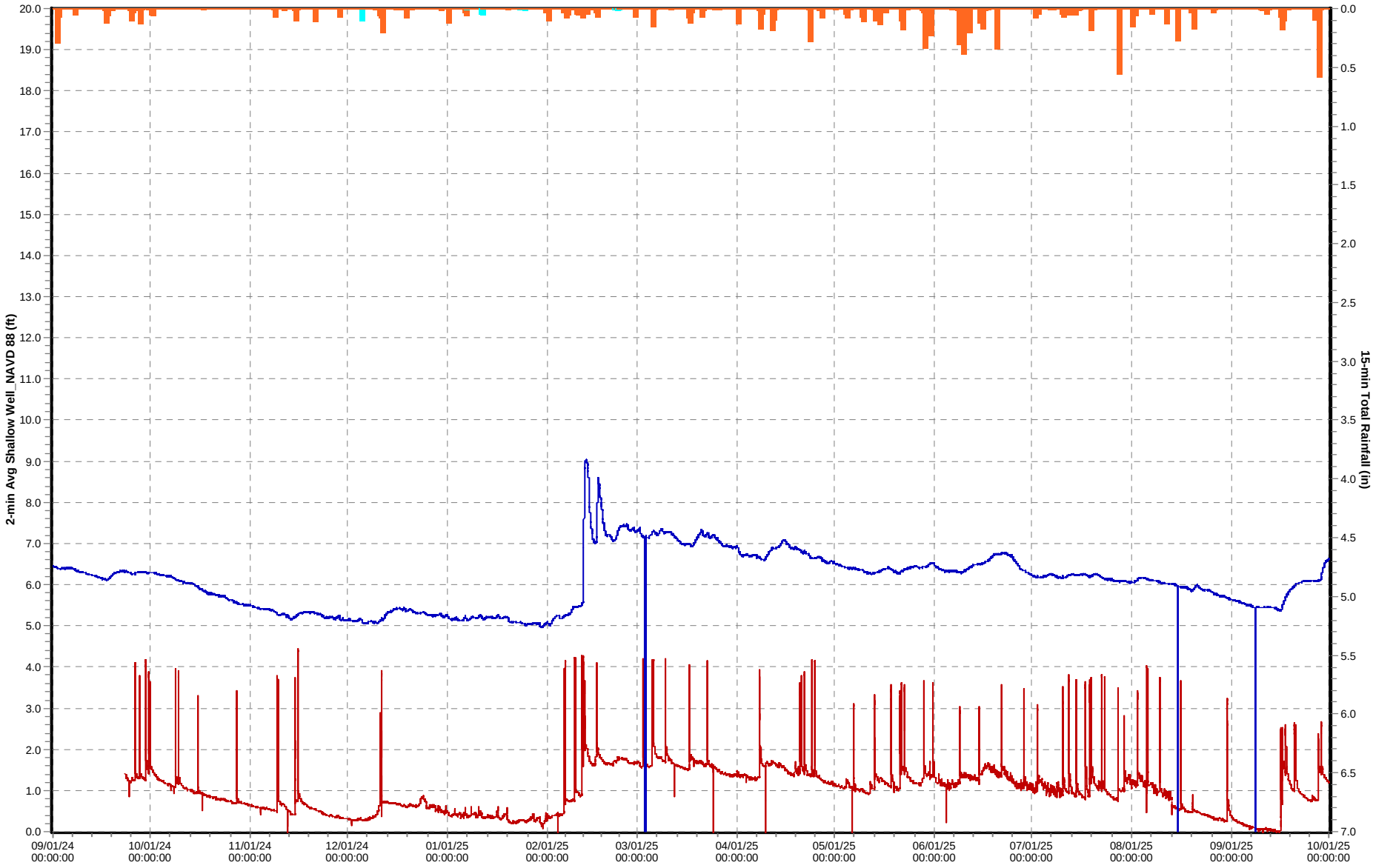


Teal is showing invalid Rainfall

1 - Year

South Shore Shallow Well Graphs

09/01/24 to 10/01/25



5 - Day

South Shore Shallow Well Graphs

09/23/25 to 09/29/25