



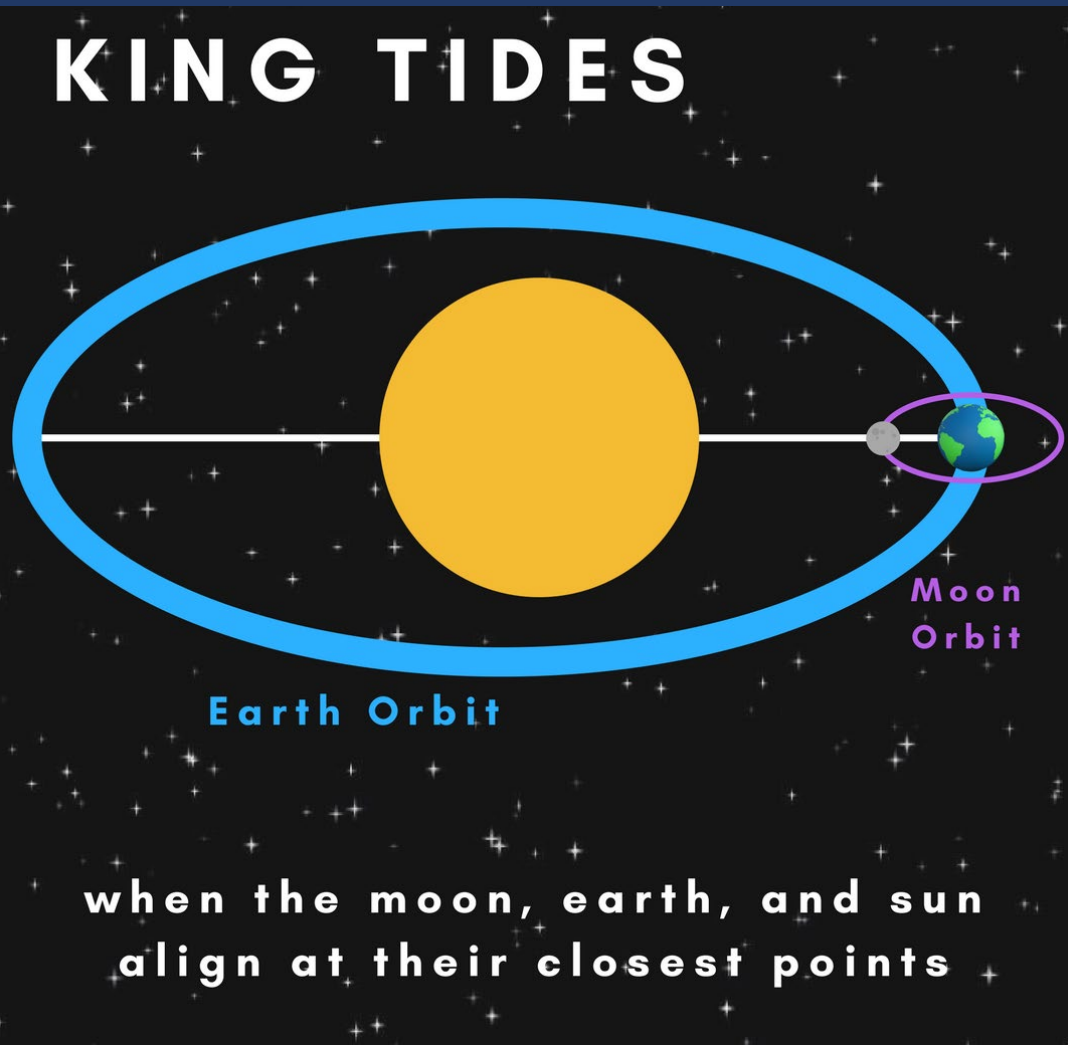
# King Tide Update

Commission Conference  
October 1, 2024



# What is King Tide?

## KING TIDES



Hourly Water Level Predictions at Virginia Key, FL for 2024  
(includes contributions from 22 standard harmonic constituents + SLR correction)

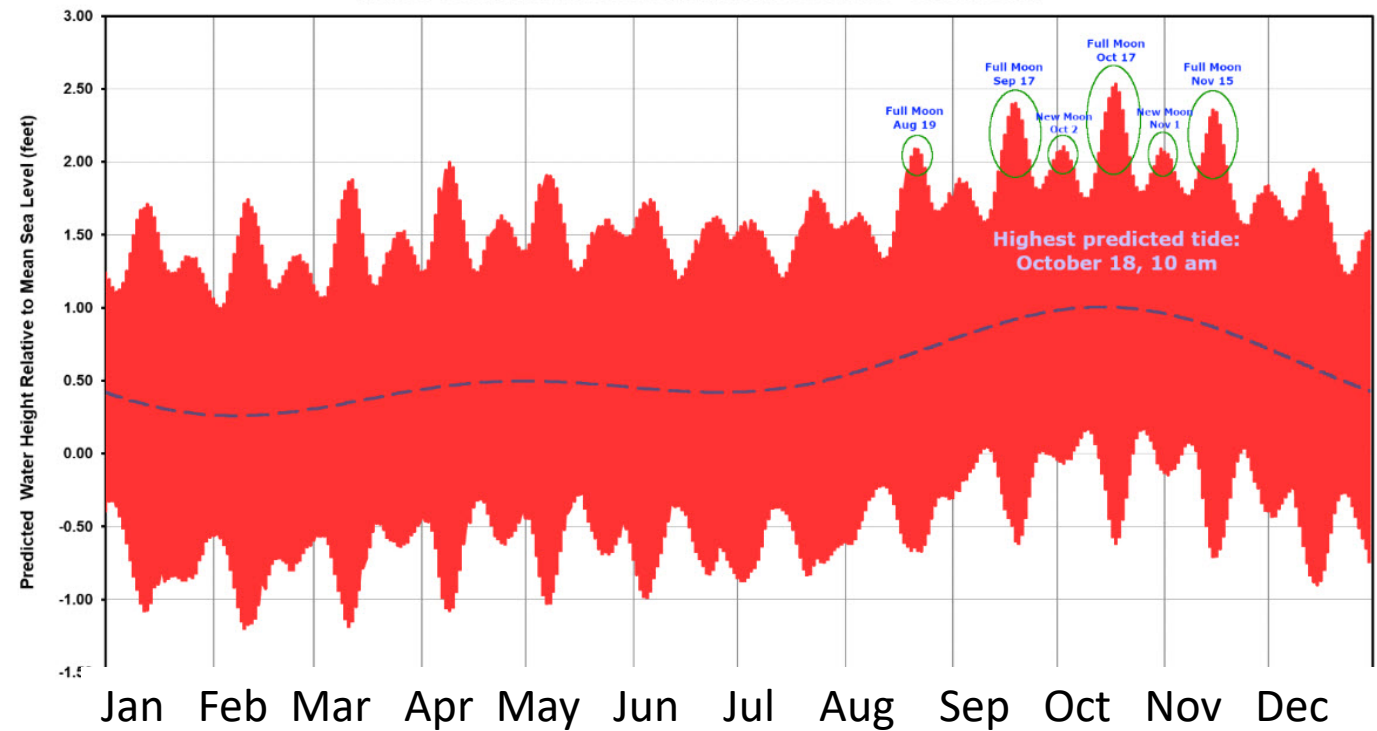


Figure 2 - Astronomical and climatological tide predictions plus a sea level rise adjustment at the Virginia Key, FL NOAA Tide Gauge showing predicted 2024 king tide season peaks. Source: Brian McNoldy, University of Miami.

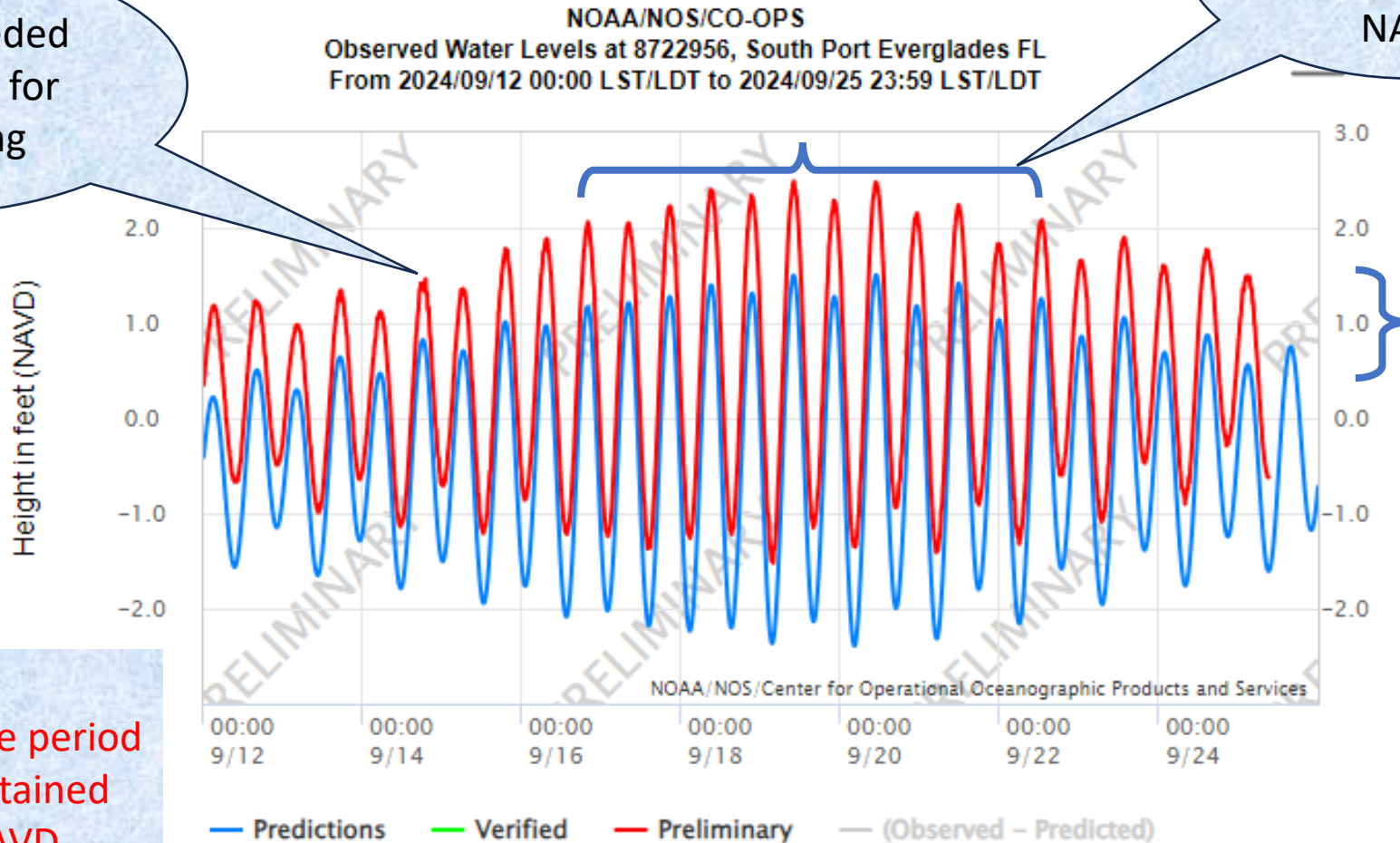
Prediction of tide elevation based on solely on gravity as a factor.



# September 2024 King Tide

Sep 14 - Exceeded the threshold for tidal flooding

Sep 16-22 - Tidal elevations exceeded 2.0 ft NAVD



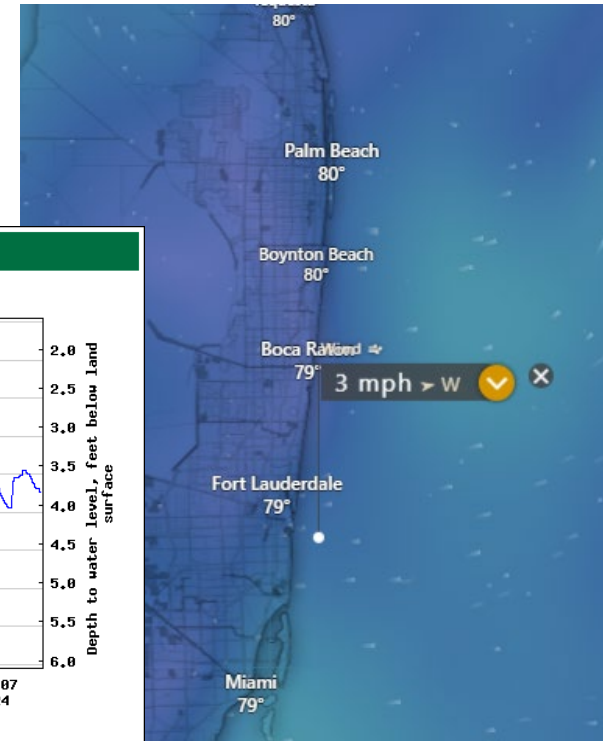
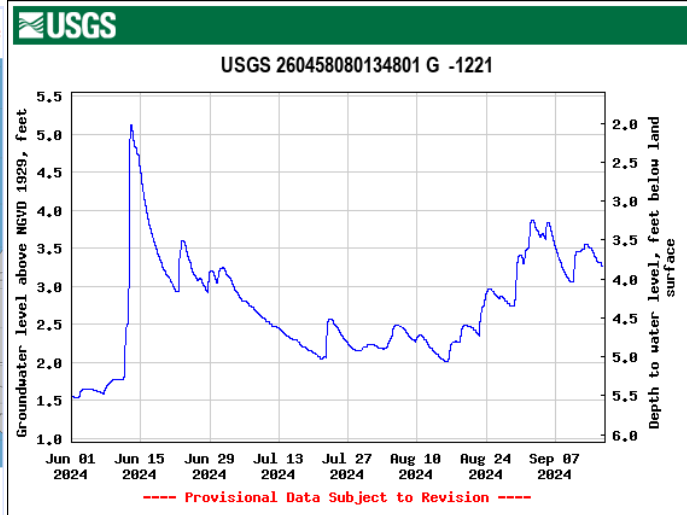
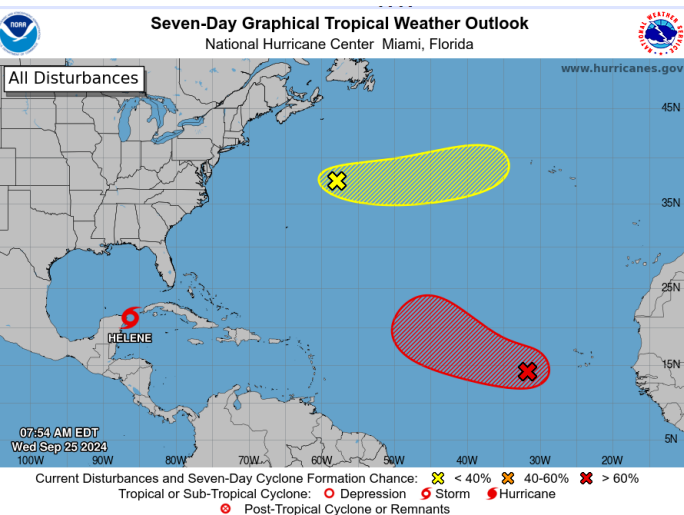
Tides observed 12 inches above predicted

**RESULT:**  
Most severe King Tide period on record, with sustained tides over 2 ft NAVD.



# Factors Influencing Observed Tides

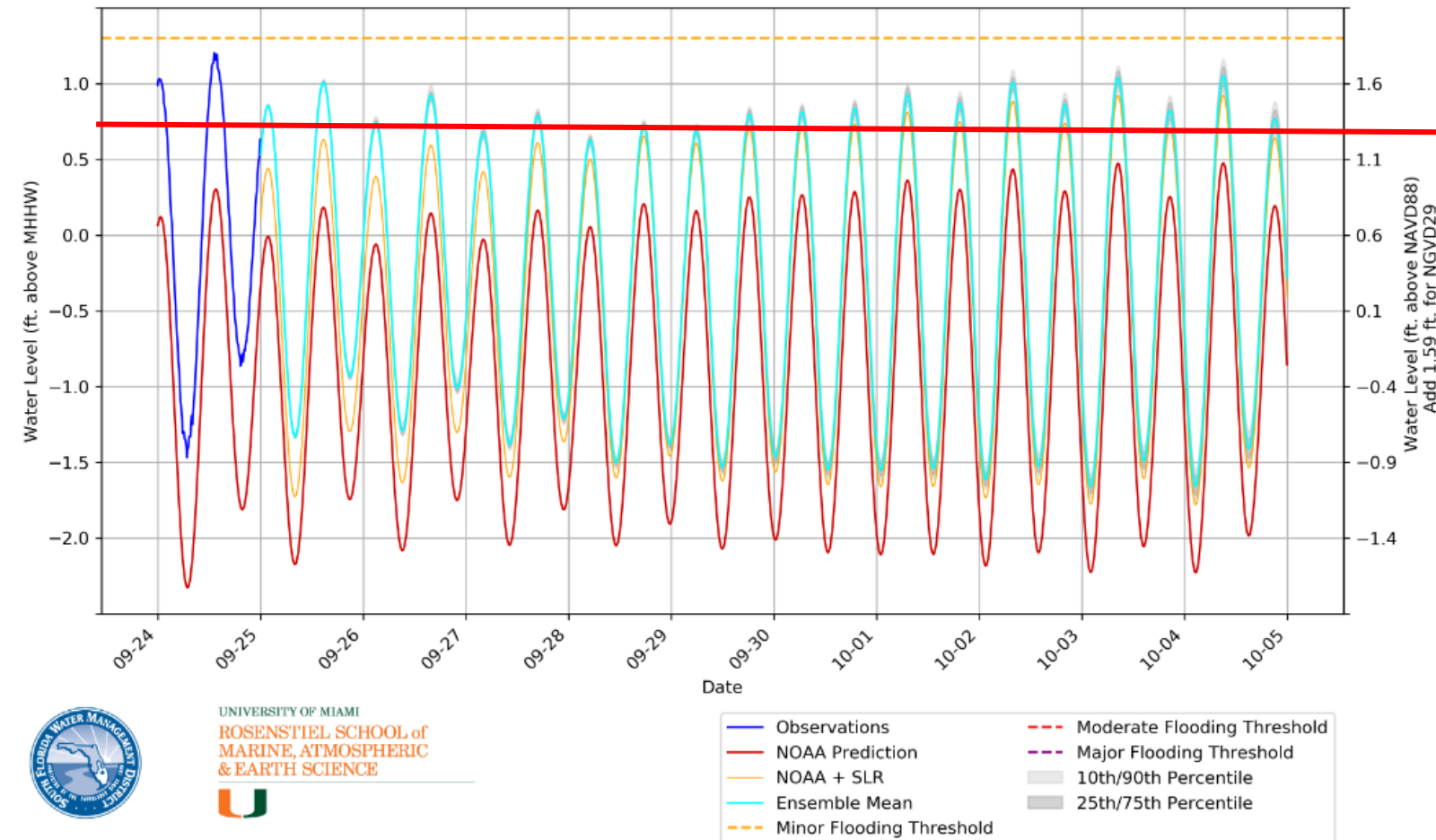
- 1) Sea level rise
- 2) Winds out of the east
- 3) Rainfall concurrent with high tides
- 4) A high groundwater table
- 5) The speed of the Florida Current
- 6) Tropical storms





# Tidal Modeling Sep 24-Oct 5

South Port Everglades 6-Minute Tide Predictions for 09-25-24  
ECMWF Ensemble Forecast



The model suggests that we will continue experience tides well above the local threshold for flooding (1.3 feet NAVD) through the next King Tide period.





# City Response: Proactive Measures

## Proactive Measures:

- Prioritized drainage improvements during the dry season
- Inspect all tidal valves prior to first King Tide
- Place delineators at edge of pavement
- Deploy “No Wake” signs
- Communicate King Tide dates



CITY OF FORT LAUDERDALE

### **PREPARE FOR UPCOMING KING TIDES NOW THROUGH DECEMBER**

Seasonal high tides known as king tides are predicted to occur this year between September and December. King tides have historically caused street flooding in low-lying areas of our community. The City uses tax dollars and stormwater fees to invest in long-term strategies to reduce the frequency, duration, and intensity of tidal flooding in vulnerable areas. These include elevating seawalls, installing tidal valves, and making drainage improvements. We also take proactive steps to prepare for the king tide season such as inspecting all tidal valves. We encourage our neighbors to prepare by:

- ✓ Reviewing flood safety tips
- ✓ Evaluating your property's readiness
- ✓ Reviewing your flood insurance policy

If you experience flooding on your street, make sure storm drains are not blocked. Rainfall concurrent with a high tide may cause some street ponding until the tide recedes.

Remove waste carts as soon as possible once emptied or wait until your next scheduled collection day to put them out. Since we experience two tidal cycles each day, be aware of the timing of the high tides and how they may affect your travel plans. Avoid driving on flooded streets. While some roadway flooding is expected, please report impassable roads to our Customer Service Center at 954-828-8000.

### **PREDICTED 2024 KING TIDES**

**Sept. 16-23**  
**Oct. 14-22**  
**Oct. 30 - Nov. 3**  
**Nov. 12-19**  
**Dec. 13-15**

[www.fortlauderdale.gov/kingtides](http://www.fortlauderdale.gov/kingtides)

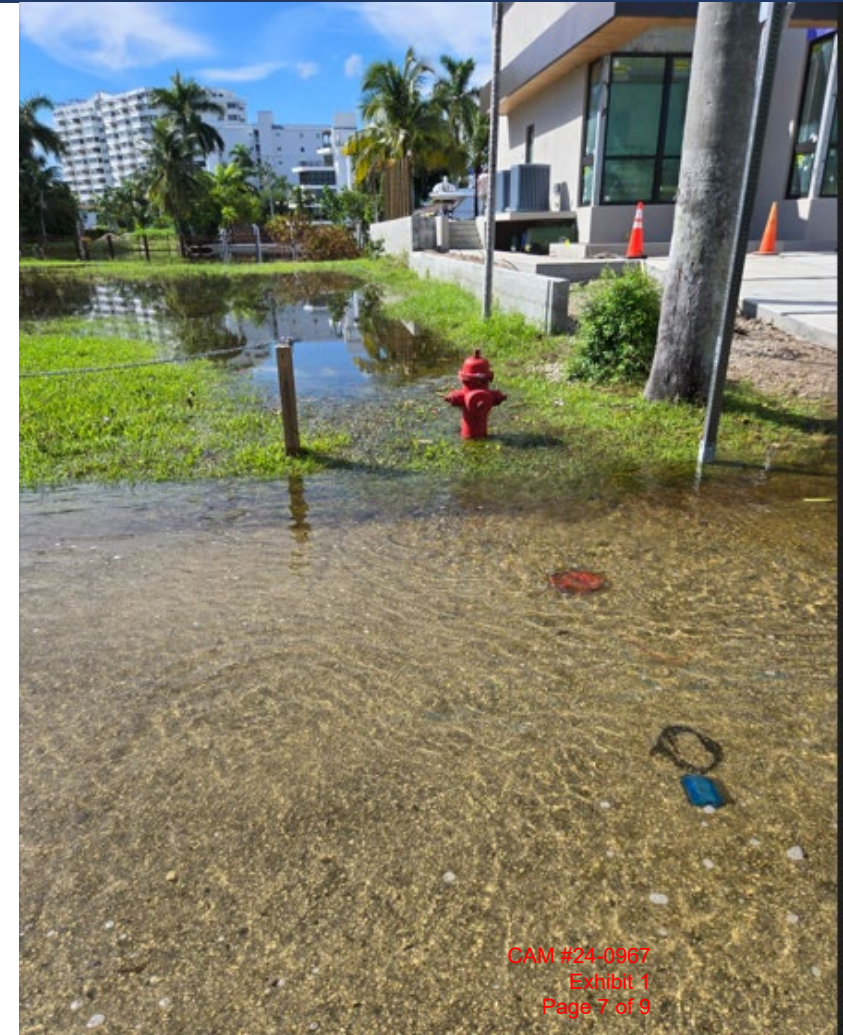




# City Response: Reactive Measures

## Reactive Measures:

- Respond to requests for inspection
- Repair tidal valves
- Provide signage for traffic concerns
- Removal of ponded water at locations where water is trapped at low tide
- Coordinate with Code Enforcement on identification and citing of private seawall violations
- Actively implement short term solutions to reduce flooding

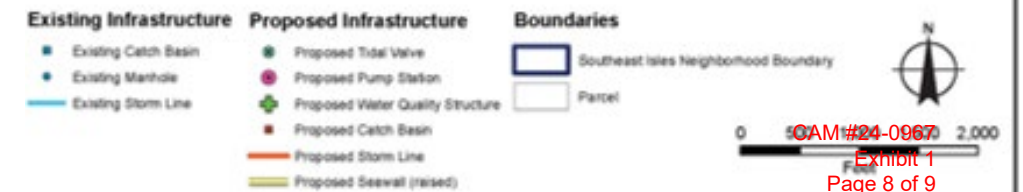




# City Response: Future Improvements

## Future Improvements:

- Accelerate design of City seawalls that are overtopping
- Move forward with next neighborhoods for Phase I Stormwater Master Plan Improvements
- Continue advancing the Fortify Lauderdale efforts
- Complete Phase II of the Seawall Master Plan





# Key Points

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- The September King Tide started early and is forecasted to continue into October.
- This has been the most severe King Tide period on record.
- A variety of factors contributed to a higher than predicted tide.
- City staff is responding to concerns.
- Future projects will reduce the frequency, intensity, and duration of flooding