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NO. LTC # **297-2019**

LETTER TO COMMISSION

TO: Mayor Dan Gelber and Members of the City Commission

FROM: Jimmy L. Morales, City Manager

DATE: May 21, 2019

SUBJECT: **CITY EXPERIENCES EXTREME RAIN EVENT**

The purpose of this Letter to Commission is to address the facts associated with the sudden and extreme rain event experienced on Thursday, May 16, 2019, which resulted in acute rain conditions in Sunset Harbour and other Miami Beach neighborhoods.

I would like to dissuade the speculation that pumps either "failed" or "turned on too late." The moment the storm began, the City deployed specialized teams to verify that the stormwater pump system was indeed operating properly. Pumps are not turned on manually; instead, they engage automatically when water in the systems reaches a certain level. The system functioned as expected during this event; however, the amount of rainfall received in a very short time exceeded the stormwater system's capacity.

Key facts associated with this rain event and the stormwater system capacity:

- According to the data captured at our City Hall weather station, 1.73 inches of rain fell in just 30 minutes. This is far greater than 0.30 inches of rain per hour, which is considered "heavy rainfall."
- To provide perspective, the 2.23 inches of rain that fell in just one hour is nearly half of what Miami-Dade has averaged during an entire month of May in the past 30 years. Please visit the South Florida Water Management District for more details. During the peak 30-minute period, we pumped more than 730,000 gallons of water out of the Sunset Harbour Neighborhood, which is more than an Olympic-sized swimming pool and translates to 1.5 million gallons of water per hour.
- The system is designed to deal with two challenges: preventing sunny day flooding caused by king tides and addressing flooding caused by stormwater. The improved system has worked very well with regards to sunny day flooding. In fact, the 12 king tides that we experienced in 2017 did not flood Sunset Harbour, even though they were higher than the most impactful event in 2013, which did cause substantial flooding in Sunset Harbour.
- With regards to stormwater management, the system is designed to drain a certain amount of water during a specific time-period. The critical factors are: the duration of rainfall and the intensity of the rain during that time. High intensity rain during a short period of time can overwhelm the stormwater system by introducing more water than it can process.

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- The stormwater system will not prevent all flooding and private properties are encouraged to make improvements to reduce flood risks. Properties located below the base flood elevation (BFE) were particularly vulnerable to flooding. Low-lying private properties can reduce the immediate impact of flood water caused by intense rain storms by retrofitting interiors to handle flood waters and installing flood panels during the raining season in anticipation of rain events. Recall that the ULI team suggested that learning to live with water must be part of the resiliency program. There is no guarantee that the area will be dry, regardless of the intensity of a rain storm.
- Many of the photos submitted to the City were of ponding water in the grassy areas of public property or front yards. This is what these areas were intended to do during extreme rainfall events in order to protect the habitable areas of buildings. Consistent with the recommendations of the ULI panel these areas should continue to function in this way and the City will not be doing anything to eliminate short term standing water in green areas.
- We also received many reports of street flooding however the areas that reported street flooding either have not received stormwater improvements or those improvements have not been completed.

The City takes note of every rain event and is diligently exploring educational opportunities and policies to mitigate flood risks, including disincentivizing new construction from building at low elevations. Elevation is the best way to secure properties from flood risk. At your request, a City team member can offer potential solutions for your property's unique conditions. You may contact the Floodplain Manager, Mohsen Jarahpour at MohsenJarahpour@miamibeachfl.gov.

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