After Action Review
May 16, 2019 Rain Event

Sustainability and Resiliency Committee

July 19, 2019

Public Works Department

City Manager's Office- Resilience

Summary

The City of Miami Beach experienced a heavy rain event on May 16, 2019 from approximately **10:30 a.m. to 1:20 p.m.**

The stormwater system functioned as expected during this event, but the amount of rainfall received in a short time exceeded the system' s capacity. **High intensity rain during a short period of time overwhelmed the stormwater system by introducing more water than it can process.**

Flooding occurred in areas that have not received stormwater improvements or where those improvements have not been completed. However, low-elevation properties experienced some flooding.

Flood Extent & Impact

City Hall weather station recorded 1.73 inches of rain falling in just 30 minutes.

730,000 gallons were pumped in Sunset Harbour during the half hour peak.

Various businesses and streets were affected by flooding or standing water.

Timeline of Event

10:30 a.m. - Rain event started, and storm water crews were out monitoring the identified low-lying problem areas.

10:56 a.m. - Stormwater staff reported that all systems were operational and areas were free of standing water.

11:30-11:41 a.m.- Significant standing water found on areas of West Avenue. Alton & 5th area was also holding water.

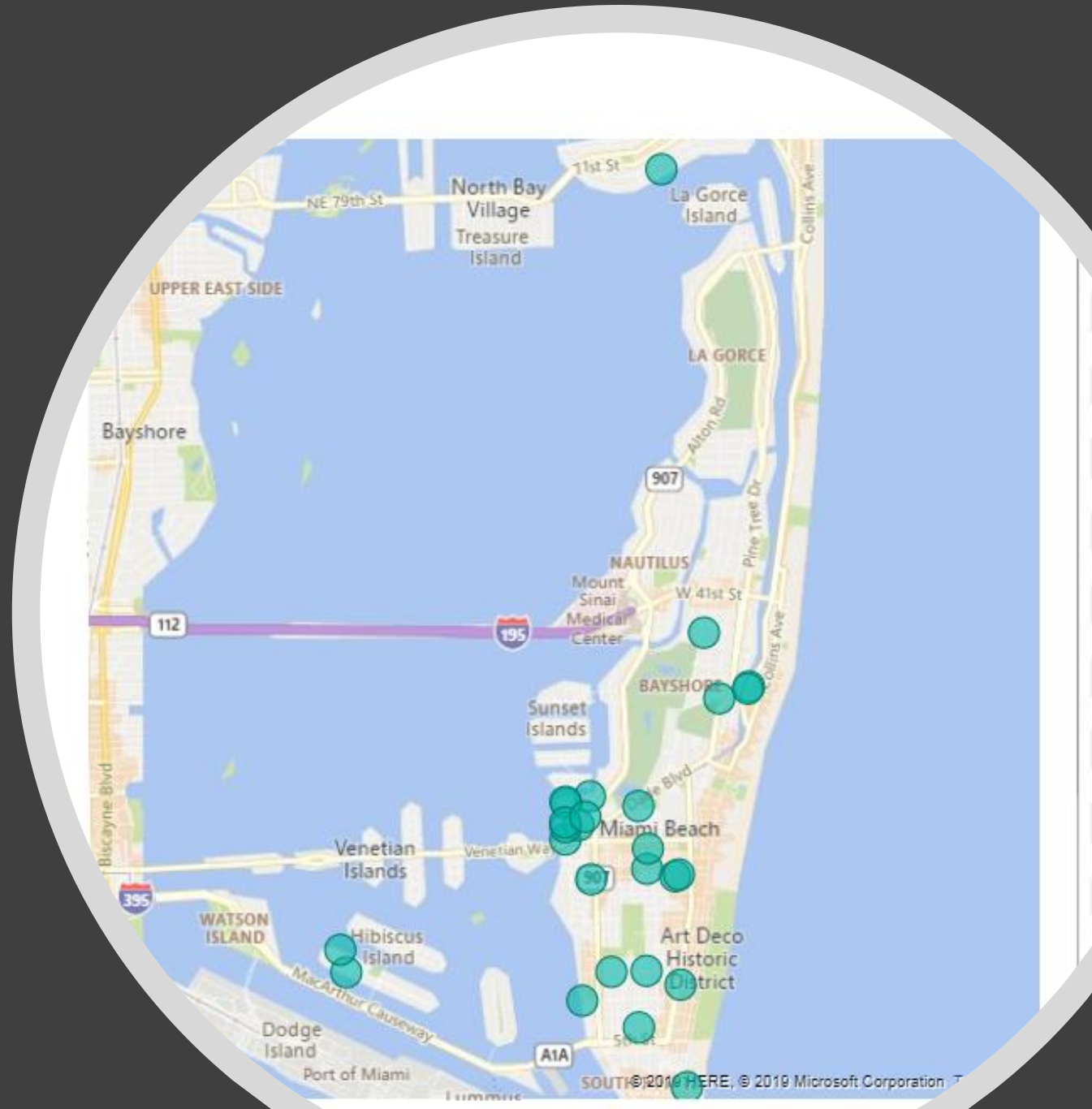**12:30 p.m. - Very intense rain came down.**

12:38-1:00 p.m. - Roy advised that various areas were flooded in Sunset Harbour. PW electrician confirmed that pumps were running.

1:04 p.m. – Rain started to slow down.

2-2:30 p.m. – Most of Sunset Harbour was dry. Operations moved to other affected areas.

3:40 p.m.- Portable pump was installed in Hibiscus Island to address flooding in the area.
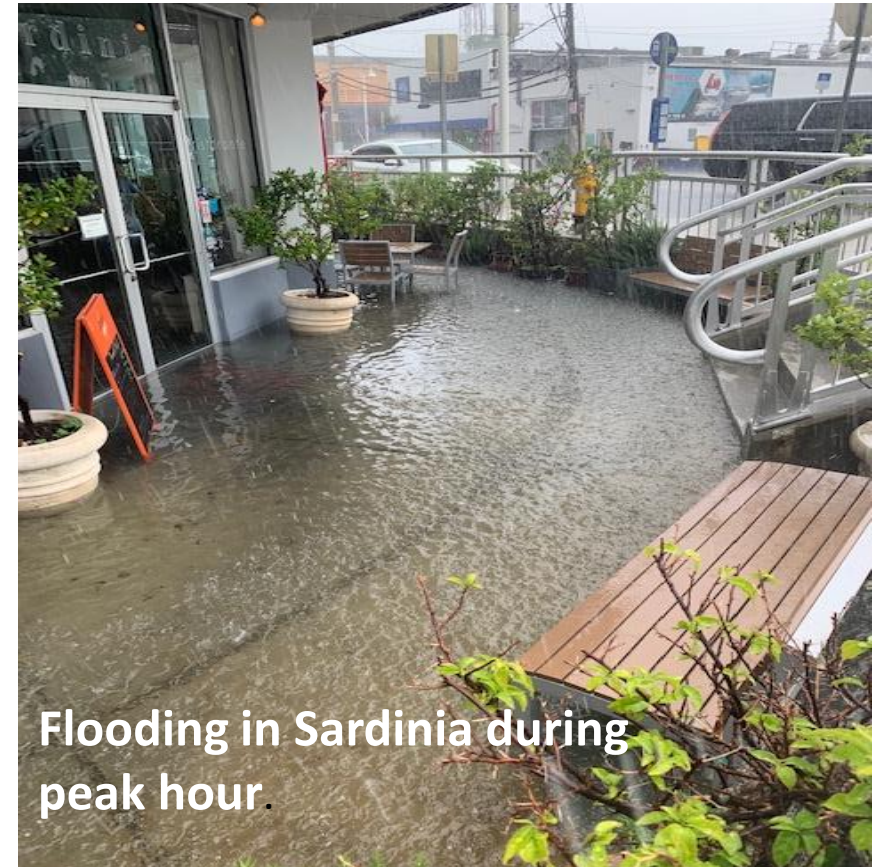
27 Flood/Standing Water Requests from Cityworks (includes EGov and phone calls to the Public Works Control Room)

Areas that Experienced Flooding

The following businesses and areas were affected by flooding or standing water:
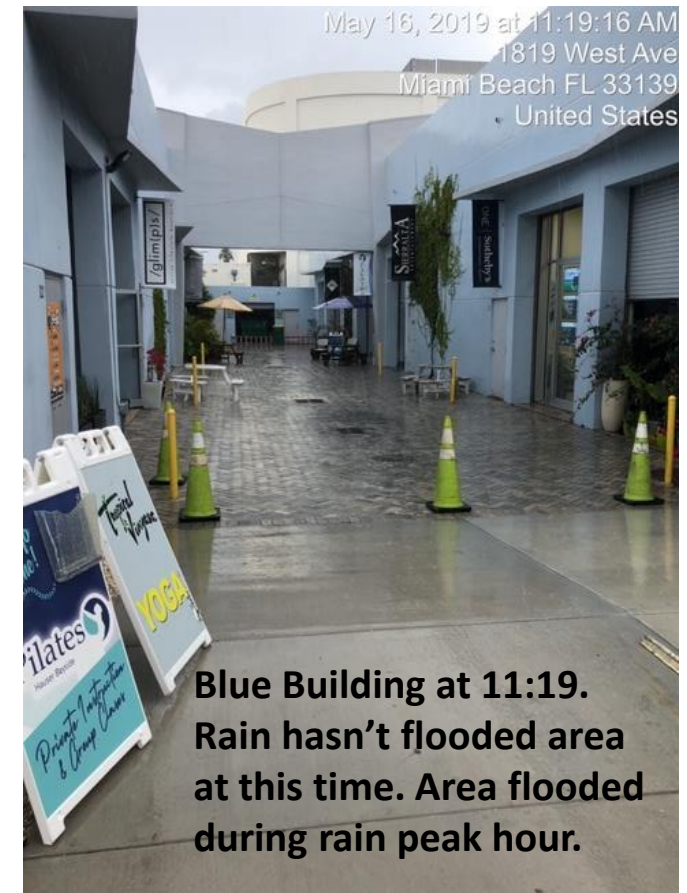
1. TKS

2. Sardinia

3. Hibiscus Island

4. Sushi Garage

5. Blue Building court yard

6. Stiltsville

7. Office Depot parking lot

8. Public storage parking lot

9. I95 Exotic Rentals

10. Significant standing water in West Ave.
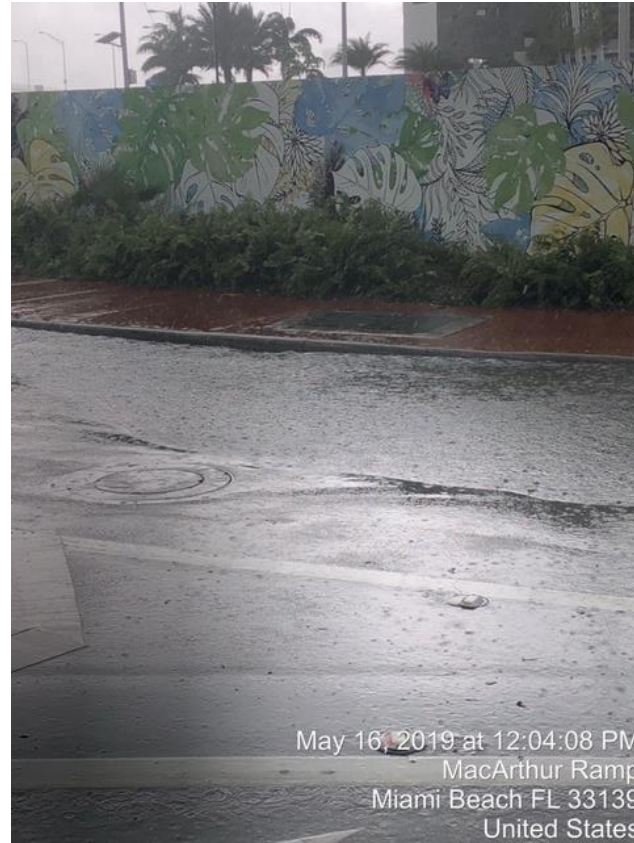
11. Standing water in Sunset Harbour

Flooding in Sardinia during peak hour.

Beginning of Rain Event – Sunset Harbour
There is no flooding in the photographed areas 11:10am – 11:19am

May 16, 2019 at 11:10:44 AM
1811 Purdy Ave
Miami Beach FL 33139
United States

May 16, 2019 at 11:10:41 AM
1811 Purdy Ave
Miami Beach FL 33139
United States

May 16, 2019 at 11:19:16 AM
1819 West Ave
Miami Beach FL 33139
United States

Blue Building at 11:19. Rain hasn't flooded area at this time. Area flooded during rain peak hour.
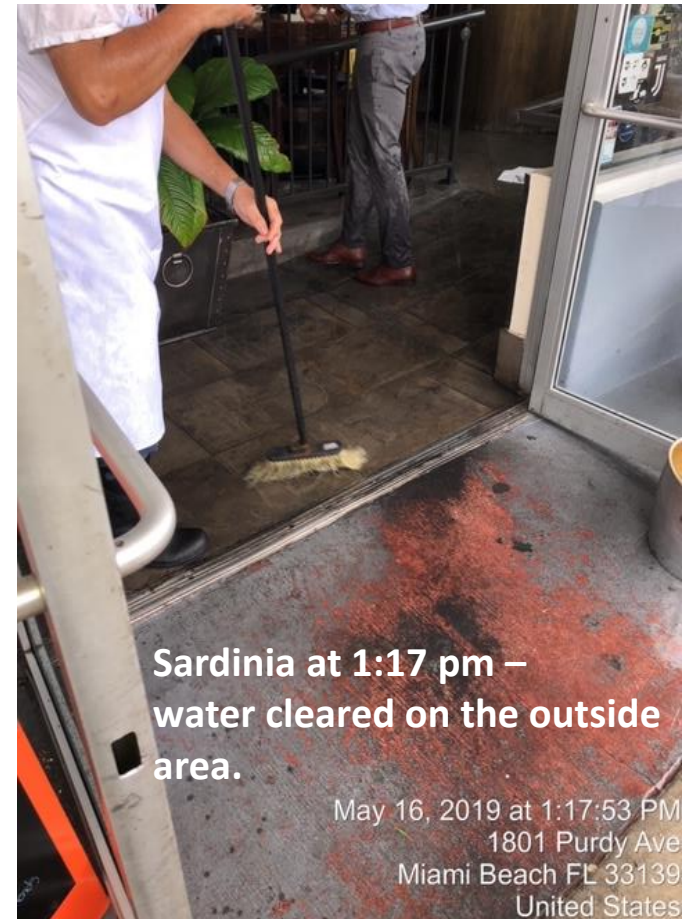
West Avenue, MacArthur ramp, Espanola Way
Standing Water 11:12am and 12:04pm

Businesses Affected by Flooding – Sunset Harbour
12:52pm and 1:17pm

Sardinia during peak rain hour. At 12:52 Roy advises of flooding issues at Sardinia. Flooding is addressed by operations.

Sardinia at 1:17 pm – water cleared on the outside area.

May 16, 2019 at 1:17:53 PM
1801 Purdy Ave
Miami Beach FL 33139
United States

Businesses Affected by Flooding – Sunset Harbour
2:01pm and 2:03pm

TKS

Public Storage- Private Parking Lot

May 16, 2019 at 2:01:03 PM
1784 West Ave
Miami Beach FL 33139
United States

May 16, 2019 at 2:03:14 PM
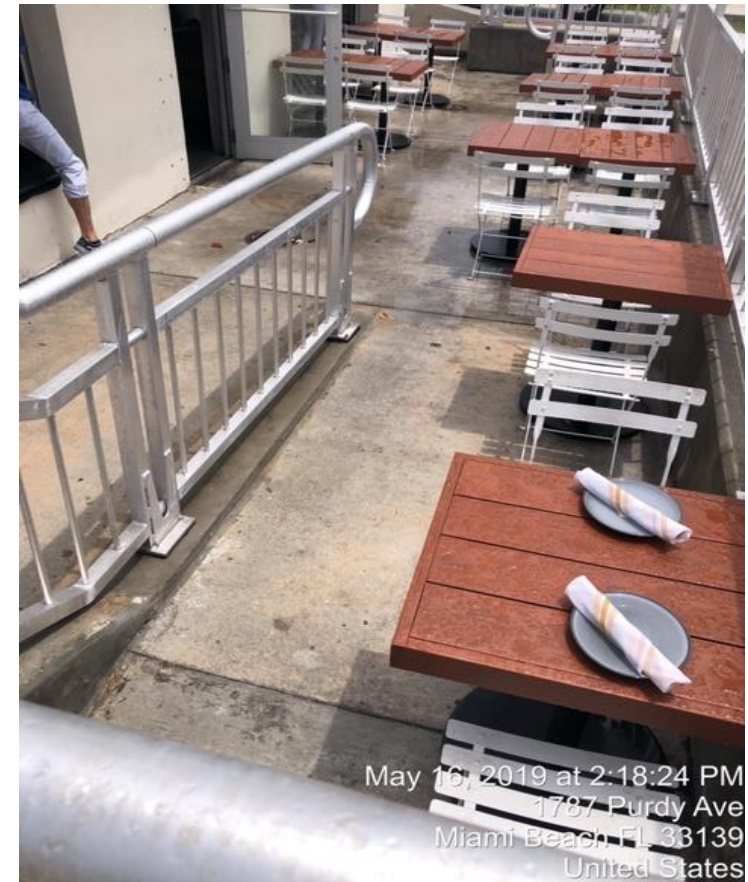1778 West Ave
Miami Beach FL 33139
United States

Businesses Affected by Flooding – Sunset Harbour
At 2 p.m. – 2:18pm water is receding.

Sushi Garage

Stiltsville

Standing Water in Sunset Harbour Area
At 2 p.m. water has receded in most areas of Sunset Harbour.

Removal of Standing Water – Sunset Harbour

Small pump is used to remove standing water from I95 Exotic Rentals.

The photo shows a blue hose used to pump the water to the street.

Response to Rain Event From Staff

31 calls about flooding received in Public Works control room.

27 flooding requests captured in Cityworks

Public Works efforts included deployment of operations to check pumps, removing standing water from flooded areas, taking photos and communicating with businesses.

Temporary pumps were only deployed in Indian Creek Drive and Hibiscus Island. A small City owned pump was used to remove the water from the Blue Building and I95 Exotic Car Rental.

Impact From Rain Event

Traffic congestion in the following areas:

1. Indian Creek Drive & 29th Street
2. Alton Road & 5th Street
3. West Avenue between 8th – 15th Street

Business closures:

1. Sardinia
2. TKS
3. Sushi Garage
4. Stillsville

No damage to fleet

News Stories About Flooding Event

- Heavy Rain Causes Flooding in Miami Beach, NBC6: https://www.nbcmiami.com/on-air/as-seen-on/Heavy-Rain-Causes-Flooding-in-Miami-Beach_Miami-510032902.html

- Rainy weather causes flooding issues throughout Miami Beach, Channel 10: https://www.local10.com/news/florida/miami-beach/rainy-weather-causes-flooding-issues-throughout-miami-beach

Additional Data Needs

Damage to public infrastructure?

Extent and depth of flooding on roadways. Were there any road closures?

How long did businesses close for? Sardinia closed for 2-3 hours

Additional data on response from staff? (For example, how many people worked during the rain event? What type of equipment was used? What's the estimated cost of resources and equipment?)

Lessons Learned

What went well during event?

What are potential opportunities for improvement?

Opportunities for Improvement

System Information
&
Private Property Adaptation and Protection

No pump failures observed. In areas with new stormwater infrastructure, **the water drained quickly, but we need to better understand the areas where improvements were completed vs. areas displaying flood complaints.**

1. Recommendation: Create a GIS map of planned, completed and in-progress stormwater projects.

Some **commercial private properties below Base Flood Elevation** experienced minor flooding.

2. Recommendation: Referral at July 31th City Commission to SRC to discuss changes to City Code that may require higher elevation and/or an commercial property owner and tenant affidavit that the property is vulnerable to flooding.

Behavior change is needed

Opportunity for Improvement:

Connect the Dots

1. PEOPLE

6. TRAINING

2. SYSTEMS

INFORMATION AND DOCUMENTATION – CENTRALIZING INFORMATION & DOCUMENTING CONDITIONS

5. ROUTINES

3. FOLLOW THROUGH

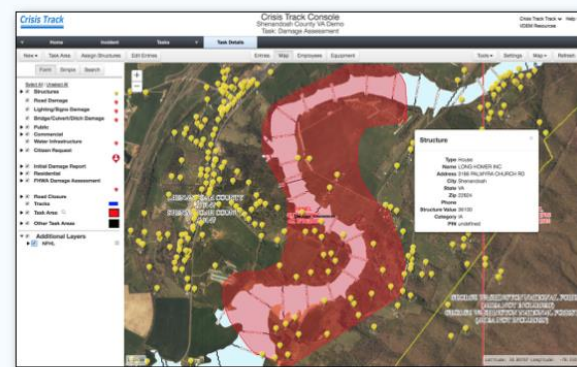4. PROCESS

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Opportunity for Improvement

Information and Documentation –

Analysis of Tracking Systems

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Purpose of Tracking Systems

Purpose of the app is to track damage from natural disasters and rain events and report it to FEMA for reimbursement.

Crisis Track – Internal Tracking (employees)

Purpose of system is to manage and track residents' requests and work orders.

CityWorks – Work order management and tracking system

Sources

Narrative from Rodolfo De La Torre and control room – frequent reporting activities.

CityWorks: Requests about flooding.

Photos about flooding from Public Works.

Data can be found in the M drive: M:\$CMB\Resiliency_Strategy_Team under "Rain Events 2019."

Thank you