CITY OF WINTER PARK, FLORIDA
ESTABLISHED 1882
EMERGENCY MANAGEMENT

After Action REPORT

HURRICANE IAN | 2022

HURRICANE IAN AFTER ACTION REPORT

Executive Summary

The Atlantic hurricane season of 2022 was an active one with 14 named storms. For Winter Park, two of those events required the full activation of the Emergency Operations Center (EOC): Hurricane Ian and Tropical Storm Nicole. This report is focused on Hurricane Ian of which the suggested improvements can address future weather events.

The city was ready to manage preparation, response and recovery for this year's hurricane season. One of the significant changes implemented this year was the management of the EOC. Designating one person as the primary coordinator of all EOC logistics, including sleeping accommodations, meals, set up and IT-related needs. This helped in the efficiency and functionality of the EOC throughout the duration of the storm.

Acknowledging every storm is different, Hurricane Ian was no exception. Ian produced an unprecedented amount of rain creating flooding and sanitary sewer overflow issues for the entire region including Winter Park.

This anomaly exposed the vulnerability of the city's stormwater and waste water systems that are not built or designed to handle this amount of continued rainfall. The city is using this valuable data to reprioritize its stormwater capital plan, apply for grants, seek Federal Emergency Management Agency (FEMA) assistance for residents without flood insurance who experienced flooding, and submit requests to FEMA for storm-hardening funds.

Winter Park experienced two additional weather events shortly after Ian. There was not sufficient time between storms for the ground water levels to subside which caused additional flooding and sanitary sewer overflows in some areas of the city.

Fortunately, due to 73% of powerlines underground and the city's reinvestment of profits going towards improvements to the system, the number of power outages were significantly less and the time to restore power was much quicker than in previous storms.

For example, in 2004 during Hurricane Charley, under Progress Energy (the city's former utility provider), a majority of Winter Park was without power for nearly one week. In 2022, although two very different storms, only 3,800 customers were without power during Ian, and their power was restored within three days.

In addition, with Ian primarily being a water event and not a substantial wind event, the number of trees impacted by the storm were also significantly less. These successes, although beneficial to the overall response to storms, also created the expectation for faster than possible recovery efforts.

Debris clean-up faced challenges of labor shortages, long wait lines at the landfills, and difficulty in maintaining contracted resources due to the demand for assistance in the hardest hit area of the state, southwest Florida.

Storm Details

City staff began monitoring an approaching storm one week before the eventual landfall of Hurricane Ian. Preparations took place according to the individual department's storm plan. The initial projected path had the storm heading for the Tampa/St. Petersburg area and then into northern Florida. On Monday, September 26, 2022, the National Hurricane Center significantly altered the forecasted track of the storm much further south on the Florida peninsula, anticipating a more significant impact to central Florida, including Orange County and Winter Park. Based on the new path, the Emergency Operations Center (EOC) became fully activated implementing operational planning periods, ordered supplies and completed final storm preparation. This final preparation included securing out-of-town mutual aid and contracted resources for restoration including both electrical power and tree crews, as well as planning to fully activate the EOC from Level 3 (monitoring) to Level 1 (full activation).

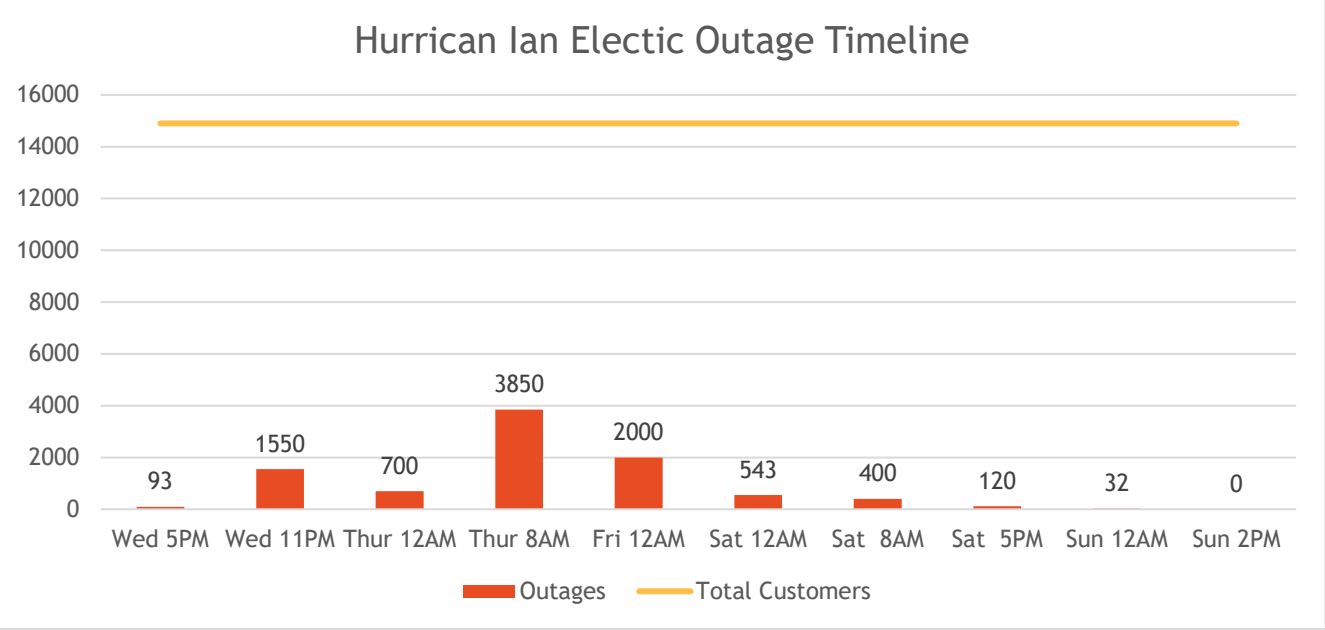
The EOC opened in phases beginning Wednesday September 28, 2022, with the Non-emergency Call Center being activated at 8 a.m. City offices were closed in preparation for the storm and the Call Center served as the place for residents to obtain information not available online or to report specific non-emergency storm-related issues. A tiered group of department directors, assistant directors and managers staffed the EOC in two operational periods which proved very effective. The first team was in place during the initial onset of the storm while the second team arrived after conditions allowed for safe travel.

Tropical storm force winds and significant rain began at 2 a.m., Thursday, September 29. Sustained winds of 48 miles per hour (MPH) with gusts of 75+ MPH lasting approximately 3-4 hours. During that same 12 to 14-hour period, the National Oceanic and Atmospheric Administration (NOAA) reported 13.7 inches of rainfall in areas of Orange County. Isolated areas received as much as 16-18 inches. Typical rainfall for the month of September is 6.5 inches.

Storm recovery began mid-day on Thursday, September 29, with electric restoration and tree clearance. Additionally, due to flooding, all wastewater lift stations were being closely monitored to make sure equipment was operating properly. While the equipment was operating at full capacity, it was not enough to prevent overflow due to groundwater saturation and rising lakes intruding into the sewer system. The Call Center remained open through the evening of Friday, September 30. Building damage assessments were performed September 30 along with stormwater infrastructure and conveyance assessments as the beginning efforts to clean and open parks were underway.

Overall Successes

- City infrastructure was prepared according to departmental storm plans and timelines.
- The city provided a sandbag site two days prior to the storm to assist residents in storm preparation at home.
- The EOC was activated and operated with only minor IT maintenance required.
- The city currently has 73% of overhead electric lines underground. This proved to be a gamechanger during this hurricane as only 3,850 electric customers lost power at the peak of the storm. Power was fully restored by the afternoon of Sunday, October 2.



- The Police Department used heavy equipment to help clear the roads.
- Staffing was streamlined during the storm allowing for the second wave of employees to work towards clean up.
- Fire-Rescue responded throughout the storm event for fire and emergency medical calls. During the height of the storm, a triage system of 911 calls was implemented. Nonemergent calls were held until the winds and high waters allowed for safe operations. No medical calls were held during this time.

Overall Lessons Learned

- Existing storm plans need to be comprehensively reviewed an updated based on information learned during this storm, specifically related to flooding. In previous storms, the focus has been on clearing roadways, power restoration and debris management. This effort will be coordinated by the city's Emergency Manager.
- Stormwater and sewer systems are not designed to manage the volume of rain (500-year storm) received during this storm. It took up to a week for waters to recede in some areas.
- This storm was a major stress test on the system and additional studies need to be conducted on vulnerable areas in both systems to prevent future spillage.
- All lift stations working at full capacity were not sufficient to prevent spillage into streets and lakes.
- Two electrical switchgears were completely submerged during the heavy rains, causing outages of approximately 1,000 customers each. In placement of future transformers, experiences from this storm will be considered when selecting locations.
- Extra sandbags need to be created for use at lift stations and for possible distribution to residents and businesses after the storm.
- Additional work to the public-facing power outage map should be considered. Enhancements to the map may reduce outage calls.
- Catering and timing of meals was difficult immediately post-storm to feed staff and crews. More prepared food needs to be available for crews. Also, a standardized system to continue feeding work crews focused on restoration and immediate clean up needs to be developed.
- A succession plan is needed for the next line of employees that have not had the experience of the current staff that has been serving in the EOC since 2004.

Departmental Evaluations

Building & Permitting Services

Best Practices

- The EOC set up and operation was excellent.
- It is important for a Building Department representative to be available to respond to damage, if needed, and support the department's Call Center staff that was working.

Lessons Learned

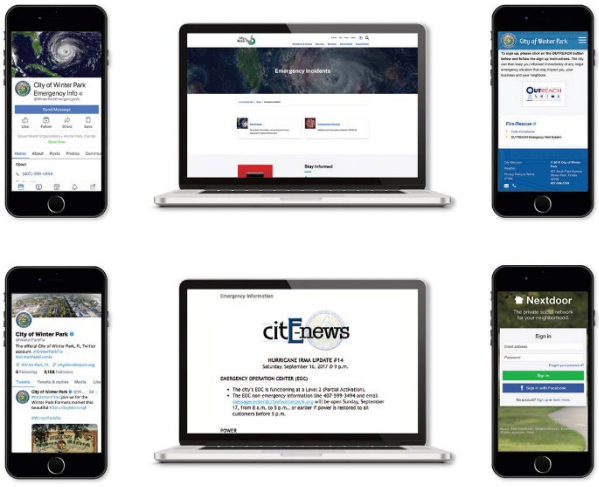
- Electric cars are not conducive to flood-type events. There was limited access to some areas due to street flooding.
- It was difficult to identify flooded homes and sewer backups in windshield initial damage assessment.
- Staff will try to identify specific addresses and separate house flooding from general flooding calls when reported to the Call Center.
- The Call Center staff could have been more efficient if notes were in the GIS system about actions taken when callers would call a second or third time.

Communications

Best Practices

Preparation for the 2022 hurricane season actively began in June 2022. Articles about hurricane preparation, safety guidelines and how to stay informed were offered in the following ways before, during and after the storm:

- Winter Park Update (mailed to all city residents and businesses)
- Utility bill insert (reaches approx. 25,000 utility customers)
- Website > cityofwinterpark.org/hurricanes
- citEnews > cityofwinterpark.org/citEnews
- Facebook® > facebook.com/WinterParkEmergencyInfo
- Twitter® > twitter.com/winterparkfla
- Nextdoor® > nextdoor.com
- Instagram® > cityofwinterpark.org/instagram (reminded followers of proper resources)
- Community meetings such as CoffeeTalks and Neighborhood Advisory Council meetings
- Hurricane guides made available at City Hall, the Public Safety Building and Winter Park Library.



- One social media resource
  - Designating Winter Park Emergency Information Facebook page as the PRIMARY social media page used to communicate all city hurricane-related information helped manage messaging throughout the storm.

- All other city social pages went dark until after the storm. This allowed the EOC team to respond to resident inquiries with the most accurate information possible in a timely manner.

- Phasing of staffing
  - Phase 1: Communications Director stationed at the EOC during the storm. Other communications staff remained at home and assisted while power and internet were functional.
  - Phase 2: Relief provided by Assistant Director post-storm when conditions were safe to travel.
  - Phase 3: All staff activated post-storm during regular work hours.
- Direct connect with Electric Utility Department
  - The most frequent question post-storm was "when will my power be restored?"
  - Having Electric Utility staff immediately available to inform communications of Estimated Time of Restoration (ETR) was tremendously helpful and appreciated by residents.

Lessons Learned

- Keep the Call Center 407-599-3494 open at least 1-2 days post-storm.
- Respond to messagecenter@cityofwinterpark.org at least 5-7 days post storm.

Electric

Hurricane Ian preparation

- The utility:
  - Participated in the formal preparations as part of the EOC activation and completed the internal storm checklist.
  - Coordinated with the Florida Municipal Electric Association (FMEA) during the 72-hour preparation period and placed the request for additional aid. This aid is in addition to city staff and 16 Heart resident employees.
- Additional resources acquired:
  - 8-person crew from Michigan due to arrive the morning of Friday, September 30.
  - 16-person crew from Nebraska due to arrive Saturday, October 1.
  - 12-person Heart crew from Jacksonville scheduled to arrive the morning of Saturday, October 1.

Best Practices

- The pre-storm efforts from the EOC were thorough and on point.
- The ICS 214 forms created in a field-friendly version facilitated more complete information.
- Collaboration between all city departments was excellent.
- The staging and logistics at the Marriot and Hilton hotels in Ravaudage were excellent.

Lessons Learned

- The GIS lightning bolts that displayed outages were very inaccurate. The public facing map was incorrect.
- Staff designated as "essential employees" should report to the EOC during the storm only. Once the storm passes, if there is power and internet, staff involved in recovery efforts should report to the EOC for briefings, management of initial workplan and perform damage assessments. Once staff is able to assess the efforts, they can return to workspaces as a standard operating procedure. The utility could have scheduled calls to report on issues for departments.
- Two switch gears were flooded and destroyed which caused major outages. The utility was able to switch them out and restore almost all customers. Location of equipment in relation to retention ponds or other bodies of water should be taken into consideration in future design.
- Davey tree resources were substandard. Contract adjustments need to be made.
- Damage assessment for GIS was good but the ability to remove icons from the screen when the outage is clear is needed. The only way, currently, is to remove the layer but individually removing them would be much more beneficial.
- A door hanger or sign of some sort needs to be made and acquired before the next event that states that the customer needs an electrician and power cannot be restored until an electrician completes their work.
- Enhanced communication regarding generator safety, specifically to turn off main breaker to protect system and line workers, is needed.
- Have ice ready in advance, in a box truck.

Fire-Rescue

Best Practices

- EOC activation was smooth.
- Reorganization of positions to create an Emergency Manager proved to be beneficial.
- All necessary supplies were on hand.

Lessons Learned

- Explore WebEOC versus GIS programs. WebEOC has compatibility with FEMA reporting requirements. Reduces duplicative efforts.
- Plan for mandatory participation in tabletop exercises.
- EOC – The Fire-Rescue Department manages and operates the EOC. Specific lessons learned related to staffing the center are as follows:
  - Maintain (ongoing) EOC call list on outlook. Department heads/directors/managers to improve the flow of information.
  - Better management of food needed. Staff was not clear on when food would be furnished and the duration.
  - Food coolers are needed to better preserve food while it is being staged.

- Consider preordering bags of ice/trailer of ice for use by mutual aid crews and city departments.
- Phones in Call Center: adjust how calls ring into the Call Center, one rings versus all phones ringing.

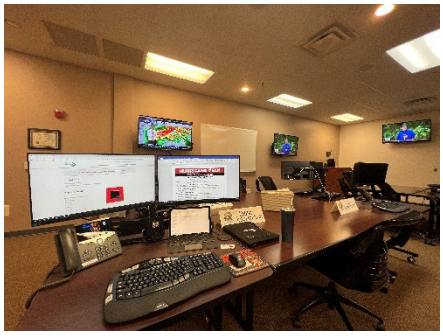
Information Technology

Best Practices

- Ensure all computers are set up for multifactor authentication.
- Identify computers that need the ability to view camera feeds. Set up appropriate software and permissions.

Lessons Learned

- Message Center email (MessageCenter@cityofwinterpark.org)
  - Need a list of everyone who needs access.
  - Preplanning:
    - Will be useful to have out of office messages prepared for different situations (i.e. mailbox is not monitored, Call Center is now closed, etc.)
    - Need to create appropriate folders to move emails after action is taken.
- Need to ensure all call center computers have fingerprint readers. Disasters are often exploited by cyber criminals.
- Identify cameras that can be displayed in EOC to help evaluate the condition of the city.



- Develop a more formal back up plan for if email, GIS, website, internet, and phones are not available.

Natural Resources & Sustainability

Best Practices (Pre/Post Storm until water recedes)

- Inspect control and outflow structures located on the Chain of Lakes and all land locked lakes, including leaf trap devices; maintaining free and clear of debris.
- Inspect all weirs and grass carp barriers including the ones located downstream of lakes Bell, Killarney, Berry and Maitland; maintaining free and clear of debris.
- Inspect drain well intake structures on Lake Killarney and all land locked lakes (Knowles, Spier, Forest, Midget, as well as the Seminole County drain wells on North Lakemont Avenue); maintaining free and clear of debris.
- Inspect canals within the Chain of Lakes and Howell Creek upstream of Lake Virginia and downstream of the Howell Branch weir.
- Inspect major conveyance systems and high-risk areas (i.e. Special Flood Hazard Area-SFHA).
- Lowering of lake elevations where permittable (Lake Menden located at Martin Luther King, (MLK) Jr. Park, Killarney, Bell, Winter Park Racquet Club).
- Monitor and record lake elevations.

- Effective communications with lake patrons, both residential and commercial, related to:
  - lake closures
  - dock safety warnings with submerged electrical components
  - submerged hazards warning
  - lake contamination warnings
- Effective post-storm environmental and water quality monitoring including inventor of environmental assets.

- Conducted damage assessment for state assistance and grant submittals.

Lessons Learned

- Multiple labs on standby-by ready to receive lake samples.
- Coordinate with water/wastewater lab to ensure coverage in the event of scheduled time off.
- High water elevation closure: >66.1 ft North American Vertical Datum (NAVD 88)
- Install closure gates to ramp and parking at Dinky Dock Park.
- Install smart technology to measure lake levels and additional weather monitoring stations.
- Grass carp barriers remanufactured as retractable.
- Prepare team to recover fallen trees in waterways.
- Establish policy: Lakes and stormwater management for flood control document.
- Residential demands - residents felt back to normal long before the lakes recovered and there was frustration experienced with permits on hold due to lake closures and inability to inspect.

Parks & Recreation

Best Practices

- Following the Urban Forestry Management Plan and proactively managing the canopy has been significant to the performance of the trees during storms.
- Parks evaluation and reopening post storm went very well.

Lessons Learned

- Work with GIS to improve aspects of the tree down notifications.
- Develop an SOP for out of town tree workers post storm (use electric utility template).
- Call for outside tree company assets sooner (hard to come by at 72 hours).
  - Davey's extended resources in this storm were sub-par.

Police

Best Practices

- Staffing levels for the hurricane event were sufficient to handle calls for service and ensure continuity of service throughout the event. A new patrol shift arrived the morning of Friday, September 30, for dayshift along with the other half of officers. A new night shift arrived the evening of September 30, and were supplemented by volunteers from several divisions. This staffing model would have been critical if we had wide spread power outages.
- Crews assigned to Armored Personnel Carrier (APC) for rescues during the event were not needed. After the event APC crews transitioned to clearing roadways and were able to clear tree debris and help get roadways back open.

Lessons Learned

- Two boats were left in the boat house which flooded and prevented access to the boats, one boat was left at the station and became a very important resource after the event.
- Develop a more formal plan for lake closure during high water events. Also, be prepared and staffed for extended closure.
- Plan ahead for special detail related to assisting debris haulers with traffic and lake patrol seven days a week.

Public Works & Transportation

Best Practices

- Prior to a storm event ensure all city streets are swept.
- Prior to a storm event ensure all city storm drains, structures and outfalls are cleaned.
- Based on policy to be proposed and adopted:
    - Remove risers from drain wells to lower water level on Lake Killarney.
    - Open drain well valve to lower water level in Lake Mendsen located at MLK, Jr. Park.
    - Open outfall gate to lower water level on the Winter Park Racquet Club pond.

Lessons Learned

- Storm and sanitary sewer system point failures encountered at maximum flow during storm events.
- Land locked lakes with no interconnection or drain well relief jeopardized surrounding structures of flooding.
- Bypass pump(s) must be on standby for relieving land-locked lakes.
- Five to 10-year Capital Improvement Plan (CIP) is necessary to perform hydraulic analysis and construct lake interconnections.

Water & Wastewater Utilities

Best Practices

- Prior to the storm's arrival, water and wastewater treatment facilities were placed on emergency generator power to eliminate power surges and the impact from power outages.
- Preventive maintenance was performed on all fixed and portable generators.
- All fixed and portable fuel tanks were filled.
- All utility property was policed to eliminate objects that could become airborne during the storm.
- Repair clamps of all sizes were inventoried.
- Lift station crews worked until wind speeds were excessive and all crews reported immediately after the storm passed.
- Spare radios from the Police Department were distributed.

Lessons Learned

- Clean bar screen at Howell Branch South Seminole North Orange County Wastewater Transmission Authority (SSNOCWTA) lift station.
- Coordinate with SSNOCWTA regarding extremely high flows from certain members.
- Check hertz setting for Variable Frequency Drives at Howell Branch Authority lift station.
- Consider closing roads with active sewer overflows to through traffic, or routing traffic around spills.
- Insure warehouse accessibility throughout storm.

Clean Up, Recovery & Post-Storm Support

Flooding

Hurricane Ian brought significant rainfall to Winter Park and the entire central Florida region, which in turn caused unprecedented flooding. Winter Park's Chain of Lakes is part of a much larger lake system that runs from Howell Creek to the St. John's River. Frustration among those flooded or close to being flooded was partially caused by misinformation. Unfortunately, in most cases, it **was necessary to wait for water to recede.**

As flooding was not an issue for residents in previous storms, the leadership team worked with U.S. Congresswoman Stephanie Murphy's office and FEMA to quickly provide information to residents on how to apply for aid. Additionally, the City Commission held a Special Commission meeting on Friday, September 30, to allocate resources and authorize the development of a program for uninsured low-income homeowners to take immediate steps toward protecting their homes from permanent water damage. Thankfully, many homeowners have reported that their insurance companies and FEMA are actively engaging to expedite the cleanup, replacement and recover efforts.

Debris Management

Debris management is always the longest task to complete following the storm. Hurricane Ian produced significantly more small brush and debris than previous storms, potentially a sign that our Urban Forestry Management Plan has been extremely successful. The city contracts with CERES for large debris removal and relies on its regular garbage hauler, Waste Pro®, to provide yard waste service. This storm proved especially difficult to garner resources as the labor market remains extremely tight and many of the large debris contractors chose to work in southwest Florida. While CERES had the advantage of dumping at designed debris sites within the city, Waste Pro was plagued with waiting in long landfill lines.

Two weeks following the storm, Waste Pro was still working on completing a first pass for small debris to each home. In an effort to supplement, the city, with paid volunteer employees, established a "Rag, Tag, Bag" team to collect bags.

This allowed Waste Pro to focus on cans, carts and small bundles. The volunteer crew worked on Saturday, October 15, and collected approximately 80% of the bags out at the street.

By Sunday, October 23, all homes within the city received a first pass of both small and large debris. Next steps included collection of construction and debris materials (flooring, fencing, carpet, etc.) to approximately 60 homes followed by a second pass for large debris. Clean up efforts were completed by Wednesday, November 2.

Moving forward, the city will continue to look for an emergency east side debris site, modify the street sweeping contract to get additional aid post storm, and consider the purchase of supplemental debris removal equipment.

Hardening for Future Storms

Below is a list of items that will potentially be submitted to FEMA as part of the hardening grant that follows a storm and/or will be budgeted for in a future city budget.

- Smart technology (telemetry) for measuring water elevation in lakes.
- Retractable barriers for grass carp.
- Road cleaning machine to potential clean dried sewer from streets and sidewalks, could be used to clean Center Street in non-storm times.
- Damage assessment software/app and camera-enabled tablet devices.
- Redesign of lift station in Timberlane Shores.
- Purchase additional by-pass pumps.
- Evaluate benefit of additional ice maker or ordering ice truck.
- Provide advance alert notifications for potential impacts to high-risk areas (i.e. flooded areas, Special Flood Hazard Areas).
- Environmental remediation including sediment removal, felled tree service, and stream-bank stabilization.
- Repairs to major outfall and weir.
- Vulnerability study (currently a grant-funded project) incorporated with new highwater benchmarks to message flood zones and make arrangements or evacuations, if needed.
- Modeling of this storm is needed so infrastructure can be built with resiliency.
- Refrigeration and food prep equipment for staff at EOC would allow for storage of pre-made food and appropriate preparation area.

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