



CASE STUDY



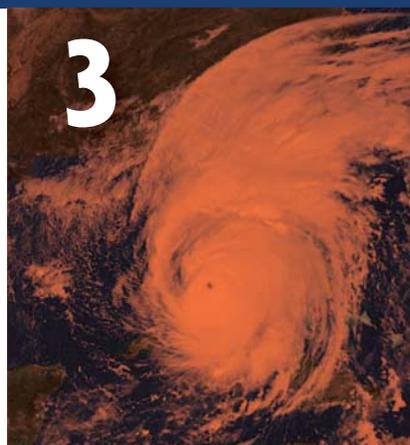
HART'S RESPONSE TO HURRICANE IRMA



Hillsborough Area Regional Transit Authority

www.goHART.org

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OVERVIEW

Hillsborough County, which surrounds Tampa, FL, is one of the most livable areas in the country, popular for its year-round warm weather and laid-back lifestyle. It is also rated as one of the top five U.S. metropolitan areas most vulnerable to hurricanes, according to the National Oceanic and Atmospheric Administration (NOAA).

Fortunately, the region hasn't had a direct hit from a hurricane since 1921 when the Tampa Bay Hurricane struck. Unfortunately, 68 tropical storms and hurricanes have come within 60 miles of the County since then. Despite the region's uncanny ability to dodge hurricanes, Hillsborough Area Regional Transit (HART) prepares itself for the big one every year with meticulous emergency planning.

At the start of hurricane season in late May 2017, forecasters at NOAA's Climate Change Prediction Center foresaw another "above-normal season," which Floridians have become accustomed to. It ended up being the fifth-most active season since records began in 1851.

Hurricane Harvey became the first major hurricane to make landfall in the U.S. in 12 years – and set the record as the costliest tropical cyclone in history. Shortly after Harvey wreaked its havoc, Hurricane Irma formed – the strongest hurricane ever recorded in the Atlantic Ocean, outside of the Gulf of Mexico and Caribbean Sea – and set its site on the Tampa Bay area.

HART was ready.





1 Sum of the Parts



Every department and every employee within HART has a role to play in the emergency preparedness plan. The overarching goal is to minimize damage to the Authority's fleet, system operations, and infrastructure, while keeping the public and employees safe and informed. Departmental roles include:

- **Safety:** Ensuring the safety and security of the overall Authority and overseeing the execution of its emergency preparedness plan.
- **Fleet Management:** Maintaining the system's fleet of nearly 200 buses and 55 paratransit vans.
- **Facilities:** Managing all of HART's assets that don't have wheels, such as a Compressed Natural Gas (CNG) fueling station, bus lifts, shelters, 2,150 bus stops, two transit centers, five transfer centers, supplies, and equipment.
- **Customer Service:** Serving as HART's connection with customers, ensuring they have the up-to-the-minute information they need to stay safe.
- **Communications:** Keeping residents informed of HART's response to the event.
- **Technology & Innovation:** Ensuring the computer system runs smoothly and minimizing the impact of potential glitches or shutdowns.
- **Streetcar Operations:** Maintaining the safety of HART's 10 streetcars and related equipment during the storm.
- **Paratransit:** Transporting anyone who needs to go to a shelter, per Emergency Operations Center (EOC) procedures – not just HART's 3,507 registered customers.





2 Before Hurricane Season

At HART, hurricane preparation is a year-round process. It begins with quarterly training with Hillsborough County's Emergency Operations Center (EOC). During the sessions, the Authority's role in the event of a hurricane is discussed to ensure there is proper coverage with first responders and emergency vehicles.

HART is one of four organizations in the County designated to transport people from their homes to shelters during a hurricane, along with the Sunshine Line, Hillsborough County Schools, and Emergency Medical Service (EMS) for people who have special needs.

Each spring, HART leadership begins annual storm preparations by participating in quarterly meetings with the city and county emergency services personnel to discuss strategies for evacuating residents, setting up temporary shelters, communicating with the public and first responders, and other tactics to be deployed before, during and after a weather-related event.

Tabletop exercises and drills are conducted with state and local colleagues to determine which agency picks up whom, who gives orders to start evacuations and where shelters are located.

Within HART itself, several things need to be determined before hurricane season even approaches, including:



- Where vehicles will be moved to prevent water damage – three locations are needed
- How to shut down facilities
- Alternate routes for vehicles to take when roads are closed
- Vehicle staging locations for keeping vehicles that will be used during a storm in a central location and ready to go

In addition, HART has on standby a team of more than 100 volunteers who can be counted on to report to work during a weather event and help put precautionary measures in place. Volunteers undergo annual refresher training in their respective roles.

Every March, hurricane kits are distributed to maintenance crews and staff at all HART facilities with rain jackets, pants and umbrellas. The time-consuming process of securing properties typically begins in June and intensifies in September, the height of hurricane season.



3 Hurricane Watch



On Friday, September 8, 2017, HART received warnings that Irma was expected to make landfall in Florida within the next 48 hours. The Authority was notified that evacuations would start the next morning. HART went into full emergency mode. The goal was to get people evacuated, vehicles brought back to HART facilities, and drivers back home while conditions were still safe.

To ensure that medically fragile and special needs individuals got priority treatment, the Authority launched a soft evacuation – transporting about 350 residents in paratransit vans, while its buses carried nearly 600 to shelters. HART’s vans were ideal for driving to neighborhoods where buses were too large to navigate, allowing residents to be picked up from their homes and transported to shelters.

While HART typically serves four shelters, due to Irma’s magnitude, 40 shelters were on the list and they filled up quickly, forcing Dispatch to stay in constant contact with drivers and the EOC. As soon as Hurricane Irma became imminent, HART emailed press releases to more than 10,000 people, including media, elected officials, government leaders, and influencers, to inform them of HART’s preparations and service impacts.

Meanwhile, HART's other departments were busy making their preparations, including:



<p>FLEET MANAGEMENT</p>	<ul style="list-style-type: none"> All buses, vans, and company vehicles were fully fueled. Two-thirds of the bus fleet was transferred to designated safe places to minimize the loss due to the approaching storm. 	<ul style="list-style-type: none"> By Saturday, all buses had been safely stored.
<p>FACILITIES</p>	<ul style="list-style-type: none"> Crews secured anything that could be turned into a projectile and cause injury or damage. Newsstands, schedule kiosks, and benches were either removed or tied down. HART's five generators were filled with diesel fuel. Tree limbs were trimmed. Other steps included: <ul style="list-style-type: none"> Boarding windows with plywood Chaining electric gates to prevent them from flailing open with a loss of power Turning off nonessential electrical circuits to prevent fire 	<ul style="list-style-type: none"> Placing sandbags and plastic in low-lying areas susceptible to flooding Turning off emergency generators at all buildings except those that would be occupied during the storm Shutting off water meters to prevent pipes from bursting Sending elevators in all buildings to the top floor so the cabs wouldn't be destroyed by floodwaters
<p>CUSTOMER SERVICE</p>	<ul style="list-style-type: none"> Representatives studied routes that would take residents to shelters. Back-ups were planned in the event designated shelters filled up and new ones opened. Information about shelter openings and closings had to be verified, making 	<p>communication with Dispatch almost constant.</p> <ul style="list-style-type: none"> Customer service representatives were relocated to the main operations facility and assigned back-up laptops to continue operation of the call center.
<p>COMMUNICATIONS</p>	<ul style="list-style-type: none"> As Hurricane Irma became imminent, HART proactively communicated up-to-the minute information to the media, elected 	<p>officials, government leaders, influencers and the general public about HART's preparations and service impacts.</p>
<p>TECHNOLOGY & INNOVATION</p>	<ul style="list-style-type: none"> Snapshots were taken of the servers, so data could be restored if lost. 	<ul style="list-style-type: none"> The Department also performed a full system backup.
<p>STREETCAR OPERATIONS</p>	<ul style="list-style-type: none"> Streetcars were taken to the rail yard – standard operating procedure for winds stronger than 35 miles per hour. 	<ul style="list-style-type: none"> Doors to the facility were sandbagged to protect the cars from flooding.
<p>PARATRANSIT</p>	<ul style="list-style-type: none"> Vans were divided between two Park-n-Ride lots and HART headquarters to 	<p>prevent the entire fleet from being flooded.</p>

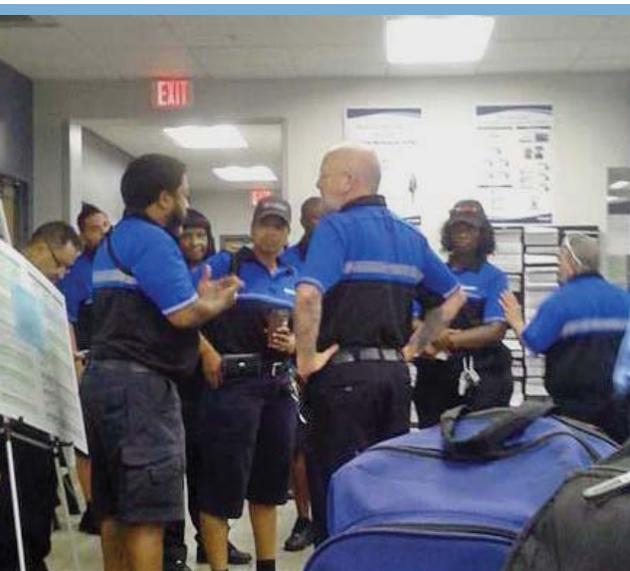


4 Landfall

As Irma approached, HART leadership split into teams with eight employees working directly with the EOC and others within the Authority. The leadership team conducted five conference calls a day to orchestrate efforts with the HART team.

Other efforts included:

- **Customer Service:** With most staff safely at home, HART's Customer Service Manager worked closely with the Authority's leadership at the EOC to stay abreast of the hurricane's path. The Department also maintained constant communication with schools and other emergency shelters to pass information on to the public and employees.
- **Communications:**
 - ÿ Collaborated with Technology & Innovation (T&I) to send out messages via Twitter, Facebook, and the HART website.
 - ÿ HART employees received periodic updates throughout the weekend via emails and a 24-hour employee hotline with information on the storm and resumption of service.
 - ÿ Family members of special needs residents also had a number to call to obtain the status of Dispatch service taking their loved ones to and from shelters.
- **Technology & Innovation:** Shut down the main servers so data would not be lost if there was an interruption in power. When HART's Call Center line went down during a power outage, T&I created an interim call line that was promoted on social media to keep people informed.





Shortly after Harvey wreaked its havoc, Hurricane Irma formed – the strongest hurricane ever recorded in the Atlantic Ocean. HART was ready.



5 After the Storm

Irma pushed ashore as a Category 4 hurricane at Cudjoe Key in the Florida Keys, and made landfall again as a Category 3 on Marco Island, about three hours to the south. Fortunately for the residents of Hillsborough County, Irma had weakened to a Category 1 by the time she reached Tampa Bay. The hurricane also hit at low tide, greatly minimizing the expected storm surge and related flooding. However, high winds resulted in 300,000 homes without power. With traffic lights out and power lines swaying in the breeze, law enforcement imposed a curfew on residents for their own safety.

Immediately after the storm, first responders and electrical crews began pouring into the area to assist those in need, assess the damage, and restore power. Due to the massive state-wide evacuation, however, diesel fuel to run their vehicles was in short supply. Since HART had stores of both diesel and CNG, the Authority decided to utilize its CNG vehicles to transport evacuees back home and perform other post-storm duties. That freed up its diesel reserves to provide fuel for 40 emergency vehicles from Tennessee, Georgia, the Carolinas, and Mississippi.

HART received clearance from the Hillsborough County Sheriff's Department and Tampa Police to put vehicles back on the streets on Monday, September 11, 2017 – the same day the storm hit in the early morning hours. However, the Authority could not begin running reverse routes to bring special needs residents back home until Tuesday.

It took three days for service to return to normal.



Following are the steps HART took to resume operations and help the County get back on its feet:



<p>FLEET MANAGEMENT</p>	<ul style="list-style-type: none"> Performed their role in reverse by retrieving vehicles from satellite locations and returning them to HART properties. 	<ul style="list-style-type: none"> Sent buses and vans to shelters to bring families, their pets, and emergency supplies back to their homes.
<p>FACILITIES</p>	<ul style="list-style-type: none"> By 6 a.m. Monday morning, one day after Irma hit, HART was back at work 	<p>assessing property damage to ensure facilities were safe to occupy.</p>
<p>CUSTOMER SERVICE</p>	<ul style="list-style-type: none"> Call Center staff returned to work Monday, albeit at another location until operations at HART headquarters were up and running. 	<ul style="list-style-type: none"> Provided up-to-date information on when buses and paratransit vans would be taking people from shelters to their homes.
<p>COMMUNICATIONS</p>	<ul style="list-style-type: none"> Played a key role by ensuring the media had trip schedules from shelters 	<p>and updates on when normal service would return.</p>
<p>TECHNOLOGY & INNOVATION</p>	<ul style="list-style-type: none"> Conducted a damage assessment and used additional internet circuits until all systems were brought back up. 	
<p>STREETCAR OPERATIONS</p>	<ul style="list-style-type: none"> The entire rail system, including the Overhead Contact System, was inspected – a process that is normally done semi-annually. HART did it in two days and the service was fully restored in five days. 	<ul style="list-style-type: none"> Staff tightened fasteners that had become fatigued by the wind and replaced those that were damaged.



6 Lessons Learned

Once operations returned to normal, HART gathered its crisis team together to discuss lessons learned in preparation for the next hurricane season.

1. SAFETY

- There's no such thing as too much communication – including minute-by-minute updates and evacuation plans.
- Role play as much as possible with tabletop exercises and actual drills, so everyone is clear about their role and responsibility.
- Always prepare for the big one. Don't become complacent after years of near-misses.



2. FLEET MANAGEMENT

- Label vehicles indicating where they should be stored before an emergency occurs so there is no confusion once the evacuation call is given.
- Make sure all vehicles are fully fueled before the storm hits.
- Determine which vehicles might be needed before storing them – buses were used to form a protective shield around paratransit vans, but then vans were needed to transport people.



3. FACILITIES

- Maintain an adequate supply of unleaded and diesel fuel.
- Keep supplies such as nonperishable food and water at facilities for employees in the event local grocery stores run out.
- Build a large volunteer army. No matter how much they prepare, some volunteers might not be able to work depending on road conditions and damage to their own homes.





4. CUSTOMER SERVICE

- Study alternative routes buses will have to take to get to shelters before an emergency, so it can be communicated to customers.
- Work closely with Dispatch operators to learn up-to-the-minute information about evacuations and return trips to neighborhoods after a storm.



5. COMMUNICATIONS

- Develop a communications plan in the event power is out for a prolonged time – don't rely on cell phones or social media.
- Prepare to work remotely to disseminate information.



6. TECHNOLOGY & INNOVATION

- Install redundant internet circuits in case one system goes down.
- Develop an additional hotline for the Call Center that will automatically switch over to a redundant circuit if the main line goes down.
- Ensure that employees know how to protect office assets such as computer cables and cords.
- Make sure satellite equipment is easy to carry and convenient to use in an emergency.



7. HUMAN RESOURCES

- Keep accurate records of personnel hours and expenses for reimbursement by the Federal Emergency Management Agency (FEMA).
- Develop an innovative way to provide hot food to volunteers who work through the night.
- Update the Continuity of Operations Plan (COOP) to ensure operations run smoothly after the storm.





7 Recognition for a Job Well Done

While not something to wish for, Hurricane Irma provided HART a tremendous opportunity to showcase what it can do – including how well it was prepared and how committed the employees are to provide a public service in all kinds of weather.

The efficiency and effectiveness displayed by the Authority demonstrated to Hillsborough County’s leaders and residents alike that HART is more than just a bus agency. The ability to help first responders further solidified HART’s role as a valuable resource in the community. Being nimble, ready and willing to help with committed employees was a game-changer for HART. The vital role the Authority played with other first responders in planning, communicating up-to-the-minute information to the public and maintaining safety and efficiency throughout the ordeal was laudable.

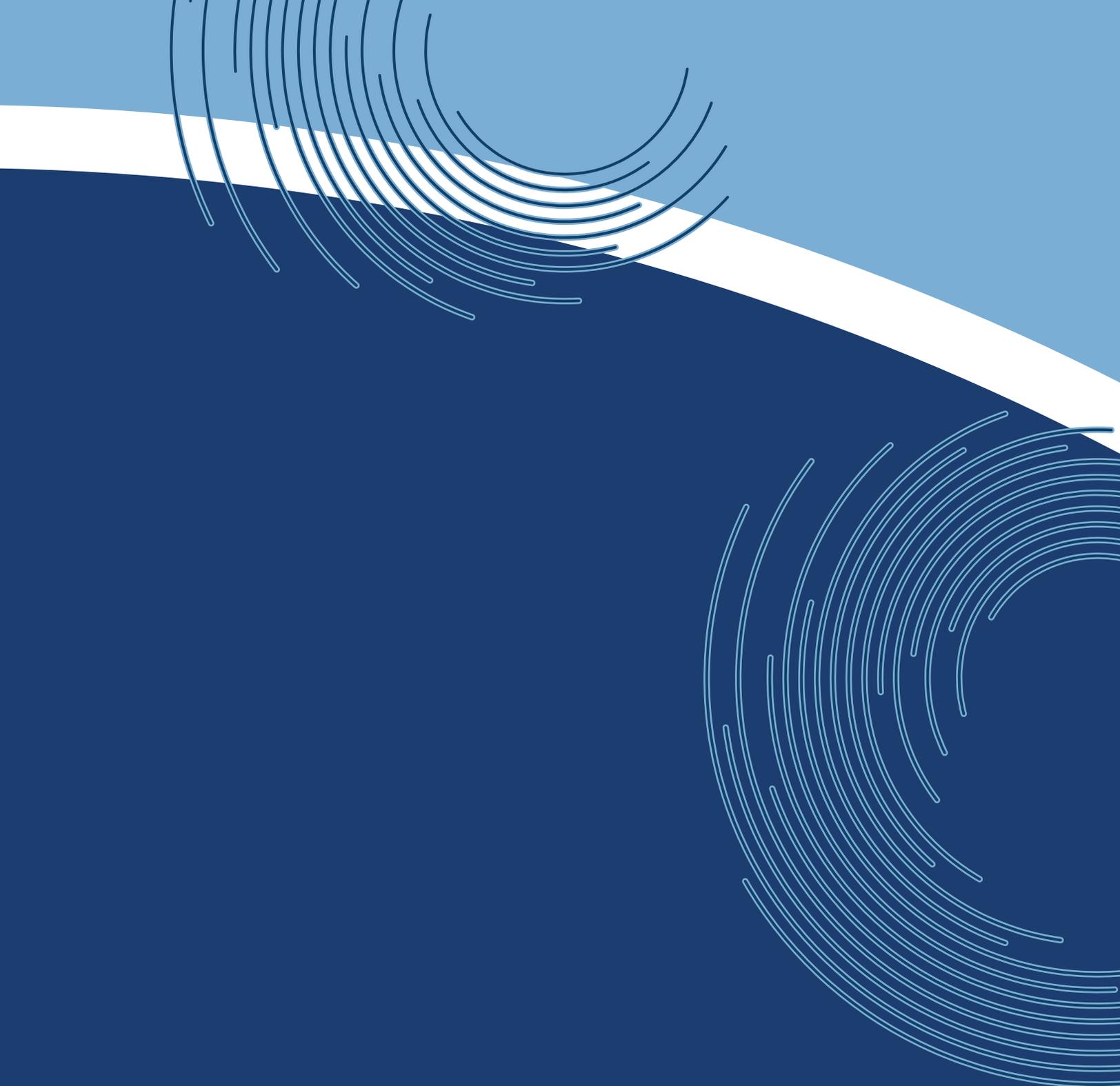
HART received accolades from the American Public Transportation Association (APTA) for the important work it did. In addition, the Tampa Downtown Partnership recognized HART with the 2017 Urban Excellence Award/Downtown Collaboration Award for Response and Relief Operations implemented in conjunction with the City of Tampa, Hillsborough County and the Tampa Emergency Operations Center.

Further, HART was recognized by the U.S. Department of Transportation for allowing out-of-state emergency vehicles to use its diesel fuel. As a result of the timely assistance, HART and the Florida Department of Transportation (FDOT) are considering an ongoing partnership during such emergencies.





The efficiency and effectiveness displayed by the Authority showed Hillsborough County's leaders and residents alike that HART is a valuable resource in the community.



Raymond C. Miller Building
1201 E. Seventh Ave., Tampa, FL 33605

813-623-5835 | www.gohart.org



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