GULF BREEZE HURRICANE SALLY AFTER-ACTION REPORT

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OCTOBER 16, 2020

CITY OF GULF BREEZE

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Executive Summary

The effects of Hurricane Sally are still being felt across the Gulf states as of the writing of this report, completed 30 days after hurricane landfall. The complexity and magnitude of Hurricane Sally has provided the City of Gulf Breeze an opportunity to analyze the performance of the City's emergency services in a manner that is difficult to simulate in even the most realistic training environment. The most common factor of every emergency requires the responding agencies to learn and gain knowledge from the event to be more prepared for the next occurrence.

This After-Action Report will help all stakeholders understand the continuous effort to build upon the strengths within the City's organization and identify needed areas for improvement. This report reflects an all-inclusive and comprehensive strategy with compiled and analyzed information that was gathered from employee feedback, multiple debriefing meetings, an independent damage assessment, an anonymous survey, and direct comments about response and recovery efforts in each field of expertise.

The recommended solutions focus on enhancing the City's emergency utility equipment such as lift stations, pumps and generators, of which a significant number failed under prolonged use during the storm. The independent damage assessment notes damages related to Hurricane Sally for FEMA cost recoveries, and also assists the City in differentiating between unavoidable damage due to a natural disaster, and damage which could be mitigated prior to the next major storm by equipment improvements.

In 2020, the City of Gulf Breeze completed a yearlong utility rate study to determine how best to afford needed renewals and replacements of utility assets including machinery and lift stations. Last June 29th, the City Council held a workshop to discuss the study's results and capital priorities for funding. The City had increasingly experienced emergency repairs of aging machinery. Recommended upgrades included new remote control software and hardware systems for lift stations, called supervisory control and data acquisition (SCADA). The absence of SCADA means that personnel must manually check and adjust each of the City's 87 lift stations daily across 30 square miles, rather than monitor and adjust remotely.

Hurricane Sally hit prior to the implementation of capital upgrades identified in the utility study, which meant that City crews must physically check and adjust all stations in the field. Of 87 sewer lift stations, 38 experienced power loss, power surge, storm surge water inundation or influx of infiltration and inflow. Inside the 4.68 square mile city limits, three residents reported sewer backups. There were approximately 273 addresses (unreported) that may have experienced moderate sewer service interruption based on tidal surge or flood water inundation into sewer collections systems. Outside City limits, in the remaining sewer franchise area of South Santa Rosa Utility, there were 13 reported sewer backups and approximately 1,270 addresses (unreported) estimated to have been impacted by known areas of tidal surge or flood water inundation into the sewer system.

Comparatively, the largest utility in Santa Rosa County, Holley-Navarre Water Systems, also has 87 lift stations and similarly lost power to 32 lift stations. Regional agency comparisons were a component of this after-action report.

Natural gas generators failed at the fire station and at the community center, both of which are emergency hubs identified in the City's Emergency Operation Plan. The generator at the community center was "recycled" from a smaller use years ago and proved insufficient for the facility. Both the generators also lacked exterior generator hookups.

Of the City's 18 permanent natural gas standby generators, 8 were inoperable during the storm due to damages or missing components. All standby generators are maintained by full-time personnel and inspected twice annually by an independent maintenance contractor to look for faults that would prevent proper operation during emergency events.

As a result of after-action briefings with other agencies, the City recommends relying more heavily on bypass pumps and less so on generators due to the propensity for failures.

The City's improved stormwater system and improved flooding response strategy paid off drastically compared to the City's last federally-declared flooding disaster in 2014 under

similar conditions. This highlights the need to complete all projects from within the Stormwater Master Plan.

Gulf Breeze pumped groundwater down and lowered stormwater ponds prior to Hurricane Sally. Of the seven stormwater pump stations inside the 4.68 square mile City limits, all pumps intermittently failed to operate due to power outages, requiring Staff to deploy portable generators or bypass pumps. Some storm equipment rentals failed or lacked necessary adapters. Yet, overall response was exceptional: The structural flooding was significantly less than the historic 2014 flood with similar rainfall. Comparatively, Santa Rosa County deployed no stormwater portable pumps or generators within the 1,174 square miles of its jurisdiction during Hurricane Sally. The City of Pensacola deployed no stormwater portable pumps or generators within its 40 square miles until after hurricane conditions passed.

Natural gas pumps and generators require a combustion engine. Combustion engines are susceptible to failure in heavy winds, rain and flooding. The City's stormwater master plan, once fully implemented, will result in a system that is dependent on gravity. In the near-term, until stormwater improvements are completed for a gravity system, the City will continue to pre-deploy combustion engine pumps or generators when weather conditions allow.

As a result of Hurricane Sally, the City is evaluating ways to install auxiliary equipment that would be safe and secure in severe storm conditions, without placing an unsightly burden in the neighborhood. A safe installation would be similar to the City Hall generator enclosed in a cinder block building. This can be very intrusive in a neighborhood and is difficult to install with the narrow rights-of-way.

Overall, the City's improved stormwater system and response strategies proved a drastic improvement citywide compared to the City's last federally-declared flooding disaster in 2014 under similar conditions.

The Florida Department of Transportation Stormwater Design Standards for a 100-year storm event is defined as a storm event that has a 1% chance of occurring and that results in 13" of rain within a 24 hour period. There are no FDOT design standards for an event with less than a 1% chance of occurring and over 20 inches of rain in 24 hours, such as the 500-year flood conditions which have occurred twice in the last six years in Gulf Breeze.

*When Hurricane Sally hit, two major stormwater projects which took years to study, design and fund were incomplete and in the midst of construction. These projects are the Bear Drive Project located in the Central Drainage Basin and the Plantation Hill Project located in the East Drainage Basin. Both projects include system improvements to surrounding neighborhood collectors. Flooding overwhelmed pumps and caused flooding with five structural impacts in the Central District and 11 structural impacts in the East District, compared to the 2014 flood with 300 structural floods in five areas and three drainage basins***.**

Of the 16 structural floods, nine occurred on two small parallel streets named McClure and Shirley: Four single-family residences and two duplexes on Shirley, and three duplexes on McClure. In addition to this report, the City has also conducted a separate incident report with greater detail of the flooding in this area in order to address the interplay of three actors: The stormwater contractor, residents, and the City's incident command team.

Conducting the review of a major hurricane response and recovery such as this one provides the opportunity to reinforce effective approaches and identify needed improvements in order to achieve optimal performance during any future events.

THE HURRICANE

The eighteenth named storm, and seventh hurricane of the extremely active, record-breaking 2020 Atlantic hurricane season, Sally formed out of an area of disturbed weather which was first monitored over the Bahamas on September 10. The system grew to a broad area of low-pressure on September 11 and was designated as a tropical depression late that day. Early the next day, the depression made landfall at Key Biscayne and subsequently strengthened into Tropical Storm Sally that afternoon.

Moderate northwesterly shear prevented significant intensification for the first two days, but convection continued to grow towards the center and Sally slowly intensified. Due to the asymmetrical structure of Sally, almost all of Florida saw continuous shower and thunderstorm activity beginning September 12. On Sunday, September 13, Santa Rosa County schools closed and coastline areas were placed under a voluntary evacuation. On Monday, September 14, Sally rapidly intensified into a strong Category 1 hurricane. Numerous watches and warnings were issued in anticipation of the imminent approach of Sally.

It further intensified into a Category 2 hurricane during the evening of September 14. However, an increase in wind shear and upwelling of colder waters weakened Sally slightly back down to Category 1 on Tuesday, September 15.

Late on September 15, twenty-four barges in the Pensacola Bay broke loose due to heavy surf. Five of the barges washed up near downtown Pensacola, one in Gulf Breeze, another collided with a maritime vessel. Garcon Point Bridge was struck by two barges. One of these lodged itself underneath the Garcon Point Bridge. Yet another barge lodged underneath the Pensacola Bay Bridge. The next morning, a crane fell onto the same bridge, destroying a portion of the roadway. The Florida Department of Transportation was unable to assess any possible damage to the bridge due to ongoing high winds. The Bob Sikes Bridge was structurally compromised due to serious storm washout.

Despite the temporary downgrading to a Category 1, Sally unexpectedly re-intensified, reaching Category 2 status again early on Wednesday, September 16. Wednesday, September 16, 2020 at 6:40am, on the 16th anniversary of Hurricane Ivan striking Gulf Shores, Alabama, Hurricane Sally made landfall in the same town at 4:45 a.m. CDT on Wednesday, hitting Pensacola-Gulf Breeze, Florida with sustained winds of 105 MPH and gusts of 120 MPH, 30 inches of rain, and 5-foot storm surges over 2 days. Peak intensity occurred at 09:45 AM, with maximum sustained winds of 105 mph. The storm rapidly weakened after landfall, becoming a remnant low early the next day.

The area between Mobile, Alabama and Pensacola-Gulf Breeze Florida, took the brunt of the storm with widespread wind damage, storm surge flooding, and over 20 inches (510 mm) of rainfall in the first 24 hours and over 30 inches in 48 hours. Several area tornadoes also occurred. Hurricane Sally damage totals are estimated to be at least $7 billion, with $7 million alone in damage to Gulf Breeze public facilities.

Water main breaks occurred inside the City of Gulf Breeze, causing the City to shut off water from the south side of Highway 98 inside City limits, where the majority of water main breaks occurred in order to isolate the leaks. Water main breaks also occurred on nearby Pensacola Beach, affecting the City's emergency redundant water supply and causing officials to advise residents of a precautionary boil water notice and distribute water.

Near the peak of Sally's hurricane winds on the morning of September 16, a Gulf Breeze major residential fire occurred unrelated to the storm. Conditions prevented area responding pumper trucks from reaching the home which was a total loss with no injuries. Later that afternoon, a major fire occurred at a gas station.

By Wednesday night, Sally was a tropical depression, according to the National Hurricane Center. Gulf Power had 287,010 total customers in eight counties without electricity. As of 7 p.m. Wednesday night September 17th, 58% of Santa Rosa County's power was restored and all major areas within the City of Gulf Breeze. Gulf Power deployed a workforce of 7,000 committed to restoring power. Sister company, Florida Power & Light, supported Gulf Power with 1,800 additional team members, including line workers, vegetation crews and other support resources. Gulf Power mobilized 12 staging sites throughout the 8 counties.

Commensurate with power restoration, the Fire Department responded to a dozen calls related to minor electrical fires. Lift stations and pumps shut off due to power surge, which caused sewer backflow and yard flooding resulting in around the clock crew response.

Downed internet services included AT&T and Mediacom. The City's redundant emergency line was consequently down, and all utility-related emergency calls were routed to the City Hall EOC for dispatch utilizing Microsoft Teams.

The City of Gulf Breeze and its partnering agencies, including Santa Rosa County Emergency Management, and FLAWarn, worked together to prepare for, respond to, and recover from the hurricane event. The emergency management collaboration and work related to the storm event, which occurred over an extended period of time, required the cooperation of the City of Gulf Breeze, the State of Florida and the Federal Emergency Management Agency (FEMA), and other community public, private, and non-profits partners.

September 21st, the City of Gulf Breeze de-activated the Gulf Breeze Emergency Operations Center and lifted the mandatory curfew simultaneous with 100% power restoration.

Regular city operating hours began on September 22nd. The only street within the City of Gulf Breeze with remaining standing water was at the north end of Gilmore Drive. The citywide precautionary boil water notice was lifted. The majority of water and sewer issues within the city and noncity service area had been resolved.

The final storm debris pass of City streets occurred Monday, October 12th, 22 days from start to finish with three passes of vegetation and construction debris pick up. Hard wood debris was mulched with a plan to haul to the International Paper Mill in Cantonment for recycling and lower costs than at the landfill.

PREPAREDNESS

In 2014, the City experienced a greater than 500-year flood event with a cumulative 27" inches of rain in five days, which flooded 300 homes and many more properties. The City established a citizen-led stormwater task force to review engineer recommendations for stormwater infrastructure improvements. The City is in the midst of completing $6 million in new infrastructure in 6 years in all major drainage basins, with an additional $1.5 million in stormwater projects remaining in design with partial grant funding.

In October 2019, the City adopted a new Emergency Operations Plan in coordination with Santa Rosa County Emergency Management, hospitals, schools, and the City's Interfaith Disaster Resources Council. As Sally approached, the City monitored the hurricane advisory, tracking reports (forecast cone), hurricane intensity and estimated arrival forecasts. As the hurricane approached, the five Activation Levels described in the City's Emergency Operations Plan were reviewed and updated.

In the post-action anonymous employee survey, 75% of employees felt that 72 hours prior to the hurricane landfall, the City was tracking the storm and preparing in a coordinated, structured manner. 66% of all employees were designated as essential responders and reported during the storm. 46% of employees reported reading the Emergency Operations Plan prior to Hurricane Sally. This reflects that potentially, 20% of responding employees were not familiar with the City's Emergency Operations Plan. However, Fire-

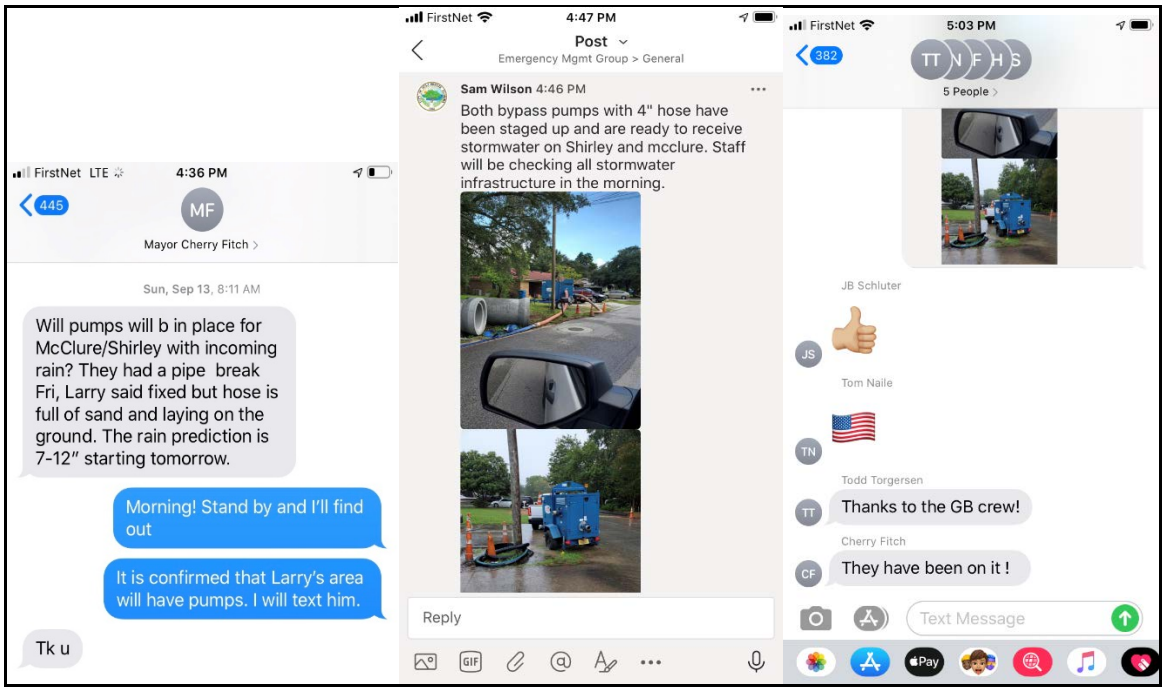
Rescue and Police each have their own standard operating procedures in addition to the EOP, and so this may account for part of the gap. Still, more training is necessary.

For example, a supervisor with less than a year in the position vocally objected to being called in 72-hours prior to hurricane landfall on a Sunday in order to pre-deploy equipment, and it was determined the next day that not all pre-deployed equipment was operable. The same supervisor disregarded protocol and dropped 2,000 sandbags at the park sand for convenience, rather than drop the sandbags at the Community Center, which is logistically responsible for limiting citizens to 10 bags. The sandbags were gone in less than a half hour. Lastly, the same supervisor assigned to "A" shift sent his essential employees' home and left 12 hours prior to hurricane landfall due to household concerns. This provided an important lesson to new staff during post-action debriefs, as the supervisor was placed on administrative leave.

Phase 4: 72 Hours from Landfall | Sunday, September 13th

The City's Development Services Manager developed a "heat map" of areas which could be vulnerable to a major flood event. The City published the map to social media and urged residents in these areas to take precautions.

Portable pumps were staged in these mapped areas midday by a city crew comprised of the Public Services Manager, Public Services Coordinator, three Natural Resources Technicians and one Natural Gas Technician II. The crew tested all stormwater pumps, stationary and portable. At 5 PM, Incident Command consulted after the weather briefing and canceled garbage service for the next week, sending out a Nixle that all trash cans should be brought inside and loose items secured.



Phase 3: 48 Hours from Landfall | HURRICANE WATCH
Monday, September 14th

Incident Command participated in a Mobile Weather Alert weather briefing and then proceeded with the City's Emergency Operations Plan: *Phase III—48 Hours from Landfall*. This phase prepares for the public's safety and ensures continuity of emergency response during a major flooding event.

Also on September 14th, the City activated its DRC Emergency Debris Contract for hauling. DRC's closest operation is located in Mobile, AL and due to the storm trajectory, the City was proactive to ensure quick staging and response. The City also activated an emergency

contract with a local landscaping company with heavy equipment and four crews, as the initial “strike team” to clear roadways and coordinate with first responders, in advance of DRC large truck haulers.

The City Manager held a morning pre-storm briefing with key members of the incident response team. The knowledge and experience gained by the 2014 flood was emphasized, and the need to communicate that experience to recent hires. Items discussed included the list of essential employees (non-essential do not report to work), and the need for essential employees to take care of personal belongings, be prepared to be called in, and be prepared to bed down Tuesday.

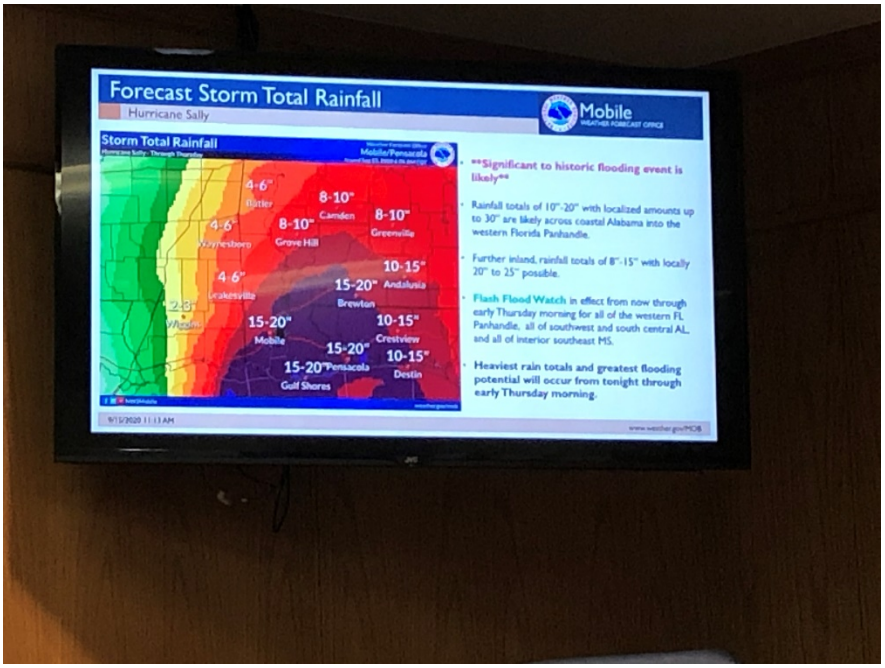
Like all departments, Police and Volunteer Fire-Rescue conducted their own meetings with command staff to formulate the staffing, equipment, and needed logistics for the hurricane event.

To ensure the quickest response and recovery following flooding, the City utilized scattered site emergency staging. This consisted of five “hubs” for strategic operations: The City Hall Emergency Operations Center, Police Department, Fire Department, Wastewater Treatment Facility, Field Operations Building, and the Community Center.

PHASE 2: 24 Hours Before Projected Landfall - HURRICANE WARNING

Additional off-duty personnel were called in for their assignments. Command and support functions were underway. Police, Public Works and Parks were assigned “A” shift and “B” shift for response. Personnel were on ALERT status. Some extra assignments or details were issued by command personnel. On-duty supervisors kept critical personnel advised of updated information. Employees identified as “essential manning” were tasked with primary A shift and B shift. “A” shift employees were instructed to be prepared to bed

down at each hub, and given time to go home and secure their personal effects Monday. “B” shift employees were told to go home and rest and be prepared to be called in. During the storm response, all employees reported both by alternating shifts and both shifts combined.



PHASE 1: 12 Hours Before Projected Landfall - HURRICANE OR SEVERE WEATHER DANGER.

CITY HALL EMERGENCY OPERATIONS CENTER - HUB 1

Mayor Cherry Fitch (24/7)
City Attorney, Mary Jane Bass
City Councilman, Todd Torgersen
City Manager, Emergency Management Coordinator, Samantha Abell (24/7)
Assistant City Manager, EOC Logistics, Sheila Fitzgerald (24/7)
IT Director, Edgar Miller (24/7)
Public Works Director, Jason Randell (24/7)
Development Services Director, Thomas Lambert
Project Manager/Santa Rosa County EOC Liaison, Clifton Wells

Gulf Breeze Emergency Operations Center (GBEOC) served as central command and control for the effective coordination of disaster management functions. GBEOC is located at 1070 Shoreline Drive, at the City Hall. Essential personnel for Incident Command were notified and operating with ICS system' functioning 24 hours a day starting September 13 thru September 17.

Throughout the duration of the storm and recovery period, the EOC consisted of the Mayor, City Manager, Assistant City Manager, IT Director, and Public Works Director. Members of the City Council and the City Attorney also manned the GBEOC. Mayor Pro Tem Naile served at the GBEOC liaison to the City's Interfaith Disaster Resources Council, feeding Gulf Power recovery crews and debris clean-up crews in the immediate aftermath of the storm.

GBEOC implemented the Incident Command System structure with the City Manager as Emergency Management Coordinator to oversee the operation. The Police Chief serves as the Public Safety Commander and the Community Services Director/Volunteer Fire Chief serves as the Regional Weather Alerts Coordinator. This extended emergency activation required the prolonged cooperation of the City's Department Directors and the orderly, timely execution of the City's emergency plans, procedures, and protocols to meet the needs of the Gulf Breeze community before, during and after the storm.

The emphasis was placed on the core functions of the emergency management system including: the collection, gathering and analyzing of data; decision-making that protected life and property; maintaining continuity of government operations; and communicating critical operational information with Santa Rosa County Emergency Operation Center and all concerned agencies and individuals. GBEOC facilitated coordination of the information, personnel, supplies, equipment, and other required resources.

Hurricane Sally served as the first hurricane response that involved a high level of technological communications including instant issue mapping. This level of full integration of City personnel and governance of the City allowed for much greater coordination and efficient information flow throughout the emergency.

PUBLIC SAFETY COMPLEX—HUB 2

Police Chief, Rick Hawthorne
Captain Stef Neff
Captain Tatro
Lead Dispatch Lisa Melton
Volunteer Fire Chief Shane Carmichael
Volunteer Deputy Fire Chief Tim Hoffman
Volunteer Assistant Fire Chief Scott Kasper

Due to the small size of our peninsula city, the GBEOC and Public Safety Complex are kept separate, yet the incident command team is in near-constant communication. On Monday September 14th, 2020 Police Department Administrative Staff met to initiate the Police Department Hurricane policy procedures. The Police Department initiated Alpha/Bravo shift (6p-6a) starting at 6 pm Tuesday September 15, 2020. Officers were assigned to either shift to add additional manpower. The Police Department reduced staffing on Saturday September 19, 2020 at 6 am.

The Fire Department's emergency operations and stipend program provides a provision that allows the Volunteer Fire Chief to recall members to provide full-time emergency staffing for major disasters for a one-time stipend payment of $500. This provision was enacted and the station was manned from Tuesday, September 15th to Saturday morning, September 19th. During that time the station was manned with an average of 8 to 10 personnel. Additionally, Gulf Breeze has a long time agreement with Escambia County Fire Rescue that whenever they have to evacuate their station on Pensacola Beach, their engine company is housed at our fire station. As a result, we have use of their resources until they are allowed to return to the Beach. This increased our total manning to 12 to 14.

Stated above, the Police Chief serves as the Public Safety Commander and the Community Services Director/Volunteer Fire Chief serves as the Regional Weather Alerts Coordinator. Both are critical leaders of incident command and as such, were frequently advising the EOC of changing conditions as the city transitioned through each of the five phases of its emergency operations plan.

Community Center – Hub 3

The Community Center was a main logistics hub in anticipation of major flooding which could temporarily cut off the peninsula city from surrounding areas. The Covid-19 pandemic necessitated precautions to ensure that responders could rest, eat meals, and dry laundry while maintaining social distances. One room was prepared in the event that any public temporarily evacuated, with supplies such as diapers, formula and bottled water.

Main meals were prepared at the Community Center due to Covid-19 for the first 96 hours after hurricane landfall. Parks staff prepared main meals and individually wrapped sandwiches and snacks for 24/7 convenience. Staff were on hand with disinfectant to immediately wipe down emptied tables and chairs. Air mattresses and individual bedding were provided. Officers, firefighters, and wastewater treatment facility operators chose to take their bedding to facility hubs. Parks staff dried and returned clothes to resting employees.

Field Operations—Hub 4
Jená Roberge, Utility Manager
Zach Lewis, Water and Sewer Superintendent

Coordinated command and control of sewer lift station emergencies and water plant and water distribution emergencies. Utilized TEAMS messaging. Responsible for:

87 sewer pumping stations over 30 square miles, and all associated sewer collections systems; City and SSRUS drinking water treatment facilities and all associated drinking water distribution systems; bulk fuels systems; portable pumps and generators.

Wastewater Treatment Plant—Hub 5
Jená Roberge, Utility Manager
Ben Watts, WWTP Superintendent

Responsible for: Command, control and operations of the wastewater treatment facility, reuse distribution and disposal storage and conveyance systems.

Other Critical Sites for Preparedness:
Public Services Building at City Hall GBEOC
Sam Wilson, Public Services Manager

Responsible for: Coordination, command and control of stormwater systems, streets, gas and solid waste, seven stormwater pumping stations; debris removal; bulk fuel systems; portable pumps and generators.

COMMUNICATIONS
Messages to city response teams were disseminated by the following mediums:

Dispatch: The Gulf Breeze 911 system handled emergency response during the storm. The regular lines went down Tuesday evening but the 911 lines operated during the entire storm. The dispatch center had communications with other surrounding agencies using the 911 system, a cell phone and the hard-wired line for one phone in dispatch. The

dispatch center received sixty-six (66) 911 calls from 6 am September 15 to 10 pm September 16th and 392 other calls regarding information about Sally, or incidents. The records clerk was assigned to the dispatch to assist with non-emergency calls being received from the public.

Microsoft TEAMS: This chat-based collaboration platform with document sharing became a critical method of communication after hurricane landfall as citizens needed response. All responders monitored TEAMS and responded for instant information sharing and fast response. Police and Fire limited this application so as to focus on Dispatch. PD and FD leadership however, monitored TEAMS for regular briefings.

Emergency group cellular messages: The Emergency Management Coordinator/City Manager utilities emergency group cellular messages to inform elected and appointed officials on emergency response.

Messages to the public were disseminated by the following mediums:

Nixle Alerts: Nixle is a community information service dedicated to helping citizens stay connected to the City to information. During the storm the City used Nixle to give information about road closures. There were 10 Nixles sent out, this was a low number due to the loss of the internet and the closure of the Pensacola Bay Bridge early on Tuesday night.

Call Em All: This feature was used more heavily in the temporary disabling of Nixle during hurricane landfall. Call Em All is a web application for sending broadcasts to customers subscribed by customer accounts. This feature was used to provide updates primarily on customer service such as precautionary boil water notices and debris pick up.

Social Media: All of the City's social media platforms were utilized for posting updates and press releases continuously throughout the Hurricane Sally event. There was no internet service disruption at the GBEOC.

The Incident Command Team delivered press releases and situational briefings as the weather deteriorated. The IT Director worked diligently in GBEOC to disseminate critical information to the public about the status of the emergency, the measures taken by response personnel, management of the emergency, and the progress of response and recovery efforts. This enabled the Mayor, City Manager and Assistant City Manager to focus on targeted communications with individual residents and businesses.

This included the City Manager utilizing the Next Door app to respond to the immediate needs and questions of residents and businesses on the progress of response efforts.

The Mayor and Assistant City Manager answered the mainline of the GBEOC throughout the duration of the storm. The City Attorney and Councilman Todd Torgersen also answered the main line of the GBEOC. This approach proved to be very positive and needed for the community. In addition to the above-mentioned communications, the Nixle alerts became activated with the restoration of line service Wednesday morning and was very successful for supplying the community with information. Taking a multi-prong approach

ensured communications in most every instance, regardless of whether there was no power, cell towers, internet or television.

In the post-action employee survey, police recommended situational briefings at regular intervals by email so that responders could refer to those emails at shift changes.

LOGISTICS

The logistics section of the incident command structure is crucial to overall effectiveness of emergency response in prolonged disasters. This includes activating emergency procedures and contracts, payroll and FEMA codes, securing lodgings and meeting the needs of employees as the disaster conditions deteriorate.

HURRICANE SALLY RESPONSE AND RECOVERY

Police and Dispatch

Gulf Breeze Police officers patrolled the streets and completed business checks prior to the winds of Sally becoming too dangerous. During the early evening of Tuesday September 15, the police department was notified that FDOT needed the Pensacola Bay Bridge shut down due to possible structural damage. Gulf Breeze officers blocked the northbound lanes at the foot of the bridge and Pensacola Police Department blocked the Southbound lanes until the weather became unsafe to be outdoors. Officers staged at the police department until it was deemed safe to patrol and assist with recovery operations. Once it was deemed safe to patrol, two officers immediately went and blocked the northbound lanes of the Pensacola Bay Bridge. Bridge patrol continued until Thursday September 17 when the contractor was able to place concrete barriers in the lanes to prevent anyone from driving on the bridge.

During the morning hours of Wednesday September 16 after Sally had passed, three officers responded to a 911 call of an individual trapped on the bottom floor of his house in an elevator. Prior to the officers' arrival, water from the intercoastal had entered the elevator shaft. Officers were able to remove the individual and his dog from the elevator and carry them back upstairs to safety.

Later that morning officers responded to another 911 call from two elderly residents that needed to leave their apartment that was starting to take water. Officers were able to get to the individuals and help them safely evacuate. Officers assisted with identifying flooded streets, streets that needed to be cleared for passage, locating down power lines and assisting the public. Damage to the Gulf Breeze side of the Bob Sikes Bridge was discovered by FDOT which required officers to be present to slow vehicle traffic to 5 mph and move all traffic in the northbound lanes.

The phone service was repaired on Thursday and normal dispatch operations resumed. A total of 74 CAD screens were built for calls for assistance from 6 PM September 15 until 10 PM September 16, 2020. These included Alarms, Public works call outs, Fire, and agency assists.

Fire-Rescue

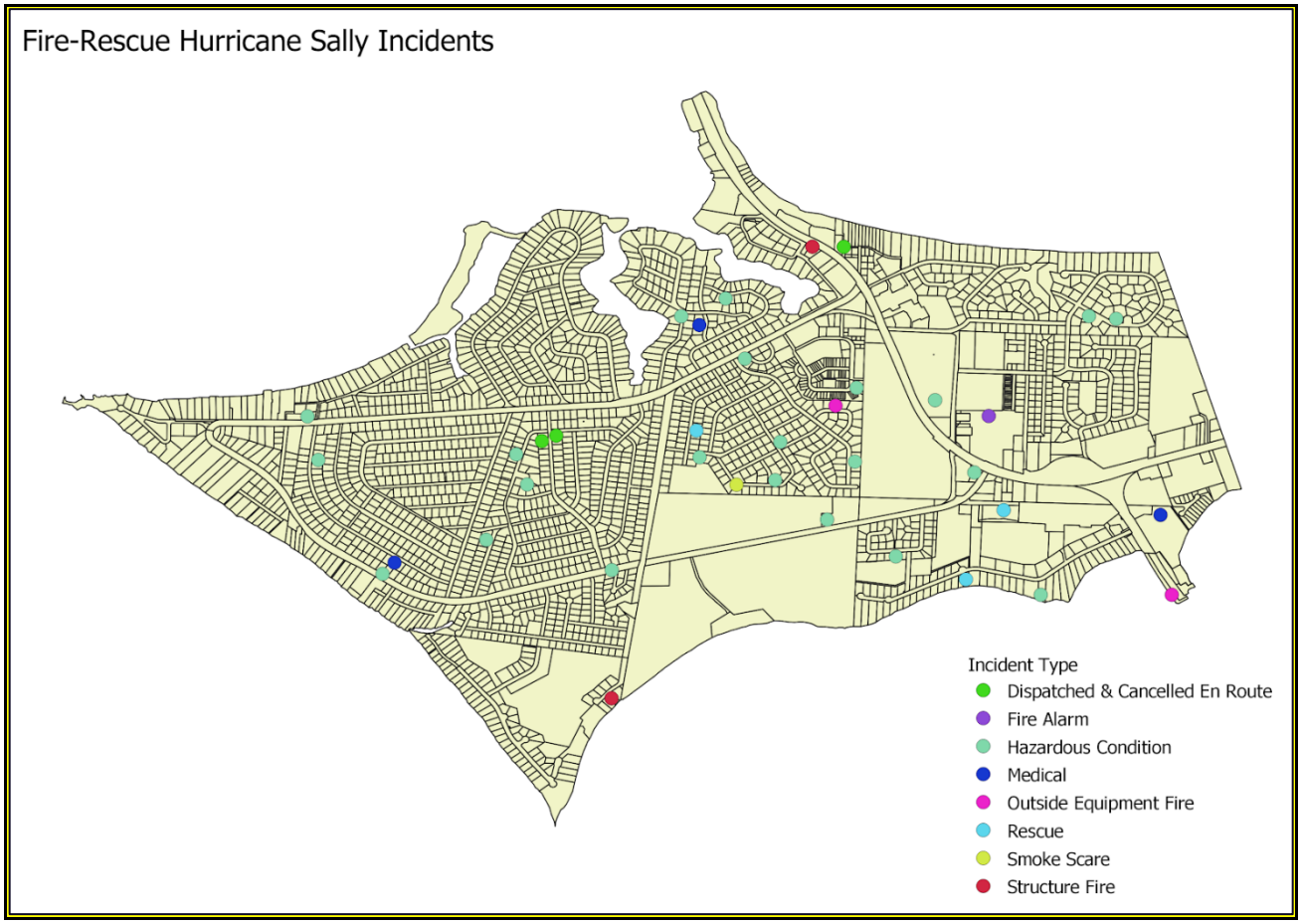
Fire-Rescue responded to 41 incidents related to the hurricane. Of note, the City experienced two structure fires. The first fire occurred on Colley Cove Drive as the eyewall of Sally was moving over the City in the early morning. A small contingent of police and fire units responded to the area to confirm that there were no occupants entrapped. Two police officers in the HUMVEE were able to make entry into the subdivision. They made contact with the homeowner and he confirmed that all the occupants were out of the structure. They radioed this information to dispatch and they further advised that it

was unsafe for the fire department to access the burning structure due to storm surge and high winds. In fact, one of the officers was knocked down due to the wave action.

Due to the unsafe conditions and the fact that the fire was not threatening any other structures, it was allowed to burn. The cause of the fire is still under investigation by the Florida State Fire Marshal's Office.

The second structure fire occurred at The Breeze Mart at 199 Gulf Breeze Parkway on September 20th. The fire started in the attic area of the building as a result of an electrical malfunction in a junction box that energized an exterior sign. Gulf Breeze VFD was assisted by the Midway Fire Department, Escambia County Fire-Rescue and a task force engine from the East Lake Fire Department (Tampa Area).

Another notable incident also occurred on the eve of landfall when a resident of Laura Lane called EMS for an unconscious male. EMS was unable to respond due to the high wind conditions and they passed the call over to dispatch. Squad 33 responded and assessed that the patient was suffering from an immediate life-threatening medical emergency and in need of hospital care. The crew received authorization from Santa Rosa EOC for the fire department to transport the patient by fire truck to Gulf Breeze Hospital. The crew used a trap to carry the patient from the residence to the rear crew bench of the rescue truck and then transported emergency response.



In addition to providing emergency response during and after the event, Fire Department staff conducted the FEMA preliminary damage assessment surveys for structural and flood damage. The information was compiled in a spreadsheet and transmitted to the EOC.

Parks and Recreation Response

Thursday, September 17th Parks Staff began distribution of water and dog food with the City under a precautionary boil water notice for 48 hours. Pallets of water were secured from Convoy of Hope and Santa Rosa County Emergency Management. Although Publix was open within 48 hours of hurricane landfall, water quickly sold out and bridge closures and storm damage prevented restocking.

As hurricane-force winds abated, Parks staff immediately assisted Hubs 4 and 5, Utility Services Division, with chainsaws in order to clear debris for access to damaged lift stations, pipes and pumps. Hubs 4 and 5 are located within the City's 30-square mile utility service area which required early around the clock debris clearing and pump deployment to make repairs.

Debris Clearing

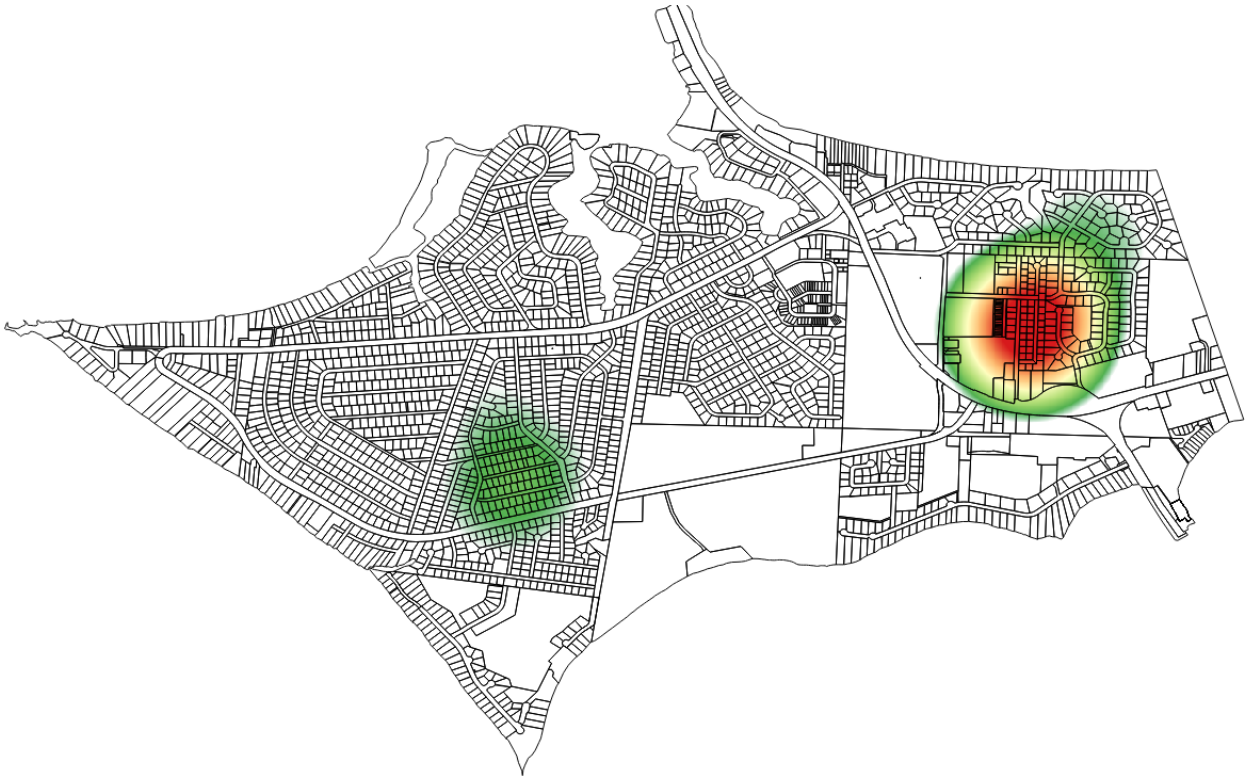
Wednesday, September 16 at 5 PM, the City's contracted "strike team" EcoGardens deployed four crews. These crews coordinated with emergency services to clear roadways from debris throughout the night. One crew removed fencing from the football field and began hauling gravel from a local garden business in order to prepare the necessary roadway for the DRC Emergency Services large panel trucks.

Thursday morning, roadway debris clearing was complete and the debris strike team began clearing debris from ingress/egress and broken limbs in canopies called "hangers" endangering life-safety. Thursday, most residents were without power. The City's strike team coordinated its four crews to clear trees from residential power lines and

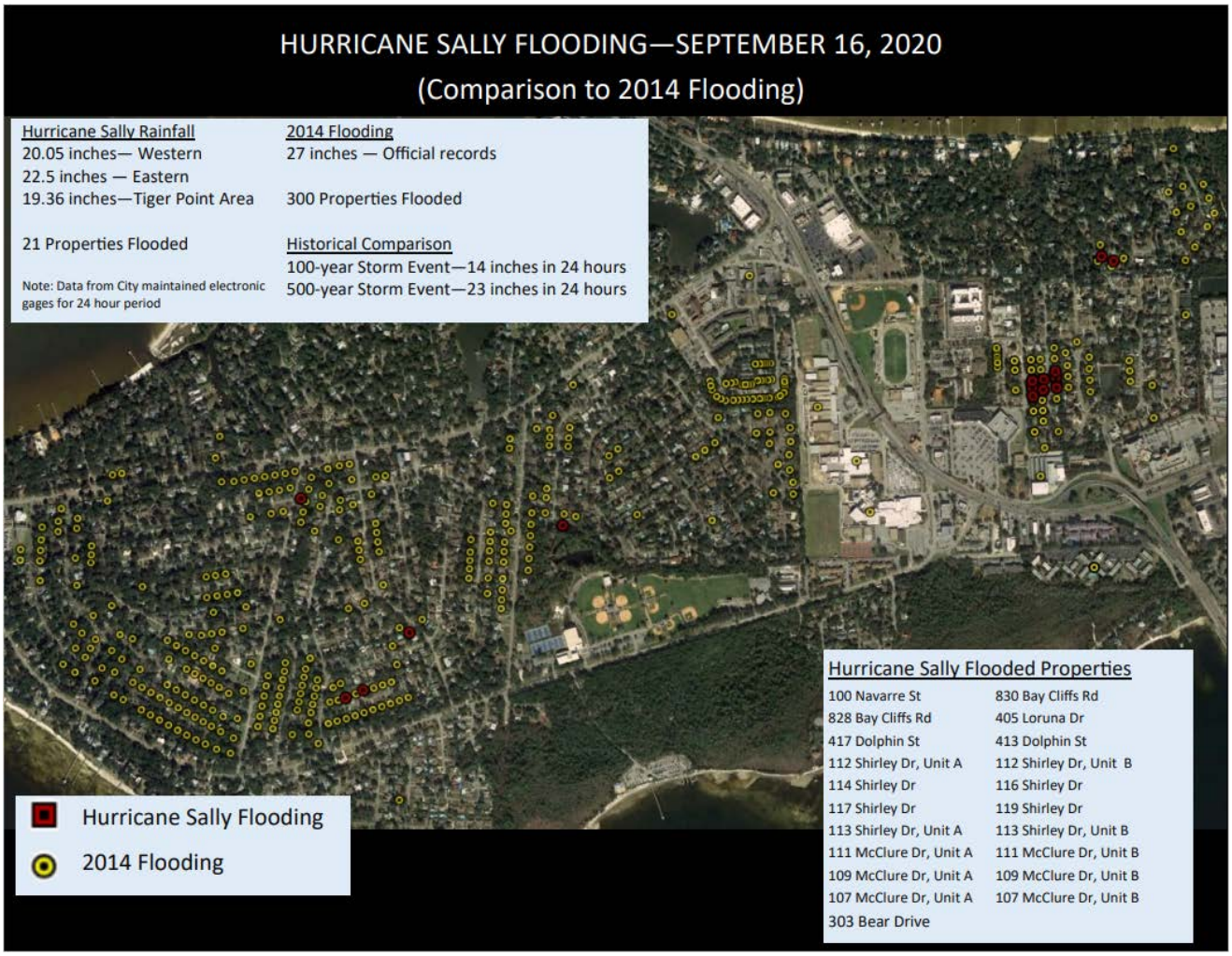
communicate with power line crews, speeding up the restoration of power. Residents phoned the City and the GBEOC coordinated by TEAMS the strike teams removing fallen trees from power lines within the public rights of way. By the weekend, the strike teams were reassigned to Tiger Point golf course in order to push the private pier debris from the City's roadside for Santa Rosa County's hauling.

City-Wide Outages and Flooding

Hot Zone Map For Rising Water



Hurricane Sally 24-Hour Rainfall Comparison to 2014 5-Day Flood Event



Flooding Depth Comparison, 2020 vs 2014

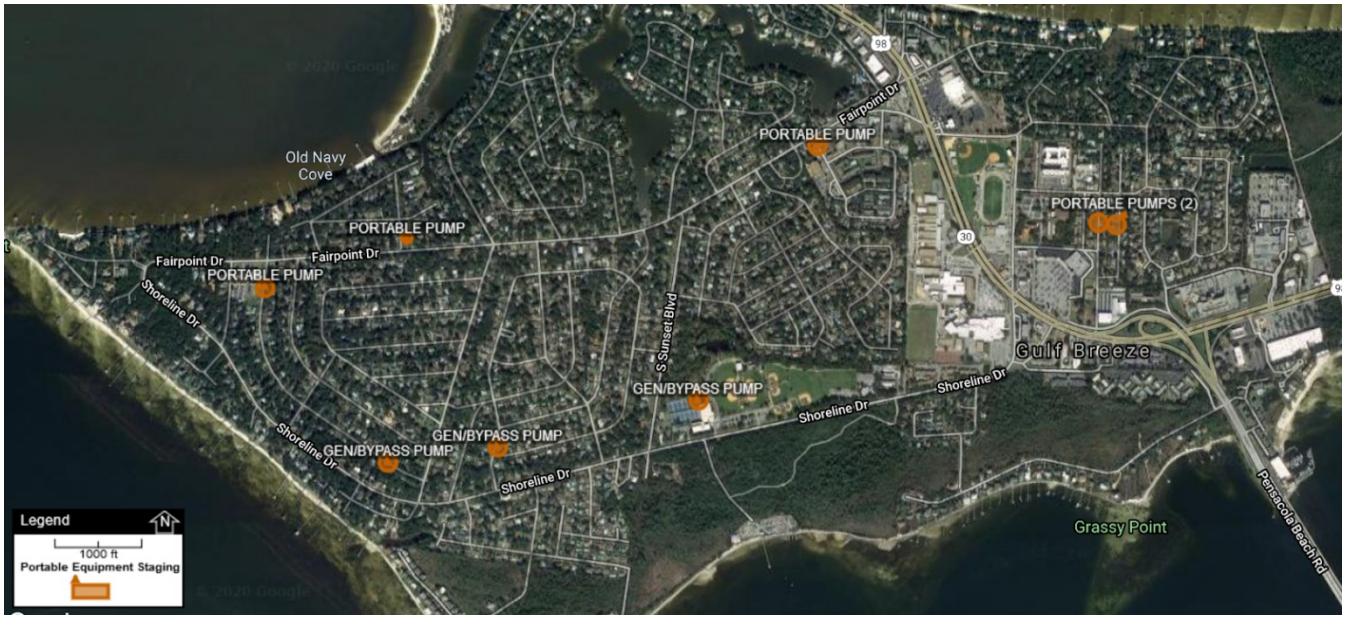
ADDRESS	2020 DEPTH (IN)	2014 DEPTH (IN)
100 NAVARRE ST	2	40
107 MCCLURE DR, UNIT A	3	12
107 MCCLURE DR, UNIT B	3	12
109 MCCLURE DR, UNIT A	1	29
109 MCCLURE DR, UNIT B	1	29
111 MCCLURE DR, UNIT A	1	32
111 MCCLURE DR, UNIT B	1	32
112 SHIRLEY DR, UNIT A	4	30
112 SHIRLEY DR, UNIT B	4	30
113 SHIRLEY DR, UNIT A	3	30
113 SHIRLEY DR, UNIT B	3	30
114 SHIRLEY DR	12	
116 SHIRLEY DR	12	
117 SHIRLEY DR	8	30
119 SHIRLEY DR	8	
303 BEAR DR	12	22
405 LORUNA DR	3	
413 DOLPHIN ST	4	24
417 DOLPHIN ST	6	28
828 BAY CLIFFS RD	4	12
830 BAY CLIFFS RD	10	

Flood Concern Areas and Deployment of Portable Equipment

Staff identified areas that are prone to flooding and that information drove the deployment locations of portable bypass pumps and generators.

Portable pump and or generator staging (Orange Circles):

Properties that flooded (Blue Circles):



Combined map showing areas of concern, 2014 flooding, Hurricane Sally flooding and portable equipment deployment locations

Power Failure

The City-wide power failure shutdown the City's 7 Stormwater pumping stations and 26 sewer lift stations. Staff had to rely on portable generators or bypass pumps to pump stormwater at the stations. In some cases, the portable generators did not work consistently.

Sewer Lift Station Locations

Water Outages

Due to several water main breaks the water system had to be shut down to preserve pressure and supply for Gulf Breeze Hospital and other critical care facilities. Water main breaks often occur when areas are flooded, and these breaks are difficult to find and repair by staff. As the flood waters receded, staff were able to find the breaks, make repairs and restore service.

Water Outage Map

Areas Affected by Zone

Zone Map

Zone 1—East District

The East District as depicted in the hot zone map below for rising water is prone to flooding due to lower elevations that receive runoff from higher elevations for storms greater than a 100-year storm. A major stormwater project is 75% complete and is on track for final completion in December 2020. All of the new infrastructure worked well during the storm. Unfortunately for areas where the improvements aren't fully complete, flooding occurred to 16 homes (64 homes in 2014). Staff deployed portable bypass pumps to try to control the rising water, but unfortunately, a total of 16 properties flooded.

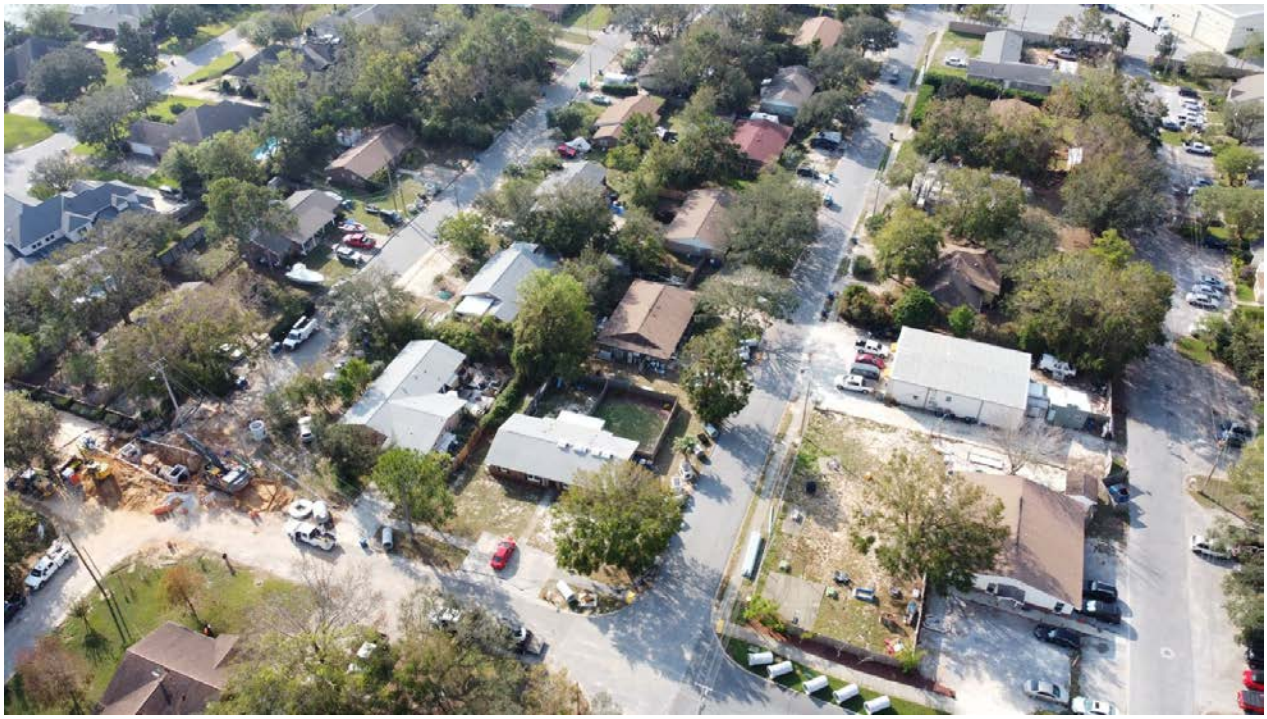
Stormwater

Staff deployed a total of 3 bypass pumps, one at Shirley Drive, one at McClure Drive, and the third on Bay Cliffs Sunday afternoon on September 13. Staff tested the pumps on Monday and found the pump on McClure to be inoperable and replaced it with a spare pump. The pump at Shirley Drive would not prime due to bad suction hoses and a lack of gaskets. Staff replaced the hoses and added gaskets to resolve the issues. There were

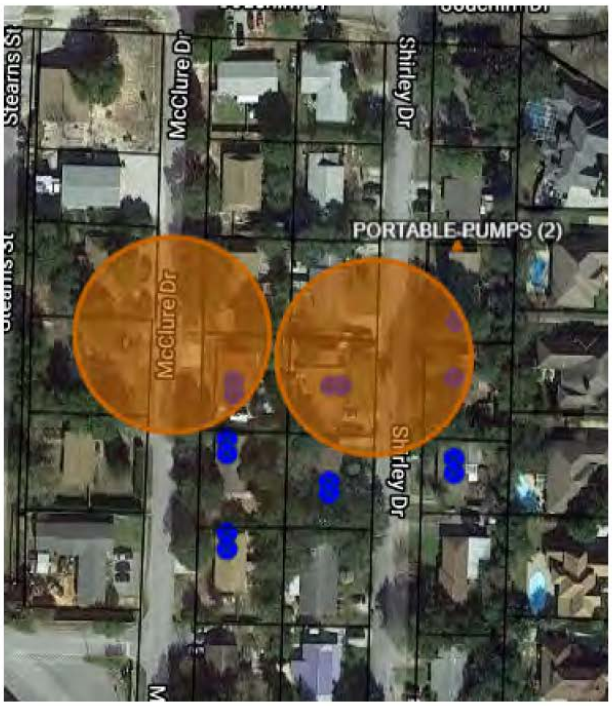
inconsistent operating times due to mechanical challenges and human interaction, as the control panels were unlocked and accessible to the public. A total of 16 properties flooded in the East District:

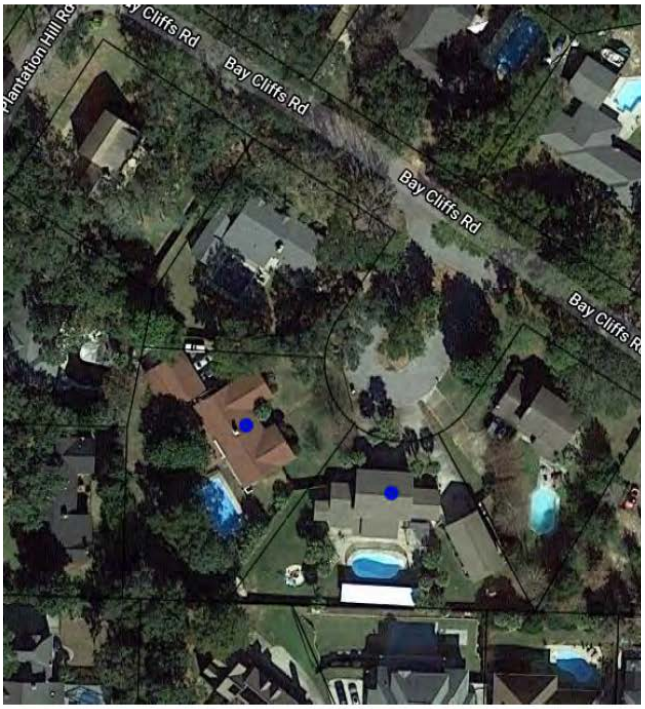
107 MCCLURE DR, UNIT A
107 MCCLURE DR, UNIT B
109 MCCLURE DR, UNIT A
109 MCCLURE DR, UNIT B
111 MCCLURE DR, UNIT A
111 MCCLURE DR, UNIT B
112 SHIRLEY DR, UNIT A
112 SHIRLEY DR, UNIT B
113 SHIRLEY DR, UNIT A
113 SHIRLEY DR, UNIT B
114 SHIRLEY DR
116 SHIRLEY DR
117 SHIRLEY DR
119 SHIRLEY DR
828 BAY CLIFFS RD
830 BAY CLIFFS RD

The East District Stormwater Improvement Project once completed will greatly improve the drainage and conveyance of excessive stormwater that affects these areas. Until project completion, staff will continue to pre-deploy pumps and ensure that all pumps run as designed in order to control rising water as much as possible and prevent homes from flooding.



Portable Bypass Pumps Deployed (above). Homes flooded McClure, Shirley, Bay Cliffs Rd (below).





Traffic/Streets

Numerous street signs were either broken from the bases or blown loose. Staff have inventoried all issues and are in the process of replacing and repairing signs. Four of the City's five traffic signals are located in the Eastern District. All four are owned by the Department of Transportation and maintained by the City through agreement with the Department. Only the signal at Gulf Breeze hospital entrance experienced extreme damage. All of these signals were repaired by the Department under an emergency contract with the Department of Transportation at no cost to the City.

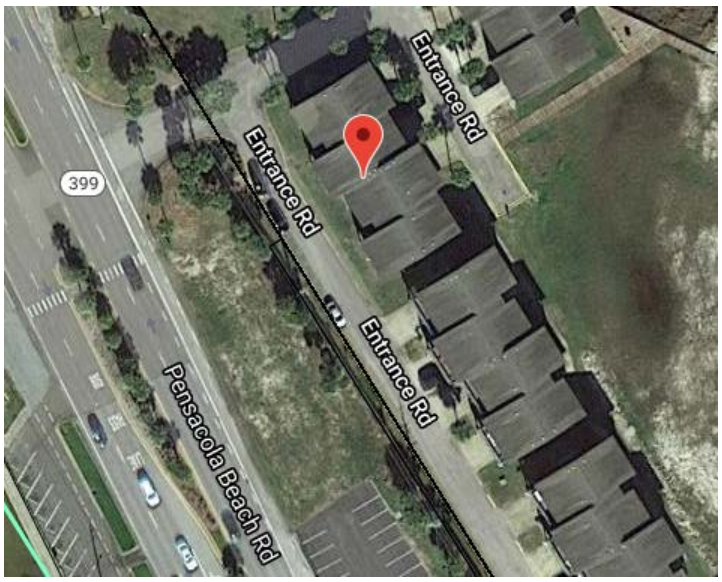
Drinking Water

Not affected by water outage and no major issues

Sewer Collection System

There are 9 sewer lift stations in the East District. During the storm one station became submerged from flooding, and 2 other stations had generator faults. All stations lost power due to the City-wide power outages. Staff utilized portable bypass pumps and generators to maintain service until power was restored. A house located at 200 Pensacola Beach Rd had sewer backup into the home due to the lift station power outage. A portable bypass pump was deployed.

Location of home that experienced sewer backup

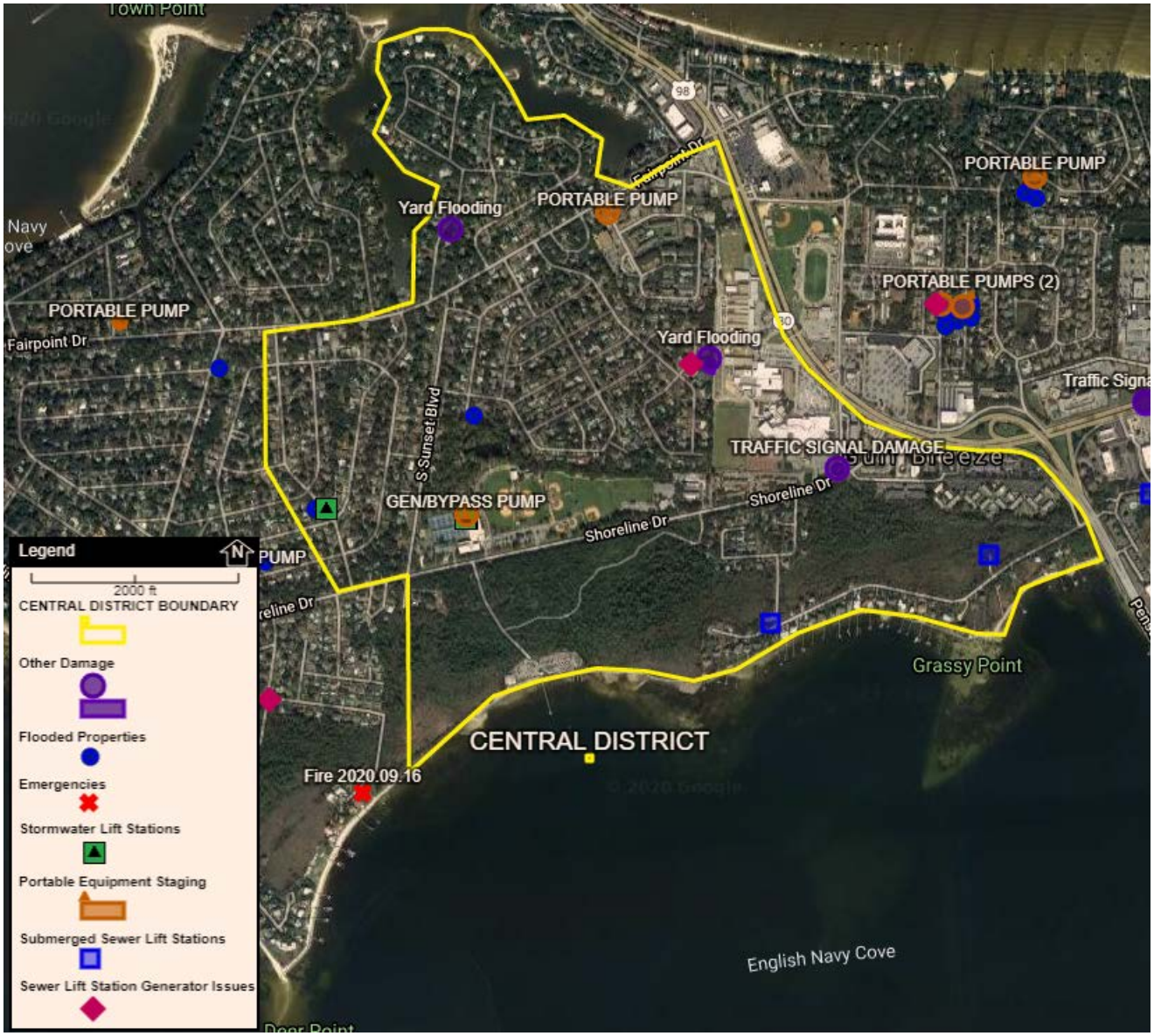


Sewer Lift Stations East District

Zone 2—Central District

Approximately 140 properties flooded in Zone 2 during the 2014 historic flood. Since 2014 several stormwater improvements have been completed in this area and during Hurricane Sally, only 2 properties flooded. Prior to the 2014 flood, the City received a grant for work in the Nightingale and Russ Drive area to provide stormwater drainage infrastructure. This project had been in the works since 2006, but did not receive funding until 2011 for the design and then 2013 for the construction. The project had been bid and was approved for construction in April 2014, when the major flood event occurred. Through the Stormwater Task Force, the project was modified from a stormwater pump station to a gravity outfall pipe, at an additional cost to the City of $1 million over the approved grant amount of $1.57 million.

Bear Drive experienced severe flooding in 2014 caused by power loss at the pump station and by collapse of some of the 10” diameter piping. The original piping was installed in 1985 consisting of the earliest plastic piping produced for drainage. The million-dollar system was budgeted for replacement by the City Council, and the project is currently underway. The replacement includes replacing the 8” and 10” pipe with 18” and 24” diameter pipes. Further enhancements to the pump station are also planned.



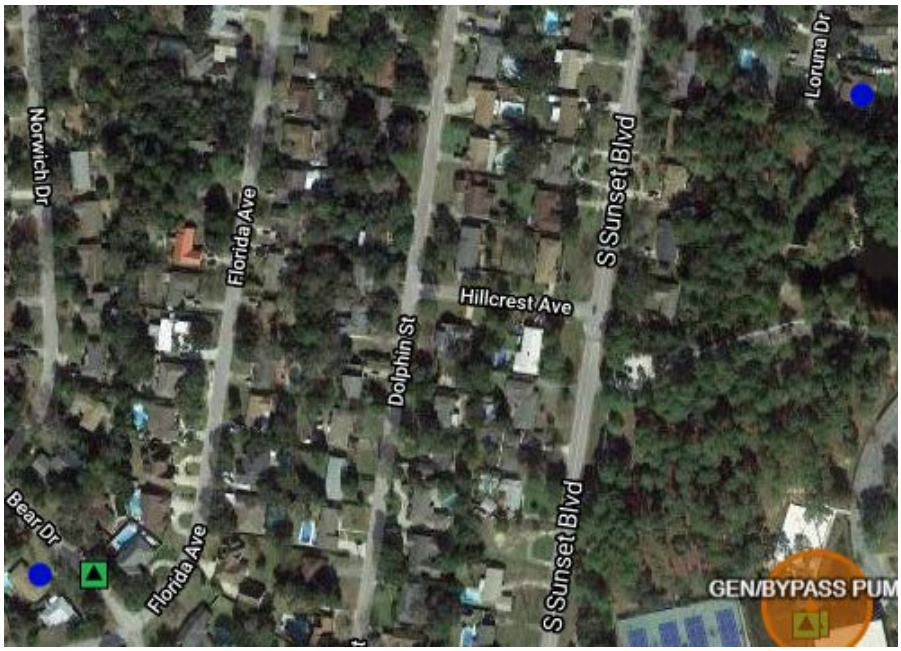
Stormwater

Staff deployed 2 bypass pumps, one at Nightingale near the Gulf Breeze Methodist Church and one at the Rec Center due to the stormwater lift station becoming inoperable after the power outage. The generator that backs up power for the Rec Center would typically supply power to the stormwater pump stations onsite, however, the generator lost one of the power phases during the storm, which meant that it could power single-phase system but not the 3-phase stormwater pumps. The homes that flooded were:

303 BEAR DR: The Stormwater Pump Station on Bear Drive lost power during the City-wide power outage. One house was flooded before staff could deploy a generator for the station.

405 LORUNA DR: During the power outage, the Rec Center generator provided power for the Rec Center but failed to power the stormwater pump stations onsite. Staff deployed a bypass pump at the station, 405 Loruna was flooded due to the low elevation of the property and proximity to the park pond.

Houses that flooded in Zone 2 (Blue Circles) and Bear Drive Stormwater Pump Station (Green Square). Bypass deployed at the stormwater station at rec center (Orange Circle):



Traffic/Streets

Several street signs were either broken from the bases, loosen and in some cases the posts blown sideways. Staff have inventoried all issues and are in the process of replacing and repairing signs. Critical traffic control signs (stop and yield) were replaced or repaired immediately. The fifth traffic signal in the City and the only one owned by the City is in the Central District at the intersection of Shoreline and Daniel Drives at the rear entrance to the high school. This signal received significant damage and was repaired by Ingram Signalization.

Drinking Water

Zone 2 was included in the City-wide water outage. In addition, there were several water line breaks that were repaired as soon as staff identified them.

Sewer Collection System

There are 9 sewer lift pumping stations in Zone 2. Two stations off of Soundview Trail became submerged from storm surge. When the City-wide power outage hit, several of the stations were without power and the station on Dracena Way generator did not operate. Staff deployed portable generators and bypass pumps to keep the collection system operational.

Lift station locations in Zone 2

Zone 3—West District

Approximately 187 homes flooded during the 2014 storm event. During Hurricane Sally only 3 homes flooded. The stormwater improvements completed since 2014 greatly improved the control of flooding to this zone. The 2014 grant that provided funding for the Central District also provided for the installation of a new stormwater pump station and drainage system on Washington Avenue, as well as additions and replacements to the pumps stations and drainage system on Florida, Dolphin and Camelia. The City has been awarded a grant for improvement of the discharge from the Gilmore Drive pump station on Eufaula Street. Additionally, the City Council approved the design of the Gilmore Basin gravity outfall project. This will provide a gravity pipe crossing Shoreline Drive at the intersections with Navarre and Eufaula Streets that connects to the proposed discharge project on Eufaula Street funded with RESTORE grant funds.

Stormwater

There are 4 stormwater pumping stations in this zone. However, these stations lost power during the City-Wide power outage. Staff deployed standby generators and portable bypass pumps in order to control the flooding of properties and streets. Two properties flooded: 413 & 417 Dolphin Street.

The Camelia Street Stormwater Station lost power during the City-wide power outage. Staff deployed a portable generator, but the system tripped breakers due to over amperage. Staff were limited to running only 1 of 2 pumps to maintain pumping without tripping breakers.

Portable generator deployed for the Camelia Street Stormwater station

100 Navarre Street: This location flooded as the stormwater drainage inlet screens clogged from leaves and debris flowing downhill to the screens. A street cleaner will be deployed in the near future which is needed to clean up fine vegetative debris along all roadways.

Gilmore Stormwater Station: This pumping station became inoperable once power was lost, causing street and yard flooding.

Gilmore near Fairpoint: Yard and road flooding occurred by the First Baptist Church, due to a low spot in the terrain. A bypass pump was deployed to convey stormwater over Fairpoint Road to dewater the area.

Washington Ave: This pumping station became inoperable once power was lost, causing street and yard flooding.

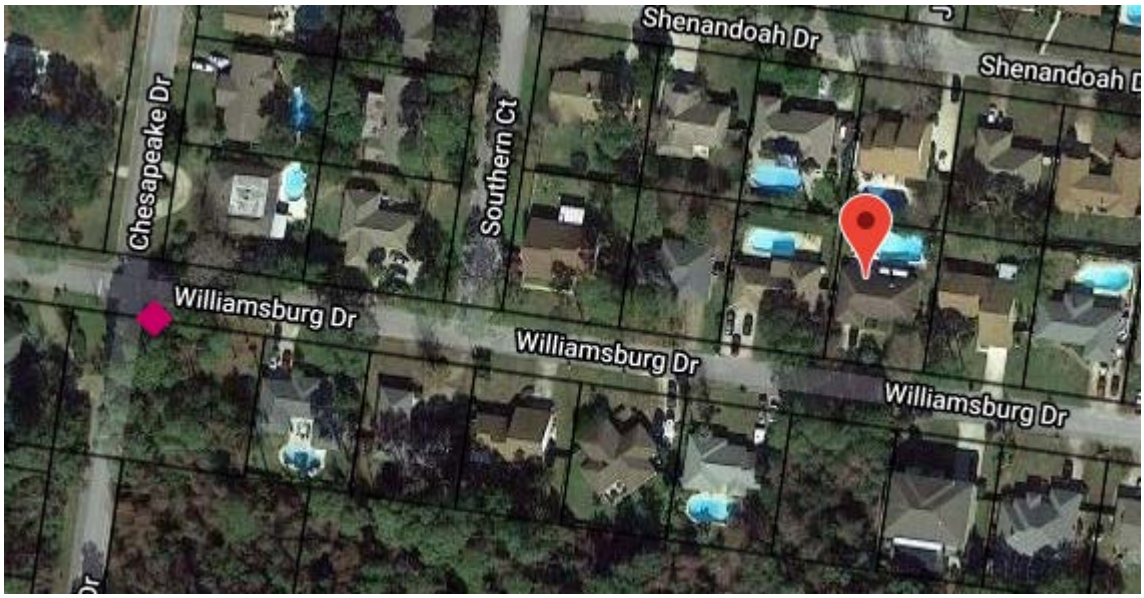
Drinking Water

Zone 3 was included in the City-Wide water outage. In addition, there were several water line breaks that were repaired as soon as staff identified them. Many of the leaks causing the drain on the water system were determined to be service lines to docks and other waterfront features.

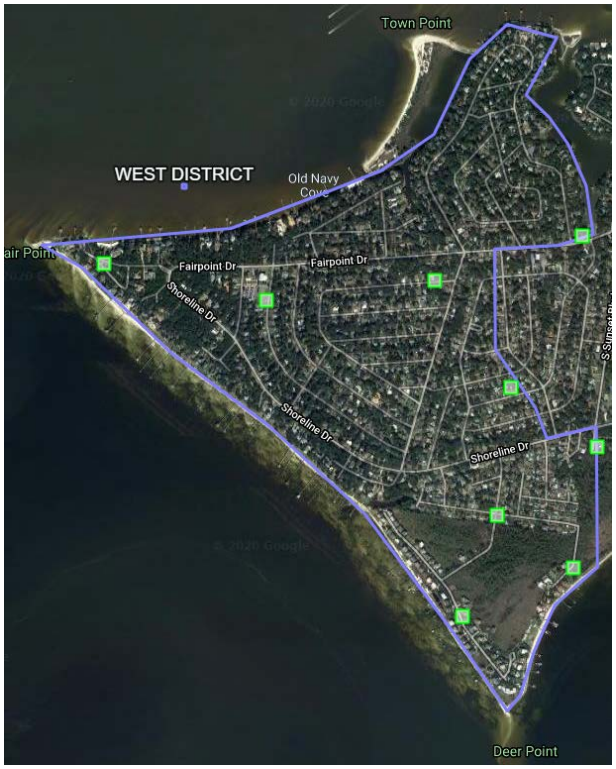
Sewer Collection System

There are 9 sewer lift pumping stations in Zone 3. Two stations became submerged due to the storm. The Deer Point lift station succumbed to storm surge, while the Gilmore Drive lift station became flooded from the high water on Gilmore Drive near Fairpoint. When the City-wide power outage hit, several of the stations were without power and the standby generator for the station on Williamsburg Road failed to operate. Staff deployed portable generators and bypass pumps to keep the collection system operational, until power was restored. A home located at 412 Williamsburg experienced sewer backups in the bathrooms, until staff were able to get the collection system pumping after the power outage.

The location of the lift station that failed (red square) and the house with the sewer backup in the bathrooms



Lift Station Locations in Zone 3



Service Area Outside the City

Sewer Collections Systems and Lift Stations

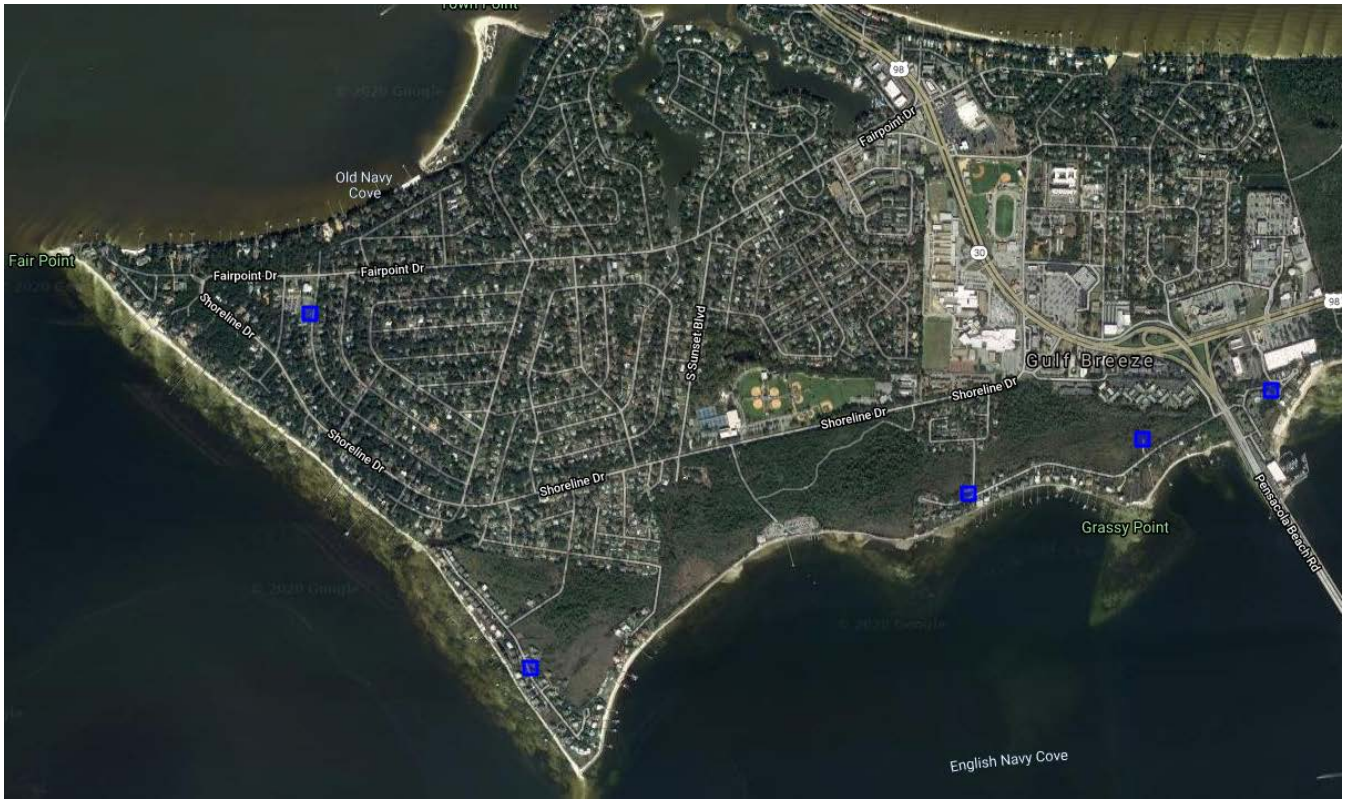
City owned portable bypass pumps and generators were deployed in the system, and additional portable equipment was rented in order to provide backup provisions. Due to the quickly changing nature of the storm, staff were caught off guard with needing additional backup equipment as the Sunday September 13 forecast changed from a medium sized rain event (6-10 inches) to a slow-moving hurricane with 15-20 inches of rain on Monday September 14. As rental units came in, they were deployed to hot zone areas.

Staff responded to lift stations in alarm status throughout the day and night of September 14th as the storm approached land. Low lying areas receiving storm surge or flood waters could not be helped by installing bypass pumps or generators as this would not solve the issue of water inundation and likely would allow for any portable equipment set to be damaged by the same waters. For this reason, staff did not set bypasses or generators at these locations once the areas were underwater. Storm surge or flood waters were already affecting lift stations in low lying areas including:

Colley Cove, Deer Point, Gilmore, Soundview Trail, Grassy Point, Sawgrass, Tiger Point Blvd & Ceylon Rd, Tiger Point Blvd & Ganges Trail, Madura Road, Quayside, Seashadow, Bay Street, Edgewater Ln, and Bengal Rd.

System-wide Submerged Lift Stations (blue squares)

Inside the City Limits Submerged Lift Stations



The intense rain event caused excessive inflow and infiltration (I&I) into the sewer collection system in combination with storm surge water inundation which created high level alarms in many lift stations before, during, and after Sally made landfall. This also caused excessive flow to the Wastewater Treatment Facility, where staff were forced to bypass treated effluent from the reuse storage pond to the west course in order to protect the berm around the storage pond from failing due to the rising water level in the pond.

The following lift stations experienced extreme I&I creating high level alarm status for approximately 24-48 hours; detailed notes include other factors affecting performance of stations as they pertain to each.

1. Polynesian Isles 1 (also experienced power loss, bypass set)
2. Polynesian Isles 2 (also experienced power loss, initially set generator but later set bypass)

3. Shadow Lakes (bypass set)
4. Grand Pointe (also experienced power loss)
5. Grand Reserve (also experienced power loss)
6. Berkley Forest (bypass set)
7. Lighthouse Point (also experienced power loss)
8. Plantation Hill (bypass set)
9. Sanibel (bypass set, also experienced power loss)
10. Seascape (bypass set)
11. Soundside Shores (bypass set)
12. Wes-Vic (high level alarm status remained while station pumping, no overflows reported)
13. Williamsburg (also experienced power loss, initially generator set, later set bypass)
14. Willowood (also experienced power loss)
15. Florida Avenue (also experienced power loss)
16. Live Oak (also experienced power loss)
17. Edgewater (also experienced power loss)
18. Polynesian Isles 3 (maintained pumping at high level)
19. Polynesian Isles 4 (maintained pumping at high level)
20. Pelican Bay (bypass set)
21. Lionsgate (also experienced power loss)
22. Palm Street (also experienced power loss)
23. Grand Reserve (also experienced power loss)

Portable bypass pumps were not set at all locations in high level as some were able to maintain pumping while remaining in high level or fluctuating just below high level during pumping, never overflowing the station. Others experienced temporary power losses which were restored in time to allow for pumping to resume without the need for a generator or bypass pump. Many stations that experienced temporary power loss causing high levels were pumped down using the vac truck as a preventative measure to prevent wet wells from overflowing.

The following experienced mainline power loss **and** permanent standby generators failures; (All lift stations inside the City had power failure with City-wide outages).

- Florida Avenue
- Live Oak
- Dracena
- Gulf Isles
- Gondolier & Venetian
- Woodlawn 1
- Williamsburg
- Woodlawn 3

Of all the sewer lift stations not already mentioned, the following experienced short-term power loss or surge at some point during or after the storm event but maintained normal wet well levels;

- Waterford Sound
- Soundside Shores
- Melissa Oaks

On September 19th, in partnership with FLAWARN and EEOC, emergency response crews dispatched by FRWA and the State of Florida arrived on site with tools, equipment and personnel to assist with emergency sewer repairs and tree removal. Electricians on site with emergency response crews were able to assist in troubleshooting several sewer lift stations. Crews assisted City staff for approximately 3 days making emergency repairs.

City staff continued to respond to emergency sewer callouts day and night through the weekend and into the week, with calls finally slowing down on Tuesday 9/21/20.

Drinking Water Plants and Water Distribution Systems

The City drinking water treatment plant ground storage tank began to lose volume beginning September 15th. Staff began searching for water leaks as soon as weather

conditions allowed that day. Several low-lying areas were still underwater and so could not be assessed. Abundant customer calls began to come into City Hall reporting low water pressure or potential water leaks. This information in combination with water usage data exported from the Sensus radio-read meter database for all water customers was used to pinpoint exact addresses with water leaks. The radio-read system was installed in 2014 and provides new readings hourly. Other, larger, water main breaks were found in the system as well. Staff made several water leak repairs within the city that day however, were unable to locate and isolate enough leaks to slow the water loss to a manageable point. Staff continued to work day and night making repairs to water lines. There was also a very large firefighting campaign conducted for structure fire which consumed an extremely large volume of water in a short time. By September 17th the water loss was still not at a manageable point and the decision was made to isolate water services on the western side of Hwy 98 within the City limits due to multiple water line breaks remaining in unknown locations. This decision is consistent with the city's Emergency Operations Plan. A Precautionary Boil Water Notice was issued to the public in accordance with State and Federal rule via televised and printed news outlets as well as by automated phone and text messaging service.

On September 18th, staff restored water services zone by zone on the west side of Hwy 98, identifying water leaks in each zone and making repairs. On the same date, the decision was made to open the emergency interconnect with ECUA as the ground storage tank level would not be able to be restored without receiving a large amount of water in a short period to catch up, leaving the City vulnerable to complete water depletion if any major main break or firefighting event occurred. Due to the fact that ECUA was already under a system wide PBWN, it was required for the City to issue a system wide (within City limits) PBWN. The volume of water needed to restore the ground storage tank to normal operating level was approximately 1.0 million gallons, which would not be possible through only the FRUS supply while continuing to feed SSRUS water supply. Although, SSRUS ground storage tank was not dangerously low at that time, it was lower than normal operating conditions and thus was also a concern. For this reason, it would not have been a good idea to isolate FRUS water supply to SSRUS to send all supply water to the City. SSRUS ground storage tank levels caught up in the following days after the storm once several water leaks were repaired and some flows were diverted from City to

SSRUS supply temporarily (days after the City water system was stabilized) to regain water storage levels. Overall, both drinking water systems maintained full compliance and all permit required parameters remained within allowable ranges (free chlorine residual and pH). The system pressure losses due to either water link breaks or intentional isolation of zones are allowable considering appropriate public and regulatory agency notifications are made followed by required bacteriological sampling, all of which were completed satisfactorily. The City system PBWN was lifted on 9/20/20 and public notifications were made via television and printed news outlets as well as automated phone and text messaging service.

On September 19th, emergency response crews dispatched by FRWA and the State of Florida arrived on site with tools, equipment and personnel to assist with water line breaks and tree removal. Crews assisted City staff for approximately 3 days making emergency repairs.

Wastewater Treatment Facility

Overall, the wastewater treatment facility performed well through the event. There were no process basin or filter overflows. All final effluent discharged remained within permit requirements for monitored parameters; Total Chlorine, pH, and turbidity. Average maximum daily flows more than doubled during the peak of the received I&I from heavy rains and storm surge inundation of the sewer collection system. Influent flows reached 6.0 million gallons per day. Fortunately, key personnel involved in the management and operations of the facility have been through a similar rain event in the past and were aware of procedures and actions that needed to be taken. One specific challenge that arose was the inability to utilize the WWTF reuse booster station, west course pump station and east course pump station to the fullest extent for reuse disposal from the reuse storage pond. Several factors affected reuse disposal performance:

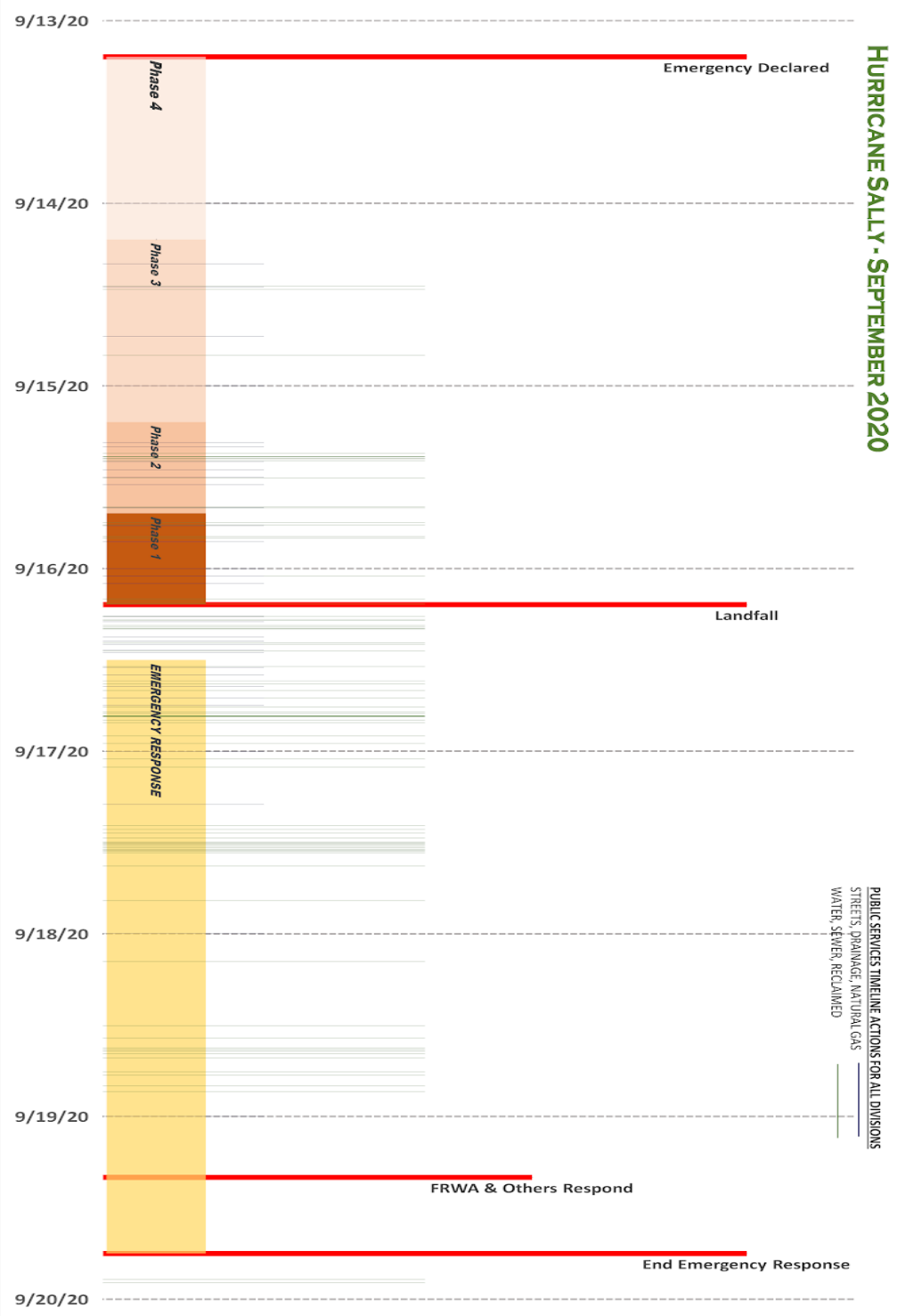
1. The west course pump house experienced flooding and power surges that disabled all pumps.
2. The reuse booster station itself experienced clogging of the intake screen and due to the high lake level and weather conditions, staff were unable to access the intake screen to clean it.

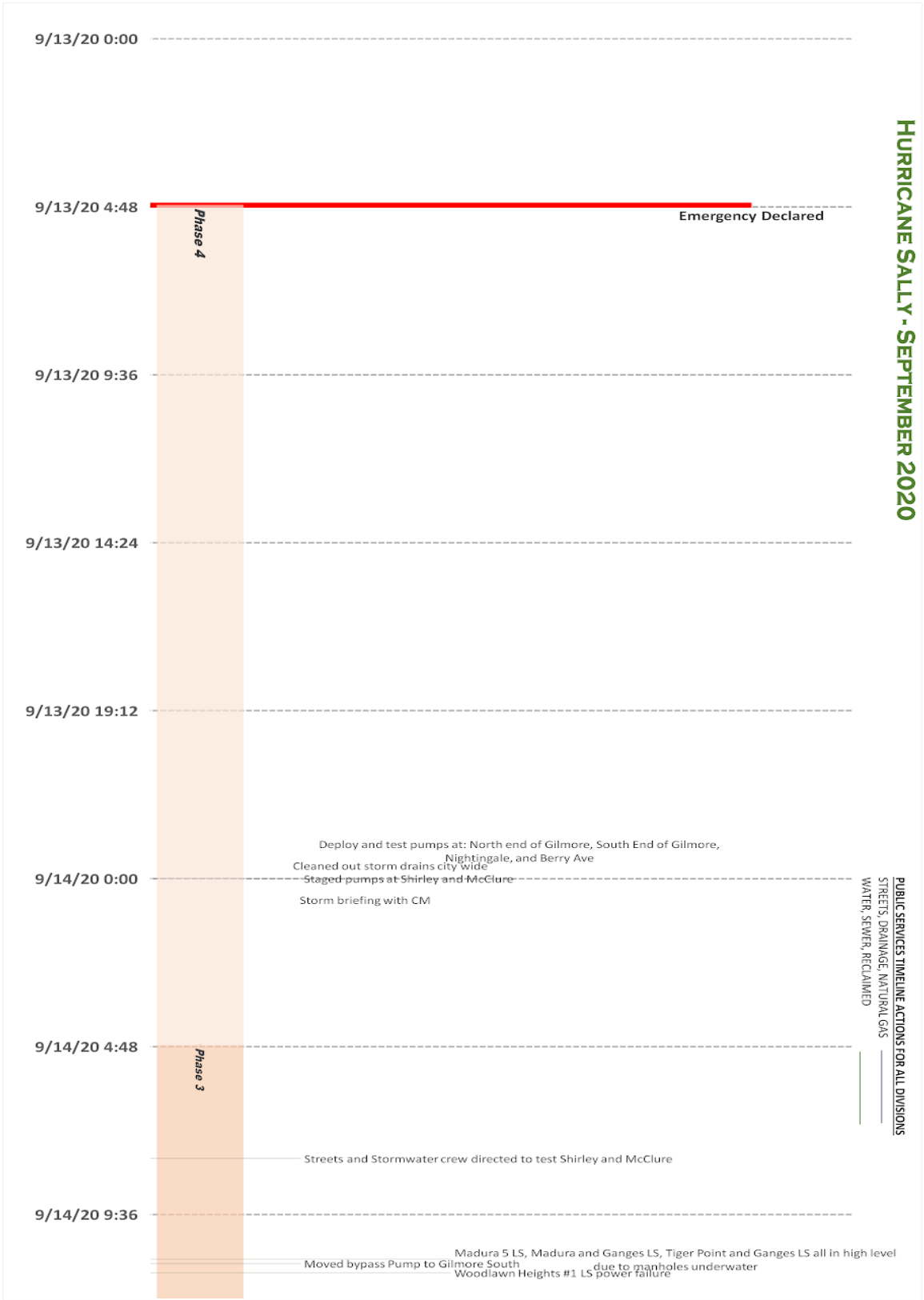
3. The east course pump house wet well is filled from a storage pond which is filled with reuse water via an automated valve based on the water level in that pond. The pond level was so high during and after the storm that there was no available storage capacity for reuse disposal to enter that pond.

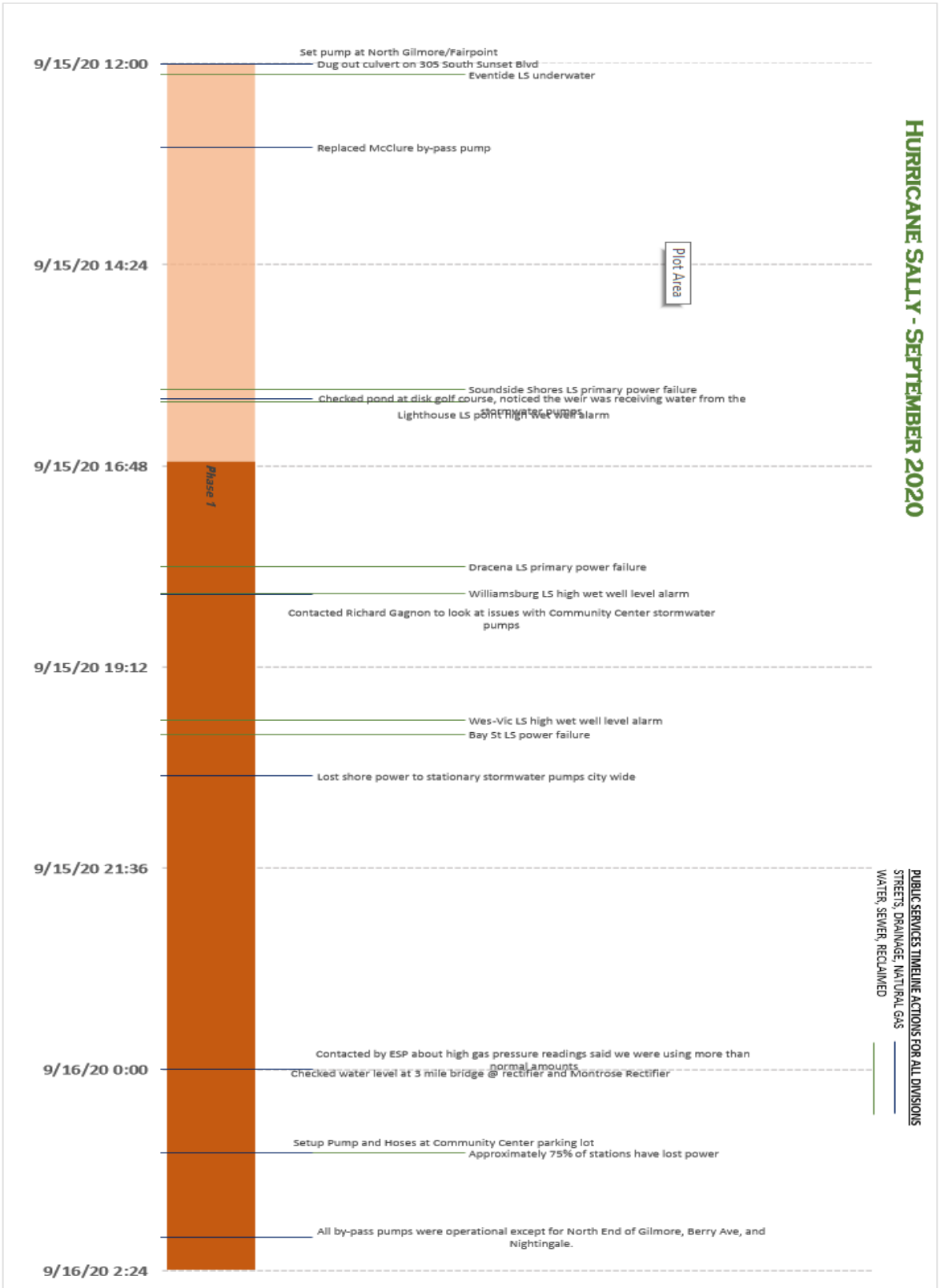
The facility's permit has a provision for emergency bypass of reuse water in order to protect the loss of property or life in emergencies. The reuse storage pond max elevation is 12 feet and in accordance with the permit, maintaining a 3-foot freeboard is required in order to not saturate the berm to the extent that it could fail and flood nearby properties. Once the pond level rose to 9 feet, staff requested approval from the Florida Department of Environmental Protection (FDEP) to implement emergency measures based on the provision in the facility permit. Staff made the decision on 9/16/20, at approximately 05:30 in the morning to begin emergency reuse disposal as the lake level reached 11.3 feet. Staff began pumping treated effluent from the storage pond using a portable bypass pump which pumped to a separate pond on the west course that overflowed into several drainage areas which drained to a separate decorative pond on the West Course. This bypass procedure was first used during the April 2014 storm event.

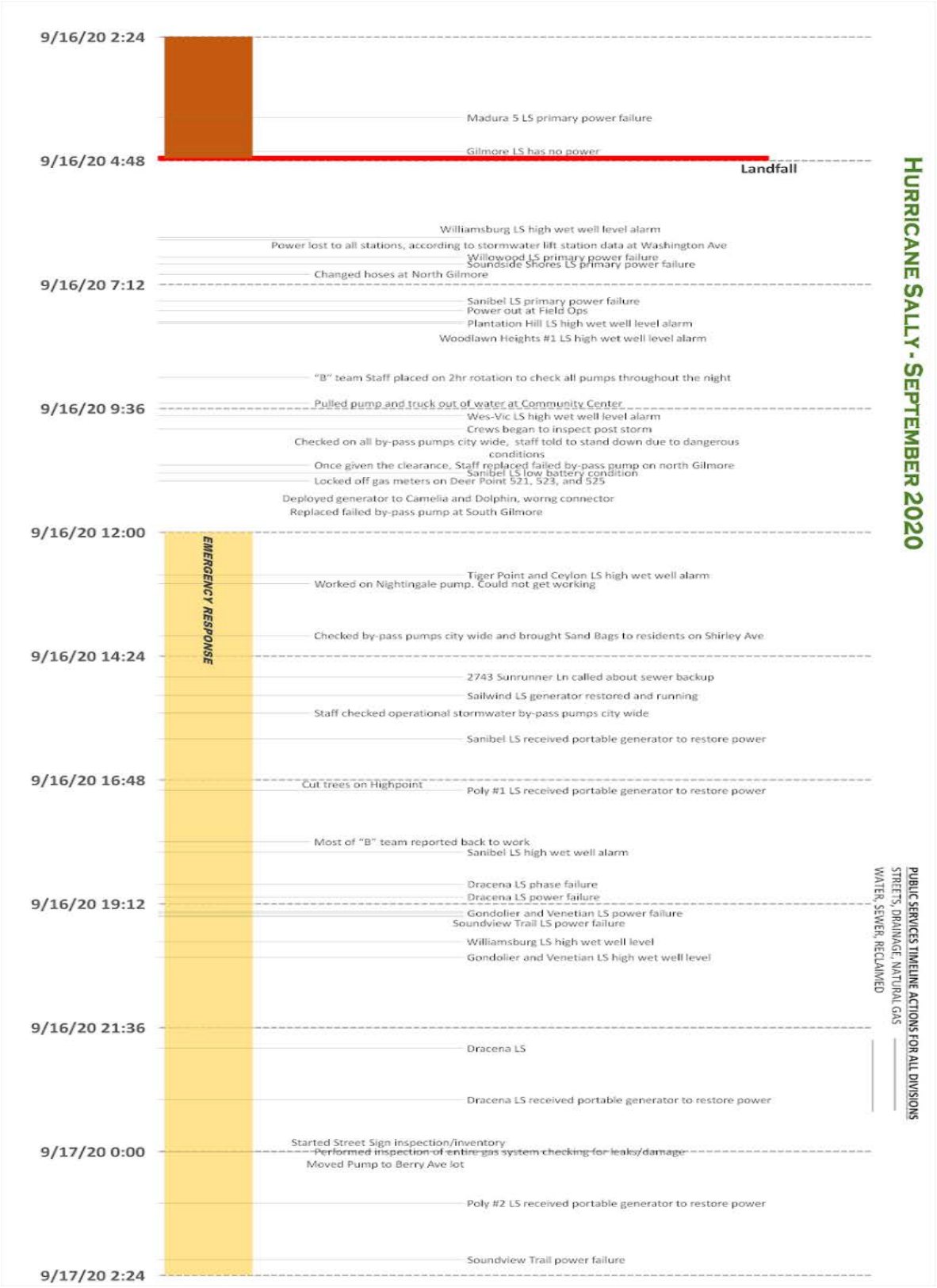
Emergency response crews dispatched by FRWA and the State of Florida arrived on site on 9/19/20 to assist. The City of Marianna provided their spare 75 HP vertical turbine pump motors. Destin Water Users provided an electrician and pump mechanic to assist. JEA crews brought crane trucks and additional personnel for tree removal and assistance in pump motor replacements. Crews were able to make emergency repairs to the west course pump station, enabling two of the three pumps to be in operation. The facility was staffed 24 hours a day, seven days a week beginning September 14th through Tues night 9/23/20. FRWA provided two licensed WWTF Operators to assist with shift coverage during that time.

Timeline of Events:




HURRICANE SALLY - SEPTEMBER 2020
PUBLIC SERVICES TIMELINE ACTIONS FOR ALL DIVISIONS
STREETS, DRAINAGE, NATURAL GAS
WATER, SEWER, RECLAIMED
9/13/20 0:00
9/13/20 4:48
9/13/20 9:36
9/13/20 14:24
9/13/20 19:12
9/14/20 0:00
9/14/20 4:48
9/14/20 9:36
Phase 4
Phase 3
Emergency Declared
Deploy and test pumps at: North end of Gilmore, South End of Gilmore, Nightingale, and Berry Ave
Cleaned out storm drains city wide
Staged pumps at Shirley and McClure
Storm briefing with CM
Streets and Stormwater crew directed to test Shirley and McClure
Madura 5 LS, Madura and Ganges LS, Tiger Point and Ganges LS all in high level due to manholes underwater
Moved bypass Pump to Gilmore South
Woodlawn Heights #1 LS power failure


HURRICANE SALLY - SEPTEMBER 2020
PUBLIC SERVICES TIMELINE ACTIONS FOR ALL DIVISIONS
STREETS, DRAINAGE, NATURAL GAS
WATER, SEWER, RECLAIMED
9/15/20 12:00
9/15/20 14:24
9/15/20 16:48
9/15/20 19:12
9/15/20 21:36
9/16/20 0:00
9/16/20 2:24
Phase 1
Plot Area
Set pump at North Gilmore/Fairpoint
Dug out culvert on 305 South Sunset Blvd
Eventide LS underwater
Replaced McClure by-pass pump
Soundside Shores LS primary power failure
Checked pond at disk golf course, noticed the weir was receiving water from the stormwater pumps
Lighthouse LS point high wet well alarm
Dracena LS primary power failure
Williamsburg LS high wet well level alarm
Contacted Richard Gagnon to look at issues with Community Center stormwater pumps
Wes-Vic LS high wet well level alarm
Bay St LS power failure
Lost shore power to stationary stormwater pumps city wide
Contacted by ESP about high gas pressure readings said we were using more than normal amounts
Checked water level at 3 mile bridge @ rectifier and Montrose Rectifier
Setup Pump and Hoses at Community Center parking lot
Approximately 75% of stations have lost power
All by-pass pumps were operational except for North End of Gilmore, Berry Ave, and Nightingale.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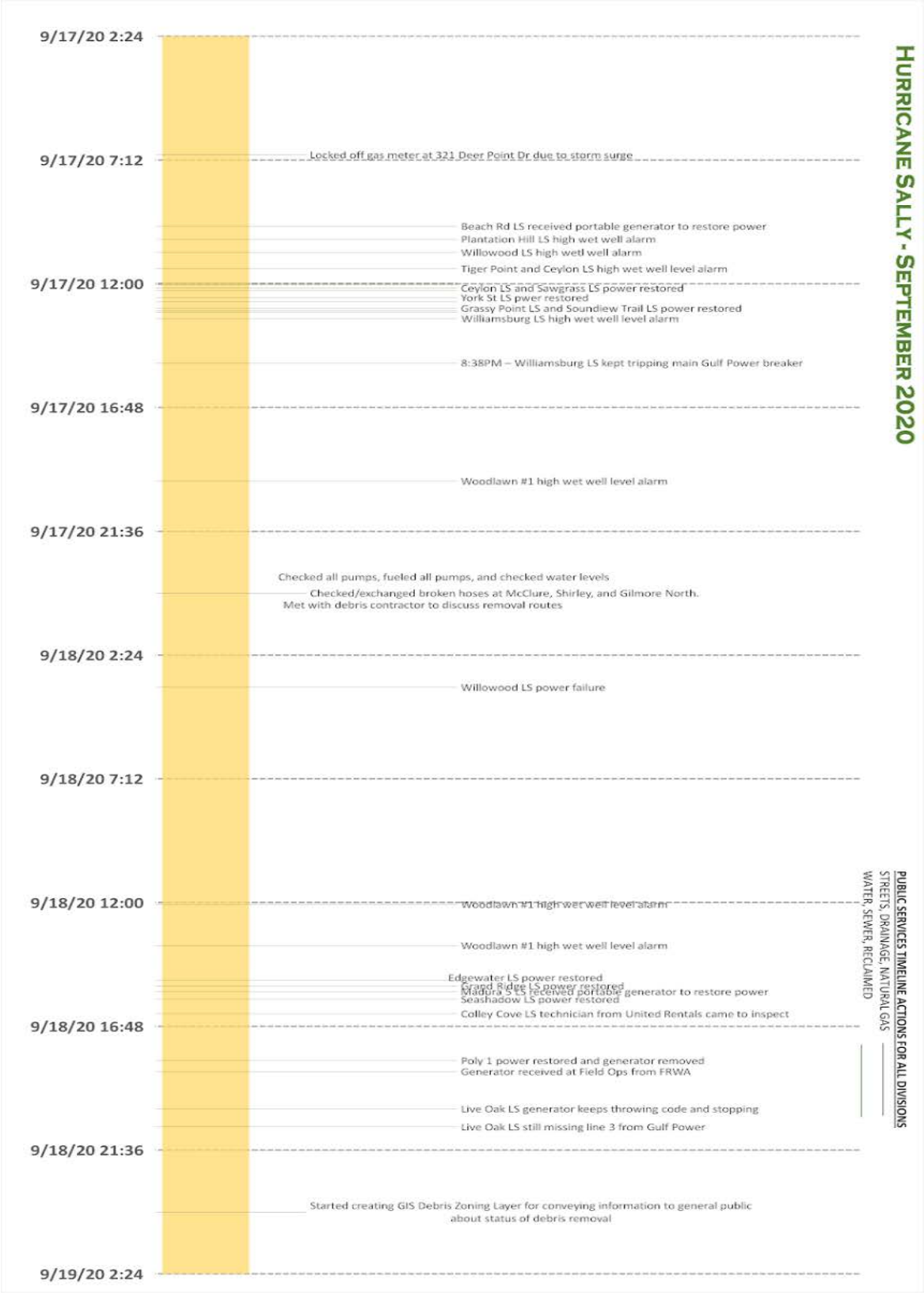
STREETS, DRAINAGE, NATURAL GAS
WATER, SEWER, RECLAIMED
EMERGENCY RESPONSE
9/16/20 2:24
Madura 5 LS primary power failure
9/16/20 4:48
Gilmore LS has no power
Landfall
Williamsburg LS high wet well level alarm
Power lost to all stations, according to stormwater lift station data at Washington Ave
Willowood LS primary power failure
Soundside Shores LS primary power failure
Changed hoses at North Gilmore
9/16/20 7:12
Sanibel LS primary power failure
Power out at Field Ops
Plantation Hill LS high wet well level alarm
Woodlawn Heights #1 LS high wet well level alarm
"B" team Staff placed on 2hr rotation to check all pumps throughout the night
9/16/20 9:36
Pulled pump and truck out of water at Community Center
Wes-Vic LS high wet well level alarm
Crews began to inspect post storm
Checked on all by-pass pumps city wide, staff told to stand down due to dangerous conditions
Once given the clearance, Staff replaced failed by-pass pump on north Gilmore
Sanibel LS low battery condition
Locked off gas meters on Deer Point 521, 523, and 525
Deployed generator to Camelia and Dolphin, worng connector
Replaced failed by-pass pump at South Gilmore
9/16/20 12:00
Tiger Point and Ceylon LS high wet well alarm
Worked on Nightingale pump. Could not get working
Checked by-pass pumps city wide and brought Sand Bags to residents on Shirley Ave
9/16/20 14:24
2743 Sunrunner Ln called about sewer backup
Sailwind LS generator restored and running
Staff checked operational stormwater by-pass pumps city wide
Sanibel LS received portable generator to restore power
9/16/20 16:48
Cut trees on Highpoint
Poly #1 LS received portable generator to restore power
Most of "B" team reported back to work
Sanibel LS high wet well alarm
Dracena LS phase failure
Dracena LS power failure
9/16/20 19:12
Gondolier and Venetian LS power failure
Soundview Trail LS power failure
Williamsburg LS high wet well level
Gondolier and Venetian LS high wet well level
9/16/20 21:36
Dracena LS
Dracena LS received portable generator to restore power
Started Street Sign inspection/inventory
9/17/20 0:00
Performed inspection of entire gas system checking for leaks/damage
Moved Pump to Berry Ave lot
Poly #2 LS received portable generator to restore power
Soundview Trail power failure
9/17/20 2:24


HURRICANE SALLY - SEPTEMBER 2020
PUBLIC SERVICES TIMELINE ACTIONS FOR ALL DIVISIONS
STREETS, DRAINAGE, NATURAL GAS
WATER, SEWER, RECLAIMED
9/17/20 2:24
9/17/20 7:12
Locked off gas meter at 321 Deer Point Dr due to storm surge
Beach Rd LS received portable generator to restore power
Plantation Hill LS high wet well alarm
Willowood LS high wetl well alarm
Tiger Point and Ceylon LS high wet well level alarm
9/17/20 12:00
Ceylon LS and Sawgrass LS power restored
York St LS pwer restored
Grassy Point LS and Soundiew Trail LS power restored
Williamsburg LS high wet well level alarm
8:38PM – Williamsburg LS kept tripping main Gulf Power breaker
9/17/20 16:48
Woodlawn #1 high wet well level alarm
9/17/20 21:36
Checked all pumps, fueled all pumps, and checked water levels
Checked/exchanged broken hoses at McClure, Shirley, and Gilmore North.
Met with debris contractor to discuss removal routes
9/18/20 2:24
Willowood LS power failure
9/18/20 7:12
9/18/20 12:00
Woodlawn #1 high wet well level alarm
Woodlawn #1 high wet well level alarm
Edgewater LS power restored
Grand Ridge LS power restored
Madura S LS received portable generator to restore power
Seashadow LS power restored
Colley Cove LS technician from United Rentals came to inspect
9/18/20 16:48
Poly 1 power restored and generator removed
Generator received at Field Ops from FRWA
Live Oak LS generator keeps throwing code and stopping
Live Oak LS still missing line 3 from Gulf Power
9/18/20 21:36
Started creating GIS Debris Zoning Layer for conveying information to general public about status of debris removal
9/19/20 2:24


HURRICANE SALLY - SEPTEMBER 2020
9/19/20 2:24
FRWA & Others Respond
9/19/20 14:24
End Emergency Response
Sanibel LS primary power failure
Sanibel LS high wet well level alarm
9/20/20 2:24
9/20/20 14:24
9/21/20 2:24
Last generator removed and all station have power restored
9/21/20 14:24
Bypass pump set at Spanish trail
9/22/20 2:24
PUBLIC SERVICES TIMELINE ACTIONS FOR ALL DIVISIONS
STREETS, DRAINAGE, NATURAL GAS
WATER, SEWER, RECLAIMED

9/14/20 10:53	Madura 5 LS, Madura and Ganges LS, Tiger Point and Ganges LS all in high level due to manholes underwater
9/14/20 11:16	Woodlawn Heights #1 LS power failure
9/14/20 20:00	Woodlawn Heights #1 LS power restored via Gulf Power
9/15/20 8:51	Tiger Point and Ceylon LS high wet well level alarm
9/15/20 9:16	Peaks point LS power failure
9/15/20 9:18	Peaks point LS checked and power was restored
9/15/20 9:30	Shoreline Park LS turned off due to park being closed
9/15/20 9:35	Madura 5 LS high wet well level alarm
9/15/20 9:51	Soundview Trail LS high wet well level alarm
9/15/20 12:08	Eventide LS underwater
9/15/20 15:53	Soundside Shores LS primary power failure
9/15/20 16:02	Lighthouse LS point high wet well alarm
9/15/20 18:00	Dracena LS primary power failure
9/15/20 18:19	Williamsburg LS high wet well level alarm
9/15/20 19:50	Wes-Vic LS high wet well level alarm
9/15/20 20:00	Bay St LS power failure
9/16/20 1:00	Approximately 75% of stations have lost power
9/16/20 3:58	Madura 5 LS primary power failure
9/16/20 4:37	Gilmore LS has no power
9/16/20 6:17	Williamsburg LS high wet well level alarm
9/16/20 6:40	Willowood LS primary power failure
9/16/20 6:48	Soundside Shores LS primary power failure
9/16/20 7:31	Sanibel LS primary power failure
9/16/20 7:42	Power out at Field Ops
9/16/20 7:55	Woodlawn Heights #1 LS high wet well level alarm
9/16/20 7:57	Plantation Hill LS high wet well level alarm
9/16/20 9:45	Wes-Vic LS high wet well level alarm
9/16/20 10:00	Crews began to inspect post storm
9/16/20 10:51	Sanibel LS low battery condition
9/16/20 12:50	Tiger Point and Ceylon LS high wet well alarm
9/16/20 14:48	2743 Sunrunner Ln called about sewer backup

9/16/20 15:10	Sailwind LS generator restored and running
9/16/20 16:00	Sanibel LS received portable generator to restore power
9/16/20 17:00	Poly #1 LS received portable generator to restore power
9/16/20 18:12	Sanibel LS high wet well alarm
9/16/20 18:49	Dracena LS phase failure
9/16/20 19:04	Dracena LS power failure
9/16/20 19:21	Williamsburg LS high wet well alarm
9/16/20 19:23	Gondolier and Venetian LS power failure
9/16/20 19:26	Soundview Trail LS power failure
9/16/20 19:27	Williamsburg LS primary power failure
9/16/20 19:56	Williamsburg LS high wet well level
9/16/20 20:14	Gondolier and Venetian LS high wet well level
9/16/20 22:00	Dracena LS
9/16/20 23:00	Dracena LS received portable generator to restore power
9/17/20 1:00	Poly #2 LS received portable generator to restore power
9/17/20 2:06	Soundview Trail power failure
9/17/20 9:46	Beach Rd LS received portable generator to restore power
9/17/20 10:16	Plantation Hill LS high wet well alarm
9/17/20 10:47	Willowood LS high wet well alarm
9/17/20 11:25	Tiger Point and Ceylon LS high wet well level alarm
9/17/20 11:58	Gondolier and Venetian LS high wet well alarm
9/17/20 12:03	Bengal LS power restored
9/17/20 12:10	Ceylon LS and Sawgrass LS power restored
9/17/20 12:15	Sabertooth LS power restored
9/17/20 12:32	York St LS power restored
9/17/20 12:42	Seashadow LS and Eventide LS still without power
9/17/20 12:57	Grassy Point LS and Soundview Trail LS power restored
9/17/20 13:03	Eventide LS power restored
9/17/20 13:06	Beach Rd power restored
9/17/20 13:21	Williamsburg LS high wet well level alarm
9/17/20 15:04	8:38PM – Williamsburg LS kept tripping main Gulf Power breaker
9/17/20 19:39	Woodlawn #1 high wet well level alarm
9/18/20 3:39	Willowood LS power failure

9/18/20 12:04	Woodlawn #1 high wet well level alarm
9/18/20 13:40	Woodlawn #1 high wet well level alarm
9/18/20 15:01	Edgewater LS power restored
9/18/20 15:14	Grand Ridge LS power restored
9/18/20 15:45	Seashadow LS power restored
9/18/20 15:27	Madura 5 LS received portable generator to restore power
9/18/20 15:27	All LS operating
9/18/20 16:19	Colley Cove LS technician from United Rentals came to inspect
9/18/20 18:08	Poly 1 power restored and generator removed
9/18/20 18:33	Generator received at Field Ops from FRWA
9/18/20 20:00	Live Oak LS generator keeps throwing code and stopping
9/18/20 20:42	Live Oak LS still missing line 3 from Gulf Power
9/19/20 21:24	Sanibel LS primary power failure
9/19/20 21:53	Sanibel LS high wet well level alarm
9/21/20 9:00	Last generator removed and all station have power restored
9/21/20 15:30	Bypass pump set at Spanish trail

Timeline Stormwater, Gas & Solid Waste, Streets & Signage Issues

Sunday 9/13/2020

- Staged pumps and hoses at Shirley and McClure

Monday 9/14/2020

- Streets and Stormwater crew directed to test Shirley and McClure and to deploy and test pumps at: North end of Gilmore, South End of Gilmore, Nightingale, and Barry Ave.
- Moved bypass Pump to Gilmore South. 8:00 AM
- Storm briefing with CM
- Cleaned out storm drains city wide. 11:00 AM
- Brought sand to Shoreline South
- Brought sand bags to Rec Center and Sand Pile
- Dug out culvert on 305 South Sunset Blvd. 5:30 PM

Tuesday 9/15/2020

Streets and Stormwater

- Set pump up on North Gilmore/Fairpoint and rolled out hose. 8:00 AM did not test or hook up hose.
- Staff was split into "A" and "B" teams just before lunch/12:00 pm. Checked pond at disk golf course. 12:00 PM noticed the weir was receiving water from the stormwater pumps. Basically, the water was flowing backwards into the pond.
- Contacted staff electrician to look at issues with Rec Center stormwater pumps
- Trouble shooting pump on McClure Dr. 4:00 PM-6:00 PM
- Changed out McClure pump with Sunbelt Pump 6:20 PM
- Lost shore power to stationary stormwater pumps city wide at approximately around 12:00 a.m.
- Staff electrician and staff worked on the rec center by-pass pumps from 1:00 PM to past 8:30 PM
- Moved 6" bypass pump to Rec Center 8:30 PM-11:00 PM

Natural Gas

- 7:30 AM to 11:30 AM checked all areas of the gas system especially in low lying areas
- 10:00 AM to 11:00 am due to storm surge, locked off gas meters on Deer Point 521, 523, and 525
- 11:00 AM to 1:30 PM Checked water level at 3 mile bridge @ rectifier and Montrose Rectifier
- Helped Streets and Stormwater the rest of the time

Wednesday 9/16/2020

- Setup pump and hoses at Rec Center parking lot 11:00 PM-1:00 AM
- From 12:00 AM throughout the storm all by-pass pumps were operational except for North End of Gilmore, Barry Ave, and Nightingale.
- Staff checked operational stormwater by-pass pumps city wide from 1:00 AM to just past 3:00 am

- According to stormwater lift station data at Washington Ave we lost power to all stationary pumps around 2:00 a.m.
- Pulled pump and truck out of water at Rec Center. 3:30 AM-4:00 AM.
- Staff contacted by FD to bring backhoe to house fire. 6:00 AM-6:20 AM Got half way there and we were told to stand down too dangerous.
- Checked on all by-pass pumps city wide. 6:20-6:45 AM Public Works Director told staff to stand down too dangerous.
- Once given the clearance, Staff replaced failed by-pass pump on North Gilmore. 9:30 AM
- Moved JEA pump to replace failed Godwin pump South Gilmore 10:00 AM
- Deployed generator to Camelia and Dolphin 10:42 AM However, issues with connecting generator to stationary pump. Pump not activated until later that afternoon once Richard Gagnon provided the connector.
- Worked on Nightingale pump. Could not get working. 11:00 AM
- Checked by-pass pumps city wide and brought sand bags to residents on Shirley Ave 11:00 AM
- Cut trees on Highpoint. 1:00 PM
- Most of "B" team reported back to work by 2:00 PM
- Changed hoses at North Gilmore. 5:00 PM
- "B" team Staff placed on 2-hr rotation to check all pumps throughout the night.
- Contacted by ESP about high gas pressure readings said we were using more than normal amounts (Performed inspection of entire gas system checking for leaks/damage 9:00 AM to 4:00 PM
- Locked off gas meter at 321 Deer Point Dr due to storm surge

Thursday 9/17/2020

- Started Street Sign inspection/inventory
- Moved Pump to Barry Ave lot and rolled out 6" hoses working by 7:00 AM
- Checked and exchanged broken hoses at McClure, Shirley, and Gilmore North.
- Checked all pumps, fueled all pumps, and checked water levels.

Friday 9/18/2020

- Met with DRC Emergency Services and provided him with GB Proper Mapbook for debris removal routes
- Started creating GIS Debris Zoning Layer for conveying information to general public about status of debris removal
- Maintained/fueled all stormwater pumps

Saturday 9/19/2020 and Sunday 9/20/20

- Staff checked and maintained/fueled stormwater bypass pumps through the weekend into the next week

SHORT RANGE RECOVERY PHASE

- Emergency Operations Recovery
- Strike Team Debris Clearing and Hauling
- FEMA Damage Assessments: The Parks & Recreation Department experienced significant damage within its waterside park facilities. In addition to extensively damaged boat launch decks, fishing pier and retaining structures at Shoreline Park South, the piers at Wayside Park East and Vista Park, at the foot of the Bob Sikes Bridge, sustained heavy damage.
- The football/soccer stadium was designated as the vegetative debris disposal/removal site.
- Tiger Point Golf Course experienced extensive golf course bunker damage, moderate flooding in the lower level of the clubhouse, roof loss & flooding in the maintenance building, and the loss of multiple trees throughout the course.
- Debris Hauling, Processing, and Recycling to Paper Mill
- Transfer Station--Emergency Opening--Limited Opening--Full Opening
- Ferry Service Interlocal Coordination
- Boat Ramp Closure--Emergency Opening--Limited Opening--Full Opening: Shoreline Park South was closed prior to the storm in anticipation of the parking lot flooding that routinely occurs in such events. The boat launch decks and fishing pier both sustained significant damage. A large amount of debris and sand was deposited in the parking lot. By Thursday, October 8, clean up was completed, emergency repairs were completed on the boat launch decks and the

remaining areas of the park were secured, enabling the use of the boat launch facilities for retrieval of water craft in preparation for Hurricane Delta. On Saturday, October 10, full boat launch activities resumed for residents of Gulf Breeze. On Saturday, October 17, the first day of snapper season, the boat launches were available for all consumers.

- Community Clean Ups
- Vulnerable Citizens Individual Case Management
- Employee De-Briefs
- Anonymous Employee Survey
- Post Incident De-Brief with Schools, Hospital and Zix/App River
- Economic Recovery and Business Promotions Due to Bridge Closures

LONG RANGE RECOVERY PHASE

Implementation of Goals from After-Action Report.

ISSUES AND RECOMMENDED SOLUTIONS (Key Take-Aways)

1. **McClure and Shirley is an area which is prone to flooding in severe weather. The residents are predominantly renters. Unbeknownst to City management, the stormwater project contractor had inadvertently pulled an AT&T service line two weeks prior to the storm which had not been restored. Residents did not obtain sandbags. Objects in yards were not secured. Garbage cans were brought to the roadway for regular service, although the weekly service had been canceled with public notices 72 hours prior to hurricane landfall. These observations highlight a lack of neighborhood engagement which could be improved.**

   Solutions: Establish at least one neighborhood captain on each street in flood prone areas. The City's Neighborhood Services Coordinator will determine from the residents the most effective means of communicating messages and continuous response updates in the future.

2. **Staff struggled with troubleshooting portable pump problems in the field.**

Solution: At least bi-annual training on pump startup, operation, maintenance and troubleshooting.

3. **Loss of power at the City's stormwater pumping stations**

   Solutions:
   - Short-term: pre-stage portable generators or bypass pumps and activate 24 hours before landfall of Cat 1 Hurricane or higher
   - Mid-Term: Install permanent backup generators at each of the 7 stations
   - Long-term: Completion of the West and Central Districts stormwater improvement projects which rely on gravity for disposal

4. **Flooding at Bay Cliffs Road**

   Solutions: Perform engineering study that will identify causes and design a solution. Include improvement projects in the 5-year CIP. Now that the East District outfall is installed, connecting the existing drainage system to this outfall will provide two positive discharge points for the runoff from these properties.

5. **Not enough backup equipment in preparation for the storm. The storm forecast changed dramatically several times. By the time it became clear that it was going to be a major impact, there were only 2 days to secure rental equipment.**

   Solutions:
   - Secure through rental contract a minimal number of portable pumps and generators during the peak of the hurricane season (Sept - Oct).
   - Setup agreements with suppliers for deployment of rental equipment where the equipment remains at the supplier's shop, but on reserve for the City.
   - Purchase additional portable equipment.

6. **Several rental portable pumps came with different style hose fittings (Bauer vs Camlock). This created challenges when staff needed to deploy pumps.**

Solutions:

- Purchase an array of Baur to Dixon converter fittings, and stored and ready for hurricane season.
- If possible, request only pumps and hoses with camlock fittings.

7. **Several rental generators were delivered without the cable and plug or had a different style plug that did not work for the lift stations.**

   Solutions:

   - Purchase an array of the correct style plugs and cables.
   - If possible, request that rental generators are supplied with the correct style cable and plugs.

8. **Storm surge flooding sewer lift Stations along coastal areas and inland areas with low elevations**

   Solution: Elevate stations and control panels above the category 2 inundation zone.

9. **Flooding of properties on Bear Drive**

   Solution: Perform Engineering study that will identify causes and design a solution. Include improvement projects in the 5-year CIP.

10. **Excessive I&I overcharged the sewer collection system and the WWTF**

    Solutions:

    - Perform a third party I&I study to determine where the major leaks in the system are occurring and then make repairs as needed to patch leaks and replace old deteriorated piping.
    - Install rain seals to manholes at low lying areas.

11. **Pumping failures at the WWTF resulted in excessively high reuse storage pond resulting in emergency bypass**.

Solutions:

- Short-Term: The three motors for the west course pump station have been replaced and a spare motor purchased. In addition, improvements were made on the electrical control system to help harden the system in times of power fluctuations.
- Long Term: The WWTF Expansion Project includes replacement of the west course pump station and reuse pump station with a new state of the art system which will include a robust control system better able to withstand storm events.

CONCLUSION

The complexity and magnitude of Hurricane Sally provides the City the opportunity to "test" its 2019 Emergency Operations Plan. Resilience is the measure of how quickly a community bounces back from a natural disaster. Resilience does not make a community impenetrable to 30 inches of rain in 48 hours. It is important to strengthen vulnerabilities and hurricane preparedness in order to reduce recovery time and costs. Yet, it is also important to set reasonable expectations with the public during a 500-year flood event. This was attempted with the City publishing its "heat map" of areas vulnerable to flooding 72 hours prior to the hurricane. However, the City will look for ways to share its storm preparedness, such as with the publication of this report.
McClure Drive and Shirley Drive are a reminder for the City not to overly rely on electronic communications prior to storm landfall. Neighborhood captains for communicating storm preparedness and response will be emphasized in the future.

The key takeaways in this after-action report focus on continuing to strengthen communications within the City and within the community. The City will continue to implement its stormwater master plan, which performed dramatically well.

Capital renewal and replacement will emphasize by-pass pumps over generators wherever possible, due to the propensity for mechanical failures.

Gulf Breeze is a 4.68 square mile City with a 30-square mile water and sewer utility service boundary. Hurricane preparedness and response compared exceptionally well with surrounding areas. Yet, safety must come first and mechanical failures do occur. This after-action report will guide future investments as we continue to set a high standard as a resilient community.

City services have returned to normal 30-days after Hurricane Sally, with all debris clean up complete and an independent damage assessment report and key takeaways guiding the City's long-range recovery phase.