



CITY OF FORT LAUDERDALE

DRAFT
MEETING MINUTES
CITY OF FORT LAUDERDALE
INFRASTRUCTURE TASK FORCE ADVISORY COMMITTEE
FORT LAUDERDALE EXECUTIVE AIRPORT
RED TAILS CONFERENCE ROOM
6000 NW 21 AVENUE, FORT LAUDERDALE, FLORIDA
MONDAY, MAY 1, 2023 – 2:00 P.M. TO 5:00 P.M.

January-December 2023

Attendance

Marilyn Mammano, Chair	P	4	0
Peter Partington, Vice Chair	P	4	0
Gerald Angeli	A	2	2
Shane Grabski	P	2	1
James LaBrie	P	4	0
Michael Lambrechts	A	3	1
Michael Marshall (via Zoom)	P	3	1
Roosevelt Walters	P	4	0
Ralph Zeltman	P	4	0

As of this date, there are 9 appointed members to the Committee, which means 5 would constitute a quorum.

Staff

- Alan Dodd, Director of Public Works
- Omar Castellon, Assistant Director of Public Works – Engineering
- Dr. Nancy Gassman, Assistant Director of Public Works – Sustainability
- Vickie Beauvais, Senior Administrative Assistant
- Jill Prizlee, Chief Engineer
- Greg Chavarria, City Manager
- Jamie Opperee, Recording Secretary, Prototype, Inc.

Communication to the City Commission

None.

1. Call to Order

i. Roll Call

Chair Mammano called the meeting to order at 2:00 p.m. Roll was called and it was noted a quorum was present.

Motion made by Vice Chair Partington, seconded by Mr. Zeltman, to allow Mr. Michael [Marshall] to participate via Zoom. In a voice vote, the **motion** passed unanimously.

ii. Approval of Agenda

Motion made by Mr. Walters, seconded by Vice Chair Partington, to approve. In a voice vote, the **motion** passed unanimously.

iii. Approval of Previous Meeting Minutes – April 3, 2023

Motion made by Vice Chair Partington, seconded by Mr. Walters, to approve. In a voice vote, the **motion** passed unanimously.

2. Old Business

i. Presentation on the LauderTrail project and its various phases

This Item was deferred to the next meeting.

3. New Business

i. Post Flood Discussion

Alan Dodd, Director of Public Works, gave a presentation on the recent extreme rainfall event in Fort Lauderdale, which occurred on April 12-13, 2023, and its resulting flooding . He also addressed aspects of the City's recovery operations, including dewatering, which refers to removing water from the ground in a location where it is expected, and unwatering, which refers to removing water from a location where it was not intended to be. The presentation will also address the City's Stormwater Master Plan and what it should have been able to do had it been fully implemented, in comparison with what actually occurred. Other items will include debris removal, lessons learned, and short- and long-term plans thus far.

On the afternoon of April 12, 2023, the National Weather Service predicted slightly more than 3 in. of rainfall in Fort Lauderdale for the night. With this level of rainfall, the City typically experiences issues with water building up in certain communities, such as Melrose Manors. Two pump trucks were deployed to that neighborhood in an attempt to keep roads dry just south of Broward Boulevard.

Shortly after the weather forecast mentioned above, the City received reports of extremely heavy rain in the Edgewood community, and determined that the rain event would be much heavier than anticipated.

By 5 p.m., the City withdrew its stormwater trucks due to the rainfall, as they were ineffective at removing water and their continued operation presented a safety concern. By 5:30 p.m., Croissant Park had reported 10 in. of rain within the previous 24 hours.

The City activated its Emergency Operations Center (EOC) at 9 p.m. This included members of Public Works and Emergency Management Staff, who oversaw emergency rescue operations. The Mayor signed an Emergency Proclamation at 11:57 p.m., by which time the City was in full emergency response mode.

The City received an unprecedented rainfall within approximately 12 hours, including 3 in. of rain in a single one-hour period. By the morning of April 13, Staff was conducting preliminary assessments of all Fort Lauderdale neighborhoods. The most severe flooding occurred in Edgewood, Melrose Park, and Melrose Manors, with additional significant flooding in numerous other neighborhoods. Some degree of flooding occurred in every City neighborhood.

Due to damage to City Hall, the City lost all external communications, which made outreach to anyone other than internal City Staff a challenge. The flood event also affected the George T. Lohmeyer Wastewater Treatment Plant (GTL), which received over 100 million gallons per day (MGD). This necessitated the use of emergency outfalls to discharge water. 30 wastewater stations were offline, and more than 120 lift stations were surcharged, which meant the inflow of water exceeded their pumping capacity.

All Public Works Staff was charged with either responding to flooding or attempting to manage wastewater systems. By 10 a.m. on April 13, Staff began removing water from City Hall in an effort to resume communications. By 10:30 a.m. it was clear that the response was beyond the capacity of the City's trucks, and they engaged multiple vendors to provide extra vehicles, using contracts that were already in place. By 2 p.m., many of these trucks were in neighborhoods.

The rainfall resumed at 3 p.m. During this time, the EOC submitted a request through the County to the state for more trucks to remove water. The EOC established a task force for unwatering, which included a call center receiving calls from residents, a planning cell with stormwater models to determine the system's capacity to move water, geographic information systems (GIS) mapping for all calls, and reconnaissance of flooded areas to determine prioritization of resources.

In order to manage neighborhood efforts, a pump master was appointed to each of the major areas of focus. This position consisted of a member of the City's Stormwater Section who could manage the deployment of pump trucks and where they could go to offload pumped water. Engineers were also assigned to evaluate areas on a neighborhood-by-neighborhood basis.

Chair Mammano requested clarification of how pump trucks worked. Mr. Dodd explained that these vehicles pump water into the truck and take it to another location. In some cases, this meant moving the water up to three or four miles away for discharge in order to prevent it flowing back into the area from which it was pumped. Pump trucks are also known as tanker trucks.

The EOC also assembled a logistics cell, which was responsible for the coordination of all mutual aid vehicles coming into the City, as well as debris management. They also worked with the City's Public Affairs Department for communications and messaging, and oversaw the fueling and management of the City's own fleet of trucks. This structure allowed Staff to operate simultaneously in multiple incident areas.

Mr. Dodd reviewed the number of assets available on a day-by-day basis, including both internal assets and external assets provided by contract or through mutual support from other municipalities. The City Manager established three priorities:

- Critical facilities, including Florida Power and Light (FPL) power banks
- Roads and arterials
- Neighborhoods

Beginning on the first day of the event, the EOC began working to determine which roads were and were not passable, and focused on clearing roadways so aid could be provided to residents and neighborhoods. They also tracked breaks in the water and wastewater systems.

Chair Mammano asked if the water system itself was affected by the storm. Mr. Dodd replied that while this system was not impacted, a number of breaks occurred due to the shock of the storm to the overall system, as the volume of water in the ground and in pipes resulted in damage. He estimated that roughly a dozen water pipe breaks occurred in the first week following the storm due to this shock. The water plants were not harmed, although precautionary notices to boil water were issued for some areas. Mr. Dodd characterized this as part of normal operations during an emergency event.

Dr. Nancy Gassman, Assistant Director of Public Works (Sustainability), also noted that not all roadways from which water had to be removed were under the City's jurisdiction. She cited the examples of SW 27th Avenue and SW 31st Avenue, which are Broward County roads. The City also worked closely with the County and the Florida Department of Transportation (FDOT) to address State Road (SR) 84/Broward Boulevard and other state-owned roadways to try to restore movements. The stormwater drainage systems attached to non-City roadways are not within the City's jurisdiction, although Staff worked closely with the responsible parties to find out how these systems were being managed throughout the crisis.

Vice Chair Partington asked if this meant the City would not deploy a pump truck onto a state roadway. Mr. Dodd explained that the City is not allowed to discharge water from Fort Lauderdale neighborhoods into the drainage system on state roadways without state authorization. They were required to contact the appropriate jurisdiction, inform them of the flooding, and request that the owners of the system assist the City with removal of water.

Mr. Dodd continued that over 4400 calls for service were received within just over 24 hours. The City began addressing neighborhoods on an individual basis to determine their levels of water, as well as identifying any limitations for the removal of water. He noted that the Edgewood and River Oaks neighborhoods, both of which are undergoing construction of new stormwater systems, had 2 to 3 ft. of water. There was no place to which water removed from Edgewood could be pumped, as there were no nearby canals. At 9:49 a.m. on April 14, the state received permission from FDOT to allow the City to use the state's stormwater drainage system to remove water from Edgewood.

Chair Mammano asked if there was a way the City could have received this permission earlier following the storm. Mr. Dodd advised that FDOT first had to determine where there was sufficient capacity in FDOT's stormwater system to allow water to be pumped into that system. Similar capacity analysis was required of Broward County before they could permit their stormwater system to be used as well. FDOT's and Broward County's systems are designed to accommodate up to 3 in. of rainfall in a 24-hour period. They were already discharging a much greater amount of water through those systems, as well as drying out their own roadways.

Mr. LaBrie requested clarification of how water was removed from neighborhoods such as Edgewood and transported elsewhere for discharge. Mr. Dodd explained that once the City received permission for discharge into FDOT systems, they could discharge the water into those systems adjacent to state roadways, such as SR 84. Pumps were also used, as these are more efficient than pump trucks.

Mr. Dodd explained that the drainage system on SR 84, for example, is designed only to drain water from that roadway. Before the City can also put water into that system, they must ensure that it is safe to do so. A similar requirement is in place for water that is pumped into canals: if the canals' water levels are too high, water will not flow into them.

Mr. Dodd continued that the stormwater system in the River Oaks neighborhood is approximately 70% complete. The contractor deployed pumps to use the pipes already in the ground to drain water from this neighborhood, which was quickly effective. Water was removed by tankers from Melrose Manors, which had 2 to 3 ft. of flooding. While the state and County encouraged the City to find a way to use pumps in this neighborhood, it was not possible to do so at this time.

Mr. Dodd continued that the Melrose Park neighborhood includes a large ditch, which is the primary conveyance for stormwater. This water flows through Lauderhill to the north fork of the New River. Because a sluice gate was closed on this waterway, the water was not flowing from Melrose Park, which required the City to coordinate with Lauderhill to ensure the gate was raised so the water could flow. He estimated that water did not flow properly from Melrose Park for at least 24 hours for this reason.

Mr. Dodd also pointed out that the opening and closure of sluice gates depends in part on water conditions on the canals. Because Fort Lauderdale is near the end of this

system, they must take the level of water already flowing through the canals into consideration. Water levels on the north fork of the New River were too high on April 14 for the sluice gate to open.

Vice Chair Partington asked if the South Florida Water Management District was also involved in this decision. Dr. Gassman advised that the sluice gates from Lauderhill are to the east of the water management district and its control structure. If the sluice gates do not discharge, the water will find its own elevation; if the gates discharge, they can add to the existing water level in the river. She emphasized that groundwater and surface water intermingle in saturated conditions, and this saturation is reflected in the canal systems' water levels.

Dr. Gassman reviewed slides showing saturation levels with the Committee members, pointing out that because rainfall continued sporadically, some of the advances made by the City through pumping of water were erased. She added that because Melrose Park and St. George Estates were originally located in an unincorporated portion of Broward County, a portion of their drainage systems was annexed to Fort Lauderdale along with those neighborhoods as well as to Lauderhill. This connection was not discovered until Tropical Storm Eta, at which time it was determined that because one of these systems does not work effectively without the other, they must be operated as a single system.

Mr. Dodd advised that these are various aspects of multiple challenges that interacted with one another as the City tried to remove water from its neighborhoods after the storm. Dr. Gassman pointed out that in addition to the storm, the tidal state was much higher than predicted, which also influenced the City's ability to discharge through its gravity system.

Mr. Dodd continued that the Durrs and Dorsey Riverbend neighborhoods also lacked connections which would have allowed them to drain without the use of tankers. A number of other neighborhoods also experienced serious flooding of up to 1 ft. of water.

By April 15, up to 36 pump trucks from 10 different cities and counties were assisting Fort Lauderdale, and roadways were reopening. The City used a color-coded system to track flooded areas of the City in order to provide an overview. Mr. Dodd noted that these areas were significantly reduced by April 15. GTL was still discharging effluent through the outfall, although it was reduced to 83 MGD by this time, 48 hours after the rain event. A number of lift stations remained surcharged.

The City installed two pumps in the Edgewood neighborhood by April 15 for discharge of water into the eastern side of the FDOT system. This lowered the water in that area to approximately 1 ft. Two pumps in River Oaks also reduced the water to 1 ft. by pumping into the FDOT system. Melrose Manors was still served only by tankers, as no discharge point had been identified by that time. Water levels in Melrose Park dropped by roughly 1 ft. once the sluice gate was opened. The Durrs and Dorsey Riverbend

neighborhoods experienced significant decreases in water as well, with Dorsey Riverbend served by tankers only as well.

The City began to see significant debris had built up in the water conveyance system, which meant this debris must be cleaned from grates so it would not impede water. This was repeated within a few days.

The 36 trucks remained operational through April 16, and a secondary operation was begun to clear dirt and debris from roads and assess damage to the roadways. A crew surveyed every roadway in the areas from which water had been removed, identifying damage including potholes, sinkholes, and debris and muck to be cleared away. This helped determine follow-up operations. When the GTL plant fell below 80 MGD, outfall discharge was stopped; however, another rain event raised the MGD once more and outfall discharge was resumed.

By this time, the Edgewood neighborhood was pumping water into a 72 in. pipe, which cut across SR 84 into the River Oaks area and combined with that neighborhood's system. The pumps were able to accommodate Edgewood within 24 hours. Dr. Gassman noted that the City had also received direct permission from the South Florida Water Management District to allow direct discharge into the river.

The use of tankers continued in Melrose Manors, which reduced the water in that neighborhood to roughly 6 in. until another rainfall began. When this occurred, it raised water levels in that area to levels observed roughly two days earlier. Melrose Park was also reduced, and the Durrs and Dorsey Riverbend neighborhoods were passable.

Mr. Walters asked what impact the City's future plans would have made on stormwater mitigation if they had already been in place before the rain event. Mr. Dodd replied that the system currently being designed is intended to accommodate a 10-year storm, which would be approximately 7 in. of rainfall. This storm was well above the capacity of any normal stormwater system design. While the flooding would still have occurred, however, the future plans would have improved the duration of water on the streets, as the pumps and other expedient measures could have removed the water much faster. Neighborhoods without discharge points would still take significantly longer for removal.

Mr. Dodd emphasized that even when the new systems are operational, the City would not be able to manage 25 in. of rainfall in one 24-hour period. City Manager Greg Chavarria further clarified that the best-designed system cannot account for the type of rainfall the City experienced. He described the weather system as a "rain bomb," which would result in water intrusion inside homes no matter what systems are in place to mitigate its effects.

Mr. Walters asked if there was anything that could be done with existing funds to allow the City to address more water, if not the full amount generated by the recent rain event. Chair Mammano agreed, noting that the current standard to which the City's systems

are designed is 0.75 in. on personal property and 3 in. on City roadway storm systems. Dr. Gassman stated that when the City engaged a consultant for its Stormwater Master Plan, the aspirational goal of that design was for a 10-year rain event, which is typically in the range of 6 to 7 in. The Plan was designed to this level of service wherever possible, but it was acknowledged that it was not feasible in some City neighborhoods.

Dr. Gassman continued that the modern design for a five-year storm was informed by scenarios including more extreme rain events and sea level rise. The intent was for this five-year level of service, which is 3 in., to be available for the next 50 years.

Chair Mammano asserted that the current system is not delivering a five-year level of service. Dr. Gassman explained that the additional increments for this level of service have only been designed for seven of the City's neighborhoods. The City is exploring the aspirational goal of 6 to 7 in. and is designing based on what is feasible. In some locations, it is feasible to design to 3 in., while in other locations it is feasible to design to 10 in. She pointed out that it is not always feasible to design to the aspirational goal due to hydrologic and hydraulic reasons. "More system" can be implemented in some locations, but not in others.

Dr. Gassman continued that at present, there are four stormwater pump stations operating within the City. By the time the Stormwater Master Plan has been completed, there will be 12 stormwater pump stations, the newer eight of which will have greater capacity than the current four stations. The City is designing to move from gravity systems to pump systems. The Stormwater Master Plan recognizes the challenges posed by some neighborhoods, and is intended to reduce the frequency, duration, and intensity of flooding moving forward.

Vice Chair Partington commented that he would like to move away from language referring to "10-year" or "thousand-year" storms, as extreme rain events appear to be occurring with increasing frequency. He agreed that no one could not have envisioned, nor designed for, a scenario in which 26 in. of rain fell in such a short time period.

Mr. Dodd advised that progress continued on April 17, with water still being discharged through the outfall. Most ponding had been reduced, with exceptions occurring in Melrose Manors and Melrose Park, which both had more than 6 in. of water remaining. Groundwater levels were also dropping by this time, and there had been no additional rain in approximately two days. High tides continued to occur, although they were on a downward trend by this point.

Mr. Dodd continued that by April 17, the City set up pumps in Melrose Manors to draw down on the water in that neighborhood. Water was pumped into the FDOT system on Broward Boulevard. He noted that once 6 in. hoses were unable to be completely submerged, the pumps are no longer effective, which meant issues arose when the water level dropped to below 6 in.

By April 18, the City was having success in addressing the Edgewood and River Oaks neighborhoods as well, with Melrose Manors down to small pockets of 4 in. of water or less in low-lying areas. While water remained in the roads in Melrose Manors and Melrose Park, people were able to drive on those roads without endangering their cars.

Mr. Dodd stated that April 19 constituted the last day of water cleanup, with the GTL plant no longer discharging through outfall and all roads clear of water with the exception of ponding. By this time, much of the recovery effort turned to muck removal and roadway cleanup. He concluded that it took six days to reach this point in the City's recovery.

By April 19, crews were addressing cleanup of material that had gotten into the system to prevent drainage. Mr. Dodd showed photos of these materials that clogged or caught on the system, including debris and muck in the outfalls as well as materials in ditches. He added that the Melrose Park ditch is cleaned on a maintenance schedule, and all of its maintenance activities were completed at the end of March, leaving it in good shape just before the rain event occurred. By April 20, the call center had received 9690 calls over a one-week period.

The Stormwater Master Plan, which was completed in 2017, identified the Edgewood and River Oaks neighborhoods as the top two locations where flooding was expected to occur. Construction is expected to be complete in Edgewood by July 2023, with all pipes in the ground. The pipe portion of the River Oaks neighborhood is expected to be done by December 2023, with pump stations to be complete by the next year. Although these systems were not fully functioning at the time of the event, they did help the temporary measures the City put in place.

Vice Chair Partington requested clarification of how the River Oaks Preserve is used. Dr. Gassman replied that the River Oaks system relies on three components: the piping system, the pump system, and the preserve. These components work together to drain the River Oaks neighborhood. Its smaller pump station is designed to bring water into the River Oaks Preserve, while the larger pump station is located on the south fork of the New River and will pump water from the preserve into that river.

Work in the Durrs and Dorsey Riverbend neighborhood projects is scheduled to go out for bid in the month of April, although there may be a slight delay due to the challenges following the storm. Mr. Dodd advised that the next set of seven neighborhoods for which planning and design will begin by 2025 includes "the bottom two-thirds of the City," for which significant stormwater improvements are planned.

Dr. Gassman explained that following Tropical Storm Eta, the Melrose Park stormwater system, including the drain and conveyance to the north fork of the New River, was completely rehabilitated. That system was originally designed by Broward County and annexed in approximately 2000. It is roughly 20 years old at present and includes exfiltration trenches as well as the ditch connected to other catch basins throughout the

system. By contrast, the Melrose Manors neighborhood has no infrastructure, other than swales, to convey drainage.

Mr. Dodd explained that when considering pumps v. pump trucks, the City considered a 100-acre watershed with 4 in. of rain to determine how quickly they would be able to drain a significant amount of water. This would take 16 days for 15 trucks to clear away the water. If 12 in. pumps are used instead, two 12 in. pumps can clear the same amount of water in roughly 18 hours. He noted that the eight new pump stations which will be built will use at least 8 in. pumps or greater capacity.

The City's contractors also collected a significant amount of debris, including destroyed furniture and drywall removed from damaged homes. Mr. Chavarria added that residents have been asked not to place debris in black trash bags in the future, as this can slow the collection process. The debris management associated with the storm was intended to be limited to pickup of debris damaged by the storm, such as flooded materials.

Dr. Gassman further clarified that the Federal Emergency Management Agency (FEMA) will reimburse the City for storm debris removal. This includes broken tree limbs which were placed by the edge of the road along with other storm debris.

Mr. Dodd continued that the City's Stormwater Operations Department has fewer than 30 members, all of whom normally work a single daytime shift. They are not staffed for 24-hour operations. When the City recognized the magnitude of the event, they determined that there was a need to split these crews so there would be expertise on hand at all times. These types of operations need to be managed differently in order to avoid periods of no coverage.

The City's canals and groundwater levels have a significant impact on how much can be drained through the system and how water can be pumped out. Monitoring these levels, including knowing where ground water is too high, greatly influences what can be done and where work should be prioritized. Inter-local agreements with Broward County, as well as with adjacent municipalities such as Lauderhill, affect the operation and maintenance of the collective system.

Mr. Dodd continued that the City received emergency permissions to use the Broward County and FDOT drainage systems, which typically cannot be accessed by the City. He emphasized the need for agreements that would identify thresholds which would allow the City to use these systems once it has been clarified that they can provide sufficient capacity. The City used three different emergency contracts, which will need to be maintained and possibly expanded in the future.

Mr. Dodd noted that drone and helicopter footage help identify areas of inundation and where efforts should be focused. It may be necessary to clear debris from the same

area of a neighborhood multiple times, as debris can continue to build up in low-lying areas and prevent water from draining.

Mr. Dodd advised that integration of the City's Q-alert system into GIS mapping can be used to track progress. This helps to improve situational awareness and determine where teams need to be and which areas must be prioritized. The City plans to consider creating new mobile apps which would allow reconnaissance teams to provide information through tablets or iPads rather than returning to the EOC and entering it manually into the system. As water is drained away, it is important to follow up immediately with muck removal and debris management.

Mr. Dodd stated that all City employees receive some level of training from the National Incident Management System (NIMS). This basic framework can be applied to different types of emergencies, as it includes planning, situational awareness, on-site command and reaction teams, and management of people, equipment, and resources to address the problem. This is the same type of framework followed by Police and Fire Departments. He emphasized that these systems and procedures can be applied to nearly every situation.

Dr. Gassman further clarified that Staff spent roughly four hours on Friday, April 14, to plan how the Unwatering Task Force would respond to the event. This made a significant difference in how the City could respond to the emergency, as it allowed them to prioritize the use of assets and determine who was in charge of specific aspects of the response. She characterized this planning time as some of the most critical hours of the response. Omar Castellon, Assistant Director of Public Works (Engineering), added that the EOC goes through periodic simulation training which addresses different emergency scenarios.

Mr. Dodd also addressed long-term impacts of the event in specific neighborhoods, stating that in Melrose Manors, the City would develop a temporary plan to identify exactly where pumps would be located and create a catch basin or pit into which these pipes could be placed to drain the water. The lack of a catch basin presented a challenge when trying to drain water from a flat area. A permanent inter-local agreement (ILA) would also need to be created with Broward County and FDOT for permissions to begin pumping the water. This neighborhood would need to be elevated to the same timeline as the other seven neighborhoods so construction may begin as soon as possible.

Chair Mammano requested additional information on how current systems work in Melrose Manors. Mr. Dodd replied that this would need to be addressed through design, reiterating that Melrose Manors was not included in the original group of neighborhoods for which design has been done. The City will need to determine how to collect water in the neighborhood's low points, as well as where that water would be delivered. He noted that this may require the addition of a pump station in the future.

Mr. Chavarria added that he and Mr. Dodd attended the previous week's meeting of the Melrose Manors Homeowners Association, where they heard significant feedback. The City will bring in consultant HDR to meet with members of the community so they can hear concerns firsthand and brainstorm with residents to determine what could be implemented quickly. He suggested that a member of the Committee attend this future meeting to hear the discussion as well.

Mr. Dodd continued that the City was already planning to purchase a new pump truck in 2024, and is now trying to accelerate the procurement process so it can be purchased in 2023. They will also review the pumps and hoses currently on hand and build up the City's inventory based on pumping plans. They will work with the Information Technology (IT) Department on GIS tracking programs to help improve situational awareness.

Long-term plans include keeping the first seven neighborhoods to be addressed on their timelines, or to speed up these timelines if possible. They can then begin to prepare for the second tranche of neighborhoods, which may require adjustment of Engineering Staff levels.

Vice Chair Partington asked if available funding will be sufficient to meet these needs. Mr. Dodd replied that the \$200 million bond was for the first tranche of neighborhoods: the second tranche will require a future bond, which he could not yet estimate. Of the neighborhoods in the first tranche, Edgewood and River Oaks are under construction for roughly \$60 million.

Dr. Gassman further clarified that documents for the first tranche are in process. The River Oaks and Edgewood neighborhoods were addressed through a line of credit which anticipated the bond. The City went through a bond validation hearing earlier in calendar year 2023, and bond documents have been in development for the last few months. She estimated that the bond for the first tranche of neighborhoods will be issued in the next one to two months.

Dr. Gassman also recalled that the City recently changed the manner in which its stormwater fee is charged, which was validated through a hearing. City management recognized the need to begin work on the system, and allowed the \$70 million line of credit.

Mr. LaBrie also addressed the stormwater management fee, asking what this pays for. Dr. Gassman replied that this fee covers operation and maintenance of the system, as well as debt service on significant improvements. There are four levels of work involved in maintaining this system:

- Basic repairs: these are made on a daily basis
- Operational repairs: these typically cost less than \$100,000 and include items such as replacement of existing infrastructure, such as pipes or catch basins

- Capital Improvement Program (CIP) repairs: these are related to larger street-level projects
- Neighborhood-level projects: these include the first tranche of neighborhoods to be addressed by the Stormwater Master Plan

Dr. Gassman concluded that the stormwater fee addresses all four types of repairs, and establishes the groundwork for larger-scale projects.

Chair Mammano echoed Vice Chair Partington's earlier comment regarding the outdated concept of "100-year" storms and similar measurements, pointing out that there should be acknowledgement that 3 in. of rainfall is no longer an adequate standard, and that there should be consideration of an increase in this standard.

Vice Chair Partington observed that a sensitivity analysis could be performed, which would determine a base design for a five-year storm and then consider how preparations for a less likely event, such as a 20-year storm, would affect the costs of this design. Dr. Gassman advised that one key aspect of this discussion is the need to consider water quantity as well as water quality: when a pump station is designed, it is permitted for a specific restricted amount of use. The City is only allowed by regulatory entities to discharge a set amount of material through that station.

Dr. Gassman continued that regulatory agencies are geared toward addressing high-frequency, low-intensity storms. The event the City recently experienced was of very high intensity and low frequency. Chair Mammano asserted that the City should work to change the outlook of these regulatory agencies. Mr. Dodd pointed out that the only reason the City was allowed to perform the level of pumping necessary for the recent rain event was due to its emergency nature, which provided the City with a waiver from water quality standards.

Vice Chair Partington stated again that it may be necessary to consider a range of designs, and their costs, to address future events. Dr. Gassman replied that this is how the first Stormwater Master Plan was developed: by running scenarios and discussing what different systems could potentially do. Scenario testing, sea level rise, and extreme rainfall events were all considered as part of this Plan's modeling activity, and decisions were made regarding the level of service that could be reasonably provided.

Mr. LaBrie asked if there have been lessons learned regarding communications among the Public Works Department, as well as with City Hall communications, which would lead to the implementation of a communication aspect to the City's disaster plans going forward. Mr. Dodd replied that the City's communications hub was located on the sixth floor of City Hall, which had a separate backup generator from the rest of the building. There were no plans that both the regular system and the backup generator would be affected by the same event. When this occurred, Public Works Staff at the Fiveash and GTL plants were on a separate system, and could communicate with one another using radios and cell phones, although their contact with the public was affected.

Mr. Dodd continued that the City's IT Department will also be reviewing their lessons learned from the recent extreme rain event, including the need for a redundant backup system for communications. He pointed out that public notifications were posted on the City's website in an attempt to share information with the community. He also noted that the call center for Police and Fire services never lost communications.

Mr. LaBrie noted that the Mayor attended his neighborhood's most recent civic association meeting, which was held one week after the rain event. One of the questions asked at this meeting addressed the availability of a pump truck to come to parts of the neighborhood. Dr. Gassman explained that the Stormwater Operations Department has four pump trucks and fewer than 30 Staff members, which means there are neither enough trucks nor Staff to respond to every location where a pump truck might be requested.

Dr. Gassman continued that another challenge which affected the extreme rain event was the height of the Middle River, which presented an impediment for drainage. Until there is somewhere for water to go, there is no effective response the City can make. She concluded that expectations often pose a challenge.

Mr. Grabski asked if the height of the Middle River was due only to upland flow, or if the South Florida Water Management District opened its gates. Dr. Gassman confirmed that the District opened these gates, which elevated the water level along with the volume of rainfall, which also contributed to elevation of the water level in the river. Water levels did not return to normal until April 20.

Vice Chair Partington asked if there was any additional action the South Florida Water Management District could have taken. Dr. Gassman replied that there will likely be further discussion between the District and the City, particularly regarding the sluice gates at Lauderhill; however, she noted that the south fork of the Middle River is substantially downstream from the District's control structure, and is subject to other influences, such as tides.

Chair Mammano noted that groundwater saturation contributed significantly to infiltration, and asked if the City should be doubling or tripling its infiltration budget to deal with these pipes so additional water does not enter the sewage treatment plant and then the Intracoastal Waterway. It was clarified that groundwater was coming from aboveground, including seeping through manhole covers or other openings directly into lift stations, which meant the issue was as much inflow as infiltration.

Mr. Dodd reiterated that many of the City's pump stations were surcharged, which meant the inflow exceeded their capacity. This meant the pipes are full, so when residents flush toilets or turn on water, it is more difficult for the water to flow through the pipes into the lift station and for the lift station to move that water out. Investing more in I&I would help the City; the issue is how much they can afford to invest in comparison

with how much is being spent on the Consent Order project and other water/wastewater projects. Public Works hopes to further prioritize I&I in the next fiscal year's budget.

Vice Chair Partington asked if there were any sewage spills associated with the surcharged lift stations which had to be reported to DEP. Mr. Dodd estimated there were two to three such spills during the extreme rain event, including backups in the Bayview and Galt Mile areas.

Vice Chair Partington also requested an update on the function of City government while City Hall is inaccessible. Mr. Dodd explained that Public Works leadership is maintaining offices in a separate building on the east side of the parking garage. He estimated that 10% of Staff who worked in City Hall are at those locations, while other employees are working remotely. Dr. Gassman added that Public Works has multiple facilities across Fort Lauderdale at which most operational staff is based at present.

Mr. Dodd continued that the City is still working to determine where Staff will be moved for short- and long-term needs. Chair Mammano suggested that the Committee may wish to schedule a discussion of City Hall at its next meeting, followed by a joint meeting with the City Commission.

Mr. Dodd concluded that Staff is still working to determine whether future Committee meetings will be held at the Fort Lauderdale Executive Airport, or at the Department of Sustainable Development. He recommended that the members consider where they would prefer to hold these meetings.

4. Public Works Update

- i. Water & Sewer Breaks Report w/Mapping**
- ii. CIP Financial Report**

These Items were deferred to the next meeting.

5. General Discussion and Comments

- i. Committee Members**

Chair Mammano noted that the September 4, 2023 meeting is currently scheduled to fall on a holiday and will require rescheduling. Senior Administrative Assistant Vickie Beauvais stated that she would reach out to the City Clerk's Office to determine if the alternate date of September 11, 2023 is available.

Chair Mammano also recalled that the Committee traditionally does not meet during the month of July in order to be consistent with the City Commission's schedule.

Motion made by Vice Chair Partington, seconded by Mr. Walters, to cancel [the] July meeting. In a voice vote, the **motion** passed unanimously.

Mr. Grabski recalled that at the April 2023 meeting, the Committee had discussed an update on cost sharing for capital improvements, and requested that this update be added to the June Agenda.

ii. Public Comments

None.

6. Adjournment – NEXT SCHEDULED MEETING DATE: Monday, June 5, 2023

There being no further business to come before the Committee at this time, the meeting was adjourned at 4:16 p.m.

Any written public comments made 48 hours prior to the meeting regarding items discussed during the proceedings have been attached hereto.

[Minutes prepared by K. McGuire, Prototype, Inc.]