



CITY OF FORT LAUDERDALE

DRAFT
MEETING MINUTES
CITY OF FORT LAUDERDALE
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INFRASTRUCTURE TASK FORCE ADVISORY COMMITTEE
VIRTUAL MEETING
MONDAY, JANUARY 4, 2021 – 2:00 P.M. TO 5:00 P.M.

February 2020-January 2021

Attendance

Marilyn Mammano, Chair	P	5	0
Gerald Angeli (arr. 2:06)	P	5	0
Shane Grabski	P	4	1
Charlie Ladd	P	4	1
Michael Marshall (arr. 3:38)	P	4	1
Peter Partington	P	5	0
Jacquelyn Scott	P	5	0
Roosevelt Walters	P	5	0
Ralph Zeltman	P	5	0

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

Staff

Aneisha Daniel, Deputy Director of Public Works
Dr. Nancy Gassman, Assistant Director of Public Works – Sustainability
Rick Johnson, Utilities Distribution and Collection Systems Manager
Talal Abi-Karam, Assistant Director of Public Works – Utilities
Victor Carosi, Assistant Director of Public Works -- Engineering
Omar Castellon, Chief Engineer
Pauline Ricketts, Senior Administrative Assistant
Igor Vassiliev, Project Manager II
Kymberly Holcombe, Business Operations Manager
Crysta Parkinson, 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.

ii. Approval of Agenda

Motion made by Mr. Partington, seconded by Ms. Scott, to approve. In a voice vote, the **motion** passed unanimously.

iii. Approval of Previous Meeting Minutes, December 7, 2020

Mr. Partington noted the following correction:

- P. 12, paragraph 4: change ending of first sentence to "...how the Lohmeyer plant operated during Tropical Storm Eta"

Deputy Director of Public Works Aneisha Daniel also noted a correction on p.9 to Project Manager II Steve Hillberg's title.

Motion made by Mr. Partington, seconded by Ms. Scott, to approve as amended. In a voice vote, the **motion** passed unanimously.

Mr. Angeli arrived at 2:06 p.m.

2. General Discussion and Comments by Committee Members

Chair Mammano observed that due to the typical length of the Committee's meetings, they do not always discuss Items toward the end of the Agenda, although Staff is regularly present for this discussion. She suggested taking Item 6 out of order on the Agenda for this reason. Ms. Scott commented that this could be addressed in the future by moving General Discussion and Comments by Committee Members to a later position on the Agenda.

Motion made by Ms. Scott, seconded by Mr. Partington, to take Item 6 out of order and make it Item 2. In a voice vote, the **motion** passed unanimously.

Ms. Daniel advised that Agenda Items 4 and 5 should also be discussed at today's meeting, as Staff has brought together a great deal of information on these issues.

The following Item was taken out of order on the Agenda.

6. Information

i. Water & Sewer Bond Expenditure Report

Ms. Daniel noted that this report was presented in a format consistent with information already provided to the Committee. The document shows actual expenditures from the first tranche of the Water and Sewer Bond, which was for \$204 million, as of December 28, 2020. She reviewed a number of individual items broken down by budgeted and actual expenditures, encumbrances to date, and balances. There have been significant expenditures during the last two months of 2020, as the City's redundant line project is

moving along very quickly and a number of bills were received toward the end of the year.

Chair Mammano asked if a number of projects added after the original Consent Order was signed were included in the document's summary chart. These projects were not necessarily covered by the original bond allocation of \$204 million. Ms. Daniel stated that these projects were likely included, although more information would be required to clarify this. Chair Mammano recalled that the Committee had wished to see a running total of the number of projects completed and yet to be undertaken, in order to determine how much more money would be needed and the timing of any additional allocation.

Chair Mammano continued that the inflow and infiltration (I&I) line item shows a total budget of approximately \$14 million, of which only \$12 million has been spent thus far. Another \$2 million remains encumbered for this line item. Chief Engineer Omar Castellon explained that sections of the six basins experiencing I&I identified in the Consent Order have been completed; however, another \$7 million to \$8 million remains to complete work on the full basins. He estimated that there may be a number of invoices not yet reflected in the document, as a great deal of work has been accomplished over the last two months.

Ms. Daniel further clarified that invoices are sent by contractors and reviewed by Project Managers, which may necessitate significant back-and-forth communication before payments are approved and processed. Chair Mammano requested that the Committee see summary updates on this report to reflect all work completed by the end of 2020.

Mr. Partington commented that the Committee is tasked with reviewing the City's expenditure plan based on a specific "bottom line" figure. At the December 2020 meeting, representatives of consultant Hazen and Sawyer had provided a presentation on the City's high-risk infrastructure, which may further affect this bottom line and by extension individual water and sewer charges.

Paul Chettle, member of the public, asserted that the public has asked to see the total cost of the improvements funded by the Water and Sewer Bond since 2016. While a presentation was made to the Committee at their October 2020 meeting on the \$204 million tranche, additional projects are partially funded by this tranche as well as within the City's Capital Improvement Program (CIP). He explained that the public wished to see the total costs of these individual projects, as it is estimated that they may cost up to 48% more than originally estimated.

Mr. Chettle continued that the report provided by Hazen and Sawyer in July 2020 includes updated cost estimates for all projects in the Consent Order, which are significantly higher than the original estimates. Projects previously identified as top priorities, which accounted for approximately \$60 million of the \$204 million bond, have been removed from the list of bond projects, although they had been included in the

City's CIP for a number of years. Mr. Chettle concluded that this affects the entire dynamic of the bond.

Ms. Daniel confirmed that the total costs of Consent Order projects can be provided to the Committee, including both bond costs and enterprise funds allocated to these projects.

ii. Fire Hydrant Maintenance and Testing

Utilities Distribution and Collection Systems Manager Rick Johnson explained that the City began its written fire hydrant maintenance program in May 2017, when there were 6168 hydrants in its system. The City was divided into three sections, each with a dedicated crew to maintain roughly 2000 hydrants in each section each year.

In the first year of the program, the City inspected and performed preventative maintenance on approximately 35%, or 2000, of these hydrants over a seven-month period. In 2018, with full staff, they maintained 100% of City hydrants. Maintenance includes checking the pounds per square inch (PSI) at each hydrant as well as its average flow. Hydrants that do not meet specifications, such as those with a PSI below 50 or a flow of fewer than 500 gallons per minute (GPM), are reviewed to determine if the problem is local or systemic. Systemic issues could result in the addition of a CIP project to replace or upgrade a water main in the subject area.

In 2019, the City completed 99.1% of inspections and preventative maintenance on hydrants. Geographic information system (GIS) data was updated to more accurately reflect the number and location of hydrants in the system. In 2020, there were significant challenges, including the impact of the COVID-19 pandemic on staffing. This prevented the City from working at full capacity. The Consent Order also required maintenance of valves in the water system, which made it necessary to move resources from the hydrant program to the valve program. These challenges resulted in the completion of approximately 40% of hydrant maintenance.

By December 2020, the City received two additional vehicles to conduct valve maintenance, which meant staff resources could be returned to the hydrant program. The hydrant maintenance and testing program is expected to be back to full capacity in 2021. Another 700 hydrants were added to the system as a result of maintenance, which identified a number of hydrants not reflected by GIS data. Maintenance resulted in the capture of the following data:

- Brand of the hydrant
- Location of the hydrant
- Whether or not the hydrant is in working condition
- Number of turns required to open the hydrant
- Flow rate and GPM
- Static pressure
- Leaks

- Need for replacement or upgrades

Mr. Johnson clarified that flow testing for fire prevention is not the same as preventative maintenance (PM). When PM is conducted, only one hydrant is tested for flow rate and static pressure. A fire flow test, which is performed for developers or contractors, requires the flow of more than one hydrant on either side of the subject property. This includes opening hydrants and measuring the pressure at the property to ensure that it can be maintained above 20 PSI. Fire flow testing can indicate that water mains in the area may be undersized, or there may be other issues within the main. The fire hydrant testing and maintenance program is based upon National Fire Protection Association documents, American Water Works Association (AWWA) standards, and Florida Statute Chapter 633.

Mr. Zeltman emphasized the difference between static and dynamic pressure tests: static pressure requires 50 PSI, while dynamic pressure for a typical single-family residence requires 500 GPM with a residual pressure of at least 20 PSI. In addition, dynamic testing may reveal tuberculation, or corrosion resulting in iron oxide precipitation, that has accumulated in pipes and can restrict flow or make it more turbulent.

Mr. Johnson continued that the City now employs four crews for valve maintenance and three crews for hydrant maintenance. As most valves are located in roadways, this maintenance process requires more staff and takes longer to complete. Because each hydrant has its own isolation valve, the hydrant testing crews also test and maintain these valves.

Mr. Ladd noted that while the average flow for City hydrants is 1000 GPM, there were 10 hydrants with a GPM below 25, with static pressure greater than the minimum requirement of 50 PSI. Mr. Johnson explained that pressure varies according to the time of day and number of pumps operating at water plants. The City uses static pressure primarily as a guide to determine whether or not more thorough inspection of the area is necessary. A CIP is developed for areas that have poor flow so these water mains can be upgraded. If issues exist in areas not already determined to have low flow, they are addressed through CIP.

Mr. Zeltman recalled that the Reiss report had shown deficient fire hydrant flow tests in several areas of the City in 2015. He asked to see a map showing the location of deficient hydrants. Ms. Daniel advised that the information she has received from the Fire Department shows there are currently no deficient hydrants in the City according to AWWA standards. Mr. Johnson reiterated that since the testing and maintenance program began in 2017, the City has tested all hydrants at least twice and is about to begin a third round of testing. This program results in significant hydrant repair and replacement.

iii. Capacity Letter Spread Sheet

Ms. Daniel stated that this spreadsheet will be presented under Old Business.

iv. Date of Last Update of ERC Numbers

The date of the last equivalent residential connection (ERC) update, which is May 1, 2019, is also included in the spreadsheet to be presented under Old Business. This serves as a guideline for the calculation of sanitary sewer connection fees. Impact fee allocation will also be discussed under New Business.

v. Matrix Used by Hazen & Sawyer to Determine Risk

Patricia Carney, representing consultant Hazen and Sawyer, recalled that at the December 2020 meeting, the Committee members had asked how risk was determined for many of the City's pipes. She explained that risk is calculated for force mains and other underground infrastructure by examining the likelihood of failure for a particular pipe, as well as the potential consequence of that failure. Likelihood of failure (LOF) is determined by the following factors:

- Age of the asset
- Material from which the asset is constructed
- Whether or not the asset has experienced recent breaks
- Peak operating pressure
- Regularity of maintenance
- External or internal physical factors affecting the asset

Each of these factors is weighted differently. Weights were determined using pairwise comparison, which is often used in scientific studies.

Once the likelihood of failure is determined, the team also considered the consequence of failure. The combination of these two scores is used to determine overall risk to the system. Consequences of failure (COF) take the following into consideration:

- Size of the asset
- Proximity of the asset to wellfields
- Impact on residential and essential services
- System reliability, including redundancies
- Financial impact
- Community impact
- Environmental compliance

Pairwise comparison is also used to determine the weighting of consequences. The weighted numbers for LOF and COF are then multiplied. This process was undertaken for all City-owned pipes in Fort Lauderdale, which were then broken down into groups. Of 110 total miles of this pipe, the team determined that 37 miles required no further assessment due to the low LOF. Another nine miles were not assessed further because

the LOF was very high, and another group of assets was already included in the Consent Order. Additional testing was done on the remaining pipes to further clarify their risk and prioritize them according to their scores.

Ms. Carney explained that approximately seven miles of pipe were added to the Consent Order using this exercise. The Consent Order requires the City not only to address a number of specific assets, but to conduct a force main condition assessment and add other assets in need of repair/replacement. Another 13 miles of pipe were also added to the CIP. These were determined not to have imminent risk of failure, but should be addressed within the next five years. The remaining assets had low LOF or could be monitored in the future.

Mr. Partington recalled that in December, the Committee saw a similar presentation comparing the findings of the Reiss report with the more current report provided by Hazen and Sawyer. This comparison had concluded there were approximately 17 miles of pipe in the high-risk category. He asked if the full 17 miles have been added to the Consent Order or the CIP. Ms. Carney advised that the Consent Order now includes roughly 22 miles of high-risk force main, and reiterated that another 13 miles were recommended for addition to the CIP. She estimated that all work would be done by 2026.

Mr. Partington noted that the process described above includes a high degree of subjectivity. Ms. Carney agreed, pointing out that this was not a physically intrusive analysis: some data was available regarding breaks, and the consultants and City Staff are aware of the likelihood of certain materials to break. The team is also aware of the locations more likely to experience saltwater intrusion or be affected by other factors.

Chair Mammano asked if the cost of the additional miles of assets added to the Consent Order has been estimated, and if these funds have already been identified. Ms. Carney replied that these 7.1 miles total approximately \$35 million. Two of these assets have been fully constructed, while another is 70% complete and one is 50% complete. The final asset, a large redundant force main, is roughly 40%-50% complete.

3. Old Business

i. Continued Discussion on Developing Moratorium

Chair Mammano advised that this Item was added at Mr. Partington's suggestion. She recommended that it be included on every Agenda in the future, as the Committee is specifically charged with discussing the possible need for a moratorium and will ultimately need to take a position on this issue and make a recommendation to the City Commission.

Mr. Ladd commented that at this point he did not see the case being made for a moratorium. He explained that based on the information presented to the Committee, there are three areas of concern:

- Fire main system
- Water main system
- Sewer system

Mr. Ladd continued that he has seen no evidence that the fire or water main systems lack capacity or infrastructure to accommodate further development. Regarding the sewer system, he noted that increased usage is unlikely to result in pipe breakage, as their flow is pressurized. The most at-risk assets are already being aggressively addressed. He concluded that a moratorium would be unlikely to change any of these factors or put the system at greater risk.

Mr. Partington observed that the Commission has heard input from the public suggesting that the system has sufficient capacity, but cannot accommodate greater flow through the pipes. He felt a moratorium could be possible if the process through which new development is evaluated gives explicit consideration to the condition, as well as the capacity, of the City's infrastructure.

Mr. Ladd pointed out that if a moratorium is invoked, it would most likely apply to projects that have already been approved rather than projects applying for permits. If the City instituted a moratorium immediately, it is not known how long this would have an impact on the amount of flow being added to the system. He also emphasized the importance of addressing the 42 in. north-south main.

Ms. Scott suggested that if a moratorium is not deemed appropriate, the City's process for the issuance of capacity letters could be modified to take the condition of infrastructure into account. She felt the capacity letters issued by the City do not sufficiently take condition into consideration. Mr. Angeli also proposed development of a conditional analysis.

ii. Continued Capacity Letter Process / Project Walk-Through

Ms. Daniel recalled that at the December 2020 meeting, the Committee had requested additional information on the capacity letter process. Igor Vassiliev, Project Manager II, reviewed the spreadsheet used to track the issuance of capacity letters, which includes approximately 360 projects at present, sorted by their pump station basins. Once projects are completed and have been issued Certificates of Occupancy (CO), they are removed from the document.

The spreadsheet includes the following columns:

- Development Review Committee (DRC) case number
- Date of DRC review
- Project name

- Project address
- Project description (for example: hotel, condominium, marina)
- Water/sewer capacity letter issue date
- Date of final DRC approval
- Construction application submittal date
- Master permit issue date
- CO issue date
- Capacity analysis data
 - Allocated flow in MGD
 - Pump station basin
 - Point of connection (nearest upstream manhole number)
- Notes
- Water demand
- Sewer demand
- Committed sewer demand (by pump station)

Chair Mammano requested clarification of how committed sewer demand by pump station differs from committed sewer demand by treatment plant. Mr. Ladd explained that the treatment plant provides a global number, while the demand by pump station breaks this figure down further. This allows Staff to identify a zone or pump station that may be deficient and requires upgrade or replacement to accommodate greater capacity.

Mr. Marshall arrived at 3:38 p.m.

Mr. Vassiliev continued that a project may be moved from the spreadsheet for two reasons:

- It has been constructed and now represents actual rather than committed flow
- It misses a deadline or fails to secure necessary permits

The first deadline is the duration of the capacity letter itself, which is one year. If final DRC approval is not received within that year, the project falls off the list and must begin the process again. Once final DRC approval is received, a project has approximately two years to secure its building permit, depending upon the type of development. Extensions on time frames may also be possible, including statutory extensions resulting from states of emergency. Mr. Marshall advised that if a project is under construction and regular inspections are ongoing to keep permits alive, it remains on the list.

Mr. Partington suggested that the spreadsheet, or a portion of its information, should be included with the City's capacity letter for each project when it goes before the DRC and possibly to the City Commission for approval. He asked if developments outside the City's boundaries but which are served by the City's infrastructure are taken into

account when determining capacity. Mr. Vassiliev confirmed this, noting that the City provides a capacity letter when supplying developments outside City limits with water.

Mr. Partington also asked if some of the infrastructure that would accommodate flows from projects on the spreadsheet are included among the list of high-risk assets developed by Hazen and Sawyer, including trunk and force mains. Mr. Vassiliev advised that it is possible the two lists overlap. He also pointed out that if sewer flow is added to a pump station, pressure and flow in the force main is not affected, as the pump station does not work continuously. Addition of flow means the station works more often, but moves fluid through the same pipes at the same pressure. Upgrades may be recommended for pump stations if new development causes it to exceed its optimum run time.

Ms. Daniel requested clarification that the Committee was suggesting a modification to the City's capacity review process to include LOF/COF when evaluating new requests. Mr. Partington replied that he would like the flows from new developments to be traced so their impact on high-risk infrastructure, even at a distance, can be considered. Chair Mammano agreed, emphasizing the importance of condition as identified by Hazen and Sawyer. She added that the City should determine how many projects are using at-risk infrastructure, and may wish to consider no further addition of new projects until the infrastructure has been upgraded, four to five years in the future.

Mr. Partington recalled from previous meetings that it would be difficult to base a moratorium on the condition of pipes at a distance from project sites; however, he reiterated that it could be possible to impose a moratorium while the City modifies the process by which adequacy is determined.

Mr. Angeli recommended not using the word "moratorium," as it implies a more broad-based activity than combining condition and capacity in adequacy letters. He did not believe a broad-based reason to halt development existed. Mr. Marshall agreed. Mr. Ladd advised that the general population may not recognize the work put in by Staff to determine capacity, which at times results in developers replacing or installing new infrastructure to accommodate their projects.

Mr. Vassiliev briefly reviewed a project on the spreadsheet as an example, noting that it underwent several changes, including design as well as the number of units. This resulted in the issue of multiple capacity letters as flow estimates were modified to reflect these changes. The project is currently going through final DRC approval.

Mr. Partington asked if the sample project required the upgrade of any infrastructure. Mr. Vassiliev did not recall any such requirement. Chair Mammano pointed out, however, that a number of projects are listed in the same area as the sample project, and connect to the same pump stations and other infrastructure. Mr. Vassiliev confirmed that the pump station has sufficient capacity to accommodate the additional flows resulting from the projects.

Chair Mammano asked if the pump station connects to any infrastructure identified as high-risk that has not yet been repaired or replaced. Mr. Vassiliev advised that this would require a full inspection of the map.

Mr. Partington showed the Committee a map from a previous meeting which identified the location of medium- and high-risk force mains throughout the City. He advised that the infrastructure in the area of the sample project is mostly medium-risk.

Mr. Vassiliev called the Committee's attention to a table showing the run times of pump stations, pointing out that stations with more than eight or 10 hours of run time per day were identified. These stations are on the City's watch list for future repairs. He characterized this table as a work in progress, as its information is constantly updated. When projects affect the pump stations identified as under stress, the capacity letter for a nearby project may include a condition that the station be upgraded to accommodate the increase.

Mr. Castellon added that in the case of older pump stations requiring rehabilitation, the City may provide a portion of the capital necessary to upgrade or rehabilitate the pump station and bring it up to standard, in addition to money provided by the developer. This activity would be in addition to any impact fees the developer may have already paid. Talal Abi-Karam, Assistant Director of Public Works (Utilities), reviewed the locations of a number of pump stations that will be upgraded or replaced as a result of incoming projects.

Chair Mammano asked if the pump stations identified as high-risk are funded for upgrade or replacement through either the bond or the CIP in time to accommodate projected additional flow. Ms. Daniel replied that a presentation is planned under New Business to provide information on pump station replacement.

Mr. Partington recommended that Staff consider their discussion with the Committee at today's meeting and determine if any changes could be made to the process to include more explicit consideration of infrastructure condition. He also requested that when a prospective moratorium is discussed on a subsequent Agenda, it may be best to have an Assistant City Attorney present to provide clarity.

4. New Business

i. Impact Fees Allocation

Kymerly Holcombe, Business Operations Manager, provided an overview of impact fees, which are one-time fees paid by new customers who connect to the City's water and sewer systems. The fees are commensurate to the capacity these customers need for either existing or new development. They are used to increase the overall capacity of the system. Impact fees are assessed per unit.

In 2018, the City contracted with consultant Stantec to review, analyze, and recommend water and sewer rates in the current environment, while at the same time considering the current \$204 million bond as well as future tranches of bond funds. The next tranche is scheduled for 2023. Stantec recommended looking into the cost of increasing both water and sewer capacity. The formula used to calculate fees was updated accordingly. Chair Mammano recalled that the Committee had supported this analysis and recommendation.

Ms. Holcombe stated that impact fee revenue is held in separate funds for water and sewer uses and is used specifically to increase the capacity of the system and to make bond payments, as bond funds are used to increase system capacity as well. She cited the example of upsizing pipes, increasing the size of a pump station, or adding redundant line to increase flow capacity. Impact fee dollars are more often used for bond interest payments than direct use on a given project.

Chair Mammano requested additional clarification of how impact fee revenue is used. Ms. Daniel noted that these fees are not maintained within the Public Works Department, but by the Department of Sustainable Development (DSD). Ms. Holcombe added that impact fees are collected upon issuance of a CO. One of Stantec's recommendations that arose from the rate study report was that these rates be reviewed and assessed every three years. Higher impact fees were implemented by the City Commission in December 2020.

Mr. Marshall recommended that members interested in further consideration of impact fees examine Florida Statute Chapter 163, Section 31-801, which constitutes the Impact Fee Act. This Act lists all requirements related to impact fees, including notice requirements prior to an increase, how the fees are maintained in a separate account, and other aspects of the process. Chair Mammano observed that the Committee would like to see a full accounting of how these dollars are used in the future. Ms. Daniel stated that this accounting would be provided at a subsequent meeting.

ii. Pump Station Replacement Update

Mr. Castellon advised that pump stations are managed by Operations, which keeps track of which stations are in poor shape or require rehabilitation, upgrade, or upsizing. Each year, when the CIP is developed, Staff meets with Operations to determine which pump stations must be addressed. The Consent Order includes five major problematic pump stations on which work has been completed.

The City has a total of 186 pump stations throughout its system. At present, the City is working on 15 of these stations in the design or construction phases. Staff also interacts with DSD to familiarize itself with the work that needs to be done on these stations. A number of pump stations will be addressed using bond funds, while others will be included in the CIP.

Ms. Scott left the meeting at 4:45 p.m.

5. Public Works Update

- i. Continued Water & Sewer Breaks Report 2020**
- ii. Mapping of Water Breaks**
- iii. Mapping of Sewer Breaks / High Risk Infrastructure**

The Committee agreed by consensus to move Item 5 to the next Agenda.

7. Public Comments

There were no public comments.

Chair Mammano requested an update on the progress of work on a major 42 in. main. Mr. Castellon replied that work on this project is roughly 77% complete. The deadline for completion is late July 2020, although Staff feels it may be possible to finish the project earlier. Relining of pipe will be addressed in the next bond.

Mr. Partington commented that over the past few months, City Staff is working under a great deal of pressure and extraordinary circumstances. He concluded that the Committee is appreciative of their work.

8. Adjournment – Next Regular Meeting TBA

There being no further business to come before the Committee at this time, the meeting was adjourned at 4:52 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.]