



# City of Margate

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## Meeting Minutes City Commission Workshop

**Mayor Joanne Simone**  
**Vice Mayor Tommy Ruzzano**  
**Commissioners:**  
**Joyce W. Bryan, Lesa Peerman, Frank B. Talerico**

**City Manager Douglas E. Smith**  
**City Attorney Eugene M. Steinfeld**  
**City Clerk Joseph J. Kavanagh**

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Wednesday, July 8, 2015

6:00 PM

Commission Chambers

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### CALL TO ORDER

**Present:** 5 - Commissioner Lesa 'Le' Peerman, Commissioner Frank B. Talerico, Commissioner Joyce W. Bryan, Vice Mayor Tommy Ruzzano and Mayor Joanne Simone

#### In Attendance:

City Manager Douglas E. Smith  
City Attorney Eugene M. Steinfeld  
City Clerk Joseph J. Kavanagh

*Commissioner Talerico arrived at 6:02 p.m.*

### 1) PRESENTATION(S)

**A.      ID 14-1231      DEPARTMENT OF ENVIRONMENTAL AND ENGINEERING SERVICES  
(DEES) ASSET MANAGEMENT PLAN**

*DIRECTOR OF ENVIRONMENTAL AND ENGINEERING SERVICES (DEES) REDDY CHITEPU gave a PowerPoint Presentation regarding the Asset Management Plan. He explained that water and sewer infrastructure improvements were mostly secured behind fences, gates and underground and were not seen. He said that most of the complaints his department received pertained to not maintaining the infrastructure and problems of no running water or toilets overflowing. He thanked the Commission for their approvals during the Budget process. He stated that to look at the infrastructure needs going forward, a defined plan was wanted. He noted that it took two years to assemble, and that this would be the path forward. He said that it was a 10 year plan from 2015, to 2024. He stated that the 2015, numbers were already in the Budget and the projects for 2015, were already implemented.*

*DIRECTOR CHITEPU gave the definition of an asset as anything that had a physical and functional identity with an age. He said that it could be any equipment in the plant. He said that asset management was to maintain existing assets at the lowest cost while keeping the level of service maintained. He said that return on the investment was needed which was achieved by effective management and implementing a plan. He explained that the City currently had a Renewal and Replacement Program, which was the five year Capital Improvement Plan (CIP), which took care of any rehabilitative work,*

replacement work and all capital projects. He stated that the intent of this plan was to maximize the value asset both in terms of capital and operating expenses. He explained that the Environmental Protection Agency (EPA) provided basic guidelines for Management Plans, which included preparing a current state of assets, identifying the level of service, identifying the critical assets, maximizing the life cycle costs and having a long term Funding Plan. He clarified that all of the assets would be in service for 30 to 40 years and close to 100 years for pipe. He said that using those guidelines, an Asset Management Plan was developed and identified 7 compliments. He said that they matched the guidelines; however, it was expanded upon to meet the City's needs. He explained that an inventory of the assets was made and things looked into were the age, current condition, life expectancy, level of service and the critical assets. He stated that this plan was in line with the Strategic Plan.

DIRECTOR CHITEPU explained the Water Treatment Plant life cycle. He spoke about the Water Treatment Plant, the distribution Collection System and the Waste Water Treatment Plant. He explained that the Water Treatment Plant took water from the ground, treated it and sent it to the Distribution System, which was out into the City residences and businesses. He said that once the businesses and homes used the water, it became sewage. He explained that the Collection System collected the sewage through the pipes, manholes, Lift Stations, to the force mains and then to the plant. He noted that the Distribution System pertained to the piping out in the field. He showed an aerial slide of the Water Plant layout. He showed the treatment units, softening units and filters for the Water Plant that was pumped into the storage tanks and then into the Distribution System. He noted that there was a small Wastewater Plant inside the Water Plant that took care of some of the capacity of the Wastewater Plant. He showed the Wastewater Plant, which was on the west side behind the office building, that took care of most of the sewage generated from the City. He showed how the odor was eliminated and structure that provide the primary treatment, which was a critical infrastructure that needed to be addressed. He noted the pumps that pumped 3,000 feet into the ground. Director Chitepu explained that all items were identified and provided an asset identification label. He said that anything over \$100,000 in value was placed on a 15 page inventory list.

DIRECTOR CHITEPU noted that the Distribution and Collection System was everything outside of the plants, and that the service area included Margate and a portion of Coconut Creek. He stated that the Geographic Information System (GIS) was used to map out the piping, which he showed on a slide. He said that there were more than 200 miles of pipe that were displayed. He stated that the age, material type and the size of each of the pipes was identified, as well as the hydrants and the number of valves. He further explained that the sewer was mapped out using the GIS, which indicated another 146 miles of sewer pipe, with close to 3,500 sewer miles. He noted that these were pipes that collected sewage that was sent through the manholes and into the Lift Stations. He added that there were 54 Lift Stations, and that all of the compliments at the Lift Stations were identified, such as the pumps, telemetry units, electrical panels, age and the generators that serviced the Lift Stations when there was no power. He noted that there were 24 portable generators and pumps. He added that the force mains were mapped, and he showed all 54 Lift Stations going back to the Wastewater Treatment Plant. He stated that there were 29 miles of force mains and valves. He said that the total of pipe that was maintained underground was approximately 370 miles.

DIRECTOR CHITEPU explained that after identifying the assets, an inventory of the assets was done. He said that identification of the year installed, service life and the rehabilitation or replacement year was completed. He noted that each of the assets could now be tracked on an ongoing basis. He showed the Distribution Center and showed the

oldest and newest lines, which were then identified for age, material type and the life expectancy. He noted that the older pipes were in the center part of the City and to the south, as well as the South Creek area. He added that newer pipes were in the northern area, such as Carolina and Coral Bay. He explained that some of the pipes had a service life of 55 years; however, that depended on soil conditions. He said that the biggest issue Margate had was the Galvanized Steel mains. He stated that the City had four percent of them, which represented about 8 to 10 miles of piping. He noted that Margate was reaching the end of service life. He showed the level of service currently in the Code, which referred to capacity. He said that when the level of service was developed 20 years ago up until now the issue was whether there was enough capacity to take care of existing customers. He said that there was never a discussion about what would happen if there was a break and people lost water. He explained that now that the infrastructure was getting older and more and more breaks were possible, it was necessary to look into that level of service. He stated that a new level of service was developed so that if a pipe broke no more than 50 homes were without water; therefore, more pipes were needed. He added that the number of valves must be minimized to six that needed to be closed if there was a break. He stated that the national standard of water breaks, which was 11 breaks every 100 miles; however, he wanted to keep it at 10 breaks every 100 miles. He noted that currently it was at 14 breaks every 100 miles, which needed to come down. He stated that the force mains needed more control during a break.

DIRECTOR CHITEPU noted that most of the Water Plant was redone between 2001, and 2004. He said that the Water Plant had a Repair and Replacement Program that handled the day-to-day maintenance requirements and any minor changes needed. He said that there were no major issues with the capacity aspects of the Water Plant. He said that the worst case was if everything went bad and then emergency interconnects would be used. He noted that Margate had interconnects with Coral Springs and with North Lauderdale. He noted that there were two with Pompano Beach; however, they had to be disconnected when the Florida Turnpike was completed. He noted that Margate was in talks with the Coral Springs Implement District (CSID) to connect to their system, as well as Coconut Creek.

DIRECTOR CHITEPU spoke about two new Capital Projects that might be looked into for the future. He stated that one was the Lime Press Facility, and he explained that Lime was the waste product from the Water Plant. He said that the lime was pumped to a pond, dried out and was picked up and taken to the Landfill. He stated that a more systematic plan would allow it to go through a press to remove the water, and then the water could be recycled. He explained that the Magnetic Ion Exchange (MIEX) System was very critical, which looked at two aspects, the color and avoiding boil water issues. He stated that the MIEX System stripped the color organics from the water to prevent interference with the disinfection chemicals and receive a higher level of certification so that the boil water was not needed. He showed an example of Palm Beach County. He noted that Margate's water was not that bad; however, the color could be improved due to complaints. He explained that higher color wells caused more complaints from residents; therefore, more balance was needed.

DIRECTOR CHITEPU stated that the Wastewater Treatment Plant was older; therefore, most of the rehabilitation and replacement issues were being addressed. He noted that one Capital Project that would be a bigger issue. He explained that the Rotating Biological Contactor (RBC) Units took away the bad parts of the sewage to make it clean before pumping out. He noted that they were installed in 1994, and were at the end of their service life. He stated that the biggest challenge was the reliability of those units until replaced. He said that other alternatives were being looked into to determine whether additional capacity could be managed on the smaller plant on the east side; however, it

would be a big challenge with regard to the reliability of what was now in place. He showed what the RBC Units looked and explained that each crane was 120 tons. He said the RBC Units had a shaft in the middle with plastic cups so when sewage came into contact, the air rotated to eliminate the particles that needed to be taken out and then it was treated. He noted that two units were lost recently because the shaft broke and it collapsed. He said that there was no repairing, and that the entire unit must be replaced. He showed what the broken RBC Unit looked like and explained that each unit cost \$250,000. He said that the question was whether to replace the two units for \$500,000 that already had old technology, or to look into other technology. He noted that to replace the all of the RBC Units would cost \$35 to \$50 million dollars. He explained that when the study for replacement was done a couple of years back, the range of replacement was between \$18 million dollars to close to \$80 million dollars; however, after looking into some of the technology, it was determined that it could be managed in the \$35 to \$50 million dollar range.

DIRECTOR CHITEPU mentioned the Distribution Collection System, and explained that before looking into replacement, sustainability must be determined depending on how much time it would take to replace some of the pipe, because there was 370 miles of pipe. He stated that each mile cost about \$250,000 to \$1 million dollars to replace. He explained that some of the utilities already implemented this work to develop a Sustainability Plan where critical points would be identified in the system so the level of service could be maintained. He said that a new level of service would be established and the system would have to meet that level of service now as it existed. He stated that if there were any deficiencies they must be taken care of along with the Replacement Plan. He said that would provide control of the system to meet the level of service and also look into replacement.

DIRECTOR CHITEPU explained that the level of service previously identified was put into hydraulic model; therefore, developing a model for the system. He added that the deficiencies were also identified, such as the need for 179 new valves. He noted that some valves were already in place, but old records did not reflect them; therefore, digging was taking place to determine whether they were there. He stated that approximately 50 percent of the valves had been found, but the new ones might need to be installed. He noted that there was an annual Budget for that purpose.

DIRECTOR CHITEPU further explained that for the new water main, the biggest deficiency found was south of the C14 Canal. He said that there were currently two crossings, but if one crossing broke the entire southern part of the City would not be able to be serviced with the other line. He stated that there were bids on the crossings already, which would be on the Agenda of the next few meetings. He said that it was the Canal Crossing Project.

DIRECTOR CHITEPU mentioned the existing aerial crossings that had never been maintained. He said that they would be rehabilitated and replaced if needed. He added that there was a similar situation with the Sewer Systems. He noted that the City was working on a project at NW 18th Street force main, which would begin in a week or two. He stated that these things were being implemented to provide control of the system right now.

DIRECTOR CHITEPU stated that Margate was not the only City with these problems due to the infrastructure aging. He noted that American Water Works Association (AWWA) came out with a modeling tool to have high level planning to determine how much money the City should be spending per year to make sure it was on top of its system, based on the inputs of age, service area, population, inflation, replacement costs, etc. He noted

that the City must be planning to spend this money every year until 2050. He said that when Margate reviewed the information, it was determined that \$160,000 in 2015, to \$1.6 million dollars per year until 2050, would be needed. He stated that when seeing those numbers, it was determined that Margate was doing alright; however, there were local issues that the model did not indicate. He said that the model was a nationwide tool for everybody, but to identify what needed to be done locally the GIS tools would be used to perform a Water Break Analysis. He explained that all of the water main breaks from 2003, to 2014, were placed in the GIS. He showed a heat map generated by the GIS tool. He explained that the intensity of the color showed that the City had a higher number of breaks in a particular location. He said that the lighter the color, the less number of breaks. He noted that water mains and pipes had been replaced and he showed the difference on the slide. He stated that there were still some areas that needed to be addressed; therefore, a plan was needed. He explained that with the use of the GIS he was able to identify the type of breaks with the different types of pipes. He said that most of the problem was with the galvanized steel pipe, which was rusting away. He stated that some samples around the City were collected and analyzed, which provided for the development of the Replacement Plan for the pipe. He said that the plan was to review each neighborhood. He said that this was the initial analysis and he hoped the City could continue doing this on a 10 year Plan.

DIRECTOR CHITEPU said that the same review was done with the Sewer System. He stated that the big issue with the Sewer System was the infiltration and inflow and was mostly with the clay pipe. He noted that the clay pipe was indicated in green on the slide, which showed in most areas of the City. He stated that the purple pipe was the PVC pipe, which was pretty calm. He explained that the problem with clay pipes was that the joints leaked over time and it cracks. He mentioned that the City had a grant from the State for this program, and that \$500,000 was put in the Budget each year for this program. He further explained that the red portion indicated areas that were already with lime. He said that with the resources the City had, it could continue to be on top of the situation. He stated that the problem areas were now known and some were being replaced; however, a proactive way of addressing other pipes was needed. He explained that the piping replacement was prioritized based on likelihood of things happening, consequences and risk. He noted that the high risk region would take priority. He stated that this tool was being used to identify other areas where there were no existing problems, but might be an issue in the future.

DIRECTOR CHITEPU spoke about the Lift Stations that were getting older. He explained that the Lift Station was a steel can that went 20 feet down with two pumps that were connected to a sewer line to pump out sewage. He said that to service the Lift Stations meant going 20 feet down, which was a big issue due to confined entry, leaks and sewer gases. He noted that it also required two people. He stated that these types of Lift Stations were being replaced with Submersible Pumps, which were operated from the top. He showed a slide of the pump from Station 12, which was located on 66th Avenue. He stated that there were still 10 cans remaining that needed to be replaced. He said that \$500,000 was placed in the Budget every year to continuously replace one or two every year.

DIRECTOR CHITEPU summarized that the challenges for the Distribution Collection System were the color and low pressure in the system, caused by the deteriorated pipe, the inflow and infiltration. He explained that a schedule was needed to address the amount of pipe and the associated costs. He noted that it was important to invest in the right places and not replacing pipes that did not need replacing.

DIRECTOR CHITEPU said that after taking into consideration the analysis, a cost was



estimated for each of the components and put in a continuous 10 year Rolling Plan. He mentioned the prior spreadsheet shown, and noted that 10 years was added, and depending on the replacement and rehabilitation schedule, the cost would fall into that year. He stated that the charts matched the current Budget, and that the plan would manage the assets. He said that the life cycle included the operating costs. He added that there was also an Accounting Budget. He thanked the Commission for approving the Work Order Software, which would identify each of the assets, tag them, and know how much was spent on labor, how much material was spent and the cost for each of the assets. He explained that the spreadsheet indicated all costs for 10 years. He explained the spreadsheet line by line for clarification. He said that the plan was to start the projects in 2021. He said that doing the main project would cost \$55 million dollars, which was in target because currently \$5 to \$6 million per year was spent. He said that the costs were known, but a system was needed for tracking any money left over, etc. He stated that a Financial Model was developed to put in the current and projected revenues, to take out all past and future expenditures, to look into reserves, to look at the funding needs and the 10 year plan. He said that following that any rate adjustments could be made. He explained that once the model was developed, the information was put into financial sufficiency to determine if there was enough money to do the project that was identified in the Asset Management Plan. He noted that a Sufficiency Study was needed to determine the funding, the reserves and whether there was enough. He stated that a small growth of one percent was estimated with the Consumer Price Index (CPI) added at two percent for operating expenses. He said that no changes were made to the transfers that were done on a daily basis. He showed different scenarios and explained that both scenarios showed the revenue requirements and utility revenue. He referred to the first scenario and noted that expenses were going up due to the two percent inflation; however, the revenue was not going up because the rate was flat since 2011. He explained that in 2021, the rates were going down because the bonds would be paid off. He showed what would happen if the rates were indexed for inflation similar to the operating expenses at two percent, and that the City would be in surplus without doing the project in 2021. He referred to scenario two and spoke about how much debt could be kept and could they be managed. He said that scenario two included the project and maintaining the reserves. He said that the chart indicated that there was a shortage of funds to do the \$50 million dollar project. He provided the rate adjustments based on the moral and to address the shortfall of money. He showed the third scenario, which gave the same CPI until 2021, with five percent for three years, which would take care of the 10 year plan. He stated that a rate comparison was performed with neighboring utilities, and that Margate was the second lowest in the area and well below the average. He showed the estimated monthly rates for 6,000 gallons a month usage with a two percent increase, assuming the CPI was at two percent, and five percent from 2022, to 2024.

VICE MAYOR RUZZANO questioned whether the City would go back to decreasing the rate after it was funded.

DIRECTOR CHITEPU said that it would have to be re-analyzed to determine if it was sustainable or not. He stated that if the operating expenses were not sustainable, the rate would have to be maintained. He noted that particularly it was maintained because the expenses were at that level at that time. He said that would continue until the extra debt was paid off, and that at that time, another rate analysis would be needed. He clarified that there would be no rate change now.

DIRECTOR CHITEPU showed the rate adjustments other Cities had. He noted that Coral Springs Improvement District (CSID) and Tamarac had no adjustments. He added that North Springs Improvement District (NSID) had one more increase next year. He noted that Coconut Creek and North Lauderdale had five percent or CPI, whichever was greater.

He noted that according to North Lauderdale Staff, that had not been used, though it was an automatic in their rate ordinance. He said that Coconut Creek did their adjustment in 2013, and North Lauderdale did it in 2014, but not in 2015. He said that Margate would remain second lowest in the area until 2020 to 2021, and after hitting the five percent rate, it would increase, providing the other Cities did not change their rate.

DIRECTOR CHITEPU stated that he was looking for support to continue investing in the infrastructure, implementing the Asset Management Plan and indexing the rates with CPI effective 2016. He said that the five percent was not being considered now, but may incur in the future. He stated that when the technology needed and actual cost, the rates could be looked into again to see if any rate adjustments were needed. He said that to handle the expenses on a daily basis now, he was requesting indexing the rates to CPI. He noted that if not adjusted, the extra money needed would come out of reserves. He stated that it would be about \$1.20 every year going forward until 2021.

VICE MAYOR RUZZANO questioned whether the City was selling the lime.

DIRECTOR CHITEPU said that the Lime Press was being looked into because of the water content. He said that draining it out of the pond was not an efficient way to remove it. He said that if it was drained out, there would be potential for putting it on the market; however, right now there was not a big market for it so most of it goes into the landfill. He noted that the City only paid for transportation.

VICE MAYOR RUZZANO said that when looking into the plans for the future, other plants such as NSID and CSID were looking into Reverse Osmosis Water Plants. He asked whether Margate was considering that.

DIRECTOR CHITEPU replied that he did not want to second guess decisions made in 2001, and 2003, when rehabilitating the entire Water Plant. He said that money was invested into it and Lime Softening was chosen at that time because Reverse Osmosis was expensive.

VICE MAYOR RUZZANO questioned whether it was not the way to go in the long run.

DIRECTOR CHITEPU agreed, and said that wished there was a Reverse Osmosis Plan; however, all requirements and regulations were being met. He noted that the only issue was currently the color, which would not be a problem with a Reverse Osmosis Plan because it stripped all of the organics. He said that with Lime Softening, more money may need to be invested when trying to accommodate upcoming regulations. He stated that there were many Cities with Lime Softeners. He explained that most Cities along the coast had an Reverse Osmosis Plan because they could not get water from Biscayne, which was too salty.

VICE MAYOR RUZZANO mentioned prior discussions about doing a Water Use Project to the golf courses to obtain a permit. He questioned whether the existing permits were sufficient for the future City Center Development.

DIRECTOR CHITEPU said, "Yes" and explained that when the Transit Oriented Corridor (TOC) was approved, the calculation was made and the Water Analysis was done.

VICE MAYOR RUZZANO asked whether the Reuse Project was done.

DIRECTOR CHITEPU said that was not included in the 10 years that were looked at, because there was no need for it in the next 10 years; however, it might have to be

*relooked at in the future if a need arose.*

*COMMISSIONER BRYAN asked whether the return on investment was calculated by a national average and how it was determined.*

*DIRECTOR CHITEPU said that Staff was not Accountants or Finance people, but was looking at whether too much was being spent on this when compared to replacing. He said that if spending \$1 million dollars for maintenance on something that costs \$1.5 million dollars, he would rather just replace it.*

*COMMISSIONER TALERICO spoke about the issue with locating the lines with the maps, and he questioned whether all the line locations were known now.*

*DIRECTOR CHITEPU agreed and explained that 85 percent of the maps were done. He said that all information from the As-builts, were placed in the GIS. He said that the lines were identified about 85 to 90 percent completion.*

*COMMISSIONER TALERICO asked how many wells were used.*

*DIRECTOR CHITEPU said that they used 12 wells.*

*COMMISSIONER TALERICO asked for the well locations.*

*DIRECTOR CHITEPU clarified that they were in the Water Plant, Wastewater Plant and in the Vincent Park area.*

*COMMISSIONER TALERICO asked whether maintenance had been addressed and the water supply was good.*

*DIRECTOR CHITEPU agreed.*

*MAYOR SIMONE mentioned the two large apartment complexes coming and asked about charging an assessment.*

*DIRECTOR CHITEPU said that was already paid in Impact Fees.*

*VICE MAYOR RUZZANO asked whether the fee could be added to new businesses coming in.*

*DIRECTOR CHITEPU stated that everybody, including the new City Center, would be required to pay Impact Fees as long as it was for a new capacity.*

*COMMISSIONER PEERMAN asked whether this could be started in January of 2016.*

*DIRECTOR CHITEPU said that it would begin in October of 2016. He said that if there was a consensus he could bring back an ordinance.*

*The consensus carried by 5-0.*

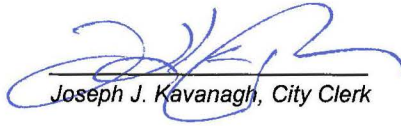
## **ADJOURNMENT**

*There being no further business, the meeting adjourned at 6:57 p.m.*

*Respectfully submitted,*

*Transcribed by Carol DiLorenzo*



  
Joseph J. Kavanagh, City Clerk

Date: 8/27/15