

**City of Coral Gables
Virtual Commission Meeting
June 9, 2020
405 Biltmore Way, Coral Gables, FL**

City Commission

Mayor Raul Valdes-Fauli

Vice Mayor Vince Lago

Commissioner Jorge Fors

Commissioner Pat Keon

Commissioner Michael Mena

City Staff

City Manager, Peter Iglesias

City Attorney, Miriam Ramos

City Clerk, Billy Urquia

Assistant City Manager, Ed Santamaria

Public Speaker(s)

Agenda Item G-4

A discussion regarding recent acute flooding on certain streets in North Gables (including Asturia Avenue, Madeira Avenue, Monterey Street, Castile Avenue) (Sponsored by Commissioner Fors and Vice Mayor Lago)

Commissioner Fors: Mayor, this is Commissioner Fors. I believe we skipped G-4 on the City Commission items. We don't have to go to it next, but I wanted to make a note that we skipped it.

Mayor Valdes-Fauli: I'm sorry, but I don't have a G-4.

Commissioner Fors: I think it was added on.

City Attorney Ramos: G-4 is a discussion regarding the recent acute flooding on certain streets in the North Gables.

Mayor Valdes-Fauli: I'm sorry, I didn't have it on my agenda. Alright. We can go to that now.

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Commissioner Fors: I sponsored this item together with Vice Mayor Lago. I know that we all know that we experienced record flooding. I think it was 17 and a half inches the week of May 24th, and I think it went on through May 27th. There were about four streets, although I have no doubt there may have been others that experience the acute flooding, perhaps worse than we saw in any other area. That was Madeira, Monterey, Castile and Asturia. I personally drove around that evening where the flooding was worst as well as that morning after where in those locations there was still standing water. I've discussed it with our Director of Public Works and our City Manager as well. You know, I think that the general explanation is a combination of the record rainfall with the topography in the area. And the fact that those are, from what I understand, low-lying areas. In my opinion though, the flooding that those particular very discreet areas experience, because in these particular areas, there was extreme flooding in a very small area and then it was dry as the desert, as the City Manager described it, just a few yards north and south or east and west of them. What I wanted to sort of explore with Public Works is understanding that there's a deadly combination of record rainfall and a low-lying area of what can be done in those areas to avoid flooding at least to that degree. I'm obviously not an expert in red water drainage, but to me, and I have a pretty high bar of tolerance when it comes to flooding and understanding that when you do experience high volume and rainfall it is going to take a while to drain, but to me those four areas, which are very small areas, presented a condition that's unacceptable for us to sit back and not do anything about in the future, if there's something that can feasibly be done about it.

Mayor Valdes-Fauli: That's the key, if there's something that can be done about it.

Commissioner Fors: Right.

City Manager Iglesias: Commissioner Fors, I will let our Public Works Director completely answer this question. However, I want to say that I was, I met with met with Lee Hefty, the Director of DERM concerning this event, and what happened was a water table that DERM controls and also part of it is controlled by South Florida Water Management District, and we went from a condition of drought to a condition of flood in a matter of four days. Its 17 and-a-half inches of water, putting about 8 inches of water on Tuesday. So, they are tasked with was maintaining a certain height of the water table. We have salt water intrusion. Salt water weighs more than fresh water. So, it tends to permeate into the ground and displaced fresh water. So, they have a tough job because they have to maintain a level high enough to prevent salt water intrusion at the same time and deal with these kinds of events. And they had a difficult time dealing with this, because it happened so quickly and...[Inaudible]...the information I received from the Director of DERM. Our water comes from well fields from out west and their job is to protect both for that salt water intrusion. So, it's a very difficult balance approach that you have to do, and it basically was very difficult when you have that much water happening in that short of time, especially when we received about 8 inches of water on Tuesday, which was just a proverbial downpour. So, a lot of these areas are low-lying areas. They're not getting water from our right-of-way, they're getting water from everywhere. And with that I just wanted to let you all know how DERM is dealing with it and they tried to deal with it, but not quite as successful as they wished, because many areas of the county were also flooded

and flooded severely. We truly don't -- those areas are not low-lying in the sense of coastal zones. They are low-lying in the sense of ponding areas as FEMA classifies areas as storm surge zones, which other areas on the east and the interior areas are ponding zones. So that's what those are. when our drainage system -- our soil acts as a sponge and that's where we drain the water to and think of it as a saturated sponge that it absorbs no more water and we are basically trying to drain subsurface water and there's no place to drain it to. So, with that I'll let our Public Works Director continue.

Assistant City Manager Santamaria: Peter, Peter with your permission. I'd like to introduce Hermes.

City Manager Iglesias: Yes please.

Assistant City Manager Santamaria: With some background data and probably some of the items that we've already discussed, but...[Inaudible]...rain event brought over approximately 18 inches of rain to our area. This essentially constituted a 25-year.... we last experienced in '99. During a 24-hour period, as Peter mentioned, Tuesday overnight into Wednesday, 8 inches of rain fell, and this was a peak of the storm. So, this extreme volume of water arrived in soils that Peter also already mentioned, that we're already so much saturated from rains in the previous... Our drainage systems are mostly relying on the poorest lime rock formation that exist underground throughout the city. Our systems typically do an excellent job. And in this case, so with the exception of the low-lying areas, it functioned. This lime rock acts like a sponge and absorbs rain and moves it away through hydrogeological. Unfortunately, as a result of all the rain our sponge was fully saturated and the water had nowhere to go, but to rise on the surface. This case our drainage systems were overwhelmed and low-lying areas where the water concentrates... Given the volume and the saturated soils, topography rules and drainage systems will only work when brown water subside. In the recent case this took several days. To give an answer to Commissioner Fors' question. Unfortunately, there is very little that we can do in these cases giving conditions. We can improve drainage function to handle more frequent regular storms, which might be a problem now in those low-lying areas, but once the groundwater research charged that water really has nowhere to go. At this time, I'd like to turn it over to Director Diaz for a more focused report discussing the specific locations identified on this item.

Public Works Director Diaz: Thank you and good morning. Hermes Diaz, Public Works Director. We started looking at all these locations. We received a little bit over a hundred reports citywide, most of which dried out by the next morning. These specific locations one of the things that we found, as the Manager mention, that area is anywhere from one to four feet below the surrounding areas. So, once it's all become saturated the water runs downhill and it pulls out the bottom. So, we're going to be looking at every single one whose location, we've done so already. There may be certain things that we can do that might have a limited impact, such as trying to keep the water in the high areas and keep it from going downhill, but we're going to do that, for example, the roads. We cannot control the water that's running from people's backyards. So, this is something that we're looking at, not only this location, citywide is something that we're be analyzing. You know, all these areas that we receive reports on, and any improvements are necessary to mention. Once it's all saturated the

water has nowhere to go. So, there's no mechanism for us to even pump the water from the water. It's one of the things that we kept getting calls for, we send the vacuum truck out there. We had a vacuum truck on Madera until ten o'clock one day, and eventually the water was flowing back up as fast as we were pumping it out. So eventually you get into a situation where you are just percolating the water, because it goes back on the ground...back up. It takes some time for the water to percolate into our waterways. But it's something that we're definitely looking at every single location. And like I said, one of the things that we're going to look at is trying to keep water from rolling downhill at least in the areas that we can control to a certain extent, but unfortunately, when you get an event of this nature, some flooding will pour in some areas and that's something that it's unavoidable. We may get a little better in some areas. We may be able to...[Inaudible]...that's something that we are working on.

City Manager Iglesias: Let me say that what Director Diaz said, there is truly -- he's talking about intercepting water before you get there and that will help with a low event storms a little bit. However, once the storm hits and the soil saturates, the water seeks its own level and basically that water elevation is about that area, except you can't see it because your ground in other houses in all areas, the ground is above that elevation and that elevation...[Inaudible]...so it creates that ponding condition. So that water is not coming from a waterway, that water is coming from everywhere and it's a ground water effect that that we truly have no place to put that water until the water table comes down through natural flow into the Atlantic into the bay or through some type of conduit such as a canal, a river, and so forth. And so, that's something for these low frequency events very difficult and we truly, there's not much that we can do intercepting the water is something that will help for your normal events. And as the Director is going to be looking at, however for these 25-year events, it's very difficult to deal with them and we truly cannot deal with, we don't have a way of dealing with these kinds of events, other than from the water back into our waterway, which is a tremendous task. In addition to that, it's an issue as far as water quality, and so it's an issue with DERM, because they deal with, not only the water quantity aspect, but quality aspect. And so, it's very difficult to deal with when we have these 25-year events like we had in 1999.

Commissioner Fors: Thank you. Hermes, I appreciate the report and I appreciate that you're continuing to look into these specific areas and I'll on my own follow up with you regarding you know, what would determine can be done if anything? I do believe that if we have special conditions or special scenario in these areas, for instance, the elevation that perhaps special conditions offer special measures in those particular areas, understanding that we're not going to be able to completely prevent ponding when we experience high volume, but I appreciate you working on and I'll continue to follow up with you on it, as I'm sure other Commissioners might. I met with several residents on Madeira and I believe Vice Mayor Lago met with them already, we'll also be meeting with the residents of Castile. I don't want to pressure anybody to do something that's going to be futile and it's just to appease myself or any residents. But if there is anything that could be done in these areas that suffered acute flooding then that's really what I'm looking for here. Thank you.

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Mayor Valdes-Fauli: Thank you Commissioner. Let's go on to...

Commissioner Keon: Can I add one please.

Mayor Valdes-Fauli: Yes please.

Commissioner Keon: In addition to those residential streets that flooded, the 1600 Block of Ponce and Galiano flooded to the point that there was water above the sidewalk and flooded the storefront. At least on these streets, as bad as it is, the homes weren't flooded. The yards were flooded, and it made it difficult for people to come and go and we should look at what we can do to fix it. But I'm also concerned about the drainage on Ponce. It's my understanding it's a relatively small drainage pipe that was put in, I think, 1927, is that what you told me Peter?

City Manager Iglesias: It's a drainage trench from 1927.

Commissioner Keon: Yes, it's a pretty old drainage trench, although...[Inaudible]...that drainage in our downtown...[Inaudible]...you really need to take a look at that too, because I think I was told that that's also the overflow for the Mile, that trench, so that's a water project that we really need to take a look at. So maybe you can follow up on that one as well as the residential flooding...

City Manager Iglesias: We are using the overflow systems for the Mile, the...trench which is a DOT trench...we are using the trench on Ponce, the trench on Galiano, which are quite old. The trench on Ponce, I believe is 27 and the Galiano trench is probably in the 30's. So, this is something that I've discussed with the Assistant City Manager and Public Works Director by looking at some drainage equipment in that area to try to move that water. There is nothing we can do when the water saturates. We are trying to spin it around quicker and try to avoid that area. That area on Ponce also happens to be a low area. We have something that our Zoning Code has done that's excellent. The Zoning Code requires homes to be 16 inches above the road, which truly protects the...[Inaudible]...getting water inside. You cannot do that in commercial areas, because you must enter the building from the sidewalk. So, you can't raise it without creating a problem, an egress problem. So that is something that we talked about. It's a project that going to require some major funding in order to do and it's something that I believe that we will be looking into and coming back to the Commission on. But those systems are quite old, and we've had too much development and so much impervious area added, and so forth, that it's something that we need to look at.

Mayor Valdes-Fauli: Thank you very much Peter. Any other comments?

Assistant City Manager Santamaria: Thank you very much any other comments. I'd like to like to note that one of our problem areas, one of our historic problem areas, Miracle Mile, did very, very well through all this. We didn't receive any complaints about drainage on the Mile after the storm. And I know that there was a lot of concern when the project was conceived and designed and constructed about the curbless design, and we can see that it worked, in this case. If it's a 50-year storm, who knows, but I think we feel pretty comfortable and it can handle 25 years.

Mayor Valdes-Fauli: Thank you Ed. Thank you very much.

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