

**City of Coral Gables City Commission Meeting**  
**Agenda Item I-2**  
**February 23, 2021**  
**City Commission Chambers**  
**405 Biltmore Way, Coral Gables, FL**

**City Commission**

**Mayor Raul Valdes-Fauli**  
**Vice Mayor Vince Lago**  
**Commissioner Pat Keon**  
**Commissioner Michael Mena**  
**Commissioner Jorge Fors**

**City Staff**

**City Manager, Peter Iglesias**  
**City Attorney, Miriam Ramos**  
**City Clerk, Billy Urquia**  
**Assistant City Manager, Ed Santamaria**  
**Public Works Director, Hermes Diaz**

**Public Speaker(s)**

**Emilio Lopez – SOP Technologies**

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Agenda Item I-2 [Start: 10:04 a.m.]

Update on stormwater filters and purification program for the Riviera outfall upstream drainage system.

Mayor Valdes-Fauli: Now we go to I-2, update on stormwater filters, Vice Mayor Lago, I-2.

Vice Mayor Lago: Thank you Mayor, I appreciate that. I wanted to see if our ACM, yes, he's here like always, if our ACM could give us a quick update in regard to where we stand on I-2. I know that we've been, first of all I want to thank the Public Works is here also. First of all, I want to commend staff, staff deserves a lot of the credit, all the Public Works team, the City Manager's team, Matt Anderson's team, everyone, you've worked very hard, along with the consultant that was generous enough to give us a lot of their time and they also gave in-kind contributions for the outfall Riviera, but you deserve all the credit here today, you've worked very hard to get where

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we're at today and now we have to make some tough decisions, will we move forward or if we don't move forward. Again, take it away. Thank you very much, by the way.

Assistant City Manager Santamaria: Good morning Mr. Mayor, members of the Commission, Ed Santamaria, Assistant City Manager Operations and Infrastructure. Regarding the item at hand, I-2, is it I-1 or I-2?

Vice Mayor Lago: I-2.

Assistant City Manager Santamaria: I-2 – Director Diaz will make a brief presentation and we will be available to answer any questions that may come up.

Public Works Director Diaz: Good morning, Hermes Diaz, Public Works Director. So, I'm going to provide a brief update on what's going on so far with our water quality efforts relative to the baskets and grates that we will be working on at your direction for the last few months. A little bit of a summary, we've gone over this before, but just as a refresher. The Riviera outfall is the city's largest direct stormwater discharge to the Coral Gables waterway. Its got 66 inches at its narrowest; section that outfall alone probably is responsible for easily over half the entire discharge over all the outfalls into the waterways just by volume. It discharges a significant portion of downtown Coral Gables, including sections of LeJeune, Ponce de Leon, and a lot of the adjacent neighborhoods. So, at your direction, we engaged with SOP Technologies in order to install a number of grates and baskets, along that system. Most of them are installed along Ponce de Leon or adjacent to it. Seven of those grates have been installed as of last week.

Vice Mayor Lago: By the way, can I just interrupt you?

Public Works Director Diaz: Sure.

Vice Mayor Lago: Again, I want to give credit where credit is due. When I brought this forward with the support of my colleagues on the Commission, we talked about this for a few months. You guys met the deadline, you guys really worked hard. I know you have a lot on your plate right now, so this is another opportunity to say thank you, thank you for listening to the Commission. We are moving in the right direction. By the way, not only are we moving in the right direction, I think we are moving leaps and bounds ahead of what other cities are doing and what we are doing here in regards to reviewing water quality, studying water quality and also, we are not only just studying, because people are tired of studying, studying, studying, here we have implementation, which is going to see real benefits for our community, and not only Coral Gables, but throughout South Florida, because the waterways belong to everybody.

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Public Works Director Diaz: So, we installed so far, with SOP Technologies, seven grates along Ponce de Leon Boulevard or some of the adjacent streets. There are still three baskets that are under publication and those should be done some time in March, probably before the end of March, they should all be installed. The idea, during the rainy season is for us to estimate how much debris is collected that will have otherwise fallen into the waterway. We weighed it, we measured it, and just to come up with an idea of what the number would be, and at the same time for us to look into the operational challenges, if any, of installation, is it holding up? - is it being damaged? – is it creating any other potential issues, if any at all, as far as operations. And basically, for this installation we did a number of ten in total, and on average its about \$336 per grate and \$876 per basket, and that was the cost. Moving onto the next one. We also are in talks with SDR Mechanical and in fact, we worked with them, they donated a smart sponge skimmer, as well as a boom that was installed at Riviera outfall. We installed that on September 11<sup>th</sup> of 2020. They, at the time, was the presentation done, the boom – I’m sorry. So, the boom showed that the sponge was effective in removing hydro carbons for the waterways and one of the things we are going to be doing now, we are going to be replacing that boom with another one that actually also takes care of nutrients and we are going to be replacing that now soon with another one, and there will be some testing involved that hopefully will show us how improved the conditions. And one of the things that I want to show here, the picture is a sample of the proposed installation for baskets at a number of inlets. The baskets will be collecting water, the sponge will address the nutrients, and one of the things that’s being discussed, a potential extension to the...with SG Mechanical, which is under evaluation, to install a number of baskets with the smart media. Based on our early conversations with them, there was a cost per basket of \$1000 per basket, but that did not include installation, and the media specifically will have to be replaced anywhere between six months to two years and the cost of that replacement will be between \$60 to \$120 per basket, it all depends upon the nutrient load that are coming in.

Vice Mayor Lago: Can you also discuss the issue, I heard from staff, from the ACM, and from the CM, the concern about potentially clogging and head pressure concerns, and I want to put that on the record to make sure that – I invited the individuals who have been, again, donating their time and their money and their insight, I want to make sure we address those issues on the record, so that you feel comfortable.

Public Works Director Diaz: Absolutely. So, we have in the past, before my time in the city, there was some kind of a program, they actually put a number of baskets in some areas, I want to say Coco Plum, and one of the things we ended up having to have them removed, because what was happening is that they were getting clogged and filled way too quickly, and we really didn’t have the staffing to go out there and clean them as regularly as it was necessary for that to be maintained

correctly. It was actually causing flooding. So, one of the things that we want to make sure before we proceed with this installation that this doesn't happen.

Vice Mayor Lago: You're right, you're completely right, and I think it's a major concern and we need to address them, to make sure we address them.

Public Works Director Diaz: The other issue is, and this one specifically deals with the baskets from operations. There are two ways to go about this. You can put an insert in every basket, or you can put a gigantic vault, either one or two, obviously you have a lower number of pictures to address. It's a lot easier for maintenances purposes, but the only concern, and this is some of the stuff that unfortunately will have to be analyzed and looked at. Anytime you introduce any kind of obstruction into a system, in this case it would be a sponge or a medium that is getting the flow through, you are going to have an impact into the velocity running through which inevitably is going to reduce the ability of your system.

Vice Mayor Lago: And could result in a catastrophic failure and that's a concern, like I talked to the ACM about.

Public Works Director Diaz: So those are things that they need to be looked at holistically as part of a larger, for example, this system is very large, its over 300 acres. So if that's the route we are eventually going to go, this implementation would have to be part of a larger discussion with the entire system that needs to be analyzed how much flow is running through that pipe, requires a bypass, what are the head losses into the system and generally speaking, its not an issue about the losses at that specific location, it's what happens a mile upstream that's when you usually see...

Vice Mayor Lago: The failure.

Public Works Director Diaz: Exactly, exactly. So those are the things that we need to make sure that we are fully aware of before we go ahead and move forward with any kind of full implementation. Want to make sure that we are addressing the problem, but not causing another one.

Vice Mayor Lago: When you say full implementation, I think what we are discussing here is, we are still in a very, very early stage.

Public Works Director Diaz: Right.

Vice Mayor Lago: We are not rolling this out throughout the entire city, it would just be in a handful of locations to have two different testing opportunities, testing the water coming in and testing the water coming out. And...[inaudible].

Commissioner Keon: Can you explain what a basket is? I'm having trouble following you. What is the basket and what is the grate? Where does the basket go?

Public Works Director Diaz: Those baskets get inserted on the catch basin themselves.

Commissioner Keon: Okay.

Public Works Director Diaz: So, the hole around will have a surface area where the water goes in the overflow out of the drain and that's how the regular flow of water was going. The sponge at the bottom is actually the bulk of your first flush of your – your floor is going to go through that, that will get filtered as it goes down, and the flow is so much higher than the filter can handle it, its going to overflow on the sides.

Commissioner Keon: So that's in all the drain outlet along the street that eventually go into the drainage system. So those are all along the streets and along the curbs where there are, where the water flows into, as it goes into the stormwater system that is underground. So, this is all at those sites.

Public Works Director Diaz: Right. So, for a system like this to be effective, we looked at everything and the decision where to be made to move forward, you have to put one of those things at every single inlet in the system. And just to give you an idea, the Ponce Boulevard drainage system has probably somewhere between 500 to 600 inlets alone.

Commissioner Keon: 500 to 600 inlets.

Public Works Director Diaz: Yes. I would say somewhere between 500 to 600.

City Manager Iglesias: The effectiveness of the system is only for positive systems. Systems that go into a French drain are filtered through the ground itself.

Vice Mayor Lago: The gravel.

City Manager Iglesias: We have a major positive system along Ponce de Leon Boulevard, which goes south, it crosses the industrial section, LeJeune Road and empties into the Riviera Waterway,

and those areas that concern me are the areas in downtown which are all pervious. You've got asphalt and you've got sidewalk, so if these systems do not work, the water has no place to go except up, and into the businesses, so it's a big concern. Also, there is another – I think we should have the state look at that outfall also, because LeJeune Road drains into that outfall, all the way down from 7<sup>th</sup> Street, comes south, goes across the Coral Gables field and empties right there. So, we have a lot of pollutants coming in from LeJeune Road and all the drainage that gets to that LeJeune Road area.

Vice Mayor Lago: When you look at this example there is by-pass capabilities already available on the system.

City Manager Iglesias: We pose at the top for by-pass, but we need to look at that, we need to address that, because not the volume will go up over the sidewalk and into the businesses so that's what we need to really ascertain.

Vice Mayor Lago: And I agree with your concerns about LeJeune. Like I mentioned before, all this water, all these hydro carbons that are coming off the surface of the asphalt that are being caught, like for example, we just had a very large rainy moment last week, where it rained for about 24 hours, maybe 48 hours it rained significantly. If you look at some of the social media accounts like Sanded for the Sea, Miami Waterkeepers, you saw the amount of hydro carbons that were being dumped into the bay, because again, that's their safety valve, just dump it into the bay when there is just too much water, to avoid, like you said, flooding in the neighborhoods and flooding in the businesses. That's a standard operating procedure. If you look at the amount of, you can see the plume, the plume of oil and gas that's on the surface of the water. Again, that's unacceptable. Again, that's something that's going to take billions of dollars to resolve, but I think we need to figure out, and I think we are doing the right things, we are taking positive steps, we're leading, this is what's important. And I want to commend the Commission and the Mayor for really leading on this effort. We need to find a way to implement a handful of these products, study them for a few months, and actually have the data to show that its actually working. That the smart sponge is absorbing the hydrocarbons, so the water coming in, excuse me, the water leaving the system is less toxic than the water that's going in. That would be my plan, obviously, depending on, we have to talk about money now, because money is key, and there is not an over abundance of money, but I think that this type of investment is important because it continues pushing the city's agenda of, again, being stewards of the environment.

Mayor Valdes-Fauli: Thank you very much Commissioner.

City Clerk Urquia: Mr. Mayor, we have Emilio Lopez from SOP Technologies is on Zoom, he wanted to make a couple of comments.

Mayor Valdes-Fauli: I can't hear you. What?

City Clerk Urquia: Mr. Emilio Lopez from SOP Technologies, he partnered with Public Works on this, and is on Zoom. He wanted to make a couple of comments.

Vice Mayor Lago: But I also wanted to just finish off with the ACM or the Director or the CM, because there was some cost associated with this that are pretty significant. I want to make sure that we are online when we move forward and what's our plan moving forward.

Mayor Valdes-Fauli: Let's hear from...

Mr. Lopez: Thank you. Thank you for the opportunity. Just wanted to quickly say that the concerns regarding potential clogging of any system that's implemented through screen debris that's going from the roadway through the pipes and out into the waterways, that's a legitimate concern. So, I just wanted you to know that we are out there with the Public Works staff, especially the maintenance teams. This is something that we talk to them about, and in fact, this coming Thursday at 1 p.m., a meeting in the field with the staff, not only to talk about ways that the debris that's in front of the stormwater screens can be quantified, in terms of helping to know how much that represents in nutrient load reduction of phosphorous reduction into the system that we're talking about, but also can talk about the maintenance. So, they can keep an eye on things to make sure that we don't have these failures that we've been discussing. So just wanted to say that the coordination is not only with my team in terms of installing the products, but also throughout the whole process, going out there in the fields several times to make sure that everybody, from the person making the decisions at the budgetary level, to the person maintaining things on the streets, its smooth and everything is coordinated. Thank you.

Mayor Valdes-Fauli: Thank you very much sir. Let's move on.

Commissioner Mena: I have some questions still about what direction this is going because of the cost associated with it and some of the questions about, as we just discussed, the impact on flooding and things of that nature. You know, this Commission has been in favor of these types of projects regularly, but we also want to be cost conscious and make sure that we're comfortable with whatever consequences or unintended consequences there could be before committing to any price whatsoever, really, but certainly one that's on the high side, it seems, so what's the plan moving forward?

Assistant City Manager Santamaria: We have two separate vendors involved in this; one is SOP and the other one is STR Mechanical, and so there are two separate initiatives, although they are related. Number one, are the physical barriers, the screens at the inlet, the baskets at the inlet. Number two, there is a filtration media attached to the mechanical. They did provide a proposal to us yesterday. I know that they are in the room, if they want to talk about their proposal, I'm more than happy to yield the floor.

Commissioner Mena: Okay.

Speaker: Good morning everyone and thank you again for your time. The first time we presented the results of our project in Riviera, we brought our technical person to talk about the sponge and now is our turn to put this in layman's terms. We installed the sponge and we were able to capture the hydrocarbons at Riviera, so it worked. Now, this sponge can be designed in different flavors, as my partner calls it, we can have the sponge designed to pick up and absorb the hydrocarbons, or bacteria, or whatever chemicals, so we have a wide variety of products, but we're not only taking care of the trash and the debris, but we are also purifying our stormwater, and that's what we want to present here. That structure that you saw, that insert that is going in each of the structures have, like, let's call it colander on top, so all the debris and the trash are being captured there and then the water flows through it and gets purified with the...So that's the whole concept of our idea.

Mr. Lopez: Thank you, that's a good explanation. I just want to thank you for the opportunity to be here and follow up to the pilot program that we carried out last year at the Riviera outfall. I think that, I feel encouraged by the Council taking positive steps in addressing this issue. As the Assistant City Manager explained to you, the Public Works Department is testing different technologies to see how they address the different concerns in terms of the ability to reduce nutrients and pollutants, and also make sure that we don't create another problem with respect to flooding. We are here to tell you that the smart sponge is a proven technology. We have over 35,000 installations in 15 different countries, but we feel confident that we can address the issue of flooding by design we have a by-pass system that will prevent the system from clogging and/or causing flooding. I think that what we are proposing is to take the next step to install approximately ten catch basin inserts to demonstrate to the Public Works Department and to the Commission that the system doesn't cause any problems, rather it will be a positive step in helping the city treat stormwater. Over the last 40-50 years, stormwater systems have been focused on drainage from abeyance capacity to prevent flooding at the expense of our environment. And so, I think that, again, to wrap it up, we are thankful for the opportunity to work with the City of Coral Gables to pilot this...and to demonstrate that we have the technology in place today to address the concerns

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of flooding, but also to purify stormwater, to make sure that the water that gets to the bay is fishable and swimmable. So, thank you for the opportunity.

Mayor Valdes-Fauli: Thank you, very good job. Mr. Santamaria let's conclude.

Assistant City Manager Santamaria: Yes Mr. Mayor. So, we are looking to the Commission to provide us direction. What SDR Mechanical did not mention is that there is a considerable cost to what they are proposing, its to the tune of \$72,000 a year, and obviously, I think at this point in time we need to look at things in two ways, whether its something that we can work with in the budget.

Vice Mayor Lago: \$72,000.

Assistant City Manager Santamaria: Per inlet, per inlet.

Commissioner Mena: Per year.

Assistant City Manager Santamaria: Per year – and so, I think its time, I'm sorry, go ahead.

Unidentified Speaker: [Inaudible]

Assistant City Manager Santamaria: The next...

Vice Mayor Lago: The ten – the proposed ten.

Assistant City Manager Santamaria: Per proposed ten – And also, we need to review this, in terms of any procurement issues that we might have. We just received a proposal yesterday. So, we would like the Commission to provide us direction as to how to proceed. One thing we need to be careful of is that we are not entering into an arrangement where we are paying for someone's research and development. We have to be good stewards to the public money.

Vice Mayor Lago: ACM, you know that's never the case, we never go out on a limb like that and do that, at least I haven't done it since we've been here for eight years. Now the \$72,000 is a significant amount of money, especially now during Covid, maybe we don't need to do ten, maybe we can do five, maybe we can do four, but I think its an opportunity that we should explore and I would like to have Mr. Manager, the team have a discussion with my colleagues on the Commission over the next two weeks. Discuss the procurement procedure and bring it back, even

if its peered back to see if there is any appetite on the Commission to discuss it. If my colleagues have no interest in doing that because, again, the cost is too much, it is what it is.

City Manager Iglesias: Vice Mayor, I think it would be good for us to allow us a couple of weeks to actually look at this proposal. There are some technical issues here involved too, and that is doing individual grates versus doing system-wide product. For instance, when Coco Plum, we have grates that have a pipe that outflow directly into the bay, on Ponce we have everything going to a Ponce trench that goes south and into the waterway. So, there might be a solution to look at an overall system that takes care of LeJeune Road and our trench there. So, I think we'd like to analyze that because there is a catch basin by catch basin approach, but the way that the Ponce trench is and how LeJeune Road has been designed, which is basically as a hydraulic conduit going all the way south into the waterway. There may be a possibility of capturing the water of cleaner water at the end instead of an inlet by inlet procedure that is very expensive and also very, very expensive from a maintenance perspective. So, we'd like to look at these alternatives with the team and look at that, because we do have some unusual circumstances, maybe there is money to be saved by applying unique solutions to unique problems.

Vice Mayor Lago: And by the way, and I agree with you on that point, in my conversations with them, Key Biscayne is moving forward also, in a very similar system, and there are also grant opportunities, Key Biscayne is moving forward with a grant opportunity. So, I'm flexible and I understand financially where we stand right now, we are trying to be as thoughtful and careful as possible. But I'd like to see something come back before the Commission. I don't want it to just be caught in reviewing and studying. I think this is something important to reanalyze, and also be able to provide some data to show, listen, this works, so enough studies at the county and state level and let's move forward with some sort of holistic approach that will address our concerns with hydro carbons and organics, because this is not the City of Coral Gables fault. I think we've all come to the understanding that this is coming from throughout Miami-Dade County and the entire State of Florida.

Mayor Valdes-Fauli: Thank you very much. Thank you very much and Mr. City Manager you have your marching orders and thank you for bringing this issue.

Vice Mayor Lago: Can she just say one last thing, she wanted to say.

Mayor Valdes-Fauli: One last thing, please.

Vice Mayor Lago: Thank you.

Mayor Valdes-Fauli: One last thing.

Speaker: [Inaudible]...with not only we are proposing these as one of the options, but we also have the boom and we also have in the five solutions, which is a very good approach to the treatment, the stormwater treatment.

City Manager Iglesias: In our city we probably will be requiring both types of solutions to optimize our system.

Mayor Valdes-Fauli: We look forward to your report. Thank you very much Vice Mayor for bringing this. Let's go on to the next.

Vice Mayor Lago: Can the Manager meet with them, maybe in the next two weeks.

Mayor Valdes-Fauli: Yes.

City Manager Iglesias: Yes, we can, Vice Mayor.

Vice Mayor Lago: Please, I appreciate that, thank you.

Mayor Valdes-Fauli: Thank you very much.

Vice Mayor Lago: Thank you for your time.