City of Coral Gables City Commission Meeting
Agenda Item I-1
October 25, 2022
City Commission Chambers
405 Biltmore Way, Coral Gables, FL

City Commission
Mayor Vince Lago
Vice Mayor Michael Mena
Commissioner Rhonda Anderson
Commissioner Jorge Fors
Commissioner Kirk Menendez

City Staff
City Attorney, Miriam Ramos
City Manager, Peter Iglesias
City Clerk, Billy Urquia
IT Director, Raimundo Rodulfo

Public Speaker(s)

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Agenda Item I-1 [10:21 a.m.]
Presentation regarding the Pininfarina Industrial Design for the new Coral Gables Smart City Poles.

Mayor Lago: Moving onto City Manager items, I-1. Raimundo, how are you, sir.

City Manager Iglesias: Mayor, this is our ___ poles Pininfarina to really create a special pole for Coral Gables. There are various designs that they've come up with. We need to limit, if possible, to two, because of the tooling cost, and so, this pole really provides – it was designed by an aerospace engineer, so its modular, it now has even 5G, so it can do traffic, pedestrian, environmental, weather, the whole thing. What we would like to have is…

Commissioner Menendez: It also makes coffee.

City Manager Iglesias: Just about. It can walk your dog too.

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Vice Mayor Mena: This is the same Smart City pole that we already have in some locations, just a new aesthetic design to it, basically.

City Manager Iglesias: We have a trial pole, and the new poles are being designed also for hurricane loading, so that they are hurricane resistant, and so, I will let our IT Director present.

Director Rodulfo: Thank you. Good morning, Mayor, Vice Mayor, Commissioners. Thank you, Mr. Manager. We have a presentation. So, this is attached to the agenda. I'm going to go really quickly over the background, and basically, you know that we presented these as a concept of collaboration between the industrial design Pininfarina and also the Smart City pole innovator. Basically, this is the first design in the entire world of these capabilities, and we had the first protype in North America. The first one that incorporates all the technologies in one single modular integrated design with no attachments. It looks like a pole with no attachments. And this technology has been piloted at the corner of Alhambra and Ponce de Leon. Has been working well…for public safety and connectivity, and without doing any construction we have replaced the poles three times, so we are running the…of the prototype, because they are learning with us how to improve it. That shows also that you invest in construction once and from then on, it's like plug and play, it's very modular. So, we know the Smart Districts to the left, but we are building the capacity for public Wi-Fi, for connectivity, for mobility, for public safety. We continue to grow to the north and to the south, eventually the goal is to connect to the land, to connect to the Flagler-Cutler, and we know that's necessary for everything else that we provide. So, without that connectivity and that capacity its difficult to provide more…and connectivity for mobility, for the connectivity that is happening now, new technology. This is the design – to the right you see how it is modular and the top tier shows three concept designs. The lower right corner is the second design of the pole that is live now, that was completely changed. I think that I didn't mention something here. That's intertwined with the other presentation that I did of the expansion of the fiber, that was approved in previous Commission meeting, the start of the construction, so that goes together. Those eight new poles are planned as part of this expansion as well and is also related to the presentation I did about…system that I showed, because all those systems have connected from the ground, all those sensors are connected and presented in those dashboards that you saw in last Commission meeting. So that's the project I presented for the expansion. Four phases – first phase is Alhambra Circle, financial corridor, and Ponce de Leon that connects to University, and then we have the mobility corridor and Andalusia and the…corridor and Aragon and Merrick Way expands also public Wi-Fi in those areas, and sensors, public safety sensors in all those areas. And this is the latest generation, the next generation of this pole. When we started, we were…with the first pilot and we had a lot of capacity, but now they are coming with a lot of new modules. So, all those different modules that you see there is part of a reporte of a module that can be mixed and matched in different configurations, depending on what you need to do on each location. Some of them are for environmental sensors, like air quality, weather, noise, etc.,

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other are more towards telecommunication, Wi-Fi. Other modules are more like for traffic safety and artificial intelligence to detect speed and other things and count pedestrians and traffic.

Commissioner Anderson: Can I ask you a question?

Director Rodulfo: Yes.

Commissioner Anderson: Since the signal for most cell phone providers is a little bit weak, is this going to help boost it?

Director Rodulfo: Only if you have a cellular antenna there; Horizon used to have. Its becoming like a small cell type of device, but you can include signal. At this time, we are providing Wi-Fi.

Commissioner Anderson: Providing Wi-Fi, but I mean for the main providers, are they going to be able to put signal boosters in there?

Director Rodulfo: We have been in tough with them. The thing with the carriers that they are very proprietary. When we ask them to collaborate in this project and join and add their own equipment, they are trying to do their own poles on their own, but we are trying to collaborate with them so they will join this project too and they…

City Manager Iglesias: The idea of this project is, the 5G issue is quite unattractive. I mean, you have a concrete pole with different antennas, then you have boxes below and so forth. The idea here is to say, yes you can do 5G, but here's how we do it in Coral Gables, and not have these ugly poles block by block. So, the effort here is that 5G now can be done, technology doesn't have to be ugly. It can be done quite nicely, and this is an effort to do that, and we hope that what we do here goes onto other cities, because the pilot program that we did is the first one in the United States. So, we are moving forward into something that can be quite unattractive, yet we can do it better. This is the idea. This is how you can do it, and its more expensive, but its something that we can expand on and the fact that these poles have expansion capabilities means its really unlimited, its really as technology moves on, its really unlimited as to what you can add to them.

Commissioner Anderson: Right. What I understand what you're saying, its limited just to 5G and it doesn't deal with any service below 5G.

City Manager Iglesias: The problem we have is 5G. The fact that there is so much movement towards 5G and there's quite a number of poles that are required for 5G, and this resolves that major issue.

Commissioner Anderson: I understand. The question I get from a lot of people is, without the building signal below 5G is not travelling very well anymore in the downtown area. So is it possible for cell phone providers to add a signal booster to these poles.

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Director Rodulfo: It is possible. It is part of the design collaboration between the manufacturer and the carriers. We have had those meetings and those conversations.

Commissioner Anderson: Okay.

Director Rodulfo: And the carriers are trying to collocate now in facades and rooftops, there's a lot of things happening now. They need also the height; so, there's a height factor there. The pole will have to really grow like almost double, but it is possible, and we have had those conversations. It is a strategic, also business decision by the manufacturer. They also should get into that market because that's going to expand. If we try to do all these capabilities and components, like we have been doing it in different collocations, we would be spending like five times the cost of this modular technology, because that's another reason its cost effective. We are consolidating and instead of having multiple sensors and poles and smart lighting and Wi-Fi controller in different places, different installation, different cost. We consolidate, its modular and we save money for this implementation. So, this is attached to the agenda, so I'm going to go really quick over the design methodology that Pininfarina followed. They started the brand of the city, the history, the heritage. They did a city tour of all the landmarks and beautiful places in the city. A lot of things that they observed, and they were amazed. They brought people from Italy, and they were amazed and very happy to see Mediterranean Italian Renaissance, those elements in Coral Gables. They analyzed the architecture elements. They analyzed the public art and sculptures. I'm going really fast, but it's attached to the agenda.

Vice Mayor Mena: Yes. They did a good job. It is very interesting actually. I reviewed it last night.

Director Rodulfo: This is an analysis of the…This was an inspiration for the design. They look at the integration with all those architectural elements. Apologize for the speed, but I need to go to the concepts. The signature of the facades. Actually, I learned about some places in Coral Gables that I didn't even know they existed when I saw the final. They looked at city furniture and signages. They looked at lighting – so they started looking at what technology is in the city, a Smart City, technology that exist already. Look at the flora, the garden city movement and all that as part of Coral Gables. They looked at the textures, that's very important. They used this also as an inspiration for the design. And the interactive technology that we already have, like sensors, poles, and Smart City Kiosks. This is a good concept. Change your leaves but keep your roots intact. Time to honor the history of the city in what they do. This is what they call the design DNA, and you see those words that pop up as part of this analysis. This is their approach, so they respect the tradition, the history, the aesthetics, the foundational concepts of the city, but they are inspired by those elements, and they dream about innovation technology taking into that inspiration from the architecture of the city. I asked them to interview staff in the city. They interviewed from Planning and Zoning, Development Services, they interviewed my staff, and I asked them to interview also the University of Miami Dean of the School of Architecture, Rodolphe el-Khoury

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is a good friend of our team, and he's a world renown expert on integrating architecture and technology in a way that is harmonious. He provided a lot of insight. That was very good, those interviews. They got some good promise. So, these are six design concepts that they produced. Staff gravitated toward the open…There are some structural issues and technological issues considered with the lower tier, in terms of the adequate use of space for the inner technologies and also…other things that may also aesthetically staff gravitated toward the…and I want to go one by one right here. The first one was inspired by those archways and its very beautiful.

Vice Mayor Mena: That's very cool.

Director Rodulfo: And this is an engineering rendering; and the second one was inspired by the…of those columns. This is very good also to incorporate more technological elements inside of the pole that will allow us to do a lot of things with telecommunications. That's the engineering rendering here.

Commissioner Anderson: Is there a light up in the top of these?

Director Rodulfo: Let me go back.

Commissioner Anderson: Looks like there is a possible light in the first one; there's a possible light in the second one.

Director Rodulfo: Yes, that is one of the modules that I showed, those modules that the new technology allows. One of those modules is for lighting.

Commissioner Anderson: Okay.

Director Rodulfo: And the third one is inspired by coral. Those are the three ones that have some structural and technical issues, but they are beautiful too. This one looks like a little bit like the 5G poles. That one was inspired by these elements. The first one is inspired by the overhangs by the palm trees. This one has some issues in terms of the shape and the capacity.

Vice Mayor Mena: You're saying that one would limit in terms of – that would limit what you are able to do in terms of functionality.

Director Rodulfo: Yes, functionality and also that shape at the top. We are trying to have more like a smooth shape on the pole. It looks good, but…

Vice Mayor Mena: Aesthetically or functionally is my question.

Director Rodulfo: Both.

Vice Mayor Mena: Okay.

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Director Rodulfo: Both – yes. But they look better than anything else you can find. And the last one was inspired – this in particular, I see it more like an indoors type of application. We are wasting a lot of space on the poles that is to be used. Also, that shape for wind resistance and structural have an issue.

Vice Mayor Mena: That's the only one I didn't like, to be honest with you.

Commissioner Anderson: I would agree. That's the only one I did not like.

Mayor Lago: The orthodontist uses it; the dentist uses it.

Commissioner Anderson: Oh, my God. You have to bring up dentist.

Commissioner Menendez: I like the one that looks like the nose hair trimmer.

[Laughter]

Commissioner Menendez: The modern sleek look. I like that.

Director Rodulfo: The goal is now that we started building the fiber expansion, we are planning those eight new poles. The first time you do…manufacturing you have to building tooling, you have to build molds, the computer…control systems here and see. You have to do a lot of things for the first time. New technology is allowed for 3D printing, fabrication, but there is a first-time cost. However, its still lower than if you have to install all those poles and different technology.

Vice Mayor Mena: The goal here is to reach one design, right.

Director Rodulfo: Two designs.

City Manager Iglesias: Because of the tooling and manufacturing cost, you have that initially and so, we'd like to see if can limit it to two designs, if possible.

Vice Mayor Mena: Yes. I wasn't sure if you are limiting it to one or two, that's why I was asking.

Director Rodulfo: Now from number four on, the cost is going to be like $40,000, way lower than if you install the systems together. We are seeking for your approval to move forward and start the manufacturing of those first three elements and have two at City Hall, maybe design one that is more historically looking on City Hall, and one maybe Ponce Circle – the reason I say this location is because we already have fiber there, but while the other segments is being built, those green lines are already there, we can connect those; and we provide Wi-Fi for Merrick Park, for the events, the tree lighting, public safety, cameras, all that stuff.

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City Manager Iglesias: What this system does, being modular it just grows with technology, and so, instead of having poles, different poles and different things, this one pole is so multi-functional. When it first started, it didn't have 5G and Raimundo and I discussed and we said, it will probably have 5G soon, and it did have 5G. So, it did incorporate 5G. So, the director and I have been really working with this and we feel the potential for this, since this is modular it just grows, and different modules can be replaced with newer modules and modules can be added. So, it just gives a tremendous amount of growth to the area and it's a way of doing 5G, a way of doing technology – we can have aesthetics, we can have technology incorporated together. And this attempt to show the communication companies that you can do both, both can happen.

Commissioner Anderson: When you say it grows, does it grow in height as you add more modules to it?

City Manager Iglesias: It could grow in height, but it can also grow in replacement of modules and more sophisticated modules. So, yes, you can add more, but as the modules become more sophisticated, it does have that micro-technology that replacing a module with more functionality is really where this is probably going.

Commissioner Anderson: So, if we have one design versus two designs, does it bring down the cost?

City Manager Iglesias: I think we can work effectively with two, because I think one is – I think two probably works a little better. We can look at those particular areas, work with the Board of Architects, look at the historical issues, hopefully incorporate those throughout the city. Similar to what we've done, I think in streetscape, where we really have designs that are streetscape specific. I think two is probably a good middle ground.

Vice Mayor Mena: Are you just looking for approval to proceed, are you looking for guidance?

City Manager Iglesias: We wanted to show all six to the Commission and see which one that you all thought were appropriate.

Vice Mayor Mena: I wouldn't, to your point, like for example, I thought the fifth one was nice, but if you tell me, it has limitations then I would nix it, you know what I mean.

Commissioner Menendez: You want us to input on the particulars, because we have the pumpkins, we voted on the pumpkins.

[Laughter]

City Manger Iglesias: I think if you pick what you like, I think we can overcome…

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Commissioner Anderson: Put the final runners-up.

City Attorney Ramos: If you are looking for approval to move forward, I would have a vote.

City Manager Iglesias: Can you put the six up, please.

Commissioner Anderson: Just the last two.

Vice Mayor Mena: The one with the six pictures.

Commissioner Anderson: The last two that you had up were one and two or one or one and three?

Director Rodulfo: Yes. One and two were the ones so far that the staff kind of favored and also three is very good too. The issue with the lower tier, they are beautiful, but they have functional and capacity and technological issues.

City Manager Iglesias: It will just be a little higher.

Commissioner Menendez: So, we are looking at basically one, two and three and maybe pick.

City Manager Iglesias: I think the consensus was not six, right, so it's one through five.

Mayor Lago: I'm not a big fan of four.

Vice Mayor Mena: Me neither.

Commissioner Menendez: I like sort of five, because it sort of reminds me of the streetlights that we have, the traditional historic streetlights, the conceptual design, but…

Commissioner Anderson: It's not useful.

Commissioner Menendez: Oh, that's right, so scrap five.

City Manager Iglesias: But I think we can make it work, if we like the design, I think we can make it work. We can make any of those five works.

Commissioner Anderson: Aero-dynamically you're saying that number five is not as…

City Manager Iglesias: We can hurricane design whatever you wish.

Vice Mayor Mena: I like five.

Mayor Lago: I'm fine with two or five.

Commissioner Fors: I like two or five as well.

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Commissioner Anderson: Yes.

Vice Mayor Mena: I did like one as well. I thought the arching was good.

Commissioner Anderson: I thought one was good, as well. I thought you had narrowed down to two as being the most functional. I like the design, but if it's not as…

Commissioner Menendez: If we can zero in on one, two and five, does that help you?

City Manager Iglesias: I think we probably should look at two, if possible, because…

Mayor Lago: Are we good with two and five? You fine with that Commissioner Anderson, or would you like to switch one out?

Vice Mayor Mena: Assuming you're able to overcome whatever concerns you have about technical capabilities.

Commissioner Anderson: Yes, that's the only thing that concerns me with number five.

Vice Mayor Mena: At which point I would revert to probably one.

Mayor Lago: Yes, exactly, I was going to say the same thing.

City Manager Iglesias: So, we have two and five and one as an alternate.

Mayor Lago: Yes.

City Manager Iglesias: Is that right?

Mayor Lago: If five presents an issue, we come back to…

Vice Mayor Mena: Functionality, obviously being.

Commissioner Anderson: Functionality. I like one because when you looked at it close up, it had the nice arch aspect to it.

Mayor Lago: Okay.

City Manager Iglesias: So, I guess we have two and five and one is the alternate.

City Attorney Ramos: Can we get a motion.

Vice Mayor Mena: I'll move it.

Commissioner Anderson: Second.

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Vice Mayor Mena: Yes

Commissioner Menendez: Yes

Commissioner Anderson: Yes

Commissioner Fors: Yes

Mayor Lago: Yes

(Vote: 5-0)

Mayor Lago: Thank you, Raimundo, as always. It's always a pleasure.

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