

**City of Coral Gables City Commission Meeting
Agenda Item H-7
December 8, 2015
City Commission Chambers
405 Biltmore Way, Coral Gables, FL**

City Commission

**Mayor Jim Cason
Commissioner Pat Keon
Commissioner Vince Lago
Vice Mayor Frank Quesada
Commissioner Jeannett Slesnick**

City Staff

**City Manager, Cathy Swanson-Rivenbark
City Attorney, Craig E. Leen
City Clerk, Walter J. Foeman
Deputy City Clerk, Billy Urquia
Assistant Public Works Director, Jessica Keller**

Public Speaker(s)

**Pete Hernandez, Representing AECOM
Orlando Hernandez, AECOM Chief Engineer
Ovideo Rodriguez, Head of AECOM Electrical Department**

Agenda Item H-7 [Start: 1:44:20 p.m.]

Mayor Cason: Next will be H-7.

City Manager Swanson-Rivenbark: This is very exciting. You all have spoken about us becoming more sustainable and one of the keys is through street lights, and so we are going to ask our Public Works in addition to their consultants to give a brief presentation on the LED street light conversion methodology.

Ms. Keller: Good afternoon, I'm Jessica Keller, Assistant Public Works Director. The City Commission requested staff to develop a methodology to convert existing street lights to LED

technology in support of becoming a more sustainable Coral Gables. The City's existing street light fixture inventory is subject to frequent outages, requires frequent maintenance, and is inefficient. To address the issues associated with maintenance and energy consumption, staff recommends replacing the existing fixtures with LED. LED's provide better, clearer, and more consistent light quality that makes Coral Gables streets safer through fewer street light outages, a truer light quality allowing colors to seem more natural, minimization of light trespass on the homes and businesses and more consistent distribution of light resulting in fewer dark spots. It also provides reduced cost environmental impacts consistent with our developing Sustainability Master Plan. Up to 60 percent decrease in energy use, in carbon emissions last up to three times longer than traditional street lights, do not contain mercury or lead, and do not release poisonous gases if damaged. This first phase will include the development of an RFP, which will incorporate the mechanism to initiate neighborhood light program. This program will allow residents to request lighting where it does not currently exist and I'm going to ask the consultants up and give a presentation.

Mr. Pete Hernandez: Thank you Jessica. Mr. Mayor, Commissioners, Madam City Manager, my name is Pete Hernandez; I'm with AECOM with offices located at 800 South Douglas Road in Coral Gables. I'm joined here today by Orlando Hernandez, no relation, who is a Chief Engineer, and Ovideo Rodriguez, the head of our Electrical Department. We have been tasked by the Public Works Department to conduct a study of the LED conversion to your street lighting, emphasizing more than one time and we have taken this to heart, to consider the aesthetic qualities and also the preservation of the ambience that is associated with the City of Coral Gables, which is very important. The presentation, we include background on the street lighting system that you have now with discussed factors related to LED conversion will provide alternatives and also a recommendation that I hope you can support so we can proceed with the program. Orlando?

Mr. Orlando Hernandez: Good afternoon. As we begin gathering information for this project, one of the first things that we need to do is to gather an inventory of what you actually have in the City. The inventory that we have for now is 4,109 street lights identified by Florida Power and Light. Out of these lights, 583 are owned and maintained by the City. The balance are owned and/or maintained by Florida Power and Light. In order to execute this conversion in a proper manner, the first thing that we need to do is determine the street light styles, the distribution type, the wattage, the voltage, and the specifics for each light fixture. Upon doing that, we need to determine which are the proper LED fixtures to use as a replacement and then we need to go on and try to determine what is the acceptable glare level and light pollution level. This is not an easy task, because there are many different light fixtures throughout the City. You have AECOM type, which is shown in the presentation; you have the traditional type light fixtures, the contemporary light fixtures, the open bottom fixture, which is usually the type that is owned by

Florida Power and Light, and also the cover head. Each one of those fixtures, they have different light distribution, different wattages, different amperage, and all of that needs to be determined. I want to pass this on now to Ovideo, he is going to give you more of the detailed technical information.

Mr. Rodriguez: As Orlando was saying, we have to consider the distribution of the lighting that you have now in the system. If you look from the top, the way you see the light, that's the light distribution. Then you have to take into consideration what wattage you have in each point, voltage and many information in the case that you have all of them, so it has to be precisely located for each one of them. We are talking about luminaire. What is a luminaire? On the picture here, we have the glass part and that's where you have the light, in this case...direct it where you want it. Then you have the lamp, you have the ballast, and the base; and basically this is the lighting fixture. Where you see one of the candelabras we have here, the whole assembly is what we call luminaire. Having said that, we think there are three alternatives; one is, replace the complete luminaire or replace the complete lighting fixture, use the manufacturer LED conversion kit, and insert will be use the...or replacement lamp. But we have to take into consideration all the aspects too. One of them is the light color, and light color is the light that you see coming out from the fixture, it's the light that you see. For instance, in this room what we have is incandescent and this is around 2,700 K's; K is the...and that's the measure that we use to measure this. When we go up it will be bluish, will be more white close to the daylight outside and that's the spectra that we can have. The other very important issue is to have a correct...of the color and that's measured by the CRI, and this is very easy. The height of the CRI, the closer the colors you see illuminated by any type of light will be the color that you see outside in the sunlight, in the natural light. One more thing that we want to address in the RFP is the glare or reducing the glare and...Glare is very simple. When you are driving, when you see a car coming to you and you can't see anything, that's glare. It could be very disorienting and it could happen like in this picture, when you see a girl walking and you see a streetlight just hitting your eye. Lighters pass is any light that you are projecting in some area that you don't want the light. For instance, we are here in this photograph you are illuminating the house that is behind that street pole, but we select the pole with the right distribution and the right, I mean the right distribution of light, then what you have is that you are not illuminating the house anymore and that light you see in the back is just the light from the house. Light pollution also has an annoying effect when you...from outside at night or in any City you will see a glare above the City, that's light that is going up. It could be reflective from the...or it could be some light that is facing up; and the tiny particulars of dust in any Ambien that will illuminate and create this glow. This is disorienting for birds, animals, in general, and is also doesn't allow you to see the stars or the....So basically glare is an unwanted problem that we have to solve, it's important. We have...[inaudible]. So we have three alternatives that we propose and the first alternative to replace the complete luminaire. The process for this is the best performance overall, the best

control of glare and...[inaudible]...and is listed by Laboratory Light that list you will see in your equipment. The cost, it would be that it's very expensive; it would be the more expensive. Second alternative will be using manufacture LED conversion kit and is less expensive. The kits are listed, they are available. The...is that it's less effective than replacing the complete luminaire, no improvement over glare that you may have now or like to express and may not be available for all luminaires. Third, we'll be using an LED conversion kit for...[inaudible]...or a replacement lamp, it's less expensive. It has the worst performance of all of them, but I believe it might be a concern may not be listed and may not be available for all luminaires. So the recommendation for Phase I will be to convert all the City owned and maintained lights into LED. You have right now liked 583 streetlights that will be converted to LED in a period of one year when the contract is awarded. Cost will depend on the selection; it will be around \$900,000 if we take the complete replacement. Manufacturer...will be around \$600,000, and separate LED we didn't dare to have the cost because there are so many variables in this. Phase II, we did a conversion of the...on the light and that will require to sit down with FPL and see where we can meet and what can be done on this. So the next step will be preparing the RFP. This RFP we address the existing conditions. This copperware will include development of your graphical information system that's the G.I.S., that's means that you have a software in your computer where you can have every pole that you own and you maintain shown there in a plan, but also we have the information of that pole, that would mean type of light that you have there, power, what's the service, etc., so it would be much more easier to maintain that light. That RFP was also contained like a menu of replacement; what I have now?- what's going to be replaced?- and selection menu where you can find out what's going to be the new one. It could have a maintenance contract like an alternate, also have a monitoring system as an alternate, should have...facing and a procurement message. This might work with the neighborhood lighting program where as the response RFP where we request to have price for new poles and fixture price as a whole. This will allow the City to facilitate the implementation of the neighborhood plan as a separate project.

Mayor Cason: Because we have under the Neighborhood Renaissance Program, we have proposal that we would do half, so that's already budgeted.

City Manager Swanson-Rivenbark: And you've allowed us to put additional monies in so we could go to the neighborhoods that want it and we partner with them.

Mr. Rodriguez: And this will bring us to the conclusion. Pete.

Mr. Pete Hernandez: In closing real quick, it is recommended from our part and I believe the department, that the City proceed with the implementation of Phase I, which is a City owned streetlights about 583 of them, and that it be done by the method of replacing the complete luminaire, which in our opinion is more reliable and will address the issues of aesthetic quality

and ensure that there is preservation of the image and ambiance of the City. The neighborhood program will also be part of this Phase I, and the RFP that Ovideo mentioned we can have those documents ready if the City decides to support a program moving forward before the end of January.

Mayor Cason: City Manager do we have anything in the Capital Budget for the next five years for this?

City Manager Swanson-Rivenbark: For lighting?- absolutely we do. Now what we are asking though is the authorization to proceed within our fee...

Mayor Cason: RFP – right.

City Manager Swanson-Rivenbark:...you are not authorizing the actual expenditure at this point.

Mayor Cason: So there is money there under both programs.

City Manager Swanson-Rivenbark: Lighting, sidewalks, they were major pieces of quality of life that you asked us to include.

Commissioner Lago: From what I remember in the budget didn't we have a million dollars allocated or was that CCTV?

City Manager Swanson-Rivenbark: That was CCTV, but we did put \$200,000 in through Neighborhood Renaissance and then we are also looking at that partnership where the City pays some and the neighborhood pays some.

Commissioner Lago: Let me ask you a question. When you said about the replacement that you are recommending in regards to the housing, correct?

Mr. Hernandez: To replace the complete luminaire rather than do a retrofit via manufacturer or even the third party.

Commissioner Lago: But you are not talking about replacing the actual structure?

Mr. Hernandez: No. No. It's basically is the luminaire which I believe was shown in one of the slides that includes the cover, the bottom, everything, and that allows really to place – the good thing about the complete luminaire is that it allows the placement of the light source to be up in the lamp and reducing the possibility of glare.

Commissioner Slesnick: Pete, how much longer do these lights last than the regular ones now?- because we have such a problem with lightbulbs.

Mr. Hernandez: I would say at minimum this will last twice as much maybe more.

Commissioner Slesnick: So how long does the normal light fixture last?

Mr. Rodriguez: Normal lights around 20,000 hours, this will be 50,000 hours. Of course this is working time, so it's around 8 hours to 10 hours depending on...

Commissioner Lago: And the consumption of electricity, what's the reduction?

Mr. Rodriguez: That's a difficult question. If you go to a new luminaire it would be better, it could be something between 40 and 60 percent in energy.

Mr. Hernandez: There is also significant savings on the reduction of maintenance.

Commissioner Lago: Oh yes, the maintenance...

Mayor Cason: They'll all be the same, so you start off with the same product and you've got spare parts and all that.

Mr. Hernandez: You have to reduce your maintenance, you are doing maintenance of replacement in let's say twice the amount of time.

Mayor Cason: So basically we are going to give you the go-ahead for an RFP.

Commissioner Lago: That's great. I'll make the motion.

Mayor Cason: Commissioner Lago makes the motion.

Commissioner Keon: Can I ask for a clarification? The RFP is to replace the complete luminaires on the City lights, is that what the RFP is for?

Mr. Hernandez: And also include the neighborhood program.

Commissioner Keon: And the neighborhood program. OK, but it's the complete luminaires, it's the complete luminaires, is that right?

Mr. Hernandez: Yes.

Mayor Cason: Do I have a second?

Commissioner Keon: I'll second it.

Mayor Cason: Commissioner Keon seconds it. Commissioner Lago made the motion and Commissioner Keon seconds. City Clerk.

Commissioner Lago: Yes

Vice Mayor Quesada: Yes

Commissioner Slesnick: Yes

Commissioner Keon: Yes

Mayor Cason: Yes

(Vote: 5-0)

Mayor Cason: Thank you very much.

Mr. Hernandez: Thank you.

[End: 2:01:14 p.m.]