

**City of Coral Gables City Commission Meeting  
Agenda Item H-2  
December 16, 2014  
City Commission Chambers  
405 Biltmore Way, Coral Gables, FL**

**City Commission**

**Mayor Jim Cason**

**Vice Mayor William H. Kerdyk, Jr.**

**Commissioner Pat Keon**

**Commissioner Vince Lago**

**Commissioner Frank Quesada**

**City Staff**

**City Manager, Cathy Swanson-Rivenbark**

**City Attorney, Craig E. Leen**

**City Clerk, Walter J. Foeman**

**Deputy City Clerk, Billy Urquia**

**Automotive Director, Steve Riley**

**Public Works Director, Glenn Kephart**

**Public Speaker(s)**

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Agenda Item H-2 [Start: 4:15:30 p.m.]

Update on fleet vehicle replacement policy and green initiatives.

Mayor Cason: All right, we're going to do now H-2, update on the fleet vehicle replacement policy and green initiatives.

City Manager Swanson-Rivenbark: We'll ask Mr. Riley to come forward, I'm sorry joined by the Public Works Director.

Public Works Director Kephart: Thank you, Madame City Manager. Good afternoon, Mayor, Vice Mayor, Commissioners. In the 2015-2019 capital budget the Commission recognized the

significant need to upgrade the City's aging fleet, and you dedicated more than \$3 million toward this effort this year and 17 million over the next five years, and staff would like to thank you for recognizing that need and funding it. And during the budget process, there were numerous discussions about the importance of assuring that our current aging fleet transitions that are greener and more sustainable fleet. And to this end, and as we move forward to begin implementation of our fleet replacement, staff is recommending several initiatives to ensure that we right-type our fleet in a green and sustainable manner. These initiatives include, in addition to the normal review that Steve always does, in working with the department agencies and other City staff to determine their needs; and to make sure that we right-type our fleet, we're recommending to add a sustainability review into that as a check to make sure that we're buying the most appropriate, sustainable green vehicle that we can. We've identified that our current fleet of administrative vehicles could be electric vehicles. And currently, in this fiscal year, we don't have replacement of any administrative vehicles, but we would start to replace administrative vehicles next year. And if we were to choose to go that way, we could begin by getting the infrastructure of charging stations in place this year in preparation for some electric vehicles next year. So we think there's a real opportunity there. We do also think, though, that we move forward somewhat with caution on that item, because the current technology I think within the industry, the lithium-ion technology, is probably not the end that we will see. The industry is working on new technology that they say that they really need to find batteries that give a much longer life. Currently, the technology gives you 70 miles or so on an average vehicle with 12 hours of charging, and we think that's probably not the end of the battery technology, so we be careful we don't get caught up in investing too much too soon on that, but there are certainly some opportunities with our administrative vehicles based on the current use, and Steve can explain that in more detail. We think that we need to evaluate the feasibility of getting a CNG (Compressed Natural Gas) infrastructure in place. This is a pretty significant investment, but it's certainly a good way to go for our larger vehicles, and we can't transition to CNG without the infrastructure to do so.

Commissioner Lago: Can I ask you just a quick question in regards to that?

Public Works Director Kephart: Sure, absolutely.

Commissioner Lago: I'm not sure if any other Commissioner has done this already, but we have a firm that their headquarters is based out of Coral Gables.

Public Works Director Kephart: Yes.

Commissioner Lago: And it escapes the name of me right now.

Vice Mayor Kerdyk: No Petrol.

Commissioner Lago: No Petrol.

Vice Mayor Kerdyk: (UNINTELLIGIBLE) beautiful building (UNINTELLIGIBLE).

Commissioner Lago: Yeah, remember?

Commissioner Keon: Green building.

Commissioner Lago: That's right, that's right. No Petrol. And I had a meeting with them probably, I would say, about a year ago, and we discussed different options, the RFPs (Request for Proposals) that they were going after. I remember one of them being the County. I don't know if that was ever settled or if a company was chosen. And he mentioned some other municipalities and school boards that he had won throughout the state of Florida. Whatever, we went back and forth. And it was interesting to see how a lot of larger municipalities are moving in that direction. And for the smaller municipalities, let's say like Coral Gables, South Miami, West Miami, they're piggybacking off these larger municipalities. So the hub, the CNG hub would be based out of a municipality, then you have the smaller municipalities that come in and use that at I guess, not a reduced rate, but at like an increase. Have you been seeing that proliferate around the state or around the nation?

Public Works Director Kephart: Yes, and we actually, with our sustainability team, met with the

Petrol people and had a brief discussion with them about their efforts to...they're working with the County now. They were awarded that contract, according to what they told us verbally to move forward with the implementation on the County. And I think part of our evaluation would be the consideration of partnering and piggybacking into those, versus establishing our own, and there's pros and cons to both, so absolutely. Given the size of our city, it's something we need to consider, but we need to start by getting in the game and getting in an evaluation of what's right for the City of Coral Gables in reference to CNG.

Commissioner Lago: He gave me two options, from what I remember. One was, you know, piggybacking; having a station let's say... it would be great to have it off of Coral Way there or Bird Road and 72nd Avenue, where...

Public Works Director Kephart: Yes.

Commissioner Lago:...your offices are, or doing like a mobile unit where the national gas is brought to the actual vehicles. He says that's a little bit more complex, but did he give you an idea of where the County's going to be putting forth, you know, the CNG stations or that hasn't been decided yet?

Public Works Director Kephart: No. Only the general vision of what they're trying to accomplish is to have a network statewide, so you're not bound to a certain local area, and you can travel with the CNG vehicles and know that you're going to get into another place where you can fuel. That's the ultimate goal. I think, obviously, we'll get there because it's a good technology. It's a matter of how long, and we need to be part of that effort, but we can't necessarily lead that effort.

Mayor Cason: What about propane? I spend a lot of time in Brazil, and Brazil's got these cars you just turn the switch and you go from gas to propane and various mixtures. Is that something that ...?

Automotive Director Riley: Yes, I have everything right here, I go an answer for every one of

your questions.

Public Works Director Kephart: OK. And just a couple of other on the initiatives, and then Steve is an expert in this. I mean we are fortunate to have somebody who authored the National Green Fleet award criteria in Steve. He knows his stuff, and he's going to talk to you about it at any level you want to. Just a couple other initiatives that we wanted to talk about, because whenever the alternative fuel vehicles, whether it be electric or a green fleet or a hybrid, doesn't meet all the criteria to meet our City needs, we're still doing the evaluation to make sure that we get the most economical green clean-burning vehicle that we can, and I'll give you a couple of examples. We're replacing some 14-year-old, I think about 14, 16-year-old Jeep Cherokees, not that clean burning and not that efficient with smaller, cleaner burning, more fuel efficient Jeep Patriots. So although it's not technically an alternative fueled vehicle, it does have a positive effect on our green footprint. We have old F-800 box trucks, Public Works, that we've looked at and then right-typing, and with Steve's guidance, we really only need a Ford F-250, and they're fairly efficient. So it's getting the right type, the right size vehicle is an important part of that evaluation too when we can't always go to the alternative fuel. One other thing that we wanted to just point out is as we move forward with our sustainability plan, it's not just our fleet, and the suggestion has been made that there's an opportunity with flex cars, zip car you may know, or car-to-go. I think South Miami has some in their parking garage. There's the opportunity to have discussion about would it make sense for us to allow developers some parking credits in exchange for implementing that type of technology into their development, and that's maybe something we have further discussion on. So those are some of the initiatives that we're moving forward with. And Steve is here, prepared to get into any level of detail you want to on what the opportunities are and where we're at.

Mayor Cason: Let me just ask you a general question. Is what you're doing or thinking about going to be incorporated into the larger sustainability study that's underway? You're going to plug it in some way?

Public Works Director Kephart: Yes. Yes, absolutely. I mean, this is one of the major things that we're talking to our sustainability team about, and they'll be making recommendations to us.

And when I talked about in the beginning, we're recommending, in addition to Steve's normal process to make sure we get the right vehicle with adding sustainability in there, what does that specifically mean? That means, specifically, Jessica Keller will be part of a team that reviews what we're planning to do, and she will consult with our Reynolds Smith & Hill, our sustainability consultant, to make sure she has all the information on what is the latest technology, what's out there, what are things that we can do.

Mayor Cason: Yeah, because in the end, we may end up with a big menu of things under the green umbrella and we may have to pick and choose, so it would be important to have this in there to see maybe we can do it all, maybe we can do part of it.

Commissioner Lago: Yeah, but I think that it all depends on what the usage of the vehicle's going to be for.

Mayor Cason: Yes.

Commissioner Lago: For example, if you're going to be using a vehicle in downtown that makes frequent stops, offering citations it's a smaller vehicle, that vehicle again could be electric. But if you're going to be using a vehicle, let's say, to pick up garbage, most individuals prefer CNG, from my understanding. I mean, I haven't seen an electric garbage truck yet, if it exists.

Automotive Director Riley: I'll try not go into too much excruciating detail and bore you, but this will probably answer any question you have on your mind whatsoever.

Commissioner Lago: I have a simple question for you.

Mr. Steve: Yes.

Commissioner Lago: OK, this is it. Are we making an effort for every single time that we buy a vehicle, that we do an analysis in regards to how we can either buy CNG or electric vehicles from now on?

Automotive Director Riley: Yes.

Commissioner Lago: OK.

Automotive Director Riley: I've been doing that constantly, since I've been here. And I'll go through exactly what I go through, my whole thought process, and I'm going to try to make this as quick, as painless as possible.

Commissioner Lago: Perfect.

Commissioner Keon: OK.

Commissioner Lago: Go ahead.

Automotive Director Riley: OK.

Mayor Cason: Expound.

Automotive Director Riley: I'll give you some insight and some of the challenges I face in greening the fleet, so I'm going to talk real quickly. A state of fleet, what we've done so far, going green fleet conversions considerations, ultimate fuel, vehicle options, overview of available EV (electric vehicle) and hybrid technology, EV, electric vehicle other technologies and services, and Glenn has already mentioned one of them, which is the flex car, suggests some next steps and overview of alternative fuels in vehicles. State of fleet, number one, I'd like to thank the Commission once again and the citizens of the City for approving the budget. It's been sorely needed. Departments have been really needing some new equipment for several years. I am a proponent of green fleet initiatives, so I'm with you on that. The total fleet signs right now stands at 687 pieces of equipment. After a recent surplus of sale, we reduced it from the 709 from our last time, so we're constantly reducing. Out of those total fleet size, 327, or 47 percent of total fleets are over their life cycle. That's even after extending the life cycle criteria of the

fleet. So I went ahead and looked at it and said, "OK, these things get underutilized. Let's go and extend the period at which we replace it." Current rolling stock: vehicles only, no boats or trailers; sits at 523 over life cycle is 208, or 39 percent. Administrative vehicles: This is no emergency response, no police; just administrative vehicles, things that we can green, things that we can convert to electric: 126 over life cycle, 87, or 69 percent. During the last five years, I've not replaced any administrative vehicles due to budget restrictions. The vast majority of the budget went to replace missing essential trucks, work trucks, fire apparatus, and things of this nature, so we have not even touched administrative vehicles. This is a first year we've actually started looking at getting into this. So what have we done so far? Once again, our fleet doesn't acquire a lot of mileage, but it's old, and old is just as devastating to a vehicle, as when you use it. Just letting it sit. It's age. As a matter of fact, we just replaced a van from Parks and Recreation that held children to take them back and forth to different events and have holes through the roof because it rusted through. It's difficult combined vehicle assets, because a lot of the departments in the vehicle are geographically dispersed and it's difficult to say, OK, let's pull them all together and pull them and let's have a singular resource that they can use. Administrative vehicles, on the average, get about 3,000 miles a year in this City. There are some that get more; some that get significantly less than 3,000 miles. That's an important number to remember. Fleet right-sizing. This is where I talk about the size of the fleet. Keep in mind that the most important aspect of right-sizing is depreciation, our capital costs. Am I going to replace that vehicle in ten years, five years from now, whatever? Capital depreciation is the most costly aspect of maintaining any fleet, not maintenance or fuel. We evaluate utilization on an annual basis, and when I do the purchase, I take a look at how long it's been used and evaluate whether or not it be better just to simply lease it. A lot of the equipment that we had, heavy-duty equipment like they had paver, a roller, an augur truck, those things were used like once a year. They rusted in place. Very little hours, very little mileage, but they rusted in place. I got rid of them. To bring them back up to operating standards is ridiculous. The guy's going to be, "Hey, I need this truck." Well, it's junk. So we lease when we need. We reduced the fleet recently, 48 pieces of equipment, and as new equipment is brought online because of the increased budget, we'll be able to get rid of some of these old reserves and things that we've been holding on to because of primary vehicle, primary asset that that department owns is so old and undependable that we're forced to maintain reserves. Right typing matches the size engine horse power to the



job requirements, when you type the vehicle to the job. You just don't simply replace simply because, hey, you know, this is what they've all had. It makes better sense. We're getting rid of three of these and replacing them with F-250s and one of these I'm replacing just with a trailer. In addition, you mentioned about the six cylinder jeeps. First question I asked myself when I looked at the budget is can I reduce the size of the vehicle while still providing the user departments with adequate equipment? And if so, can they be converted to a green vehicle? When we're converting green, we need to think of the following things: number one, the operation and requirements of the department is primary; can the department perform its job with that particular vehicle? If I downsize that vehicle to a small compact car and its required to carry boxes or whatever, loads back and forth passengers can they still perform their mission with that reduced size? The operational limitations of green vehicles: the weight, range, loading, downtime, which includes not only charging time, but also refuel time if you look at going CNG and maybe a slow-fill infrastructure. For the historical utilization of the vehicle being replaced, how far does it operate? Obviously, if you have an administrative vehicle that's twice or three-times a month goes on trips or whatever, conferences or whatever, this is something that I wouldn't probably look at for electrification. Availability of fuel: Once again, we talked about the infrastructure. And does the employee and this is very important, and I take it into consideration all the time. Is it mission-essential after a national disaster? If I convert that vehicle to an all-electric vehicle and we lose commercial power and our charging stations are not connected up to a stand-by generator, then that whole class, all those vehicles become completely utterly useless. They sit in place. I've never been through a hurricane, so everyone sitting here has, but I've never been. I've only been here for five years, but I've heard stories of power outages for several weeks, if not months, depending on the amount of devastation. Additionally, there are other financial issues. Remember, our capital budget is actually formulated based upon a conventionally fuel fleet. When we switch it and start looking at electric vehicles, pure electric vehicles, hybrids, and things like this, it's going to cost our capital budget actually fleet value to go up. Alternative vehicles options: we've got full electric, hybrid, plug-in hybrids, liquified petroleum gas, which is propane, CNG, E5 flex fuel, hydrogen, which is not feasible at this time. All the fuel options, vehicle options are based upon the private sector. If there's no one out there buying it, the manufacturers are not going to make it. So if you don't have citizens buying these vehicles and there's not a demand for it, they're not going to make it.

There's not enough sales to public sector entities for these manufacturers to pull a profit. And also, the falling gas prices, as everybody knows, is not helping at all. Couple of things I wanted to define. Clean fuel. The US Federal Tax Code defines clean fuel as a motor vehicle basically, fuel designed to be used in one of the following; compressed natural gas, liquified natural gas, LPG hydrogen, electricity, and E85. The problem is that there's no such thing as a clean fuel. It's cleaner but not clean, and I'll go over that in a little bit. Overview of EV and hybrid technologies: fully electric vehicles to replace traditional vehicles that have a defined route and profile that will provide that usage within the battery's effective range and allow for sufficient charging times. As I stated before, right now we're looking at the parking vehicles; would be a prime candidate. They're not essential after a hurricane, they have a very limited route structure, and they could be electrified into electric vehicles. The problem is that the gopher just recently came up with an electric vehicle that ranges 60 to 75 miles, but unfortunately, it takes anywhere from 12 to 14 hours to charge, and there's no air conditioning, and it coins with the union contract, Article 25, requires a life purchase vehicle with air conditioning, so I had to take that into consideration. That limits my choices. The 110 volt recharge option, generally takes a lot longer, anywhere from 10 to 12 hours, all the way up to probably 16. The first thing that we need to do is come online with what they call a "level two charging station," which is a 14.4 kilowatt, 240 volt system that will allow these vehicles to be charged within a period of four to six hours. And we would have to have that each one of those stations per vehicle before we start with widespread use of EV. Most fully electric vehicles may not know this, but under fast charge stations, you have three different levels. You have level one, which is 110 volts; level two, which is what I just stated, 240 volts, 14.4 kilowatts; level three is higher than that, higher than 14.4 kilowatts and will charge electric vehicles within 30 minutes. However, when you do that, you also wear the batteries down very rapidly. Additionally, a battery's range, within that battery's warranty period will reduce 30 percent within its life, but before I get rid of it, I have to calculate that, that vehicle's range is going to start to deteriorating about 30 percent. So if it gets 60 miles per gallon, or 60 miles on a full charge, you can look at maybe 42 or somewhere in that area.

Public Works Director Kephart: Steve, could we asked the Commission if you have, and I think there was a specific question asked as to whether we're looking each and every time at the

opportunities to turn green, and obviously, we have the guy in charge of our fleet that knows his technology and I would ask at this time because I know it's been a long day, are there additional specific questions you have for Steve that you'd like to ask?

Mayor Cason: It sounds like it's much more complicated than it seems.

Automotive Director Riley: It is.

Mayor Cason: Than just going to get a green vehicle. I mean, it sounds like you could probably save a lot of money just by taking your oldest vehicles with the lowest gas mileage and changing some of those out, depending on what you're trying to achieve. If it's spending less money, or if it's less pollution.

Automotive Director Riley: Let me touch just upon a couple of things. I'm going to try to skip over most of this.

Public Works Director Kephart: Let's just answer their questions at this point and then...

Commissioner Keon: I think that the objective was that as we move forward, when appropriate, that we use hybrid or electric vehicles in the instances that it is appropriate. And you had said that for the uses and for the cars that have been ordered, you have found the best alternative for those cars. Now, they may not be electric or they may not be hybrid, but that's because that wasn't the best objective.

Public Works Director Kephart: Right, right.

Commissioner Keon: What you have is the best objective in going forward, you will do that.

Public Works Director Kephart: Yes.

Commissioner Keon: Thank you. Yes, you've made that really clear, and I think maybe, you

know, we didn't realize how many options there are out there and why one particular option is a better option than another and why, in some instances, what we think, you know, in our laymen knowledge, you know, is an appropriate green vehicle...

Automotive Director Riley: If I may, let me just touch on a couple of things which I think are really important to understanding what my limitations are.

Mayor Cason: All right.

Commissioner Keon: Oh, OK.

Automotive Director Riley: Since the vast majority of our fleet gets less than 3,000, 6,000 miles, your regular hybrid, non-plug in, we don't have enough, we do not drive these vehicles enough to maintain a state of battery charge sufficient for that vehicle to run on its batteries only. The reason why is if you take off and you go five-mile stop, well, five-mile stop, a hybrid is designed to come in from the suburbs, you drive 15, 20 miles, and then you tour around the city on complete electricity, and then you go back. Well, those times in between, you're charging the battery off the engine. If you're not doing that, you're constantly using the battery; eventually, you're going to get to a point to where the battery drains and you're not putting enough charge. Regenerative braking doesn't do a one-for-one. You can't go five miles, regenerative braking, put the power back in the system. We have two hybrids already. They're 2005 Ford Escape, which, by the way, they don't make anymore. The Tahoe's used to be hybrid. They don't make them anymore. The actual factories are pulling away from SUV (Sports Utility Vehicles) hybrids and the only thing I can get now is a SUV hybrid, which is a neat Toyota Highlander hybrid, because they're only being sold in premium packages with a base price of \$42,815. The two Escapes that we have never attained the Ford estimated miles per gallon of 35 when they were built. They had a mean average over this entire life span around 18.7 miles per gallon.

Mayor Cason: So not much more than...

Automotive Director Riley: Which means they're using the engine.

Mayor Cason: Yeah.

Commissioner Keon: Thank you.

Automotive Director Riley: And the last thing I'd like to touch on as we talk about fuels and things like this. When in Model Year 2004, the EPA (Environmental Protection Agency) instituted tier two requirements for gasoline-driven vehicles. When they did that, the exhaust stream, and I'm talking about the exhaust stream from the, what they call "wells to wheels," is as compatible as it is running the alternative fuels. It's hazardous running the 85, it's CNG. On this one here, this is energy economically vast implications of natural gas trucks. In 2010, when they instituted the new 2010 emissions, if you ever took a look at our new platform truck, you can actually stick your face in the tail pipe and smell nothing. That's how clean it is. However, standards implemented in 2010 criteria pollutants for heavy-duty trucks will eliminate the advantage of natural gas vehicles in this respect.

Commissioner Quesada: Steve, I think we're overwhelmingly satisfied.

Commissioner Keon: Thank you.

Mayor Cason: Thank you. I think the bottom line on this is that we can trust you with your knowledge in a complexity that we never would have crossed our minds, that you're making the right decisions when you choose the vehicles.

Automotive Director Riley: A lot of minutia.

Commissioner Keon: We'll never ask again.

Mayor Cason: Thank you.

Commissioner Quesada: Thank you.

Mayor Cason: Thank you.

Vice Mayor Kerdyk: That's the most thorough report I've ever heard up here. Congratulations.

Mayor Cason: It's great, super. We have the best.

Commissioner Keon: Thank you.

Commissioner Quesada: I mean, overwhelmingly.

Mayor Cason: Thanks a lot, Steve. Thank you.

Mayor Cason: All right. Well, let's do I-1.

Commissioner Keon: H-1.

City Attorney Leen: Mr. Mayor, item I-1 is a report regarding...

Commissioner Quesada: Just to be clear, that's the best compliment you can get from us, Steve.

Mayor Cason: That was thorough.

Vice Mayor Kerdyk: That's good, Steve.

City Attorney Leen: This Commission...

Vice Mayor Kerdyk: I want your report to be like that, Mr. Hudak when you come up.

[End: 4:42:45 p.m.]