

City of Coral Gables City Commission Meeting
Agenda Item H-1
December 11, 2007
City Commission Chambers
405 Biltmore Way, Coral Gables, FL

City Commission

Mayor Slesnick Donald D. Slesnick, II
Vice Mayor Maria Anderson
Commissioner Rafael “Ralph” Cabrera, Jr.
Commissioner William H. Kerdyk, Jr.
Commissioner Wayne “Chip” Withers

City Staff

City Manager, David Brown
City Attorney, Elizabeth Hernandez
City Clerk, Walter J. Foeman
City Clerk Staff, Billy Urquia
Alberto Delgado, Public Works Director
Assistant City Manager, Maria Jimenez

Public Speaker(s)

Dr. Murat Erkoc, Ph.D., Associate Professor, School of Industrial Engineering, University of Miami,

H-1 [Start: 12:22 p.m.]

Presentation by Dr. Murat Erkoc, Ph.D., Associate Professor, School of Industrial Engineering, University of Miami, to present the results of the study conducted on transportation service provided by the Coral Gables Trolley system.

City Manager Brown: This was requested by the Commission probably well over two years ago; the study had been completed and now we are going to present the results of that – Mr. Delgado.

Mr. Delgado: You can see the history of this report, the School of Industrial Engineering at the University of Miami; it was chosen as the entity to conduct the efficiency and analysis of the system program evaluation for our trolley system. That was based on their experience with the University of Miami simulator system, which they helped improve its operation of organization. In 2005, as the City Manager said, the City entered into a Professional Service Agreement with the University of Miami to conduct this very comprehensive study. I am going to introduce Dr. Murat Erkoc, which is Associate Professor of the School of Industrial Engineering of UM, which is the author of this report, and he will be making this presentation.

Mayor Slesnick: Doctor, welcome.

Dr. Erkoç: Thank you very much Mr. Mayor, members of the Commission. Today I'm going to try to present the most salient points of our study – the detailed report has been submitted to the City, I hope you have a copy.

Mayor Slesnick: Yes, we have it in front of us.

Dr. Erkoç: In the interest of time, I will just go through the salient points and at the end if you have any questions from what I present, or from what you see in the report, I will try my best and answer to my best ability. With that I'm going to need to use the presentation slides – OK, thank you very much. Again, this is a study conducted by the University of Miami Department of Industrial Engineering, a great deal of the work was done by students, undergraduates and graduate engineering students – next please. The project background is again, we are studying the trolley system, pretty much you know all this information; what we are looking at is a four year old system with a steady increasing popularity servicing; fare-free on a street of about 2.3 miles. At the beginning of the first year actually demand was about two thousand (2,000) riders a day, and at this point we are basically realizing forty-five hundred (4,500) ridership a day; it's a great increase and mostly the numbers actually show this exploding around forty-eight hundred (4,800) – next please. The service is on Ponce de Leon and currently the trolley systems owns and employs ten (10) trolleys, and four (4) to six (6) of them continuously operating during peak hours it can go up to eight (8) trolleys, which achieve six (6) to ten (10) minute headways for entry/departure times, and its operating mostly on numbers of a one point four million dollar (\$1.4M) budget – next please. The scope of our studies that we conducted systematic and comprehensive analysis of the trolley system from the specs of operations, and to collect data, process them so that we can basically capture the performance of the system, which can be used as a reference for evaluation of strategic plans, and meanwhile to develop some user-friendly tools that can be used by the trolley managers – next please. What we've for this – a great deal of this work included collection of data by our students, and processing this data and conducting statistical analysis, and going through surveys, which then fed into some scientific paradigm, such as simulation modeling and forecast, so that basically we can conduct “what-if” scenario analysis ratio domain for operational planning and forecasting – next please. This is the picture of the history of the system. What you see at the top is the weekly embarkation since the initiation of the trolley system, and you can see the steady increase, its impossible to miss that, and its still counting; and then the increase you can see that at some points there are a lot of fluctuations, but at the recent data you can see that the fluctuations are almost gone, which is an indication of a sturdy demand, which means that people pretty much adapted to it. And if you compare the monthly ridership between 2007 and 2006, you'll see that for each month the ridership is higher than the recent year – next please. And this is the picture of the distribution – the daily distribution around embarkations; you can see its pretty much uniform for days on Friday that's due to the extended service hours, and maybe what they call Friday night phenomenon. I believe the next figure is more important; this is the distribution for the person that uses as it is distributed to the time of the day. Now you can see almost one quarter of all embarkations occur during the early morning hours, which is an indication that some usage by some commuters, and if you look at the afternoon hours you can see it's pretty steady, so its also an indication that people are using this for inner city travel as well. The morning of the information can lead us to further results and using the actual Miami-Dade standards and proficient's they can compute that an estimated number of about seven hundred (700) parking

spaces are saved because of this service, of course this is an estimation and can be changed, but it's definitely going to be in the upper hundreds – next. This is the list of the embarkations distributed to the bus stops; the main take away from this one, as you can see that Douglas is far most easily the popular stop...

Vice Mayor Kerdyk: Which one doctor?

Commissioner Cabrera: Douglas entrance – Douglas station – Metrorail Station, followed by...

Dr. Erkoc: ...well, followed by Miracle Mile and San Lorenzo, Andalusia, 8th Street, Alhambra, and Altara. What's important in this one, if you hit the next one so we can see; the five stops all of then north bound[inaudible] although make up ninety-two percent (92%) of all embarkations, not one of the embarkations. On the south bound its eighty-one percent (81%).

Commissioner Cabrera: Doctor, as you look at this information here, could this also help us understand that this has more of a connector application than a circulator?

Dr. Erkoc: Both – because forty percent (40%) is – forty percent from Douglas – if you assume that all of the people are using the Douglas, and you can add Eighth Street to that, it's forty-six (46) together percent of commuters to the remaining fifty-four (54) probably inner city or lunch time students using it, and also I would like to note – since you ask this question, that the previous year 2006, the Douglas Road users was forty-seven (47%) percent, it actually dropped, which means – the all usage increased, but the distribution was in favor of inner city travel, and in the most recent year – next please. And this is a similar picture, but this is now for disembarkations – next please. This also shows that the five stops actually capture seventy-three percent (73%) of north bound disembarkations; and the same thing happens for ninety-two percent (92%) on the south bound – next. The next thing is we looked at some performance measures that includes some inter-departure times, which will be an indication of how long a customer or passengers wait for a trolley; and also some other pretty much standard measures that measure the service intensity of service levels for the trolley system, and also some cost analysis – next. For inter-departures and capacity, we see that the average in peak hours 6-7 minute headway, which means on the average a passenger will wait 6-7 minutes for a trolley, and the capacity is four hundred and fifty (450) passengers during the after hour, and during the morning hours it is pretty much close to capacity. The off-peak hours the capacity drops to three hundred and twenty (320) passengers an hour, and the inter-departure times increase to ten minutes – next. This gives you a clearer picture of distribution of the waiting times; the way you read this is the blue ones the bars are showing the morning inter-departure times of distribution; let's say for example, thirty-one percent (31%) of the time a passenger will wait less than five minutes for the next trolley, then you go to six minutes or fifty-four percent (54%) of the time, and the bottom line is ninety-one percent (91%) of the time a trolley is going to be there in ten minutes, or the next trolley – next. The other measure is the passenger miles; this is a measure for passenger traffic, its like man-hours. Your basically sum-product of total number of passengers and distance traveled in miles, for example if you have a ten passenger mile as a measure it means that it is equivalent to moving ten passengers one mile or one passenger ten miles; and the daily passenger miles for Coral Gables is five thousand eight hundred and seventy eight (5,878), based on 4,500 daily average, which sums up to be about one point million miles

(1.5M), which means it is equivalent to basically moving one passenger one point five million miles during the year. At which we began using the Miami-Dade coefficients, it will translate into an annual reduction of one point two million (1.2M) vehicle miles, and in other words you are removing this much vehicle miles from the City with this, using the Miami-Dade numbers. And the total projected passenger trips are projected to be exceeding one million passengers for 2007; and the annual miles are going to be one hundred and forty-five thousand (145,000) miles, which leads us to the next numbers. This is a comparison of certain performance measures with Miami-Dade and the national average. As you can see the passenger per mile as for that the Coral Gables is pretty much with the national average above Miami-Dade; the passenger average miles are less than that, and that's due to the fact that the trolley serves a short strip compared of course to Miami-Dade; and cost per passenger trip is one dollar thirty cents (\$1.30), which is below both Miami-Dade and the national average; but if you go to cost per passenger miles its going to be a little bit more than that and that's understandable because in Miami-Dade one passenger travels quite some miles, whereas distance here is....

Commissioner Cabrera: Doctor, can you associate cost per passenger trip as a direct effect of using the hybrid vehicles?

Dr. Erkoc: No – I just – we made these calculations based on the total budget

Commissioner Cabrera: OK.

Dr. Erkoc: And the per hour cost reported to us.

Commissioner Cabrera: OK.

Dr. Erkoc: Next – as for the forecast, we basically – we looked at the forecasting tool and user-friendly can be basically easily used by the trolley manager, and can process up to four years of data, and what we forecast right now as we stand here expecting that the embarkations is going to hit the five thousand (5,000) mark, and going to be a little bit above that during the year 2008 – the next. Also, we generated an excel based simulation, can be user-friendly and can be easily used by the trolley manager to basically further analyze and simulate different scenarios for different schedules of the trolley – next. Now with the current schedules, we say that the current schedule is actually close to optimal, and the operations are very efficient, and I would like to commend Mr. Cox for that, for doing a very tremendous job and especially the way he keeps data, we did not have to – normally we have to deal a lot with the data when we receive from the many skeletons, but the quality of the data is very good. And also the current schedule – the bottom line here I guess, the current schedule is sustainable up to fifty-five hundred (5,500) passengers a day. So for 2008 it looks like the trolley system is OK; it doesn't require any increase in capacity; but if the demand exceeds fifty-five hundred (5,500) and up to seven thousand (7,000) an additional trolley will be needed – next. We also conducted a survey about the parking lot. In the interest of time, I don't think this is necessary right now, if you have questions I will address them – next. So, my conclusions are is pretty much – recap of what I already mentioned. The important thing here is that keep in mind that we are facing a very steady and strong demand, and it constantly increasing; the increase from last year is twenty percent (20%). As the passenger number increases up to a certain point, actually the cost per passenger

will go down; and waiting times are very good and they certainly show that nobody, almost nobody complained about the service waiting time, so the inter-departure times are very good; and again we will like to reiterate that the promotion of the trolley system can further alleviate the traffic and parking load in the City, which is pretty much what we observe in other municipalities anyways. So, I would like to conclude here my presentation; if you have any questions.

Mayor Slesnick: Well Doctor, thank you very much, we will go down the line here and see if – Ralph, did you have...?

Commissioner Cabrera: I can't thank you enough from our first meeting that we had at the University of Miami, and I was impressed with you then, and I'm impressed with you now. So, Doctor, I appreciate the collaboration, and I look forward to maybe doing some more work with you in the future.

Dr. Erkoc: I want to say it was a pleasure for us especially – you know, its not just a service from us to you, it was good for our students.

Commissioner Cabrera: It was great, it was great; we need to tap into your talents more often. I think it was a worthwhile exercise, and I think Public Works expresses the same sentiment. You know, my questions are not so much directed at you, but my questions are directed at staff and my colleagues. I'd like to some point in time talk about the trolley, and talk about the trolley, and talk about all these elements that affect the trolley, and talk about the demands that we are going to have before us in the not-so-distant future, and make some decisions; make some decisions that are good for the City, good for the trolley; holistic decisions that allow us to move forward with this thing because I know during the budget cycle we had many discussions about the cost of the trolley, the funding mechanisms, the deficits; we've since talked about the trolley fare again, and we seem to kind of walk around this subject because its somehow "radio-active", and I don't know if we are afraid to talk about it or unsure about what we want to do with it, but at some point in time we are going to have to address the demand that the Doctor has pointed out in terms of passengers; and we're now going to possibly be looking at fifty-five hundred (5,500) passengers per day; and we are going to have to look at what kind of fund mechanisms are going to remain available to us, whether at the County level, or State, or Federal. I know for a fact, Commissioner Kerdyk that you've met with Commissioner Gimenez to try to find some additional funding through the transit system. I know the transit system is using some of our trolley numbers to generate revenue from somewhere else. I just think that the time needs to come where we put our arms around this process and bring it to some sort of a head, sometime in the very near future; and I would tell you – I would venture to say that we would probably need to focus in on this by the first quarter of 2008; and if we are going to make some hard decisions whether to expand the trolley routes, or buy additional trolleys, or charge a fare, or reconfigure the trolley system; we got to quit messing around with this thing and finally address it once and for all, because the reality is you've got residents that want trolley expansion, you've got people, maybe some of us, all of us on the Commission want to look at the fare possibility, charging a fare, and there are so many variables out there. I'll tell you, I've got two variables that we haven't spoken about, but when I first, along with the rest of you, passed the trolley, I remember two things: one was – I remember one specific thing that I liked about the trolley, we were going

to utilize the trolley.... Doctor forgive me, but I'm going off in a tangent, we were going to use the trolley for historic tours. Well we've never really even thought about doing that, we haven't contemplated using the trolleys for historic tours; and the second item that just came back to my mind is, we've been talking since God was a little girl about advertising in the trolley, and there still is...I have seen zero movement on advertising in the trolley. Now I know that you may be doing some things behind the scene, but we haven't done anything – nothing's happened. I remember a day when we talked about having trolley stops where we would have benched sponsored by particular entities – nothings happened there. What has happened? The demand continues, we need to buy more trolleys, lease more trolleys, fix more trolleys, and now we have a professional industrial engineer who's telling us, hey, this thing is not going away, this thing is even going to be bigger than you guys all thought it would be. So at some point in time somebody here has to stop and do a real reassessment of this program, and I don't know where its going to lead us, but Bill its not an attack on you; I continue to commend you for bringing the trolley to Coral Gables, I think it's the best thing that we've done since I can recall, and so please don't take it personally, its not meant as a personal attack, and if Tim is watching, Tim Plummer, don't take this personally, its not an attack on you, if Mr. Cox is watching, Mr. Cox you are doing a phenomenal job, its not an attack on you, but we've got to address this issue once and for all.

Vice Mayor Kerdyk: Can I respond?

Mayor Slesnick: Yes, Mr. Kerdyk.

Commissioner Cabrera: Absolutely.

Vice Mayor Kerdyk: It's not really a response, but just add to your things. First of all thank you Doctor, it's the first time we've ever had a chance to talk, or meet, or anything like that, and thank you very much for your presentation. Before I answer some of the questions that are being bantered around, and I certainly agree with Commissioner Cabrera, we should take that time and discuss this. Let me just point out three key issues in your presentation that is somewhat comforting, and before I do that, every time we discuss the trolley, I mean everybody is kind enough to say this, Commissioner Kerdyk thank you very much, but really it's a team effort, the Commission had to move forward, everybody here had to agree upon moving this forward, and had the vision to move the trolley forward, for really two reasons: we wanted to alleviate traffic in our downtown area, and throughout; and to provide parking spaces; and your survey basically agrees with that tremendously; you are eliminating one point two million (1.2M) miles of traffic, and furthermore, you are coming up with seven hundred and twelve (712) parking spaces that we would have to provide if this trolley was not there, is that correct?

Dr. Erkoc: Yes.

Vice Mayor Kerdyk: The other thing that I wanted to point out before getting to a quick update, is the optimization of the system, and I would recollect and really it would be – its necessary to mention that Albert Delgado, Jim Kay, and Ed Cox has done a tremendous job – Ed Cox has done a tremendous job...

Mayor Slesnick: Why isn't Ed here today?

Assistant City Manager Jimenez: We asked him to be here, but the trolley was being inspected by DOT.

Mayor Slesnick: OK – that's all, I just...

Mr. Delgado: That's a very important inspection.

Commissioner Withers: That's OK, he doesn't need to be here.

Vice Mayor Kerdyk: But I've heard the Commission loud and clear as far as trying to come up with additional funding for the trolley, and it's understandable the situation especially as far as budgetary constraints goes, and I just want to report to the Commission that we've actively, when I say "we" a committee of people that include the three that I mentioned earlier, Maria Jimenez, Dave Brown's included in on meetings, Tim Plummer, and myself had met on several occasions, but in addition to meeting just ourselves we have gone out and basically tried to address three areas, in particular try to find funding mechanisms. First of all the Florida Department of Transportation, we've met on several occasions with Johnny Martinez and Gary Dunn to try to secure additional funding for trolleys that will be needed; and they will be needed not only from the standpoint that if it reaches the five thousand five hundred (5,500) capacity, but what really we find out they are needed to take these hybrids out of service, because a lot of our funding is going to repairing these hybrids; and once we take them out you are going to see a lot of money that is realized. So FDOT, we've been talking to them, they feel that they can't give us a complete commitment yet, but I feel pretty secure that we are going to get at least one trolley from them, and things are looking in the right direction as far as that's concerned. With regards to the local level, we met with, as you pointed out, Commissioner Gimenez on two separate occasions; and at the last occasion we met with the Department Head of MTA, Mr. Kapour is it? - Mr. Kapour. This meeting was important because what it was we were trying to get a commitment to get some additional monies from MTA for routes that they eliminated, some funding for the trolley as far as that's concerned; but also from the standpoint that they allow us to pursue Federal funding. We've never been able to pursue federal funding based on the fact that when we've got the hybrids they said, you can't pursue any federal funding unless you come through us, and they have told us verbally that it would be OK to start that federal funding, look for money, and they would do it even through their office themselves to help us generate those funds. In addition, they also – everything is hearsay, but this is what they are talking about, they are talking about providing us a small amount, a stipend amount of money to help augment some of the services that we provide. If we ever do move up to Flagler, whether we do it or not, I have no opinion one way or another, but they understand they could help eliminate one of their routes and then they would give us additional funding to move up in that direction, but that's for discussion later on, I'm not advocating or not. The other thing that is very interesting, Commissioner Gimenez is looking into, and I'll say almost there about bringing forward to the Miami-Dade Commission an ordinance – I'll say an amendment to the ordinance for the impact fees, where they could take operating money out of the impact fees that we receive and apply it to the trolley system; and that's another mechanism that he is working on. So as far as federal, state, local, we've actively – I mean, I've listened, I really actively have been trying to

engage in doing that; getting a little bit closer to the situation as far as finding advertising dollars, and I'm a hundred percent with you, there's got to be a mechanism to find advertising dollars. One of the things that we are about ready to release...when?

Assistant City Manager Jimenez: 13th.

Vice Mayor Kerdyk: 13th – what's today, the eleventh, in two days we have a request for proposal to get advertising for the trolley on the monitor, on the monitor, is that right?- the monitor, and I know that we are trying to....

Commissioner Anderson: Actually there is a program on our CGTV on the monitor on the advertising or some type of....

Vice Mayor Kerdyk: No, no, no...I think that's it, we are doing that; as a matter of fact even the BID – Ed Cox has been speaking to the BID and possibly...going ahead and taking over that program and possibly being the one to run with it from that point forward. So that, and one last thing I will bring to your attention, as I mentioned to you earlier...

Mayor Slesnick: BID taking over but with income...

Vice Mayor Kerdyk: Coming to us, coming to us – instead of us – a partnership agreement – instead of us. And also, the final thing is that the trolley, the system as far as these five hybrids is really draining our overall budget itself, and those have to be eliminated. We are looking at possibly leasing or purchasing existing trolleys that are less, that we have to pay less value, for instance there is one in Georgetown now that normally we would have to pay three hundred thousand dollars (\$300,000) for a trolley, but this is a sixty-five thousand dollar (\$65,000) trolley, and we can lease it or...

City Manager Brown: With twenty eight thousand (28,000) miles.

Vice Mayor Kerdyk: With twenty eight thousand (28,000) miles, we can lease it or purchase it, but we are trying to – by buying this Ed thinks he can reduce the overall operating budget by two hundred thousand dollars (\$200,000), and that's from taking it more of these hybrids out of there. So we have been aggressively....

Mayor Slesnick: Can I ask a question?

Vice Mayor Kerdyk: Sure.

Mayor Slesnick: We keep talking about going “green” and about all this, are we saying that hybrids don't work, just these hybrids that we bought, this particular hybrid?

Commissioner Cabrera: No, its just from a maintenance standpoint, from a mechanical standpoint they are complicated; its complicated equipment; its equipment that requires a great deal of maintenance; it is not created – that equipment was not created by the high usage that we

are having to put it through; so for those reasons its not a feasible transportation vehicle, would that be a good assessment?

City Manager Brown: Absolutely – the hybrids are a very finicky engine; it's a one vendor engine; the demand became greater than the vendor could supply, and so the use that we are having to put it through, the good old diesel....

Commissioner Cabrera: Don't even let me get started to talk to you about life safety, because from a fire rescue standpoint, the battery issue on those things is really scary. The only reason I know this is I spent a day working with Fire on one of my many fire days that I spend with them, and I went to a trolley training session on the safety aspects of the trolley, and how fire rescue would deal with it; its one massive car battery; imagine that thing exploding.

Vice Mayor Kerdyk: I think its like thirty-five thousand dollars (\$35,000) for replacing one of those batteries.

Commissioner Cabrera: Yes, we are going to have to get you some jumper cables where you can just make sure you...

LAUGHTER

Commissioner Cabrera: Bill, listen, are you done?

Vice Mayor Kerdyk: Yes, pretty much.

Commissioner Cabrera: OK.

Vice Mayor Kerdyk: I can't say anymore.

Commissioner Cabrera: Yes you could. Let me give you some feedback, OK. Number one, yes, we were a team when we decided this thing; and number two you lead the team on this exercise, so I wasn't trying to take anything away from the rest of us, but I'm trying to give you the credit that you deserve, so that's first and foremost. But when you started your commentary here's what I thought you were doing; I thought you were engaging me in debate, I know you are not, what you did was you were giving me an update, you were educating me, and you were informing me on some of the great things that are being done to augment what the good Doctor has presented to us. Now here's the tough part, I need to get that kind of stuff more often, and it doesn't necessarily need to come from you, but it needs to come from somebody in the City, so that I can develop a better comfort level with what's happening with the trolley; and here's why – everything that you've said today was news to me, never heard about it; I head about the Gimenez meeting, because Carlos and I spoke about it because we met the same day, but outside of that I know nothing about what's going on with the trolleys. I need to know, just like Maria, and Don, and Chip need to know, so that we can be more comfortable with this process because right now Bill, I got to tell you, I really want to explore the fare issue, but now that you have had the opportunity to brief us, I feel a lot different. But I'm going to tell you this, every time I do something like that to the Commission, I go well out of my way to put memorandums together,

whether its talking to you guys about term limits, or talking to you about the annual performance review for appointed officials, or if I'm talking to you all about salary increases for City Commissioners, I put it in writing and I make sure it becomes a public document. As your good friend and colleague, and I consider you my closest political ally on the City Commission, I would tell you that that would be my recommendation to you.

Vice Mayor Kerdyk: I appreciate that. I think we've had this discussion before in our meetings, that we should have people go and speak to each Commissioner, and I don't know why that hasn't been done, but I'll take the full hit for not having that done; So, I apologize for that. But we will make sure, right Mr. Delgado, that people are updated more on a continuous basis.

Commissioner Cabrera: Doctor, sorry.

Mayor Slesnick: Doctor, thank you very much for your report. Obviously it contains the kind of information that we will be able to use to move forward in these very important discussions as you've heard set forth by at least two of the Commissioners here.

Dr. Erkoc: My pleasure.

Mayor Slesnick: Thank you; thank you Mr. Delgado. Please tell Ed Cox that we missed him and that we send our compliments for his good work.

[End: 12:54pm]