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of the

COMMITTEE ON TECHNOLOGY IN GOVERNMENT AND SUBCOMMITTEE ON PUBLIC HOUSING

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HELD AT: Hearing Room
250 Broadway, 14th Floor

B E F O R E:
GALE A. BREWER
ROSIE MENDEZ
Chairperson

COUNCIL MEMBERS:
G. Oliver Koppell
Robert Jackson

A P P E A R A N C E S (CONTINUED)

Avi Duvdevani
Deputy General Manager for Information Technology
NYCHA

CHAIRPERSON MENDEZ: Good afternoon. I am Councilwoman Rosie Mendez. This is a hearing being held jointly between the Subcommittee on Public Housing and the Committee on Technology in Government. I am very honored to be chairing this with Chairperson Gale Brewer. Today's hearing will focus on NYCHA's pilot program which uses broadband technology. The New York City Housing Authority provides a needed home for poor and working-class New Yorkers to be able to live in this great city. That being said, we must ensure that the agency responsible for providing much needed affordable housing is able to make the best use of technology that is available to assist and serve the residents of public housing and others who interact with NYCHA. We are interested in learning whether issues exist regarding the broadband power lines network that need to be addressed in order to avoid future problems and ensure an efficiently functioning system and increasing NYCHA's responsiveness to tenant complaints about the system. I want to thank everyone for being here today and to my co-chair. I will turn over the committee for her to

chair. Thank you.

CHAIRPERSON BREWER: Thank you very much. I'm Gale Brewer, chair of the Technology in Government and it's always a pleasure to participate in anything with Council Member Rosie Mendez, who's a real authority and supporter of good management at the NYCHA developments. As we know, NYCHA is the largest public housing authority in North America, 343 developments, 2,636 buildings throughout the five boroughs, 405,000 residents--it says authorized, but we love them all whether they're authorized or not--live in almost 178,137 apartments representing 8.3% of our cities rental apartments and 5% of our city's population. I think we know that most families that live in NYCHA developments pay no more than 30% of their family household income for rent and the average rent is $378 per month. What we're talking about today is BPL, also known as broadband over power lines. It uses the existing power grid to deliver high speed internet service to the electric outlet with the addition of equipment on the power grid itself and a plug-in modem in the house. It sounds real easy, but I

know it's more complicated. BPL can be accessible by every building and apartment that has an electrical and it is generally less expensive to deploy than cable and telephone companies' broadband. However, BPL can be a potential interference for other radio services using the same frequency range because power lines can act as antennas and unintentionally emit broadband signals as radio signals. We have spent hours on this issue with the white spaces discussion, as some of you know, on a broader level. NYCHA's proof of concept, or POC. Seeking to identify a low cost solution to replace the aging intercom system and the closed circuit TV, also known as CCTV, security system in every housing development. NYCHA evaluated BPL technology by creating a proof of concept, a POC. In November of last year NYCHA placed a BPL system, broadband over power line, in 115 apartments throughout 15 floors of the same building. I'm sure we'll hear more about this later. After making changes to the system and implementing CCTV and intercom system in June 2008, the project became operational a few months later in August '08 and

then entered a four-month monitoring period. This project has allowed residents to talk to guests at the front door of the building and open the door remotely by using the apartment intercoms, while also installing nine stationary cameras and one pan-tilt-zoom camera to monitor the outside areas, elevators and the lobby in real time. The BPL technology is beneficial because it is less costly and more efficient since this new system costs 50% less than other cable systems that offer both intercom and CCTV service. This technology is also capable of providing additional service, such as VOIP, which is cable phone service and internet service. So we are delighted to have here Avi Duvdevani, who is the deputy general manager for information technology at NYCHA and who's known worldwide in terms of his expertise on this topic. So we're delighted to have you, Avi.

AVI DUVDEVANI: Thank you, Chair Brewer, Chair Mendez, members of the City Council. Good afternoon, I'm Avi Duvdevani, deputy general manager for information technology at the New York City Housing Authority. I appreciate this opportunity to discuss the broadband over power

line technology demonstration project at NYCHA. As you've just indicated, NYCHA manages over 178,000 apartments in 343 developments throughout the five boroughs and we provide housing and services for over 403,000 low and moderate-income New Yorkers. Given the age and vast extent of NYCHA's 343 developments throughout the five boroughs, our priority is to preserve and modernize our housing stock. We're also taking advantage of opportunities to look at smart building technology to improve and enhance services to NYCHA residents. NYCHA, as you've noted, is currently testing an emerging technology known as broadband over power line, or BPL, that could potentially allow us to address the need for more cost effective intercom service for our residents and to explore the possibilities of other smart building opportunities. I want to depart from my testimony for a second to just take a moment to acknowledge the leadership of the Committee on Technology for the early recognition of BPL technology at a hearing that was held in October of 2006, which coincided with NYCHA's release of the solicitation that resulted in this

proof of concept demonstration project. BPL maps an IP internet protocol signal onto a building's existing electrical infrastructure through its electrical risers allowing it to readily reach individual apartments. This makes ordinary electrical outlets in an apartment capable of IP communications. NYCHA has developed and implemented a demonstration project to evaluate BPL technology. We also call it a proof of concept. The term proof of concept is a term of ours that we used in our IT governance process, but proof of concept and demonstration project can be used interchangeably to describe the nature of the project. The scope of the demonstration project was two-fold; to determine if BPL is a viable solution to replace legacy intercoms and to determine its viability to support a typical CCTV deployment in a NYCHA development. Under the demonstration project, NYCHA installed a BPL at a single 15-story building containing 115 dwelling units at Roosevelt Houses in Bedford Stuyvesant in Brooklyn in the summer of 2008. NYCHA installed an intercom system utilizing an IP telephone mounted to a BPL iBridge, which is a modem-like

device, at each of the 115 apartments at Roosevelt Houses Building #5. The iBridge plugs into an ordinary electrical receptacle outlet which in turn operates the magnetic door locks at the lobby entrance. Residents received training on how to utilize the BPL intercom component in their apartment. For the CCTV component, ten security cameras, as you've noted, were strategically placed in select areas of the building, including the lobby, elevators and in and around the building entrances, exits and paths. BPL carries the signal for these devices. NYCHA will spend the next several months evaluating resident and staff experiences with the intercom and CCTV enhancement provided by these two applications which are supported on the BPL technology. We look at several factors as we evaluate the demonstration project including: reliability, level of functionality, cost effectiveness, ease of use, and ease of maintenance of the components. In conclusion, NYCHA has developed and implemented a creative demonstration project in response to the demand to maintain high quality intercoms and CCTV security for residents. I'm pleased to

report the Public Technology Institute, also known as PTI, a national not-for-profit that works with government to identify opportunities for technology research has recognized the New York City Housing Authority as an innovation lab for broadband over power line in-building demonstration project. As an innovation lab, NYCHA will share information on the project and serve as a resource to other government officials interested in exploring building power line infrastructure to enable enhanced intercom, CCTV video surveillance and additional services that BPL technology can provide, including VOIP phone service and high speed internet service. As I mentioned previously, NYCHA will spend the next several months evaluating the project and obtaining resident and staff feedback. Despite difficult fiscal challenges, NYCHA will continue to seek low cost smart solutions such as BPL to improve services to residents. Let me conclude my remarks here and thank the City Council and this committee for your support of New York City Housing Authority. I'm pleased to answer any questions you have.

CHAIRPERSON BREWER: Thank you very much. I think one of our first questions is what is advanced cabling infrastructure and how many buildings use that technology? How does it differ from BPL? So, I think what you have are two different systems, but if you could just describe them and how they differ and what's cheaper. You know, all the differences.

AVI DUVDEVANI: First let me say that NYCHA provides and maintains intercom services at all our developments. The advance cabling infrastructure project was a building intercom modernization capital program at 17 NYCHA developments, or roughly 222 buildings, which is completely separate from the broadband over power line demonstration project. That project was conceived ten years ago and was substantially completed over two years ago. I had previously provided your committee testimony on this topic at an oversight hearing on November 14, 2005. Although I didn't prepared any additional remarks, in answer to your question I can tell you that the advance cable infrastructure program was meant as a replacement of the buildings' reliance on the

telephone line to support the intercom system, which is the typical way intercom services are provided at most NYCHA developments. So in the case of these 222 buildings in the advanced cabling infrastructure modernization project, the original Cat 3 line to each apartment was supplemented with a composite cable bundle from a central wiring center in the basement of each building and it was terminated at each dwelling unit with a network interface device known as NID box. Each of the 2 plus 2 cable bundle consisted of 2 coaxial cables, 2 four-pair Cat 5e cables and one dual-strand multi-node fiber optic cable. Currently over 20,000 apartments across 17 NYCHA developments in these 222 buildings contain the advance cabling infrastructure. All but one, our Drew-Hamilton Houses in Manhattan, are receiving intercom services over that infrastructure. Currently Drew-Hamilton is still negotiating with the capital project contractor to complete the deployment at Drew-Hamilton.

CHAIRPERSON BREWER: Avi, can you help us a little bit with what you just said? I think what we need is to understand what exactly

advance cabling infrastructure is in an apartment, exactly what exists and then maybe even just visually how BPL will look differently. And then I guess there are some buildings that don't have either of the above.

AVI DUVDEVANI: Right.

CHAIRPERSON BREWER: So let's just start with advance cabling. What does it look like when you're in an apartment?

AVI DUVDEVANI: There is a cable bundle that's delivered to each apartment from a wiring center in the basement of the building. That cable bundle is terminated in a box that's typically installed in the closet. That termination has two plus two plus one cable components in it. We use one portion of it, the copper, to support a modernized intercom. It's a standard telephone intercom that connects to this and controls the doors. It's a standard telephone. That's different than the usual setup in most of our developments where the intercom is supported by a telephone that's the same telephone used to make calls, the Verizon telephone. Because typically and historically, going back to

the 40s and 50s when these buildings were constructed, the decision was made then to co-locate on the existing Verizon copper that supports the regular telephone. So the decision to modernize this ten years ago in these 17 developments was an attempt to upgrade and modernize and remove the reliance on the Verizon telephone copper and be managed by NYCHA directly. As I said before, we maintain intercoms at all of our buildings and we have contracts for intercom maintenance throughout. But in the 222 buildings with the advance cabling infrastructure, the setup is separate from the Verizon telephone.

CHAIRPERSON BREWER: So there's 220 buildings in 17 developments with the advance cabling infrastructure and then other buildings have the old copper with the phone, and then a few buildings now have BPL.

AVI DUVDEVANI: Just one.

CHAIRPERSON BREWER: Just one building.

AVI DUVDEVANI: Just one in the demonstration project.

CHAIRPERSON MENDEZ: I'd like to

get a list of the 17 developments that we are talking about.

AVI DUVDEVANI: Yes, ma'am, I submitted it a couple of years ago, but I'll do it again. I'm happy to do so.

CHAIRPERSON BREWER: When you have the advance cabling infrastructure it does intercom, CCTV and then communication services for residents, is that all part of what it does?

AVI DUVDEVANI: In terms of NYCHA's implementation of the advance cable infrastructure, it primarily supports intercom and that's it. What we've done is we've entered into license agreements with a couple of service providers for some of these developments to provide video, telephony and internet services. So for example, in Staten Island, the Todt Hill Houses, for 500 units in that developments, one of our licensees is providing currently low cost internet access at a much better than DSL level; also providing a video bundle very competitively with what's offered to those residents in terms of what Time Warner Cable provides out there; and of course, telephony services. NYCHA doesn’t get

into the business of the service provider's services, we just license to them the right to use our infrastructure to deliver these services. But just to give you a sense, I believe, that a triple-play bundle that consists of video and telephony and broadband internet service comes in at two-thirds or less of the cost that Time Warner would charge. So it's certainly an advantage to our residents there and in any case offers a competitive choice to our residents in terms of which kind of service to choose.

CHAIRPERSON MENDEZ: How do you pronounce his last name?

CHAIRPERSON BREWER: We call him Avi. Everybody calls him Avi.

CHAIRPERSON MENDEZ: I heard I could just call you Avi.

CHAIRPERSON BREWER: Everybody calls him Avi.

CHAIRPERSON MENDEZ: So that makes it much easier for me.

CHAIRPERSON BREWER: Everybody calls him Avi.

CHAIRPERSON MENDEZ: So a lot of

what you said I get, but a lot of it I don't quite get and I'm just wondering then with the audience out there and the people who are going to see this, how we can put this more in plain English for them to understand this. Am I understanding that you started this process ten years ago in public housing?

AVI DUVDEVANI: What I was saying is that the advance infrastructure cabling, which the council member was referencing was a project that was conceived ten years ago as a way to attempt to modernize the existing facilities. That involved running these cable bundles, which is a very, very labor intensive and costly process because you have to drill through the floors and into the apartments. As you can understand it's very, very costly. It costs the Housing Authority at the time many millions of dollars, but it was an opportunity to do a capital improvement that was viewed as needed at the time, at least in these particular developments. Clearly in these hard fiscal times it's not an easy decision to make to spend those kind of millions, so we were looking at this BPL project as a way to possibly

demonstrate that it could be done at a lesser cost using this new technology.

CHAIRPERSON MENDEZ: So this was started about ten years. I certainly remember when they started putting in the intercom system way before that, and that's been problematic and still is. So we're just trying to get the technology faster to residents of public housing and we've been able to do this only in 17 developments during the last ten years?

AVI DUVDEVANI: Again, for the advance cabling infrastructure, given that it's been very, very costly, it was limited to those 17 developments.

CHAIRPERSON MENDEZ: I'd like to know which of those developments were done prior to the chronic underfunding and which ones were done after the chronic underfunding.

AVI DUVDEVANI: They were all funded prior to the chronic underfunding. They were all funded, it just took a long time to do them. There was vast amount of labor intensive work that contractors had to perform to do the core drilling, access each of the apartment units

in those 222 buildings, so it was a long project. It was completed about two and a half years ago. But the funding allocation, I believe was prior to the chronic underfunding.

CHAIRPERSON MENDEZ: I'm just going to let you go so I can absorb some of this information.

CHAIRPERSON BREWER: We've been joined by Council Member Oliver Koppell from the Bronx.

COUNCIL MEMBER KOPPELL: Thank you.

CHAIRPERSON BREWER: Is broadband over power line less expensive? If the project that you're looking at goes well, is it going to be considered as an alternative or is it supplement, compliment, how are you looking at this?

AVI DUVDEVANI: The intention of the demonstration project is to demonstrate that it is a less costly alternative to doing the core drilling and running the cables. Early numbers indicate that there is a reduction, as you noted, of approximately 20%. We don't have all the numbers finalized yet. We hope, over the next

three or four months, to get those numbers really nailed down. In addition to intercom, which we did in advance cabling, we chose to include CCTV, which makes it a little bit more complicated to analyze the cost of one versus the other. But we will be doing that in a great amount of detail because our governance process in terms of how we make decisions to invest in technology at NYCHA is based around developing a very clear business case that has a return on investment. So I'm hopeful that we'll be able to demonstrate that it's less costly and a preferred alternative. It's just that we can't say that yet.

CHAIRPERSON BREWER: This is my ignorance, but many RSOA [phonetic] dollars and NYCHA dollars go towards security cameras, CCTV. They're very expensive. The question I have is, does BPL work with the CCTV? Is that what you're looking at? When you talked about this hopefully integrating, is that what you're talking about?

AVI DUVDEVANI: So what would happen is in terms of attempting to reduce the cost of the CCTV package, which the council members have so generously supported, is to

possibly reduce the cost of that because we would be relying on running less cable and using the BPL as a transport mechanism. You can't avoid running some cable to support the cameras. Obviously you have to run electrical power to them and so forth. But in general we can use the BPL to transport that signal and that would lower the cost of a typical CCTV deployment.

CHAIRPERSON BREWER: I assume that there are cameras in some developments where there isn't advance cabling infrastructure.

AVI DUVDEVANI: Right.

CHAIRPERSON BREWER: Can you just compliment the BPL with the current cameras?

AVI DUVDEVANI: No. Where we've deployed cameras, this is some cost, right? Those cameras are deployed having run cables throughout the building to support that compliment of cameras. In the case of the BPL demonstration, we have lessened the need for the amount of cable necessary to support the same compliment of ten cameras.

CHAIRPERSON BREWER: All right. The other question I have is when you do your

evaluation are you looking at it with an outside evaluator? Or is NYCHA looking at it in terms of the BPL? Who's doing the evaluation?

AVI DUVDEVANI: Obviously there's many components to the review. My colleagues in the management department who need to support, and do on an every day basis, the intercom throughout the development, they have to provide us some input in terms of what the operation issues are. In this particular case, the residents are using a different kind of telephone. They're usually actually a VOIP phone on the intercom. It's a slightly different user interface, if you will, than in a typical building where a resident uses their regular phone that they might make normal calls with. So those are the kind of differences that we need to ensure are sustainable in any future deployment, whether it would be on a moderate or large scale. Obviously any future deployment is going to depend on tradeoffs in the location of capital dollars for competing priorities.

CHAIRPERSON BREWER: This is off the topic, and I think this has been worked out,

but the VOIP phones originally couldn’t call 911. That's been all worked out?

AVI DUVDEVANI: Yes.

CHAIRPERSON BREWER: And then the other issue with the VOIP is many people don't want their telephone listed, but sometimes Verizon won't list in the phone book a VOIP phone. Has that been worked out also?

AVI DUVDEVANI: These telephones that we're deploying in the demonstration project cannot be used for anything other than to support the intercom.

CHAIRPERSON BREWER: Okay. So you continue to have your normal phone if you so desire.

AVI DUVDEVANI: Exactly.

CHAIRPERSON BREWER: The other question I have is there any interference that one would worry about with BPL? Obviously the first responder. I don't think anybody has ham radios anymore. I don't know. But are there any other kinds of interference that could--

AVI DUVDEVANI: [interposing] Well certainly we were aware from the material that was

discussed at the hearing that you held about four years ago that there was this issue of the interference and the FCC certainly has made some mention of it. Nothing has come to our attention yet in this particular one building demonstration project that there's any ill effect from this interference. But clearly that's something we're going to consider if it comes to our attention. We have our personnel in the building who use the tier one radios and no one's reported any difficulties with that.

CHAIRPERSON BREWER: I'm just trying to understand this. So this is more cost efficient than what we currently have?

AVI DUVDEVANI: We believe at the end it will be. Again, we're still measuring, but indications are that it would be more cost efficient.

CHAIRPERSON BREWER: And your measurement is based on this pilot program? What is it based on?

AVI DUVDEVANI: So again, comparing the cost of implementing the broadband cable infrastructure, which averaged at the time about

$1,400 per apartment dwelling, comparing to what we have done in this demonstration project, which looks to be somewhere in the neighborhood of $800 to $900 per apartment dwelling. We see, obviously, that differential. So we estimated in today's dollars that $1,400 might be $1,700 because that cost is primarily labor, it's not technology. It's the labor that's needed to run that broadband cable infrastructure and do the core drilling and so forth. So if we were to do that broadband cable infrastructure today we're assuming it would cost us more than it did when we initially contracted for this a number of years ago.

CHAIRPERSON BREWER: Explain to me in very plain English, how is this related to electrical services? There are some buildings where tenants pay electricity and most buildings where tenants do not.

AVI DUVDEVANI: I was always under the belief that tenants do not pay electricity.

CHAIRPERSON BREWER: Not in all the developments.

AVI DUVDEVANI: Again, it's not

something I'm familiar with. But this broadband over power line has no impact on the kilowatt usage or anything. It just merely uses the power lines as a way of conveyance of this internet protocol signal, but it has no impact on the consumption of power or the way in which power is charged. It doesn't interfere at all with any electrical services provided. I think there was some discussion at the October 2006 hearing that Con Edison actually had implemented this in one building where they were able to prove that it had no impact on their own services in that building. And yet they were able to enhance the quality of life of the tenants in that particular building where the residents got to enjoy some of this. I believe it was a co-op or a condo uptown someplace.

CHAIRPERSON BREWER: And with the future greening of NYCHA, is there any anticipated issues that may arise?

AVI DUVDEVANI: Certainly, when you bring some technology in and we have to bring things like servers and these modem-type devices, there is some carbon footprint associated with

that. But there's a tradeoff because we do avoid running all these cables through the building and do avoid the unnecessary intrusion on tenants if we were to wire the building directly. So there are tradeoffs. If you're asking me is this technology completely green, well no technology is completely green, it just gets a little greener every time.

CHAIRPERSON BREWER: This pilot program is being run in what borough?

AVI DUVDEVANI: It's in Brooklyn, Bedford Stuyvesant, Roosevelt Houses Building #5.

CHAIRPERSON BREWER: Are there any anticipated issues that might arise in other boroughs or any particularities?

AVI DUVDEVANI: Again, part of the whole demonstration is to determine how this technology behaves in different types of NYCHA buildings. There's basically three basic building types: under 15, 15, and over 15, very large high rises. In the larger high rises, we think the cost is going to be higher. We haven't tried it yet. If we do get a chance to demonstrate that I believe we'll see the cost gets higher because you

have to introduce all sorts of extenders and signal boosters to get up higher on the building. We presume that the lower story buildings might be a little cheaper because you could do more. The technology is constantly changing. We've seen during the demonstration project itself an evolution of technology that allowed us to increase the broadband bandwidth by an order of magnitude. So we see this technology constantly changing. So it's something that has to be considered in future ones.

CHAIRPERSON BREWER: In some of the smaller buildings, they're connected by rooftops and basements, but they've got separate entrances. So we are talking about the building entrance or are we talking about an actual myriad of buildings that are connected by rooftops?

AVI DUVDEVANI: Typically what we would do is control the main entranceway through the intercom system that will allow for the electromagnetic lock to open when the tenant wishes to let the visitor in after the intercom discussion. So that's what we would seek to control. And that's the way the traditional

intercoms do work. But again, these are more modernized and presumably cheaper to install.

CHAIRPERSON BREWER: I've just got a couple more questions. Where is the funding coming from this? Does this get reimbursed by the federal government? Does it get reimbursed dollar for dollar? Are there any additional funding outside of the federal government that's coming to do this pilot project?

AVI DUVDEVANI: For the demonstration project we allocated, I believe, $260,000 out of a HUD grant for capital improvements. Any future allocation is really going to be based on the available of the capital fund and the competing priorities for those funds, which as you are well aware, there are a lot of other competing priorities. There is no current plan allocation for expansion of this until the results of the demonstration project are conclusive and then the decision about where to invest the constrained capital dollars that we have in terms of the overall rehab that we need to do throughout NYCHA.

CHAIRPERSON BREWER: So the pilot

program only cost $260,000 and that came from a HUD grant, is that correct?

AVI DUVDEVANI: Yes, ma'am. One building.

CHAIRPERSON BREWER: And the 17 other developments that the infrastructure cable work was done, how much money did that cost and where did the funding come from?

AVI DUVDEVANI: As I said, there was 222 buildings at roughly $1,400--

CHAIRPERSON BREWER: [interposing] Excuse me, the number was 222?

AVI DUVDEVANI: Buildings at roughly $1,400 per unit, translated to somewhere around $34 or $35 million that at that time did come from a HUD grant. I can't be 100% sure, but I believe it was part of the funds that at the time were available to support the anti-crime and anti-drug program that was available then. Those funds are no longer available. But I believe that's where those funds came from before the chronic underfunding.

CHAIRPERSON BREWER: Thank you very much. Technology requests to Sean Donavan, as

well as everything else. We have his home address. You should send it immediately, Avi. The question I have is smart buildings. I know you mentioned that and it's a term that is widely used without knowing exactly what that means. How does this sort of advantage smart building technologies? Is there other things that you can do with BPL in terms of heating systems? I don't know.

AVI DUVDEVANI: Sure, you mentioned in your presentation earlier that there was opportunities for actual delivery of broadband services and certainly that was not in the scope of our demonstration project. But we believe that's reasonably doable pretty much within the type of investment we've already made. It wouldn’t be a lot more in cost to actually deliver. Obviously you need to contract with a provider to actually provide the internet broadband, but that kind of service could be readily available. I don't think that the capabilities of broadband over power line could go as far as to support some of these video services.

CHAIRPERSON BREWER: So no triple

play?

AVI DUVDEVANI: Right. But certainly voice over IP telephony, extending the telephone to be more than just an intercom telephone but also a telephone that could be used as a voice over IP telephone, that's all within reason. But those would be things that we would look to obviously contract out to service providers if this were to go on. Some of the other smart building applications are some of the things we're supporting today with standard and/or wireless cables. Today with wireless we're supporting remote monitoring of the heating plant, remote monitoring of the elevator system.

CHAIRPERSON BREWER: Water.

AVI DUVDEVANI: Supporting that with a combination of wired and wireless. Certainly BPL can have a role in that as well.

CHAIRPERSON BREWER: I'm just thinking out loud, but NYCWin is supposedly doing some with DEP, et cetera. Is there some connection here or could there be?

AVI DUVDEVANI: We're actually working with Do It and NYCWin to support our

handheld inspection initiative. Our pilot today is with a handheld inspection facility that cradles and connect to the network. But we expect by next summer to be able to utilize NYCWin to support those handheld devices. So NYCWin certainly figures on. So what it does, as you are implying, broad over power line merely adds one more option to use in a portfolio of opportunities in terms of connectivity--wireless, wired, NYCWin as a different kind of wireless and obviously BPL.

CHAIRPERSON BREWER: What's the speed on any of this? How is it different from other speeds?

AVI DUVDEVANI: Again, it's the width of the broadband signal, so there's a limitation. We see that we can handle the CCTV with virtually no difference between a standard CCTV video signal. Our CCTV mangers are very, very happy with the quality of what they're capturing and the volume that they're capturing in this demonstration project. But we realize that there is going to be some limitation if you attempt to add much more to it. We think the broadband is fully supportable. We'd like the

opportunity to demonstrate that. We'll see if that can happen in the future.

CHAIRPERSON BREWER: As an example, so we can be specific, if you're living in this Brooklyn development and the project is going well in terms of security in the intercoms and CCTV, but if you want to add other services to your own apartment, you could piggyback off of this but you'd have to pay. How would that work?

AVI DUVDEVANI: Well NYCHA would have to contract with a service provider to do the backhold--

CHAIRPERSON BREWER: [interposing] In the building?

AVI DUVDEVANI: In the building. And then we'd then market those kind of services within the building to those interested tenants.

CHAIRPERSON BREWER: It could be less expensive than a provider? I'm trying to think of homework and seniors and households.

AVI DUVDEVANI: And I think we've demonstrated that in the Todt Hill Houses where we're using the advance cable infrastructure. That was a sunk cost. The cost was sunk. We

spent $1,400 per apartment unit to deploy that and it supports very effectively a modernized intercom. But now those tenants have the option to add the broadband service internet access at less than half the cost that they might have to pay Time Warner or Verizon for that. They have the option of also buying video services from that vendor. They also have the option of getting voice over IP telephony either as a triple play package or as distinct services. So that's a benefit that those tenants get by us having licensed with a provider.

CHAIRPERSON BREWER: Within NYCHA or residents, are there governance procedures for approving this technology for one technology over the other? NYCHA's very complicated.

AVI DUVDEVANI: I mean in terms of making decisions about future investments and doing the priority selection, we certainly have a governance process for presenting a business case and letting the governance committee, which is effectively the general manager, his deputy general managers who will have to make a final decision about tradeoffs. I'm fortunate to have

good support and people very much interested in technology. We've worked together and continue to work together on a lot of initiatives, but in the end the tradeoff of making one investment over another one, we realize you don't have all the funds that you need to do everything that you need to do. We've demonstrated that the governance process works. And even projects that don't get funded in any given year always get revisited again if they make sense.

CHAIRPERSON BREWER: The other topics in technology you know so much better than I things change and evolve and you never know what's next. But the wireless has always been a challenge because of the thickness of the walls. Is WiMAX something that might come down the line later on? Or is that also the same challenge?

AVI DUVDEVANI: It appears it might be the same challenge.

CHAIRPERSON BREWER: I'm trying to think the next is. You've got BPL, advanced and then I just didn't know if there was something else that's even more cost appropriate.

AVI DUVDEVANI: We will certainly

look at anything that comes about. I believe you're correct that wireless implementation in our buildings are going to have challenges in reaching everybody. We may be able to reach a campus environment in the public grounds and so forth, but getting into each apartment effectively and consistently is going to be a challenge. The BPL I believe is demonstrating that it helps us overcome that challenge. There will be advances in BPL. There may be other solutions. We're going to be open to them. When NYCHA made the decision to invest in the advance cabling infrastructure a substantial amount of money that was the only option available at the time when that was considered ten years ago. And we see now ten years later there are other options and we don't have to consider making that kind of investment anymore.

CHAIRPERSON BREWER: Does WiMAX run into the same challenges as wireless even though it's a bigger stem, a bigger pipe?

AVI DUVDEVANI: I'm trying to stay as much up in literature as I can. I haven't seen any kind of deployment in buildings with the

characteristics that we have at NYCHA.

CHAIRPERSON BREWER: So there won't be any other pilot programs I guess unless there's more funding and you'll have to see how this one goes.

AVI DUVDEVANI: Yes, ma'am. Once we publish our final business case, I'm hopeful that I can get some funds to possibly expand. I mean we did just one building. That's not enough of a demonstration. We'd like to do a small campus perhaps. So maybe the $260,000 investment maybe becomes a half a million dollar investment. So if that's possible in the judgment of my colleagues at NYCHA, we would hope to be able to do something like that. If it's not possible immediately, I would hope that we would be able to do something like that soon.

CHAIRPERSON BREWER: I think BPL works, as you suggest, internally, which is what you're doing, in the buildings. But it doesn’t necessarily work as a citywide opportunity because it's not that reliable. I mean I think you're thinking about it just internally, which makes sense.

AVI DUVDEVANI: Provincially at NYCHA we have to look in terms of our buildings.

CHAIRPERSON BREWER: To your credit. No, no, to your credit.

AVI DUVDEVANI: But I think that the technology has been used in small cities, as you're aware.

CHAIRPERSON BREWER: That's correct.

AVI DUVDEVANI: And it could work. New York is always a difficult challenge when you look at New York compared to some small city in Maryland where they've done this successfully.

CHAIRPERSON BREWER: I know there's one in Utah.

AVI DUVDEVANI: There's a few examples. Many of these locations they were smaller, private homes rather than multiple dwelling. I think we've demonstrated with our project, which is the reason I think our project is exciting, that we're able to do that in a multiple dwelling facility of some large number in an effective way. Part of the reason for having this innovation lab designation is to kind of

learn from each other. We can't figure everything out ourselves or be able to do everything ourselves. But in this dialogue that we have with other people in government, we might be able to see some other opportunities such as you suggest.

CHAIRPERSON BREWER: Are you going to need repeaters down the line?

AVI DUVDEVANI: Again, in the higher buildings, obviously.

CHAIRPERSON BREWER: What would be an example? Or you don't quite know yet?

COUNCIL MEMBER KOPPELL: Above 20 stories.

CHAIRPERSON BREWER: Above 20 stories you might need a repeater? Okay.

AVI DUVDEVANI: We are actually using some repeaters in our 15-story building here as well. We found some challenges once we got above ten and we had to introduce some repeaters.

CHAIRPERSON BREWER: As a tenant, do you have the ability with the BPL, how does it give you more--I understand the advantages from the Housing Authority's perspective, hopefully lower costs for the CCTVs and less cabling and all

those infrastructure issues. But from the residents' perspective, what exactly does he or she get more than one would under the advance cabling infrastructure, just from his or her perspective?

AVI DUVDEVANI: The advance cable infrastructure and the BPL customer interface are similar, except the difference is one is an IP device and one is not. In advance cable it's not an IP device. The advantage of the IP device is it opens up other opportunities such as using a second node on that IP device to support broadband services. So while the tenant may not immediately see the advantage, we clearly see there's an advantage to the tenant in the long run.

CHAIRPERSON BREWER: So they could put in a computer or they could put in a laptop or they could put in another phone.

AVI DUVDEVANI: Yes, and it becomes an appliance as opposed to just a telephone.

CHAIRPERSON BREWER: So right now probably most of the residents in the Brooklyn have the broadband over power lines. And what that entails is they have perhaps an opportunity

if there's an outside provider and they continue to have their regular phone, whatever that might be. And they could then probably have their own computer on a separate line if they have the funding to do the provider.

AVI DUVDEVANI: Today, since the broadband over power line scope is limited to just supporting the intercom and CCTV, if they were to have a computer they would be buying services from either Verizon or Cablevision.

CHAIRPERSON BREWER: Right. Whatever they choose, their outside provider.

AVI DUVDEVANI: Right. But that could change with the introduction of a provider to this.

CHAIRPERSON BREWER: And with the second connection into the BPL?

AVI DUVDEVANI: Yes, ma'am.

CHAIRPERSON BREWER: If you put that in, people are going to be very excited, Avi.

AVI DUVDEVANI: Well, I'm hopeful. I mean we're still monitoring the level of excitement over at Todt Hill. It doesn’t seem to be overwhelming, but we're hopeful over time.

CHAIRPERSON MENDEZ: Thank you. Earlier you mentioned that it costs between $34 to $35 million to do these 17 other developments and that you believe this money came from the HUD anti-crime/anti-drug funding. So I would like to get exactly where the money came from. My recollection of the anti-drug funding and I can't recall exactly when HUD cut the funding, you know the numbers just aren't adding up for me. So if the committee could get that information it'd be helpful. Also you said that the authority enters into license agreements with different providers. Can you tell me how much revenues the authority generates from those agreements?

AVI DUVDEVANI: At the moment it's very, very little revenue. We have a license agreement with two different providers. One of the providers, as I mentioned before, is providing the services at Todt Hill development in Staten Island, a 500-unit development. They've only sold a small number of packages, so it would only be pennies of revenue that’s being generated there monthly. There are future deployments planned in the Bronx with another licensee, as well as six or

so additional developments. So it remains to be seen how successful that will be. We just viewed it as an opportunity to make this infrastructure available to service providers as a result of a solicitation that we did some time ago, and also an alternative to the incumbent franchisee or other provider. And very much the same theory that is bring considered in terms of the Verizon FiOS deployment that's going to happen over the next seven years across the city.

CHAIRPERSON MENDEZ: Where in the Bronx?

AVI DUVDEVANI: St. Mary's Housing in the Bronx is possibly the next development that would go online with one of our licensees.

CHAIRPERSON MENDEZ: Thank you very much.

CHAIRPERSON BREWER: Joined by Council Member Robert Jackson. Thank you, RJ.

COUNCIL MEMBER JACKSON: You're welcome, Gale.

CHAIRPERSON BREWER: The question I have too is in the Bronx and I know you've explained this to me many times, again, how is

that deployment, if it is different from what you are suggesting in terms of BPL. I know that you've explained this to me many times.

AVI DUVDEVANI: Again, in the Bronx it's using the advance cable infrastructure that was deployed there. So it's using traditional Cat 5 to access the apartment. The licensee there has the opportunity to do a provisioning of IP telephony and low cost broadband through that infrastructure and deliver it.

CHAIRPERSON BREWER: And then that particular resident would be able, as we have discussed, to see through the intercom in his or her apartment what's coming in the front door?

AVI DUVDEVANI: Yeah, the intercom works as a traditional intercom.

CHAIRPERSON BREWER: That would also exist in Staten Island?

AVI DUVDEVANI: Yes, ma'am.

CHAIRPERSON BREWER: They should be excited. They should be excited. So we will try to go there and visit and make them see that it's exciting.

AVI DUVDEVANI: Let me correct

that. There is no video service in Staten Island for the intercom.

CHAIRPERSON BREWER: Okay. But would there be under BPL? Could there be?

AVI DUVDEVANI: There could be. Again, it's not something that was in the scope of our demonstration project.

CHAIRPERSON BREWER: But there could be?

AVI DUVDEVANI: Yes, ma'am.

CHAIRPERSON BREWER: Okay, that's what the Bronx is attempting to do, albeit very slowly. Are there other cities that you know of, either through PTI or other information, that have tall buildings that are trying to do this? Are you to be congratulated?

AVI DUVDEVANI: The interest in the innovation designation would allow some dialogue. I haven't seen much yet. There's been some excitement when the document was published, but I haven't had much interaction with colleagues elsewhere. Interestingly enough, not many housing authorities throughout the country are PTI members. I hope that might change a little bit so

we'll get some more information.

CHAIRPERSON BREWER: I'm sure it will. Did the Hope Six provide any money for this a long time ago, or you don't know?

AVI DUVDEVANI: I don't know.

CHAIRPERSON BREWER: Because they supposedly did a lot of technology but I haven't seen it. Any questions, Council Member Jackson? Anything else? Thank you very much for all of your hard work. We look forward to visiting in Staten Island and then perhaps, as time goes on, looking at the project in Brooklyn would be very helpful. Okay? Thank you very much. I know we want to thank the staff for putting this together. I know that Jeff Baker, Colleen Pagter and John Russell--anyway, thank you.

CHAIRPERSON MENDEZ: I'd like to add my thank you to the staff of the Public Housing Subcommittee. Baaba Halm, our attorney and Ben Goodman, our policy analyst. Thank you.

CHAIRPERSON BREWER: So this hearing is adjourned. I think there has been a good discussion from NYCHA to see some of their innovative ways of supporting residents. It's a

challenge and we look forward to continuing the discussion. Thank you very much. This hearing is adjourned.

C E R T I F I C A T E

I, Donna Hintze certify that the foregoing transcript is a true and accurate record of the proceedings. I further certify that I am not related to any of the parties to this action by blood or marriage, and that I am in no way interested in the outcome of this matter.

Signature Donna Hintze

Date December 29, 2008