CITY COUNCIL
CITY OF NEW YORK

----------X

TRANSCRIPT OF THE MINUTES

of the

COMMITTEE ON TRANSPORTATION

----------X

November 6, 2008
Start: 10:13am
Recess: 1:07pm

HELD AT: Council Chambers
City Hall

B E F O R E:
JOHN C. LIU
Chairperson

COUNCIL MEMBERS:
Joseph P. Addabo, Jr.
G. Oliver Koppell
Miguel Martinez
Michael C. McMahon
Daniel R. Garodnick
Jessica S. Lappin
Vincent Ignizio
Alan J. Gerson

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

David Woloch
Deputy Commissioner
New York City Department of Transportation

Steven Galgano
Director of Engineering
New York City Department of Transportation

Leo Smith
Regional Northeast Director
International Dark Sky Association

Susan Harder
Section Leader
International Dark Sky Association

Dan Minor
Chair
NYC Sierra Club

Jennifer Brons
Lighting Research Center, Rensselaer Polytechnic Institute

Glenn Philips
Executive Director
New York City Audubon

Lauren Schuster
Environmental Campaign Coordinator
New York Public Interest Research Group

Gail Clyma

Michael Demma
Light Maintainer
Transit Authority

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

Paul Schubert
Community Organizer

CHAIRPERSON LIU: Good morning and welcome to today's hearing of the City Council's Committee on Transportation. My name is John Liu and I have the privilege of chairing this Committee. We have convened today for the purposes of examining two bills related to street lighting and voting on one bill to clarify parking rules. Some time ago Mayor Bloomberg announced with great fanfare that he would be taking on environmental initiatives in PlaNYC 2030, a plan designed to, among other things, reduce energy usage to help reduce pollution that is a byproduct of energy usage and production. New York City Government accounts for almost seven percent of the City's overall energy usage, and a large part of this can be attributed to the City's 300,000 street lamps. There's no dispute that in a city as densely populated as ours that streetlights are necessary to ensure that people can conduct activities after dark, which now that we are in standard times, is earlier than ever, and to give people a sense of security at night. The two bills that we are considering today attempt to improve the City's streetlights. Intro 757, by

Council Member Alan Gerson, would require the Department of Transportation and certain other parties to use fully shielded lights that direct light downwards to help reduce light pollution whenever they install a new streetlight or replace a light fixture. Intro 806, by Council Member Jessica Lappin, would require the DOT to use light emitting diode bulbs, or LED bulbs, which last longer and are more efficient than bulbs currently used in street lighting, in all street lamps within one year of the effective date of the law. Decorative street lamps would be exempt from the requirements of this bill. Today we'll also vote on Proposed Intro 812-A, introduced by Council Member Felder, that would allow people to park at broken meters up to the maximum amount of time otherwise lawfully permitted at such meter space. The bill would fix a quirk in the traffic rules where people are, apparently, only allowed to park for up to one hour at a broken meter space, whereas they would be allowed to park up to the maximum amount of time normally allowed in that parking zone if the meter was missing. This scheme has led to confusion where people have been

ticketed, surprisingly so, when they thought they were in full compliance of the law. And based on previous hearings we have concluded that the rationale for such rule, purportedly to deter vandalism, is simply not worth the amount of confusion and punitive measures that people in New York have had to endure. The A version of this bill has had some changes made to make clear that motorists would only be able to park up to the maximum amount of time otherwise lawfully permitted at that metered space, and the effective date of this bill was changed from 60 days to 90 days after the bill is enacted into law. We will now--

[Pause]

CHAIRPERSON LIU: We are now going to invite the officials from the Department of Transportation to join us at the table.

[Pause]

CHAIRPERSON LIU: And we will hear some opening remarks from Council Member Jessica Lappin, who is the prime sponsor of Intro 806.

COUNCIL MEMBER LAPPIN: Good morning, Mr. Chairman. Thank you for putting this

item on the agenda today. It's nice to see you all from DOT. I'm sure you're going to say very, very positive thing. I just wanted to briefly explain why I introduced this legislation. In these tough economic times, I think we have to find creative ways to do more with less. And this bill could not only save the City money over the long run by reducing our energy consumption, it will also make our City greener. There are about 300,000 street lamps, to my count. And transforming those over to LED lights could reduce energy consumption by as much as 30%. So while I understand there would be an initial capital investment that would be needed for this effort, I think it would clearly save us money in the long run. And in terms of the environmental impacts, it's estimated that replacing only 1,000 streetlights with LED bulbs would be the equivalent of removing 400 cars from the road in terms of greenhouse gas emissions. With nearly 300,000 streetlights in New York City, we could effectively reduce our carbon footprint by the equivalent of 120,000 cars, and I think that's a pretty substantial amount. LED technology, which

we're going to discuss more today, is exciting and this City has already embraced some of its possibility, from our traffic signals to Times Square to the Brooklyn Bridge and Rockefeller Center, New York City is already saving 6.3 million dollars annually by utilizing these energy efficient bulbs. So I hope that we can expand that effort by passing this legislation. Thank you, Mr. Chairman.

CHAIRPERSON LIU: Thank you Council Member Lappin. And now we invite testimony from the Department of Transportation. Thank you for joining us, gentlemen.

DAVID WOLOCH: Good morning, Chairman Liu and Council Member Lappin. I'm David Woloch, Deputy Commissioner for External Affairs at the New York City Department of Transportation. And with me her today is Steve Galgano, DOT's Executive Director of Engineering. Thank you for inviting us here today to testify at this hearing on Intro 757, which would require the use of full cut off light fixtures for any new or replacement light fixtures and Intro 806, which would require DOT to replace all street lamp bulbs with light

emitting diode bulbs, LEDs, or replace any street lamps that are incapable of accommodating LEDs with street lamps that are within one year of the bill's effective date. Before I discuss this specifics of the bills, I would like to brief the Council on DOT's lighting standards and explain what the difference is between a full-cutoff fixture or luminaire, as called for in Intro 757, and a semi-cutoff luminaire, which is the standard luminaire used Citywide today. DOT is responsible for maintaining over 300,000 luminaires on the City's streets, highways, parks overpasses, underpasses, bridges and playgrounds. The carefully considered lighting levels and uniformity ratios, which measures light distribution, provided by these luminaries are based on standards established by the Illuminating Engineering Society of North America and reviewed for specific and varied conditions throughout the five boroughs of New York City. As a densely populated urban center, we used standards that are adjusted to provide adequate lighting to motorists on the road, as well as to the many pedestrians as they walk throughout the City. Adequate lighting

protects public safety by facilitating the flow of traffic and reducing motor vehicle accidents, providing pedestrians with an open visual environment to make them feel safe and secure, and promoting business and industry that's open during nighttime hours. New York City is a 24-hour city and therefore it's imperative that adequate lighting be provided for the public at all times. The standard luminaire that is used Citywide today to achieve these proper lighting levels are high-pressure sodium semi-cutoff cobra head luminaries. I now ask you to turn to the illustrations at the end of the testimony so that I can explain the differences between semi-cutoff and full-cutoff luminaries. The first illustration depicts a streetscape utilizing full cutoff luminaires. As you will note, full-cutoff luminaries direct light downward, in a spotlight effect and none of the light is directed above 90 degrees. And while direct up light is avoided, it creates areas of shadow and uneven illumination. Additionally, the concentrated down light can cause higher amounts of reflected light and poor uniformity. The second illustration depicts a streetscape using

semi-cutoff luminaries. Semi-cutoff luminaries direct light distribution downward in a more evenly dispersed pattern, and up to five percent of the light may be directed above 90 degrees. Semi-cutoffs allow us to increase the spacing between poles, since light is being distributed in a wider diameter. They also provide increased illumination of vertical surfaces, including building doorways and people, which is important for safety concerns, and produce less reflected light than full-cutoff luminaries. Now that you have a basic understanding of our lighting standards and what a semi-cutoff versus a full-cutoff luminaire is, let me turn to Intro 757, which would mandate the use of full-cutoff luminaires for any new or replacement lighting. DOT is opposed to this bill, primarily because it would conflict with the New York City climate protection act, Local Law 55 of 2007, a law this Council passed, that established energy efficient practices in this City Government's energy consumption, by mandating at least a 30% reduction in Citywide greenhouse gas emissions, from FY 2006 levels within ten years. DOT is making a

substantial contribution to meeting this local law and reducing energy consumption Citywide through its Wattage Reduction program, which would have to be discontinued, essentially, should this bill pass. Under this program in June 2007, DOT began replacing all 250-watt high-pressure sodium streetlight cobra heads with the 150-watt heads and 150 watts with 100-watt heads. This program consists of three phases, and in total we're going to convert 250,000 luminaires, which will save over 105 million kilowatt-hours annually. Additional benefits include lower maintenance costs, and also a reduction of light above 90 degrees, thus making the five percent difference between semi-cutoffs and full-cutoffs that much smaller. Should Intro 757 pass into law, we'd be forced to discontinue this energy savings program, since to date no manufacturer makes a 150 watt full-cutoff luminaire that meets our technical specifications, despite our repeated requests to the manufacturing community to develop one. It simply, as of now, does not yet exist. As we explained to Council Staff previously, when a 150 watt full-cutoff luminaire that meets our

specifications is developed, we will gladly look for opportunities to use it. In effect, our wattage reduction program is helping to meet the goals of the climate protection act of 2007 and will result in real energy savings, money savings and greenhouse gas credits. While Intro 757 does nothing to reduce energy consumption, it is important to understand that Intro 757 is not an energy conservation bill. In addition, semi-cutoff luminaires only add five percent more upward light than full cut-offs. And as I noted earlier, our wattage reduction program reduces this five percent even further. Our focus is on safety and energy efficiency, and we are also always striving to make use of the most current technology, looking for ways to reduce energy consumption and increase cost savings. Our efforts extend beyond our wattage reduction program. All of the City's 32-watt incandescent fire alarm lamps have been replaced with 7-watt LED lamps. All 12,000 highways signage 84-watt fluorescent lamps have been replaced with 3,000 100-watt metal halide units. We are reviewing our existing lighting catalogue with particular

emphasis on non-custom contemporary street fixtures that will provide more energy efficient alternatives with attention to lighting levels on the street. We're in direct communication with members of IESNA, lighting designers and lighting manufacturers to ensure that current guidelines are considered for future installations. We're working with the Climate Group and the Clinton Climate Initiative among others to explore along with other cities the best uses for full and semi-cutoff luminaires, as well as more efficient lighting sources. Since there's no manufacturer that makes a full-cutoff 150 watt luminaire that meets our specifications, this legislation would either require us to compromise our energy conservation efforts, requiring us to use higher wattage fixtures or, as I will explain, provide additional poles, at a greater financial cost to the City, to compensate for the full-cutoff luminaires in order to achieve the necessary lighting uniformity, or require us to compromise our lighting standards, which as stated earlier are accepted standards established by the IESNA. We certainly do not want to compromise our

standards. We need to provide adequate lighting to the many pedestrians as the walk throughout the City as well as to motorists on the road. In fact, in addition to the countless requests for increased lighting from the public over the years, we've also received many requests from City elected officials requesting additional lighting, over 600 requests over the last three years, and none asking for less lighting. Not surprisingly, states that have passed laws mandating the use of full-cutoffs, including Massachusetts, Rhode Island and New Hampshire, all recognize the unique lighting needs of urban areas and allow the use of semi-cutoffs in their urban areas. The Massachusetts law, for example, specifically states, any urban area where there is high nighttime pedestrian traffic, which has been examined by an engineer employed by the Commonwealth and experience in outdoor lighting and deemed to be an area where the installation of semi-cutoff luminaires are necessary. As the technology currently exists in order to maintain our lighting standards and utilize full-cutoff luminaires, closer pole spacing may be required in

order to achieve the necessary lighting uniformity. Either streetlight poles may need to be relocated or additional poles may need to be installed. This may also require Con Edison to excavate streets in order to provide the additional electrical service. The initial purchase, together with installation, increased energy use and maintenance costs would be substantial, and any increase is certainly not something the City can afford at this time. For example, we currently install 5,000 new streetlight poles a year and replace approximately 20,000 cobra heads. A complete semi-cutoff cobra head luminaire currently costs us $120. A full-cutoff luminaire on the other hand would cost us $240, twice as much. Therefore in effect to convert just these 25,000 luminaires to full-cutoffs would cost us approximately three million dollars. And that's just the cost of the luminaire. It doesn't include the cost of any additional poles if we would need to add them, their installation, increased energy use or maintenance. Again, this isn't something the City can afford right now. Lastly, we are also opposed

to Intro 757, because under this legislation the majority of historic and decorative lights, which are any lights other than our cobra head standard, would not be permitted, as they utilize either semi-cutoff or non-cutoff luminaires. However, there are some existing decorative lights that utilize full-cutoff luminaires, and therefore would not be affected by this legislation. Working with partners such as the Economic Development Corporation and the Downtown Alliance, these were able to be installed in certain locations because our partners are picking up the cost for the luminaires, additional poles and the increased energy used. So while some historical and decorative lights can simply not accommodate full-cutoffs, we will continue working with our partners to expand the use of historic and decorative full-cutoffs where we can. In conclusion, while DOT is committed to expanding our use of full-cutoff luminaires where feasible, we're opposed to Intro 757 as it would require us to either discontinue our Wattage Reduction Program, putting us in conflict with the New York City Climate Protection Act, or require us to

either compromise our lighting standards, or to add additional poles to produce enough lighting to meet our standards, and lastly require the removal of the majority of our existing historic and decorative lights. Now let me turn to Intro 806, which would require DOT to replace all streetlamp bulbs with light emitting diode bulbs, LEDs, or replace any street lamps that are incapable of accommodating LEDs with streetlamps that are within one year of the bill's effective date. We're opposed to this legislation due to technology and cost concerns. In keeping with our efforts to conserve energy and to utilize the latest technology, we've already begun using LED Citywide, where appropriate. We've replaced all Citywide traffic signals and pedestrian signals with LEDs between 1998 and 2004. In addition to this, we are piloting the use of LEDs on the decorative necklace lighting of the Manhattan and Brooklyn Bridges. We're also actively searching for appropriate locations to test LED pedestrian streetlights. However, LEDs as a light source are still in the developmental phase and to mandate their use Citywide within a year is not prudent.

We're concerned about light distribution when LEDs are used, as the quantity of light to reach our standard levels may be difficult to achieve. At the present time LEDs deliver 90 lumens per watt, while high pressure sodium delivers 125 lumens per watt. In effect, LEDs produce approximately 25% less light for the same amount of energy. Furthermore, we don't want to tie our hands and limit our use to one specific technology as lighting technology is constantly changing. For example, we're also testing the use of induction lamps on the Manhattan and Brooklyn Bridges. These bulbs may last longer and perform better on our bridges than LEDs and would cost approximately $175 each for replacements, as opposed to an LED, which would cost approximately $800 to $1,200 each depending on the location. Mandating a type of technology that may very well change in the near future may not allow us to take advantage of perhaps better and less expensive lighting products. I think this is a very important point. We're not opposed to utilizing new lighting technology, and our record speaks to this. However, to legislate lighting standards, whether

those in Intro 757 or those in Intro 806, would simply box us in. Technology is constantly changing, as we've already seen. And we'd prefer to work with the Council as technology improves to make sure that we're not missing out on any new opportunities and being cognizant of what other localities are doing. Lastly, while the intent of Intro 806 is admirable, the cost to implement it would far outweigh any benefits. We assume that to replace all of the City's 305,000 luminaires would cost the City approximately 286 million in addition to approximately 3 million annually in replacement costs. Similar to Intro 757, this isn't something the City can afford at this time. Thank you for this opportunity to testify before you today. And at this time we'd be happy to answer any questions that you may have.

CHAIRPERSON LIU: Thank you very much, Commissioner Woloch. Before we proceed to questions concerning your testimony on Intro 757 and 806, Congressman? We are going to call for a vote on Intro 812-A.

WILLIAM MARTIN: William Martin, Committee Clerk, Committee on Transportation,

Introduction 812-A. Council Member Liu.

CHAIRPERSON LIU: Well thank you. I want to thank the Clerk for jumping right to it. I just want to say once again that we held a hearing on Intro 812-A, which seeks to remedy this broken meter rule that is extremely confusing for people and has led to innumerable people receiving tickets for what these motorists fully expected and had considered would be their law abiding practice. This is part of an ongoing effort on the Committee's part to clarify and to make parking rules in New York City more reflective of the needs of New York City and less punitive when those punitive measures are unnecessary. In encourage my colleagues to vote yes on this bill and thank Council Member Simcha Felder for introducing it. And I vote yes on this bill.

WILLIAM MARTIN: Addabbo.

COUNCIL MEMBER ADDABBO: Yes.

WILLIAM MARTIN: Martinez.

COUNCIL MEMBER MARTINEZ: Yes.

WILLIAM MARTIN: McMahon.

COUNCIL MEMBER MCMAHON: Yes.

WILLIAM MARTIN: Lappin.

COUNCIL MEMBER LAPPIN: Yes.

WILLIAM MARTIN: Ignizio.

COUNCIL MEMBER IGNIZIO: Yes.

WILLIAM MARTIN: By a vote of six in the affirmative, zero in the negative and no abstentions, item is adopted. Members, please sign the Committee report. Thank you.

CHAIRPERSON LIU: And I request that the Clerk keep the roll open, because we have other members joining us to make their votes. Thank you. Okay. Well turning back to the DOT's testimony, again, these two bills are intended to improve our street lighting in New York City. The Department of Transportation, shockingly enough, thinks that legislation is not necessary as they are doing everything they can to keep our streets well lit in an efficient manner. I'd like to ask you gentlemen when-- could you describe the last couple of times or maybe even just the last time that the City embarked in a change in the devices used to illuminate our City streets? Identify yourself for the record please.

STEVEN GALGANO: Steve Galgano, Executive Director of Engineering, New York City

Department of Transportation. We are in the process right now. We started about two years ago changing from 250 watt high pressure sodium luminaires to 150 watt high pressure sodium luminaires, which use different optics and solid state ballast to improve the efficiency of the luminaire, which allows us produce additional efficient light out of the fixture at a lower wattage. And that we've started two years ago and we are continuing at the moment and expect for another two years to continue to change all the cobra heads from 150 to 100 and 250 to 150.

CHAIRPERSON LIU: And when the mandate came down for that, I mean that was a mandate, right? That was not an initiative embarked upon by the Department of Transportation. There was a mandate for that.

STEVEN GALGANO: We started this four years ago with the design and the testing before the mandate ever came down.

DAVID WOLOCH: The mandate was not specific. I think it had general targets. This allows the City to help meet those.

STEVEN GALGANO: And in the mid

80s, we changed from 400 watt to 250 because the fixtures became more efficient, 250, and allowed us to use them instead of 400 and provide the same amount of light. In the early 90s-- in the late 90s, excuse me; we changed from incandescent bulbs to LED lenses to take advantage of that technology. So we've been doing this on an ongoing basis as the technology becomes available.

CHAIRPERSON LIU: Right. So over the years, the technology has improved, thus allowing our City and the Department of Transportation to use bulbs that use less energy and still provide the same amount of light adequate to keep our City streets and sidewalks safe. Your testimony today I think was extremely harsh on both bills, particularly Intro 757. I certainly don't think that it was the intent of any member of this body and certainly not the intent of the sponsors of these bills to impose unnecessary costs on the City. One thing that I think you have not addressed with regard to Intro 757 is the possibility that better direction of the light could achieve the same level of luminance without-- same level of lighting, by

further decreasing the amount of wattage or the amount of energy that's necessary to provide that same amount of light. I know you gave us a very-- I assume these pictures that you show us here are computer generated, right? They're not real. This is not real life. This is computer generated.

STEVEN GALGANO: It's computer generated, but it came from a symposium at the Illumining Engineers Society from two years ago and we got permission from the presenter to use them.

CHAIRPERSON LIU: Okay. But I think we all realize that light bulbs are light bulbs. But there are better ways to keep our City streets-- I mean the system we have now is not perfect. And the bulbs that are being used now are imperfect. And what Council Member Gerson attempts to do with Intro 757 is to strike a more reasonable balance. And you may agree or disagree. This is why we're having a hearing here. But there's a balance necessary between keeping our streets and sidewalks well-lit and trying to minimize the amount of pollution that

causes all sorts of different effects on the rest of the city, people who are not on the sidewalk. So I'm going to turn it over to Council Member Gerson for a bit for his questions, and I will follow up on a few different points. But I think the testimony here is just basically saying that, okay, I mean the DOT is doing everything that it can, and that the Council should not legislate on these particular matters. Well, it is always the intent of this body to help our agencies strike a better balance. And it's the same thing with the broken meter rule that we're going to pass today, that the Department's testimony was oh, it's not necessary; we have to do this because of this. Well, in some cases we beg to differ. And so let me turn it over to Council Member Gerson for his questions.

COUNCIL MEMBER GERSON: Thank you very much, Mr. Chair, my colleagues. Good morning. It's always a pleasure if not a challenge to be with you, Commissioner Woloch. And Mr. Chair, your remarks are right on point. I mean, you know the history of our interaction, our very constructive interaction with the Department

of Transportation has a certain dynamic where the Department frequently claims that everything is being done that can and must be done. And upon introduction of pressure and legislation we find, lo and behold, that there is more that in fact needs to be done than the agency at first either realized or admitted, and then usually we reach a common ground, and it does get done whether it's through the passage of legislation or through action after legislation is introduced, short of actual adoption. The most recent example being the successful at long last repair of cobblestone to many historic districts, which for years, if not decades, languished. And we introduced legislation and lo and behold now we are seeing a very constructive result through cooperative action. So I hope we can do the same with respect to lighting. As I was not here to make an introductory statement, let me just briefly point out an underscore to the intent of this as a part of a package of lighting related bills, which will be heard either by this committee or by the Department of Buildings. But the purpose of it is threefold, the purpose of the package in its

entirety. One is to reduce the quantity of or the amount of light pollution throughout our City, defined as excessive light, unneeded luminosity, not serving a constructive, safety or other purpose, which is shining into people's residences or other areas where it is unwanted and in fact disruptive, and in fact depriving New Yorkers of a reasonable semblance of a nighttime ambiance without excessive lighting. New York will never and should never be, you know, a city without lights, but we are too far out of balance in terms of excessive lighting. And there's been a series of articles, most recently in a recent issue of National Geographic, highlighting the health and other human benefits of having dark skies during evening hours. So we want to get a little closer to that here in the City. The second purpose of the package is to conserve fuel and energy, in most cases the package overall through a reduction in the use of excessive energy to achieve unneeded lighting. The package overall, not in each bill, but overall will in fact conserve energy. And thirdly, and related to that, the package overall will save the City considerable amount of money as

it reduces lighting and thus energy costs on City government. So we'll have ample time to discuss all of the other bills that are part of the package, but obviously for today's hearing I'm going to focus on Intro 757, the primary purpose of this bill being in the first area of which I spoke, needless light pollution disrupting people's lives and we believe in effect as we cure that over time, we will achieve as technology evolves, energy and thus cost savings. But let me just-- just a few very basic questions. In terms of learning from experience elsewhere, you did not cite the experience of our closest neighbor, the state of Connecticut. Are you familiar with their recent implementation of a similar bill to 757?

STEVEN GALGANO: I know they changed to full-cutoff fixtures in certain cities, yeah.

COUNCIL MEMBER GERSON: I believe it's statewide.

STEVEN GALGANO: Well--

COUNCIL MEMBER GERSON: [Interposing] Or it's in the process of being implemented in phases statewide.

STEVEN GALGANO: Well we talked to, I believe it was Stamford, as we mentioned to your staff when we met with them. We spoke to the people in Stamford and we asked them what the lighting levels were before the change and what the lighting levels were after the change and they had no idea. They didn't do a study before or after. So their experience doesn't help us if we don't have that information.

COUNCIL MEMBER GERSON: That's Stamford.

STEVEN GALGANO: Yes.

COUNCIL MEMBER GERSON: Okay. But Connecticut has a few other cities besides Stamford, right?

STEVEN GALGANO: Well at the time we did this, which was almost a year ago I think it was when we first started talking with your staff, Stamford was the one we were aware of.

COUNCIL MEMBER GERSON: Did the folks in Stamford tell you they were having problems with their implementation of the full-cutoff which is requiring them to go back and eliminate that requirement or were they going to

stick with their requirement of full-cutoffs for the foreseeable future?

STEVEN GALGANO: What I got from them is it looked good.

COUNCIL MEMBER GERSON: And let me just turn to then Massachusetts, which you cited in your testimony. And I believe-- Mr. Chair, I want to be exact, so I want to find the specific language. Yeah. On page 4 of your testimony you cited that the Massachusetts law makes an exception for an urban area, but not just-- it's not a blanket exception, again reading the quote in your testimony, for any urban area, but where other conditions have met, which includes an examination by an engineer employed by the commonwealth and experienced in outdoor lighting. Do you know how many instances in the State of Massachusetts has that exception been applied? In other words, in how many instances has an engineer employed by the Commonwealth and experienced in outdoor lighting determined that an exception needs to be made?

STEVEN GALGANO: I have no idea.

COUNCIL MEMBER GERSON: Mr. Chair,

since it's always good to learn from experiences elsewhere it seems to me, before one, we should do a little bit more investigation as to, you know, what is happening up in our neighbors. In Connecticut, as just testified, they are implementing a full-cutoff and they seem to, you know, be happy doing it because they're not reversing it and they haven't changed their law, indicates that there might be something to this. And the fact that Massachusetts did provide, you know, a general conversion to a full-cutoff and we don't know how many exceptions there have been necessary, you know, it seems to me that before we attempt to read into anything from, you know, the Massachusetts experience, we should find out what the exceptions have been and how many and indeed if any. You know, no one-- and certainly we need to, and if it's the suggestion of DOT to in a law like this to incorporate, you know, an exception along the lines of the Massachusetts rule for, you know, particular situations and circumstances, or for the cases of historic lighting, then as you cited in your testimony, then certainly that is consistent with the spirit and the intent of this

law and we would certainly be happy to engage you in a conversation on that. But I want to turn, finally-- well for now finally to the major point made by the witnesses with respect to the wattage reduction and the claim-- I just want find it. Yeah, the Wattage Reduction Program and the claim that the switch to the full-cutoff would interfere with the Wattage Reduction Program. And if I understand your testimony correctly, the main reason for that is that again, reading from your testimony, to date no manufacturer makes a 150 watt full-cutoff luminaire that meets our technical specifications. Is that correct?

DAVID WOLOCH: Correct.

STEVEN GALGANO: That's correct.

COUNCIL MEMBER GERSON: Okay. And you say, and I applaud you for this, that the Department has made repeated requests to the manufacturing community to develop one.

STEVEN GALGANO: That's correct.

DAVID WOLOCH: Absolutely. I mean I think we share your goal here. And I think you cited the spirit of this bill; I think we agree with the spirit of what you're trying to achieve.

And I think both you and the Chair mentioned the word balance. And I think that's really the important word. There are a number of things we have to balance here. We have to balance energy efficiency and having adequate lighting and costs and the aesthetics on our streets. And it's true that there's a new factor that we all need to begin to focus on in terms of light pollution. But in terms of looking at the balance, if we were to start using full-cutoffs and if we were required to, as of now, we would have to use the 250 watt bulbs, and we would have to sacrifice energy efficiency. So I think we all want to continue to work with the Council going forward, because the landscape is constantly changing. And hopefully sooner rather than later the manufacturers will come up with a 150 watt luminaire that allows us to achieve the light pollution goals as well.

COUNCIL MEMBER GERSON: Well that's great. Then I think that's exactly how we should proceed, working together towards that goal. I mean is it your understanding that the reason this bulb has not been produced as yet is more

economics or technological?

STEVEN GALGANO: I believe it's technological. It's not just the bulb we're looking at; we're looking at the whole fixture. And we've incorporated into the new fixture newer technology and changes to the optics that allow the lower wattage fixture to be more efficient. And right now, until someone makes the full-cutoff with those characteristics, it would require us to go back to higher wattage luminaires where they do make full-cutoff. That may, you know, suffice for us, however we would have to give up the savings in energy in order to do it.

COUNCIL MEMBER GERSON: Now I just want to press you a little bit more though on the technology. I mean, do you think this is a question of evolution and time with a little bit of pressure and interest expressed by the purchasing community, the companies-- I mean will overcome the obstacles? I mean is this in the category of, you know, there has to be a little bit more of a will and then we'll find a way or is this in the category of teleportation that, you know, is something that is way beyond-- well the

realm as we know it today. But you know, with our Transportation Committee Chair, anything is possible. And I understand you're working on the latter.

STEVEN GALGANO: I just believe it's a matter of time.

COUNCIL MEMBER GERSON: Okay. Well then let me say maybe, and we've seen this elsewhere in other environmental areas where, you know, when the initial fuel pollution diesel emission technologies began to be evaluated and looked at, we weren't quite there yet in terms of retrofitting, in terms of designing the best ultra low sulfur diesel fuel. But it took kind of the pressure of a demand by purchasers to push the industry to achieve the technology. And maybe if the industry sees that there is going to be, you know, a significant demand at the end of the day, then that will propel them even further. So maybe we can consider a piece of legislation that will kick in once, in fact, the technology becomes available, and therefore that type of legislation might be a driving force to promote the technology. So I hope we can follow up this

hearing with that conversation as well. I omitted when we were talking about experiences elsewhere, Los Angeles. Are you familiar with the Los Angeles experience?

STEVEN GALGANO: Yes.

COUNCIL MEMBER GERSON: Have they switched to a full-cutoff?

STEVEN GALGANO: In certain places, yes, they're testing.

COUNCIL MEMBER GERSON: In certain places within the City of Los Angeles?

STEVEN GALGANO: Yes.

DAVID WOLOCH: But I think the key word Mr. Galgano said was testing.

COUNCIL MEMBER GERSON: Well do you know how long that testing has been going on?

STEVEN GALGANO: No I don't. I have it at the office. I don't--

COUNCIL MEMBER GERSON: [Interposing] All right. Well we should follow up on that also, Mr. Chair. My understanding is that those tests began in 1988 and that as of today virtually all of the Los Angeles street lights have in fact been converted to full-cutoff without

any reports of problems with lighting of the streets. So again, I think we should verify that and find out what the actual situation is. And let's try and learn and let's try and push the technology rather than follow the technology. Thank you, Mr. Chair.

CHAIRPERSON LIU: Thank you very much, Council Member Gerson. I think I would ask the Department of Transportation to go back and do a little more homework on this particular issue. The DOT's approach to many of these kinds of issues that are brought up before this Committee is generally a blanket approach that applies to the entire City, every single nook and cranny of the City. And I think the Department has to begin to realize that the City is not the same everywhere. And so to that extent, I would encourage the Department of Transportation, and this applies to so many other pieces of legislation that has been considered by this Committee, in this case there are obviously different parts of the City that have different kinds of lighting needs. And there are different issues from annoyances to outright health hazards

for local residents that are caused by this kind of, in this case specifically, lighting issues. So, why don't we take a look at what's being done in other cities and not just base testimony in opposition to this bill, seemingly only on the results and what's been presented at various conferences. I think we need to take a look at that and to the extent that maybe it makes sense to test some of these lights on real live streets where there are clearly other light sources, and not base it on computer simulations in these pictures. Let's go back and do a little bit more homework before you come to this Committee and basically trash a proposal that has been put forth by a colleague that is seeking to address constituent concerns.

DAVID WOLOCH: With all due respect, the attachments to the testimony were illustrative and were meant to inform members of the Committee who may not have been necessarily familiar with the difference between a full-cutoff and a semi-cutoff. Our Department frequently speaks with representatives from municipalities and states around the country. So to suggest that

we're not doing our homework, I think, is unfair. Are there perhaps other places that all of us can talk to that we have not yet talked to? Sure. And I think we're constantly trying to learn more from industry and learn more from other places. I think the point is that the nature of the industry is constantly changing. And I think the main concern we have about the legislation is that you are in fact with this bill applying a single standard to the entire City and our entire universe of poles and again sacrificing other concerns. And I guess to paraphrase the President Elect, this is an issue that doesn't require a sledgehammer, it requires a scalpel. So to suggest that we must use full-cutoffs in all instances when in fact there's cost to that and the cost would be different in different parts of the City perhaps, is going too far. So I think that's our concern. Again as I said before, this is a good direction to push in. This is a good hearing to have. This is a good discussion to have. We're not against that.

CHAIRPERSON LIU: That wasn't part of your testimony. But we appreciate those

comments.

DAVID WOLOCH: Well I'm happy to add that on. The concern we have is the nature of both pieces of legislation, which mandate a particular type of solution Citywide. And the nature of this technology is that it's constantly changing. So to be boxed in like that is what's troubling. The direction that both bills are pressing in are again, good issues to raise, and good directions for us to push in and to go in.

CHAIRPERSON LIU: And in fact that's what this legislation was proposed for, to engage the Department of Transportation in discussing these kinds of issues. But I think it also has been noted that the testimony here basically-- well, I don't want to have a back and forth on the tone and the substance of the testimony, but I am very happy to note that our new President Elect has even reached into this Committee and its hearings to the point where the Deputy Commissioner has to cite President Elect Obama's comments on how we change the world. I want to give two colleagues a chance to vote on Intro 812-A. The Clerk, will you please call the

roll on these two members?

WILLIAM MARTIN: Council Member Koppell?

COUNCIL MEMBER KOPPELL: Aye.

WILLIAM MARTIN: Garodnick.

COUNCIL MEMBER GARODNICK: Aye.

WILLIAM MARTIN: The vote now stands at eight in the affirmative; zero in the negative and zero abstentions.

CHAIRPERSON LIU: Great. Thank you very much. We have questions from Council Member Jessica Lappin.

COUNCIL MEMBER LAPPIN: Thank you, Mr. Chair. Since we're all paraphrasing our President Elect, how about a little Yes We Can?

[Laughter]

COUNCIL MEMBER LAPPIN: Because, you know, you come here and gave very disappointing, and I think in regards to my bill somewhat disingenuous testimony. And it would be nice if you came here and said, this is a great idea and we should be harnessing new technology and let's find a way to work together and amend these bills and find a way to do it. Because

these are just drafts. And I'll speak for myself; at least, this is a version of a bill. We always go back and forth. We always negotiate. We always discuss ways to make this legislation better, and that's why we're having a hearing. And we're going to hear from the Sierra Club and from Gail Clyma and from other people about ways to make this legislation better. So instead of coming and just saying no, it would be nice if you came in and said, we actually like this idea, let's figure out how to make it work. And I'm going to, since we've also been discussing the simulated images that you attached, I'm going to pass around to the Committee Members and then ask the Sergeant to show the DOT representatives an actual photo of a roadway in Calgary that was illuminated with both the non-shielded and then flat lens light so you can see the difference in terms of the illumination and the glare. And I'm fully supportive of Council Member Gerson's bill and would love to be added as a co-sponsor if the Counsel of the Committee would be so kind as to add me. And in fact, if we ever get to a point where my bill is enacted into law, and we do move

in this City towards LED lights, I think they should be shielded as well, for the reasons that Council Member Gerson has discussed. So let's go to your testimony. And we've been talking about Cities with other precedents. I know Ann Arbor, Michigan, has been moving from old street lights to LED lamps. I think San Jose has just issued an RFP to replace all of their streetlights with LED lights. In Japan Sharp is introducing two new solar paneled powered LED streetlight prototypes that have apparently created quite a sensation and demand. In Düsseldorf, Germany, city officials are replacing their 10,000 streetlights with LED lamps. So I think people are starting to move towards embracing this technology all across the world, not just in our country. I wanted to start with sort of this concept that you use standards established by the Illuminating Engineering Society of North America. Because I have federal guidelines that are perfectly compatible with LED lights, the Energy Star Guidelines that the federal government has released. So can you just explain in more detail why you use the IESNA standards, when you started to adopt those

standards, if you have something in writing that details why you do?

STEVEN GALGANO: We have been using the IES standards since 1960 or so. I can get you the exact date on when we took over the lighting from Con Edison and when we started using these standards. These are standards that are set aside for outdoor lighting, specifically, that we use it for. And it is from a group that represents across the nation cities, colleges, and formed a society and formed these guidelines that we use. These are things we use when we set out to design. We also use them in defense of our legal position when we are challenged for the lighting levels. And that is what we base our standards on and our designs on.

COUNCIL MEMBER LAPPIN: And 100% of the streetlamps in New York City comply with their recommended guidelines or you pick and choose?

STEVEN GALGANO: They all should. Now some of them have been in place for a long time and the conditions change and people, you know, claim that there's not enough light. And we go out and we do the design and the layout and we

see if it does meet the standards. If it doesn't, we add light or we respace. But everything that we do and we design now should meet those standards.

COUNCIL MEMBER LAPPIN: Should or does?

STEVEN GALGANO: You're asking me in every block I go on will they be spaced correctly so they meet the standards? I can't tell you that until I go out there. Things were put in place in the 30s and the 40s and I don't know what standard they were using then. So if it comes up in a particular location people are complaining it's dark. Or we're doing a reconstruction we go out and we analyze and take measurements and we follow those guidelines.

COUNCIL MEMBER LAPPIN: And are you familiar with the new Energy Star Federal Guidelines?

STEVEN GALGANO: No, I'm not.

COUNCIL MEMBER LAPPIN: Okay. So we'll make sure that we'll get you a copy of them. Because I think if it's good enough for the federal government, I would think it would be good

enough for us. I guess I like to go to the pricing. Because I think this is somewhat disingenuous. I mean you stated in your testimony, first of all, that you install 5,000 new street poles a year and replace approximately 20,000 cobra heads. So in basically a 12 year cycle, you will have completely changed every single streetlamp in New York City, according to your testimony.

STEVEN GALGANO: Not necessarily. Different lamps that get replaced.

COUNCIL MEMBER LAPPIN: But, you do 25,000 per year you replace or are installing new. So you could extrapolate pretty close to in a 12 year cycle I would imagine you would replace or add additional new lamps.

STEVEN GALGANO: Yes.

COUNCIL MEMBER LAPPIN: Okay. So is that free or do you spend money on that?

STEVEN GALGANO: Right now we spend money on that.

COUNCIL MEMBER LAPPIN: Okay. So does your cost estimate reduce the additional expenditures you're making on those 25,000 lamps

every year or is that included in your estimate?

STEVEN GALGANO: The cost of an LED fixture that we have now--

COUNCIL MEMBER LAPPIN: [Interposing] That wasn't my question. My question was your 286 million dollar cost estimate, does that include the 25,000 lamps that you would be replacing anyway every year or not?

STEVEN GALGANO: No, because the law said we had to do it in one year.

COUNCIL MEMBER LAPPIN: Well we can discuss the timetable.

STEVEN GALGANO: Okay.

COUNCIL MEMBER LAPPIN: And actually you could have said that. That would have been more constructive testimony. So I'd like to get an understanding of the 286 million dollars. What exactly is that?

STEVEN GALGANO: It's 300,000 or so streetlights times $833, which was the lowest price we found for an LED fixture and $90 a piece to install them.

COUNCIL MEMBER LAPPIN: Does that factor in the savings over time in terms of the

reduced energy costs?

STEVEN GALGANO: I don't know of any reduced energy costs, yet until we see the fixture and what it--

COUNCIL MEMBER LAPPIN: Does it include a reduction in spending because these bulbs need to be replaced less frequently?

STEVEN GALGANO: The bulbs may need to be replaced less frequently, but the bulb costs $10. The fixture costs $1,000. So we're not sure about the maintenance savings until we study it further.

COUNCIL MEMBER LAPPIN: So you just took the most expensive number you could come up with, but didn't actually look at what the cost savings would be over the longer term.

DAVID WOLOCH: We don't know yet what the cost savings would be. I think that's the point. Again, this might be a good direction to go in, but it's something we need to learn more about. I mean that's precisely the point; we don't know what the savings would be.

COUNCIL MEMBER LAPPIN: And what would you be spending this year in terms of the

25,000 new or replacement lamps? What's in the capital budget for that?

STEVEN GALGANO: It's not in the capital budget. It's in our maintenance contract, so it's expense.

COUNCIL MEMBER LAPPIN: And what's the expense number for that?

STEVEN GALGANO: They cost $125 a piece times 25,000. So it's about two and half million. Something like that.

COUNCIL MEMBER LAPPIN: Okay. I actually have a couple of other questions, but I'd like to defer to my colleagues who may have questions and then have a chance to come back, Mr. Chair, if that's okay.

CHAIRPERSON LIU: Absolutely. And I would absolutely agree with Council Member Lappin's questions about these cost estimates and the cost impact and the repeated phrase in your testimony that this is something that we cannot afford at this time. Obviously nobody knows better than the City Council that we are in tough fiscal straits right now. We're not looking to impose costs. But money still is spent and we

want to make sure that that money is spent wisely. And your cost estimates again, and this is a point that Council Member Lappin brought up, you haven't factored in at all the cost savings due to the energy reduction. And the only thing that you've been able to say this morning is oh, you don't know. You don't know what the energy savings would be. For the ten dollar bulb, on an annual basis, how much does it cost to pay for the electricity to light that bulb?

STEVEN GALGANO: For a 150 watt luminaire it's about $180 a year.

CHAIRPERSON LIU: $180 a year. And Commissioner Woloch was going to say something also?

DAVID WOLOCH: I don't think any of us know what that savings would be. I mean I think that's part of the concern. I think what's troubling for the agency when we see a bill like this before having any discussion, and in all fairness, we did have ample discussion on the first bill, and frankly that was a healthy discussion; it's one we want to continue. We should probably have a similar discussion on the

LED topic. But to date, until today, we have not had this discussion. So when we see a piece of legislation that requires us within a year to make such a dramatic change when there's still a lot of uncertainty, that's a great cause for concern. Now it's easy for you to sit over there and say, well that's something we can change. When we first see this bill, we don't know that. We don't know what's going to be changed. What we have to look at is we have to look at the language we're seeing today.

CHAIRPERSON LIU: Dave, every bill that we've passed in this Committee and then the City Council over the last several years has started with certain timeframes, because we always like to put a timeframe on it. And I believe every single bill has had that timing altered to accommodate what is reasonable, what is reasonably achievable by the Department. So I mean I think that's-- this goes beyond just these two particular bills. Now the idea that the Department feels you have to come in and testify that oh, based on this timing it's just impossible, what we've been saying and what has

actually been done for many years now is the timing of these things, and if we have to phase things in, we've always been open to that. So I wouldn't fixate too much on, oh, it's a one year requirement. You know we've always changed that. We have always changed it based on what you deem is correct. But if we don't put a timeframe on it, then the Department tends to come and say okay, we'll get to it when we get to it. So, I just want to-- let's just keep it real and civil here. We have additional questions from Council Member Koppell.

COUNCIL MEMBER KOPPELL: Do I have this? Okay, I got it. What did you say before about Los Angeles, about the use of these full-cutoff lights in Los Angeles? Did you say something about that? Weren't you asked about that a few minutes ago?

STEVEN GALGANO: We were asked if we were aware of it.

COUNCIL MEMBER KOPPELL: Yes. And what did you say?

STEVEN GALGANO: Yes.

COUNCIL MEMBER KOPPELL: But didn't

you say they're using it for testing? Isn't that what you said?

STEVEN GALGANO: My understanding is that it was a test, yes.

COUNCIL MEMBER KOPPELL: Well that seems to be entirely wrong based on this letter that I just received. I don't know. Who distributed this letter, Mr. Chairman, the letter from Los Angeles?

COUNCIL MEMBER GERSON: Yes. Thank you, Council Member Koppell for signing up. We need to ask the Sergeant to distribute a copy to the witnesses. It was just-- we actually just received it, though we had the information provided to us verbally in advance. But we recently, even though it stated earlier-- actually it's a copy of a letter prepared years ago. But we actually just physically received it recently. So I would ask the Sergeant to distribute it to the witnesses and I thank you Council Member Koppell for raising this and for your line of questioning.

COUNCIL MEMBER KOPPELL: Well, I just am slightly shocked at the answer, because I

have in front of me a letter that was placed in front of me from the then Mayor of Los Angeles, apparently James K. Hahn, I didn't know that gentleman. This letter is dated January 25th, 2002. So that's six years ago. And it says the following, it says the City of Los Angeles has specified full-cutoff luminaires on nearly all street lighting plans for new street lighting installations and conversions of existing installations since 1990. That's 18 years ago. We had previously specified full-cutoff luminaires at traffic signal intersections, and in hillside areas for several years, previously to 1990. We now have about 70,000 full-cutoff luminaires in our system. In 2001, Los Angeles adopted IES RP 8200 as our street lighting standard, using illuminance method. Regarding energy use-- well, let me just say that it's very disturbing to have some witness testify that they've used it only for testing and then read that this has been in use for over 18 years. It's just very disturbing to me. If you don't know, you can say you don't know. But this completely contradicts your testimony in a very dramatic way, is very

supportive of the proposal that you're opposing. And again, Mr. Chairman, I'm just troubled by this. Because not only did you say testing, but if the stenographer will see it, Mr. Woloch then emphasized that. You see, it's just testing, he said. And then I get this letter from Los Angeles. I don't know if you want to say anything about it, but I'm very troubled by this. Please don't testify to something that you don't know. And this-- because when you said testing, I said, well if they're just testing it, then maybe we should go slower on this. But then when I read this, it's completely to the contrary and strongly supports the bill.

CHAIRPERSON LIU: Thank you, Council Member Koppell. That's precisely the reason why the founding fathers envisioned a system of checks and balances where there would be legislative oversight over the executive. Do we have additional questions?

STEVEN GALGANO: We did reach out to Los Angeles. And we did speak to the people in their lighting division there and that's the answer we got. I will go back, I will find out

who we spoke to and we'll find out what the problem is here. But we did call Los Angeles and speak to them.

CHAIRPERSON LIU: Okay but even-- I think we all know the kinds of calls that are made. It depends on who you're speaking to at the end. I mean this seems to be a pretty firm letter that had been written a number of years ago. And I guess it would be, since you offered, I guess it would be helpful to know exactly who you spoke to in L.A. and when you spoke to them. Because, I mean, it's been in place for a long time. And so let's take a look at what happened there. We have additional questions from Council Member Lappin.

COUNCIL MEMBER LAPPIN: Thank you, Mr. Chairman. So I'd like to really-- we can continue discussions after this hearing, but I would like to try and find a way to move forward with this concept and with this legislation. What I didn't mention before was that, I mean the City has held a competition, I guess DDC organized it, and awarded the Lighting Science Group and the Office for Visual Interaction a contract to engineer, produce and test the winning design.

And my understanding was that the winning design was an LED solution.

STEVEN GALGANO: It has both solutions.

COUNCIL MEMBER LAPPIN: Okay. What does that mean?

STEVEN GALGANO: It means they were to design an LED fixture and a high pressure sodium fixture, because at the time the LED fixture did not meet our standards.

COUNCIL MEMBER LAPPIN: And why didn't it meet your standards?

STEVEN GALGANO: Because it didn't produce enough light.

COUNCIL MEMBER LAPPIN: And that's a standard that's based on the IESNA guidelines or the--

STEVEN GALGANO: [Interposing] Yes.

COUNCIL MEMBER LAPPIN: Okay. But if you were to take another look and look at federal guidelines or it's been a few years, decide that it was something that worked, I guess, what was the point of the design competition?

STEVEN GALGANO: To design a new,

contemporary fixture.

COUNCIL MEMBER LAPPIN: Okay.

STEVEN GALGANO: And pole.

COUNCIL MEMBER LAPPIN: And since an LED design was awarded, have you put that on the shelf? Have you tried to move forward with that? I mean what are you doing with the results of the competition?

STEVEN GALGANO: I believe the contract has been signed for them to produce their design.

COUNCIL MEMBER LAPPIN: Of both?

STEVEN GALGANO: Of both.

COUNCIL MEMBER LAPPIN: So, I guess now I'm confused. Are you planning within the administration to potentially install LED streetlamps?

STEVEN GALGANO: When it makes economic and technical sense, yes. We have 12 of them outside, I don't know the exact number, but we visit with 10 or 12 companies and we have samples outside our building, our office building now, testing them. It's like when we did the LEDs for the traffic signals. When the technology

became feasible and it made sense economically and technically, we made the change.

COUNCIL MEMBER LAPPIN: So you have a pilot program that the City has undertaken? Is that what I'm hearing?

STEVEN GALGANO: What we have is fixtures that we have from the manufacturers that we put outside our office so that we can see how the light output is, take the measurements, watch them for maintenance to see how they perform.

COUNCIL MEMBER LAPPIN: When did they go up?

STEVEN GALGANO: Some of them have been up, I guess, six, seven months ago.

COUNCIL MEMBER LAPPIN: And how are they doing?

STEVEN GALGANO: They look pretty bad light output wise.

COUNCIL MEMBER LAPPIN: And how far are they-- I mean, do they follow your spacing guidelines and all of that?

STEVEN GALGANO: Right now we have them up on poles next to one another. We haven't placed them on our whole artery until it makes

sense; the light output makes sense for us.

COUNCIL MEMBER LAPPIN: And why is it that it's working in other cities but you don't think it works here. And I understand that there are a number of cities in New Jersey, Camden, Elizabeth, Trenton and Verona, that are going to be replacing their cobras with LEDs. So why is it working in these other places but not working for you?

STEVEN GALGANO: I don't know what standards they're using; I don't know the pole spacing they're using. I don't know what particular locations they're placing in. I can only talk about what we do here and what our responsibilities are here. We take those responsibilities seriously. I'm sorry if we're overreacting here, but we have been trying to look at this technology for a while. The idea of using the design competition for an LED fixture was something we embraced, that was three years ago, to try and get one that works. Right now we do not believe they have one that works. That doesn't mean they won't have one that works. When we first started looking at the LEDs for the

traffic signals, I didn't make sense. They didn't make the right colors, it was very expensive, they didn't put out enough light. Over time, they did. It came down. It became economically feasible for us to do it and we went ahead and we did it, to save the energy and to save the dollars. The same thing with the street lighting things, we're undergoing the Wattage Reduction now, based on technology that was available now, so we can save the energy and save the money now. When the LEDs become available and they make sense, we have no problem using them. Same thing with the full-cutoff, when it works and it makes sense, we will use it. Our only concern is when we pass a bill that says you have to use it, when do we decide whether it makes sense? When the bill is passed? That's all I'm saying, is I don't understand how we can legislate the engineering.

COUNCIL MEMBER LAPPIN: Let's say the engineering; let's say there was a prototype or a model you thought worked. Maybe you even modified your standards somewhat to reflect what other cities across the world are doing. Let's say that that happened, what would be, because you

talked a lot about the timeframe, what would be a logical timeframe for you to begin once the technology was there that met your standards to phase it in?

STEVEN GALGANO: Well what they're doing with the cobra heads, it's taken us about five years to change the Cobra heads.

COUNCIL MEMBER LAPPIN: Okay. Thank you, Mr. Chairman.

CHAIRPERSON LIU: Thank you very much, Council Member Lappin. And I appreciate Steve Galgano's remarks just then. I mean, that's what this is about. And we know that those LEDs, we know all new technology costs a significant amount and over time, sometimes it's many years, sometimes it's just a couple of years, the costs get reduced greatly very quickly. So let's just, it would have been great if the testimony was like, look, it's something that we've looked at and right now we think the cost is too prohibitive, but maybe in a couple of years, just like we've seen with other things, just like we saw with the experience of the traffic signals, maybe in a couple of years it will become

economically feasible. And that kind of testimony, maybe it's just me, I think it would have been far more constructive than to essentially accuse of trying to rob the taxpayer's pocketbooks here. Council Member Gerson.

COUNCIL MEMBER GERSON: Thank you very much, Mr. Chair. Fist of all with the permission of the lead sponsor, would like to add my name as a co-sponsor for Intro 806, and I do so not to return the favor, but in recognition of the merits of the bill and the compelling case made by Council Member Lappin. And I just-- when I hear you all point out, and I think you know that we've worked cooperatively together on any number of projects and DOT has in fact taken the lead in progress in any numbers of areas, and these bills certainly the bill I've proposed, you know is to, one good turn deserves another, to push us you know, to push all of us to do even more to set the bar even higher and to work out the kinks in an effort to do so. But when I hear, I don't understand how we can legislate the engineering, that is precisely what we need to do. It's the history of environmental progress in any number of

areas, whether it's improving standards for air emissions and reducing air pollution, improving standards for noise emissions and lowering noise, improving standards for water quality. And now we need to do the same for lighting. We in government should not just wait for the technology to come upon us. We should, especially the City of New York, which is a major purchaser, we should be a major factor in pushing the technology, in driving the technology, in driving the science and the engineering to benefit New Yorkers. And so if we're, as you testified, close but not quite yet there, a piece of legislation which pushes the bar can get us there. And then we can work with you, sir, as we did most recently with construction site are emission, where we worked in certain exceptions of certain retrofit technologies were not available for particular pieces of construction site equipment. We don't want to stop progress. But we pushed it and then worked in the exception where costs or technology mandated the exception. So I'm hearing, I hope, from you that we will following this hearing have an opportunity to go back and look at this and

work out, you know, the necessary text which pushes us forward. But as needed as our Chair pointed out, recognize that there may be differentials in different parts of the City or maybe different situations. And we could work in the necessary exceptions. But at the same time, as we push the bar. I mean, is that a conversation we can have following this hearing?

DAVID WOLOCH: I think we're happy to have a conversation about different ways to push that, push that bar and to push industry. And I think you're correct that we're getting close. And we're always happy to talk about improvements to legislation. But again, and I don't want to be repetitive, when we were given this legislation to look at, it didn't have those exceptions yet. And it didn't have carve outs in case an industry wasn't there yet. And that's frightening to us, because to be asked to do something where the technology doesn't exist or you have to make substantial compromises is of great concern. And I don't want to split hairs, but Mr. Chairman, I think the way you characterize what you would have rather seen in the testimony,

I don't think that was that far off of, certainly the intent of our testimony. Perhaps it could have been worded a little differently, but again, there are specifics of the bills, as they exist now, which are of great concern. These are topics that we're happy to continue to talk to you about, whether legislation is necessary, I'm not sure. We certainly know that these are both fronts that we're pushing on.

COUNCIL MEMBER GERSON: See that concerns me. Because on one hand you're saying we should talk and we can work out exceptions. And I'm sure, Mr. Chair, it's not our intent to frighten the Department of Transportation, at least in these instances. And there's no vote scheduling. But we know from experience from all the experience I cited, that it was through legislation, legislation jointly agreed upon by the Executive and the Legislative branches, but it was through legislation which had something concrete to which the industry could respond knowing that there would be a demand out there, which effectuated the improvement, so--

DAVID WOLOCH: [Interposing] Sure.

No, absolutely. As I said, I said I'm not--

COUNCIL MEMBER GERSON:

[Interposing] Okay.

DAVID WOLOCH: I said I'm not sure. There are also plenty of areas where we've made progress because the Council has made suggestions to us and we've moved forward without legislation. There are other areas, including beginning to use the LED technology on our traffic signals, where we've made progress unprompted. So again, I think we're happy to move forward with discussions and we'll see where we go.

COUNCIL MEMBER GERSON: Okay. And I look forward to that. But again, the history for when we're talking about pushing the bar in technology and meeting demand, it's important for the industry to know that it's not dependent upon a particular phase of a particular administration, but it's a longstanding policy, and that's why all the environmental progress I've cited has in fact been made through legislation. And so I look forward to having the conversation for the purposes of coming up with the best piece of legislation. And Mr. Chair, you know, we don't

really have that far to go clearly. I just want to read into the record a very short letter that's more recent, actually just dated the other day, November 4th of this year, from the-- addressed to me, from the City of Stamford. Dear Council Member Gerson, this letter is provided as a reference on the experience of the City of Stamford, Connecticut in using fully-shielded full-cutoff street lights. In 2001 the City of Stamford began using full-cutoff street lights for replacements and new installation in compliance with a new statute passed by the Connecticut general assembly, so it is statewide. In the seven years since, full-cutoff streetlights have been constantly deployed with no instance where the use of full-cutoff streetlights has necessitated the use of more streetlights or tighter pole spacing. Stamford has also adopted a policy of reducing wattage levels with the installation of full-cutoffs as part of Stamford's efforts to conserve energy. Stamford has uncovered no problem in using full-cutoff streetlights and would be pleased to share details with the New York City Department of

Transportation, sincerely Nancy Domiziano. And finally, I just want to go back to the letter referenced by Council Member Koppell, in specifically the last paragraph, which sets forth the purpose and the benefits. The primary purpose of our change to specifying full-cutoff luminaires, etcetera, was to reduce light trespass, a residential comfort impact; glare, a detriment to driver and pedestrian visibility; and light pollution or sky glow that impact on everyone's enjoyment of the sky at night. These benefits are not quantifiable, but are very significant to our life experience. They are certainly part of what the public pays for in street lighting. We believe that our specification of full-cutoff luminaires has been quite beneficial both in controlling costs and energy use and in more intangible areas mentioned, which is, you know, what I set forth at the beginning is the purpose. I hope we can serve New Yorkers as their City has served the good people of Los Angeles. Thank you very much, Mr. Chair.

CHAIRPERSON LIU: Well thank you very much. And yeah, you know, maybe we just got

off to a wrong start here today. But I think these are issues that we don't doubt that you're looking in to it. But you also have to consider the fact that we are getting complaints from constituents. And so to the extent that we can work together in addressing all these issues, that would be great. Thank you. Let me invite our next panel to speak. We have a panel consisting of Leo Smith, Susan Harder and Dan Minor. And this panel will be followed by testimony from Jennifer Brons.

SUSAN HARDER: Shall I go a head?

CHAIRPERSON LIU: Please do.

SUSAN HARDER: Thank you, Mr. Chairman and my regards to all the Council people. This is a real privilege for me. I'm a 35-year resident of New York City, a retired businesswoman, and I appreciate this opportunity to help contribute to improving the City that I love so much. I have spoken many times about this issues, which sometimes these laws that are brought forth are called Dark Sky Legislation. I just want to emphasize it's not dark ground legislation. Because when you direct light towards the ground, there is less light being

emitted upward and hitting particulate and causing sky glow. Sometimes as a result of these measures you can see more stars. Just as a quick aside I saw a really terrific movie last night about-- and it was in Los Angeles, a Robert De Niro movie, I think it's called What Happened. Full-cutoff light fixtures everywhere throughout the entire movie, all over the City. Also, if you drive on the Manhattan Bridge, which is under a different Agency than New York City DOT, you'll see full-cutoff light fixtures, and also throughout the entire state of Washington. Decisions about the design of streetlights and, well they call them luminaires, but they're basically just streetlight fixtures, same thing, should be based on what provides the best visibility and the safest nighttime environment for pedestrians to see where they walk and for them to be seen. For example, cars have headlights, so street lighting for cars, unless they are traveling at very high rates of speeds in areas of high accidents where you have a mingling of pedestrians, they don't meet the New York State warrants, we nave New York State warrants for roadway lighting, and they would not

provide a public benefit for cars. The biggest issue that needs to be considered regarding safety and vision is glare, and you've already brought that up. And you've also brought up the National Geographic, which is a very short but very terrific article, and I Xeroxed it in the file that I've given you. This was this month, in case you want to get the whole issue with photos. Fully shielded fixtures reduce glare, because the bulb is not within our line of sight. Glare also affects our sense of safety. There was a study done in California. They had two adjacent parking lots, one shielded, one unshielded, and the people felt more secure and they felt safer in the parking lot that had the fully shielded fixtures. There are also problems of glare and adaptation with regard to the type and the color of the bulb. LEDs, for example, need to be fully shielded. And I'm delighted that you will consider combining your bills, because an LED is a very sharp point of light, and so therefore the element of glare is going to be much more apparent. The second issue affecting vision is excess, because it will effect adaptation, going from light to dark, and of

course it wastes energy. Excess light levels provide no additional public benefit. And we've mentioned several times the Illuminating Engineers Society of North America, of which Leo and I are both members. But this is a group that is made up primarily of manufacturers, so the light levels that they're setting were based on their own private interests. We do not yet have, and this would be an important addition for us to consider for the future, we do not have independent tests on what are the proper light levels for good vision. Excess light levels also do not help reduce crime. In the materials I've given you, there's a US Department of Justice Study that was done that higher light levels for streetlights does not reduce crime. There's also an alley study in the material from Chicago, where they increased the light in alleys hoping to reduce crime, and instead it increased crime. And also with respect to the DOT talking about historic type fixtures that they don't have shielded versions, you have shielded historic fixtures right out here in City Hall Park. And also I've helped three municipalities with the Main Street

historic lines of Acorn lights and changed them over to fully shielded fixtures. And in two cases they were able to reduce the wattage, and they achieved better light levels on the ground. I can give you that material. Here in midtown New York, because the fixtures have such a high proportion of light that is not directed down, they have 500 watts per pole, and I think that with a fixture that would look very similar, if not identical, we can reduce the wattage and provide more light on the ground. In conclusion, the New York City streetlights suffers from the use of poorly engineered fixtures, and a lack of design criteria with the respect to the light levels, more than what we need. It's simply just waste. And also light that's being emitted above the fixture. I'm now on the 22nd floor and my apartment has light that's being emitted into my apartment from the streetlights. We also don't have, in New York City; we don't have any warranting criteria about where and when to install a streetlight. And in the case of-- there may or may not be, there may be instances where other alternative means, reflectors, refractors, you know, different types

of things could be used to perform the same function, they don't have a warranting criteria, which I think is very important. So I've included in the back of this material, the New York State pending bill, which is an outdoor lighting bill so that all new and replacement lights would be fully shielded. They've been repeatedly received salacious letters of opposition from New York City DOT and the Senate Sponsor, Carl Marcellino will tell you that that is one of the main reasons that it's having difficulty, although it has passed in the assembly. It's also been endorsed by many environmental energy civic groups and the municipalities that have voluntarily instituted the measures of full shielding. So, I just would also like to say that I have been in touch with some manufacturers. One of the largest street lighting manufacturers in the country tells me that they're very close to being able to provide the type of streetlight that's already being specified by New York City. So thank you again for visiting this issue. I think it's really very important and I'd like to see it done sooner rather than later. And thank you very much.

CHAIRPERSON LIU: Thank you, Ms. Harder. Mr. Smith?

LEO SMITH: Good morning, Mr. Chairman and Members of the Committee. I respectfully come before the Committee this morning and urge the passage of Intro 757, which requires the City DOT to use full-cutoff streetlights for future installations and replacements. I serve as the Regional Northeast Director for the International Dark Sky Association and I'm also a member of the Illuminating Engineering Society. And I serve on the Roadway Lighting Committee. And our committee is the committee that establishes these standards, which I brought with me today, that are the standards for roadway lighting. In 2004 I was appointed as one of eight people on the Model Outdoor Lighting Task Force, which is an organization between Illuminating Engineering Society and the International Dark Sky, to come up with a Model Outdoor Lighting ordinance for municipalities. Full-cutoff streetlights cast more light downward and less light into the sky or onto adjacent properties where the light is not

needed. An example of a similar situation that was referenced to New York, which we've talked about this morning so-- where the city has deployed the full-cutoff lights, is the City of Los Angeles. I've had a conversation directly with the Manager of the streetlights, Mr. Ed Ebrahimian. And they started this program in 1988. And it was at that point that his predecessor started using full-cutoff lights as a concern with reference to dark sky issues. Today almost all of the 240,000 streetlights that are deployed in Los Angeles are full-cutoff. Mr. Ebrahimian is a streetlight manager, and he can provide direct verification as to the success Los Angeles has had using these full-cutoff streetlights and without having to use closer poll spacing or having more lights fixtures, as was previously claimed in the testimony by the New York City DOT. In my written testimony I've included his contact information, and I would suggest that there is absolutely no way that this is a test. In 2001, the Connecticut General Assembly enacted Public Act 01-134 to require full-cutoff streetlights for all State and

municipal roads. The public utility companies, all municipalities and the Connecticut Department of Transportation are all required to use full-cutoff streetlights under this law. This includes urban areas. There's not a carved out exception for urban settings. The City of Stamford, which we've heard about, is one of the largest cities in Connecticut and has been aggressively converting to full-cutoff streetlights since 2001. They've also downsized wattage when they made this conversion. An example would be that a previous 100 watt streetlight that was a semi-cutoff, when converted to full-cutoff would be converted to 70 watt. There was no need for increased numbers of lights, closer poll spacing or having to go to higher wattages as was claimed by DOT. Nancy Domiziano is the Energy/Utility Manager for the City of Stamford, and I've included her email address for contact purposes if the Committee would like to contact her directly. Where the Committee finds contradiction and opposition from the New York City DOT to use full-cutoff streetlights, direct contact with Los Angeles, Stamford and other cities such as Calgary may

offer clear and compelling evidence that the opposition by the New York City DOT is based on myth and misunderstanding, much of which is fostered by current vendors who prefer that the status quo not be disturbed. On human health; the International Dark Sky Association takes no position on whether streetlights have an adverse effect on human health, since the jury of scientific evidence is still out. Dr. Steven Lockley from the Harvard Medical School has done significant research on the adverse effects of light at night on human health. According to a letter that I attached to this testimony, Dr. Lockley has stated that light at night from an unshielded 250 watt streetlight may result in a decrease in the level of melatonin. Lower levels of melatonin correlate to increased rates in breast cancer according to established scientific studies on the effects of light at night. In 2006, the National Institute of Environmental Health Sciences conducted a worldwide seminar where they brought in 30 experts to testify as far as what the effects were of light at night on human health and the need for funding for various

studies. The use of full-cutoff streetlights will lower the amount of light trespass into apartment windows. These findings have not yet been corroborated by other scientific testing. With reference to energy issues, the full-cutoff streetlight directs more light downward and as such often allows for reduced wattages to provide sufficient lighting. The City of Stamford has been following that replacement plan, where a 100 watt drop lens is replaced with a 70 watt full, flat glass full-cutoff, resulting in energy savings of 30%. The City of Calgary also has lowered its wattage levels when flat lens streetlights were used to replace drop lens streetlights. And I've included a copy of the website summary that Calgary put out on those energy savings. In summary, the flat glass or full-cutoff streetlights control light pollution and reduce wattage levels, energy waste from stray light. In many cases by directing more light downward the full-cutoff streetlight wattage can often be reduced without compromising public safety or security. One question that might, if I were able to ask the question of the City DOT is

that in the roadway lighting manual, in stead of just having one standard which they referred to, there are actually three standards under which you can achieve compliance with the Roadway Lighting Committee recommendations. One table is called the Illuminance Method. You can go and comply with that. The other is Luminance. You can go and comply with that. And then the third standard is called the Small Target Visibility Standard. And what's interesting here is that under the small target visibility standard, you actually have to have a little bit less light in between the poles in order for the small target visibility to work. So for example, when he says in his testimony that he doesn't think that the full-cutoff light would comply because it might create some darker areas, while I don't believe that that is true, even if it were, the small target visibility standard would allow for that. So it's not that the City would be bound to only do the illuminance method. If it adopted the small target visibility standards, then there would be no problem at all with the full cutoff light in terms of what's technically available right now.

So I would suggest that the City is not as bound technologically as the City Department suggested that it was. So for these reasons, I respectfully urge the Committee to approve Intro 757 requirements to use full-cutoff. Thank you.

CHAIRPERSON LIU: Thank you very much, Mr. Smith. Mr. Minor?

DAN MINOR: Thanks for the opportunity.

CHAIRPERSON LIU: Thanks for sharing.

DAN MINOR: Mr. Chairman, members of the Council, thank you very much for your invitation to testify before you today. First of all I certainly agree with my colleagues of the Dark Sky Initiative. It's a very important issue. And there's a couple of other issues that the City also ought to be looking at closely. I appreciate PlaNYC and everyone's strong concern with making the City more adapted to climate change and mitigating our effects. I would like to remind everyone that Dr. James Hanson, the director of the NASA Goddard Institute says that the expected target of 450 parts per million of carbon in the

atmosphere is too high. So the suggestion that looking for only 80% cuts in our carbon emissions by 2050 is too little and too late. Dr. Hanson suggests that really what we ought to be looking at as a ceiling for carbon is 350 parts per million, which is below what we currently have at 380 parts per million. So I would suggest that you all keep in mind that even though current efforts to lower the City's energy and fossil fuel consumption are well-intended and good starts, we need to, as Council Member Gerson rightly suggests, raise the bar and look for ways to even more aggressively lower our energy use and our use of fossil fuels, which is the root cause of climate change. So in addition to stepping up our climate change response, which is very important for us to do and is necessary, however it can still be pushed away as an option. I would also like to remind members of Council and I would certainly like to include Department of Transportation staff, if any are still here, that we are looking at inevitable difficulties in maintaining supplies of fossil fuels in the future. And this is something that must be

factored in, because it means that we will inevitably have rising costs of the fuel inputs, whether towards electric production or transportation or heating, any of these points. We need to look at where natural gas, which is a key input for in-city electric generation, is going to be coming from, not just the current cost. It ought to be known that North American Natural Gas production has already peaked. We're drawing more and more of our natural gas supply from Canada and we're looking increasingly at liquefied natural gas as a future source of natural gas, which as fires our power plants. That means building expensive, risky and dangerous transportation facilities to freeze natural gas from Russia and the Middle East and ship it here. Often that infrastructure has not yet even been constructed and we will have to bid against other countries around the world for imported natural gas supplies. Many are looking to coal as a salvation for electric needs, however the more coal we use, the more we worsen our climate change problem. Is clean coal a solution? Unfortunately not, because it's not been commercially proved to

be effective. And the federally subsidized Future Gen, coal sequestration R&D project was de-funded earlier this year because it was running far over its cost estimates. Of course, even though we are not looking too much at oil as a source of New York City electric production, oil too is in decline. The International Energy Agency is expected to be releasing a report next week looking at nine percent annual declines in oil production due to a variety of sources. This is especially important for DOT because it means that future transportation is going to become inevitably either more expensive or more dependent on fuel supplies that are in decline. Once again, when we're looking at New York City lighting infrastructure, we ought to be prioritizing the most efficient, highly cost savings technologies that we can purchase. And certainly the testimony that we heard encourages us to look at both flexible schedules and flexible means of upgrading to the most efficient pieces of technology. But I commend Council Members for pushing the City to move as far as possible towards cost savings as aggressively as possible. And I think that both

the Council and the administration and DOT would do well to factor in long term cost estimates and supply estimates for the fossil fuels on which our energy supplies depend. Now hearing this, what are we to do; I would say a key thing is efficiency. There's a McKinsey study of 2007 that suggests making our electric usage and infrastructure as efficient as possible can prevent us from having to turn towards new electric generating plants and would avoid building more coal plants in the future, which is extremely important to us to not worsen our climate change situation. So pushing for LEDs or the next generation lighting technology is certainly one of the most important things that New York City can do, and I certainly agree with members of Council in saying that City purchasing decisions have a huge impact on the market. And rather than waiting for the Market to demonstrate new technology, the City ought to be pushing the market and thereby demonstrating its commitment to being a national and international leader in both dealing proactively with climate change and also with fuel depletion, which is a reality that the

City needs to address front on.

COUNCIL MEMBER LAPPIN: Thank you, Mr. Minor. And Mr. Smith, if you would come back, because I actually have a question for you. You might have noticed that Chairman Liu had to-- he's also a member of the Consumer Affairs Committee, and as often the case here, we have multiple committees meeting at the same time. So he had to go across the street briefly. I wanted to ask Mr. Smith, because you testified about the different standards that IESNA has established. And DOT talked a little bit about their standards and why the full-shielded or the LEDs don't meet their standards. And you talked about a luminaire and small target visibility. Could you just expound a little bit about what the three different set of standards are that IESNA established?

LEO SMITH: You have an luminance standard. And that is one where you would measure the amount of light that's on the street. An illuminance standard would be one where you measure the light as it meets the eye, so it's more of a vertical level of illuminance. And then small target visibility resulted from studies that

were done on how basically best to see, so that when you have some types of light uniformity, where light is behind and light is in front, you have some problems in terms of the surrounding areas being equal to the target, because everything is sort of lit the same and you don't see the target as well. So that by reducing light in between, let's say for example at intersections, you would have a darker area in between the lights that would then allow you to see better that small target, namely a person or an animal or whatever, because you would have a different level of illumination before and after it. So now in the middle, where it's a little darker, you actually can see that target better.

COUNCIL MEMBER LAPPIN: And do you know, and I guess I should ask this of DOT, which standards they're using when they're discussing streetlamps in New York?

LEO SMITH: I'm not sure, but it is either illuminance or luminance, one of those two. They do not use small target visibility standards.

COUNCIL MEMBER LAPPIN: And do you think they could or should?

LEO SMITH: If they did, they would be complying with the standards of the Illuminating Engineering Society for the roadway lighting. I happen to serve on the standards committee that actually is responsible for adopting various standards in the roadway lighting manual. And the question of what particular standard you use is really up to use, but you can use any one of the three. And what has happened is the small target visibility standard was adopted in 2000 as a new standard. So in many cases you had cities that were using either the luminance or the illuminance method, let's say from years and years back. So when the small target visibility standard came out, well, if you were already using one, then you just kept using it as opposed to taking a look or exploring the possibility of changing your standard and using small target visibility.

COUNCIL MEMBER LAPPIN: Okay. I think Council Member Gerson has a question.

COUNCIL MEMBER GERSON: Thank you, Madam Chair or Madam Acting Chair. Just to be clear, under the guidelines, each of those three

standards are equally viable? They're interchangeable in terms of the viability and the effect?

LEO SMITH: That's right. The City would be complying with the Illuminating Engineering Society's Roadway Lighting Committee Standards if it met any one of those three-- it's basically like three different routes to get to where you want to go. If you take one route or the other, it doesn't matter. You're still getting to where you want.

COUNCIL MEMBER GERSON: Would you be able to provide the Committee with a copy of the booklet that you have referenced?

LEO SMITH: Yeah. I can provide the Committee with a copy of the book or excerpt the pages for the different standards. There's a lot more in here than just the three various methods.

COUNCIL MEMBER LAPPIN: Great. And if you'd be so kind even as to make sure my staff says hello to you. I'd love to have that as well in addition to sending it to Committee.

COUNCIL MEMBER GERSON: And I'd

just like to ask finally, we've been looking at this chart. I'd like to enter that on the record. So if the Sergeant could bring the chart to the witness stand, could one of you, Mr. Smith or Ms. Harder or I think it was the two of you who brought the chart, if you could just briefly talk us through what that chart is and we'll get it on the camera and we'll get it on the record.

LEO SMITH: The chart distinguishes the difference between a full-cutoff and a semi-cutoff light.

COUNCIL MEMBER GERSON: I'll tell you what, because we're making a transcript, you need to speak into the might. Maybe the Sergeant-- yeah, that's perfect. And this way we also get it on the camera.

LEO SMITH: Here we have an image of the full-cutoff light that basically casts the light down. Over here you have the semi-cutoff that basically throws light into the sky and onto adjacent properties. What's interesting is that for--

COUNCIL MEMBER GERSON: [Interposing] Are we getting the sound?

LEO SMITH: In terms of what's actually useful light, it's not just the light that is coming out below this line. Effectively somewhere around the 63 to 60 degree area represents light that's useful. Because when you cast light, let's say at an 80 degree, by the time it hits its target, it's way out there and it doesn't really provide much in the way of direct illumination. So it's really the light that is going to be coming down at a say, 63 degree area and under, that provides actual benefit. All the light above the 63 degree and all the light above the 90 degree is effectively wasted. It's not really illuminating what you want to illuminate. I wanted to just mention--

COUNCIL MEMBER GERSON: And the diagonal line represents the 63 degrees?

LEO SMITH: Say that again?

COUNCIL MEMBER GERSON: The diagonal line on the chart represents the 63 degrees?

LEO SMITH: Probably this does right here.

COUNCIL MEMBER GERSON: I see.

Okay.

LEO SMITH: With reference to the issue of the health that we talked about earlier, one of the problems in your urban areas has to do with the fact that the street lights, obviously, are very proximate to living quarters. And while in certain areas where you might have well to do people, you're going to put in your blind curtains so that the light doesn't come in and you have this light blocking equipment. But in areas where you have people that aren't in the position to make those purchases, you're going to end up with a significant amount of light coming directly in bedroom windows without being blocked, where people basically could read a book without any other lights; there's that much light coming in. And so, some consideration might be given there from a human health standpoint as to the need to reduce that blockage by having the shielded light that shines more straight down.

COUNCIL MEMBER GERSON: Well thank you. And I thank each of the three witnesses very much for your testimony and your guidance to us as we proceed in this effort. Thank you, Madam

Chair.

COUNCIL MEMBER LAPPIN: Since we're alternating panels in opposition and in support, the next person signed up to testify in opposition is Jennifer Brons, from the Lighting Research Center Rensselaer Polytechnic Institute.

[Pause]

COUNCIL MEMBER LAPPIN: Please introduce yourself for the record and begin.

JENNIFER BRONS: Thank you. My name is Jennifer Brons. I am a Research Scientist at Rensselaer Polytechnic Institute at the Lighting Research Center. I'm here today to address Intro number 757 and 806 both. May I begin?

COUNCIL MEMBER LAPPIN: Yes, please.

JENNIFER BRONS: The motive of Introduction number 757 was not stated in the text that I had received earlier, but in the discussions today it sounds as if it's to address light pollution and energy efficiency. So I'll speak those points. There are several aspects of light at night that may be offensive, such as sky

glow, light trespass and glare and many other people have spoken about those issues. The stories in the popular press such as in the National Geographic, may lead one to believe that fully-shielded lights would reduce light pollution in New York City. However closer examination shows that this strategy will be ineffective at mitigating these three components of light pollution, so that's what I'll talk about today. Limiting light above the horizontal will not be effective for reducing sky glow for several reasons. In an urban environment, such as many parts of New York City, the structures of the City itself create canyons that shield the light from traveling directly from the streetlight towards the sky. Additionally the use of shielding will not stop the light from reflecting off of all of those surfaces and eventually contributing to sky glow. The technique of limiting angles of light leaving a streetlight may have some merit to reduce sky glow in more open areas, but direct upward light from streetlights is often not the primary contributor to light going into the sky. Rather it is the light reflected from the ground

and all the other surfaces that is more likely to contribute to sky glow. For this reason, Lighting Research Center has recently proposed a system of measurement called the Outdoor Site-Lighting Performance System or OSP. This is a calculation technique employing commercially available lighting software to account for both contributors to sky glow, the direct and reflected light together. Preliminary tests of this system have demonstrated the most effective technique for reducing the amount of light leaving the boundaries of a property is to limit the amount of light actually being added or contributed to the space. In other words, the more light that you add to the environment, the more light will leave that environment and go into the sky and contribute to the sky glow. So that's addressing the issue of sky glow. Light trespass is also an annoying feature of light at night. And it's caused when light enters the private property, typically a residential one, from outside the boundaries of the property. The proposed strategy of prohibiting light above the horizontal may be effective in limiting some complaints of light

trespass, but only for individuals residing at a height greater than that of the luminaire. For those residing at or below the level of the luminaire, complaints of light trespass will not be reduced with the use of fully shielded lights. To prevent light from entering residential windows, lighting manufacturers have developed what's called house side shields that restrict light behind the luminaire to lower than the horizontals, or even more restrictive to where light can leave a fixture. Often these can be mounted as a retro fit to existing streetlights to address complaints of light trespass and for new pole locations trespass can also be addressed by moving the poles away from residential windows. So we've addressed sky glow and light trespass. There's also the issue of glare, the third aspect of light pollution. Researchers have been struggling for decades to develop methods to predict complaints of discomfort glare. We at the Lighting Research Center have recently published an updated technique as part of the aforementioned calculation system. The underlying research shows that glare is related to the amount of light

reaching the eye indeed, primarily contributed by a offensive streetlight, for instance, but also counter balanced by the light in the surrounding area. Thus it is not clear whether changing the angles at which light may be emitted will increase or decrease complaints of glare here in New York City. Although Intro 757 might cause a marginal improvement of glare complaints, the effect for individuals standing below the streetlights would not necessarily be different than for fully-shielded streetlights. Even for locations above streetlights, the impact would be highly contextual and not equally applicable across the five boroughs, as we mentioned before. While the purpose of outdoor lighting is to create safe, comfortable environments to encourage nighttime use of the City, in the future the Lighting Research Center expects that new lighting techniques and technologies will justify a major investment to change New York City street lighting; new technologies are expected to increase energy efficiency and reduce maintenance requirements. And I'll talk about that more in a moment. It is not clear, however, what the

incremental costs, at least when I wrote this, what the incremental costs to New York City would be compared to conventional streetlight replacements. Even if there is no incremental cost to the use of fully shielded luminaires, this effort would not achieve the presumed goal of reducing the three aspects of light pollution in a significant manner, much less address what may be the more pressing issues of maintenance, energy efficiency and safety. We'd certainly be happy to propose a research project to develop more practical and effective techniques for limiting light pollution. Shall I continue to address the Light Emitting Diode question or shall we just stay with light pollution?

CHAIRPERSON LIU: Why don't you just continue with your testimony on 806?

JENNIFER BRONS: Okay.

CHAIRPERSON LIU: But it's probably, yeah, we have the whole testimony for the written record. So--

JENNIFER BRONS: [Interposing] Pardon me?

CHAIRPERSON LIU: We have your

entire testimony for the written record, so if you want to summarize the key points, that would be helpful.

JENNIFER BRONS: I will indeed. I'm going to approach the bench and give you a sample of light emitting diodes.

[Pause]

JENNIFER BRONS: What you're holding is a light emitting diode and the metal is a heat sink to conduct heat away from the chip, the diode, that is necessary in order to help the light emitting diodes to emit light effectively as planted and to live as long as they are supposed to as planned. You need to remove heat from these chips in order for them to operate properly, otherwise they will fail prematurely and will not benefit you in terms of life and they will also not benefit you in terms of light output. One of the main promises of light emitting diodes is a long, useful light. We're very excited about the opportunities for the use of this technology in the industry and at the Lighting Research Center. We've already seen a transformation in the market in terms of the signal lights, which we talked

about before, or indicator lighting, exit lighting, those are instances where we are looking directly at a light source. It's not illuminating an environment. That's already a promising area for the use of this technology, and now we are excited to be able to use it for illuminating our environments. Energy efficiency is improving rapidly and in the future we expect to see long operating lives and reduced maintenance. However, it's indeed rapidly evolving technology and there are several reasons why we do not think that New York City would be well served by rapidly adopting light emitting diodes at this time. So I'm going to address two issues with light emitting diodes, retrofitting existing streetlights and replacing new streetlights. If you are to retrofit your existing streetlight you will be enclosing the light emitting diode in a very tightly gasketed environment that was originally designed for a different light source. It's an environment that deliberately excludes the air changes that are necessary for a light emitting diode to remove the heat. Conventional technologies need to be enclosed from water and from dirt and insect

ingress. And if you put something like this inside a tightly enclosed streetlight, it will overheat. If you replace that streetlight with a deliberately designed light emitting diode, such as the one that is being developed as part of New York City's design competition, those fixtures will have the fins, these heat sinks, exposed to the air and will be able to extract the heat properly. If not, they will fail prematurely, much sooner than you expect, and will not save you any energy in terms of maintenance or watts in your system. So, as a retro fit, we at Lighting Research Center are not excited about the use of LEDs in enclosed outdoor lighting. As a replacement in your existing streetlights, we think in a few years there will be many examples where you can use the technology effectively. Right now it's a little too soon. You will not be saving watts and you will not be shortening life just yet, but if you give it a few years we think it will be a very encouraging time to replace existing streetlights with LEDs.

[Pause]

JENNIFER BRONS: --sure I have all

my issues here. I think those are the main points that I wanted to make, that retro fit will not make you happy. But in the future, replacing them with LEDs would be very encouraging.

CHAIRPERSON LIU: Thank you, Professor Brons, for testifying. I mean, your testimony-- so do you think that the cities of Stamford and Los Angeles and Calgary are wasting their time with this?

JENNIFER BRONS: Well if their goal is to reduce-- we're talking again about the fully shielded--

CHAIRPERSON LIU: [Interposing] Yeah, I mean I think the--

JENNIFER BRONS: [Interposing] And light pollution? None of the letters or the testimony that was presented indicated that they reduced light pollution, just that they didn't have problems with light uniformity as a result. They may have if they reduced their wattage.

CHAIRPERSON LIU: Okay. So your testimony is only with respect to light pollution and not energy efficiency.

JENNIFER BRONS: Right. At this

point you may, we do not expect that you will reduce light pollution by putting in fully shielded lights in your streetlights. It may not do any harm. It may improve glare in some instances, but it's hard to generalize in a blanket manner whether you'll have improved glare in all instances. So in terms of light trespass, we don't expect there to be an improvement in complaints about light entering the bedroom windows. And in terms of sky glow, we don't expect there to be an improvement.

CHAIRPERSON LIU: Okay. We have questions from Council Member Lappin.

COUNCIL MEMBER LAPPIN: I've never heard of the Lighting Research Center. Can you just tell me briefly what it is?

JENNIFER BRONS: Oh, indeed. The Lighting Research Center is part of Rensselaer Polytechnic Institute, which is an institute in upstate New York. It's one of the oldest in the country, an engineering school originally. The Lighting Research Center is now celebrating its 20th year. We are a third party independent evaluator of technology and ways to use light more

effectively.

COUNCIL MEMBER LAPPIN: So you're fully funded by the University?

JENNIFER BRONS: No. We are funded by research projects from energy efficiency groups across the country and internationally. That's the primary source of our income. We get very little funding from our University. It's mostly energy efficiency groups.

COUNCIL MEMBER LAPPIN: So what makes you independent?

JENNIFER BRONS: We are not hired to promote the use of any particular technology.

COUNCIL MEMBER LAPPIN: But are you hired by the industry? Because I see on your bio you work on behalf of lighting companies.

JENNIFER BRONS: At the end of my bio I mention that the OSP calculation metric is one research project with four manufacturers, two in North America, two in Europe, to address the calculation system, to create a calculation system that will allow lighting engineers to calculate in advance before lights get put in where and how much light is going to leave their sites and what

they can do to improve it in advance before it gets installed.

COUNCIL MEMBER LAPPIN: But are the lighting companies the funders of the Lighting Research Center also or no?

JENNIFER BRONS: Most of our work is funded by energy efficiency groups. We do get some funding from partners in industry; some are government agencies. We have some luminaire manufacturers, some utilities, individuals that contribute to paying for our website and paying for our secretaries and so forth. But in terms of directed research dollars, the vast majority of our work has been energy efficiency work. We're also working in the effect of light in health. So we have some NIH funding and some other health related funding to measure how much light reaches the eye and how we can do a better job at meeting our health needs for dark nights and light days.

COUNCIL MEMBER LAPPIN: Okay. Thank you, Mr. Chairman.

CHAIRPERSON LIU: Thank you. Questions from Council Member Gerson?

COUNCIL MEMBER GERSON: Yes, thank

you very much, Mr. Chair. You referred to-- and welcome, Professor Brons.

JENNIFER BRONS: Thank you.

COUNCIL MEMBER GERSON: Actually we're always happy in the City Council when folks and especially experts, you know, from out of town come to visit us, even though you're not that far out of town. But, you know, we all need to learn from each other, you know, the world over, certainly the state over. So actually, so we can learn how to promulgate our hearings, perhaps better, how did you learn of our hearing and what, you know, how did you learn of our hearing and what brought you here?

JENNIFER BRONS: Well, my understanding is that someone called our Lighting Research Center. I think if you Google the word Lighting, we're one of the first things that come up other than manufacturers of lighting. So because we're not manufacturing lighting, we are testing and trying to evaluate how to make it better and point out when manufacturers may not be being completely honest with how they're representing information, we are an independent

location for lighting techniques and technology information in the industry. So I imagine someone who was arranging this event Googled lighting.

COUNCIL MEMBER GERSON: And I should say I'm a guest of the Committee and not a member of the Committee and I appreciate the opportunity to be a guest of the Committee here and so I'm not-- I was just informed that in fact the Committee did reach out to your organization and we appreciate your response. You mentioned energy efficiency groups. Could you identify by name some of those groups or the leading groups which provide funding to your institute?

JENNIFER BRONS: The leading first one that comes to mind is the New York State Energy Research and Development Authority, NYSERDA, providing our initial funding 20 years ago to start a university based research center devoted to lighting. And they do fund a number of projects at Lighting Research Center.

COUNCIL MEMBER GERSON: Have they funded any projects related to this fully shielded issue? NYSERDA specifically.

JENNIFER BRONS: No, sir.

COUNCIL MEMBER GERSON: Okay.

JENNIFER BRONS: But they've funded-- I believe they've participated in LED research projects. I'm actually not running LED research projects at this time. There are something like 30 researchers working at Lighting Research Center in very different aspects, studying the effect of light at nice on us and collecting blood from people and many different aspects of measuring light and the effect on people.

COUNCIL MEMBER GERSON: And any other groups besides?

JENNIFER BRONS: Yes, indeed. We've been working for many years with the US EPA and the US DOE to encourage the use of energy efficient technologies.

COUNCIL MEMBER GERSON: And have either of those governmental entities been involved in studies pertaining to fully shielded lights?

JENNIFER BRONS: No, sir.

COUNCIL MEMBER GERSON: And what about governmental--

JENNIFER BRONS: [Interposing] I'm sure they've been involved with the LED research though.

COUNCIL MEMBER GERSON: Okay. And what non-governmental organizations fall within the energy efficiency groups that provide funding?

JENNIFER BRONS: None of the energy efficiency groups are encouraging-- that support Lighting Research Center are funding fully shielded research.

COUNCIL MEMBER GERSON: Well no. I meant, I first was asking generally what non-governmental entities provide funding to your institute?

JENNIFER BRONS: There are alliances or groups of people that are interested in looking at how to use day lighting more effectively, how to shut off lights when they're not needed when we have plenty of daylight entering spaces. So there's the North West Energy Efficiency Alliance. There are several groups that collaborate on the day lighting issues, how to improve the use of the technology.

COUNCIL MEMBER GERSON: Okay. Well

maybe, Mr. Chair, rather than belabor this now, certainly we could probably follow up, I would imagine, you know a lot of this information is publicly available and if we have any further questions we could certainly get back to you. But certainly, you know, the relevancy of funding sources is important. Or funding sources are relevant to our understanding of the work of your entity. Let me just ask, in the areas that you've cited, you did say that fully shielded lights could in certain circumstances reduce glare. What circumstances would those be?

JENNIFER BRONS: In an environment where the person is able to see directly into a light fixture and see the light source, the bulb itself, if the bulb is sort of protruding down below the luminaire, if there's a deep glass bowl or some other diffuser material below it that allows a person to look directly at a light source, before a change, and then afterwards if a luminaire is installed that hides that light source from view, then it will be more comfortable to be viewed from whatever angle you're speaking of.

COUNCIL MEMBER GERSON: So at least in those cases a fully shielded light could have a beneficial impact.

JENNIFER BRONS: It could, sir. It could.

COUNCIL MEMBER GERSON: Now let me also ask you about light trespass. First of all, you spoke about house side shields. And it sounds like those are something we might want to look into. Are they compatible with one kind of shielding or another? In other words, could you use house side shields either with partially or fully top shielded lighting?

JENNIFER BRONS: I can't speak to all light fixtures that are on the market, but I have seen ones in catalogues where they were both, they both did not allow light above the horizontal. I'm going to demonstrate for the camera. And also had an additional optical feature that prevented light from going behind the light source into ostensibly a bedroom window. So that's something that is possible to have both.

COUNCIL MEMBER GERSON: So technologically, we could if we chose--

JENNIFER BRONS: [Interposing] Indeed.

COUNCIL MEMBER GERSON: Have it both ways.

JENNIFER BRONS: [Interposing] If there are--

COUNCIL MEMBER GERSON: [Interposing] One doesn't preclude the other.

JENNIFER BRONS: Indeed.

COUNCIL MEMBER GERSON: Okay. And then of course you mentioned that prohibiting, I'm reading from your testimony or excerpting from it, prohibiting light above the horizontal may be effective in limiting some complaints of light trespass, but only for individuals residing at a height greater than that of the luminaire. Do you have any idea in New York City the proportion of individuals who probably reside higher than the luminaire?

JENNIFER BRONS: It's certainly much higher than in Troy, New York, where I live.

COUNCIL MEMBER GERSON: I would guess that.

JENNIFER BRONS: I'm on the third

floor and looking right into a lovely light source.

COUNCIL MEMBER GERSON: Actually I live on the 20th floor and we get a lot of this. So at least in those situations, this might be something we as a Council should look into and consider. Is that correct?

JENNIFER BRONS: Indeed. It would make sense to pay attention to how light is entering bedroom windows on a case by case basis. It's hard to generalize across all the boroughs.

COUNCIL MEMBER GERSON: At least on an area by area basis. We can't do it for every single apartment.

JENNIFER BRONS: Maybe not.

COUNCIL MEMBER GERSON: Okay. Well thank you, and certainly we have your contact information if we need to follow up.

JENNIFER BRONS: Okay.

COUNCIL MEMBER GERSON: Thank you very much.

JENNIFER BRONS: Were there any question about LEDs?

CHAIRPERSON LIU: Thank you very

much. Thank you, Professor. Our next panel will consist of Glenn Phillips, Lauren Schuster and Gail Clyma. They will be followed by a panel consisting of Michael Demma and Paul Schubert.

[Pause]

CHAIRPERSON LIU: Mr. Phillips, please proceed.

GLENN PHILLIPS: My name is Glenn Phillips. I'd like to thank the Committee and Council Member Gerson for hearing our testimony today. I'm the Executive Director of the New York City Audubon Society, which is a grassroots organization dedicated to the protection of wild birds and their habitat for the benefit of all New Yorkers. Our 10,000 members, volunteers and other supporters care passionately about the plight of birds in North America. Since the 1960s, populations of even our most common birds have declined dramatically, despite legislation to protect them. Birds like the common grackle, which is one of the most abundant species here in New York City, has declined across its range by over 60%, that's a loss of over 80 million common grackles in 40 years. Habitat loss remains the

most important cause of the dramatic declines of birds, but lighting has been a contributor to declines in bird populations. And the solutions to this problem provide benefits for all New Yorkers. For thousands of years birds have migrated from the tropics to the temperate zones and they evolved sophisticated internal navigation systems that depend on light cues as well as magnetic ones. Today those mechanisms are disrupted by pervasive artificial light. Scientific studies by Sidney Gathreaux, Bill Evans and others have documented the impact of light pollution on birds and this book, the Ecological Consequences of Artificial Night Lighting, which is quite an interesting read, calls for full shielded fixtures as one method for reducing the problem; it won't solve it, but it will help. Our bid safe building guidelines, which I've provided copies of as a reference, also provide more information on the impact of night lighting on birds. Introduction 757 is a common sense solution to the problem of light pollution and will provide multiple benefits to New Yorkers. On behalf of New York City Audubon's 10,000 members,

I would like to thank Council Member Gerson for introducing this legislation and I strongly encourage the Transportation Committee to support this important legislation.

CHAIRPERSON LIU: Thank you very much. We have Ms. Lauren Schuster.

LAUREN SCHUSTER: Good morning. Thank you Chairman and the Committee for having me here to testify today. My name is Lauren Schuster and I'm Environmental Campaign Coordinator with the New York Public Interest Research Group. NYPIRG is New York's largest non-profit environmental and consumer advocacy organization with more than 20 offices across the state including chapters in each of the five boroughs. NYPIRG has a long history of advocating for energy conservation measures at the City and state level. Thank you for this opportunity to testify in support of Intro 757, which would require any new or replacement street lighting in New York City to use fully shielded light fixtures. There are many reasons to support this legislation; most we've spoken about already, including transportation safety, aesthetics, benefits to human health and

wildlife. NYPIRG supports this legislation because it will reduce New York City's energy use. According to the National Oceanic and Atmospheric Association 30% of the United State's outdoor lighting is reflected skyward. The lack of adequate standards for outdoor lighting fixtures results in wasted illumination and wasted energy. Most of our energy comes from burning fossil fuels, which has enormous consequences on our health and the environment and is the major cause of global warming and climate change. NYPIRG supports using the most energy efficient street lighting possible. Fully shielded fixtures would enable the City to reduce the overall wattage used while still producing the same amount of light. Fully shielded light fixtures radiate a focused light, because no light can be emitted above the 90 degree horizontal. Less light is wasted because light cannot escape upwards and outwards towards unintended targets. The ability to light intended targets only would allow New York City to use lower wattage bulbs, while illuminating the same area at the same intensity. Replacing existing streetlights with fully shielded light

fixtures would thus lead to a greater increase in energy efficiency and overall savings in energy costs. This has been experienced, as we've discussed, by cities that have retrofitted their streetlights like Calgary and Stamford Connecticut. We commend the many steps that the City Council has taken to improve energy efficiency and environmental protection in New York City. New York is emerging as a national leader in sustainability. This legislation is one of several measures that are currently pending in the Council that focus on energy efficient lighting. Energy efficient lighting standards are a common sense measure that will help contribute to reducing energy use and combating climate change. And NYPIRG respectfully urges the City Council to adopt this measure as soon as possible. Thank you again for the opportunity to testify today.

CHAIRPERSON LIU: Thank you, Ms. Schuster. Ms Clyma?

GAIL CLYMA: I admire your durability. This has been a very long session and I'm sorry I can't get off the stage in half a

minute.

CHAIRPERSON LIU: [Off Mic]

GAIL CLYMA: Oh really?

CHAIRPERSON LIU: Yeah. Actually I was remiss in apologizing for having to step across the street for another hearing momentarily. But glad to be back.

GAIL CLYMA: We missed you. I made separate statements for the two bills. And I'm going to start with the one, with 757, which is the one that has this little flier on the top. I'm really delighted that not one but two bills dealing with street lighting are on your agenda. I wrote this morning, but I guess that doesn't work anymore. Street lights are a major cause, in many places the major cause, of light pollution, a problem I've been working on for 15 years. In case this issue is new to you, light pollution is outdoor lighting that is misdirected, excessive or unnecessary. Such lighting results in disabling glare, trespass onto other properties, waste and sky glow, that is the illumination of the night sky so that there appear to be only a handful of stars over New York City. And this little

brochure just gives you some basic information about light pollution. In addition to creating unnecessary hazards for drivers and pedestrians, light pollution can harm plants and animals. This should not be surprising. If we keep in mind that every living thing on this earth evolved over thousands of years by adapting to a world that was truly dark at night-- and we have a brochure here with some of the wildlife impacts. A growing body of evidence is demonstrating that human beings are not exempt from this damage. The link between light at night and breast cancer is particularly strong. And you have a page of information about the human health concerns. As you may know, a bill that would require shielding of streetlights and other publicly funded lighting has been stalled in the New York State legislature for a number of years. I was a constituent of Assemblyman Pete Grannis, the sponsor of this bill, until he was appointed DE commissioner last year, DEC commissioner. And I worked closely with his staff. The principal opponent has been New York City's Department of Transportation, which insisted for years that fully shielded street

lighting could not match the performance of drop lens cobra head types now on City streets. Finally this spring they accepted our evidence to the contrary. But they are still fighting, because they just don't like any sort of legislation that affects them. I guess you guys have discovered that, I gathered from some of the comments this morning. The evidence is a little bit complicated. I'm not going to stop right now to go into it, but I hope I will have time to do that in a bit. There are several problems with language in the existing draft of resolution 757. Since I was involved in revising and refining the state bill over the years, I thought it might be helpful to adapt that language for New York City. The resulting draft is the next item in your packet and I hope you will find it useful. One addition, an issue that is not in the State bill, is a proposed prohibition of streetlights having metal halide bulbs. These bulbs, which have a bluish tint, have been widely used in lighting funded by business improvement districts, most noticeably Grand Central Partnership, 34th Street Partnership, Lower Manhattan Alliance. These are

bad for many reasons, not the least that they are an even greater health threat than the gold ampere high pressure sodium bulbs that are now used. And the last thing you have here is a discussion of metal halide lighting and particularly the problems of which the blue tint is one of the major problems. I think I will talk a little bit about 806 now and then I want to come back and get into a few other details. I do want to commend Council Member Lappin for recognizing the potential of LED technology to reduce the amount of electricity consumed by our New York City street lighting system. As you may know, the City-- this has been discussed before, we already have LED traffic lights. Development of the higher wattage LEDs needed for street lighting has been proceeding at a brisk pace. The promise of energy savings has prompted the US Department of Energy to take an active role in coordinating these efforts and establishing guidelines and performance standards for this new technology. In August, DOE proposed that in order to qualify for Energy Star designation, LED streetlights would need to be fully shielded. Although this

requirement will not be finalized until next month, I hope it will be incorporated into this legislation. And I have given you a couple of pages from the Energy Star recommendations and if you look, the lower half of the page has to do with roadway luminaires and down towards the bottom there's a little line called zonal lumen density requirement. And what this is, is just kind of a technical definition as opposed to a sort of verbal definition of full shielding. And I would really hope that that could be incorporated into 806 and I would also comment that the existence, the fact that DOE is doing this suggests that there must be some value in fully shielding street lighting of any type. They just happen to be working on LEDs here. In my comments regarding Council Member Gerson's bill I mentioned the concern about use of bluish tinted mental halide bulbs in streetlights. This is an even greater issue with LEDs, therefore even though it is not a requirement for energy start streetlights, I strongly recommend that a provision to address this issue be added to resolution 806. Light sources are characterized

by something called correlated color temperature, which is measured in degrees of Kelvin. On the upper part of the first page that we were just looking at, there's a section on residential down lights. And you will see the last line of that allowable CCT, that's correlated color temperatures, and for residential down lights the recommendation is a maximum of 3500 Kelvin. But since such fixtures can be turned off by residents, I would suggest that for streetlights where we don't have the option of turning them off, a limitation of 3000 Kelvin be added to this legislation. LED streetlights now being used in experimental programs are commonly around 6000 to 8000 Kelvin, so that's more than twice what I am recommending. In the commentary I gave you earlier regarding the blue tint of metal halide lighting, you will see that it takes only a fraction of metal halide light-- only a fraction, as much metal halide light as high pressure sodium light to suppress production of the cancer fighting hormone melatonin. So even though the Energy Star folks have not written a provision to limit correlated color temperature of LED

streetlights, I hope you will consider adding one to this bill. I have a couple of comments that I would like to make on some of the earlier testimony. And it's kind of a funny situation with DOT where we have presented evidence to them that fully shielded fixtures can match the performance of what they're using now and they say, yeah, fine, we'll use them when we have an opportunity, but here's 110 reasons why they're a bad idea. So we have to kind of deal with all of these things. One of the items I've given you is called an explanation of street lighting calculations. And I'm sorry to be doing this two and a half hours into the hearing, but I think it's important for you to understand this information, which was originally presented to DOT in 2005, has been presented again on several occasions since then. The basic-- you have two tables here. The first table examines-- let me just first talk about the measures in the illuminance method, which is what City DOT uses. There are two measures that are considered. One is the average illumination on the street, which is measured in foot candles, and the other is the

evenness or the uniformity of that illumination. So you have an average where the high number is good and you have a uniformity ratio where the low number is good. The first table, the one that runs horizontally on the page, is for East 86th Street in Manhattan. You don't have to pay a bit of attention to the block by block data, but all the way over in the right hand corner you will see an average for those eight blocks of 86th Street from Fifth Avenue over to East End. Above the heavy line you see the GE semi-cutoff fixture which has been very widely used in this City and another fixture from GE, which is a full cutoff or fully shielded fixture, otherwise very similar. And if you go all the way over to the right hand side, you will see that on average foot candles and on the average to minimum uniformity, there's no significant difference between these two fixtures. The items below the heavy line in that table are just you know-- we showed these data to DOT and DOT said, well, we can't just deal with one supplier. So we have, you know, examples of other fixtures from there manufacturers that are, you know, comparable more or less to what DOT has

been using. And in fact the Cooper fixture, the first one below that heavy line, you can see that the average foot candles are exactly the same as the semi-cutoff GE that DOT prefers and that the uniformity is actually lower. So that's actually a better fixture to meet DOT's standards than the semi-cutoff fixture that they're now using. So, this is 86th Street and we thought, well, maybe 86th Street is not comparable, not typical for some reason. And incidentally, it is a street where DOT is not meeting its own standards. I don't know how long the streetlights were put up there, but they don't comply with DOT's own standards. But as has been mentioned previously, there was a competition that was run in 2004 to design a new streetlight for the City and in the process of organizing that, they provided two competitors a description of a typical New York City street lighting installation. So this gave us, you know, it told a certain mounting height, a certain width of street and all of the ingredients that go into these calculations. So this gave us another opportunity to compare the performance of the fully shielded fixture with the semi-cutoff

one that DOT prefers. So in the upper part of this table that goes long ways on the page, straight up the page, are the copper and GE semi-cutoff fixtures that are pretty popular right now in the City. They both have average foot candles of 0.7 and a uniformity ratio of 2.3. They both happen to have the same results. Below the heavy line are a number of full-cutoff fixtures, fully shielded fixtures with performance that is more or less similar to those existing lights. Again, there are in this case several fixtures that by DOT's own standards actually perform better than the semi-cutoff fixture that they're hanging on to. So I'm sorry to get into a lot of technical there, but they haven't been able to debunk this. So they keep talking about 110 reasons why it's a bad idea. So I would like to just offer a couple general comments on earlier testimony. One is the Massachusetts bill that they were voting this morning, that's only a proposed bill. There's no law in Massachusetts at this time. So they had their facts a little screwed up there. I think it's also worth pointing out, particularly given the tone of DOT's testimony this morning, that

over-- we've been working on this, I've been actively working on this State bill since the year 2000. And this year, or starting last year with a new DOT commissioner we thought, you know, maybe things will open up a little bit over there. We made some changes in our bill. We asked them repeatedly, look, if you have problems with this bill, suggest some changes. What is it that, you know, we would need to consider doing in order to make this livable from your standpoint. And I can't tell you how many times we asked that question, but we never got an answer. One other little correction. The competition, there was a fist place winner and a second place winner and a third place winner. The first place winner was an LED streetlight. The second and third place were both similar to the existing cobra heads, you know, stylistically they looked very different, but the fist place winner was an LED streetlight.

CHAIRPERSON LIU: Ms. Clyma, if I can ask you to start wrapping up.

GAIL CLYMA: Yeah, okay. Just quickly. LRC-- to save time, I will say that it is not correct to say that fully-shielded fixtures

will not reduce sky glow. It simply isn't so. It is not correct to say that they won't reduce light trespass. It simply is not so. Council Member Gerson mentioned he's on the 20th floor. I live on the 7th floor. There's a streetlight 40 feet below my bedroom window that's lighting up my ceiling and a fully shielded fixture would not do that. At the end of the day--

CHAIRPERSON LIU: [Interposing] Ms. Clyma, you are refuting the testimony of a professor that comes from this well-known institute.

GAIL CLYMA: Yes.

CHAIRPERSON LIU: Could you state for the record what kind of credentials you could offer to support that.

GAIL CLYMA: I have only 15 years o experience working on this issue. I'm not an engineer. I have no sheepskins in this field. But, if I may put up one of these boards.

[Pause]

GAIL CLYMA: You know, just sort of a basic diagram.

CHAIRPERSON LIU: I can see what

the diagram says. I think the information that you gave us is extremely valuable and we do appreciate it, but we do also need to just ask the question of what the credentials are. And the--

GAIL CLYMA: [Interposing] Simply--

CHAIRPERSON LIU: [Interposing] And there's nothing wrong with being well-versed in these matters for 15 years or for 15 months for that matter. There's nothing wrong with that.

GAIL CLYMA: Trained in the trenches I guess would be.

CHAIRPERSON LIU: Okay. And there's nothing wrong with that. I'm not questioning the credibility, just to round out the testimony; I just wanted to see what that was.

GAIL CLYMA: Right. Basically the bottom line, DOT is making three claims, first of all they're still kind of fighting whether these fully shielded fixtures can perform. And you've got those numbers now, so you know you can just stop worrying about that. So then they start saying well, you know, it costs too much. I think Leo Smith has some excellent information on that point. There might be, you know, a difference of

possibly ten percent in the cost. And then when they can't get anywhere with that they say, well, we can't get them. We can't get these fully shielded fixtures with the electronic ballasts and, you know, I just have to point out that's just an assertion that is being made. It's unverifiable. It simply is not verifiable. Unless DOT comes in here with a request for a proposals--

CHAIRPERSON LIU: [Interposing] Okay.

GAIL CLYMA: --that they have put out and it didn't produce anything.

CHAIRPERSON LIU: All right.

GAIL CLYMA: So I think that needs to be taken into account as well. And thank you, and I'm sorry to hold you up.

CHAIRPERSON LIU: That's not a problem. Thank you very much for your insight into this issue. And I want to thank the rest of the panel for testifying as well.

COUNCIL MEMBER LAPPIN: And Mr. Chairman, if I may, I just wanted to thank Ms. Clyma for all of her input and I've enjoyed

working with her and learning from her a lot more about this issue.

GAIL CLYMA: Thank you, Council Member. I enjoyed it too.

COUNCIL MEMBER GERSON: And Mr. Chair, if I may chime in, I want to add my acknowledgement and gratitude to each of the witnesses, not only for your support but for your expertise and guidance. And there are certain advantages to being trained in the trenches for 15 years including not having to worry about the desires of funders who… but I'll leave it at that. Thank you very much.

GAIL CLYMA: Yeah, I'm not getting paid very well for this; I've got to admit.

CHAIRPERSON LIU: Thank you very much. Our next panel, Michael Demma and Paul Schubert.

MICHAEL DEMMA: Good morning, again.

CHAIRPERSON LIU: Good morning, Michael.

MICHAEL DEMMA: Good morning.

CHAIRPERSON LIU: Please proceed.

MICHAEL DEMMA: Good afternoon. My name is Michael Demma. I've been doing some community work at 14th Street and Sixth Avenue for the last eight years. I've been trained in the trenches too. I'm an employee of the transit authority and my title is Light Maintainer, but I don't represent them here today. I put a little something together quickly and this is regarding the street lighting at 14th Street at the intersection of Sixth Avenue. I was concerned about some issues as we're bringing out, and very intelligent sharing of the environment and wasted oil and all that other good stuff. It's nice to see some people about that here, people take it for granted, lighting. But there's so much to touch on. I took a picture of a streetlight here, not long ago, and concerned about reflective light. If we could see that from here? I'll be giving this after I speak. This is a typical streetlight, and it seems that the light is a beautiful lamp, it's doing its job, but it's bounding off at a 90 degree from the walls, from the fixture straight out into buildings and people's homes. And it's wasted energy, it seems

to be here. So, my suggestion would be something more similar than--

[Pause]

MICHAEL DEMMA: That's nice they're too. It's a similar picture, yes. It's very nice. But my suggestion would be no different than what we grew up at our night table. Here's a typical lampshade. It's reflecting the light at a proper angle down onto the street rather than all around and they probably wouldn't be too much money to retrofit these. But it seems like if something like this was put in place rather than having an open fixture as we know it, it would help the community, the pedestrians, and my concern also is motorists driving in the City. When I drive around this town, most of the time I could see a streetlight coming right into my vision, which is usually quite annoying and distracting and straining and a drain. So I think some type of globe other than what they're saying here as a-- what was that called? A fully shielded? Something like this here. Something that we know. I think that would be helpful. So with all these intelligent agencies and people,

I'm surprised something like that hasn't been brought out. So I'm leaving this photo book with you that I put together very briefly. And this is a concern of mine because at 14th Street and Sixth Avenue here the illumination has been weak over the years and suggestions have, to DOT and to your Council here, Mr. Liu, it's been helpful, but there's a way to go. Some fixtures have been replaced. Some of them, as I'm going to show here have been replaced and with the recent heavy rains of the hurricanes in the summer, strangely these fixtures have been loading up with water from the rain and they dry out and they're leaving some heavy soot behind. So the illumination has decreased dramatically. Here's an original fixture still in place today, the, probably 40 year old fixture. The pollution is so tremendous here in Manhattan as we know; it's making the fixture useless. There isn't any maintenance per se, so to speak. So it's, what else? Here's my card. Also coming in her and listening to DOT and they have a three-page report putting it to sleep, I'm surprised they don't come up here with some kind of illustrations to have the average person

understand what we're talking about. Because I've been involved with this for so long, I know what the cobra head means. I know what a 25 means on top of the fixture; I know what 15 means on top of the fixture. We're talking 25 watts; we're talking 150 watts. So, you know, if they could just put their papers aside a little bit and bring some full-sized illustrations to get the feel of what's actually happening out there. It's difficult. And I don't know why they don't agree with you most of the time, folks.

CHAIRPERSON LIU: Thank you, Michael.

MICHAEL DEMMA: Okay.

CHAIRPERSON LIU: Thank you. We always appreciate the illustrated books that you bring up.

MICHAEL DEMMA: There's something very serious also about this here. We're talking about reflected light into the atmosphere. Outdoor advertising, the heavy billboards that are all around our roadways or wherever, those are using up at least 2500 watts per billboard at 100 watts per fixture, so we're talking about a

tremendous amount of light being reflected. And it wasn't mentioned here at all other than street lighting.

CHAIRPERSON LIU: We don't have the jurisdiction over those billboards.

MICHAEL DEMMA: Well, you know, that's interesting to know. So here you go, Mr. Liu.

CHAIRPERSON LIU: Thank you.

MICHAEL DEMMA: And hopefully Mr. Gerson can look this over and help me out with getting some street lamps cleaned up, and one that has been vacant for a very long time. I don't want to see anybody get hurt.

CHAIRPERSON LIU: Thank you. Mr. Schubert?

PAUL SCHUBERT: Yes. I'm Paul Schubert.

MICHAEL DEMMA: You don't mind if I leave, do you, Mr. Liu?

CHAIRPERSON LIU: That's fine.

PAUL SCHUBERT: Okay. I'm Paul Schubert, a community activist from the Rockaways, card carrier. As my card states, public safety is

my primary concern. I'm personally responsible through the help of DOT Commissioner Iris Weinshall and Janette Sadik-Khan, of having installed so far 14 wheelchair ramps, a traffic light by the Scholars Academy Beach 104th Street, over 20 traffic light crossing walk signals being adjusted so that grandma can cross safely as well as mommy with carriage. It's an interesting coincidence walking speed wise that a senior citizen and a mother with a child with a carriage walk at the same speed approximately. I found this to be an interesting coincidence. Now I've also, I've prepared a little visual thing over here. Now, I've been a street peddler approximately 20 years, since 1986. The bids came in. By City Charter, the law; let's talk about the law. By City Charter they are legally responsible for street lighting and maintenance thereof, by law. They are legally responsible for the repair and the maintenance and replacement of all sidewalks. Have they done so? No. Do they have any plan to do so? No. I have noticed their absence from here. Now, if we're going to start talking about who's responsible, then let's

consult the City Charter, the law, the administrative code. I have seen our streets grow dark. You can go; the NYPD gives out a wonderful anti-crime, anti robbery flier. It states, to prevent oneself from being mugged, one walks in a well-lit area. I went around New York City taking photographs at night, say I'm on Fifth Avenue at Rockefeller Center, it's dark. I've gone to Times Square side streets, 46th, 43rd, it's dark. I've gone by 48th Street between Fifth Avenue and Madison, it's dark. So my question is, now we don't live in Mayberry. I live in Rockaway Park, a residential community with houses. We can see the stars. But New York City is high rises. 24-hour City as Frank Sinatra once said. New York's my kind of town, the City that never sleeps. So we need well-lit corridors everywhere in the main town city, in all the shopping malls. Tourists will not visit a city where they do not feel safe. They will not come back to a city if they don't feel safe there. And they want the big city lights. They live in Mayberry. They want big city lights. They want to see daylight. Now, I'd like to see these studies that cause cancer by

streetlights, I really would. Mr. Liu you are quite correct in asking for credentials. Professor Brons over here, due to her Light Research Center, I believe she has the credentials, over 20 years I understand, of careful scientific study. And scientific study means that what's tested here is then tested here and then here and then based upon a repeat of the same results, we reach a scientific conclusion. This is what was told to us by Aristotle, by Socrates. But, I would like to show my little display over here if possible.

[Pause]

PAUL SCHUBERT: Yeah. I appreciate that, sir.

CHAIRPERSON LIU: All right, but Mr. Schubert, we have to wrap up momentarily.

PAUL SCHUBERT: Yeah, I know. My thanks full to you Mr. Liu. And I will state for the record that whenever I've contacted Mr. Liu's office concerning transportation safety questions, I've had a very good response. I want to state that for the record. Bids are made, code is a crime.

[Pause]

PAUL SCHUBERT: Before them we had safe avenues do to xenon lighting. Now a xenon bulb takes half the power of a halogen bulb.

CHAIRPERSON LIU: Mr. Schubert, I don't think we're going to be able to get through that whole presentation if you're going to--

PAUL SCHUBERT: [Interposing] Okay.

CHAIRPERSON LIU: I would suggest just reading it yourself, because we can actually see it also.

PAUL SCHUBERT: Okay. This is basically going to be my piece de resistance. Low light creates rapes, robbery, crime--

CHAIRPERSON LIU: [Interposing] I don't believe anybody today has talked about reducing the amount of light on our city streets.

PAUL SCHUBERT: Well, I'd like to increase it, myself. I would like to increase it dramatically to the levels that we had about ten years ago, very well-lit avenues. I'm talking to young people that are 20 years old and they remember this.

CHAIRPERSON LIU: To the extent

that there are missing street lamps or broken streetlamps, it is certainly the intent of my colleagues and I in the City Council to make sure that the Department of Transportation fixes those street lamps or installs new street lamps so that the City's streets and sidewalks are well-lit.

PAUL SCHUBERT: Well--

CHAIRPERSON LIU: [Interposing] That is not the issue of today's hearing.

PAUL SCHUBERT: Well I'm going to be providing you with a CD-ROM showing pictures taken last night. Of Times Square, Fifth Avenue, Sixth Avenue down around 14th Street, 23rd, showing dark corridors of crime.

CHAIRPERSON LIU: That would be extremely helpful to our committee.

PAUL SCHUBERT: Thank you, sir.

CHAIRPERSON LIU: I really appreciate your input over the years and today's hearing.

PAUL SCHUBERT: And I do want to thank you for your indulgence.

CHAIRPERSON LIU: Thank you.

PAUL SCHUBERT: I tell people I do

a very good three and a fairly good two minutes, and I do want to thank with my full heart the Council's indulgence.

CHAIRPERSON LIU: I want to thank you for your very good eight minutes today.

PAUL SCHUBERT: Thank you, sir.

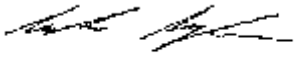
CHAIRPERSON LIU: Thank you.

[Laughter]

CHAIRPERSON LIU: With that, this hearing of the City Council's Transportation Committee is adjourned.

C E R T I F I C A T E

I, Erika Swyler 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 

Date November 24, 2008