

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:
Jessica S. Lappin
Joseph P. Addabbo, Jr.
Miguel Martinez
Michael E. McMahon
Vincent Ignizio
G. Oliver Koppell
Daniel R. Garodnick

A P P E A R A N C E S

COUNCIL MEMBERS:

Alan Gerson

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

Dave Woloch
Deputy Commissioner for External Affairs
New York City Department of Transportation

Steve Galgano
Executive Director of Engineering
New York City Department of Transportation

Susan Harder
Retired Business Owner

Leo Smith
Regional Northeast Director
International Dark-Sky Association

Dan Miner
Sierra Club New York City

Jennifer Brons
Research Scientist
Lighting Research Center
Rensselaer Polytechnic Institute

Glenn Phillips
Executive Director
New York City Audubon Society

Lauren Schuster
Environmental Campaign Coordinator
New York Public Interest Research Group

Gail Clyma

Michael Demma
Light Maintainer
Transit Authority

Paul Schubert
Community Activist
Rockaway

1
2 CHAIRPERSON CHAIRPERSON LIU: Good
3 morning and welcome to today's hearing of the City
4 Council's Committee on Transportation. My name is
5 John Liu and I have the privilege of Chairing this
6 Committee. We have convened today for the
7 purposes of examining two bills related to street
8 lighting and voting on one bill to clarify parking
9 rules.

10 Sometime ago, Mayor Bloomberg
11 announced with great fanfare that he would be
12 taking on environmental initiatives in a PlaNYC
13 2030, a plan designed to, among other things,
14 reduce energy usage to help reduce pollution that
15 is a byproduct of energy usage and production.
16 New York City government accounts for almost 7% of
17 the City's overall energy usage. And, a large
18 part of this can be attributed to the City's
19 300,000 street lamps. There's no dispute that, in
20 a City as densely populated as ours, that street
21 lights are necessary to ensure that people can
22 conduct activities after dark, which, now that we
23 are in standard times, is earlier than ever. And,
24 to give people a sense of security at night.

25 The two bills that we are

1
2 considering today attempt to improve the City's
3 street lights. Intro 757, by Council Member Alan
4 Gerson, would require the Department of
5 Transportation and certain other parties to use
6 fully shielded lights that direct light downwards
7 to help reduce light pollution whenever they
8 install a new street light or replace a light
9 fixture. Intro 806, by Council Member Jessica
10 Lappin, would require the DOT to use light-
11 emitting diode bulbs, or LED bulbs, which last
12 longer and are more efficient than the bulbs
13 currently used in street lighting, in all street
14 lamps, within one year of the effective date of
15 the law. Decorative street lamps would be exempt
16 from the requirements of this bill.

17 Today we'll also vote on proposed
18 Intro 812-A, introduced by Council Member Felder,
19 that would allow people to park at broken meters
20 up to the maximum amount of time otherwise
21 lawfully permitted at such meter space. The bill
22 would fix a quirk in the traffic laws where people
23 are apparently only allowed to park for up to one
24 hour at a broken meter space; whereas, they would
25 be allowed to park up to the maximum amount of

1
2 time normally allowed in that parking zone if the
3 meter was missing. This scheme has led to
4 confusion where people have been ticketed,
5 surprisingly so, when they thought that they were
6 in full compliance of the law. And, based on
7 previous hearings, we have concluded that the
8 rationale for such rule, purportedly to deter
9 vandalism, is simply not worth the amount of
10 confusion and punitive measures that people in New
11 York have had to endure.

12 The A version of this bill has had
13 some changes made to make clear that motorists
14 would only be able to park up to the maximum
15 amount of time otherwise lawfully permitted at
16 that metered space. And, the effective date of
17 this bill was changed from 60 days to 90 days
18 after the bill is enacted into law.

19 We will now [pause]. We are now
20 going to invite the officials from the Department
21 of Transportation to join us at the table. And,
22 we will hear some opening remarks from Council
23 Member Jessica Lappin, who is the prime sponsor of
24 Intro 806.

25 COUNCIL MEMBER LAPPIN: Good

1
2 morning, Mr. Chairman. Thank you for putting this
3 item on the agenda today. It's nice to see you
4 all from DOT. I'm sure you're going to say very,
5 very positive things.

6 I just wanted to briefly explain
7 why I introduced this legislation. In these tough
8 economic times, I think we have to find creative
9 ways to do more with less. And, this bill could
10 not only save the City money over the long run by
11 reducing our energy consumption, it will also make
12 our city greener. There are about 300,000 street
13 lamps to my count and transforming those over to
14 LED lights could reduce energy consumption by as
15 much as 30%. So, while I understand there would
16 be an initial capital investment that would be
17 needed for this effort, I think it would clearly
18 save us money in the long run.

19 And, in terms of the environmental
20 impacts, it's estimated that replacing only 1,000
21 street lights with LED bulbs would be the
22 equivalent of removing 400 cars from the road in
23 terms of greenhouse gas emissions. With nearly
24 300,000 street lights in New York City, we could
25 effectively reduce our carbon footprint by the

1
2 equivalent of 120,000 cars. And, I think that's a
3 pretty substantial amount. LED technology, which
4 we're going to discuss more today, is exciting.
5 And, the City has already embraced some of its
6 possibility from our traffic signals to Times
7 Square to the Brooklyn Bridge and Rockefeller
8 Center. New York City is already saving \$6.3
9 million annually by utilizing these energy
10 efficient bulbs. So, I hope that we can expand
11 that effort by passing this legislation. Thank
12 you, Mr. Chairman.

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

17 DAVID WOLOCH: Good morning,
18 Chairman Liu and Council Member Lappin. I'm Dave
19 Woloch, Deputy Commissioner for External Affairs
20 at the New York City Department of Transportation.
21 And, with me here today is Steve Galgano, DOT's
22 Executive Director of Engineering. Thank you for
23 inviting us here today to testify at this hearing
24 on Intro 757, which would require the use of full
25 cutoff light fixtures for any new or replacement

1
2 light fixtures, and Intro 806, which would require
3 DOT to replace all street lamp bulbs with light-
4 emitting diode bulbs, LEDs, or replace any street
5 lamps that are incapable of accommodating LEDs
6 with street lamps that are, within one year of the
7 bill's effective date.

8 Before I discuss the specifics of
9 the bills, I'd like to brief the Council on DOT's
10 lighting standards and explain what the difference
11 is between a full cutoff fixture, or luminaire, as
12 called for in Intro 757, and a semi-cutoff
13 luminaire which is the standard luminaire used
14 Citywide today.

15 DOT is responsible for maintaining
16 over 300,000 luminaires on the City's streets,
17 highways, parks, overpasses, underpasses, bridges
18 and playgrounds. The carefully considered
19 lighting levels and uniformity ratios, which
20 measures light distribution, provided by these
21 luminaires are based on standards established by
22 the Illuminating Engineering Society of North
23 America and reviewed for specific and varied
24 conditions throughout the five boroughs of New
25 York City.

1
2 As a densely populated urban
3 center, we use standards that are adjusted to
4 provide adequate lighting to motorists on the
5 road, as well as to the many pedestrians as they
6 walk throughout the City. Adequate lighting
7 protects public safety by facilitating the flow of
8 traffic and reducing motor vehicle accidents,
9 providing pedestrians with an open visual
10 environment to make them feel safe and secure, and
11 promoting business and industry that's open during
12 nighttime hours. New York City is a 24-hour city
13 and, therefore, it's imperative that adequate
14 lighting be provided for the public at all times.

15 The standard luminaire that is used
16 Citywide today to achieve these proper lighting
17 levels are high-pressure sodium semi-cutoff cobra
18 head luminaires. I now ask you to turn to the
19 illustrations at the end of the testimony so that
20 I can explain the differences between semi-cutoff
21 and full cutoff luminaires. The first
22 illustration depicts a streetscape utilizing full
23 cutoff luminaires. As you will note, full cutoff
24 luminaires direct light downward in a spotlight
25 effect and none of the light is directed above 90

1
2 degrees. And, while direct up-light is avoided,
3 which is important, it creates areas of shadow and
4 uneven illumination. Additionally, the
5 concentrated down light can cause higher amounts
6 of reflected light and poor uniformity.

7 The second illustration depicts a
8 streetscape utilizing semi-cutoff luminaires.
9 Semi-cutoff luminaires direct light distribution
10 downward in a more evenly dispersed pattern and up
11 to 5% of the light may be directed above 90
12 degrees. Semi-cutoffs allow us to increase the
13 spacing between poles since light is being
14 distributed in a wider diameter. They also
15 provide increased illumination of vertical
16 surfaces including building doorways and people,
17 which is important for safety concerns, and
18 produce less reflected light than full cutoff
19 luminaires.

20 Now that you have a basic
21 understanding of our lighting standards and what a
22 semi-cutoff versus a full cutoff luminaire is, let
23 me turn to Intro 757 which would mandate the use
24 of full cutoff luminaires for any new or
25 replacement lighting. DOT is opposed to this bill

1
2 primarily because it would conflict with the New
3 York City Climate Protection Act, Local Law 55 of
4 2007, a law this Council passed, that established
5 energy-efficient practices in the City
6 government's energy consumption by mandating at
7 least a 30% reduction in Citywide greenhouse gas
8 emissions from fiscal year 2006 levels within ten
9 years.

10 DOT is making a substantial
11 contribution to meeting this Local Law and
12 reducing energy consumption Citywide through its
13 Wattage Reduction Program, which would have to be
14 discontinued essentially should this bill pass.
15 Under this Program, in June 2007, DOT began
16 replacing all 250 watt high-pressure sodium street
17 light cobra heads with 150 watt heads, and 150
18 watts with 100 watt heads. This Program consists
19 of three phases and, in total, we're going to
20 convert 250,000 luminaires, which will save over
21 105 million kilowatt hours annually. Additional
22 benefits include lower maintenance costs and also
23 a reduction of light above 90 degrees, thus making
24 the 5% difference between semi-cutoffs and full
25 cutoffs that much smaller.

1
2 Should Intro 757 pass into law, we
3 would be forced to discontinue this energy savings
4 program since, to date, no manufacturer makes a
5 150 watt full cutoff luminaire that meets our
6 technical specifications despite our repeated
7 requests to the manufacturing community to develop
8 one. It simply, as of now, does not yet exist.
9 As we explained to Council staff previously, when
10 a 150 watt full cutoff luminaire that meets our
11 specifications is developed, we will gladly look
12 for opportunities to use it.

13 In effect, our Wattage Reduction
14 Program is helping to meet the goals of the
15 Climate Protection Act of 2007 and will result in
16 real energy savings, money savings and greenhouse
17 gas credits, while Intro 757 does nothing to
18 reduce energy consumption. It's important to
19 understand that Intro 757 is not an energy
20 conservation bill. In addition, semi-cutoff
21 luminaires only add 5% more upward light than full
22 cutoffs. And, as I noted earlier, our Wattage
23 Reduction Program reduces this 5% even further.

24 Our focus is on safety and energy
25 efficiency. And, we are also always striving to

1
2 make use of the most current technology, looking
3 for ways to reduce energy consumption and increase
4 cost savings. Our efforts extend beyond our
5 Wattage Reduction Program. All of the City's 32
6 watt incandescent fire alarm lamps have been
7 replaced with seven watt LED lamps. All 12,000
8 highway signage 85 watt fluorescent lamps have
9 been replaced with 3,000 100 watt Metal Halide
10 units.

11 We are reviewing our existing
12 lighting catalogue with particular emphasis on
13 non-custom contemporary street fixtures that will
14 provide more energy efficient alternatives with
15 attention to lighting levels on the street. We
16 are in direct communication with members of IESNA,
17 lighting designers and lighting manufacturers to
18 insure that current guidelines are considered for
19 future installations. We're working with the
20 Climate Group and the Clinton Climate Initiative,
21 among others, to explore, along with other cities,
22 the best uses for full and semi-cutoff luminaires,
23 as well as more efficient lighting sources.

24 Since there is no manufacturer that
25 makes a full cutoff 150 watt luminaire that meets

1
2 our technical specifications, this legislation
3 would either require us to compromise our energy
4 conservation efforts by requiring us to use higher
5 wattage fixtures or, as I will explain, provide
6 additional poles at a greater financial cost to
7 the City, to compensate for the full cutoff
8 luminaires in order to achieve the necessary
9 lighting uniformity, or require us to compromise
10 our lighting standards, which as stated earlier,
11 are accepted standards established by IESNA.

12 We certainly don't want to
13 compromise our standards. We need to provide
14 adequate lighting to the many pedestrians as they
15 walk throughout the City, as well as to motorists
16 on the road. In fact, in addition to the
17 countless requests for increased lighting from the
18 public over the years, we've also received many
19 requests from City elected officials requesting
20 additional lighting, over 600 requests over the
21 last three years, and none asking for less
22 lighting.

23 Not surprisingly, States that have
24 passed laws mandating the use of full cutoffs,
25 including Massachusetts, Rhode Island and New

1
2 Hampshire, all recognize the unique lighting needs
3 of urban areas and allow the use of semi-cutoffs
4 in their urban areas. The Massachusetts law, for
5 example, specifically states "Any urban area where
6 there is high nighttime pedestrian traffic, which
7 has been examined by an engineer employed by the
8 Commonwealth and experienced in outdoor lighting,
9 and deemed to be an area where the installation of
10 semi-cutoff luminaires are necessary."

11 As the technology currently exists,
12 in order to maintain our lighting standards and
13 utilize full cutoff luminaires, closer pole
14 spacing may be required in order to achieve the
15 necessary lighting uniformity. Either street
16 light poles may need to be relocated or additional
17 poles may need to be installed. This may also
18 require Con Edison to excavate streets in order to
19 provide the additional electrical service. The
20 initial purchase, together with installation,
21 increased energy use and maintenance costs would
22 be substantial and any increase is certainly not
23 something the City can afford at this time.

24 For example, we currently install
25 5,000 new street light poles a year and replace

1
2 approximately 20,000 cobra heads. A complete
3 semi-cutoff cobra head luminaire currently costs
4 us \$120. A full cutoff luminaire, on the other
5 hand, would cost us \$240; twice as much.
6 Therefore, in effect, to convert just these 25,000
7 luminaires to full cutoffs would cost us
8 approximately \$3 million. And that's just the
9 cost of the luminaire. It doesn't include the
10 cost of any additional poles if we would need to
11 add them, their installation, increased energy use
12 or maintenance. Again, this isn't something the
13 City can afford right now.

14 Lastly, we are also opposed to
15 Intro 757 because, under this legislation, the
16 majority of historic and decorative lights, which
17 are any lights other than our cobra head standard,
18 would not be permitted as they utilize either
19 semi-cutoff or non-cutoff luminaires. However,
20 there are some existing decorative lights that
21 utilize full cutoff luminaires, and therefore,
22 would not be affected by this legislation.

23 Working with partners such as the
24 Economic Development Corporation and the Downtown
25 Alliance, these were able to be installed in

1
2 certain locations because our partners are picking
3 up the cost for the luminaires, additional poles
4 and the increased energy use. So while some
5 historical and decorative lights can simply not
6 accommodate full cutoffs, we will continue working
7 with our partners to expand the use of historic
8 and decorative full cutoffs where we can.

9 In conclusion, while DOT is
10 committed to expanding our use of full cutoff
11 luminaires where feasible, we're opposed to Intro
12 757 as it would require us to either discontinue
13 our Wattage Reduction Program putting us in
14 conflict with the New York City Climate Protection
15 Act or require us to either compromise our
16 lighting standards or to add additional poles to
17 produce enough lighting to meet our standards and
18 lastly, require the removal of the majority of our
19 existing historic and decorative lights.

20 Now let me turn to Intro 806 which
21 would require DOT to replace all street lamp bulbs
22 with light-emitting diode bulbs, LEDs, or replace
23 any street lamps that are incapable of
24 accommodating LEDs with street lamps that are,
25 within one year of the bill's effective date. We

1
2 are opposed to this legislation due to technology
3 and cost concerns.

4 In keeping with our efforts to
5 conserve energy and to utilize the latest
6 technology, we've already begun using LEDs
7 Citywide where appropriate. We've replaced all
8 Citywide traffic signals and pedestrian signals
9 with LEDs between 1998 and 2004. In addition to
10 this, we are piloting the use of LEDs on the
11 decorative necklace lighting of the Manhattan and
12 Brooklyn Bridges. We're also actively searching
13 for appropriate locations to test LED pedestrian
14 and street lights.

15 However, LEDs as a light source are
16 still in the developmental phase and to mandate
17 their use Citywide within a year is not prudent.
18 We're concerned about light distribution when LEDs
19 are used, as the quantity of light to reach our
20 standard levels may be difficult to achieve. At
21 the present time LEDs deliver 90 lumens per watt,
22 while high-pressure sodium delivers 125 lumens per
23 watt; in effect LEDs produce approximately 25%
24 less light for the same amount of energy.

25 Furthermore, we don't want to tie

1
2 our hands and limit our use to one specific
3 technology as lighting technology is constantly
4 changing. For example, we are also testing the
5 use of induction lamps on the Manhattan and
6 Brooklyn Bridges. These bulbs may last longer and
7 perform better on our bridges than LEDs and would
8 cost approximately \$175 each for replacements as
9 opposed to an LED, which would cost approximately
10 \$800 to 1,200 each, depending on the location.
11 Mandating a type of technology that may very well
12 change in the near future will not allow us to
13 take advantage of perhaps better and less
14 expensive lighting products.

15 I think this is a very important
16 point. We're not opposed to utilizing new
17 lighting technology and our record speaks to this.
18 However, to legislate lighting standards, whether
19 those in Intro 757 or those in Intro 806, would
20 simply box us in. Technology is constantly
21 changing, as we have already seen. And, we would
22 prefer to work with the Council as technology
23 improves to make sure we're not missing out on any
24 new opportunities and being cognizant of what
25 other localities are doing.

1
2 Lastly, while the intent of Intro
3 806 is admirable, the costs to implement it would
4 far outweigh any benefits. We assume that to
5 replace all of the City's 305,000 luminaires would
6 cost the City approximately \$286 million, in
7 addition to approximately \$3 million annually in
8 replacement costs. Similar to Intro 757, this
9 isn't something the City can afford at this time.

10 Thank you for this opportunity to
11 testify before you today and at this time we'd be
12 happy to answer any questions that you may have.

13 CHAIRPERSON LIU: All right. Thank
14 you very much, Commissioner Woloch. Before we
15 proceed to questions concerning your testimony on
16 Intro 757 and 806, we are going to call for a vote
17 on Intro 812-A.

18 WILLIAM MARTIN: William Martin,
19 Committee Clerk, Committee on Transportation,
20 Introduction 812-A, Council Member Liu.

21 CHAIRPERSON LIU: Well, thank you.
22 I want to thank the clerk for jumping right to it.
23 I just want to say, once again, that we held a
24 hearing on Intro 812-A, which seeks to remedy this
25 broken meter rule that is extremely confusing for

1
2 people. It has led to innumerable people
3 receiving tickets for what these motorists fully
4 expected and had considered would be their law-
5 abiding practice. This is part of an ongoing
6 effort on the Committee's part to clarify and to
7 make parking rules in New York City more
8 reflective of the needs of New York City and less
9 punitive when those punitive measures are
10 unnecessary. I encourage my colleagues to vote
11 yes on this bill. And, thank Council Member
12 Simcha Felder for introducing it. And, I vote yes
13 on this bill.

14 WILLIAM MARTIN: Addabbo.

15 COUNCIL MEMBER ADDABBO: Yes.

16 WILLIAM MARTIN: Martinez.

17 COUNCIL MEMBER MARTINEZ: Yes.

18 WILLIAM MARTIN: McMahon.

19 COUNCIL MEMBER McMAHON: Yes.

20 WILLIAM MARTIN: Lappin.

21 COUNCIL MEMBER LAPPIN: Yes.

22 WILLIAM MARTIN: Ignizio.

23 COUNCIL MEMBER IGNIZIO: Yes.

24 WILLIAM MARTIN: By a vote of six
25 in the affirmative, zero in the negative and no

1
2 abstentions, item is adopted. Members, please
3 sign the Committee report. Thank you.

4 CHAIRPERSON LIU: And, I request
5 that the clerk keep the roll open because we have
6 other members joining us to make their votes.
7 Thank you.

8 Okay. Well, turning back to the
9 DOT's testimony, again, these two bills are
10 intended to improve our street lighting in New
11 York City. The Department of Transportation,
12 shockingly enough, thinks that the legislation is
13 not necessary, as they are doing everything they
14 can to keep our streets well-lit in an efficient
15 manner. I'd like to ask you gentlemen, could you
16 describe the last couple of times, or maybe even
17 just the last time, that the City embarked on a
18 change in the devices used to illuminate our City
19 streets? Steve, identify yourself for the record,
20 please.

21 STEVE GALGANO: Steve Galgano,
22 Executive Director of Engineering, New York City
23 Department of Transportation. We are in the
24 process right now. We started, about two years
25 ago, changing from 250 watt high-pressure sodium

1
2 luminares to new 150 watt high-pressure sodium
3 luminaires, which use different optics and solid
4 state ballast to improve the efficiency of the
5 luminaire, which allows us to produce additional
6 efficient light out of the fixture at a lower
7 wattage. And, that we've started two years ago
8 and we are continuing at the moment and expect for
9 another two years to continue to change all the
10 cobra heads from 150 to 100 and 250 to 150.

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

16 STEVE GALGANO: We started this
17 four years ago with the design and the testing
18 before the mandate ever came down.

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

22 STEVE GALGANO: And, in the mid-
23 '80s, we changed from 400 watt to 250 because the
24 fixtures became more efficient, 250, and allowed
25 us to use them instead of 400 and provide the same

1
2 amount of light. In the early '90s, in the late
3 '90s, excuse me, we changed from incandescent
4 bulbs to LED lenses to take advantage of that
5 technology. So, we've been doing this on an
6 ongoing basis as the technology becomes available.

7 CHAIRPERSON LIU: Right. So, over
8 the years, the technology has improved, thus
9 allowing our City and the Department of
10 Transportation to use bulbs that use less energy
11 and still provide the same amount of light
12 adequate to keep our City streets and sidewalks
13 safe.

14 Your testimony today, I think was
15 extremely harsh on both bills, particularly Intro
16 757. I certainly don't think that it was the
17 intent of any member of this body, certainly not
18 the intent of the sponsors of these bills, to
19 impose unnecessary costs on the City. Now, one
20 thing that I think you have not addressed with
21 regard to Intro 757 is the possibility that better
22 direction of the light could achieve the same
23 level of luminance without-- same level of
24 lighting by further decreasing the amount of
25 wattage or the amount of energy that is necessary

1
2 to provide that same amount of light. I know you
3 give us a very-- I assume this picture, these
4 pictures that you show us here are computer-
5 generated. Right? They're not real-- this is not
6 real life? This is computer-generated?

7 STEVE GALGANO: It's computer-
8 generated. But, it came from a symposium at the
9 Illuminating Engineers Society from two years ago.
10 And, we got permission from the presenter to use
11 them.

12 CHAIRPERSON LIU: Okay. But, we,
13 you know, I think we all realize that light bulbs
14 are light bulbs. But, there are better ways to
15 keep our City streets-- I mean, the system we have
16 now is not perfect. And, the bulbs that are being
17 used now are imperfect. And, what Council Member
18 Gerson attempts to do with Intro 757 is to strike
19 a more reasonable balance. And, you may agree or
20 disagree. This is why we're having a hearing
21 here. But, there's a balance necessary between
22 keeping our streets and sidewalks well-lit and
23 trying to minimize the amount of pollution that
24 causes all sorts of different effects on the rest
25 of the City; people who are not on the sidewalk.

1
2 So, I'm going to turn it over to
3 Council Member Gerson for a bit for his questions.
4 And, I will follow up on a few different points.
5 But, I think the testimony here is just basically
6 saying that okay, I mean, the DOT's doing
7 everything that it can. And, that the Council
8 should not legislate on these particular matters.
9 Well, it is always the intent of this body to help
10 our agencies strike a better balance.

11 And, it's the same thing with the
12 broken meter rule that we're going to pass today
13 that the Department's testimony was oh, it's not
14 necessary. We have to do this because of this.
15 Well, in some cases, we beg to differ. And so,
16 let me turn it over to Council Member Gerson for
17 his questions.

18 COUNCIL MEMBER GERSON: Thank
19 [pause] these new mics. Thank you very much, Mr.
20 Chair, my colleagues. Good morning. It's always
21 a pleasure, if not a challenge, to be with you,
22 Commissioner Woloch. And, Mr. Chair, your remarks
23 are right on point. I mean, you know, the history
24 of our interaction, our very constructive
25 interaction, with the Department of Transportation

1
2 has a certain dynamic, where the Department
3 frequently claims that everything is being done
4 that can and must be done. And, upon introduction
5 and pressure of legislation, we find, lo and
6 behold, that there is more that, in fact, needs to
7 be done than the agency first either realized or
8 admitted. And then, usually we reach a common
9 ground and it does get done whether it's through
10 the passage of legislation or through action after
11 legislation is introduced, short of actual
12 adoption. Most recent example being the
13 successful, at long last, repair of cobblestones
14 in many historic districts, which, for years if
15 not decades, languished. And, we introduced
16 legislation and, lo and behold, now we are seeing
17 a very constructive result through cooperative
18 action. So, I hope we can do the same with
19 respect to lighting.

20 As I was not hear to make an
21 introductory statement, let me just briefly point
22 out and underscore the intent of this as a part of
23 a package of lighting-related bills, which will be
24 heard, either by this Committee or by the
25 Department of Buildings. But, the purpose of it

1
2 is threefold, the purpose of the package in its
3 entirety. One is to reduce the quantity of, or
4 the amount of, light pollution throughout our
5 City, defined as excessive light, unneeded
6 luminosity not serving a constructive safety or
7 other purpose, which is shining into people's
8 residences or other areas where it is unwanted
9 and, in fact, disruptive and, in fact, depriving
10 New Yorkers of a semblance, of a reasonable
11 semblance, of nighttime ambiance without excessive
12 lighting. New York will never, and should never,
13 be, you know, a city without lights. But, we are
14 too far out of balance in terms of excessive
15 lighting. And, there's been a series of articles,
16 most recently in a recent issue of National
17 Geographic highlighting the health and other human
18 benefits of having dark skies during evening
19 hours. So, we want to get a little closer to that
20 here in the City.

21 The second purpose of the package
22 is to conserve fuel and energy. In most cases,
23 and the package overall, through a reduction in
24 the use of excessive energy to achieve unneeded
25 lighting, the package overall, not in each bill,

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

but overall, will, in fact, conserve energy.

And, thirdly and related to that, the package overall will save the City considerable 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 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 as 757?

STEVE GALGANO: I know they changed to full cutoff fixtures in certain cities, yes.

COUNCIL MEMBER GERSON: I believe it's statewide or it's in the process of being

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

implemented in phases statewide.

STEVE 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 experiences doesn't help us if we don't have that information.

COUNCIL MEMBER GERSON: That's Stamford?

STEVE GALGANO: Yes.

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

STEVE 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 that they were having problems with their implementation of the full cutoff, which is requiring them to go back and

1

2 eliminate that requirement? Or, were they going
3 to stick with their requirement of full cutoffs
4 for the foreseeable future?

5 STEVE GALGANO: What I got from
6 them is it looked good.

7 COUNCIL MEMBER GERSON: And, let me
8 just then turn to Massachusetts, which you cited
9 in your testimony. And, I believe-- Mr. Chair, I
10 want to be exact, so I want to find the specific
11 language-- yeah. On page 4 of your testimony, you
12 cited that the Massachusetts law makes an
13 exception for an urban area, but it's not a
14 blanket exception. Again, reading the quote in
15 your testimony, for any urban area, but where
16 other conditions have met, which includes an
17 examination by an engineer employed by the
18 Commonwealth and experienced in outdoor lighting.
19 Do you know how many instances in the State of
20 Massachusetts has that exception been applied? In
21 other words, in how many instances has an
22 engineer, employed by the Commonwealth and
23 experienced in outdoor lighting, determine that an
24 exception needs to be made?

25 STEVE GALGANO: I have no idea.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

COUNCIL MEMBER GERSON: All right. Well, Mr. Chair, since it's always good to learn from experiences elsewhere, it seems to me before, one, we need to do a little bit more investigation as to, you know, what is happening up in our neighbors in Connecticut, the fact that, 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, you know, have been, you know, necessary, you know, 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 if we need to, 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

1
2 circumstances, or for the cases of historic
3 lighting, then, as you cited in your testimony,
4 then, certainly, that is consistent with the
5 spirit and the intent of this law. And, we would
6 certainly be happy to engage you in a conversation
7 on that.

8 But, I want to turn, finally--
9 well, for now, finally to the major point made by
10 the witnesses with respect to the wattage
11 reduction and the claim-- just want to find, yeah--
12 - the Wattage Reduction Program and the claim that
13 this switch to a full cutoff would interfere with
14 the Wattage Reduction Program. And, if I
15 understand your testimony correctly, the main
16 reason for that is that, again, reading from your
17 testimony, to date no manufacturer makes 150 watt
18 full cutoff luminaire that meets our technical
19 specifications. Is that correct?

20 DAVE WOLOCH: Correct.

21 STEVE GALGANO: That's correct.

22 COUNCIL MEMBER GERSON: Okay. And,
23 you saying, I applaud you for this, that the
24 Department has made repeated requests to the
25 manufacturing community to develop one.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

STEVE GALGANO: That's correct.

DAVE 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 cost and the aesthetics on our streets. And, it's true that there is 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, it's constantly changing, and hopefully, sooner rather than later, the manufacturers will come up with 150 watt luminaire that allows us to achieve the light pollution goals as well.

1
2 COUNCIL MEMBER GERSON: Well,
3 that's great. Well, then I think that's exactly
4 how we should proceed working together towards
5 that goal. I mean, is it your understanding that
6 the reason this bulb has not been produced as yet
7 is more economics or technological?

8 STEVE GALGANO: I believe it's
9 technological. It's not just the bulb we're
10 looking at. We're looking at the whole fixture.
11 And, we've incorporated into the new fixture newer
12 technology and changes to the optics that allow
13 the lower wattage lamp fixture to be more
14 efficient. And, right now, until someone makes
15 the full cutoff with those characteristics, it
16 would require us to go back to higher wattage
17 luminaires, where they do make full cutoff. That
18 may, you know, suffice for us. However, we would
19 have to give up the savings in energy in order to
20 do it.

21 COUNCIL MEMBER GERSON: And, I just
22 want to press you a little bit more, though, on
23 the technology. I mean, do you think this is a
24 question of evolution and time? With a little bit
25 of pressure and interest expressed by the

1
2 purchasing community, the companies, I mean, will
3 overcome the obstacles? I mean, is this in the
4 category of, you know, there has to be a little
5 bit more of a will and then, we'll find a way?
6 Or, is this in the category of teleportation that,
7 you know, is something that is way beyond, well,
8 the realm as we know it today? But, you know,
9 with our Transportation Committee Chair, anything
10 is possible. But, and I understand you're working
11 on the latter. So, maybe that--

12 STEVE GALGANO: I just believe it's
13 a matter of time.

14 COUNCIL MEMBER GERSON: Okay. Well
15 then, let me say maybe, and we've seen this
16 elsewhere in other environmental areas where, you
17 know, when the initial fuel pollution, diesel
18 emission technologies began to be evaluated and
19 looked at, we weren't quite there yet in terms of
20 retrofitting, in terms of designing the best
21 ultra, less sulfur diesel fuel. But, it took kind
22 of the pressure of a demand by purchasers to push
23 the industry to achieve the technology and maybe,
24 if the industry sees that there is going to be,
25 you know, a significant demand at the end of the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

day, then that will propel them even further.

So, maybe we could consider, you know, a piece of legislation that would kick in once the technology, in fact, becomes available. And, therefore, that type of legislation might be a driving force to promote the technology. So, I hope we could follow up this hearing with that conversation, as well.

All right. Let me just, also, I omitted, when we were talking about experiences elsewhere, Los Angeles. Are you familiar with the Los Angeles experience?

STEVE GALGANO: Yes.

COUNCIL MEMBER GERSON: And, have they switched to a full cutoff?

STEVE GALGANO: In certain places, yes. They're testing.

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

STEVE GALGANO: Yes.

DAVE WOLOCH: But, I think the key word that Mr. Galgano just said was testing.

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

1
2 STEVE GALGANO: No, I have it at
3 the office.

4 COUNCIL MEMBER GERSON: My--

5 STEVE GALGANO: I don't have it.

6 COUNCIL MEMBER GERSON: All right.

7 Well, we should follow up on that, also,
8 Mr. Chair. My understanding is that this test
9 began in 1988 and that, as of today, virtually all
10 of the Los Angeles street lights have, in fact,
11 been converted to full cutoff, without any reports
12 of, you know, problems with lighting of the
13 streets. So, again, I think we should verify that
14 and find out what the actual situation is. And,
15 let's try and learn and let's try and push the
16 technology, rather than follow the technology.
17 Thank you, Mr. Chair.

18 CHAIRPERSON LIU: Thank you very
19 much, Council Member Gerson. I think I would ask
20 the Department of Transportation to go back and do
21 a little bit more homework on this particular
22 issue. The DOT's approach to many of these kinds
23 of issues that are brought up before this
24 Committee is generally a blanket approach that
25 applies to the entire City, every single nook and

1
2 cranny of the City. And, I think the Department
3 has to begin to realize that the City is not the
4 same everywhere.

5 And so, to that extent, I would
6 encourage the Department of Transportation, and
7 this applies to so many other pieces of
8 legislation that has been considered by this
9 Committee. In this case, there are obviously
10 different parts of the City that have different
11 kinds of lighting needs. And, there are different
12 issues from annoyances to outright health hazards
13 for local residents that are caused by this kind
14 of, in this case, specifically, lighting issues.

15 So, why don't we take a look at
16 what's being done in other cities. And, not just
17 base testimony in opposition to this bill
18 seemingly only on the results and what's been
19 presented at various conferences. I think we need
20 to take a look at that. And, to the extent that
21 maybe it makes sense to test some of these lights
22 on real live streets, where there are clearly
23 other light sources and not base it on computer
24 simulations in these pictures.

25 Let's go back and do a little bit

1
2 more homework before you come to this Committee
3 and basically trash a proposal that has been put
4 forth by a colleague that is seeking to address
5 constituent concerns.

6 DAVE WOLOCH: With all due respect,
7 the attachments to the testimony were illustrative
8 and were meant to inform members of the Committee,
9 who may not have necessarily been familiar with
10 the difference between a full cutoff and a semi-
11 cutoff. Our Department frequently speaks with
12 representatives from municipalities and states
13 around the country. So, to suggest that we're not
14 doing our homework, I think is unfair. Are there
15 perhaps other places that all of us can talk to
16 that we have not yet talked to? Sure. And, I
17 think we're constantly trying to learn more from
18 industry and learn more from other places.

19 I think the point is that the
20 nature of the industry is constantly changing.
21 And, I think the main concern we have about the
22 legislation is that you are, in fact, with this
23 bill, applying a single standard to the entire
24 City and our entire universe of poles and, again,
25 sacrificing other concerns. And, I guess to

1
2 paraphrase the President-Elect, this is an issue
3 that doesn't require a sledgehammer. It requires
4 a scalpel. So, just suggesting that we must use
5 full cutoffs in all instances, when, in fact,
6 there's cost to that and the cost would be
7 different in different parts of the City, perhaps,
8 is going too far.

9 So, I think that's our concern is,
10 again, as I said before, this is a good direction
11 to push in. This is a good hearing to have. This
12 is a good discussion to have. We're not against
13 that.

14 CHAIRPERSON LIU: [Interposing]
15 That wasn't part of your testimony. But, we
16 appreciate those comments.

17 DAVE WOLOCH: Well, I'm happy to--

18 CHAIRPERSON LIU: Okay.

19 DAVE WOLOCH: -- add that on. The
20 concern we have is the nature of both pieces of
21 legislation which mandate a particular type of
22 solution Citywide. And, the nature of this
23 technology is that it's constantly changing. So,
24 to be boxed in like that is what's troubling. The
25 directions both bills are pressing in are, again,

1
2 good issues to raise and good directions for us to
3 push in and to go in.

4 CHAIRPERSON LIU: And, in fact,
5 that's what this legislation was proposed for, to
6 engage the Department of Transportation in
7 discussing these kinds of issues. But, I think it
8 also has to be noted that the testimony here
9 basically-- well, I don't want to have a back and
10 forth on the tone and the substance of the
11 testimony. But, I am very happy to note that our
12 new President-Elect has even reached into this
13 Committee and its hearings to the point where the
14 Deputy Commissioner has to cite President-Elect
15 Obama's comments on how we change the world.

16 I want to give two colleagues a
17 chance to vote on Intro 812-A. And, the clerk,
18 will you please call the roll on these two
19 members?

20 WILLIAM MARTIN: Council Member
21 Koppell.

22 COUNCIL MEMBER KOPPELL: Aye.

23 WILLIAM MARTIN: Garodnick.

24 COUNCIL MEMBER GARODNICK: Aye.

25 WILLIAM MARTIN: Vote now stands at

1
2 eight in the affirmative, zero in the negative and
3 zero abstentions.

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

7 COUNCIL MEMBER LAPPIN: Thank you,
8 Mr. Chair. Since we're all paraphrasing our
9 President-Elect, how about a little yes, we can,
10 because, you know, you come here and give very
11 disappointing, and I think in regards to my bill,
12 somewhat disingenuous testimony. And, it would be
13 nice if you came here and said this is a great
14 idea. And, we should be harnessing new technology
15 and let's find a way to work together and amend
16 these bills and find a way to do it, because these
17 are just drafts.

18 And, I'll speak for myself, at
19 least. This is a version of a bill. We always go
20 back and forth. We always negotiate. We always
21 discuss ways to make this legislation better.
22 And, that's why we're having a hearing. And,
23 we're going to hear from the Sierra Club and from
24 Gail Clyma and from other people about ways to
25 make this legislation better. So, instead of

1
2 coming in and just saying no, it'd be nice if you
3 came in and said we actually like this idea.

4 Let's figure out how to make it work.

5 And, I'm going to, since we've also
6 been discussing the simulated images that you
7 attached, I'm going to pass around to the
8 Committee members and then ask the Sergeant to
9 show the DOT representatives an actual photo of a
10 roadway in Calgary that was illuminated with both
11 the non-shielded and then flat lens lights, so you
12 can see the difference in terms of the
13 illumination and the glare.

14 And, I'm fully supportive of
15 Council Member Gerson's bill and would love to be
16 added as a co-sponsor, if the counsel of the
17 Committee would be so kind as to add me. And, in
18 fact, if we ever get to a point where my bill is
19 enacted into law and we do move in this City
20 towards LED lights, I think they should be
21 shielded, as well, for the reasons that Council
22 Member Gerson has discussed.

23 So, let's go to your testimony.
24 And, we've been talking about cities with other
25 precedents. I know Ann Arbor, Michigan has been

1
2 moving from old street lights to LED lamps. And,
3 I think San Jose has just issued an RFP to replace
4 all of their street lights with LED lights. In
5 Japan, Sharp is introducing two new solar paneled-
6 powered LED street light prototypes that have,
7 apparently, created quite a sensation and demand.
8 In Düsseldorf, Germany, city officials are
9 replacing their 10,000 street lights with LED
10 lamps. So, I think people are starting to move
11 towards embracing this technology all across the
12 world, not just in our country.

13 I wanted to start with sort of this
14 concept that you use standards established by the
15 Illuminating Engineering Society of North America,
16 because I have federal guidelines that are
17 perfectly compatible with LED lights, the Energy
18 Star guidelines that the federal government has
19 released. So, can you just explain, in more
20 detail, why you use the IESNA standards? When you
21 started to adopt those standards? If you have
22 something in writing that details why you do?

23 STEVE GALGANO: We have been using
24 the IS standard since 1960 or so. I can get you
25 an exact date on we took over the lighting from

1
2 Con Edison and when we started using these
3 standards. These are standards that are set aside
4 for outdoor lighting, specifically, that we use it
5 for. And, it is from a group that represents,
6 across the nation, cities, colleges and formed
7 this society and formed these guidelines that we
8 use.

9 These are things we use when we set
10 out to design. We also use them in defense of our
11 legal position when we are challenged for the
12 lighting levels. And, that is what we base our
13 standards on and our designs.

14 COUNCIL MEMBER LAPPIN: And, 100%
15 of the street lamps in New York City comply with
16 their recommended guidelines? Or, you pick and
17 choose?

18 STEVE GALGANO: They all should.
19 Now, some of them have been in place for a very
20 long time and the conditions change and people,
21 you know, claim that there's not enough light.
22 And, we go out we do the design and the layout and
23 we see if it does meet the standards. If it
24 doesn't, we add light or we re-space. But,
25 everything that we do when we design now, should

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

meet those standards.

COUNCIL MEMBER LAPPIN: Should or does?

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

STEVE GALGANO: No, I'm not.

COUNCIL MEMBER LAPPIN: Okay. So, we'll make sure that we 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'd like to go to the pricing, because I think this is somewhat

1
2 disingenuous. I mean, you stated in your
3 testimony, first of all, that you install 5,000
4 new street poles a year and replace approximately
5 20,000 cobra heads. So, in, basically, a 12-year
6 cycle, you will have completely changed every
7 single street lamp in New York City, according to
8 your testimony.

9 STEVE GALGANO: Not necessarily
10 different lamps that get replaced.

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

16 STEVE GALGANO: Yes.

17 COUNCIL MEMBER LAPPIN: Okay. So,
18 is that free? Or, do you spend money on that?

19 STEVE GALGANO: Right now, we spend
20 money on that.

21 COUNCIL MEMBER LAPPIN: Okay. So,
22 does your cost estimate reduce the additional
23 expenditures you're making on those 25,000 lamps
24 every year? Or, is that included in your
25 estimate?

1
2 STEVE GALGANO: The cost of an LED
3 fixture that we have now--

4 COUNCIL MEMBER LAPPIN: That wasn't
5 my question. My question was your \$286 million
6 cost estimate, does that include the 25,000 that
7 you would, lamps, that you would be replacing
8 anyway every year? Or, not?

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

11 COUNCIL MEMBER LAPPIN: Okay.
12 Well, we can discuss the timetable.

13 STEVE GALGANO: Okay.

14 COUNCIL MEMBER LAPPIN: And,
15 actually, you could have said that. That would
16 have been more constructive testimony. So, I'd
17 like to get an understanding of the \$286 million.
18 What exactly is that?

19 STEVE GALGANO: It's 300,000, or
20 so, street lights times \$833, which was the lowest
21 price we found for an LED fixture and \$90 a piece
22 to replace them-- to install them.

23 COUNCIL MEMBER LAPPIN: Does that
24 factor in the savings over time in terms of the
25 reduced energy costs?

1
2 STEVE GALGANO: I don't know of any
3 reduced--

4 COUNCIL MEMBER LAPPIN: No.

5 STEVE GALGANO: -- energy cost,
6 yes, until we see the fixture and what [crosstalk]

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

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

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

19 DAVE WOLOCH: We don't know yet
20 what the cost savings would be. I think that's
21 the point. So, this, again, this might be a good
22 direction to go in. But, it's something we need
23 to learn more about. I mean, that's precisely the
24 point. We don't know what the savings would be.

25 COUNCIL MEMBER LAPPIN: And, what

1
2 will you be spending this year in terms of the
3 25,000 new or replacement lamps? What's in the
4 capital budget for that?

5 STEVE GALGANO: It's not in the
6 capital budget. It's in our maintenance
7 contracts. So, it's expense.

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

10 STEVE GALGANO: They cost \$125 a
11 piece times 25,000. So, it's, what, about two and
12 a half million. Something like that.

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

18 CHAIRPERSON LIU: Absolutely. And,
19 I think I would absolutely agree with Council
20 Member Lappin's questions about these cost
21 estimates and the cost impact and the repeated
22 phrase in your testimony that this is something
23 that we cannot afford at this time. Obviously,
24 nobody knows better than the City Council that
25 we're in tough fiscal straights right now. We're

1
2 not looking to impose costs. The money still is
3 spent. And, we want to make sure that that money
4 is spent wisely. And, your cost estimates, again,
5 and this is a point that Council Member Lappin
6 brought out, you haven't factored in at all the
7 cost savings due to the energy reduction. And,
8 the only thing that you've been able to say this
9 morning is that oh, you don't know. You don't
10 know what the energy savings would be. For the
11 \$10 bulb--

12 DAVE WOLOCH: [Interposing] Well,
13 and--

14 CHAIRPERSON LIU: -- on an annual
15 basis, how much does it cost to pay for the
16 electricity to light that bulb?

17 STEVE GALGANO: For 150 watt
18 luminaire, it's about \$180 a year.

19 CHAIRPERSON LIU: A hundred and
20 eighty dollars a year. And, Commissioner Woloch
21 was going to say something also?

22 DAVE WOLOCH: I don't think any of
23 us know what that savings would be. I mean, I
24 think that's part of the concern. And, I think
25 what's troubling for the agency when we see a bill

1
2 like this before having had any discussion, and in
3 all fairness, we did have ample discussion on the
4 first bill and, frankly, that was a healthy
5 discussion. It's one we want to continue. We
6 should probably have a similar discussion on the
7 LED topic. But, today, until today, we have not
8 had this discussion. So, when we see a piece of
9 legislation that requires us, within a year, to
10 make such a dramatic change, when there's still a
11 lot of uncertainty, that's a great cause for
12 concern.

13 Now, it's easy for you to sit over
14 there and say well, that's something we can
15 change. When we first see this bill, we don't
16 know that. We don't know what's going to be
17 changed. What we have to look at is we have to
18 look at the language we're seeing today.

19 CHAIRPERSON LIU: Dave, every bill
20 that we've passed in this Committee and then, the
21 City Council, over the last several years, has
22 started with certain timeframes, 'cause we always
23 like to put a timeframe on it. And, I believe
24 every single bill has had that timing altered to
25 accommodate what is reasonable, reasonably

1
2 achievable by the Department. So, I mean, I think
3 that's really-- this goes beyond just these two
4 particular bills. Now, the idea that the
5 Department feels you have to come in and testify
6 that oh, based on this timing, it's just
7 impossible. What we've been saying, and what has
8 actually been done for many years now, is the
9 timing of these things, and if we have to phase
10 things in, we've always been open to that. So, I
11 wouldn't fixate too much on oh, it's a one-year
12 requirement. I mean, you know we've always
13 changed that. We have always changed it based on
14 what you deem is correct. But, if we don't put a
15 timeframe on it, then the Department tends to come
16 and say okay, we'll get to it when we get to it.
17 So, let's just keep it real and simple here. We
18 have additional questions from Council Member
19 Koppell.

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

1
2 STEVE GALGANO: We asked if we were
3 aware of it.

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

6 STEVE GALGANO: Yes.

7 COUNCIL MEMBER KOPPELL: But,
8 didn't you say they're using it for testing?
9 Isn't that what you said?

10 STEVE GALGANO: My understanding
11 was that it was a test, yes.

12 COUNCIL MEMBER KOPPELL: Well, that
13 seems to be entirely wrong based on this letter
14 that I just received. I don't know. Who
15 distributed this letter, Mr. Chairman?

16 CHAIRPERSON LIU: I don't know.

17 COUNCIL MEMBER KOPPELL: The letter
18 from Los Angeles.

19 COUNCIL MEMBER GERSON: Yeah, thank
20 you, Council Member Koppell for citing that. We
21 need to ask the Sergeant to distribute a copy to
22 the witnesses. We actually just received it.
23 Though, we have the information provided to us
24 verbally in advance. But, we recently, even
25 though it's dated earlier-- or, it's, actually,

1
2 it's a copy of letter prepared years ago. But, we
3 actually just physically received it recently.
4 So, I would ask the Sergeant to distribute this to
5 the witnesses. And, I thank you, Council Member
6 Koppell for raising this and for your line of
7 questioning.

8 COUNCIL MEMBER KOPPELL: Well, I
9 just am slightly shocked at the answer because I
10 have, in front of me, a letter that was placed in
11 front of me from the then-Mayor of Los Angeles,
12 apparently, James K. Hahn. I didn't know the
13 gentleman. This letter is dated January 25th,
14 2002. So, that's six years ago. And, it says the
15 following. It says "City of Los Angeles has
16 specified full cutoff luminaires on nearly all
17 street lighting plans for new street lighting
18 installations and conversions of existing
19 installation since 1990." That's 18 years ago.
20 "We have previously specified full cutoff
21 luminaires at traffic signal intersections and in
22 hillside areas for several years previously to
23 1990. We now have about 70,000 full cutoff
24 luminaires in our system. In 2001, Los Angeles
25 adopted IESRPA 2000 as our street lighting

1
2 standard, using the Illuminance Method. Regarding
3 energy use..."

4 Well, let me just that it's very
5 disturbing to have some witness testify that
6 they've used it only for testing and then read
7 that this has been in use for over 18 years. And,
8 you know, it's just very disturbing to me. If you
9 don't know, you can say you don't know. But,
10 this completely contradicts your testimony in a
11 very dramatic way; is very supportive of the
12 proposal that you're opposing and, again, I just,
13 Mr. Chairman, I'm just troubled by this because
14 not only did you say testing, but if the
15 stenographer'll see it, Mr. Woloch then emphasized
16 that. You see, it's just testing, he said. And
17 then, I get this letter from Los Angeles. I don't
18 know if you want to say anything about it. But,
19 I'm very troubled by this. Please don't testify
20 to something that you don't know because when you
21 said testing, I said well, if they're just testing
22 it, then maybe we should go slow on this. But
23 then, when I read this, it's completely to the
24 contrary and strongly supports the bill.

25 CHAIRPERSON LIU: Thank you,

1
2 Council Member Koppell. That's precisely the
3 reason why the founding fathers envisioned a
4 system of checks and balances where there would be
5 legislative oversight over the executive. Do you
6 have additional questions? Yes, Mr.--

7 STEVE GALGANO: We did reach out to
8 Los Angeles. And, we did speak to the people in
9 their Lighting Division there. And, that's the
10 answer we got. I will go back. I will find out
11 who we spoke to and we'll find out what the
12 problem is here. But, we did call Los Angeles and
13 speak to them.

14 CHAIRPERSON LIU: Okay. But, I
15 mean I think we all know that the kinds of calls
16 that are made depends on who you're speaking to at
17 the other end. And, this seems to be a pretty
18 firm letter that had been written a number of
19 years ago. And, I guess, since you offered, it
20 would be helpful for us to know exactly who you
21 spoke to in LA and when you spoke to them because,
22 I mean, it's been in place for a long time. And
23 so, let's take a look at what happened there. We
24 have additional questions from Council Member
25 Lappin.

1
2 COUNCIL MEMBER LAPPIN: Thank you,
3 Mr. Chairman. So, I'd like to really-- we can
4 continue discussions after this hearing. But, I
5 would like to try and find a way to move forward
6 with this concept and with this legislation. What
7 I didn't mention before was that-- I mean the City
8 has held a competition, I guess DDC organized it,
9 and awarded the Lighting Science Group and the
10 Office for Visual Interaction a contract to
11 engineer, produce and test the winning the design.
12 And, my understanding is that the winning design
13 was an LED solution.

14 STEVE GALGANO: It has both
15 solutions.

16 COUNCIL MEMBER LAPPIN: Okay. What
17 does that mean?

18 STEVE GALGANO: It means they were
19 to design an LED fixture and a high-pressure
20 sodium fixture because, at the time, the LED
21 fixture did not meet our standards.

22 COUNCIL MEMBER LAPPIN: And, why
23 didn't it meet your standard?

24 STEVE GALGANO: Because it didn't
25 produce enough light.

1
2 COUNCIL MEMBER LAPPIN: And, that's
3 a standard that's based on the IESNA guidelines
4 or--

5 STEVE GALGANO: Yes.

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

12 STEVE GALGANO: To design a new
13 contemporary fixture.

14 COUNCIL MEMBER LAPPIN: Okay.

15 STEVE GALGANO: And, pole.

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

21 STEVE GALGANO: I believe that the
22 contract has been signed for them to produce their
23 design.

24 COUNCIL MEMBER LAPPIN: Of both?

25 STEVE GALGANO: Of both.

1
2 COUNCIL MEMBER LAPPIN: So, I guess
3 now I'm confused. Are you planning, within the
4 Administration, to potentially install LED street
5 lamps?

6 STEVE GALGANO: When it makes
7 economic sense and technical sense, yes. We have
8 12 of them outside, I don't know the exact number,
9 but we visit with 10 or 12 companies and we have
10 samples outside our building, our office building,
11 now testing them. It's like when we did the LEDs
12 for the traffic signals. When the technology
13 became feasible and it made sense economically and
14 technically, we made the change.

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

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

23 COUNCIL MEMBER LAPPIN: When did
24 they go up?

25 STEVE GALGANO: Some of them have

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

been up I guess six, seven months ago.

COUNCIL MEMBER LAPPIN: And, how are they doing?

STEVE GALGANO: They look pretty bad, light output-wise.

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

STEVE GALGANO: Right now, we have them up just on poles, next to one another. We haven't placed them on a 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?

STEVE 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 them. I can

1
2 only talk about what we do here and what our
3 responsibilities are here. We take those
4 responsibilities seriously.

5 I'm sorry if we're overreacting
6 here. But, we have been trying to look at this
7 technology for a while. The idea of using the
8 design competition for an LED fixture was
9 something we embraced, that was three years ago,
10 to try and get one that works. Right now, we do
11 not believe they have one that works. That
12 doesn't mean they won't have one that works.

13 When we first started looking at
14 the LEDs for the traffic signals, it didn't make
15 sense. They didn't make the right colors. It was
16 very expensive. They didn't put out enough light.
17 Over time, they did. It came down. It became
18 economically feasible for us to do it. And, we
19 went ahead and we did it to save the energy and to
20 save the dollars.

21 The same thing with the street
22 lighting things. We're undergoing the wattage
23 reduction now based on technology that was
24 available now, so we could save the energy and
25 save the money now. When the LEDs become

1
2 available and they make sense, we have no problem
3 using them. Same thing with the full cutoff.

4 When it works and it makes sense, we will use it.

5 Our only concern is when we pass a
6 bill that says you have to use it, when do we
7 decide whether it makes sense? When the bill is
8 passed? That's all I'm saying is I don't
9 understand how we can legislate the engineering.

10 COUNCIL MEMBER LAPPIN: Let's say
11 there was a prototype or a model that you felt
12 worked, maybe you even modified your standards
13 somewhat to reflect what other cities across the
14 world are doing. Let's say that that happened.
15 What would be, 'cause you talked a lot about the
16 timeframe, what would be a logical timeframe for
17 you to begin, once the technology was there and it
18 met your standards, to phase it in?

19 STEVE GALGANO: Well, as we're
20 doing with the cobra heads, it's taken us about
21 five years to change the cobra heads.

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

24 CHAIRPERSON LIU: Thank you very
25 much, Council Member Lappin. And, I appreciate

1
2 Steve Galgano's remarks just then. I mean, that's
3 what this is about. And, we know that those LEDs-
4 - we know all new technology costs a significant
5 amount. And, over time, sometimes it's many
6 years, sometimes it's just a couple of years the
7 costs get reduced greatly, very quickly. So,
8 let's just, I mean, it would have been great if
9 the testimony was like, look, it's something that
10 we've looked at. And, right now, we think that
11 the cost is too prohibitive. But, maybe in a
12 couple of years, just like we've seen with other
13 things, just like we saw with the experience with
14 the traffic signals, maybe in a couple of years,
15 it'll become economically feasible. And, that
16 kind of testimony, maybe it's just me, I think
17 that would have been far more constructive than to
18 essentially accuse us of trying to rob the
19 taxpayer's pocketbooks here.

20 Council Member Gerson.

21 COUNCIL MEMBER GERSON: Thank you
22 very much, Mr. Chair. I, first of all, with the
23 permission of the lead sponsor, would like to add
24 my name as a co-sponsor for Intro 86. And, I do
25 so, not to return the favor, but in recognition of

1
2 the merits of the bill and the compelling case
3 made by Council Member Lappin.

4 And, I just, when I hear you all
5 point out, and I think you know that we've worked
6 cooperatively together on any number of projects
7 and DOT has, in fact, taken the lead in progress
8 in any number of areas. And, these bills,
9 certainly the bill I've proposed, you know, is to
10 one good turn deserves another to push us, you
11 know, to push all of us to do even more to set the
12 bar even higher and to work out the kinks in an
13 effort to do so. But, when I hear I don't
14 understand how we can legislate the engineering.
15 I think that is, in a way, not in a way, that is
16 precisely what we need to do.

17 It's the history of environmental
18 progress in any number of areas, whether it's
19 improving standards for air emissions and reducing
20 air pollution, improving standards for noise
21 emission and lowering noise, improving standards
22 for water quality. And now, we need to do the
23 same for lighting. We, in government, should not
24 just wait for the technology to come upon us. We
25 should, especially the City of New York, which is

1
2 a major purchaser, we should be a major factor in
3 pushing the technology, in driving the technology,
4 in driving the science to, and the engineering, to
5 benefit New Yorkers.

6 And so, if we're, as you testified,
7 close, but not quite yet there, a piece of
8 legislation, which pushes the bar, can get us
9 there. And then, we could work with you to, as we
10 did most recently with construction site air
11 emission, where we worked in certain exceptions of
12 certain retrofit technologies were not available
13 for particular pieces of construction site
14 equipment. We don't want to stop progress. But,
15 we pushed it and then, worked in the exception
16 where costs or technology mandated the exception.

17 So, I'm hearing from you that we
18 will, following this hearing, have an opportunity
19 to go back and look at this and work out, you
20 know, the necessary text which pushes us forward,
21 but as needed, as our Chair pointed out,
22 recognizes that there may be differentials in
23 different parts of the City, or maybe different
24 situations. And, we could work in, you know, the
25 necessary exceptions. But, at the same time, as

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

we push the bar, I mean, is that a conversation we could have following this hearing?

DAVE WOLOCH: I think we're happy to have a conversation about different ways to 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 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.

COUNCIL MEMBER GERSON: Well, we--

DAVE WOLOCH: And, I don't want to split hairs. But, Mr. Chairman, I think the way you characterized 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

1
2 concern. These are topics that we're happy to
3 continue to talk to you about. Whether
4 legislation is necessary, I'm not sure. We
5 certainly know that these are both fronts that
6 we're pushing on.

7 COUNCIL MEMBER GERSON: See, that
8 concerns me because it's one thing to hear you.
9 On one hand, you're saying we should talk and we
10 could work out exceptions. And, I'm sure,
11 Mr. Chair, it was not our intent to frighten the
12 Department of Transportation. But, at least in
13 these instances and there was no vote scheduling.

14 But, you know, but, we know from
15 experience, from all the experience I cited, that
16 it was through legislation. Legislation jointly
17 agreed upon by the executive and the legislative
18 branches. But, it was through legislation which
19 had something concrete to which the industry could
20 respond knowing that there would be a demand out
21 there, which effectuated the improvement.

22 DAVE WOLOCH: Sure. No--

23 COUNCIL MEMBER GERSON: So--

24 DAVE WOLOCH: -- absolutely. As I
25 said, I said I'm not--

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

COUNCIL MEMBER GERSON: Okay.

DAVE WOLOCH: I said I'm not sure.

There're 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 on a particular phase of a particular administration. But, it's a longstanding policy. And, that's why all of 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

1
2 to read into the record a very short letter that's
3 more recent, actually dated just the other day,
4 November 4th of this year and addressed to me from
5 the City of Stamford. "Dear Council Member
6 Gerson, This letter is provided as a reference on
7 the experience of the City of Stamford,
8 Connecticut in using fully shielded, full cutoff
9 street lights. In 2001, the City of Stamford
10 began using full cutoff street lights for
11 replacement and new installation in compliance
12 with a new statute passed by the Connecticut
13 General Assembly." So, it is statewide.

14 "In the seven years since, full
15 cutoff street lights have been constantly deployed
16 with no instance where the use of full cutoff
17 street lights has necessitated the use of more
18 street lights or tighter pole spacing. Stamford
19 has also adopted a policy of reducing wattage
20 levels with the installation of full cutoffs as
21 part of Stamford's effort to conserve energy.
22 Stamford has uncovered no problem in using full
23 cutoff street lights and would be pleased to share
24 details with the New York City Department of
25 Transportation. Sincerely, Nancy Domiziano."

1
2 And, finally, I just want to go
3 back to the letter referenced by Council Member
4 Koppell, in specifically the last paragraph, which
5 sets forth the purpose and the benefits. "The
6 primary purpose of our change to specifying full
7 cutoff luminaires," etcetera, "was to reduce light
8 trespass, a residential comfort impact; glare, a
9 detriment to drivers and pedestrian visibility and
10 light pollution or sky glow, that impact on
11 everyone's enjoyment of the sky at night. These
12 benefits are not quantifiable, but are very
13 significant to our life experience. They are
14 certainly part of what the public pays for in
15 street lighting. We believe that our
16 specification of full cutoff luminaires has been
17 quite beneficial, both in controlling cost and
18 energy use and in more intangible areas
19 mentioned," which is, you know, what I set forth
20 at the beginning as the purpose. "I hope we could
21 serve New Yorkers as their City has served the
22 good people of Los Angeles." Thank you very much,
23 Mr. Chair.

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

1
2 off to a wrong start here today. But, I think
3 these are issues that we don't doubt that you're
4 looking into it. But, you also have to consider
5 the fact that we are getting complaints from
6 constituents. And so, to the extent that we can
7 work together in addressing all of these issues,
8 that'd be great. Thank you.

9 Let me invite our next panel to
10 speak. We have a panel consisting of Leo Smith,
11 Susan Harder and Dan Miner. And, this panel will
12 be followed by testimony from Jennifer Brons.

13 SUSAN HARDER: Shall I go ahead?

14 CHAIRPERSON LIU: Please do.

15 SUSAN HARDER: Thank you,
16 Mr. Chairman and my regards to all the Council
17 people. This is a real privilege for me. I'm a
18 35-year resident of New York City, a retired
19 businesswoman. And, I appreciate this opportunity
20 to help contribute to improving the City that I
21 love so much. I have spoken many times about this
22 issue, which sometimes these laws that are brought
23 forth are called dark sky legislation. Just want
24 to emphasize it's not dark ground legislation,
25 because when you direct light towards the ground,

1
2 there's less light being emitted upward and
3 hitting particulate and causing sky glow.

4 Sometimes, as a result of these measures, you can
5 see more stars.

6 Just as a quick aside, I saw a
7 really terrific movie last night and it was in Los
8 Angeles, Robert DeNiro movie called, I think it's
9 called What Happened. Full cutoff light fixtures
10 everywhere throughout the entire movie all over
11 the city. Also, if you drive on the Manhattan
12 Bridge, which is under a different agency than New
13 York City DOT, you'll see full cutoff light
14 fixtures. And, also, throughout the entire state
15 of Washington.

16 Decisions about the design of
17 street lights and, they call them luminaires, but
18 they're basically just street light fixtures, same
19 thing, should be based on what provides the best
20 visibility and the safest nighttime environment
21 for pedestrians to see where they walk and for
22 them to be seen. For example, cars have
23 headlights. So, street lighting for cars, unless
24 they are traveling at very high rates of speed in
25 areas of a high accident, where you have a

1
2 mingling of pedestrians, they don't meet the New
3 York State warrants. We have New York State
4 warrants for roadway lighting. And, they would
5 not provide a public benefit for cars.

6 The biggest issue that needs to be
7 considered regarding safety and vision is glare,
8 and you've already brought that up. And, you also
9 brought up the National Geographic, which is a
10 very short, but very terrific article. And, I
11 Xeroxed it in the file that I've given you. This
12 was this month, in case you want to get the whole
13 issue with photos. Fully shielded fixtures reduce
14 glare because the bulb is not within our line of
15 sight. Glare also affects our sense of safety.
16 There's a study done in California. They had two
17 adjacent parking lots; one shielded, one
18 unshielded. And, the people felt more secure and
19 they felt safer in the parking lot that had the
20 fully shielded fixtures.

21 There are also problems of glare
22 and adaptation with regard to the type and the
23 color of the bulb. LEDs, for example, need to be
24 fully shielded. And, I'm delighted that you will
25 consider combining your bills, because an LED is a

1
2 very sharp point of light. And so, therefore, the
3 element of glare is going to be much more
4 apparent.

5 The second issue affecting vision
6 is excess, because it will affect adaptation,
7 going from light to dark. And, of course, it
8 wastes energy. Excess light levels provide no
9 additional public benefit. And, we've mentioned
10 several times, the Illuminating Engineer Society
11 of North America, which Leo and I are both
12 members. But, this is a group that is made up
13 primarily of manufacturers. So, the light levels
14 that they're setting were based on, you know,
15 their own private interest.

16 We do not yet have, and this would
17 be an important addition for us to consider for
18 the future, we do not have independent tests on
19 what are the proper light levels for good vision.
20 Excess light levels also do not help reduce crime.
21 In the materials I've given you, there's a U.S.
22 Department of Justice study that was done that
23 higher light levels for street lights does not
24 reduce crime. There is also an alley study in the
25 materials from Chicago, where they increased the

1
2 light in alleys hoping to reduce crime, and
3 instead it increased crime.

4 And, also, with respect to the DOT
5 talking about historic type fixtures, that they
6 don't have shielded versions, you have shielded
7 historic fixtures right out here in City Hall
8 Park. And, also I've helped three municipalities
9 with the Main Street historic lines of acorn
10 lights and changed them over to fully shielded
11 fixtures. And, in two cases, they were able to
12 reduce the wattage and they achieved better light
13 levels on the ground. I can give you that
14 material.

15 Here in mid-town New York, because
16 the fixtures have such a high proportion of light
17 that is not directed down, they have 500 watts per
18 pole. And, I think that with a fixture that would
19 look very similar, if not identical, we can reduce
20 the wattage and provide more light on the ground.

21 In conclusion, the New York City
22 street lights suffers from the use of poorly
23 engineered fixtures. And, a lack of design
24 criteria with respect to the light levels more
25 than what we need is simply just waste. And, also

1
2 light that's being emitted above the fixture, I'm
3 now on the 22nd floor and my apartment has light
4 that's being emitted into my apartment from the
5 street lights. We also don't have, in New York
6 City, we don't have any warranting criteria about
7 where and when to install a street light. And, in
8 the case of, there may or may not be, there may be
9 instances where other alternative means,
10 reflectors, refractors, you know, different types
11 of things could be used to perform the same
12 function. They don't have a warranting criteria,
13 which I think is very important.

14 So, I've included in the back of
15 this material the New York State pending bill,
16 which is an outdoor lighting bill so that all new
17 and replacement lights would be fully shielded.
18 They've been repeatedly received fallacious
19 letters of opposition from New York City DOT.
20 And, the Senate sponsor, Carl Marcellino, will
21 tell you that that is one of the main reasons that
22 it's having difficulty, although it has passed in
23 the Assembly. It's also been endorsed by many
24 environmental energy civic groups and the
25 municipalities that have voluntarily instituted

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

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 street light 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 Illuminating, pardon me, 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.

1
2 And, our Committee is the committee that
3 establishes these standards, which I brought with
4 me today that are the standards for roadway
5 lighting.

6 In 2004, I was appointed as one of
7 eight people on the Model Outdoor Lighting Task
8 Force, which is a organization between
9 Illuminating Engineering Society and the
10 International Dark-Sky to come up with a Model
11 Outdoor Lighting Ordinance for municipalities.
12 Full cutoff streetlights cast more light downward
13 and less light into the sky or onto adjacent
14 properties where the light is not needed.

15 An example of a similar situation
16 that was referenced to New York, which we've
17 talked about this morning some, where the city has
18 deployed the full cutoff lights is the City of Los
19 Angeles. I've had a conversation directly with
20 the manager of the street lights, Mr. Ed
21 Ebrahimian. And, they started this program in
22 1988. And, it was at that point, that his
23 predecessor started using full cutoff lights as a
24 concern with reference to dark sky issues. Today,
25 almost all of the 240,000 street lights that are

1
2 deployed in Los Angeles are full cutoff.

3 Mr. Ebrahimian is the street light manager and he
4 can provide direct verification as to the success
5 Los Angeles has had using these full cutoff street
6 lights and without having to use closer pole
7 spacing or having more light fixtures, as was
8 previously claimed in the testimony by the New
9 York City DOT. In my written testimony, I've
10 included his contact information. And, I would
11 suggest that there is absolutely no way that this
12 is a test.

13 In 2001, the Connecticut General
14 Assembly enacted Public Act 01-134 to require full
15 cutoff street lights for all state and municipal
16 roads. The public utility companies, all
17 municipalities and the Connecticut Department of
18 Transportation are all required to use full cutoff
19 street lights under this law. This includes urban
20 areas. There's not a carved out exception for
21 urban settings. The City of Stamford, which we've
22 heard about, is one of the largest cities in
23 Connecticut and has been aggressively converting
24 to full cutoff street lights since 2001. They've
25 also downsized wattage when they made this

1
2 conversion. An example would be that a previous
3 100 watt street light that was a semi-cutoff when
4 converted to full cutoff would now become a 70
5 watt. There was no need for increased numbers of
6 lights, closer pole spacing or having to go to
7 higher wattages, as was claimed by DOT. Nancy
8 Domiziano is the energy utility manager for the
9 City of Stamford. And, I've included her e-mail
10 address for contact purposes if the Committee
11 would like to contact her directly.

12 Where the Committee finds
13 contradiction and opposition from the New York
14 City DOT to use full cutoff street lights, direct
15 contact with Los Angeles, Stamford or other
16 cities, such as Calgary, may offer clear and
17 compelling evidence that the opposition by the New
18 York City DOT is based on myth and
19 misunderstanding, much of which is fostered by
20 current vendors who prefer that the status quo not
21 be disturbed.

22 On human health, the International
23 Dark-Sky Association takes no position as to
24 whether street lights have an adverse effect on
25 human health, since the jury of scientific

1
2 evidence is still out. Dr. Steven Lockley from
3 the Harvard Medical School has done significant
4 research on the adverse effects of light at night
5 on human health. According to a letter that I
6 attached to this testimony, Dr. Lockley has stated
7 that light at night from an unshield 250-watt
8 street light may result in a decrease in the level
9 of melatonin. Lower levels of melatonin correlate
10 to increased rates in breast cancer, according to
11 established scientific studies on the effects of
12 light at night.

13 In 2006, the National Institute of
14 Environmental Health Sciences conducted a
15 worldwide seminar, where they brought in 30
16 experts to testify as far as what the effects were
17 of light at night on human health and the need for
18 funding for various studies. The use of full
19 cutoff street lights will lower the amount of
20 light trespass into apartment windows. These
21 findings have not yet been corroborated by other
22 scientific testing.

23 With reference to energy issues,
24 the full cutoff street light directs more light
25 downward and, as such, often allows for reduced

1
2 wattages to provide sufficient lighting. The City
3 of Stamford has been following that replacement
4 plan where 100 watt drop lens is replaced with a
5 70 watt full flat glass full cutoff, resulting in
6 energy savings of 30%. The City of Calgary, also
7 has lowered its wattage levels when flat lens
8 street lights were used to replace drop lens
9 street lights. And, I've included a copy of the
10 website summary that Calgary put out on those
11 energy savings.

12 In summary, the flat glass or full
13 cutoff street lights control light pollution and
14 reduce wattage levels, energy waste from stray
15 light; in many cases, by directing more light
16 downward. The full cutoff street light wattage
17 can often be reduced without compromising public
18 safety or security.

19 One question that might, if I were
20 able to ask the question of the City DOT, is that
21 in the Roadway Lighting Manual, instead of just
22 having one standard, which they refer to, there
23 are actually three standards under which you can
24 achieve compliance with the Roadway Lighting
25 Committee recommendations. One table is called

1
2 The Illuminance Method. You can go and comply
3 with that. The other is Luminance. You can go
4 and comply with that. And then, the third
5 standard is called the Small Target Visibility
6 Standard.

7 And, what's interesting here is
8 that under the Small Target Visibility Standard,
9 you actually have to have a little bit less light
10 in between the poles in order for the small target
11 visibility to work. So, for example, when he
12 says, in his testimony, that he doesn't think that
13 the full cutoff light would comply because it
14 might create some darker areas, while I don't
15 believe that that is true, even if it were, the
16 Small Target Visibility Standard would allow for
17 that. So, it's not that the City would be bound
18 to only do the Illuminance Method. If it adopted
19 the Small Target Visibility Standards, then there
20 would be no problem at all with the full cutoff
21 light in terms of what's technically available
22 right now. So, I would suggest that the City is
23 not as bound technologically as the City
24 Department suggested that it was.

25 So, for these reasons, I

1
2 respectfully urge the Committee to approve Intro
3 757 requirements to use full cutoff. Thank you.

4 CHAIRPERSON LIU: Thank you very
5 much, Mr. Smith. Mr. Miner.

6 DAN MINER: Thank you for the
7 opportunity [pause].

8 CHAIRPERSON LIU: Thanks for
9 sharing.

10 DAN MINER: Mr. Chairman, members
11 of Council, thank you very much for your
12 invitation to testify before you today.

13 First of all, I certainly agree
14 with my colleagues of the Dark-Sky initiative.
15 It's a very important issue. And, there's a
16 couple of other issues that the City also ought to
17 be looking at closely. I appreciate PlaNYC and
18 everyone's strong concern with making the City
19 more adapted to climate change and mitigating our
20 effects.

21 I would like to remind everyone
22 that Dr. James Hanson, the Director of the NASA
23 Goddard Institute, says that the expected target
24 of 450 parts per million of carbon in the
25 atmosphere is too high. So, the suggestion that

1
2 looking for only 80% cuts in our carbon emissions
3 by 2050 is too little and too late. Dr. Hanson
4 suggests that really what we ought to be looking
5 at as a ceiling for carbon is 350 parts per
6 million, which is below what we currently have at
7 380 parts per million.

8 So, I would suggest that you all
9 keep in mind that even though current efforts to
10 lower the City's energy and fossil fuel
11 consumption are well intended and good starts, we
12 need to, as Council Member Gerson rightly
13 suggests, raise the bar and look for ways to even
14 more aggressively lower our energy use and our use
15 of fossil fuels, which is the root cause of
16 climate change. So, in addition to stepping up
17 our climate change response, which is very
18 important for us to do and is necessary, however,
19 it can still be pushed away as an option.

20 I would also like to remind members
21 of Council and I would certainly like to include
22 Department of Transportation staff if any are
23 still here, that we are looking at inevitable
24 difficulties in maintaining supplies of fossil
25 fuels in the future. And, this is something that

1
2 must be factored in because it means we will
3 inevitably have rising costs of the fuel inputs,
4 whether towards electric production or
5 transportation or heating, any of these points.

6 We need to look at where natural
7 gas, which is a key input for in-City electric
8 generation, is going to be coming from, not just
9 the current cost. It ought to be known that North
10 American natural gas production has already
11 peaked. We're drawing more and more of our
12 natural gas supply from Canada. And, we're
13 looking increasingly at liquefied natural gas as a
14 future source of natural gas, which fires our
15 power plants. That means building expensive,
16 risky and dangerous transportation facilities to
17 freeze natural gas from Russia and the Middle East
18 and ship it here. Often, that infrastructure has
19 not yet even been constructed and we will have to
20 bid against other countries around the world for
21 imported natural gas supplies.

22 Many are looking to coal as a
23 salvation for electric needs. However, the more
24 coal we use, the more we worsen our climate change
25 problem. Is clean coal the solution?

1
2 Unfortunately not, because it's not been
3 commercially proved to be effective. And, the
4 federally subsidized FutureGen coal sequestration
5 R&D project was de-funded earlier this year
6 because it was running far, far over its cost
7 estimates.

8 Of course, even though we are not
9 looking too much at oil as a source of New York
10 City electric production, oil, too, is in decline.
11 The International Energy Agency is expecting to be
12 releasing a report next week looking at 9% annual
13 declines in oil production due to a variety of
14 sources. This is especially important for DOT
15 because it means that future transportation is
16 going to become inevitably either more expensive
17 or more dependent on fuel supplies that are in
18 decline.

19 Once again, when we're looking at
20 New York City lighting infrastructure, we ought to
21 be prioritizing the most efficient highly cost
22 savings technologies that we can purchase. And,
23 certainly the testimony that we heard encourages
24 us to look at both flexible schedules and flexible
25 means of upgrading to the most efficient pieces of

1
2 technology. But, I commend Council Members for
3 pushing the City to move as far as possible
4 towards cost savings as aggressively as possible.
5 And, I think that both the Council and the
6 Administration and DOT would do well to factor in
7 long term cost estimates and supply estimates for
8 the fossil fuels on which our energy supplies
9 depend.

10 Now, hearing this, what are we to
11 do? And, I would say that a key thing is
12 efficiency. There is a McKinsey study of 2007
13 that suggests making our electric usage and
14 infrastructure as efficient as possible can
15 prevent us from having to turn towards new
16 electric-generating plants and would avoid
17 building more coal plants in the future, which is
18 extremely important for us to not worsen our
19 climate change situation.

20 So, pushing for LEDs or the next
21 generation lighting technology is certainly one of
22 the most important things that New York City can
23 do. And, I certainly agree with members of
24 Council in saying that City purchasing decisions
25 have a huge impact on the market. And, rather

1
2 than waiting for the market to demonstrate new
3 technology, the City ought to be pushing the
4 market and thereby, demonstrating its commitment
5 to be a national and international leader in both
6 dealing proactively with climate change and also
7 with fuel depletion, which is a reality that the
8 City needs to address front on.

9 COUNCIL MEMBER LAPPIN: Thank you,
10 Mr. Miner. And, Mr. Smith, if you could come
11 back, 'cause I actually have a question for you.
12 You might have noticed that Chairman Liu had to--
13 he's also a member of the Consumer Affairs
14 Committee and, as often the case here, we have
15 multiple committees meeting at the same time. So,
16 he had to go across the street briefly.

17 I wanted to ask Mr. Smith, because
18 you testified about the different standards that
19 IESNA has established. And, DOT talked a little
20 bit about their standards and why the fully
21 shielded or the LEDs don't meet their standards.
22 And, you talked about Illuminaire and Small Target
23 Visibility. Could you just expound a little bit
24 on what the three different set of standards are
25 that IESNA established?

1
2 LEO SMITH: You have an Illuminance
3 standard and that is one where you would measure
4 the amount of light that's on the street. And,
5 Illuminance standard would be one where you
6 measure the light as it meets the eye. So, it's
7 more of a vertical level of illuminance. And
8 then, Small Target Visibility resulted from
9 studies that were done on how basically best to
10 see, so that when you have some types of light
11 uniformity, where light is behind and light is in
12 front, you have some problems in terms of the
13 surrounding areas being equal to the target
14 because everything is sort of lit the same and you
15 don't see the target as well. So, that by
16 reducing light in between, let's say for example,
17 at intersections, you would have a darker area in
18 between the lights that would then allow you to
19 see better that small target, namely a person or
20 an animal or whatever, because you would have a
21 different level of illumination before and after.
22 So, now in the middle, where it's a little darker,
23 you actually can see that target better.

24 COUNCIL MEMBER LAPPIN: And, do you
25 know, and I guess I should ask this of DOT, which

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

standards they're using when they're discussing street lamps 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 you. But, you can use any one of the three.

And now, 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 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

1
2 taking a look or exploring the possibility of
3 changing your standard and using Small Target
4 Visibility.

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

7 COUNCIL MEMBER GERSON: Thank you,
8 Madam Chair, Madam Acting Chair. Just to be
9 clear, under the guidelines, each of those three
10 standards are equally viable. They're
11 interchangeable in terms of the viability and the
12 effect?

13 LEO SMITH: That's right. The City
14 would be complying with the Illuminating
15 Engineering Society's Roadway Lighting Committee
16 standards if it met any one of those three. It's
17 basically like three different routes to get to
18 where you want to go. If you take one route or
19 the other or the other, it doesn't matter, you're
20 still getting to where you want.

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

24 LEO SMITH: Yeah, I can provide the
25 Committee with a copy of the book or excerpt the

1
2 pages for the different standards. There's a lot
3 more in here than just the three various methods.
4 I can--

5 COUNCIL MEMBER LAPPIN: Great.

6 And, if you'd be so kind even as to make sure my
7 staff says hello to you, I'd love to have that as
8 well, in addition to sending it to the Committee.

9 COUNCIL MEMBER GERSON: And, I'd
10 just like to ask finally, we've been looking at
11 this chart. I'd like to enter that on the record
12 so if the Sergeant could bring the chart to the
13 witness stand. Could one of you, Mr. Smith and
14 Miss Harder or, I think it was the two of you who
15 brought the chart. If you could just briefly talk
16 us through what that chart is and we'll get it on
17 the camera and we'll get it on the record.

18 LEO SMITH: The chart distinguishes
19 the difference between a full cutoff and a semi-
20 cutoff light. [Pause]

21 COUNCIL MEMBER GERSON: I'll tell
22 you what, 'cause we're making a transcript. You
23 need to speak into the mic. But, maybe the
24 Sergeant or-- yeah, yeah, that's perfect.
25 Perfect. And, this way we also get it on the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

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-- in terms of--

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, way, 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 wanted to illuminate. And, I wanted to just

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

mention--

COUNCIL MEMBER GERSON:

[Interposing] 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 significant amount of light coming directly

1
2 in bedroom windows, without being blocked, where
3 people basically could read a book without any
4 other lights on. There's that much light coming
5 in. And so, some consideration might be given
6 there from a human health standpoint as to the
7 need to reduce that blockage by having the
8 shielded light that shines more straight down.

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

14 COUNCIL MEMBER LAPPIN: Since we're
15 alternating panels in opposition and in support,
16 the next person signed up to testify in opposition
17 is Jennifer Brons, from the Lighting Research
18 Center, Rensselaer Polytechnic Institute. Please
19 introduce yourself for the record and begin.

20 JENNIFER BRONS: Thank you. My
21 name is Jennifer Brons. I am a research scientist
22 at Rensselaer Polytechnic Institute at the
23 Lighting Research Center. I'm here today to
24 address Intro Number 757 and 806, both. May I
25 begin?

1
2 COUNCIL MEMBER LAPPIN: [Off-mic]

3 JENNIFER BRONS: The motive of
4 Introduction Number 757 was not stated the text
5 that I had received earlier. But, in the
6 discussions today, it sounds as if it's to address
7 light pollution and energy efficiency. So, I will
8 speak to those points.

9 There are several aspects of light
10 at night that may be offensive, such as sky glow,
11 light trespass and glare and many other people
12 have spoken about those issues. The stories in
13 the popular press, such as in the National
14 Geographic, may lead one to believe that fully
15 shielded lights would reduce light pollution in
16 New York City. However, closer examination shows
17 that this strategy will be ineffective at
18 mitigating these three components of light
19 pollution. So, that's what I'll talk about today.

20 Limiting light above the horizontal
21 will not be effective for reducing sky glow for
22 several reasons. In an urban environment, such as
23 many parts of New York City, the structures of the
24 city itself create canyons that shield the light
25 from traveling directly from the street light

1
2 towards the sky. Additionally, the use of
3 shielding will not stop the light from reflecting
4 off of all of those surfaces and eventually
5 contributing to sky glow.

6 The technique of limiting angles of
7 light leaving a street light may have some merit
8 to reduce sky glow in more open areas, but direct
9 upward light from street lights is often not the
10 primary contributor to light going into the sky,
11 rather it is the light reflected from the ground
12 and all the other surfaces that is more likely to
13 contribute to sky glow. For this reason, the
14 Lighting Research Center has recently proposed a
15 system of measurement called The Outdoor Site
16 Lighting Performance system, or OSP. This is a
17 calculation technique employing commercially
18 available lighting software to account for both
19 contributors to sky glow, the direct and reflected
20 light together. Preliminary tests of this system
21 have demonstrated that the most effective
22 technique for reducing the amount of light leaving
23 the boundaries of a property is to limit the
24 amount of light actually being added or
25 contributed to the space. In other words, the

1
2 more light that you add to the environment, the
3 more light will leave that environment and go into
4 the sky and contribute to sky glow. That's the
5 addressing the issue of sky glow.

6 Light trespass is also an annoying
7 feature of light at night and is caused when light
8 enters the private property, typically a
9 residential one, from outside the boundaries of
10 the property. The proposed strategy of
11 prohibiting light above the horizontal may be
12 effective in limiting some complaints of light
13 trespass, but only for individuals residing at a
14 height greater than that of a luminaire. For
15 those residing at or below the level of the
16 luminaire, complaints of light trespass will not
17 be reduced with the use of fully-shielded lights.
18 To prevent light from entering residential
19 windows, lighting manufacturers have developed
20 what's called house side shields that restrict
21 light behind the luminaire to lower than the
22 horizontal, are even more restrictive in where
23 light can leave a fixture. Often these can be
24 mounted as a retrofit to existing street lights to
25 address complaints of light trespass. And, for

1
2 new pole locations, trespass can also be addressed
3 by moving the poles away from residential windows.
4 So, we've addressed sky glow and light trespass.

5 There's also the issue of glare,
6 the third aspect of light pollution. Researchers
7 have been struggling for decades to develop
8 methods to predict complaints of discomfort glare.
9 We, at the Lighting Research Center, have recently
10 published an updated technique as part of the
11 aforementioned calculation system. The underlying
12 research showed that glare is related to the
13 amount of light reaching the eye, indeed,
14 primarily contributed by an offensive street light
15 for instance, but also counterbalanced by the
16 light in the surrounding area. Thus, it is not
17 clear whether changing the angles at which light
18 may be emitted will increase or decrease
19 complaints of glare here in New York City.
20 Although Intro 757 might cause a marginal
21 improvement in glare complaints, the effect for
22 individuals standing below the street lights would
23 not necessarily be different than for fully
24 shielded street lights. Even for locations above
25 street lights, the impact would be highly

1
2 contextual, and not equally applicable across five
3 boroughs, as we mentioned before.

4 While the purpose of outdoor
5 lighting is to create safe, comfortable
6 environments to encourage nighttime use of the
7 City, in the future, the Lighting Research Center
8 expects that new lighting techniques and
9 technologies will justify a major investment to
10 change New York City's street lighting. New
11 technologies are expected to increase energy
12 efficiency and reduce maintenance requirements.
13 And, I'll talk about that more in a moment.

14 It is not clear, however, what the
15 incremental cost, at least when I wrote this, what
16 the incremental cost to New York City would be
17 compared to conventional street light
18 replacements. Even if there's no incremental cost
19 to the use of fully shielded luminaires, this
20 effort would not achieve the presumed goal of
21 reducing the three aspects of light pollution in a
22 significant manner, much less address what may be
23 the more pressing issues of maintenance, energy
24 efficiency, and safety.

25 We'd certainly be happy to propose

1
2 a research project to develop more practical and
3 effective techniques for limiting light pollution.

4 Shall I continue to address the
5 light-emitting diode question? Or, shall we just
6 stay with light pollution?

7 CHAIRPERSON LIU: Why don't you
8 just continue with your testimony on 806.

9 JESSICA BRONS: Okay.

10 CHAIRPERSON LIU: But, it's
11 probably-- yeah, we have the whole testimony for
12 the written record, so--

13 JESSICA BRONS: Pardon me?

14 CHAIRPERSON LIU: We have your
15 entire testimony for the written record, so if you
16 want to summarize the key points, that would be
17 helpful.

18 JESSICA BRONS: I will, indeed.
19 I'm going to approach the bench and give you a
20 sample of light-emitting diodes. What you're
21 holding is a light-emitting diode. And, the metal
22 is a heat sink to conduct heat away from the chip,
23 the diode. That is necessary in order to help the
24 light-emitting diodes to emit light effectively,
25 as planned, and to live as long as they are

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

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 life. 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 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 for being 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 a rapidly, indeed, rapidly evolving

1
2 technology. And, there's several reasons why we
3 do not think that New York City would be well-
4 served by rapidly adopting light-emitting diodes
5 at this time.

6 So, I'm going to address two issues
7 with light-emitting diodes; retrofitting existing
8 street lights and replacing new street lights. If
9 you are to retrofit your existing street lights,
10 you will be enclosing the light-emitting diode in
11 a very tightly gasketed environment that was
12 originally designed for a different light source.
13 It's an environment that deliberately excludes the
14 air changes that are necessary for a light-
15 emitting diode to remove the heat. Conventional
16 technologies need to be enclosed from water and
17 from dirt and insect ingress. And, if you put
18 something like this inside a tightly enclosed
19 street light, it will overheat.

20 If you replace that street light
21 with a deliberately designed light-emitting diode,
22 such as the one that is being developed as part of
23 New York City's design competition, those fixtures
24 will have the fins, these heat sinks, exposed to
25 the air and will be able to extract the heat

1
2 properly. If not, they will fail prematurely,
3 much sooner than you expect and will not save you
4 any energy in terms of maintenance or watts in
5 your system.

6 So, as a retrofit, we, at Lighting
7 Research Center, are not excited about the use of
8 LEDs in enclosed outdoor lighting. As a
9 replacement of your existing street lights, we
10 think in a few years, there will be many examples
11 where you can use this technology effectively.
12 Right now, it's a little too soon. You will not
13 be saving watts and you will not be shortening
14 life just yet. But, if you give it a few years,
15 we think it'll be a very encouraging time to
16 replace existing street lights with LEDs. [Pause]
17 sure I have all my issues here.

18 I think those are the main points I
19 wanted to make that retrofit will not make you
20 happy. But, in the future, replacing them with
21 LEDs would be very encouraging.

22 CHAIRPERSON LIU: Thank you,
23 Professor Brons for testifying. I mean, your
24 testimony-- so, do you think the cities of
25 Stamford and Los Angeles and Calgary are wasting

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

their time with this?

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

CHAIRPERSON LIU: Yeah, I mean, I think--

JENNIFER BRONS: -- 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: [Interposing] Okay. So, your testimony is only with respect to light pollution--

JENNIFER BRONS: Right.

CHAIRPERSON LIU: -- and not--

JENNIFER BRONS: For light--

CHAIRPERSON LIU: -- energy efficiency.

JENNIFER BRONS: Right. At this point, we do not expect that you will reduce light pollution by putting in fully shielded lights in your street lights. It may not do any harm. It

1
2 may improve glare in some instances. But, it's
3 hard to generalize in a blanket manner whether
4 you'll have improved glare in all instances. So,
5 in terms of light trespass, we don't expect there
6 to be an improvement in complaints about light
7 entering the bedroom windows. And, in terms of
8 sky glow, we don't expect there to be an
9 improvement.

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

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

15 JENNIFER BRONS: Oh, indeed. The
16 Lighting Research Center is part of Rensselaer
17 Polytechnic Institute, which is an institute in
18 upstate New York. It's one of the oldest in the
19 country. An engineering school, originally. The
20 Lighting Research Center is now celebrating its
21 20th year. We are a third-party independent
22 evaluator of technology in ways to use light more
23 effectively.

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

1
2 JENNIFER BRONS: No, we are funded
3 by research projects from energy efficiency groups
4 across the country and internationally. That's
5 the primary source of our income. We get very
6 little funding from our University. It's mostly
7 energy efficiency groups.

8 COUNCIL MEMBER LAPPIN: So, what
9 makes you independent?

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

12 COUNCIL MEMBER LAPPIN: But, are
13 you hired by the industry, 'cause I see in your
14 bio that you work on behalf of lighting companies?

15 JENNIFER BRONS: At the end of my
16 bio, I mentioned that the OSP calculation metric
17 is one research project with four manufacturers;
18 two in North America, two in Europe, to address
19 the calculation system, to create a calculation
20 system that will allow lighting engineers to
21 calculate, in advance, before lights get put in,
22 where and how much light is going to leave their
23 sites and what they could do to improve it, in
24 advance before it gets installed.

25 COUNCIL MEMBER LAPPIN: But, are

1
2 the lighting companies the funders of the Lighting
3 Research Center, also? Or, no?

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

18 COUNCIL MEMBER LAPPIN: Okay.

19 Thank you, Mr. Chairman.

20 CHAIRPERSON LIU: Thank you.

21 Questions from Council Member Gerson.

22 COUNCIL MEMBER GERSON: Yes, thank
23 you very much, Mr. Chair. You refer to, and
24 welcome, Professor Brons--

25 JENNIFER BRONS: Thank you.

1
2 COUNCIL MEMBER GERSON: Actually,
3 we're always happy in the City Council when folks,
4 and especially experts, you know, from out of town
5 come to visit us, even though you're not that far
6 out of town. But, you know, we all need to learn
7 from each other, you know, the world over,
8 certainly the state over. So, how did you, so we
9 can learn how to promulgate our hearing perhaps,
10 you know, better, how did you learn of our
11 hearing? And, what, you know, what prompted you
12 to come? Well, not what prompted you, but how did
13 you learn of our hearing? And, what brought you
14 here?

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

information in the industry.

COUNCIL MEMBER GERSON: And--

JENNIFER BRONS: 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. So, and I appreciate the opportunity to be a guest of the Committee here. So, I was just informed that, in fact, that the Committee did reach out to your organization. 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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

issue? NYSERDA specifically.

JENNIFER BRONS: No, sir.

COUNCIL MEMBER GERSON: Okay.

JENNIFER BRONS: But, they've funded, I believe they 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 night on us and selecting 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 U.S. EPA and the U.S. 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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

about--

JENNIFER BRONS: I'm sure they've
been involved with--

COUNCIL MEMBER GERSON: -- non-
governmental--

JENNIFER BRONS: -- 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--

COUNCIL MEMBER GERSON: Yeah, this-
-

JENNIFER BRONS: -- fully shielded
research.

COUNCIL MEMBER GERSON: Well, no,
no, no, no, no. 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

1
2 effectively; how to shut off lights when they're
3 not needed, when we have plenty of daylight
4 entering spaces. So, there's the Northwest Energy
5 Efficiency Alliance. There are several groups
6 that collaborate on the day lighting issues, how
7 to improve the use of the technology.

8 COUNCIL MEMBER GERSON: Well,
9 maybe, Mr. Chair, rather than, you know, belabor
10 this now, maybe we could, certainly, we could
11 probably follow up, I would imagine. You know, a
12 lot of this information is publicly available and
13 if we have any further questions, we could
14 certainly get back to you. But, certainly, you
15 know, the relevancy of funding sources is
16 important or funding sources are relevant to our
17 understanding of the work of your entity.

18 Let me just ask in the areas that
19 you cited, you did say that fully shielded lights
20 could, in certain circumstances, reduce glare.
21 What circumstances would those be?

22 JENNIFER BRONS: In an environment
23 where the person is able to see directly into a
24 light fixture and see the light source, the bulb
25 itself. If the bulb is sort of protruding down

1
2 below the luminaire, if there's a deep glass bowl
3 or some other diffuser material below it that
4 allows a person to look directly at a light source
5 before change. And then, afterwards, if a
6 luminaire is installed that hides that light
7 source from view, then it will be more comfortable
8 to be viewed from whatever angle you're speaking
9 of.

10 COUNCIL MEMBER GERSON: At least,
11 in those cases a fully shielded light could have a
12 beneficial impact.

13 JENNIFER BRONS: It could, sir. It
14 could.

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

23 JENNIFER BRONS: I can't speak to
24 all light fixtures that are on the market. But, I
25 have seen ones in catalogs, where they were both--

1
2 they both did not allow light above the
3 horizontal. I'm going to demonstrate for the
4 camera.

5 COUNCIL MEMBER GERSON: Right.

6 JENNIFER BRONS: And, also had an
7 additional optical feature that prevented light
8 from going behind the light source into ostensibly
9 bedroom windows. So, that's something that is
10 possible to have both.

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

13 JENNIFER BRONS: Indeed.

14 COUNCIL MEMBER GERSON: -- have it
15 both ways. One--

16 JENNIFER BRONS: If there are--

17 COUNCIL MEMBER GERSON: One doesn't
18 preclude the other.

19 JENNIFER BRONS: Indeed.

20 COUNCIL MEMBER GERSON: Okay. And
21 then, again, of course, you mentioned that
22 prohibiting, I'm reading from your testimony or
23 excerpting from it, prohibiting light above the
24 horizontal may be effective in limiting some
25 complaints of light trespass, but only for

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

individuals residing in 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 it in Troy, New York, where I live.

COUNCIL MEMBER GERSON: I would guess that. So, okay.

JENNIFER BRONS: I'm on the third--

COUNCIL MEMBER GERSON: That's something we--

JENNIFER BRONS: -- floor and looking right into--

COUNCIL MEMBER GERSON: Yeah.

JENNIFER BRONS: -- 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.

JENNIFER BRONS: Indeed.

COUNCIL MEMBER GERSON: Is that

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

correct?

JENNIFER BRONS: 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--

COUNCIL MEMBER GERSON: Or, at least on an--

JENNIFER BRONS: -- the boroughs.

COUNCIL MEMBER GERSON: -- 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: Thank you.

COUNCIL MEMBER GERSON: Thank you very much.

JENNIFER BRONS: Were there any questions 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'll be followed by a panel

1
2 consisting of Michael Demma and Paul Schubert.

3 Mr. Phillips, please proceed.

4 GLENN PHILLIPS: My name's Glenn
5 Phillips. I'd like to thank the Committee and
6 Council Member Gerson for hearing our testimony
7 today. I'm the Executive Director of the New York
8 City Audubon Society, which is a grassroots
9 organization dedicated to the protection of wild
10 birds and their habitat for the benefit of all New
11 Yorkers.

12 Our 10,000 members, volunteers and
13 other supporters care passionately about the
14 plight of birds in North America. Since the
15 1960's, populations of even our most common birds
16 have declined dramatically, despite legislation to
17 protect them, birds like the common grackle, which
18 is one of the most abundant species here in New
19 York City, has declined across this range by over
20 60%. That's a loss of over 80 million common
21 grackles in forty years.

22 Habitat loss remains the most
23 important cause of the dramatic declines of birds,
24 but lighting has been a contributor to declines in
25 bird populations. And, the solutions to this

1
2 problem provide benefits for all New Yorkers. For
3 thousands of years, birds have migrated from the
4 tropics to the temperate zones. And, they evolved
5 sophisticated internal navigation systems that
6 depend on light cues as well as magnetic ones.
7 Today, those mechanisms are disrupted by pervasive
8 artificial light.

9 Scientific studies by Sidney
10 Gathreaux, Bill Evans and others have documented
11 the impact of light pollution on birds. And, this
12 book, the Ecological Consequences of Artificial
13 Night Lighting, which is kind of an interesting
14 read, calls for fully shielded fixtures as one
15 method for reducing the problem. It won't solve
16 it. But, it will help. Our Bird-safe Building
17 Guidelines, which I've provided copies of as a
18 reference, also provide more information on the
19 impact of night lighting on birds.

20 Introduction 757 is a common sense
21 solution to the problem of light pollution, and
22 will provide multiple benefits to New Yorkers. On
23 behalf of New York City Audubon's 10,000 members,
24 I would like to thank Council Member Gerson for
25 introducing this legislation, and I strongly

1
2 encourage the Transportation Committee to support
3 this important legislation.

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

6 LAUREN SCHUSTER: Good morning.
7 Thank you, Chairman and the Committee for having
8 me here to testify today. My name is Lauren
9 Schuster. And, I am an environmental campaign
10 coordinator with the New York Public Interest
11 Research Group.

12 NYPIRG is New York's largest
13 nonprofit environmental and consumer advocacy
14 organization, with more than 20 offices across the
15 state, including chapters in each of the five
16 boroughs. NYPIRG has a long history of advocating
17 for energy conservation measures at the City and
18 State level.

19 Thank you for this opportunity to
20 testify in support of Intro 757, which would
21 require any new or replacement street lighting in
22 New York City to use fully shielded light
23 fixtures. There are many reasons to support this
24 legislation, most we've spoken about already,
25 including transportation safety, aesthetics,

1
2 benefits to human health and wildlife. NYPIRG
3 supports this legislation because it will reduce
4 New York City's energy use.

5 According to the National Oceanic
6 and Atmospheric Association, 30% of the United
7 States' outdoor lighting is reflected skyward.
8 The lack of adequate standards for outdoor
9 lighting fixtures results in wasted illumination
10 and wasted energy. Most of our energy comes from
11 burning fossil fuels, which has enormous
12 consequences on our health and the environment,
13 and is the major cause of global warming and
14 climate change. NYPIRG supports using the most
15 energy efficient street lighting possible.

16 Fully shielded fixtures would
17 enable the City to reduce the overall wattage
18 used, while still producing the same amount of
19 light. Fully shielded light fixtures radiate a
20 focused light, because no light can be emitted
21 above the 90 degree horizontal. Less light is
22 wasted because light cannot escape upwards and
23 outwards towards unintended targets. The ability
24 to light intended targets only would allow New
25 York City to use lower wattage bulbs while

1
2 illuminating the same area at the same intensity.
3 Replacing existing street lights with fully
4 shielded light fixtures would thus lead to a
5 greater increase in energy efficiency and overall
6 savings in energy costs. This has been
7 experienced, as we've discussed, by cities that
8 have retrofitted their street lights, like Calgary
9 and Stamford, Connecticut.

10 We commend the many steps that the
11 City Council has taken to improve energy
12 efficiency and environmental protection in New
13 York City. New York is emerging as a national
14 leader in sustainability. This legislation is one
15 of several measures that are currently pending in
16 the Council that focus on energy efficient
17 lighting. Energy efficient lighting standards are
18 a commonsense measure that will help contribute to
19 reducing energy use and combating climate change.
20 And, NYPIRG respectfully urges the City Council to
21 adopt this measure as soon as possible. Thank you
22 again for the opportunity to testify today.

23 CHAIRPERSON LIU: Thank you,
24 Miss Schuster. Ms. Clyma.

25 GAIL CLYMA: I admire your

1 durability. This has been a very long session.

2 And, I'm sorry I can't get off the stage in half a
3 minute. I have--

4 MALE VOICE: [Off-mic]

5 GAIL CLYMA: Oh, really?

6 CHAIRPERSON LIU: Yeah, and,
7 actually, I was remiss in apologizing for having
8 to step across the street for another hearing
9 momentarily. But, glad to be back.

10 GAIL CLYMA: We missed you. I made
11 separate statements for the two bills. And, I'm
12 going to start with the one, with 757, which is
13 the one that has this little flyer on the top.
14 I'm really delighted that not one, but two bills
15 dealing with street lighting are on your agenda.
16 I wrote this morning, but I guess that doesn't
17 work anymore. Streetlights are a major cause, in
18 many places, the major cause of light pollution, a
19 problem I've been working on for 15 years.

20 In case this issue is new to you,
21 light pollution is outdoor lighting that is
22 misdirected, excessive or unnecessary. Such
23 lighting results in disabling glare, trespass onto
24 other properties, waste, and sky glow, that is,
25

1
2 the illumination of the night sky so that there
3 appear to be only a handful of stars over New York
4 City. And, this little brochure just gives you
5 some basic information about light pollution.

6 In addition to creating unnecessary
7 hazards for drivers and pedestrians, light
8 pollution can harm plants and animals. This
9 should not be surprising if we keep in mind that
10 every living thing on this earth evolved over
11 thousands of years by adapting to a world that was
12 truly dark at night. And, we have a brochure here
13 with some of the wildlife impacts. A growing body
14 of evidence is demonstrating that human beings are
15 not exempt from this damage. The link between
16 light at night and breast cancer is particularly
17 strong. And, you have a page of information about
18 the human health concerns.

19 As you may know, a bill that would
20 require shielding of streetlights and other
21 publicly funded lighting has been stalled in the
22 New York State Legislature for a number of years.
23 I was a constituent of Assemblyman Pete Grannis,
24 the prime sponsor of this bill until he was
25 appointed DEC Commissioner last year, and I worked

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

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 a 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

1
2 street lights having metal halide bulbs. These
3 bulbs, which have a bluish tint, have been widely
4 used in lighting funded by Business Improvement
5 Districts, most noticeably, Grand Central
6 Partnership, 34th Street Partnership, Lower
7 Manhattan Alliance. These are bad for many
8 reasons, not least that they are an even greater
9 health threat than the gold-to-amber high-pressure
10 sodium bulbs that are now used. And, the last
11 thing you have here is a discussion of metal
12 halide lighting and particularly the problems, of
13 which the blue tint is one of the major problems.

14 I think I will talk a little bit
15 about 806 now. And then, I want to come back and
16 get into a few other details. I do want to
17 commend Council Member Lappin for recognizing the
18 potential of LED technology to reduce the amount
19 of electricity consumed by our New York City
20 street lighting system.

21 As you may know, the City, this has
22 been discussed before, we already have LED street
23 lights, or traffic lights. Development of the
24 higher wattage LEDs needed for street lighting has
25 been proceeding at a brisk pace. The promise of

1
2 energy savings has prompted the U.S. Department of
3 Energy to take an active role in coordinating
4 these efforts and establishing guidelines and
5 performance standards for this new technology. In
6 August the DOE proposed that in order to qualify
7 for Energy Star designation, LED street lights
8 would need to be fully shielded. Although this
9 requirement will not be finalized until next
10 month, I hope it will be incorporated into this
11 legislation.

12 And, I have given you a couple of
13 pages from the Energy Star recommendations. And,
14 if you look, the lower half of the page has to do
15 with roadway luminaires. And, down towards the
16 bottom, there's a little line called Zonal Lumen
17 Density requirement. And, what this is is just
18 kind of a technical definition, as opposed to a
19 sort of verbal definition of full shielding. And,
20 I would really hope that that could be
21 incorporated into 806. And, I would also comment
22 that the existence, the fact that DOE is doing
23 this suggests that there must be some value in
24 fully shielded street lighting of any type. They
25 just happen to be working on LEDs here.

1
2 In my comments regarding Council
3 Member Gerson's bill, I mentioned the concern
4 about use of bluish tinted metal halide bulbs in
5 street lights. This is an even greater issue with
6 LED's. Therefore, even though it is not a
7 requirement for Energy Star street lights, I
8 strongly recommend that a provision to address
9 this issue be added to Resolution 806.

10 Light sources are characterized by
11 something called Correlated Color Temperature,
12 which is measured in degrees of Kelvin. On the
13 upper part of the first page that we were just
14 looking at, there's a section on residential down
15 lights and you will see the last line of that,
16 Allowable CCTs, that's Correlated Color
17 Temperatures. And, for residential down lights,
18 the recommendation is a maximum of 3,500 Kelvin.
19 But, since such fixtures can be turned off by
20 residents, I would suggest that, for street
21 lights, where we don't have the option of turning
22 them off, a limitation of 3,000 Kelvin be added to
23 this legislation. LE street lights now being used
24 in experimental programs are commonly around six
25 to 8,000 Kelvin. So, it's more than twice what I

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

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 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 street lights, 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

1
2 and a half hours into the hearing. But, I think
3 it's important for you to understand this
4 information, which was originally presented to DOT
5 in 2005, has been presented again on several
6 occasions since then. You have two tables here.

7 Let me just first talk about the
8 measures. In the Illuminance Method, which is
9 what City DOT uses, there are two measures that
10 are considered. One is the average illumination
11 on the street, which is measured in foot candles.
12 And, the other is the evenness or the uniformity
13 of that illumination. So, you have an average
14 where the high number is good and you have a
15 uniformity ratio, where the low number is good.

16 The first table, the one that runs
17 horizontally on the page, is for East 86th Street
18 in Manhattan. You don't have to pay a bit of
19 attention to the block-by-block data. But, all
20 the way over in the right hand corner you will see
21 an average for those eight blocks of 86th Street
22 from Fifth Avenue over to East End. Above the
23 heavy line, you see the GE semi-cutoff fixture,
24 which has been very widely used in the City. And,
25 another fixture from GE, which is full cutoff, or

1 fully shielded fixture, otherwise very similar.
2
3 And, if you go all the way over to the right hand
4 side, you will see an average foot candles and on
5 the average to minimum uniformity. There's no
6 significant difference between these two fixtures.

7 The list of the items below the
8 heavy line in that table are just, you know, we
9 showed these data to DOT. And, DOT said well, we
10 can't just deal with one supplier. So, we have,
11 you know, examples of other fixtures from other
12 manufacturers that are, you know, comparable, more
13 or less, to what DOT has been using. And, in
14 fact, the Cooper fixture, the first one below that
15 heavy line, you can see that the average foot
16 candles are exactly the same as the semi-cutoff GE
17 that DOT prefers and that the uniformity is
18 actually lower. So, that's actually a better
19 fixture to meet DOT's standards than the semi-
20 cutoff fixture that they're now using.

21 So, this is 86th Street and we
22 thought, well, we don't want to, you know, maybe
23 86th Street is not comparable, not typical for some
24 reason. And, incidentally, it is a street where
25 DOT is not currently meeting its own standards. I

1
2 don't know how long the street lights were put up
3 there. But, they don't comply with DOT's
4 standards.

5 But, as has been mentioned
6 previously, there was a competition that was run
7 in 2004 to design a new street light for a city.
8 And, in the process of organizing that, they
9 provided to competitors a description of the
10 typical New York City street lighting
11 installation. So, this gave us, you know, it
12 told, you know, a certain mounting height, a
13 certain width of street and all of the ingredients
14 that go into these calculations. So, this gave us
15 another opportunity to compare the performance of
16 the fully shielded fixture with the semi-cutoff
17 one that DOT prefers.

18 So, in the upper part of this table
19 that goes long-ways on the page, straight up the
20 page, are the Cooper and GE semi-cutoff fixtures
21 that are pretty popular right now in the City.
22 They both have average foot candles of 0.7 and a
23 uniformity ratio of 2.3. They both happen to have
24 the same results. Below the heavy line are a
25 number of full cutoff fixtures, fully shielded

1
2 fixtures with performance that is, more or less,
3 similar to those existing lights. Again, there
4 are, in this case, several fixtures that, by DOT's
5 own standards, actually perform better than the
6 semi-cutoff fixture that they're hanging on to.

7 So, I'm sorry to get into a lot of
8 technical there, but they haven't been able to
9 debunk this. But, still they keep talking about
10 110 reasons why it's a bad idea. So, I would like
11 to just offer a couple general comments on earlier
12 testimony. One is the Massachusetts bill that
13 they were voting this morning. That's only a
14 proposed bill. There's no law in Massachusetts at
15 this time. So, they have their facts a little
16 screwed up there. I think it's also worth
17 pointing out, particularly given the tone of DOT's
18 testimony this morning, that over-- we've been
19 working on this, I've been actively working on the
20 State bill since the year 2000. And, this year,
21 or starting last year, with the new DOT
22 Commissioner, we thought, you know, maybe things
23 will open up a little bit over there. We made
24 some changes in our bill. We asked them
25 repeatedly look, if you have problems with this

1
2 bill, suggest some changes. What is it that, you
3 know, we would need to consider doing in order to
4 make this livable from your standpoint. And, I
5 can't tell you how many times we asked that
6 question. But, we never got an answer.

7 One other little correction. There
8 was a first place winner and a second place winner
9 and a third place winner. The first place winner
10 was an LED street light. The second and third
11 place were both similar to the existing cobra
12 heads, you know, stylistically they looked very
13 different. But, the first place winner was an LED
14 street light.

15 CHAIRPERSON LIU: Miss Clyma, I'd
16 like to ask you to start wrapping up.

17 GAIL CLYMA: Yeah, okay. Just
18 quickly, LRC, to save time, I will say it is not
19 correct to say that fully shielded fixtures will
20 not reduce sky glow. It simply isn't so. It is
21 not correct to say that they won't reduce light
22 trespass. It simply is not so. Council Member
23 Gerson mentioned he's on the 20th floor. I live on
24 the seventh floor. There's a street light 40 feet
25 below my bedroom window that's lighting up my

1 ceiling. And, a fully shielded fixture would not
2 do that. At the end of the day--

3
4 CHAIRPERSON LIU: Miss Clyma, you
5 are refuting the testimony of a Professor that
6 comes from this well-known institute.

7 GAIL CLYMA: Yes.

8 CHAIRPERSON LIU: Could you state,
9 for the record, what kind of credentials you could
10 offer to support that?

11 GAIL CLYMA: I have only 15 years
12 of experience working on this issue. I'm not an
13 engineer. I have no sheep skins in this field.
14 But, if I may put up one of these boards. [Pause]
15 You know, just sort of a basic diagram--

16 CHAIRPERSON LIU: Well, I can see
17 what the diagram says.

18 GAIL CLYMA: Yeah, okay.

19 CHAIRPERSON LIU: I think the
20 information that you gave us is extremely
21 valuable. And, we do appreciate it. But, we do
22 also need to just ask the question of what the
23 credentials are.

24 GAIL CLYMA: Okay.

25 CHAIRPERSON LIU: And, the--

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

GAIL CLYMA: Simply studies--

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

GAIL CLYMA: Trained in the--

CHAIRPERSON LIU: 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. And, I don't--

GAIL CLYMA: [Crosstalk]

CHAIRPERSON LIU: -- I'm not questioning the credibility.

GAIL CLYMA: Yeah, yeah.

CHAIRPERSON LIU: Just to round out the testimony--

GAIL CLYMA: Right.

CHAIRPERSON LIU: -- just wanted to see what that was.

GAIL CLYMA: Right.

CHAIRPERSON LIU: All right.

GAIL CLYMA: Basically, the bottom

1
2 line, DOT is making three claims. First of all,
3 they're still kind of fighting whether these fully
4 shielded fixtures can perform. And, you've got
5 those numbers now. So, you know you can just stop
6 worrying about that. So then, they start saying,
7 well, you know, it costs too much. I think Leo
8 Smith has some excellent information on that
9 point. There might be, you know, a difference of
10 possibly 10% in the cost. And then, when they
11 can't get anywhere with that, they say well, we
12 can't get them. We can't get these fully shielded
13 fixtures with the electronic ballasts. And, you
14 know, I just have to point out that that's just an
15 assertion that is being made. It's unverifiable.
16 It simply is not verifiable unless DOT comes in
17 here with, you know, a request for proposals that--
18 -

19 CHAIRPERSON LIU: Okay.

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

22 CHAIRPERSON LIU: All right.

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

1
2 CHAIRPERSON LIU: That's not a
3 problem. Thank you very much for your insight
4 into this issue. And, I want to thank the rest of
5 the panel for testifying as well.

6 COUNCIL MEMBER LAPPIN: And,
7 Mr. Chairman, if I may, I just wanted to thank
8 Miss Clyma for all of her input and I've enjoyed
9 working with her and learning from her a lot more
10 about this issue.

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

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

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

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

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. 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 area. People take for granted lighting.
But, there's so much to touch on.

I took a picture of a street light

1
2 here not long ago. And, concerned about
3 reflective light. If we could see that from here.
4 I'll be giving this after I speak. This is a
5 typical street light. And, it seems that the
6 light is a beautiful lamp. It's doing its job.
7 But, it's bouncing off at a 90 degree from the
8 walls, from the fixture straight out into
9 buildings and people's homes. And, it's wasted
10 energy it seems to be here. So, my suggestion
11 would be something more similar than-- that's nice
12 there, too.

13 FEMALE VOICE: That's the same
14 picture.

15 MICHAEL DEMMA: Similar picture,
16 yes, very nice. But, my suggestion would be no
17 different than what we grew up at our night table.
18 Here's a typical lamp shade. It's reflecting the
19 light at a proper angle down onto the street,
20 rather than all around. And, they probably
21 wouldn't be too much money to retrofit these.
22 But, it seems if something like this was put in
23 place rather than having an open fixture as we
24 know it, it would help the community, the
25 pedestrians and my concern, also, is motorists

1
2 driving in the City. When I drive around this
3 town, most of the time I can see a street light
4 coming right into my vision, which is usually
5 quite annoying and distracting and straining and a
6 drain. So, I think some type of globe, other than
7 what they're saying here as a-- what was that
8 called?

9 FEMALE VOICE: Fully shielded.

10 MICHAEL DEMMA: Fully shielded,
11 something like this here, something that we know.
12 I think that would be helpful. So, with all these
13 intelligent agencies and people, I'm surprised
14 something like that hasn't been brought out. And
15 so, I'm leaving this photobook with you that I put
16 together very briefly. And, this is a concern of
17 mine because at 14th Street and Sixth Avenue here,
18 the illumination's been weak over the years and
19 suggestions have, to DOT and to your Council here,
20 Mr. Liu, that's been helpful, but there's a ways
21 to go.

22 Some fixtures have been replaced.
23 Some of them, as I'm going to show here, have been
24 replaced and with the recent heavy rains of the
25 hurricanes in the summer, strangely these fixtures

1
2 have been loading up with water from the rain.
3 And, they dry out and they're leaving some heavy
4 soot behind. So, the illumination has decreased
5 dramatically.

6 Here's an original fixture still in
7 place today. The, probably 40-year-old fixture,
8 the pollution is so tremendous here in Manhattan,
9 as we know, it's making the fixture useless.
10 There isn't any maintenance per se, so to speak.
11 So, it's-- what else. There's my card.

12 Also, you know, coming in here and
13 listening to DOT and they had the three-page
14 report putting me to sleep. I'm surprised they
15 don't come up here with some kind of illustrations
16 to have the average person understand what we're
17 talking about. Because I've been involved with
18 this for so long, I know what the cobra head
19 means. I know what the 25 means on top of the
20 fixture. I know what 15 means on top of the
21 fixture. We're talking 25 watts. We're talking
22 150 watts. So, you know, if they could just put
23 their papers aside a little bit and bring some
24 full size illustrations to get the feel of what's
25 actually happening out there. It's difficult.

1
2 And, I don't know why they don't agree with you
3 most of the time, them folks.

4 CHAIRPERSON LIU: Thank you,
5 Michael.

6 MICHAEL DEMMA: Okay. But--

7 CHAIRPERSON LIU: Thank you. We
8 always appreciate the--

9 MICHAEL DEMMA: Okay.

10 CHAIRPERSON LIU: -- illustrated
11 books that you bring us.

12 MICHAEL DEMMA: There's something
13 very serious also about this here. We're talking
14 about reflective light into the atmosphere.
15 Outdoor advertising, the heavy billboards that are
16 all around our roadways and wherever, those are
17 using up at least 2,500 watts per billboard at 100
18 watt per fixture. So, we're talking a tremendous
19 amount of light being reflected. And, it wasn't
20 mentioned here at all, other than street lighting.
21 And--

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

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Mr. Liu, and hopefully--

CHAIRPERSON LIU: Thank you.

MICHAEL DEMMA: -- 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 of I

leave [off-mic]

CHAIRPERSON LIU: No.

FEMALE VOICE: Use the mic.

PAUL SCHUBERT: Yes. I'm Paul

Schubert, a community activist from the Rockaways card - - . As my card states, public safety is my primary concern. I'm personally responsible, through the help of DOT Commissioner Iris Weinshall and Janice Sadik-Kahn of having installed, so far, 14 wheelchair ramps, a traffic light by the Scholar's Academy at Beach 104th Street, over 20 traffic light crossing walk

1
2 signals being adjusted so that grandma can cross
3 safely, as well as mommy with carriage. There's
4 an interesting coincidence, walking speed-wise,
5 that a senior citizen and a mother with a child,
6 with a carriage, walk at the same speed
7 approximately. I found this to be an interesting
8 coincidence.

9 Now, I've also, I prepared a little
10 visual thing over here. Now, I've been a street
11 peddler approximately 20 years, since 1986. The
12 bids came in. By City Charter, the law, let's
13 talk about the law. By City Charter, they are
14 legally responsible for street lighting and
15 maintenance thereof, by law. They are legally
16 responsible for the repair and the maintenance and
17 replacement of all sidewalks. Have they done so?
18 No. Do they have any plan to do so? No. I have
19 noticed their absence from here. Now, if we're
20 going to start talking about who's responsible,
21 then let's consult the City Charter, the law, the
22 Administrative Code.

23 I have seen our streets grow dark.
24 The NYPD gives out a wonderful anti-crime, anti-
25 robbery flyer. It states "To prevent oneself from

1
2 being mugged, one walks in a well-lit area." I
3 went around New York City taking photographs at
4 night. So, I'm at Fifth Avenue, Rockefeller
5 Center. It's dark. I've gone in Times Square
6 side streets, 46th, 43rd. It's dark. I've gone by
7 48th Street between Fifth Avenue and Madison. It's
8 dark.

9 So, my question is now, we don't
10 live in Mayberry. I live in Rockaway Park, a
11 residential community with houses. We can see the
12 stars. But, New York City is highrises. Twenty-
13 four hour City, as Frank Sinatra has said. New
14 York's my kind of town. The City that never
15 sleeps. So, we need well-lit corridors everywhere
16 in the main town city; in all the shopping malls.
17 Tourists will not visit a city where they do not
18 feel safe. They will not come back to a city if
19 they don't feel safe there. And, they want the
20 big city lights. They live in Mayberry. They
21 want big city light. They want to see daylight.

22 Now, I'd like to see these studies
23 that cause cancer by street lights. I really
24 would. Mr. Liu, you are quite correct in asking
25 for credentials. Professor Brons, over here, due

1
2 to her Light Research Center, I believe she has
3 the credentials, over 20 years I understand of
4 careful scientific study. And, scientific study
5 means what's tested here is then tested here and
6 then here and then, based upon a repeat of the
7 same results, we reach a scientific conclusion.
8 This is what was told to us by Aristotle, by
9 Socrates.

10 But, I would like to show my little
11 display over here, if possible.

12 MALE VOICE: [Off-mic]

13 PAUL SCHUBERT: Yeah, I appreciate
14 that, sir.

15 CHAIRPERSON LIU: All right. But,
16 Mr. Schubert, we have to wrap up momentarily.

17 PAUL SCHUBERT: Yeah, yeah, yeah,
18 yeah, I know. I know. My thankful to you,
19 Mr. Liu. And, I will state for the record that
20 whenever I've contacted Mr. Liu's office
21 concerning transportation safety questions, I've
22 had a very good response. I want to state that
23 for the record. Bids that may - - is a crime.
24 [Pause] Before then, we had safe avenues due to
25 Xenon lighting. Now, a Xenon bulb takes half the

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

power of a halogen bulb.

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

PAUL SCHUBERT: Okay.

CHAIRPERSON LIU: -- if you're going to. I would suggest just reading it yourself, because we can actually see it also.

PAUL SCHUBERT: Okay. This is basically giving me my - - . 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 talk to the young people, that are 20-years-old, and they remember this.

CHAIRPERSON LIU: To the extent that there are missing street lamps or broken street lamps, it is certainly the intent of my colleagues and I and the City Council to make sure

1
2 that the Department of Transportation fixes those
3 street lamps or installs new street lamps so that
4 the City's streets and sidewalks are well-lit.

5 PAUL SCHUBERT: Well--

6 CHAIRPERSON LIU: That is not the
7 issue of today's hearing.

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

13 CHAIRPERSON LIU: That would be
14 extremely helpful to our Committee, Mr. Schubert.

15 PAUL SCHUBERT: Thank you, sir.

16 CHAIRPERSON LIU: I really
17 appreciate--

18 PAUL SCHUBERT: And, I--

19 CHAIRPERSON LIU: -- your input
20 over the years--

21 PAUL SCHUBERT: And, I--

22 CHAIRPERSON LIU: -- and today's
23 hearing.

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

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16

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 indulging--

CHAIRPERSON LIU: I want to thank you--

PAUL SCHUBERT: -- the clock.

CHAIRPERSON LIU: -- for your very good eight minutes today.

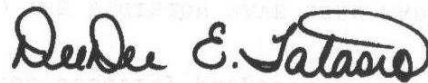
PAUL SCHUBERT: Thank you, sir.

CHAIRPERSON LIU: Thank you. 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, DeeDee E. Tataseo 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

A handwritten signature in cursive script that reads "DeeDee E. Tataseo". The signature is written in black ink and is positioned above a horizontal line.

Date

December 22, 2008