

NEW JERSEY CLEAN AIR COUNCIL PUBLIC
HEARING

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AIR TOXICS: HOW FAR HAS NEW JERSEY COME
IN ALMOST A QUARTER CENTURY?

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NJ Department of Environmental Protection

401 East State Street, Public

Hearing Room, Trenton, New Jersey

April 19, 2023

9:07 A.M.

Job no: 6910

AGENDA

CHIESA, SHAHINIAN, & GIANTOMASI, P.C.
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CLEAN AIR COUNCIL MEMBERS Representing

Sean Moriarty, Deputy Commissioner, NJ
DEP
Welcome and Opening Remarks

Francis Steitz, Director of Air Quality
NJ Department of Environmental Protection
Ambient Monitoring and Analytical
Modeling of Air Toxics In New Jersey

Allen Weston, Chair NJ Association of
Clean Air Council Counties

Maria Connolly, Vice-Chair Dept. Of
Community Affairs

Stephen Milgrom Dept. Of State
Leonard Bielory, M.D. Public

Hearing Co-Chair

Michael Egenton NJ State Chamber of
Commerce

Richard E. Opiekun, PhD.

Timothy Fekete Dept. Of Agriculture

Toby Hanna NJ Society of
Professional
Engineers, Inc.

(Continued agenda)

Kim Gaddy, NJ Environmental Justice
Director, Clean Water Action, and Chair of
NJDEP Environmental justice council

Ray Cantor, Deputy Chief Government
Affairs Officer

Panos Georgopoulos, PhD.
Rutgers Environmental and Occupational
Health Sciences Institute
Geospatial Analysis of Air Toxics

Joann Held, Air Toxics Analyst
Self-Employed
Addressing Air Toxics in New Jersey

Dennis Hart, Executive Director of the
Chemistry Council of New Jersey
Chemistry Council

Robert Laumbach, M.D., M.P.H., C.I.H.
Rutgers Environmental and Occupational
Health Sciences Institute

Barbara Goun, MPH, PhD, Research
Scientist and Principal Investigator
New Jersey Department of Health
Air Pollution and Cancer

Barbara Morin, Environmental Analyst
Northeast States for Coordinated Air Use
Management (NESCAUM)
Perspectives on Air Toxic Priorities

1 MR. VALERI: My name is. John
2 Valeri. We are a little out of order.
3 I am the Vice Chair of the Hearing
4 today and a public member of the
5 Council, and because we're having some
6 technical difficulties online, I'm
7 going to go right into the ground
8 rules of today's meeting.

9 We have up on the screen for
10 those in the room and those online,
11 the members of the Clean Air Council,
12 our Chairman, Allen Weston, our
13 Vice-Chair, Maria Connelly. The
14 Co-Chairs of this hearing are Len
15 Bielory and Michael Egenton, and I am
16 the Vice-Chair of this hearing.

17 Next slide, please.

18 Okay. So let me read from the
19 instructions for today's hearing and
20 the etiquette. Obviously, have
21 respect for all the speakers.
22 Attendees please turn off your mobile
23 phones or put them in silent mode. I
24 include those online too since I have
25 heard phones go off online in the

1 past. If you need to take a call,
2 please leave the room and go to the
3 hallway.

4 For those here today, restroom
5 facilities are located around the
6 corner from the room. Please make a
7 left upon leaving.

8 Regarding the format of the
9 hearing, our environment experts,
10 which are listed on our agenda, will
11 each give a 20-minute formal
12 presentation. The format is that of a
13 formal presentation by our experts
14 followed by discussion by Council
15 members only to the extent that
16 there's time left, since we are on a
17 tight schedule. There will be a brief
18 time of questions if a speaker ends
19 early.

20 And then at the end of our
21 listed speakers, which I think our
22 last one on the agenda is 2:00 or
23 2:20, there will be an opportunity for
24 members of the public to give a
25 presentation, which will be limited to

1 three minutes.

2 If you plan to address the
3 Council, please sign on the list next
4 to the door where you entered, if
5 you're here. If you're online, please
6 request to speak in the chat. And if
7 you do that, please put your name and
8 who you represent, if at all, in the
9 chat.

10 We have the hearing room until
11 three p.m. Depending upon the number
12 of persons, we may not be able to fit
13 in every one to speak publically.

14 Please note that all persons can
15 submit public comments on this issue
16 to the Council via e-mail until
17 May 5th. That's May 5th. The
18 instructions are at the bottom of the
19 hearing brochure, which is online.

20 Lunch will be at 12:00 to 1:00.
21 Lunch will be served only for invited
22 guests and members of the Council.
23 We'll adjourn for one hour.

24 Public guests may use the
25 opportunity to get food from a variety

1 of eating establishments. The places
2 to eat can be found on East State
3 Street as well as along Warren Street.

4 I want to thank our stenographer
5 today for being here. Everyone who
6 has been at a court hearing and/or
7 public hearing, please speak slowly
8 and enunciate so that she can take an
9 accurate stenography.

10 Recommendations that we make
11 based upon your presentations, whether
12 you're a member of the public or
13 you're an invited speaker will be used
14 to provide recommendations to the
15 Commissioner, which we'll give some
16 time around July or August of this
17 year.

18 Again, you'll have 20 minutes as
19 you can see on the slide. For those
20 who are actually speaking to us today,
21 you'll have a verbal three-minute
22 warning from me and a one-minute
23 warning. Any presenter who's online
24 should turn on the camera when
25 speaking, if not using a PowerPoint,

1 and we'll be permitted to ask
2 questions later, as I said.

3 If you can switch slides,
4 George.

5 Okay. I think that's it. Very
6 good. So let's jump into it since
7 we're now on time.

8 Our introduction today will be
9 given by our Deputy Commissioner, Sean
10 Moriarty. I'd love to give a
11 background on Sean, except that I
12 don't have a bio for him. And, I
13 apologize, that was not going to be my
14 role, but of course technical
15 difficulties --

16 MR. MORIARTY: Josh, just say
17 something nice though.

18 MR. VALERI: He's worked really
19 hard on the EJ Rule and needs a
20 vacation.

21 MR. MORIARTY: That works.
22 Thank you for that wonderful
23 introduction.

24 I often give really boring
25 speeches, but usually my bio is the

1 most important part of every speech I
2 give, so I appreciate you skipping
3 that.

4 Hello folks online and whatever
5 is happening on the screen. Thank you
6 for having me here today. I usually
7 start with apologies for being the
8 other Sean. I'm not the Commissioner,
9 but I'm still really grateful to have
10 the chance to be here as Clean Air
11 Council.

12 I think in prepping for this,
13 it's very clear what a wonderful
14 example that this Council represents
15 of how we can work effectively across
16 multiple levels of government,
17 industry, academia, business.

18 But either way, what we're doing
19 is to effect positive change to the
20 people of New Jersey. Being able to
21 enhance that work and coordinate that
22 work is critically important.

23 I can hear Dennis telling me we
24 should be doing more of that. Dennis,
25 you might be right on that.

1 Over the years, the Clean Air
2 Council has addressed a wide range of
3 important emerging air quality issues,
4 power plant pollution, interstate
5 transport air toxins, mobile sources,
6 cumulative impacts, climate change,
7 fugitive dust emissions and the impact
8 of the COVID-19 pandemic on air
9 quality. An incredibly broad spectrum
10 of issues and this year, like any good
11 band going back on tour to celebrate
12 the anniversary of their hit album,
13 we're going back and revisiting the
14 topic of air toxics, something we last
15 explored in 2000.

16 But this isn't about nostalgia.
17 This is about measuring progress.
18 This year's hearing is a retrospective
19 looking at the progress New Jersey has
20 made in reducing air toxic pollution
21 and its impact to New Jersey over the
22 last almost quarter century.

23 I'm thinking about 23 years as a
24 quarter century as someone who
25 graduated high school in the late

1 '90s, a very scary thing. But that's
2 a lot of time that's passed and a lot
3 of work that has been done. You're
4 going to see that today from the
5 speakers.

6 We're going to talk about the
7 historic and current sources of air
8 toxics, how that profile has changed,
9 help impact some potential exposures.
10 We're going to look at questions about
11 ambient air monitoring and modeling
12 over the last 23 years, and what those
13 trends look like, and see Frank's
14 presentation and see the lines in
15 retrospect. You're going to be enrapt
16 with that.

17 We're going to talk about how
18 the department continues to identify
19 emerging air contaminants to develop
20 programs to minimize their impact.
21 We're going to talk about risk
22 assessment tools, other studies that
23 are available, technology and science
24 and how that has advanced, use of
25 regulatory determinations.

1 We're going to try to find
2 creative solutions. We're going to
3 talk about ways to be creative to find
4 ways to reduce those impacts.

5 And then we're going to talk
6 about whether we need to have new
7 regulations. What do we need to do to
8 ensure that we're getting at these
9 issues in the most effective way
10 possible and that we're enforcing our
11 rules adequately.

12 And then we're also going to
13 look back at those year-2000
14 recommendations and kind of, again,
15 look at that and see how effective its
16 been. And we're going to be able to
17 push this forward.

18 And from the department's
19 perspective, we work on the stuff
20 everyday. Frank, Paul, the team, you
21 know, I would be remiss to not really
22 kind of give credit to the work that
23 they do.

24 I will say this without any
25 exaggeration, every time I've talked

1 to one of them, I've learned something
2 new, and that's not just the fact that
3 I talk to them about air regulation.
4 They know everything about air
5 regulation and they teach us every
6 single day the better ways to protect
7 the people of New Jersey.

8 So we've done things like amend
9 our air permitting rules to require
10 reporting new air toxics, lowering
11 thresholds for reporting so we can
12 better assess offsite impacts. We
13 have taken steps to address exposures
14 associated with community fumigation,
15 many of those operations being located
16 in our overburdened communities. We
17 have done significant work from our
18 part of this to address impacts from
19 transportation resources; our Cargo
20 Handling Rule, the moving forward with
21 the Advanced Clean Truck proposal, the
22 omnibus proposal that is close to
23 being adopted that's going to be able
24 to address; vehicle inspections, as
25 well as the stake holding that we've

1 done with the potentials that prepare
2 for a proposal to move forward with
3 California's Advanced Cars II Rule.
4 All of those things working in tandem
5 with the things that we'll discuss
6 today to try to reduce those impacts
7 in our communities, particularly
8 overburdened communities.

9 And as we talk about
10 overburdened communities, how can I
11 not mention that we've adopted the
12 Environmental Trust this weekend
13 officially. Thank you, Christine.

14 I wasn't sure if I was going to
15 have to duck when I said that. So
16 it's nice to get a round of applause.

17 Really what the EJ Rules do is
18 really try to get at the impacts that
19 most directly affect folks in our
20 overburdened communities, our most
21 vulnerable residents, and really kind
22 of from our perspective gives us all
23 an opportunity and most importantly
24 the tools to better address those
25 inequities.

1 Those inequities have left New
2 Jersey's overburdened communities
3 subject to a disproportionately high
4 number of environmental (check)
5 including pollution from numerous
6 industrial, commercial and
7 governmental facilities and their
8 attendant health impacts. So when
9 we're discussing air toxics and the
10 way that -- you know, we think that
11 that can only enhance the efforts that
12 we'll talk about today.

13 EJ Rules will allow us to
14 consider things that we weren't
15 previously able to consider from a
16 regulatory perspective and empower us
17 to evaluate the pollution potential on
18 a facility-wide basis and apply
19 appropriate conditions to help
20 facilities avoid and minimize those
21 impacts.

22 And EJ Map, the greatest online
23 tool ever created by Christine and her
24 team is available online. I suggest
25 folks look at that. Take a look at

1 our website. We have FAQs, we have EJ
2 Map, we have a lot of guidance there
3 of almost all of our rules to try to
4 help people understand how these rules
5 and action work in practice. We're
6 going to talk about that with some
7 folks at noon today to get a little
8 bit more in depth.

9 You know, I think it's better
10 than folks think it is. I think it's
11 going to work a lot better than folks
12 fear. And I'm excited to begin the
13 formal process of floatation.

14 So in closing, my speakers today
15 are going to share the progress we've
16 made. You're going to hear a lot
17 about it and a lot of exciting stuff,
18 and on behalf of the Commissioner,
19 because I'm here instead, we're
20 looking forward to the recommendations
21 to the Department of Future Strategies
22 on things that we can do better.

23 So in closing, I want to hear
24 from folks before I walk away too. I
25 want to thank the Council for its

1 service, including Chairman Allen
2 Weston, Vice-Chairman, Maria Connolly,
3 hearing co-chairs Dr. Leonard Bielory,
4 Michael Egenton, and, of course, John
5 Valeri, who gave me that wonderful
6 introduction.

7 So since I don't have the
8 opportunity to be here for the
9 entirety of the presentation, if
10 there's anything that you would like
11 to share with me, that I can take back
12 to the person that actually makes the
13 decisions of the department, I'm more
14 than welcome to hear that.

15 MR. VALERI: I appreciate that.
16 First of all, can members -- Glen, can
17 you speak because I think we're
18 connected, but let's --

19 MR. BIELORY: Testing one, two,
20 three.

21 MR. VALERI: Yes. Thank you.

22 Very quick. Does anyone have
23 any questions for the Deputy
24 Commissioner or comments from members
25 of the Council?

1 MR. EGENTON: It's Mike Egenton.

2 I just want to take 30 seconds. Thank
3 you for the work that you do with this
4 Council. As you may know, I'm the
5 longest serving member on the Council
6 and its been a pleasure working with
7 you and the Commissioner and the team.

8 And I just wanted to mention
9 that the collaborative, the great
10 information that we get from the
11 department, I'd like to use the
12 opportunity to give a shout out to
13 Frank Steitz and Paul and everybody
14 that is with us every single month.
15 Remember this is a volunteer group and
16 the great work that we do certainly is
17 the culmination of the various reports
18 and studies that we have done over the
19 years.

20 So thank you and to the
21 department for always relying on us
22 and the collaborative that we have and
23 the volunteer time that you and your
24 team dedicate to us year after year.
25 That's it. Just nothing but thanks.

1 MR. MORIARTY: Thank you, Mike.
2 Next time I'll have you read my
3 opening. That was better than I said.
4 Appreciate it.

5 MR. VALERI: No problem.
6 Already paying for this for awhile.

7 Anybody else on the Council?

8 MR. BIELORY: I guess, also
9 thanking you very much, Mr. Moriarty,
10 for presenting the opening salvo, so
11 to speak, as also one of the olders --
12 one of the older men. I'll leave Mike
13 to be oldest since it's better that
14 way.

15 But the scenario is that,
16 obviously, I'm a public physician
17 being an allergist in air quality, and
18 I've learned a learned a lot of
19 alphabet soup, that I learn every time
20 I participate. It's a monthly
21 participation.

22 But like it's been stated, this
23 year is focusing on air toxics, and
24 it's anything in the air for the
25 health of our community at large. And

1 the Clean Air Council and all the
2 members should given lauds of the
3 time, but more so the employees that
4 you have in the NJ DEP that have on a
5 monthly basis contributed and updated
6 us to get an appreciation for the
7 public health of the citizens of New
8 Jersey.

9 So along those lines, again, and
10 accolades for the NJ DEP, Fran Steitz,
11 and his group have done over the year.
12 Really have done a tremendous job.

13 Any other comments from our
14 Council members or anybody as we have
15 a few minutes for questions, and this
16 is the time to probe.

17 Anybody? And if not --

18 MR. HANNA: Thanks for the good
19 summary. We talk a lot about good
20 things that have happened going back
21 even to 2000, I guess the last time we
22 took on air toxicity as a hearing
23 topic for the Council. What today may
24 be your short list of either
25 recommendations or targets that we

1 should be thinking about, whether it's
2 individual air toxics, compounds or
3 sectors or maybe talk obviously about
4 environmental justice and the
5 community impacts and where air toxics
6 fit into that, but what's your sense
7 of the top three of whether it's
8 chemicals or sectors of the pollution
9 that really needs more work?

10 MR. MORIARTY: Yeah. I think
11 it's a wonderful question and probably
12 one I'm under qualified to fully
13 answer at this point. But I think
14 from the perspective, from the
15 Commissioner's office perspective and
16 what we do at this level, I think the
17 health impacts to individuals living
18 in our overburdened communities,
19 particularly those communities subject
20 to adverse cumulative stress, that's
21 where we want to be able to focus.

22 I think whether that is through
23 monitoring, through traditional
24 recognition or through conditions that
25 we might place on facilities. But I

1 think that's a place we really, really
2 want to focus, right?

3 I think, in addition to that,
4 and some of the things that we
5 mentioned in my opening, the impacts
6 of transportation, right? We have
7 transportation represents almost,
8 like, you know, it's 40 percent of our
9 GHG emissions and their associated air
10 toxics. How can we bring that work
11 together to further our climate goals
12 as well as protecting public health
13 through our efforts to address and
14 scope.

15 I think that if we're focusing
16 on overburdened communities and we're
17 focusing on transportation as much as
18 possible, I think we're going to get a
19 tremendous amount of benefit from that
20 and we're going to be able to further
21 multiple of the department and the
22 state's level at the same time.

23 Now I'm just calling on people.
24 Now I'm just running here.

25 MR. HART: Dennis Hart from the

1 Chemistry Council of New Jersey. I
2 appreciate you being here today. I
3 just have one request. The department
4 has a lot of initiatives going. And
5 for a lot of facilities in New Jersey,
6 we have some big facilities with a lot
7 of staff people, we also have a lot of
8 facilities with a hundred people or 50
9 people and have a hard time trying to
10 plan how to work with the department
11 on so many initiatives. So --

12 MR. BIELORY: You need to please
13 repeat the question or does the person
14 speaking have a mic due to being upon
15 Zoom in the meeting.

16 MR. HART: Okay. So, again,
17 Dennis Hart with the Chemistry Council
18 of New Jersey. I just was saying that
19 the department has so many initiates
20 going on, if there was somehow a
21 comprehensive list of the regulatory
22 and legislative permitting and
23 enforcement initiatives that's to each
24 separate program's undertaking. It
25 might surprise you how much is going

1 on that's hitting a small facility
2 from every different direction. So if
3 that's a task that I could request
4 from the department, I would
5 appreciate that.

6 MR. MORIARTY: Thank you. I
7 think we can always do better. No
8 such thing as -- I take that request
9 very seriously.

10 MR. VALERI: I think at this
11 point, we'll go into our next speaker.

12 MR. BIELORY: It's 10:05 and we
13 have five minutes. Does anybody else
14 have questions that's standing there
15 or have their hands up.

16 Okay. If not, we can proceed to
17 the next speaker, which is Frank
18 Steitz, the Director of Air Quality at
19 NJ DEP. He's been working with us
20 actually for quite a long time as
21 well. If he's not one of the oldest
22 members of participants, he has given
23 us a lot of information on a monthly
24 basis, beginning as monthly updates,
25 which actually has helped the Council

1 members who are all volunteers to
2 maximize their input.

3 So with no further ado, Frank
4 you're up.

5 MR. STEITZ: Good morning,
6 everyone. Can everyone hear me, and
7 online can you hear me and see me?
8 I'll wave at the camera. And, George,
9 if you can display the presentation.

10 I'm going to be talking to you
11 today about air quality trends
12 observed through air monitoring and
13 air quality modeling. So these
14 represent actual measurements of air
15 quality --

16 Switch the presentation here.
17 Next slide.

18 So, good morning. Two ways that
19 we monitor for air toxics in New
20 Jersey. We do physical measurement of
21 certain air toxics. We have four
22 locations that we do that at the
23 state, that's called our Ambient
24 Monitoring Program. We also do air
25 toxics analytical modeling, which is

1 using computer numerical models to
2 analyze multiple air toxics over the
3 entire state.

4 George, if you can minimize
5 that. Thank you. Sorry, Dr. B.

6 Next slide.

7 So real quick, what pollutants
8 do we monitor? I'm going to talk
9 about where do we monitor them, how
10 have we advanced in our technology and
11 methods over the last 20 years, what
12 are the trends we are seeing in the
13 actual monitored or measured air
14 pollutants and suggestions to the
15 Council on opportunities where this
16 monitoring can be enhanced.

17 Next slide, please.

18 So right now, we do air toxics
19 monitoring for what we call volatile
20 organic compounds or VOCs at 24-hour
21 canisters. So this is once every six
22 days we collect emission samples at
23 four locations. 68 compounds are
24 analyzed. About nine or ten we don't
25 actually detect because they're at too

1 low a concentration.

2 Of those 68 compounds, 43 of
3 them are regulated as hazardous air
4 pollutants under the air permitting
5 regulations; 36 of those compounds
6 have cancer endpoints, meaning they
7 have potential increases and
8 incidences of cancer, and 15 have what
9 are called noncancer endpoints.

10 MR. VALERI: Excuse me. Whoever
11 is on, please mute yourselves if
12 you're on.

13 MR. STEITZ: So 15 of these
14 compounds also have noncancer health
15 impacts, which means they have
16 potential impacts that go beyond
17 cancer.

18 Next slide, please.

19 So we also monitor for nonVOC or
20 particulate-based metals and other
21 particles where, again, we do 24-hour
22 filter sampling. So this is a
23 physical filter where air is passed
24 through and the filter can be
25 analyzed. And we look at 41 different

1 metals and other elements for
2 analysis.

3 About five or six of those 41
4 are generally nondetectable. These
5 include arsenic and cobalt. We don't
6 usually measure those in the ambient
7 air.

8 And 11 compounds listed there
9 are also regulated as hazardous air
10 pollutants on our permitting
11 regulations.

12 Next slide.

13 The monitoring locations. So
14 there are four current locations, but
15 obviously historically we've had some
16 relocation of our monitors. So in
17 Camden, we originally monitored up
18 until about 2008 at the Copewood and
19 Davis Street. Since 2013, we've
20 monitored at Spruce Street.

21 Additionally, we've had a
22 Chester rural location in Northwest
23 New Jersey since 2001. We have the
24 Elizabeth lab since about 2000, 2001.
25 We added metals in 2001, started in

1 2000.

2 We had the Newark firehouse from
3 2010 until last year. We're working
4 on getting a new location, which those
5 Len and the team are working with the
6 community to try to identify a new
7 site.

8 We also have -- we used to do
9 VOC and metals monitoring in New
10 Brunswick until 2015, and now we
11 monitor at Rutgers University, which
12 we started after we shut down the New
13 Brunswick site.

14 Next slide.

15 So there have been advances in
16 air monitoring in the last 20 years.
17 We are now able to continuously
18 monitor. So instead of just doing a
19 sample, we collect 24 hours of gas
20 every six days.

21 We are able to continuously able
22 to measure black carbon and our BTEX
23 compounds, which are Benzine, toluene,
24 ethylbenzene and xylene. Easy things
25 to transcribe, I'm sure.

1 We also have better analytical
2 methods for ethylene oxide, acrolein,
3 and we are able to detect compounds at
4 lower limits. So over time,
5 technology has continued to advance
6 from discreet measurements to more
7 continuous measurements.

8 Next slide.

9 So I'm going to go through a
10 couple of slides on trends. These are
11 measured trends where each of the
12 lines represents a station. And I'm
13 just going to mention, as you can see,
14 there's a dotted line at the bottom.
15 That dotted line represents the level
16 at which we would expect no public
17 health impact from the exposure levels
18 measured.

19 So for benzene, we have seen a
20 downward trend since 2001. It's begun
21 to plateau or slow its rate in the
22 more recent years, but in all cases,
23 it's still above the reference
24 concentration where we would expect no
25 public health impact.

1 Next slide.

2 Similar slide for 1 3 butadiene.

3 Again, at our rural site, we're seeing
4 maintain levels at or below or very
5 slightly above no public health
6 impact. But at our other three
7 stations, we are seeing a significant
8 downward trend but we're still a
9 little above that level we would
10 expect no public health impact. So
11 again, progress, but more work needs
12 to be done.

13 Next slide.

14 Formaldehyde. Now formaldehyde,
15 as you can see, has a very low level
16 where we would expect no public health
17 impact. We're not seeing a whole lot
18 of progress on formaldehyde. That's
19 one compound where trend-wise,
20 potentially from increased combustion
21 of natural gas we are seeing flat,
22 basically flat, no improvement.

23 Next slide.

24 Tetrachlorethylene. Good news
25 story. The story here is we're

1 looking at it. It's looking like
2 we're below the public health impacts
3 at the four monitoring stations. A
4 little uptick there at the end, but
5 right at or around where we would
6 expect no public impacts from the
7 concentrations that were measured at
8 the four stations.

9 Next slide.

10 So in addition to monitoring at
11 four stations, we always hear the
12 question: What about locations other
13 than or that are not near those four
14 locations? So what the department, we
15 supplement those physical monitoring
16 stations with a computer numeric model
17 to analyze the multiple air toxics
18 over the entire state, and that does
19 the identification of areas we may
20 want to do further analysis, further
21 study, further consideration. It
22 helps us prioritize the pollutants and
23 emission sources for regulations, and
24 it also informs our Air Monitoring
25 Program whether we're monitoring in

1 the correct locations.

2 And also it helps us trend. It
3 lets us look at over time some
4 significant changes to the air shed in
5 New Jersey. Right now our primary
6 tool in this exercise is the
7 AirToxScreen. It used to be called
8 NATA, National Air Toxics Assessment,
9 NATA, but it's now called
10 AirToxScreen.

11 It is now an annual tool or an
12 annual dataset that EPA provides to
13 all the states and local regulatory
14 authorities across the United States.
15 It is used in the environmental
16 justice mapping assessment and
17 protection tool. Christine's team
18 uses this data to give us an
19 assessment of cancer impacts and other
20 noncancer health impacts in that
21 assessment tool. So it forms the
22 basis for the environmental justice
23 rule, those environmental stressors
24 related to air toxics.

25 Regulatory decisions, permitting

1 use, other tools beyond this EPA air
2 toxics tool, so when we're doing a
3 regulatory decision, we have even more
4 sensitive modeling, Air Mod, if you're
5 familiar with that, Hamax, those air
6 shed-type modelings, those
7 dispersion-type models that are used
8 for regulatory decisions.

9 So when we're doing more
10 planning, we use the more broad scope
11 AirToxScreen. When we do regulatory
12 decisions, we're using the more
13 refined air dispersion modeling.

14 Next slide.

15 So again, as I mentioned, the
16 tool we used used to be called NATA.
17 Every time I used this slide, I would
18 talk about NATA, NATA, NATA. Well,
19 now I have to change it. I don't have
20 a good acronym yet.

21 We just call it AirToxScreen.
22 It's a screening characterization with
23 a census tract resolution, which means
24 down census-tract level, we can
25 estimate individual air toxic

1 concentrations for use and analysis.

2 And again, it screens for cancer and
3 noncancer risks that are estimated for
4 about 140 hazardous air pollutants and
5 also data on chronic exposure: What
6 happens if these chronic exposures
7 occur at those concentrations.

8 Again, it uses the computer
9 numeric modeling and data from EPA's
10 National Emission Inventory for the
11 hazardous air pollutants and, also,
12 very critically for New Jersey, diesel
13 particulate matter.

14 Next slide.

15 So I'm going to talk about three
16 pollutants, three trend pollutants
17 using the air toxics assessment since
18 2001 time frame. We'll look at diesel
19 particulate matter, formaldehyde, and
20 benzene as three air toxics of
21 concern.

22 Next slide.

23 So each one of these is going to
24 show you a slide with estimated
25 concentrations at the census tract

1 level for a given pollutant, along
2 with the coarse bonding.

3 I'm going to walk for a second,
4 guys. Make sure you can hear me. Can
5 everybody hear me?

6 MR. STEITZ: So it's easy just
7 to see. So starting in 2002, which is
8 our first year for concern, you can
9 see that the predicted concentrations
10 associated with diesel particulate
11 matter, especially close in by New
12 York City are in the range, the
13 highest range of close to 2000 times
14 the level we would expect no public
15 health impact.

16 I want you to remember that
17 number. Just keep that in mind.

18 Refined modeling improved those
19 estimates to a more broad scale in
20 2005. So 2002 and 2005 are not
21 directly comparable but they give you
22 quantitative, qualitatively what the
23 differences were.

24 You'll notice -- next slide --
25 that we got much more consistent in

1 our modeling the later the years go.
2 So in 2011, you can see still see the
3 extreme concentration that's along the
4 whole Route 1/I95 corridor. And with
5 each successive year, the reductions
6 in emissions associated with that lead
7 to modeling results that came down
8 significantly by 2017.

9 We still have the area by the
10 tunnels that are significantly high --

11 Next slide.

12 -- you continue to trend -- and
13 for 2018, I asked the staff to zoom in
14 in particular. Do you remember the
15 number from 2002, over 2000 in a
16 million increased cancer risk, right?

17 Now, we still have some that are
18 over 500, but the further you go away,
19 notice the zoom-in, you're talking an
20 order of magnitude smaller from 2002
21 to 2018.

22 Next slide.

23 I just want to show you this
24 last slide. This is the most recent
25 data. We are getting 2020 soon. We

1 don't have it yet.

2 But look at the -- George,
3 toggle back and forth between '18 and
4 '19. So go back and then forward,
5 back and then forward. So you can see
6 that in the macro scale, you're not
7 seeing a huge difference across the
8 State, but when you zoom in, you're
9 seeing much lower levels in Hudson
10 County for Diesel particulate matter.

11 So we've reduced that from over
12 2000 in a million down to below 400 in
13 a million. Again, a good trend, but
14 potentially a lot more work to do to
15 get those levels down to levels where
16 we would expect minimal health
17 impacts.

18 Next slide.

19 Similar trends. This one is
20 from formaldehyde. You notice we
21 didn't see a whole lot of changes
22 across the State.

23 Next slide.

24 Starting 2002. Now, in 2014 and
25 2011, you notice that we suddenly went

1 down. I believe that's because the
2 methodology used to assess those
3 emissions changed, so I'm going to
4 start in 2011 and start comparing 2011
5 risks to now.

6 So in 2011, we still had some
7 areas that were over 50 in a million
8 cancer risk. Those begin to decrease.

9 Next slide.

10 Again, now we're getting most of
11 the State, by 2017, is dropping down;
12 by 2018, we're starting to see areas
13 under ten in a million for
14 formaldehyde representing significant
15 progress.

16 And finally, I think that's the
17 last 2018 -- 2019, George. There you
18 go. Not a whole lot of change. A
19 little bit along the coast. It's hard
20 to see up at the top, but, again, we
21 are now below 25 in a million across
22 the State for formaldehyde.

23 So, again, progress, but still a
24 challenge to continue to read those
25 gains in all communities.

1 Next pollutant, George.

2 So this is for benzene. This is
3 our benzene.

4 So looking at it, and I think
5 that's -- yeah, the titles are cut
6 off, but, again, this is the trending.

7 Next slide.

8 So again, moving forward, you
9 can continue to see reformulated
10 gasoline was a federal standard that
11 came in place, that significantly
12 reduced the amount of benzene in
13 gasoline, which also lead in turn to a
14 significant improvement. If you look
15 at the risks, we're looking five to
16 ten in a million or one to five.

17 Next slide.

18 Again, we're seeing significant
19 reductions across the state, but we
20 are still seeing some areas that
21 represent problems in terms of just
22 the potential health impacts for
23 benzene.

24 Next slide. And I know I'm on
25 three minutes, so I'm trying to wrap

1 this up.

2 Just by way of mentioning, in
3 2017, the department amended its
4 rules, changing reporting thresholds
5 for the compounds evaluated for the
6 stationary source program. Of those,
7 126 compounds had lower recording
8 thresholds, 17 were actually raised
9 due to better information -- actually
10 the ones that were lowered and raised
11 were based on better information from
12 the reporting thresholds that were
13 developed, I guess, originally in '95,
14 Joann?

15 When did we first do the
16 reporting thresholds?

17 MS. HELD: The first time?

18 MR. STEITZ: A long time ago.
19 So probably 30 years. 30 years maybe.
20 All right.

21 Next slide.

22 So recommendations for
23 consideration. Under environmental
24 justice, how can air toxic monitoring
25 health help overburdened communities?

1 How can cumulative risk be evaluated
2 in overburdened communities? From an
3 air monitoring, are the number and
4 locations of the air toxics monitoring
5 between stations sufficient, what
6 additional air toxics should be
7 monitored for and should the DEP
8 consider less expensive but less
9 accurate monitoring technologies?

10 In terms of regulation and
11 evaluation should our stationary
12 source of mission statement program be
13 expanded for the source types required
14 to report on air toxics? Should the
15 list of substances that are currently
16 required be expanded or reduced, and
17 it's the reporting level summing it at
18 the facility as it currently is or
19 should it be done at the stack level?

20 So those are the potential
21 recommendations for the department to
22 consider, and then just some more
23 information.

24 I'd be happy to take questions.

25 MR. BIELORY: That's great,

1 Frank. Any questions from the Council
2 themselves?

3 MR. O'REGAN: Frank, just one
4 question representing the Department
5 of Health. When it comes to the
6 planning purposes or regulatory
7 decisionmaking, what considerations is
8 the department currently giving to
9 low-level chronic exposure in the
10 community?

11 MR. STEITZ: So from a
12 regulatory decision, I assume you're
13 speaking to when we're doing a
14 permitting decision on a stationary
15 source.

16 MR. O'REGAN: Siting permit,
17 right.

18 MR. STEITZ: So the department's
19 guideline on any individual sources,
20 we look at incremental risk from the
21 permitting action. So if that's a
22 single source, we are looking to make
23 sure that the noncancer health impacts
24 from that incremental operation will
25 be below a level at which there is any

1 expected public health impact, so this
2 is noncancer.

3 We call it Hazard Index. It's
4 set at a value of 1 for any
5 incremental impact from a stationary
6 source. So if the level is 15, we
7 will look at the impacts from that
8 source and make sure all the levels in
9 the community at the fenceline are
10 below 15, Hazard Index of 1.

11 For cancer impacts on an
12 individual piece of equipment, we look
13 at an individual's increasing cancer
14 risk for as one in one million. So
15 anything more than one in one million
16 requires additional review, but that
17 is our benchmark we are shooting for.

18 For an entire facility, our
19 benchmark goal for new and modified
20 sources is ten in a million, so that
21 takes everything at the facility
22 associated with it.

23 So one in a million for
24 individual sources; ten in a million
25 facility-wide. Does that answer?

1 MR. BIELORY: Very good. All
2 right.

3 I have one question, but it's
4 thick. I better ask it to be answered
5 later. It's just that on most of
6 these items there are individual
7 spikes that occur, like, in
8 formaldehyde. I'm sure there's a
9 reason do they go back up and down.

10 I don't know if you have a fair
11 reason for those individual years, and
12 if you can, can you just provide them
13 to the Council for our report because
14 the trend is noted clearly. But I'm
15 just curious about these independent
16 spikes that occur with monitoring.

17 MR. STEITZ: I will ask our
18 chief of air monitoring to see if he
19 can provide an explanation on the
20 individual variability, because that
21 is the variability from year to year,
22 why one year might be higher or lower
23 than a previous year.

24 MR. BIELORY: Yes. There's some
25 that are really dramatically spiking

1 and in a sense it looks like a release
2 of something. So it may have been a
3 fire or just that it's -- but the
4 information for the general population
5 of the State of New Jersey is clearly
6 that we're on the right track and
7 we've done our -- The NJ DEP has done
8 an incredible job, and we'll know
9 which legislation has had the best
10 impact. That's what I will read in
11 the report.

12 Thank you very much.

13 We will move on actually to our
14 next -- we're moving right on time.
15 It's Joann Held, who is an air toxics
16 analyst. She's self-employed as an
17 air toxics analyst for over 26 years
18 and has been involved in the Air
19 Quality Program of NJ DEP.

20 She serves as a member of the
21 New Jersey Site Remediation
22 Professionals, Licensing Board and the
23 NJ DEP Environmental Justice Advisory
24 Council. She holds the chair of
25 Hopewell Valley and a variety of

1 others, but one of the most things,
2 she's held a BS in meteorology from
3 St. Louis University and an MS in air
4 pollution control from Harvard School
5 of Public Health.

6 But more importantly, I always
7 like to put a bug in is that she
8 maintains her knowledge base in
9 providing to others: She teaches and
10 provides development of evaluation
11 tools and been involved in Nu skin,
12 InAqua, air toxics committees and
13 continues to teach short courses for a
14 variety of entities. And education is
15 a vital component of moving forward to
16 have the best information for our
17 citizens of New Jersey.

18 With no further ado, I'd like to
19 give the microphone to Joann Held.

20 MS. HELD: Thank you very much.
21 You mentioned that I could just -- I
22 would like to go and talk about air
23 toxics for the next couple of hours.
24 So I'll try not to talk too fast.

25 But I have two parts to my talk.

1 The first is to look back a little bit
2 at some of the beginnings of the Air
3 Toxics Program, that happened to be
4 actually coincidental when I started
5 with the department, and then look
6 ahead a little bit at maybe what the
7 next frontier is. And some it
8 overlaps some of the recommendations
9 that Frank was just describing as
10 well.

11 So I'd like to go back.

12 So next slide.

13 I'm going to start looking at
14 the past 40 years -- I know you're
15 just looking at 20, but I think you
16 need to go back 40 to really sort of
17 see what the impetus was for the Air
18 Toxics Program.

19 In the '70s, the federal
20 government managed to pull together
21 all the cancer data on to maps, and
22 New Jersey showed up as a big red
23 spot. We were cancer alley.

24 Citizens wanted us to do
25 something about it and the air program

1 was on it. They were in the middle of
2 proposing some rules to address
3 volatile organics because ozone was a
4 big problem in New Jersey.

5 So they said we'll just throw in
6 11 toxic volatile organic substances
7 that are carcinogens. We'll start
8 working on them right away. And that
9 was in 1979.

10 They were just going to throw it
11 in with the regular volatile organics,
12 but ended up a separate Subchapter 17
13 which addressed those toxic
14 substances. And that's been kind of
15 the base for some of the regulatory
16 efforts since that time.

17 And that rule required that if
18 you omitted one of those 11
19 substances, you should register with
20 the department and demonstrate that
21 you were using state-of-the-art
22 controls on your facility. It
23 affected a whole lot of dry cleaners.
24 That's one of the big ways that we had
25 in the source category.

1 And so that was good. That got
2 people thinking. When permit
3 evaluators were now looking at permits
4 and they saw something that was not
5 your traditional toxic substance, they
6 would come down to me and say, "Is
7 this safe?" And so I'd go, "Well,
8 let's find out."

9 And so one by one, we're
10 analyzing sources to figure out if it
11 was safe, what was state of the art
12 for this kind of pollutant.

13 That sort of triggered, after
14 asking that question many, many times
15 in about the mid-80s we developed the
16 Risk Screening Worksheet with about, I
17 think it's, 41 carcinogens, so that
18 you could very quickly estimate if
19 something was safe. It streamlined
20 the permitting process, it gave some
21 certainty for the people who are
22 submitting permits. It turned out to
23 be a really good tool. I think it
24 was. And I think people have adopted
25 it and are happy to have it.

1 It actually was sort of expanded
2 over the years, and I think it was
3 officially adopted in '88 according to
4 some old records that I had. In '94
5 we added some more carcinogens. In
6 2000 we started to add some
7 noncarcinogens. We started to look at
8 long-term and short-term impacts in
9 2003.

10 In 2007, we revised everything
11 using air mod and now again, recently,
12 they have done it over again -- I keep
13 saying "we." I'm sorry. The
14 department. I've never really left --
15 and start to look at other pollutants,
16 start to figure out a way to use it to
17 address diesel.

18 And I think that that tool has
19 turned out to be a real benefit for
20 the department and also provides, you
21 know, something that Dennis was
22 talking about, to make it easier for
23 those who are being regulated. They
24 need to have that certainty and be
25 able to look and see what they need to

1 do to comply.

2 So the list now according to my
3 count has 257 toxic substances with
4 health benchmarks for cancer and
5 noncancer long and short-term. That
6 was tremendous work.

7 In 2002 to 2005, we also did
8 something called a Camden Waterfront
9 South Risk Assessment Pilot Project.
10 And that was an attempt to look at
11 cumulative risk because people were
12 saying, rightly so, okay, what about
13 these places that, you know, this
14 source is safe, this source is safe,
15 this source is safe, but what if
16 you're exposed to a hundred of them,
17 what happens?

18 So it took us three years to
19 just look at one neighborhood, develop
20 an air toxic inventory, which we
21 didn't have, and do the modeling one
22 by one, and do the assessment, work
23 with the community and figure out
24 where the big risks were in just that
25 community, and have some real data.

1 That was a great effort, but
2 it's a sort of thing that you can't do
3 for every single community in the
4 State. It's just impossible.

5 But we learned a lot from it,
6 and I think some of the tools
7 developed in that process can be used
8 today and are being used.

9 So when we first started this,
10 fortunately we got Brad to come in,
11 because he didn't know how hard it
12 would be to do an air toxics
13 inventory. If we'd ask anybody in the
14 department to do it, they'd say no,
15 you can't do it.

16 So then you got in and didn't
17 know any better. And so now we have
18 one. It takes time though. Most of
19 these things take a lot of time, so
20 it's good to take a 20-year
21 perspective I think on some of these.

22 The recent rule changes that
23 Frank mentioned, you know, adding some
24 more pollutants to the list of
25 hazardous substances, requiring more

1 emissions reporting for some of those
2 toxics that we didn't require before
3 and also identifying new source
4 categories to be regulated, like,
5 fumigation operations, those are all
6 important ways that we keep on
7 progressing with the Air Toxics
8 Program.

9 And now on Monday, the
10 department announced their EJ Rules
11 that will address overburdened
12 communities and go beyond the way that
13 the department currently does
14 permitting and ask the extra
15 question --

16 Oh, I'm still on the second
17 slide. But I don't have that many
18 because I added stuff after I sent
19 these in to George.

20 But it gives you a chance to ask
21 the bigger question: What will this
22 impact be in an overburdened
23 community? We've got air toxics
24 monitoring, we've got the inventory,
25 we have other examples of how also the

1 department has worked -- air quality
2 has worked in other parts of the
3 department to address issues.

4 For example, the mercury
5 projects. In the 90's, mercury was a
6 big issue, and we worked -- the
7 department had brought people from all
8 parts of their programs to work
9 together to identify mercury sources
10 and figure out what were reasonable
11 things to do to lower mercury in the
12 environment in New Jersey.

13 That was working together, and I
14 think that's another important piece
15 of the puzzle when you're trying to
16 address air toxics. It's not just the
17 air program that's going to manage it.
18 It's going to be people working
19 together.

20 And so enough stories. I mean,
21 the next slide, please.

22 So I think where the department
23 is now, or one place it is now, is
24 that new and modified sources have
25 been fairly well addressed. I think

1 that the program, the pieces that you
2 have in place are really helping to
3 say is this new source a problem or
4 not? Is this change a problem or not?

5 The next frontier has been kind
6 of alluded to as identifying the
7 sources that slipped through the cracks
8 in the permitting program and areas
9 that also are exposed to multiple
10 sources of air toxics.

11 Next slide.

12 As I said, it's impractical to
13 do cumulative impact for every
14 neighborhood such as the one done for
15 Waterfront South. There are new data,
16 but there are new datasets and new
17 tools which can be used to identify
18 high risk areas, and I think that's
19 perhaps the next frontier for the
20 department is using those tools to try
21 and find out where are the high risks,
22 maybe is this unique to this area or
23 is it something that's happening in
24 lots of places around the State?

25 So, for example, with the

1 fumigation operations, maybe that was
2 important in Camden. It was happening
3 in other areas, especially near ports.
4 So rules that identify that and made
5 it consistent and also made sure that
6 those activities were being undertaken
7 safely were a good way to reduce
8 exposures to people in those high risk
9 areas.

10 So I'm just going to cover a few
11 areas that I think are kind of new and
12 evolving and maybe have some potential
13 for identifying those high risk areas.

14 Next slide, please.

15 First there's the AirToxScreen
16 that Frank was mentioning, and using
17 that -- well, when the 1999 data came
18 out, it was useless because there was
19 so many problems with it. When the
20 next one came out, it was much better
21 and the department was able to look at
22 it and say, okay, these are the high
23 risks. What is causing that? What
24 are the strategies that were used to
25 address those high risks?

1 And I think having it come out
2 every year is great because there's so
3 much lag time before, we almost said,
4 "Well, that's what was happening five
5 or six years ago, is it still
6 happening now?" It's really hard to
7 be taken seriously.

8 But now with it coming out
9 annually, that's going to help to look
10 at that data and say what's happening
11 and especially if it's more -- you
12 might find that there is one big
13 important source that usually calls
14 for a visit by the compliant
15 assistance team to help sources figure
16 out what they are doing and what they
17 could do better.

18 And so I think that that's one
19 of the -- it's data, it's tools. I'm
20 not sure where things cross over from
21 data into tools, so I'm calling them
22 all data and tools. But that's one of
23 the things that the department now has
24 available to it.

25 There's mapping tools that were

1 being developed for the EJ Rule, which
2 I just heard were probably related to
3 the annual tox screen. So it's
4 already happening that you've got that
5 tool there, you can look at the air
6 toxics and use it.

7 You know, don't just wait for
8 the next permit to come in that has to
9 use it to do their cumulative
10 assessment of stressors. But look at
11 it in advance and say, "Well, here.
12 These are the places where we have
13 problems. Let's start looking at them
14 as well."

15 Next slide.

16 One thing that I mentioned I
17 think in the last hearing on this
18 topic was perimeter air monitoring.
19 And I think you all might know. But I
20 think perimeter air monitoring has
21 come a long way.

22 I've been working with a site
23 remediation program on their guidance
24 document for perimeter air monitoring,
25 and although it's starts in -- it's

1 coming out soon. They promised me.

2 It will be coming out soon.

3 It starts with the disclaimer.

4 It says this is all your cyber
5 mediation. But working with the folks
6 who were really experts on this field,
7 I think that that has come a long way,
8 and that it could be used in some
9 instances to look at community
10 monitoring on a short-term basis.

11 And it's not the handheld purple
12 air monitors. It's real monitoring
13 and it can be used to say, yes,
14 there's a problem here or, no, there
15 doesn't seem to be a problem here.

16 I think, just as an aside, an
17 important problem, I think, in
18 environmental justice in overburdened
19 communities is that they are scared.
20 They are subject to so much stuff and
21 there are odors and there's noises and
22 there's stuff flying down their
23 streets. It would be important for
24 them to know objectively what's in
25 their air.

1 And in some cases, perimeter air
2 monitoring, maybe around a facility,
3 maybe around the neighborhood might be
4 a way to give them some more
5 certainty. And I bet there's EPA
6 funding for that sort of thing. EPA's
7 funding a lot of stuff, so it's
8 something to consider.

9 Next, I just wanted to mention,
10 also speaking of community air
11 monitoring though, there's a lot of it
12 going on. And I think that that could
13 be leveraged by putting it all into a
14 single database.

15 The actual number itself doesn't
16 tell you if there's a violation or a
17 health issue, but it could give you a
18 relative understanding of what the
19 exposures are in overburdened
20 communities where they're doing this a
21 lot. But I think there's going to be
22 a lot of people in other communities,
23 the rest of the State that are also
24 monitoring. Let's get them to all
25 share their data so that you can look

1 at relative exposures.

2 And then the new emission
3 monitoring data I think will soon be
4 available to do some residual risk
5 analysis to again identify pollution
6 sources that might be important in
7 contributing especially to these high
8 risk areas.

9 So I mentioned some of the
10 strategies --

11 Next slide, please.

12 -- that could be used. I think
13 sometimes enforcement and compliant
14 assistance is what you need if it's a
15 source that you discovered. Like in
16 Camden, there was a metal recycling
17 that was doing sandblasting outside.
18 And they were visited and then they
19 moved it indoors. Sometimes that's
20 helpful.

21 Compliance alerts that are being
22 sent out are also very, very helpful.

23 Energy efficiency projects can
24 be helpful especially if we can get
25 away from the combustion of fossil

1 fuels in some places.

2 Waste handling and best
3 management practices can also be an
4 important way to reduce exposes.

5 And then, of course, is all the
6 local sourcing mission reaction
7 programs that's happening.

8 So this is a lot to do, but I
9 just wanted to throw in one last
10 thing. Air toxics steering committee.
11 The department used to have an air
12 toxics steering committee that had
13 representatives from lots of different
14 parts of the department who were able
15 to combine resources, share knowledge,
16 work together to address topics like
17 the mercury and lots of, like,
18 Waterfront South.

19 Some of these things could be
20 addressed well with something like an
21 air toxics steering committee and I
22 think that that's something that maybe
23 should be recommended again to bring
24 that back and to help lead the charge
25 on some of these outstanding issues.

1 So thank you for this
2 opportunity. I welcome any questions.
3 I look forward to reading your report.

4 MR. BIELORY: Thank you very
5 much. Actually, we are right on time
6 so we won't take questions at this
7 point in time from the Clean Air
8 Council. But if there are questions
9 that you want to raise, we can forward
10 it to you for response to be included
11 with the report.

12 For our next speaker, to
13 maintain our timeline, Ms. Kim Gaddy,
14 who actually I've known for a number
15 years. She's a founder of the South
16 Ward Environmental Alliance, which is
17 a grassroots environmental justice, EJ
18 process organization literally for the
19 environment of Newark, and that's
20 where I was involved with Kim at that
21 time. It was very interesting to
22 learn more about the EJ and how it
23 evolved, and it's more important that
24 Kim Gaddy has been involved.

25 She is now the Director of our

1 local or State of New Jersey National
2 New Jersey Environmental Justice
3 Director, so she has expanded for the
4 Clean Water Action and develops and
5 implements clean water action, water
6 funds, grassroots environmental again,
7 and, more recently, throughout her
8 career she's maintained in the
9 political arena and has been involved
10 with Newark at the board of education,
11 as well as the mayor's office.

12 But more important, for example,
13 Governor Bill Murphy actually
14 appointed her as chair of the NJ DEP's
15 Environmental Justice Advisory Council
16 and actually will be taking during the
17 noon will be coming up, more
18 important, the EJ process to learn
19 from her more about that. She has
20 received a number of honors.

21 And I don't want to take from
22 her talk, so with no further ado, Kim,
23 I'd like to give you the platform.

24 MS. GADDY: Thank you. I want
25 to acknowledge that he was one of the

1 first health officials that helped me
2 make a presentation to the Newark
3 Municipal Council, and to highlight
4 the high asthma rate in Newark and its
5 close proximity to traffic and
6 pollution sources. So I want to thank
7 you all those years ago that has led
8 to where I am today. So I really
9 appreciate that.

10 And good morning to all the
11 other members on the Clean Air
12 Council. As was stated, I am Kim
13 Gaddy. I am the chair of the New
14 Jersey DEP Environmental Justice
15 Advisory Council, founder of the
16 Newark South Ward Environmental
17 Alliance and currently the National
18 and New Jersey Environmental Justice
19 Director for Clean Water Action.

20 And this is such an important
21 topic for me. I am a parent of three
22 asthmatic children, and it is so
23 important that we have the ability to
24 just breath clean air in our
25 environmental justice communities

1 throughout New Jersey.

2 I can't breath doesn't just
3 apply to racial justice; it applies to
4 environmental justice. That's reality
5 if you want black lives to matter.

6 I am also a fourth generation
7 Newarker, so I know all too well about
8 the health impacts of air pollution
9 and the City of Newark and the link to
10 the high asthma rates of children and
11 elderly residents. Unfortunately, one
12 in four children in Newark have
13 asthma, in New Jersey 167,000 children
14 and over 600,000 adults have asthma.

15 The disproportionately high cost
16 of emergency visits is paid for by
17 families and taxpayers funds alike.
18 If the pollution is reduced in these
19 neighborhoods, visits to emergency
20 rooms and other chronic costs of
21 illness, like lost work, school days
22 and long-term care would decrease as
23 well as funding from taxpayers.

24 While the negative impact of the
25 pollution is known to the local

1 residents, workers and visitors who
2 spend time at these communities,
3 scientifically backed data at the
4 hyper-local level is needed to
5 mobilize and assist us in our
6 communities.

7 And I do want to just stop here
8 and pause because Joann Held was also
9 a member of the EJ Committee who just
10 spoke. She's been working with us for
11 so many years and doing fantastic work
12 down in Camden.

13 And it is the air monitoring
14 project that we are allowed to bring
15 into our communities that is allowing
16 us to now really see what is happening
17 in our communities. So it is very,
18 very important then that we support
19 this data from this hyper-local level
20 of community-based monitoring, that is
21 crucial, and I have to list that up
22 there.

23 The city of Newark is an
24 environmentally overburdened community
25 from cumulative impact from pollution

1 sources. Residents are highly, I want
2 to say highly concerned about their
3 exposure to elevated levels of toxic
4 air pollution and justifiably so.

5 According to one report that was
6 available, not only from some of the
7 Harvard studies but utilizing EPA's EJ
8 Screen, we can see how these impacts
9 have been impacting our community.
10 The long history and close proximity
11 to industrial pollution and the lack
12 of information about residents'
13 exposure is an environmental health
14 injustice. I just want to make that
15 clear. It is an environmental health
16 injustice.

17 Residents' health and quality of
18 life are degraded by a multiple -- by
19 a multitude of stationary and mobile
20 emission sources, which include, as
21 you've heard some of these earlier,
22 fugitive dust, carcinogenic volatile
23 organics, black carbon, particulate
24 matter, the definite smells that we
25 have in our communities. So, the

1 odors and the visible emissions from
2 traffic, that's something that we just
3 can't escape.

4 The city of Newark is the
5 backyard to the second largest port,
6 right, so thousands of trucks come to
7 our community and they stay on our
8 roads.

9 We also have solid waste
10 handling facilities, seaport, airports
11 and industrial corridors. The
12 prolonged exposures is costing local
13 residents and workers millions of
14 dollars per year and the lives of
15 black, brown and lower income
16 individuals. We want you all to know
17 that their lives matter.

18 Direct and indirect air
19 pollution from activities associated
20 with the Port of New York and New
21 Jersey is massive and for several
22 pollutants levels appear to be
23 increasing. You know, I can go on and
24 on about that story, which you will
25 also hear that from other people as

1 well.

2 Moreover, Essex County where
3 Newark is located is an attainment for
4 ozone -- it's a non-attainment rather
5 for ozone, and the city residents are
6 subjected to cumulative impacts of
7 other harmful exposures in addition to
8 substantial economic and social
9 problems.

10 So to make matters worse, and I
11 know most of you have heard about the
12 recent Harvard study that revealed
13 that black and brown people are sicker
14 and dying more often from COVID-19.
15 And, you know, we think that we're
16 coming out of these three years of
17 COVID, but there are so many
18 individuals who are suffering from
19 long-term COVID-19 impacts as well,
20 and they are living with poor air
21 quality, and Essex County has the
22 highest death count in the State.

23 While the COVID-19 pandemic
24 temporarily reduced air pollution from
25 individual passenger cars along New

1 Jersey's highways, the Port of New
2 York and New Jersey continues to
3 operate at full capacity. And as I
4 mentioned, there's data out there that
5 says there's between 18 to 25,000
6 trucks moving through the
7 Port-adjacent environmental justice
8 neighborhoods on a daily basis.

9 And so based on community input
10 and the enhanced hyper-local air
11 monitoring, health model's assessment
12 are tied to air quality empirics and
13 for other strategies and tactics
14 should be utilized. Ultimately the
15 goal is to reduce health risk and
16 improve the welfare of New Jersey
17 port-adjacent communities.

18 You know, I'm talking a lot
19 about Newark. I live in the South
20 Ward. But we also have the East Ward
21 of Newark, Elizabeth, Jersey City,
22 Bayonne, Camden, just to name a few.
23 But there are so many in, as we say,
24 those communities that are in and not
25 necessarily on the outskirts of the

1 Port that also suffer from the
2 pollution sources because there's no
3 barriers in the sky. The Port of New
4 York and New Jersey is growing at an
5 alarming rate and airport communities
6 most often are inhabited by people of
7 color and of low income, and this is
8 something that we have to change.

9 One of the things that I want to
10 kind of list up because I also know
11 that Dr. Rob Laumbach will be
12 speaking. He also serves on the NJ
13 DEP EJac. And so at the Environmental
14 Justice Advisory Council we have an
15 air committee and I guess several
16 months ago and several years ago, we
17 periodically received complaints of
18 fires at the Newark and Camden Port.
19 These fires were connected to metal
20 recycling facilities at the Newark
21 Port and the Port in Camden and,
22 unfortunately, due to the lack of
23 communication and sharing of
24 information between the emergency
25 response team and NJ DEP, communities

1 were left with poor air quality and no
2 answers as to their health concerns.

3 And this was very crucial to us
4 because when you see a fire, that fire
5 that's burning for days and days and
6 days and you're trying to get
7 information from your local
8 municipality, you're trying to get
9 information from DEP, you're trying to
10 understand who is out here to help
11 you. And so we heard from DEP, that
12 monitoring systems aren't meant for
13 emergencies, they aren't meant to
14 analyze long-term trends and each
15 sample is very expensive.

16 Unfortunately, this doesn't work
17 for families fighting to breath clean
18 air in those neighborhoods. We need
19 the ability to get answers and
20 solutions in real time. As my EJAC
21 members also mentioned at our
22 committee meetings is that this is
23 where the problem lies. Like, how can
24 we effectively assist our community if
25 we can't even get answers to what is

1 happening.

2 So with the Newark and Camden
3 fire, as I mentioned was burning for
4 days and there was immediate releases
5 of toxics, so this is a problem that
6 if DEP does not have oversight where
7 there are toxic releases, what can we
8 do? And so I want to make sure I just
9 empathize and list that up because
10 that's just one example of so many
11 that is happening in the EJ
12 communities.

13 And so New Jersey has many
14 options and now want to kind of go to
15 some solutions to regulate emissions
16 from mobile sources that are
17 permissible under the Clean Air Act.
18 And some of these include, and I'm
19 quite sure most of you have heard some
20 of them, to adapt indirect source
21 review rules to limit cumulative
22 emissions from multiple not just
23 individual smaller sources of
24 emissions and facilities of concern,
25 for example, place of trucks at

1 warehouses and our Port. We need to
2 adapt California's new engine
3 emissions standard as soon as they are
4 finalized. We need to accelerate
5 adoption of the proposed heavy duty
6 new engine and vehicle and diesel
7 vehicle inspection rule.

8 We need to strengthen -- you
9 know, I want to emphasize that
10 strengthen and accelerate
11 implementation of the recently adopted
12 Cargo Handling and Advanced Clean
13 Truck Rules specifically and CPR Rules
14 1 and 2 more generally. We need to
15 adopt Advanced Clean Car 2 this year
16 in time for it to apply for model year
17 2027. We can't continue to wait
18 because, again, lives are at risk, and
19 people are just trying to breath.

20 We must implement the
21 just-adopted EJ Rule aggressively,
22 apply it to propose PGSC and
23 Woodbridge Jersey Gas Plant current
24 permit renewals for Newark and Camden
25 incinerators and the Newark energy,

1 aka, the dirty gas center.

2 We have to divert the 10 Billion
3 slated for the flawed Turnpike
4 expansion in Hudson County to mass
5 transit, require government entities
6 to purchase zero emission vehicles,
7 adopt incentives for the purchase of
8 zero emission vehicles and then
9 regulate nonemissions related aspects
10 of vehicles like horsepower. This is
11 crucial.

12 And then when you think about
13 these communities that's most
14 important, we have to make sure that
15 we are engaging community-based
16 initiatives as I mentioned and
17 hyper-local air monitoring and
18 improvement projects inside and
19 outside of the court, and establishing
20 zero emission zones in the impacted
21 communities must be prioritized.

22 The South Ward Environmental
23 Alliance has been working with Clean
24 Water Action. We have ten purple air
25 monitors. The Newark Green Team has

1 about 15 purple air monitors
2 throughout the city.

3 We have partnered with Louis Lam
4 (Phonetic), who is doing a great job
5 from DEP, and we want to thank him for
6 helping us with this project.

7 But we also need to monitor on a
8 24-hour basis, right, because we are
9 getting the data, but we want to make
10 sure that we're getting all the data.
11 And so that is just important to us,
12 that we allow the community to have a
13 seat at the table and to be present in
14 the narrative of what is best for
15 their respective communities.

16 MR. VALERI: Kim, I apologize.
17 Just a three-minute warning, please.

18 MS. GADDY: Sure.

19 Just right on time. In closing,
20 I want to leave you with this quote
21 from Governor Murphy when we adopted
22 the environmental justice bill and
23 now, most recently, two days ago the
24 environmental justice lower rules was
25 adopted, and our Governor said,

1 "Today we are sending a clear
2 message that we will no longer allow
3 black and brown communities in our
4 state to be dumping grounds. Where
5 access to clean air and clean water
6 are overlooked, the action is a
7 historic step to ensure that the
8 community input and collaboration will
9 factor into decisions that have a
10 cumulative impact for years to come.
11 I am incredibly proud that New Jersey
12 is now home to the strongest
13 environmental justice law in the
14 nation."

15 And so one thing that we must
16 do, let's remember these words and
17 allow thousands of residents in EJ
18 communities to just breath clean air.

19 This presentation shows you what
20 communities of color have always
21 known: The unfair distribution of
22 pollution sources means we don't all
23 breath the same air. Having laws and
24 rules on the books aren't enough. We
25 must do better implementing and

1 strengthening than now.

2 So I thank you on behalf of the
3 Clean Water Action and all of the
4 environmental justice communities in
5 the State of New Jersey.
6 Newark-strong. Let's do this.

7 Thank you, Dr. Bielory and the
8 Clean Air Council.

9 MR. BIELORY: Thank you very
10 much and thank you for your overview.
11 And actually, congratulations on
12 moving things forward and having the
13 State of New Jersey lead the way, so
14 to speak, and, as you say, the law
15 that's most strong is EJ law on the
16 books.

17 If there are questions -- we are
18 literally at the last seconds of this
19 time frame. If there are any
20 questions for EJ we will ask the Clean
21 Air Council to forward an e-mail or a
22 chat to Kim, and she can answer online
23 so we can maintain the timeliness of
24 our meeting.

25 Kim, again, thank you very much

1 for your time and your efforts and
2 continued efforts in this area
3 because -- call upon us when you need
4 us. Hopefully, we'll be there to
5 respond. Thank you, again.

6 (Five-minute break.)

7 MR. BIELORY: Our next speaker
8 is Mr. Ray Cantor who is the Deputy
9 Chief Government Affairs Officer for
10 the New Jersey Business and Industry
11 Association. He's an attorney with an
12 extensive career. He's been involved
13 actually as a former Assistant
14 Commissioner and later Chief
15 Advisement Commissioner of DEP as well
16 here in New Jersey, and has
17 commentated involvement in legal
18 affairs -- actually, he went to
19 education with the New York Law
20 School, and what's interesting, at
21 least from my point of view, is that
22 he actually was also part of the
23 government affairs office for the
24 Medical Society of New Jersey, where I
25 was actually one of the early

1 individuals who started the Medical
2 Student Association for the Medical
3 Society of New Jersey many years ago.

4 So with no further ado, again,
5 we'd like to introduce Ray Cantor to
6 proceed. It's now 11:10, so we'll
7 give him an extra -- or he has a
8 little time. Instead of being over at
9 11:20 at this time we're going to go
10 from 11:10 to 11:30 if you need so.

11 With no further ado, Ray are you
12 on?

13 MR. CANTOR: I am on. Thank
14 you. Can you hear me?

15 MR. BIELORY: Got it. Go for
16 it.

17 MR. CANTOR: Good morning. My
18 name is Raymond Cantor and as I said,
19 I am the Deputy Chief Government
20 Affairs Officer for the New Jersey
21 Business and Industry Association.
22 NJBIA was founded in 1910 as a group
23 of manufacturers sharing ideas about
24 workplace safety.

25 Over the past century, NJBIA has

1 grown to be the largest statewide
2 business association in New Jersey,
3 representing businesses from every
4 sector, from large industries,
5 technology companies, clean energy
6 companies, utilities, and retail
7 giants such as Amazon, and also the
8 thousands of smaller mainstream
9 businesses that we utilize every day.

10 Our mission is to advance the
11 competitive excellence and financial
12 success of our members. Because
13 NJBIA's membership is diverse, my
14 testimony is not focused on any
15 particular industry or activity, but
16 rather will be general in nature
17 reflecting the viewpoints of the
18 business community as a whole.

19 It is also not my purpose today
20 to provide you with statistics you
21 already know, or to provide you with
22 technical or scientific advice which
23 is beyond my expertise.

24 Rather, I want to give you the
25 perspective of the business community

1 as a partner and fellow citizen of
2 this State and as entities that are
3 subject to regulation.

4 We are not seeking to avoid
5 regulation. We understand the
6 necessity of government regulation
7 when it comes to air emissions, and we
8 benefit from a level playing field.

9 We seek balanced, reasonable
10 regulation, and a recognition that
11 society must accept certain tradeoffs
12 when it comes to emissions. That is
13 why emissions can never, at least not
14 with any foreseeable technology or
15 practices, as a general rule be set at
16 zero and why we set policies by
17 developing reasonable health and
18 environmental standards for emissions.
19 It is why the Department of
20 Environmental Protection's air program
21 has been so successful since its
22 modern inception with the passage of
23 the New Jersey "Air Pollution Control
24 Act" in 1970. It has managed to both
25 protect the public health and allow

1 businesses to operate within confined
2 parameters for emissions.

3 However, balance is always
4 necessary and we must be aware of the
5 societal benefits of businesses in
6 general and manufacturing in
7 particular. New Jersey has already
8 lost over 278,000 of its previous
9 529,000 manufacturing jobs between
10 1990 and 2019. Previously,
11 manufacturing represented nearly 15
12 percent of the state's nonfarm
13 employment. Now that number is 6
14 percent. Still, we remain a strong
15 manufacturing state with over 250,000
16 jobs, jobs we want to keep.

17 While there are many factors
18 responsible for those job losses, we
19 cannot deny that regulatory burdens
20 played at least some part in these job
21 losses, as well as the failure to
22 bring manufacturing back to the State
23 in any significant way.

24 I will note, anecdotally, that a
25 colleague of mine, and actually a

1 colleague of a number of yours,
2 recently returning from a trip to
3 North Carolina, told me that their
4 state's air program could not keep up
5 with the permit requests from new
6 manufacturing moving into that state.
7 New Jersey should have that problem.

8 I want to focus my presentation
9 today on three points: One, we have
10 made substantial progress in reducing
11 toxic air emissions in our State over
12 the last 25 years; Two, part of the
13 success of those efforts resulted from
14 the relationship the Department's air
15 program has developed with the
16 regulated community so that new
17 regulations that mandate the reduction
18 of emissions has been done rationally,
19 methodically, and in a manner that
20 often takes into account industry
21 concerns; finally, I want to push for
22 the continuation of predictable,
23 risk-based standards. The business
24 community has significant concerns
25 that there is a trend to ignore the

1 lessons we have learned from our past
2 successes, and that we are beginning
3 to be driven more by politics than
4 science-based and balanced policy
5 considerations.

6 The department has been
7 monitoring the level of hazardous air
8 pollutants in the ambient air since
9 1989. While some hazardous air
10 pollutants (HAPs) remain above
11 health-based standards, we have seen
12 measurable reductions, and many are
13 now below health-based standards.

14 We have seen these reductions
15 through a variety of measures,
16 including the imposition of maximum
17 control technologies on point sources,
18 and regulations on consumer products,
19 architectural coatings, fuel
20 containers, and other non-point
21 sources of pollution.

22 We have also seen reductions as
23 the result of emission controls and
24 reformulation of fuels for both
25 on-road and off-road vehicles. The

1 Department's diesel retrofit program
2 was very successful in taking heavily
3 polluting truck and bus engines off
4 the road, and it did so in a manner
5 that made it economically viable to
6 make those retrofits.

7 There has been a considerable
8 number of recent statements that the
9 Department's environmental programs,
10 in particular its air program, does
11 not do enough to protect individual
12 communities for toxic and other air
13 pollutants. While no program is
14 perfect in its inception or execution,
15 such broad statements ignore the fact
16 that the Department does have
17 representative air monitoring stations
18 that give a general indication of the
19 condition of air quality, even in
20 urbanized areas.

21 The Department's regulatory
22 efforts have produced statewide
23 reductions in both criteria and
24 hazardous air pollutants bringing
25 benefits to everyone. Significantly,

1 and I believe largely overlooked, is
2 the testing and standards for
3 individual air permits, especially for
4 Title V and other large industrial
5 emitters. These facilities not only
6 have to meet increasingly stringent
7 emission standards and control
8 technologies, but they are required to
9 perform area-specific risk
10 assessments.

11 These risk assessments do
12 consider local conditions and
13 cumulative pollution. Modifications,
14 including stack height and operations,
15 are required if standards would not be
16 met under the original proposal.

17 I would be remiss if I did not
18 also point out that despite its
19 demonization, point source industrial
20 facilities account for only four
21 percent of toxic air emissions in New
22 Jersey. Contrary to popular rhetoric,
23 air pollution is decreasing,
24 neighborhoods are more protected, and
25 health outcomes are improving, all as

1 we work to keep good paying jobs in
2 our state.

3 I don't think we talk enough
4 about the progress that has been made
5 in cleaning up our air over the last
6 25 years and longer and of the
7 Department's work in achieving this.
8 We live in a time when bad news gets
9 the headlines and is used to promote
10 policy objectives. Rarely, if ever,
11 do we hear about how toxics and other
12 criteria pollutants have been reduced
13 and many are within safe ranges or
14 meet standards.

15 While no one should have to
16 breath unhealthy air, a
17 misrepresentation has been cultivated
18 by advocates, the media, and some
19 policymakers that things are getting
20 worse, not better, or that these
21 issues are being ignored.

22 It is to avoid those
23 misrepresentations that we collect
24 data and issue trend reports. Knowing
25 the facts allows us to make progress

1 with objective data so that we can
2 make the best, and, hopefully,
3 rational and balanced decisions.

4 I also want to recognize the
5 invaluable cooperation that has
6 existed between the Department and the
7 regulated community, especially
8 industrial facilities and
9 manufacturers. While no one would
10 suggest that the Department should not
11 serve as the regulator with the
12 primary purpose of protecting public
13 health and safety, and while many in
14 the regulated community would argue
15 that the Department has engaged in
16 "Overregulation," I believe that the
17 dialogue that the Department has
18 purposefully engaged in with the
19 regulated community has allowed for
20 those reductions to be made in a
21 rational and balanced manner, and has
22 led the air program to become one of
23 the most successful in the nation.

24 Cooperation and dialogue, much
25 like compromise, are not dirty words.

1 This Council is one example of that
2 cooperative relationship by grouping
3 together representatives from many
4 backgrounds, including the business
5 community, to come together to solve
6 air emission problems.

7 The Industrial Stakeholder's
8 Group has been highly successful in
9 fostering good public policy and
10 achieving results. The stakeholder
11 meetings the air program holds when it
12 is contemplating regulatory or policy
13 changes, including when the Department
14 is considering general permits,
15 guidance documents and new toxic risk
16 assessment procedures, help to
17 highlight potential issues and very
18 often results in better policy.

19 There is a lack of appreciation
20 among the general public of how much
21 the business community works with the
22 Department to achieve air pollution
23 reductions. Often, the question is
24 not what, but how and in what
25 timeframe.

1 These questions are vital to
2 ensure New Jersey not only meets its
3 environmental and public health
4 obligations, but also to ensure that
5 our citizens have good paying jobs and
6 healthy and happy lives.

7 Environmental regulation is
8 complicated. The Department cannot do
9 it on its own, at least not well.
10 Cooperation and information sharing
11 are necessary for a successful
12 regulatory program. We ask that the
13 Department be a bit more vocal about
14 the accomplishments that have already
15 been made.

16 Finally, we are concerned that a
17 failure to recognize the progress that
18 has been made is leading us away from
19 the sound policies that have resulted
20 in these achievements. Our air
21 program has focused on two key
22 strategies, requiring technology and
23 setting health-based standards. While
24 different in their approach, both
25 strategies are science-based and are

1 founded on predictable, risk-based
2 objectives.

3 We fear that we may be moving
4 away from these sound and effective
5 strategies and replacing them with
6 subjective criteria based on
7 political, small "P," standards.

8 The recently enacted
9 Environmental Justice Law whose
10 regulations were just adopted on
11 Monday, is an example of that trend.
12 The EJ Law sets standards for the
13 review of permits, including air
14 permits, that are specifically not
15 based on health risk standards.
16 Rather, the law uses surrogate
17 "stressors," which are more
18 perceptually a problem than they are
19 in reality.

20 Further exacerbating the move
21 away from objective standards is the
22 deference to community objections
23 which may result in additional
24 undefined conditions being placed on a
25 facility seeking a permit or a permit

1 renewal.

2 This is not the forum to
3 relitigate the efficacy of the
4 Environmental Justice Law or its
5 implementing regulations, but it is
6 important to recognize the recent
7 tendency to move away from risk-based
8 objective criteria and now base
9 decisions on those with the loudest
10 and influential voices. It only makes
11 it worse that new Title V and other
12 major facilities cannot be located in
13 most of the State despite the fact
14 that they meet all environmental
15 standards, would economically benefit
16 communities, and there is no health
17 standard being violated.

18 While in no sense am I arguing
19 that community concerns should not be
20 listened to and addressed where
21 warranted, a regulatory program cannot
22 effectively exist if it is purely
23 subjective in its application. I know
24 you have heard this mantra a million
25 times from the regulated community,

1 but most businesses want a predictable
2 and efficient regulatory process.
3 Tell us upfront what we need to do and
4 help us create a regulatory process
5 where we can get timely approvals.
6 While there is nothing the Department
7 can do about the laws that are on the
8 books, the Department does have the
9 ability to work within those laws to
10 retain predictable and health-based
11 regulatory processes.

12 In conclusion, I want to thank
13 this Council for inviting me here
14 today to give the perspective of the
15 business community. We are no longer
16 living in the era before the Clean Air
17 Act when there was little, if any,
18 controls or considerations about toxic
19 air pollutants. The business
20 community recognizes the need to limit
21 air pollutants and to have healthy air
22 to breathe. We have been your partner
23 in this effort for decades. We want
24 to be good neighbors. We live here
25 too, and we share the same values. We

1 have come a long way in reducing
2 pollution from all sources, including
3 toxics, since the inception of the
4 Clean Air Act and in the last 25
5 years. Let's recognize those
6 improvements, acknowledge that both
7 government regulation and business'
8 cooperation are necessary to achieving
9 even greater reductions, and let's
10 ensure that tomorrow's toxics
11 regulatory programs learn from the
12 practices that got us to this point.
13 Thank you very much.

14 MR. BIELORY: Thank you very
15 much, Mr. Cantor. That was actually a
16 very interesting point-counterpoint as
17 we talked about EJ versus business and
18 subjective versus objective. I think
19 that you've raised those points as
20 something that needs to be discussed.

21 I'm going to ask just a general
22 question. Does somebody from NJBIA
23 sit on the EJ Advisory Council?

24 MR. CANTOR: We currently have a
25 person who sits there. Unfortunately,

1 that person has left BIA and will be
2 reassigned I assume in the near future
3 and needs to be replaced.

4 MR. BIELORY: Because,
5 obviously, like you said, discussion
6 in a proactive way between the
7 community, which has more subjective
8 concerns and the objective
9 measurements, which we'll hear from
10 Panos and others, where we have these
11 issues. We need to balance those
12 items to take care of the fears
13 because mental health is still health.
14 There are objective components to it,
15 and we still need to look at that. So
16 I appreciate your comments.

17 Are there any comments from the
18 other members of the Clean Air
19 Council? And actually thank you,
20 Doctor, you actually put us back on
21 schedule.

22 Any questions from the Clean Air
23 Council? If not, then I will
24 introduce our next speaker.

25 Thank you very much, Mr. Cantor.

1 Our next speaker is Panos
2 Georgopoulos, who I've known for quite
3 a number of years. We've been
4 collaborators and actually fellow
5 investigators on neurobiology,
6 specifically on pollen, on the effects
7 of air quality with pollen, modelling
8 it for New Jersey as well as the
9 continental United States.

10 Dr. Georgopoulos is actually a
11 professor, not only in the medical
12 school at Robert Wood Johnson but in
13 the engineering school, so he really
14 integrates the biomedical components
15 between the two, which is very
16 important in putting together the
17 health, which is the Department of
18 Environmental Protection. It is an
19 outgrowth from the Department of
20 Health and putting the health
21 component with the engineering
22 component, which he has done with VO
23 spacial analysis of the air toxics.

24 And just to reflect that he has
25 had his chemical engineering degree,

1 PhD from Cal Tech.

2 So again, no further ado, I give
3 you Dr. Georgopoulos.

4 And Panos, it's all yours.

5 MR. GEORGOPOULOS: Thank you
6 very much, Len, for the great
7 introduction, and I would like to
8 thank you again for this invitation.
9 I would like also to apologize for my
10 voice because my Greek accent is
11 combined with my allergies.

12 So, again, I assume I can share
13 my slide for the screen? I hope that
14 you now can see the first slide.

15 MR. BIELORY: We can. Go for
16 it.

17 MR. GEORGOPOULOS: Okay. Great.
18 So I'm going to talk about the
19 Geospatial Analysis communication
20 between air toxics in relation to
21 Environmental Justice and COVID-19
22 outcomes.

23 There are more slides that I'd
24 love to cover, but I wanted to cover
25 everything here for reference because

1 it's another technical topic and maybe
2 people would like to look at
3 information later.

4 The Rationale for studying this
5 is because there are multiple
6 significant damages that chronic low-
7 level exposures to individual or
8 co-occurring air toxics may contribute
9 to increased vulnerability to
10 respiratory infection and in
11 particular to COVID-19 in a cumulative
12 manner, and this cumulative exposures
13 are especially relevant for
14 overburdened communities and sensitive
15 populations.

16 It is obvious by looking at the
17 general patterns of the COVID-19
18 infection, which hit in 2020 with the
19 patterns of low-income poverty of the
20 distribution of minority communities,
21 as well as the distribution of toxic
22 air pollution, and I'm showing these
23 airborne concentrations.

24 On the right, there's a certain
25 overlap and it's overlap, of course,

1 one can see. If not for COVID, for
2 the other factors in EG map that the
3 DEP has developed. But is this
4 overlap -- when it comes to COVID
5 outcomes and infections, but more
6 importantly mortality from COVID,
7 something that is statistically
8 significant and robust or it's just a
9 coincidence? So we try to look at
10 that.

11 In part, this had been
12 (indecipherable) of status over the
13 past three years. Looking at the
14 effects of COVID, of different factors
15 of COVID mortality including the build
16 environment indicator and the air
17 pollution had been one of those
18 factors.

19 In fact, one of the first time
20 this came out in 2020 was from the
21 Harvard School of Public Health where
22 they did an ecological analysis at
23 county level and found that the cost,
24 the 3,000 counties of the United
25 States, about one microgram per cubic

1 meter increase in the long-term
2 average PM 2.5, was associated in
3 2011, 10 percent increase in the
4 county's mortality rate.

5 They used the data over the
6 previous diesel, and basically the
7 conclusion was, that if you live in an
8 area with air pollution, your chances
9 of dying from COVID were significantly
10 high. And the study of course was
11 tested for aids and other factors like
12 population, density, medical
13 conditions.

14 And, in fact, the multiple
15 ecological studies looking at
16 population numbers was found
17 consistent positive associations of
18 elevated COVID-19 incidence and
19 mortality with past air pollution
20 levels in the area of PM 2.5. Similar
21 associations have been established
22 NO2.

23 So we know from multiple studies
24 that air pollution increased its
25 census on a population level of dying

1 from COVID. It had been well
2 established for nitrogen, various
3 oxides and from particulate matter,
4 and multiple mechanisms for biological
5 mechanisms explained this had been
6 discussed in the literature.

7 The part that the same mechanism
8 applied, not only for criteria of
9 pollutants but also air toxics. This
10 is a map of the execution of both a
11 seven-year average of presentations in
12 county level for data used in the
13 Harvard study, and you see the number
14 of COVID-19 deaths from 100,000.00
15 population.

16 This is by September 3rd, is at
17 the end of the first wave of the
18 pandemic. This is -- we used the
19 first wave of the pandemic for our
20 analysis for most of the studies had
21 done because the dynamics of the
22 pandemic who were not effected by the
23 vaccine was unavailable yet. So there
24 was no issue accounting for compliance
25 or noncompliance affecting this

1 vaccine and so on.

2 So what we did back in 2020, we
3 replicated the analysis that Harvard
4 did, but in addition to the factors
5 that they looked at, we put in with
6 over a hundred other environmental
7 socioeconomic and health factors.

8 And this is an overview of the
9 first level of this analysis. It's a
10 correlation heat map. It might seem
11 overwhelming to some of the -- he's
12 not seeing correlation heat maps like
13 this.

14 But essentially you see at the
15 bottom here, the outcomes, the case
16 rates of COVID-19 per county. This is
17 still rates for the 3,000 US counties,
18 the death rates and the case rates.
19 And then you see from the different
20 factors, which county, how strong the
21 correlation is.

22 So you find that the percentage
23 of black population, we're talking
24 about the first wave of the pandemic,
25 is the most high-correlated variable,

1 and then you see up here, that
2 particulate matter pollution, is also
3 a factor. But formaldehyde,
4 respiratory factor index,
5 hypertension, then you see
6 acetaldehyde, diabetes, being a
7 minority. So you see potential
8 correlation, by living in an area with
9 high formaldehyde levels was more
10 strongly correlated for dying from
11 COVID than hypertension or diabetes.
12 We know where significant factors
13 predicted to COVID mortalities.

14 So we decided to look into air
15 toxics in more detail. In fact, that
16 from my knowledge, there had been only
17 two studies that look systematically
18 high, the statistics of air toxics of
19 COVID-19 outcomes.

20 One is a Nationwide county-level
21 study performed at State University of
22 New York, and the other is our study
23 where we looked at New Jersey
24 municipality levels.

25 Actually certain studies, one of

1 the concerns were that they would be
2 discounting (indecipherable) in terms
3 of historic levels of air pollution
4 over toxins, and we thought by looking
5 at data across the 565 New Jersey
6 municipalities, we could address some
7 of these local (indecipherable) and
8 slides that were similar.

9 I'm not going to spend a lot of
10 time on the technicalities, but we
11 considered the combined respiratory
12 hazard index, and the individual is
13 going to have questions for specific
14 air toxics. We picked the five air
15 toxics that generally contribute about
16 50 percent of the total US respiratory
17 hazard index and we used older data
18 from 2014.

19 It has been a representative of
20 an average volume between 2010 and
21 2019 as studies of toxic levels have
22 been declining.

23 In order to ensure that the
24 results were robust, that it would not
25 depend on a particular method, we

1 systematically evaluated using six
2 geostatistical models and two machine
3 learning models. And this is the same
4 correlation heat map that we did for
5 the national level for the 2000 --
6 this is now at the state level for the
7 565 municipalities of New Jersey.

8 So you see at the bottom,
9 COVID-19 deaths cases, and you see the
10 parameters, the municipalities that
11 correlate most highly, had the highest
12 correlation of these outcomes.

13 So you see, for example, the
14 number of local care facilities in
15 each community plays a big role
16 because 36 percent of what COVID
17 places in New Jersey in care
18 facilities. But then if you go a
19 little bit up, you see that social
20 vulnerability, minority allows us
21 to -- percentage of minority in the
22 community using public transport.
23 These were significant factors, and
24 then you have a number of air toxics
25 including formaldehyde, acrolein,

1 diesel, naphthalene, and the
2 cumulative respiratory hazard index
3 has been very strongly correlated.

4 This is another way to solve
5 this data. And you see here that the
6 bands in this (indecipherable) show,
7 what variables are influencing and how
8 these variables lead to levels of
9 formaldehyde and diesel and so on.
10 They actually affect death rates,
11 mortality rates of COVID-19 in New
12 Jersey.

13 We see the same for a number of
14 socioeconomic factors, like percentage
15 of black population, Hispanic
16 population, minorities in the
17 community. So this variables are
18 correlated in places with high
19 population and high levels of
20 minorities, also high levels of
21 diesel, formaldehyde, naphthalene, and
22 so on.

23 So we need to use appropriate
24 statistical methods to look and to
25 combine the effects and bring out the

1 specific contributions and its
2 factors, yes.

3 These are examples of the
4 distributions of two of the
5 contaminants in the community
6 (indecipherable) in New Jersey. This
7 is a slide to help people who cannot
8 -- I apologize for my accent. I know
9 it's a lot of information to
10 comprehend.

11 This map shows the ranking of
12 the 565 New Jersey municipalities by
13 level of air toxics, and this is for
14 the epi concentration which is shown
15 here is the one corresponding to
16 respiratory effects. It is much, much
17 higher level than the corresponding
18 cancer risk mark.

19 For example, formaldehyde is 27
20 times higher than naphthalene. Is
21 many thousand times higher, but we
22 assume that the cancer is not
23 available to COVID.

24 This respiratory stress factors
25 air toxics, which would require a much

1 higher level of concentration of this
2 toxic --

3 The point I would like to make
4 here is that, although the levels of
5 the toxics are below the reference
6 concentration respiratory effects, and
7 the respiratory hazard index is below
8 1101, which is the alert level, we
9 still found very significant effects.
10 Meaning, despite this being historic
11 exposures to levels of toxics or
12 seeing these differences in mortality
13 from COVID in municipality levels.
14 This is the main slide, the main
15 results that basically is the sum of
16 the presentation.

17 Hopefully this is the next slide
18 that I'd like to focus on. You can
19 see here that the statistical and
20 machinery models that the brown/orange
21 color corresponds to the New Jersey
22 analysis. The blue is at the level
23 analysis (indecipherable) for the US
24 and you see that it says, for example,
25 1 micro cubic meter ug/m3 PM 2.5

1 results in a 10 percent increase in
2 mortality or 18 in that municipality,
3 which is significant. But in addition
4 to that, we find also a robust
5 association for nitro dioxide comes
6 only five in negative association for
7 us.

8 But what is significant is that
9 very small increases in chronic levels
10 of respiratory air toxics, levels well
11 below their reference concentration
12 are associated to significant
13 increases in the mortality rate. So a
14 ten percent increase in the cumulative
15 respiratory hazard index, we found to
16 be associated with over a 20 percent
17 increase in mortality rate in
18 municipality, while just a one percent
19 increase in the formaldehyde hazard
20 quotient to be associated with over a
21 10 percent MRR mortality rate. So we
22 find systematically, and this is
23 across the eight different models that
24 we applied, these increases in
25 mortality rates and level of air

1 toxics much lower than the chronic
2 respiratory high cancer risk.

3 So as a conclusion, what I said
4 statistically significant associations
5 of both individual and cumulative
6 chronic air toxics exposures is more
7 high for municipality level across New
8 Jersey. Air toxics exposures with
9 COVID-19 have limitations, as they
10 primarily rely.

11 And so the studies says we use
12 modeled estimates and aggregated data,
13 they demonstrate very robust
14 consistency in findings both
15 nationwide and for New Jersey. And of
16 course, the data (indecipherable) of
17 overburdened communities,
18 environmental demographic and
19 socioeconomic (indecipherable) the
20 president.

21 So the accommodations are
22 basically to the potential risk
23 between chronic exposure to air toxics
24 and COVID-19 mortality to be
25 considered by rating the frequency of

1 pollution regression studies because
2 such exposure may effect many other
3 diseases.

4 And thank you very much for your
5 attention. I apologize for my voice.

6 MR. BIELORY: But one big
7 question that I need to ask because
8 it's very nice to have this overlap,
9 but one question is: What's the
10 immunization rate of people -- I don't
11 know if you have the data. You can
12 answer it at a later time because it
13 wasn't on your list.

14 It has to correlate. Have these
15 same patients been immunized and, if
16 not, would the mortality -- the
17 immunization rates in the inner cities
18 were not as high, to the best of my
19 knowledge, but to your analysis. So I
20 would ask you that question, and you
21 could submit the answer because we
22 have to keep going on time.

23 MR. GEORGOPOULOS: For right
24 now, this is was special pandemic
25 vaccines were available, so we

1 wouldn't have to deal with this
2 complication, but as another factor,
3 the people right now who have the
4 highest mortality rate across the US
5 are not any more minorities. They are
6 unvaccinated otherwise --

7 MR. BIELORY: It works both
8 ways, but we'll talk about that.
9 Thank you very much. Thank you,
10 Panos. It's been very helpful.

11 To further move forward, I'm
12 going to try to keep on time, and we
13 do have a 12:00 hard stop because we
14 have another meeting to attend. But I
15 don't want to cut Mr. Dennis Hart, who
16 is the Executive Director of the
17 Chemistry Council of New Jersey. He
18 has been involved in a variety of
19 areas and I don't want to take away
20 from his but he's been 23 years in a
21 variety of staff positions at the NJ
22 DEP, including Assistant Commissioner.

23 So again, with no further ado, I
24 would like to give the floor to
25 Mr. Dennis Hart.

1 MR. HART: Thank you very much.

2 My name is Dennis Hart, Executive
3 Director for the Chemistry Council of
4 New Jersey. Our member companies,
5 chemical and pharmaceutical
6 manufacturing, is the largest
7 manufacturing sector in New Jersey.
8 The chemical industry in New Jersey is
9 the largest manufacturing industry
10 having the largest impact on the
11 state's economy both from job and
12 products that we develop.

13 I want to first take a moment of
14 personal privilege. Today's date
15 always has a special meaning. Today's
16 the 28th anniversary of the terrorist
17 bombing of the Oklahoma Federal
18 Building. And for those of us at DEP,
19 it was also take your daughters to
20 work day. And because all of us at
21 federal buildings, all federal
22 buildings were evacuated and we were
23 across the street from the Federal
24 Courthouse, so the DEP was evacuated
25 and we had a panic of employees and

1 children evacuated out to the cemetery
2 where we sat for many hours while the
3 building and the federal building was
4 screened by Federal Marshals and State
5 Police for any bombs. So for all of
6 us that were here at that time, today
7 always brings back some crazy
8 memories. And I wish peace to the
9 families of Oklahoma City.

10 I want to talk about -- my talk
11 is going to be very, very brief and
12 Tom Wickstrom from ERM is going to get
13 into greater details. I would argue,
14 similar to what Ray Cantor argued, the
15 industries that I work with have done
16 a phenomenal job with reducing toxics,
17 reducing air toxics, meeting and
18 exceeding all of their environmental
19 permits.

20 I challenge anybody to remember
21 the last time we saw an article about
22 it; one of our companies were
23 violating their permit or were in DEP
24 violation. They're all good corporate
25 citizens.

1 And I think we are missing the
2 amount of work that is done and is
3 being done by industries in this
4 State, which are the manufacturing
5 industries. These industries are
6 creating the products that are keeping
7 our citizens safe, helping our
8 products become more circular, better
9 for its circular economy, better for
10 ESG. Those companies have significant
11 ESG commitments they're meeting, and
12 along with that, they are good
13 corporate citizens.

14 And I think a testament to that
15 is if you look at during COVID when
16 the main part of the shutdowns
17 happened, our industries were operated
18 more than 100 percent to make the
19 products that people needed, to make
20 the PPE, the hand sanitizers, all the
21 products people needed, and air
22 quality in New Jersey was never
23 better.

24 And that was because our
25 industries are not the cause. We are

1 a very, very minor.

2 Now, when I say stuff like
3 this, whether it's in the context of
4 this or in the context of
5 environmental justice, you will never
6 hear me or an industry that I work
7 with say, "Citizens or workers should
8 be expected to bear a higher burden in
9 pollutants in exchange for jobs." We
10 will never say that because we don't
11 believe that.

12 We believe that we are doing
13 everything the Department has asked
14 for; more than what the Department has
15 asked for to meet our standards and
16 that we really look at the
17 Department's efforts need to be
18 focused on where the biggest bang for
19 the buck is to reduce, and that is the
20 transportation center and all those
21 sectors that go along with that. We
22 are still working on that.

23 And so, I think as you look at
24 the circular economy, what we're
25 doing, you look at New Jersey's air

1 toxics AMP concentrations, we should
2 carefully consider increasing costs
3 and decreasing benefits of furthering
4 air toxic regulations of our
5 manufacturing sector.

6 Before I turn to Tom, I just
7 want to answer -- Dr. Bielory, you
8 asked about representation on the
9 Environmental Justice Council.

10 MR. BIELORY: Yes.

11 MR. HART: Industry was not
12 represented and is not represented on
13 this Council. I mean no disrespect to
14 the people that are on there. There
15 are two industry seats. One person is
16 experienced in community solar and the
17 other person is a consultant.

18 We had submitted someone the
19 first time to be put on. It was
20 turned down. We submitted another
21 name for that vacant position. Our
22 hope is that we have part of the
23 regulated community that's our good
24 neighbor's part of environmental
25 justice be on that panel.

1 So at this point, I want to turn
2 it over to Tom from ERM who is
3 generous in giving his presentation.

4 MR. BIELORY: Thank you very
5 much. Tom.

6 MR. WICKSTROM: Thank you,
7 Dennis. I'm Tom Wickstrom with ERM.
8 Thank you for the opportunity to
9 present to the Council today.

10 If we can go right to the
11 outline summary.

12 Today I'm going to be presenting
13 on new air toxic regulations that
14 apply to Chemistry Council of New
15 Jersey members since the year 2000,
16 air toxic regulations for the refining
17 sector in particular, nationwide
18 investment in initiative reductions
19 for the refining sector and Refining
20 Fenceline Monitoring Program in New
21 Jersey's own air toxics health risk
22 assessments. Then, finally, we'll
23 present our summary recommendations to
24 the Council.

25 Next slide, please.

1 Council of New Jersey's member
2 industries are subject to many federal
3 regulations governing emissions of air
4 toxic pollutants. On these next two
5 slides, I'll present some of the
6 national emission standards for
7 hazardous air pollutant regulations
8 (the NESHAPs) also referred to as MACT
9 Rules, M-A-C-T, which stand for
10 Maximum Achievable Control Technology,
11 as well as New Source Performance
12 Standards or NSPSs.

13 The regulations shown on the
14 slide are NESHAP regulations. All of
15 the NESHAPs and NSPS rules on this
16 slide and the next have been had
17 initially promulgated or significantly
18 updated since the year of 2000.

19 In fact, the EPA announced
20 earlier this month, there are aspects
21 of miscellaneous organic chemical
22 production processes, which is also
23 referred to as the MON Mact, M-O-N,
24 and the refinery Mact, NSPS are being
25 proposed for further amenities.

1 In another important NESHAP
2 regulation, which is 40CFR63 subparts
3 H9, specific to synthetic organic
4 chemical manufacturing industry, which
5 has also been proposed for revisions
6 this month. These NESHAPs are
7 referred to as the hazardous organic
8 NESHAP or H-O-N, HON. There's no
9 shortage of acronyms in the air
10 quality industry.

11 I'll talk about some of these
12 new requirements later in this
13 presentation.

14 Next slide, please.

15 EPA's regulations for these
16 industries are aimed at reducing
17 emission of air toxics, and are high
18 priority for the agency. They are
19 constantly being updated and typed to
20 reflect the latest advancements both
21 from the industrial technology side,
22 which are the NSPS regulations, but
23 also from a health-based toxicological
24 perspective, which are the NESHAPs
25 regulations.

1 These specific regulations are
2 in addition to over 100 federal rules
3 aimed at reducing air toxics emissions
4 that have been on the books well
5 before the year 2000. All of these
6 regulations are aimed at stationary
7 industrial installations, such as
8 refineries, chemical manufacturing
9 facilities and so forth, and not on
10 mobile sources.

11 The Clean Air Council was
12 presented with data at a meeting in
13 January and again today in Frank
14 Steitz's presentation. They showed a
15 general decline of certain hazardous
16 air pollutants at New Jersey's air
17 toxic monitors over the past 20 years.

18 Benzene in particular has shown
19 a decline in ambient concentrations.
20 Benzene is a pollutant that's
21 specifically controlled by federal
22 regulations for refineries. Overall
23 stationary sources are becoming
24 increasingly well controlled and
25 ambient concentrations of benzene and

1 similar air toxics are decreasing.

2 In the presentations today, we
3 have seen that diesel particulate
4 matter is a continuing concern in New
5 Jersey, although it too is decreasing.
6 But we should be noting that diesel
7 emissions are primarily linked to the
8 transportation sector and not the
9 stationary sources.

10 Next slide, please.

11 So let's discuss what these
12 regulations mean for a particular
13 industrial sector, the refining
14 industry. This industry has seen a
15 significant tightening of emissions
16 since the year of 2000. EPA statutory
17 obligation to review advances in
18 industrial technologies yielded an
19 impactful new NSPS regulation in 2012
20 that was largely focused on heaters,
21 coking units and flaring operations.
22 The requirements under the NSPS
23 cleared new monitoring and work
24 practice standards as well as new
25 capital investments.

1 In 2015, revisions to the NSPS
2 and NESHAPs for refineries were
3 finalized once referred to as the
4 Refinery Sector Rule. This set of
5 rules introduced the Refinery
6 Fenceline Monitoring Program among
7 more traditional-source focused
8 requirements.

9 Now at the time, the Refinery
10 Fenceline Monitoring Program was a
11 somewhat novel concept under the Clean
12 Air Act. This program requires that
13 refineries conduct what's essentially
14 continuous monitoring of the ambient
15 air as a way to track compliance. It
16 requires them to take quick corrective
17 action when monitored values exceed an
18 action level. This is a departure
19 from typical compliance monitoring,
20 which usually focuses on source-level
21 monitoring of direct emissions or of
22 operational parameters from the
23 source.

24 This approach is actually
25 sampling the ambient air. This is a

1 direct way to demonstrate
2 effectiveness of the facility's air
3 pollution controls and emissions
4 minimization work practices.

5 As I mentioned previously, as
6 air toxics monitoring shows a downward
7 trend of ambient benzene
8 concentrations State-wide since the
9 year of 2000.

10 Next slide.

11 So, of course, all of these
12 federal regulations come with a cost.
13 The costs shown above are estimated
14 nationwide costs for the refinery
15 sector rule shown in 2010 dollars.

16 These capital investments --
17 these are the capital investments I
18 alluded to in the previous slide.
19 These are EPA's own cost figures being
20 made available when the regulations
21 were finalized.

22 I can tell you from my own
23 personal experience that the recurring
24 annual cost of the Refinery Fenceline
25 Monitoring Program is closer to \$10

1 million nationwide. There are
2 approximately 100 refineries in EPA's
3 Fenceline Monitoring database and each
4 has annual program costs on the order
5 of \$100,000 a year.

6 So the ongoing costs of the
7 Fenceline Monitoring Program is
8 similar to what EPA is characterizing
9 as initial capital investment.

10 EPA estimates just over 1,300
11 tons per year of hazardous air
12 pollutant reductions nationwide as a
13 result of the implementation of this
14 refinery sector rule. And I apologize
15 that the other new -- the NESHAPS that
16 I referred to earlier in the
17 presentation, I don't have the cost
18 figures for those yet. Those were
19 just proposed in the last few weeks.

20 We can go to the next slide.

21 So now I'd like to talk about
22 more details about the Fenceline
23 Monitoring Program. The map on this
24 slide shows the location of
25 approximately 100 refineries across

1 the country with action programs.

2 The program is based on ambient
3 air samples of benzene, as I mentioned
4 previously. Benzene is itself an air
5 toxic and listed hazardous air
6 pollutant. But it's also part of a
7 typical suite of USC HAPs such as
8 toluene, ethylbenzene and xylene.

9 The program that targets benzene
10 is also indicative of these other
11 hazardous air pollutants as well.
12 Every impacted refinery must maintain
13 a network of passage diesel samplers
14 at the fenceline of the refinery
15 property. Some refineries have over
16 50 sampler locations.

17 A unique aspect of this program
18 is that the data are readily available
19 to the public through an online
20 report. This allows for a high degree
21 of transparency for the public
22 stakeholders. It's a very real way
23 for the public to be engaged, to be
24 informed on the environmental
25 performance of these facilities.

1 As I mentioned previously, the
2 program explicitly requires quick
3 corrective action for benzene
4 concentrations exceeding an action
5 level. So what this means according
6 to the refinery manuals, within five
7 days of determining that the action
8 level had been exceeded, the facility
9 has to initiate a root-cause analysis
10 to determine the cause and to
11 determine appropriate corrective
12 action, the root-cause analysis and
13 initial corrective action.

14 Initial corrective action
15 analysis has to be completed no later
16 than 45 days after determining that
17 the action level was exceeded. The
18 new HON proposal would also prescribe
19 fenceline monitoring of facilities
20 with HON affected pollution units.

21 This proposed requirement will
22 be over six specific apps: Benzene,
23 which is part of the Refinery
24 Fenceline Monitoring Program, but also
25 butadiene, ethylene dichloride, vinyl

1 chloride, ethylene oxide, and
2 chloroprene. This proposed monitoring
3 program would include a similar
4 root-cause analysis with similar
5 response time frames to the refinery
6 sector.

7 Next slide, please.

8 So going beyond the federal
9 regulations in New Jersey's subsequent
10 adoption, enforcement of those
11 regulations through New Jersey DEP's
12 program, the DEP oversees one of the
13 more comprehensive air toxics risk
14 assessment programs in the United
15 States.

16 So the federal regulations I've
17 been describing so far all have a
18 fundamental objective of reducing
19 emissions air toxics, more
20 specifically, minimizing public health
21 related risk. The risk assessment
22 process is applicable to both new and
23 existing sources in New Jersey.

24 The existing sources are
25 required to conduct a risk assessment

1 for their entire facility-wide
2 initiative of air toxics as part of
3 the operating permit renewal process.
4 DEP currently uses air quality
5 dispersion models as the only tool in
6 their risk assessment process. These
7 are the refined dispersion models that
8 were referred to in Frank Steitz's
9 presentation earlier today.

10 Air quality models are designed
11 to conservatively predict a worse case
12 potential ambient air concentration
13 due to a model emission rate of a
14 pollutant. For permit renewal
15 purposes, the emissions model are the
16 emissions that are allowable under the
17 permit.

18 The risk assessment answers the
19 following fundamental question: Do
20 emission sources permitted operations
21 result in levels considered acceptable
22 to the public outside. However, our
23 existing sources using worst case air
24 quality modeling approaches may be
25 unnecessarily conservative when the

1 existing source isn't proposing an
2 expansion or increase in emissions.

3 We can go to the next slide.

4 I'll skip right to the
5 recommendations here. Our
6 recommendations on behalf of CCNJ are
7 that DEP should consider the value of
8 the data from Fenceline Monitoring
9 Programs and both New Jersey
10 refineries. Consider how these data
11 may be used to supplement health risk
12 assessments in the area of these
13 facilities. These actual air toxic
14 monitoring data could and should be
15 used as additional weighted evidence
16 during risk assessment reviews.

17 With the recent new proposed
18 revisions to chemical industry
19 NESHAPs, it's clear now that EPA is
20 moving in the direction of
21 site-specific monitoring as a means of
22 ensuring and demonstrating compliance
23 in a way for facilities to identify
24 and address equipment function that
25 may cause increased emissions. For an

1 existing facility with no new proposed
2 initiatives or methods of operation
3 but is also subject to one of these
4 new ethylene monitoring requirements,
5 is it really necessary to impose
6 conservative forward-looking air
7 quality modeling approaches when the
8 emissions operating scenarios have
9 already in place at the facilities
10 sometimes for many years.

11 Air quality models are most
12 useful for new or proposed emissions
13 to access future compliance, not
14 existing compliance. But when air
15 quality models are used, DEP should
16 consider frequency of occurrence in
17 evaluating operating scenarios for
18 health risk assessment. If an
19 emissions scenario is extremely rare
20 and not part of the facility's
21 standard operating profile, does it
22 need to be rigorously assessed as if
23 the scenario occurs almost
24 continuously?

25 Final point. New Jersey's air

1 toxic community concentrations are
2 largely resulting from nonindustrial
3 source categories, such as
4 transportation emissions. DEP should
5 carefully consider the increasing
6 costs and decreasing of further air
7 toxic requirements for the industrial
8 community.

9 That concludes our comments.
10 Thank you.

11 MR. BIELORY: Thank you very
12 much. Actually this has been also a
13 very interesting overview from the
14 point of view of the Chemistry
15 Council, but due to the nature of the
16 timing, we wanted to thank you very
17 much for meeting the time.

18 I will actually have no
19 questions being reported. If anyone
20 does have questions for the Clean Air
21 Council, please type it in to the chat
22 and direct them to them and they can
23 have an answer back to us in our
24 report.

25 But at this point in time, I

1 would like to conclude the morning
2 portion. But one important factor, is
3 there any visitors from the public who
4 wish to speak who have not registered,
5 please speak with Mr. George Berdomas
6 immediately so they can get on the
7 list because others have been invited
8 or have registered and are on our
9 list. But if you're interested in
10 speaking, please step up and be listed
11 to be included.

12 At this point in time, we will
13 resume promptly at 1:00. Thank you.

14 (LUNCH RECESS.)

15 MR. BIELORY: Looks like we are
16 back online. Thank you everyone for
17 returning from a robust lunch I hope
18 everybody has enjoyed.

19 Again, I must remind anybody
20 from the public who is interested in
21 speaking who is not registered, please
22 speak with George Berdomas to get your
23 name on it.

24 At this point in time, I'd like
25 to introduce Robert Laumbach, who is

1 the Associate Professional at Rutgers
2 School of Public Health, and he is
3 specifically involved environmental
4 health and justice and he's been at
5 the Environmental Occupational and
6 Health Site Institute, otherwise known
7 as EOHSI, which I'm a member as well.

8 And he's been a member of Clean
9 Air Council, a valuable member. His
10 major focus has always been EJ or
11 environmental justice and the impact
12 was one of his areas. And now we have
13 air toxins, and we're going to have
14 him give some additional thoughts on,
15 quote, unquote, "Air toxics in New
16 Jersey: Some thoughts on what we
17 might be missing."

18 What are we missing? Might be
19 missing, what are missing? Because
20 there's a list that exists, but maybe
21 there's more.

22 And with no further ado, I'll
23 hand over the microphone to Bob.

24 MR. LAUMBACH: Thank you to the
25 Council providing me to speak. If I

1 did have some thoughts prepared about
2 what we're missing, some of that has
3 been covered already by previous
4 speakers, and a lot of that was about
5 some of the challenges that we face in
6 assessing concentrations of air
7 toxics --

8 (Short pause for technical
9 difficulties.)

10 George, if you want to go on to
11 the first slide.

12 A lot of that's been covered
13 about some of the challenges and about
14 the cumulative impacts issue with air
15 products. I'm going to talk more
16 about cancer risks and more about
17 diesel exhaust and more about benzene
18 and formaldehyde, pretty major air
19 products that present the most cancer
20 risk in New Jersey.

21 But I want to focus a little bit
22 more on a particular approach to
23 measuring air toxic exposure and
24 especially relative to diesel
25 particulate matter. So we heard Kim

1 Gaddy talk enthusiastically about use
2 of purple air monitors, the community
3 air monitoring regarding air toxics.

4 I want to preface my remarks by
5 saying that I'm also a big proponent
6 of community air monitoring. In fact,
7 for the Science Advisory Board of the
8 DEP, I lead a team that wrote a report
9 on, quote, unquote, Citizen's Science
10 and Community Science that featured a
11 lot of air monitoring. I think that
12 purple air can be useful.

13 The bottom line, cutting to the
14 chase, is that I don't think that
15 purple airs are going to be very
16 useful for measuring air toxics and
17 particularly diesel particulate
18 matter.

19 So I'm going to explain a little
20 bit more about why I think that's
21 true. And that's not to say that
22 minimize their use for other purposes,
23 and we will talk about that a little
24 bit.

25 Go to the next slide.

1 So I want to talk about diesel
2 particulate matter. And as we saw
3 from Frank's presentation, by far it
4 dwarfs other sources of cancer risk in
5 New Jersey from air toxics.

6 I think it's important to keep
7 in perspective that the DEP's
8 threshold, of course, public health
9 significance is one in a million
10 cancer cases. I think it's important
11 to consider that we have about a 40
12 percent chance in our life time, the
13 average person, of getting some form
14 of cancer, with a 400,000 in a
15 million.

16 So when we talk about one in a
17 million risk, we are talking about
18 concerns about cumulative risk and
19 multiple exposures and multiple
20 carcinogens as well as how other
21 factors may combine in terms of health
22 disparities and cumulative exposure
23 and cumulative risk. But again, in
24 absolute risk, often not so great, but
25 in combination and for perhaps because

1 of synergies and other interactions,
2 it can be more concerning.

3 Next slide, please.

4 So Frank already talked about
5 how we get our information from
6 central monitoring as well as modeling
7 primarily.

8 Next slide, please.

9 So I'm going to focus again on
10 diesel particulate matter and a little
11 bit on benzene and formaldehyde.
12 These sort of go together because
13 diesel particulate matter is really a
14 marker for diesel exhaust, which
15 includes about 40 different
16 carcinogens including benzene and
17 formaldehyde, although perhaps not the
18 major source of those other air
19 pollutants.

20 Next slide, please.

21 So this slide from the DEP shows
22 how diesel particulate matter in terms
23 of cancer risk in New Jersey dominates
24 all other compounds combined.

25 Next slide.

1 If we leave out diesel exhaust
2 as a cancer risk, then formaldehyde
3 and benzene are the next leading
4 causes, contributors.

5 Next slide.

6 Look a little more about the
7 measurements that are done. As Frank
8 pointed out, we have what we call
9 urban air toxics sites at the
10 Elizabeth lab and Newark and also at
11 Camden, and then we might call Rutgers
12 a suburban site and Chester a rural
13 background site.

14 I want to talk a little bit more
15 about the specific sites, especially
16 the urban sites.

17 Next slide.

18 So for those of you who may not
19 be familiar, the Elizabeth lab central
20 monitoring station is located at
21 Exit 13 on the Turnpike or off the
22 Turnpike, right next to the tollbooth
23 there where that red star is. So you
24 might think, well, certainly it's an
25 urban area. It certainly looks like

1 it's really in a hot spot, right?

2 I mean, it's hard to imagine it
3 being a hotter spot maybe for diesel
4 exhaust and mobile source air
5 pollution here in New Jersey than
6 right here perhaps. An exit tollbooth
7 where cars are idling perhaps at times
8 and then accelerating, which is
9 associated with less efficient
10 combustion, perhaps more VOCs, more
11 particulate matter generation. And
12 then right there within perhaps 100 or
13 200 meters of the Turnpike and then
14 Route 278.

15 So I want you to keep in mind,
16 that when we talk about what we
17 measure at this site, the fact that,
18 again, it's hard to image that there
19 will be a hotter site for diesel
20 particulate matter in the State.

21 Next slide.

22 This is Camden on Google Maps,
23 the Camden site at Spruce and Locust.
24 And here we'll see that both -- and we
25 saw already on Frank's slide, but I'm

1 going to show Google and really
2 emphasize the difference between the
3 sites. So while Camden and Elizabeth
4 have the highest levels of measured
5 air toxics for mobile sources, but
6 here in Camden it really isn't, as far
7 as we can see here, a major mobile
8 source site. You know, there's 76
9 there a little bit to the east, maybe
10 it's a little bit downwind.

11 But upwind, we have Philadelphia
12 Metropolitan area. So probably about
13 a half a mile across the river, that's
14 Philadelphia, downtown Philadelphia,
15 the whole Philadelphia Metropolitan
16 area. So this site probably
17 represents more global source and
18 other PM, other source PM from
19 Metropolitan area Philadelphia. This
20 main industry there, metals industry,
21 there's a gypsum plant there and so on
22 and there's vessels in the river that
23 generate sources of PM that are more
24 local. But this probably not so much
25 a hotspot, perhaps it's more like an

1 urban background spot.

2 Go to the next slide, please.

3 So Frank showed you slides
4 already and he emphasized it's been
5 recorded that the levels of elemental
6 carbon here, especially in the urban
7 area near Elizabeth, that's labeled
8 the yellow line coming down.

9 But what I'll emphasize is that
10 if you look on the right side there,
11 present levels, 2021, you see that
12 there's still great disparities. So
13 the level of elemental carbon, which
14 is a relatively specific marker for
15 diesel exhaust is about 300 percent
16 greater than Chester, about four times
17 greatest Chester than background.

18 It also, in Elizabeth there,
19 it's about double or maybe a little
20 bit less than Newark. So Newark is an
21 urban sort of background site also.
22 The firehouse in Newark, not
23 particularly in what we might call a
24 hotspot area.

25 So it's the difference between

1 Elizabeth and Newark there, I think
2 just the local sort of hotspot factor,
3 the local emissions from all the
4 traffic on 278 and the Turnpike around
5 the tollbooth.

6 Next slide.

7 I won't go over this again
8 because Frank already talked about it.
9 But I think if you go to -- just look
10 at the 2017, which is similar to
11 today, it has definitely gotten better
12 since then. I think the next slide
13 shows that.

14 Go to the next slide, please.

15 There's still disparities where
16 parts of the State with diesel
17 particle risk, which is really
18 proportional to the amount of
19 exposure. Because we use a linear
20 threshold model, the risk is
21 proportional to the exposure. We see
22 still in areas there, Hudson County,
23 where the risk is still perhaps about
24 500 in a million whereas other parts
25 of the State 50 in a million. So

1 tenfold difference in risk.

2 So definitely diesel particulate
3 matter obviously is an environmental
4 justice issue and an issue about
5 disproportionate risk.

6 Next slide.

7 Then we look at benzene, and
8 very similar. We see about urban
9 sites, Camden and Elizabeth -- we
10 don't have Newark for benzene --
11 double perhaps Rutgers and Chester.

12 Next slide.

13 And then as Frank pointed out,
14 this map doesn't show the disparity
15 because the turquoise color is one in
16 five in a million, which is a fivefold
17 limit, so there's still double or
18 triple or perhaps even fivefold
19 differences in risk at different parts
20 of the State for benzene.

21 Next slide.

22 And formaldehyde, again, about
23 double in the urban areas.

24 Next slide.

25 Formaldehyde again. And then,

1 too, you know, we have a map that has
2 relative bins of exposure that extend
3 over multiple levels of risk.

4 Next slide.

5 Here's the crux of my
6 presentation, which is about low cost
7 monitors and particularly purple air
8 monitors and what we can expect
9 they're going to be able to tell us
10 about urban air toxics and especially
11 about diesel particulate matters.

12 So these monitors are
13 inexpensive, less than \$300.00, and
14 they are quite sophisticated and
15 nifty. They can certainly be useful
16 in some circumstances.

17 So they measure PM 2.5. They
18 have two sensors, which helps with
19 quality control and an optical sensor
20 which senses particles and then
21 convert that to mass. They hook up to
22 Wifi, results in automatic math.
23 There's like averaging done by the
24 central software over various time
25 periods and (indecipherable)

1 increments by every minute.

2 So here we see in
3 (indecipherable) law department,
4 Elizabeth, one of my graduate students
5 working with some of the maintenance
6 folks there putting up one of these
7 monitors in Elizabeth. And then
8 there's math there how to get
9 something up on the map immediately.

10 And so there's been a lot of
11 promotion of these monitors to measure
12 hotspots in communities. The EPA
13 recently funded at least two projects
14 here in New Jersey that includes some
15 particulate matter with PM 2.5
16 nutriments including with a purple
17 air, so I know there's at least four
18 or five projects, you know, throughout
19 the State that are using purple areas.

20 And I think for a lot of those
21 projects and I think a lot of the
22 projects around the country, there's
23 an expectation that these monitors are
24 able to pick up diesel particulate
25 matter, which is a problem in New

1 Jersey, it's a problem in urban areas
2 around the country.

3 Next slide.

4 So that's a monitor there. It
5 has a temperature and humidity sensor,
6 which allows you to cull for
7 temperature and humidity, to adjust
8 for it. So overall, I think it's a
9 pretty reliable PM .5 monitor.

10 But the problem is that PM --
11 the main problem is the monitor has
12 its issue -- well, in terms of
13 limitations for measuring PM 2.5, but
14 the main problem is that PM 2.5 is not
15 a good surrogate marker for diesel
16 particulate matter. Most of the
17 diesel particulate matter from new
18 sources like Exit 13 on the Turnpike
19 for example is very, very small
20 particles that can't be seen by the
21 monitor because its optical carbon
22 counters particle assessment .2 or .3
23 microns can't be seen.

24 And then the other issue here on
25 this graph being shown is a reference

1 monitor there co-located -- we've
2 co-located these monitors with the DEP
3 central site monitor indoor. It has
4 the yellow line. But I want to point
5 out that the other three monitors are
6 all purple airs and you see how they
7 differ by about 10 or 15 percent of
8 one monitor to the next, and it's a
9 bias for that one, that's the blue
10 line there, being about 10, 15 percent
11 or more lower than the other monitors.

12 Next slide.

13 So here's the crux of the issue
14 I think, which is this is showing the
15 BP's monitoring at central sites
16 throughout New Jersey. What I've
17 circled there is the Elizabeth lab,
18 the highest peak there in that circle
19 on the left, and then Jersey City and
20 then Newark. And these are accurate
21 measurements for DEP primary
22 reference.

23 And we see that there's only
24 about a 10 percent or so or less
25 really difference between the

1 Elizabeth lab, the Jersey City and
2 Newark firehouse backgrounds. So
3 really the difference, the maximum
4 difference really that there would be
5 I think likely is at that difference
6 at best is due to that urban
7 background hotspot of Exit 13.

8 And that's a small difference.
9 And the reason why it's a small
10 difference again is that diesel
11 particulate matter from sources close
12 to the source is very, very small
13 particles (indecipherable) to the
14 mass.

15 So if you consider, again, the
16 Elizabeth lab is being perhaps close
17 to the maximum hotspot you might find
18 in New Jersey, than a monitor like the
19 purple air, which measure PM 2.5,
20 which is measured here, that has a 10
21 or 15 or so percent margin of error is
22 not going to be able to detect what we
23 know is from the element of carbon
24 particulates four or five times or
25 more greater exposure to diesel

1 particulate matter at Exit 13.

2 So hopefully that's clear. I'm
3 sure I can explain it more to the
4 Council later in terms of I don't
5 think that PM 2.5 is a good measure.
6 Even when you have a good monitor,
7 like here during this data, DEP's
8 central site monitor, it's really hard
9 to detect diesel particulate matter in
10 a hotspot as PM 2.5 because of the
11 fact that it's not a good marker for
12 diesel particulate matter.

13 Next slide, please.

14 Again, there's are big
15 differences in elemental carbon. We
16 can measure that.

17 Next slide.

18 There are other ways of
19 measuring diesel particulate matter
20 that are more specific, such as black
21 carbon, which I've done some
22 measurements. These are personal
23 measurements in Newark with children
24 who are wearing these black carbon
25 monitors.

1 And the next slide.

2 I know we know that one of the
3 major roadways, like here in
4 California in Santa Monica, the 4 or 5
5 I think or something, that there are
6 up to a mile or more, 1500 hundred
7 meters or more in a measurable
8 doubling of other types of markers of
9 traffic emissions, such as ultrafine
10 particle counts.

11 Next slide.

12 So my recommendation is that we
13 need to think beyond what we're
14 currently doing in terms of community
15 monitoring with PM 2.5 monitors or
16 with purple airs or any other type of
17 PM 2.5 monitors and start to think
18 beyond that. There's limitations on
19 how to do that. Black carbon monitors
20 cost over \$6000 each, ultrafine
21 particle monitors have limitations and
22 they cost 12,000 or more.

23 And I'm not saying that we
24 should abandon what we're currently
25 doing with purple air, but I think we

1 need to align our expectations and not
2 oversell the use of purple airs and
3 other 2.5 monitors for this purpose
4 because I think that could really
5 damage relationships and trust when
6 we're using the limited resources of
7 community groups as well as of the DEP
8 as well as micromanicslike myself
9 pursuing projects that are unlikely to
10 give us useful information. And the
11 worse thing is because of the lack of
12 sensitivity and specificity perhaps
13 getting false negative results that
14 seem to indicate there is no
15 differences between sites when
16 actually it's because we're using the
17 wrong tools.

18 So I ran over a little bit in
19 time but appreciate the opportunity to
20 speak with you.

21 MR. BIELORY: Thank you very
22 much, Bob.

23 One of the things we just had
24 here several years ago was review of
25 these monitors that are not EPA

1 certified, so to speak, that have
2 limitations. And it will cause a
3 report of a fire, so to speak.
4 Everybody will go running in there.
5 But it's measuring something that may
6 be not worthwhile or it will create
7 more havoc than we have reality. So
8 we will need your input as to what's
9 the best way to proceed because it is
10 important.

11 But one question in the limited
12 time we have. If I took a point
13 source, which is limited as
14 (indecipherable) a four percent and I
15 took four percent, are those located
16 near EJ's communities versus mobile?

17 MR. LAUMBACH: Generally, yes.

18 MR. BIELORY: If we look at a
19 map looking at all the point sources
20 and then we can look at, quote,
21 unquote, the EJ communities and see if
22 they overlap, those might -- my next
23 question would be: What's the
24 distance of transmission of air
25 toxics? Like pollen, it could be 30

1 miles, 50 miles traveling by air.

2 What's the distance travelled by air
3 toxics from a point source?

4 MR. LAUMBACH: Well, transport
5 of various compounds, some of them
6 degrade with other things in the
7 atmosphere. They're all sort of
8 disbursed from a point source. If
9 EJ's screen, the EPA's, it can easily
10 be seen where major points are starred
11 in New Jersey and around the country
12 and see how they are relative to, I
13 think, how the EJ map of New Jersey,
14 EJ is also is a tool for doing that.

15 MR. BIELORY: Okay. Thank you
16 very much.

17 And questions, again, we'll be
18 limiting to if anybody has questions
19 for the Council, please, send it to us
20 so we can get it back and participate
21 in the report.

22 So with no further ado, I'd like
23 to keep ourselves going on here. I'd
24 like to ask Barbara Goun who has a
25 Master's in Public Health, who is

1 research scientist and principal
2 investigative participant in NJB
3 Department of Health. She's worked
4 with the Department of Health for the
5 past 20 years as a PI, principal
6 investigator, for the CDC-funded
7 environmental public health tracking
8 operative agreement, which is a
9 multi-factorial -- I think this may be
10 one of the ones that someone was also
11 looking to do the pollen for, the CDC
12 would like to get more of the pollen
13 information into because it does
14 compound and add to the inflammatory
15 reaction associated with air pollution
16 in general.

17 So with no further ado,
18 Dr. Barbara Goun.

19 MS. GOUN: I'm Barbara Goun. I
20 am the principal investigator with New
21 Jersey's Environmental Public Health
22 Tracking Project. I'd like to
23 recognize Richard Opiekun, who many of
24 you know, who is the data coordinator
25 for this project. It would be remiss.

1 And these slides are the products of
2 both Rick and I.

3 Next slide, please.

4 I'm going to do a rather
5 different presentation. Since I'm not
6 a air person, I'm an epidemiologist by
7 trade and training, I'm going to be
8 talking about cancer epidemiology
9 using both US national, worldwide and
10 New Jersey-specific data. I want to
11 provide an overview of what the lit is
12 on this topic, especially since so
13 many people who are attending this
14 meeting both here in the room and
15 remotely, this isn't their topic, it's
16 my topic.

17 So I hope that I can help
18 everyone have more familiarity with
19 this important question, and I'm going
20 to sort of skirt away from the air
21 issues that you guys are better at DEP
22 and other places, much better able to
23 address than me.

24 Next slide, please.

25 This slide is one of the most

1 famous slides in epidemiology. I
2 actually remember this slide as a
3 graduate student in my PhD program.

4 But for those people in the
5 room, it only went to here, and now
6 it's so more much more robust and
7 complete. So what we see, the
8 important thing I'd like to point out,
9 is -- so we're going to talk about the
10 slide for a second.

11 This is male, age-adjusted
12 cancer death. We're going to look at
13 females right after this, so don't
14 worry. We're getting there.

15 This line here is the important
16 one. This is lung and bronchus.
17 That's the normal grouping that's used
18 for looking at lung cancer. It's
19 mostly lung, but bronchus is always
20 linked with it.

21 As you can see, this is 1930, so
22 this is not just a 20-year look back,
23 this is a really serious look back
24 folks. We're seeing it's rising, and
25 then right around here, we see it

1 reaches its turning point and during
2 the '90s it's decreasing.

3 Next slide, please.

4 Now we have females. We see the
5 same trend. The other cancers,
6 especially I like the slide for you
7 guys who are remote. You can see --
8 I'd hoped that you'd be able to see it
9 on your monitor pretty well.

10 Continuing along, we have other
11 types of cancer: Stomach, liver,
12 uterus, pancreas, colon, rectum,
13 breast is here.

14 What I wanted to really point
15 out is here we have lung and bronchus.
16 We see in women, that the curve is
17 very similar but less high.

18 Next slide, please.

19 So what do we know about air
20 pollution and cancer overall. This is
21 very general. This is the overview
22 from way high up.

23 We're well aware, manmade and
24 naturally occurring air pollution is
25 known to cause cancer. Evidence comes

1 particularly, the original evidence
2 came from occupational studies of
3 highly exposed workers, and for those
4 of you are classicists, those would
5 include chimney sweeps probably is the
6 oldest study and then topside coal
7 workers, all types of cancers that are
8 historically known and very well
9 established.

10 Historically, we had diverse
11 exposures: Tobacco smoke, radon,
12 chemicals, metaloids, and fibers and
13 they've all been classified as
14 carcinogenic. I have citations for
15 these if you need them for your future
16 use.

17 Next slide, please.

18 So what do the epi studies of
19 ambient air pollution, not
20 occupational air pollution but rather
21 ambient in community setting. We
22 certainly see an increased risk of
23 lung cancer in association with
24 exposure to PM 2.5. And we see this
25 risk in both smokers and in

1 nonsmokers.

2 We certainly also see lung and
3 bladder cancer from multiple studies
4 associated with high levels of
5 occupational exposures to diesel
6 exhaust. So, you know, these are
7 working populations, that are exposed
8 probably at higher levels than most
9 community members would get. But this
10 is a very important epidemiology to
11 look at the most exposed populations.

12 There certainly are risks of
13 lung cancer associated with indoor
14 exposure to radon and its decay
15 products. This is well-established
16 originally in miners, and secondhand
17 smoke has been repeatedly shown to be
18 associated with lung cancer among
19 nonsmokers.

20 Next slide, please.

21 So let's talk about lung cancer
22 especially for those of you who are
23 air people and are not cancer people
24 like me. Lung cancer is the most
25 commonly diagnosed cancer, 2.2 million

1 cases, and it is the leading cause of
2 cancer deaths worldwide as of 2020. I
3 do not expect this has changed
4 recently. It has been a leading cause
5 for a very long time.

6 Lung cancer is also the leading
7 cause of cancer deaths in the US.
8 This has been longstanding, and it
9 accounts for one in five US cancer
10 deaths. So this is the leading cause
11 of cancer deaths, a very important
12 point.

13 The American Cancer Society
14 estimated that in 2023 there will be
15 over 200,000 new cases of lung and
16 bronchus cancer and 127,000 deaths
17 from lung and bronchus cancer. So
18 these are really serious causes of
19 incidents, new cases of cancer and
20 mortality.

21 This is the worst part of this.
22 Lung cancer remains highly fatal. It
23 currently has a five-year survival
24 rate of only about 18 or 19 percent.

25 The five-year survival, however,

1 is 56 percent if the cases were
2 detected in stage one, where they are
3 still localized in the lungs.
4 Unfortunately, here's the bad news.
5 This rarely happens.

6 Most cases are detected when the
7 individual already has metastatic
8 cancer. In that case, survival is
9 poor. And this had been established
10 and longstanding.

11 Next slide, please.

12 So what do we know worldwide
13 about lung cancer? There's great
14 variation in both males and females
15 worldwide. It's listed on the slide
16 where we see more or less males are
17 high in Micronesia/Polynesia, Eastern
18 Asia and in Eastern Europe. Females
19 have the highest incidence for lung
20 cancer, however, very different, North
21 America, Northern and Western Europe
22 and in Australia, New Zealand. This
23 is not a distinction women of America
24 need to be in or to have. And this is
25 North America, not just the US.

1 Cigarette smoke probably
2 accounts for the majority of lung
3 cancer. Some researchers place that
4 at 80 percent. The number is not rock
5 science, rock perfect, but I would
6 professionally say 70, 80 percent is
7 very solid in terms of the science.

8 Ambient air pollution and
9 exposure to household burning of solid
10 fuels, so that would be, like, wood
11 stoves, using peat and other sources
12 of burning in the home, residential
13 radon, secondhand tobacco smoke,
14 asbestos and some other more minor
15 things including some occupational
16 exposures have also been clearly
17 associated with lung cancer risk.

18 Next slide, please.

19 This is a map of the
20 age-adjusted lung cancer mortality
21 rates by county for the US. We've
22 blended four years together to get
23 good stable counts and numbers.

24 And when we look at New Jersey,
25 we're sort of up here. We're not as

1 bad as some places. We sort of see a
2 belt up in Maine, and then we see this
3 central area here. We also see a
4 really wretched rate up in Northern
5 Alaska and in some of the counties out
6 far west.

7 Next slide, please.

8 So let's talk about, since this
9 meeting had a theme of looking back of
10 20 years, I tried to go with that
11 theme. And we're looking at the
12 trends in lung cancer incidence rates.

13 Just for those folks who are not
14 familiar with the standard terms that
15 I use, incidence means the number of
16 new cases versus mortality deaths from
17 the disease of interest. So that's
18 what an incidence rate is. You can
19 only be incident or dead one time from
20 an epi point of view.

21 So this is distant meaning the
22 cancer has already spread to well
23 beyond its origin. And then we're
24 looking at this by race because we're
25 always interested in New Jersey in

1 both looking at data by race, and for
2 EJ purposes, this is very important.

3 And what we see is that -- and
4 this is US data. What we see is the
5 incidence is always highest when its
6 being detected distant, and then we
7 see the local, so that would mean it's
8 only located where it started. We
9 don't see those rates changing that
10 much, local, local, local. They are
11 very similar because all races is
12 largely a mix of whites and
13 African-American individuals. So
14 that's what we are seeing.

15 Thankfully, we are seeing the
16 incidence is declining as we get up
17 towards more current data.

18 Next slide, please.

19 And then if we look at this by
20 ethnic groups, AAPI is American Indian
21 and Alaskan native. And that's AIAN.
22 And this is, I believe, Asian Pacific
23 and -- AAPI is Asian American and
24 Pacific Islander. So these are not
25 huge parts, but they are important to

1 look at all these ethnic breakdowns.

2 And what we see is in males, the
3 rates are coming town. The dark blue
4 here is the white.

5 And we see in females, it is
6 declining, but not as much, and it did
7 rise here from 1990 up to around, sort
8 of say the turning point might be
9 around here. So we do see that it is
10 declining now and we see that the rate
11 is continuing to decline nicely in
12 males.

13 Next slide, please.

14 I'm going to show the New Jersey
15 data in just a minute.

16 So here we address the question
17 of what's happening with people
18 smoking. This is a very important
19 point, that you cannot skip in any
20 honest presentation of lung cancer.

21 So if we look at the trend in
22 smoking prevalence, this data is the
23 National Health Interview Survey. But
24 the data is very similar to what BRFS
25 found. So we see races combined and

1 we see males, blacks, whites, females,
2 blacks here, whites there, all
3 continuing to decline.

4 Next slide, please.

5 Okay. So now we're going to
6 switch to New Jersey data. Up till
7 now, I haven't done anything specific
8 to New Jersey. Now we're all New
9 Jersey all the time.

10 What we see, this is PM 2.5, and
11 we're looking during the years that we
12 were sort of asked to think back. And
13 what we see, this is by county, there
14 are 15 counties with monitors for this
15 and here we see the kind of bouncy but
16 continuing to decline over the time
17 interval.

18 Next slide, please.

19 Now we're getting into what does
20 environmental public health tracking
21 have on air quality and cancer. And
22 this is the one time I was going to
23 say can you make this one bigger so we
24 can just see the center of it.

25 Perfect. Hold that there.

1 So what we have is we have
2 outdoor air. These are indicators.

3 New Jersey SHAD is the New
4 Jersey State Health Assessment Data.
5 This is a publically available website
6 available through the New Jersey
7 Department of Health, funded in part
8 by the grant that we have from the
9 CDC. And it also supports other data,
10 but any that needs to be put up and
11 made publically available for the
12 Department of Health.

13 But we also put up some
14 environmental data and we have FAQs
15 and resources, a lot of time sending
16 people directly to DEP, and then we
17 have indicators. So we have all these
18 relevant air quality indicators.

19 Next slide, please.

20 This is the first data that I
21 specifically got and prepared just for
22 this talk. So this is data that has
23 not been shown previously. I'm glad
24 to show it to you guys.

25 It's lung and bronchus cancer

1 incidence up through in three time
2 periods, and what we see is -- here's
3 the three time periods. You can see
4 them on the bottom and blue is the
5 oldest, ten years, orange is the
6 middle ten years and gray is most
7 recent ten years. So 2011 through
8 2020.

9 And this is the trend in
10 incidence for lung cancer in New
11 Jersey, and this is a complete
12 ascertainment. This is not a sample.
13 This is the actual data from the New
14 Jersey State Cancer Registry.

15 And what's interesting is in
16 males we see perfect line up of the
17 curves falling through the three
18 different ten-year intervals. In men,
19 the oldest time period, that's shown
20 in blue, it has the highest rates.

21 But it's very funky in women.
22 The highest rate in -- the oldest time
23 period has the lowest rate. This is
24 what the data what tells us, but it's
25 pretty funky.

1 Next slide, please.

2 And then if we look at this a
3 little differently, by summarizing it,
4 what we see, for all the data people
5 in the audience, what we see is the
6 lines are going to converge.

7 So the female line is the orange
8 and the blue line is the male. And if
9 we extend them out, coming very soon
10 to a state we live in, we're going to
11 see the lung cancer rates actually
12 either cross or join together.

13 And this data also came to me
14 directly from the New Jersey Cancer
15 State Registry. They were kind enough
16 to do special runs so that I could
17 present this data today.

18 Next slide, please.

19 So what we see here, side by
20 side, directly from the CDC
21 environmental public health tracking
22 website is -- one side we see the
23 age-adjusted lung cancer and bronchus
24 for that interval and then we see the
25 current smoking. This is not as

1 pretty as we all would like.

2 What we see is it doesn't line
3 up perfectly. And this is current
4 smoking, adults only, and this is
5 directly from BRFs, but then they
6 modeled it. Because they only collect
7 it. When New Jersey BRFs is collected
8 they collect enough sampling to get an
9 answer for every county in New Jersey,
10 but not enough to go below because the
11 cost of the survey is quite high.

12 And this, of course, is
13 collected from our cancer registry,
14 and then they modeled it down to
15 every -- I don't know if this is
16 census tract. I'm not sure what this
17 is. But here it is. And what we see
18 is we have a light area here with the
19 least smoking and we sort of have some
20 lighter areas for lung cancer here.

21 But it's not going to correlate
22 perfectly because also lung cancer
23 probably has a thirty-year time period
24 to develop. So this is current
25 smoking and this is people developing

1 lung cancer, so the mismatch of time
2 is not perfect.

3 Next slide, please.

4 And then finishing up -- we're
5 almost at the end here. We have the
6 US cancer, lung cancer deaths. And
7 then below, in New Jersey, we see that
8 New Jersey is below the nation, but we
9 don't look very different really. The
10 curve and trajectory is very similar
11 and it's pretty easy to see.

12 And that's my last slide.

13 The next slide has my contact
14 information. If you'd like to reach
15 out to me, please do. You're welcome
16 to e-mail me directly at the e-mail
17 that I'm providing. And also, in case
18 you're interested, here's our NJSHAD
19 site if you want to look at the data
20 we have queryable data and Health and
21 Environmental Indicators.

22 And then I have to plug to our
23 newest product which is Healthy
24 Community Planning. If you're
25 interested in data by municipality,

1 that's where you want to go.

2 Thank you very much.

3 MR. BIELORY: Thank you very
4 much, Dr. Goun. I do have a couple of
5 questions.

6 Number one, if you look at the
7 male and female track for lung and
8 bronchus, actually women started to
9 peak later than the men, so, therefore
10 when you show the merging of the two
11 is that the males are coming down to
12 the females at the time. So it
13 really -- there is a disparate timing
14 in years of that overlap.

15 So I wanted to highlight that
16 because if you put those two just
17 below male and female, the woman are
18 developing late or are now developing
19 it and are moving down whereas the men
20 were developing it in, I will say the
21 military, World War I and II, where
22 they were smoking a lot more than they
23 are today. That's going to be a
24 post-war, post whatever period, an
25 event in that regard.

1 You want to comment on that,
2 Barbara? Because that's what I see.

3 MS. GOUN: I think what we're
4 seeing in the lung cancer rates are a
5 couple of things. We're seeing the
6 combination of beginning smoking,
7 ending smoking and volume of smoking.
8 Because it's not really -- for BRFS
9 data you get yes, no, but the truth is
10 ideally we'd prefer to have, like,
11 packs per day. That changed over time
12 as people started to cut back on their
13 smoking.

14 But women I think entered the
15 smoking -- women started smoking later
16 and men were already heavily smoking
17 at the Surgeon General's Report and
18 were quitting. We also see that
19 quitting is very difficult as those of
20 us who work in the lung cancer and
21 health world know. So, you know,
22 people don't necessarily quit, but
23 they might diminish their smoking.

24 So, yeah, the pattern is -- that
25 pattern is pretty perplexing and we

1 have not ever seen that, and we were
2 just talking to the Cancer Registry.
3 We're thinking maybe doing one-page,
4 like a little mini fact sheet with
5 that one graphic on it that shows the
6 disparity because we're not sure that
7 data is out yet.

8 And I'd like to thank Lisa
9 Paddock at the New Jersey State Cancer
10 Registry for providing us with that
11 data so I could mess with the
12 graphics. I never know what the data
13 says until I mess with it, and usually
14 make it visual.

15 MR. HANNA: I was hoping to ask
16 this of a couple of speakers
17 previously, but we were running out of
18 time, so I have the pleasure of asking
19 here. But with all of your data and
20 your analysis, you came pretty close
21 to the question I'm asking, and if you
22 don't have an answer to it discretely,
23 maybe we can talk about how we might
24 get there.

25 But we heard a lot this morning

1 about all of the actions we've taken,
2 whether in New Jersey or across the
3 country for 20 years, 40 years,
4 whatever window you want to look at to
5 minimize air toxics. We looked at
6 lots of the ambient monitoring data to
7 show the trends; the conclusion it's
8 coming down. We heard from some
9 industry representatives who have
10 talked about the investment that they
11 have made to follow regulations and
12 comply and reduce pollution.

13 What we always seem to be
14 missing though is the data to show
15 from a health standpoint that the
16 benefits are there. You talked a lot
17 about smoking, but that's not the air
18 toxics from the State and its
19 transportation and from industrial.

20 Can we quantify that is really
21 my question? Is there any way to
22 parse that down?

23 MS. GOUN: Can you put up my
24 recommendations? This is very
25 apropos.

1 It will take a second but in the
2 meantime we'll talk.

3 It's very hard to quantify. A
4 lot of these studies are ecological
5 which don't really -- from an epi
6 point of view, are not the best. But
7 they are not bad studies. They're
8 well done but they are not able to
9 quantify that number.

10 Ideally as an epidemiologist,
11 I'd rather have case-controlled
12 studies, but they cost a fortune and
13 you can't wait for people to develop
14 lung cancer. It would cost a fortune
15 and it would be unconscionable to not
16 counsel everyone to quit smoking.
17 Entirely unconscionable.

18 So I'm saying we need further
19 research on indoor and outdoor air and
20 the consequences to guide exposure,
21 but these are what I've submitted as
22 my summary and recommendations.

23 MR. HANNA: Is there a pathway
24 to that; is it within the realm of
25 possibility at least? It's not going

1 to be purely quantitative but to be
2 able to --

3 MS. GOUN: Oh, yeah. I totally
4 believe it's possible. I do feel from
5 my point of view -- I'm now speaking
6 as an individual, not representing the
7 health department because you're
8 asking me a great question, so I'm
9 going to answer it on the fly. So
10 this is not like the health department
11 speaking. This is Barbara Goun, PhD
12 in epidemiology speaking.

13 I think it's doable, but it
14 really should be done with the type of
15 epi study that is expensive and time
16 consuming if you really want to get
17 quantifiable. But I'm very hopeful
18 because air pollution causes more than
19 lung cancer. It has multiple health
20 impacts that are well proven.

21 So we have to decrease exposure
22 not just based on one end point but on
23 multiple end points.

24 MR. HANNA: And we're showing
25 we're decreasing exposure.

1 MS. GOUN: As you should.

2 MR. HANNA: And that's
3 happening, but the missing link then
4 is what are the benefits of that
5 reduced exposure and within those
6 benefits, where are there still
7 benefits to gain that are meaningful.
8 And again, you can't evaluate the
9 cost-benefit of future policy --

10 MS. GOUN: Your question is a
11 great one, but it could be a whole
12 course in graduate school. So I'm
13 afraid I can't answer your question.

14 Do we have time for another
15 question?

16 MR. BIELORY: Well, in addition
17 to that, you can't parse out yet in a
18 generation; it takes 40 years to see
19 the impact, 20 to 40 years. So
20 obviously that's -- but I would love
21 from Dr. Gown to get more specific
22 because what -- Toby's raising the
23 question can you parse out the impact
24 of air toxics on the health from
25 cancer specifically, and your answer

1 is that you can't really do it very
2 well with the present database, but
3 nonetheless you do recommend that
4 specific studies be done, and you've
5 got to start now to see the impact.

6 MS. GOUN: Yes.

7 MR. BIELORY: Because, like I
8 say, it's 20 to 40 years. It's not
9 going to come back in five to 10
10 because numbers as you've shown have
11 decreased in the past 20 years, but
12 that implication of impact on the
13 bronchus won't be seen for another 20
14 years if it really does have an
15 impact.

16 MS. GOUN: And there are so many
17 other risks and adverse health
18 outcomes to air pollution, we can't
19 only worry about lung cancer. We have
20 to be concerned about acute effects,
21 we have to be concerned about other
22 disease concomitant -- the effect of
23 air pollution on concomitant diseases.

24 So there's a lot going on here.
25 I'm only addressing a small part of it

1 talking about lung cancer, but there's
2 a whole course possible on what is the
3 impact of air pollution on health.

4 MR. BIELORY: Anybody else on
5 the Council have questions?

6 If not, Dr. Goun, thank you very
7 much. I would love to have more in
8 writing. I think later I'll look at
9 your slides regarding the development
10 of digital studies that need to be
11 started now for the long-term
12 assessment and design for the proper
13 assessment of what actually Toby Hanna
14 has raised.

15 Thank you.

16 We'd like to pass the mic on, so
17 to speak, to Barbara Morin who is an
18 environmental analyst at North East
19 States for Coordinated Air Use
20 Management, which is otherwise known
21 as NESCAUM, an agency you can see in
22 association of eight of the North
23 Eastern states, and she has been
24 working a variety of air toxics and
25 public health issues as well as

1 environmental justice within that
2 umbrella organization.

3 But before she started working
4 at NESCAUM, she worked for the State
5 of Rhode Island for over 30 years in
6 their Environmental Management's
7 Office of Air Resources as well as the
8 health office of L.B. Holmes and the
9 environment.

10 So I pass the mic on to Barbara
11 Morin. Thank you.

12 MS. MORIN: Thank you. I really
13 appreciate having the opportunity to
14 address this council. As you said, I
15 work for NESCAUM and it's an honor to
16 be able to work with a number of staff
17 people from New Jersey DEP on a
18 variety of variations including air
19 toxics.

20 I guess, George, you're
21 controlling the slides. Can you go to
22 the next one, please.

23 So we're very impressed by a lot
24 of the accomplishments that have
25 already come through New Jersey DEP

1 for air toxics over the years.
2 Particularly notable are the
3 permitting program, which includes the
4 analysis of short and long-term risks
5 over a range of air toxics from
6 stationary sources and certainly has
7 resulted in some controls being --
8 additional controls being instituted
9 where necessary.

10 The incorporation of
11 environmental justice considerations
12 and the permitting process, and I have
13 to say that even though I realize that
14 the new rule was just announced this
15 week a lot considerations have already
16 been put in place, you know, for
17 instance, increased public
18 participation and notification that is
19 not always easy to implement.

20 Certainly the innovative fumigation
21 rule, which is substantially reducing
22 local risk from those fumigants and
23 the also the New Jersey DEP worked
24 with -- from my understanding worked
25 with other states to make sure that

1 this operations didn't just get
2 transferred to another state where
3 they wouldn't be regulated.

4 We're very happy to see that
5 diesel particulate cancerous graph map
6 on your website. That's even though
7 EPA's AirToxScreen and before that
8 data did evaluate exposures and
9 ambient concentrations of diesel
10 particulate, they did not calculate
11 cancer risks, so that's been such an
12 important exposure. We're very happy
13 to see that on your website.

14 Certainly the monitoring of the
15 ambient models of the air toxics, the
16 organics at four sites and the metals
17 at six sites, which enabled
18 comparisons both within the state and
19 between states or among states, it's
20 very important.

21 We're also very impressed by
22 kind of the use of (indecipherable) at
23 the website including the What's in My
24 Community interactive mapping website,
25 which I think gives a lot of valuable

1 information to community members. And
2 then also well-designed very
3 informative websites on subjects like
4 air toxics and community air
5 monitoring projects, which are
6 successful in providing information
7 about complex topics in language
8 that's accessible to a variety of lay
9 people.

10 Next slide, please.

11 So the continuing concerns that
12 I wanted to address today are two.
13 One is exposure to ethylene oxide, and
14 the second, impact of emissions from
15 petroleum refining's storage and
16 distribution sources.

17 Next slide.

18 I'm not sure if this has already
19 been discussed this morning, but
20 according to EPA's 2019 AirToxScreen
21 modeling analysis, which I think has
22 been discussed quite a bit today, the
23 pollutant associated with the greatest
24 risk to any of the New Jersey's census
25 tract, the highest cancer risk is

1 ethylene oxide.

2 It may not have been the case if
3 they included a diesel particulate
4 cancer risks, but at any rate that's
5 how it came up. And certainly New
6 Jersey was not alone in that.

7 For the highly impacted census
8 tracts it's almost totally associated
9 with emissions from ethylene oxide
10 sterilizers, which are used mostly for
11 medical equipment sterilization, but
12 also in some cases for sterilizing
13 some materials. The highest
14 particulate risk for any census tract
15 was 151 per million. That analysis
16 assumes that there's no ethylene oxide
17 in background air, zero concentration
18 in background air and that there's no
19 ethylene oxide that's formed in
20 reactions in the atmosphere.

21 And that way it's different from
22 say -- you know, they assume there's a
23 certain concentration of carbon
24 tetrachloride in the background air
25 and there's formaldehyde that's in

1 both the background air and that's
2 formed in the reaction from the
3 atmosphere. But for ethylene oxide
4 it's in the air except where you have
5 a source that's impacted.

6 Next slide, please.

7 So in the last few years, New
8 Jersey DEP has been monitoring for
9 ethylene oxide that's part of the DEP
10 LC samples at their four monitoring
11 sites. And the levels that they see
12 of ethylene oxide and the monitoring
13 results are much higher than what's
14 reached within the EPA models, even
15 though those sites aren't continually
16 near any big sources of ethylene
17 oxide.

18 They are, in fact, between 200
19 and 2000 times higher the monitored
20 values compared to the model values,
21 or between 200 and 2000 times higher.
22 And even if you compare these sites
23 that are monitored values to these
24 sites that are not particularly near a
25 known source with what the EPA's model

1 is predicting for the highest impacted
2 census tract, it's still 10 times
3 higher in these kind of background
4 types than they would be at this
5 maximally impacted. So that's kind of
6 a concern.

7 Next slide, please.

8 So it's not -- this is not just
9 an issue in New Jersey. Those
10 discrepancies between monitor and
11 model values exist in other states.

12 The first four here and then the
13 Jersey sites. But you can see it
14 shows mean monitored concentrations
15 divided by the modelled and it's well
16 within the kind of ratios that have
17 been seen in other states as well.

18 Next slide, please.

19 However, one thing that is
20 different is that here if you look at
21 the slide on the left, it's the
22 monitored values as it compares
23 New Jersey -- those first four are
24 New Jersey, the next several are
25 New York and then Pennsylvania and

1 some other states after that.

2 And the monitored numbers in
3 New Jersey tend to be higher than in
4 most of the other states except
5 Pennsylvania shows -- Pittsburgh,
6 Pennsylvania site shows up as being a
7 similar range as New Jersey on this
8 graph. There are also a couple of
9 others in other parts of the country
10 that are kind of a similar range. I
11 think Oklahoma and Arkansas maybe.
12 I'm not sure.

13 At any rate, if we compare the
14 ones that we're seeing in New Jersey,
15 for instance, with what you're seeing
16 in New York, it tends to be about
17 twice as high in New Jersey as in New
18 York. And if you look over to the
19 next -- the other graph, also what was
20 predicted by the AirToxScreen for
21 those (indecipherable) stripes where
22 those monitors are, it doesn't --
23 you're not necessarily seeing that
24 kind of discrepancy where you expect a
25 lot higher numbers in New Jersey than

1 in New York.

2 I have to say that -- point out
3 that the scale of these two graphs are
4 really different. Because, as I said,
5 the projections for the model's
6 concentration are much lower.

7 So next slide, please.

8 This is kind of a dilemma that
9 needs to be followed up because
10 ethylene oxide is predicted to have
11 such a high risk in comparison to
12 other pollutants.

13 So to try to nail this down
14 better, I think it's important --
15 first I think it's important to try to
16 identify the reasons for the
17 discrepancies.

18 To the extent that you believe
19 that the monitor values are correct,
20 you may need to be looking at what
21 other sources are being left out of
22 the AirToxScreen Analysis and also
23 whether there are background levels
24 that are present that are just not
25 being included in that analysis that

1 should be.

2 Also I think it's really
3 important to identify the reasons for
4 why the New Jersey monitoring
5 concentrations are higher than those
6 in other states, and I'm actually
7 especially interested in the
8 comparison with New York.

9 So one of the issues has been
10 ethylene oxide is a difficult
11 pollutant to measure accurately in the
12 ambient air. And that's due to both
13 problems with the sampling itself
14 because it can actually grow in a
15 canister.

16 So after you collect it, the
17 sample can actually increase if the
18 sample isn't analyzed very promptly,
19 and in some cannisters it grows faster
20 than others. And there's a lot of
21 sort of unknowns about that.

22 And then also with the analysis,
23 that there can be interference that
24 you can end up mischaracterizing.
25 Some of what you think is definitely

1 an oxide might actually be interfering
2 with another compound.

3 We noted that New Jersey and
4 actually also Pennsylvania, which had
5 a high Pittsburgh monitor, used the
6 EPA contract lab, which is ERG, to do
7 the analysis of its BOC cans. New
8 York has actually spent a lot of
9 energy over the past several years,
10 responding to techniques for ethylene
11 oxide to try to eliminate a lot of the
12 variance and try to figure out what
13 the best techniques are to get the
14 most accurate numbers.

15 So that may explain some of the
16 differences with the three other
17 states I think that I identified that
18 also had higher numbers. Two of those
19 also used the PA contract lab.

20 So it may be partially a
21 difference of how long the cans wait
22 before they're analyzed or they're
23 sent off, or it may be some other
24 differences in the techniques that
25 partially explain the differences.

1 One thing that's happening now
2 is just in the past week or so
3 proposed some new regulations for
4 organic chemical manufacturers that
5 included some requirements for
6 fenceline monitoring of several air
7 toxics including ethylene oxide and
8 said that they were proposing some
9 refined monitoring, sampling and
10 analytical techniques for more
11 accurately measuring ethylene oxide.
12 So hopefully that will help with that
13 issue.

14 But even with the refinements,
15 it's likely that ethylene oxide
16 measurements may continue to be higher
17 than what would be predicted by the
18 EPA modeling analysis and we may need
19 to look further in to why. One thing
20 that we noticed, actually, was that
21 there seems to be some formation of
22 ethylene oxide in chemical reactions
23 in more amounts similar to ozone and
24 formaldehyde. Also often have higher
25 ethylene oxide so that's another

1 effect that probably needs some
2 further evaluation.

3 Next slide.

4 I just quickly wanted to say a
5 couple of things about petroleum,
6 refining storage and distribution
7 emissions. I hoped to have more data
8 on this to show but these are
9 actually --

10 George, can I ask you to not
11 show this slide.

12 I apologize for this, but we
13 have been doing some preliminary work
14 but our funder didn't want us to show
15 preliminary data until it was put to a
16 period. So we can't show that slide
17 now.

18 So the second topic I wanted to
19 address was issues about potential
20 impacts from petroleum, refining,
21 storage and distribution sources in
22 the State.

23 So one thing that we looked at
24 was that the New Jersey DEP monitor at
25 Elizabeth has benzene concentrations

1 that are roughly twice as high as the
2 one in Chester, New Jersey. That's
3 sort of probably largely influenced by
4 the one in Elizabeth because it's
5 closer to the New Jersey Turnpike and
6 the elevations from the mobile sources
7 that are definitely impacting it. But
8 there are also several terminals that
9 are in that area.

10 NESCAUM has had a concern for a
11 while about impacts to ambient air
12 from various sources of petroleum,
13 storage and distribution and refinery.
14 So that's something that warrants
15 further investigation.

16 Next slide, please.

17 So one area that we were
18 interested in is the area around
19 Linden, New Jersey. There are a
20 number of tank farms and there's the
21 Bayway Refinery, north of there. It's
22 a community that's considered an
23 overburdened community. So we're kind
24 of concerned that there likely could
25 be impacts in that area from some of

1 those sources. And as I said, we're
2 currently supporting some work to
3 investigate VOC emissions and to kind
4 of figure out where you're seeing
5 elevated levels of various VOCs to
6 shrink it to some source apportionment
7 to figure out what the sources are.

8 We don't have results we can
9 share about that today, but we hope to
10 have those ready in early 2024, and,
11 you know, I think that this is
12 definitely an area that warrants
13 further investigation.

14 Next slide, please.

15 So as a follow-up from that
16 area, we think that it would be a very
17 important thing to increase monitoring
18 in the vicinity of petroleum
19 facilities. I think Joann mentioned
20 this morning the fenceline kind of
21 monitoring of the neighborhoods around
22 those facilities and doing some
23 continuous monitoring that gives you a
24 better idea of being able to associate
25 emissions with particular activities

1 at the facilities. You can also look
2 at more spacial differences as you
3 move away from a facility.

4 And then a thing that's sort of
5 coming down the line, that has been
6 mentioned before, a lot of the
7 community monitoring projects that
8 have been done to this point have been
9 largely done with purple ear or other
10 sensors that most are looking at
11 particulate, but there are a new group
12 of low cost VO sensors that are coming
13 down the line now that are being
14 evaluated that show a lot of promise
15 that look at VOCs and in real time,
16 and those kind of things may be
17 valuable to better characterize what's
18 going on in terms of local impacts and
19 sources.

20 And then because you already
21 have a one-hour average benzene
22 benchmark as well as your annual
23 averages, you certainly could use
24 those data probably both in terms of
25 calculating risks and also identifying

1 activities or sources that are
2 contributing all data concentrations.

3 We're very impressed with the
4 program in general, and just a couple
5 of areas of some suggestions.

6 MR. BIELORY: Thank you very
7 much, Ms. Morin. The question I have
8 is that based upon your very own
9 comments, can I trust the numbers that
10 we find here in Jersey regarding
11 ethylene oxide being a hundred times
12 more than the EPA model? Meaning
13 you're telling me that there are
14 problems with the measurement devices,
15 then that's a problem in itself. That
16 could be stage one. How can you
17 measure something that you're not sure
18 that you're measuring? I really have
19 a problem with that being discordant
20 because if I present that data, we
21 look like we're -- I'm doing a
22 disservice to the State but I don't
23 have the right numbers.

24 MS. MORIN: Yeah. I think that
25 the monitoring has to be really worked

1 out. It's not New Jersey issue alone
2 by far. Hopefully, these refinements
3 that EPA is suggesting will help to
4 some degree, but from what I can tell
5 in talking to some of the people in
6 New York that have been working in
7 this area for quite a while, you know,
8 it will help some, it's not going to
9 make the problem go away.

10 So it may bring the
11 concentrations down to more similar to
12 what you're seeing in New York, but
13 they're still quite elevated. I think
14 this is a lot to -- this is sort of
15 still a mystery area.

16 It just needs investigation
17 because if it's really true that the
18 concentrations are that high in
19 background areas then it's a real
20 significant risk factor.

21 MR. BIELORY: Right. I'm
22 thinking that on like subjective data
23 it's not objective yet. It really has
24 me a little uncomfortable as a
25 scientist.

1 MS. MORIN: Yeah. And I agree.
2 At the same time, the PA disfunction
3 in AirToxScreen at the zero background
4 I think is not correct either. So --

5 MR. BIELORY: Well, it's like
6 the work with arsenic. No one in this
7 room or participating could live
8 without arsenic. Arsenic is required;
9 however, it's the amount of arsenic
10 that is the problem and the dose over
11 a period of time.

12 And that's I think what Tony
13 Hanna was reflecting, it's what's the
14 help of that. We do need some of
15 these things whether we like it or
16 not. It's not zero.

17 Is there any other questions
18 from the Council, please?

19 MR. HANNA: It's Toby. I would
20 like to ask Barbara a couple of
21 questions about the bulk storage study
22 that you're doing.

23 First question, I guess, is how
24 soon is that going to be conclusive or
25 when would you expect to have -- I

1 don't know whether you're issuing
2 recommendations or a report or a
3 study, but what's the timing on it?

4 MS. MORIN: We have some sort of
5 preliminary work. We may continue to
6 kind of do more monitoring this
7 summer, and then they're hoping to
8 have something that's kind of ready to
9 be kind of released to the general
10 community like early 2024. That's the
11 timeline right at the moment.

12 MR. HANNA: Okay. And it sounds
13 like you know what's been -- New
14 Jersey's been working on that. I've
15 been helping lead a stakeholder group
16 on all the storage terminals for
17 benzene emissions for the past year,
18 and I think you're aware that New
19 Jersey is checking all of those
20 facilities. It's a facility-wide
21 health risk assessment for their
22 permits that's not actually emissions
23 monitoring but that's looking at their
24 potential to emit and whether that's
25 acceptable at the fencelines and in

1 the communities. And that would be
2 looking at one both the one-hour
3 benzene benchmark and the annual.

4 And I think you're probably also
5 aware that nearly all of the
6 refineries in the country at this
7 point have EPA reference at the
8 fenceline monitoring requirements
9 under max standards and they been have
10 been reporting under that for five
11 years now, I believe, and all of that
12 information is still locally
13 available. And that is for benzene at
14 the fenceline.

15 So there's tens of thousands of
16 data points out there on benzene at
17 refinery fencelines that might factor
18 into that, as well.

19 MR. BIELORY: Thank you.

20 Any other questions from the
21 Council?

22 Toby, you have any more
23 questions?

24 MR. HANNA: No. Thanks, Len.

25 MR. BIELORY: Okay. Thank you,

1 Barbara. This will close the, quote,
2 unquote, invited speakers, but we now
3 open it up. I don't have a list.

4 MR. VALERI: We have a list.
5 Two people signed up. Just as a
6 reminder for members of the public
7 that are speaking, there's a
8 three-minute time frame on speaking.

9 On our list the first person is
10 online, Melissa Miles. If she can
11 unmute herself and identify herself:
12 Name, where she's from and if she's
13 representing anybody -- and camera.

14 So all yours, Melissa Miles.

15 MS. MILES: Good afternoon.
16 Melissa Miles, Executive Director,
17 New Jersey Environmental Justice
18 Alliance. Thank you so much for the
19 presentations today. They were very
20 informative.

21 I didn't sign up to be a speaker
22 because I didn't really have an entire
23 presentation, but I did want to weigh
24 in with a little bit about my
25 experiences and what I've been

1 learning in this area from groups
2 around the country in the past couple
3 of years.

4 And a lot of what I was thinking
5 and heard have been already stated by
6 speakers before me. So, you know, I
7 just wanted to maybe add some
8 resources to the conversation.

9 Dr. Goun was talking about
10 ethylene oxide which is definitely a
11 toxic of concern to us, specifically
12 because it is seems like communities
13 in New Jersey are very unaware of the
14 of the dangers of ethylene oxide. And
15 ethylene oxide for us is definitely an
16 EJ issue.

17 A recent study by the Union of
18 Concerned Scientists and some of their
19 tools, which I'll put in the chat,
20 have shown that many of these
21 facilities are in what we would
22 consider EJ around the country. One
23 of the biggest ones, which the US EPA
24 considered a super emitter is right in
25 Linden, which the previous speaker

1 spoke about Linden in terms of the
2 Bayway refinery and other polluting
3 facilities.

4 But, you know, Linden is a
5 community that is almost 73 percent
6 people of color, which makes this, for
7 us at NJ EJA an EJ issue. And
8 ethylene oxide is definitely a
9 chemical concern that we want to see
10 more study, more research and more
11 regulation around.

12 In addition, I think speakers
13 like Dr. Laumbach talked about the
14 cumulative impact of living in
15 communities that have multiple sources
16 of pollution. Places like Camden,
17 that have been spoken about, like
18 Newark, where it, for many decades,
19 has been difficult to really quantify
20 certain -- you know, both the amount
21 and the impact of certain chemicals
22 that we know aren't our problems
23 simply based modeling, but we do need
24 to do more to actually be capturing
25 fence-line emissions from facilities

1 when it comes to chemicals and
2 pollutants, air toxics of concern.

3 Particularly facilities that are
4 at risk of fire, fugitive emissions,
5 we need to see much more monitoring
6 happening around the State,
7 particularly in overburdened
8 communities.

9 So I will be submitting some
10 written comments that are a bit more
11 detailed, but I just wanted to take a
12 minute to weigh in from an EJ
13 perspective that this conversation is
14 very important to us and we appreciate
15 you having it today.

16 Thank you.

17 MR. BIELORY: Thank you. And
18 actually please make sure you forward
19 your comments in writing so we can
20 review and incorporate it for the
21 report.

22 Thank you very, very much.

23 MR. VALERI: Okay. The next
24 speaker is here. It's Robert Rashkes.
25 So he's here and will be coming up.

1 And just a reminder for whether
2 you're speaking or not speaking, if
3 you want to submit written comments,
4 you have until May 5th. The address
5 or e-mail address for those comments
6 that's online on the Clean Air Council
7 page of the DEP website.

8 MR. RASHKES: My name is Robert
9 Rashkes and my comment is: At last
10 year's public hearing, I spoke about
11 the increase of recreational wood
12 burning in residential neighborhoods
13 such as mine in West Orange and the
14 adverse environmental and health
15 effects that it causes. This year, I
16 would like to focus on how businesses
17 are generating revenue from
18 recreational wood burning.

19 Large home improvement centers
20 are selling fire pits and chimineas as
21 recreational amenities. Home
22 contractors are building luxury fire
23 pits with seating for residential
24 backyards. Supermarkets are selling
25 aged firewood for burning in

1 fireplaces and fire pits, and realtors
2 are marketing homes for sale with wood
3 burning and fireplaces as amenities.

4 This culture is adding toxics to
5 our air. Steps need to be taken as
6 were done with tobacco smoke to
7 develop regulations and to enforce
8 them if we want healthy clean air to
9 breath. Residences need to be held as
10 accountable as commercial buildings or
11 by the NJ DEP if we are to reduce
12 toxins in the air. Campaigns need to
13 be developed to dissuade the sale of
14 products and services that are causing
15 poor air quality in our neighborhoods.

16 As the proposed New Jersey Green
17 Amendment says that all residents have
18 the right to breath clean air and
19 drink pure water, we need to support
20 passage of this amendment and to tie
21 it into the elimination of toxic
22 residential recreational wood burning
23 in our State.

24 Thank you.

25 And I have a post-educational

1 poster that I made up about the
2 dangers and the health effects and the
3 environmental effects of wood smoke.
4 And I learned today that ethylene
5 oxide is a component of wood smoke and
6 it was a very beneficial presentation.

7 Thank you.

8 MR. VALERI: Are there any
9 others?

10 MR. BIELORY: That's all we have
11 signed up so -- in closing, as you
12 heard Mr. Valeri say, that comments
13 can be submitted through May 5th, and
14 please submit them in writing because
15 the council will be meeting to review
16 the transcripts and the contents of
17 all the speakers to provide a report
18 to the New Jersey Department of
19 Environment Protection by legislative
20 decree.

21 So the scenario is that, again,
22 we welcome more. Even if it wasn't a
23 topic that was mentioned, you can
24 still submit for us to review, and the
25 Council can ask questions of the

1 speakers and send it to them and
2 hopefully they will respond to further
3 and enhance our report for the NJ DEP
4 of this director as well.

5 And anybody else have any
6 closing remarks? John? Mike? Toby?
7 Anybody else?

8 MR. WESTON: This is Allen. I
9 just want to say the same. You did a
10 great job today Dr. B. Thank you for
11 your hard work.

12 [TIME NOTED: 2:35 P.M.]
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1 CERTIFICATION

2
3 I, Ayelet Russo, a Notary Public for and
4 within the State of New Jersey, do hereby
5 certify:

6 That the witness whose testimony as
7 herein set forth, was duly sworn by me;
8 and that the within transcript is a true
9 record of the testimony given by said
10 witness.

11 I further certify that I am not related
12 to any of the parties to this action by
13 blood or marriage, and that I am in no way
14 interested in the outcome of this matter.

15 IN WITNESS WHEREOF, I have hereunto set
16 my hand this 10th day of May, 2023.

17
18
19
20 AYELET RUSSO
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