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

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AGENDA

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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 Clean Air Council	NJ Assocation of Counties
Maria Connolly, Vice-Chair	Dept. Of Community Affairs
Stephen Milgrom	Dept. Of State
Leonard Bielory, M.D. Hearing Co-Chair	Public
Michael Egenton Hearing Co-Chair	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 Georgopoulous, 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

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

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

Next slide, please.

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

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

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

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

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

three minutes.

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

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

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

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

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

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

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

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

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

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

If you can switch slides, George.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

We're going to talk about how the department continues to identify emerging air contaminates to develop programs to minimize their impact. We're going to talk about risk assessment tools, other studies that are available, technology and science and how that has advanced, use of regulatory determinations.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. BIELORY: Testing one, two, three.

MR. VALERI: Yes. Thank you.

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

MR. EGENTON: It's Mike Egenton. I just want to take 30 seconds. Thank you for the work that you do with this Council. As you may know, I'm the longest serving member on the Council and its been a pleasure working with you and the Commissioner and the team.

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

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

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

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

Anybody else on the Council?

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

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

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

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

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

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

Anybody? And if not --

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

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

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

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

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

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

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

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

MR. HART: Dennis Hart from the

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

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

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

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

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

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

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

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

members who are all volunteers to maximize their input.

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

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

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

Switch the presentation here. Next slide.

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

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

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

Next slide.

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

Next slide, please.

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

low a concentration.

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

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

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

Next slide, please.

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

metals and other elements for analysis.

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

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

Next slide.

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

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

2000.

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

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

Next slide.

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

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

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

Next slide.

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

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

Next slide.

Similar slide for 1 3 butadiene. Again, at our rural site, we're seeing maintain levels at or below or very slightly above no public health impact. But at our other three stations, we are seeing a significant downward trend but we're still a little above that level we would expect no public health impact. So again, progress, but more work needs to be done.

Next slide.

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

Next slide.

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

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

Next slide.

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

the correct locations.

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

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

Regulatory decisions, permitting

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

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

Next slide.

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

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

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

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

Next slide.

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

Next slide.

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

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

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

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

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

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

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

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

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

Next slide.

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

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

Next slide.

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

don't have it yet.

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

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

Next slide.

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

Next slide.

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

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

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

Next slide.

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

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

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

Next pollutant, George.

So this is for benzene. This is our benzene.

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

Next slide.

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

Next slide.

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

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

this up.

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

When did we first do the reporting thresholds?

MS. HELD: The first time?

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

Next slide.

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

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

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

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

I'd be happy to take questions.

MR. BIELORY: That's great,

Frank. Any questions from the Council themselves?

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

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

MR. O'REGAN: Siting permit, right.

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

expected public health impact, so this is noncancer.

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

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

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

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

MR. BIELORY: Very good. All right.

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

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

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

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

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

Thank you very much.

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

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

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

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

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

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

But I have two parts to my talk.

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

So I'd like to go back.

So next slide.

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

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

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

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

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

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

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

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

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

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

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

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

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

do to comply.

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

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

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

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

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

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

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

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

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

And now on Monday, the department announced their EJ Rules that will address overburdened communities and go beyond the way that the department currently does permitting and ask the extra question --

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

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

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

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

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

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

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

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

The next frontier has been kind of alluded to as identifying the sources that slipped though the cracks in the permitting program and areas that also are exposed to multiple sources of air toxics.

Next slide.

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

So, for example, with the

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

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

Next slide, please.

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

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

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

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

There's mapping tools that were

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

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

Next slide.

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

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

coming out soon. They promised me. It will be coming out soon.

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

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

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

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

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

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

at relative exposures.

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

So I mentioned some of the strategies --

Next slide, please.

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

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

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

fuels in some places.

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

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

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

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

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

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

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

She is now the Director of our

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

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

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

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

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

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

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

throughout New Jersey.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

well.

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

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

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

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

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

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

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

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

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

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

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

happening.

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

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

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

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

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

aka, the dirty gas center.

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

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

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

about 15 purple air monitors throughout the city.

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

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

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

MS. GADDY: Sure.

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

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

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

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

strengthening than now.

So I thank you on behalf of the Clean Water Action and all of the environmental justice communities in the State of New Jersey.

Newark-strong. Let's do this.

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

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

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

Kim, again, thank you very much

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

(Five-minute break.)

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

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

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

With no further ado, Ray are you on?

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

MR. BIELORY: Got it. Go for it.

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

Over the past century, NJBIA has

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

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

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

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

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

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

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

businesses to operate within confined parameters for emissions.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

we work to keep good paying jobs in our state.

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

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

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

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

I also want to recognize the invaluable cooperation that has existed between the Department and the regulated community, especially industrial facilities and manufacturers. While no one would suggest that the Department should not serve as the regulator with the primary purpose of protecting public health and safety, and while many in the regulated community would argue that the Department has engaged in "Overregulation," I believe that the dialogue that the Department has purposefully engaged in with the regulated community has allowed for those reductions to be made in a rational and balanced manner, and has led the air program to become one of the most successful in the nation.

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

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

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

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

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

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

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

founded on predictable, risk-based objectives.

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

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

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

renewal.

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

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

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

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

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

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

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

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

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

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

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

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

Thank you very much, Mr. Cantor.

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

Dr. Georgopoulos is actually a professor, not only in the medical school at Robert Wood Johnson but in the engineering school, so he really integrates the biomedical components between the two, which is very important in putting together the health, which is the Department of Environmental Protection. It is an outgrowth from the Department of Health and putting the health component with the engineering component, which he has done with VO spacial analysis of the air toxics.

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

PhD from Cal Tech.

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

And Panos, it's all yours.

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

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

MR. BIELORY: We can. Go for it.

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

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

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

The Rationale for studying this is because there are multiple significant damages that chronic low-level exposures to individual or co-occurring air toxics may contribute to increased vulnerability to respiratory infection and in particular to COVID-19 in a cumulative manner, and this cumulative exposures are especially relevant for overburdened communities and sensitive populations.

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

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

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

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

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

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

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

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

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

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

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

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

vaccine and so on.

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

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

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

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

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

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

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

Actually certain studies, one of

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

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

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

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

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

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

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

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

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

We see the same for a number of socioeconomic factors, like percentage of black population, Hispanic population, minorities in the community. So this variables are correlated in places with high population and high levels of minorities, also high levels of diesel, formaldehyde, naphthalene, and so on.

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

specific contributions and its factors, yes.

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

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

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

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

higher level of concentration of this toxic --

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

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

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

But what is significant is that very small increases in chronic levels of respiratory air toxics, levels well below their reference concentration are associated to significant increases in the mortality rate. So a ten percent increase in the cumulative respiratory hazard index, we found to be associated with over a 20 percent increase in mortality rate in municipality, while just a one percent increase in the formaldehyde hazard quotient to be associated with over a 10 percent MRR mortality rate. So we find systematically, and this is across the eight different models that we applied, these increases in mortality rates and level of air

toxics much lower than the chronic respiratory high cancer risk.

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

And so the studies says we use modeled estimates and aggregated data, they demonstrate very robust consistency in findings both nationwide and for New Jersey. And of course, the data (indecipherable) of overburdened communities, environmental demographic and socioeconomic (indecipherable) the president.

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

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

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

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

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

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

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

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

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

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

MR. HART: Thank you very much. My name is Dennis Hart, Executive Director for the Chemistry Council of New Jersey. Our member companies, chemical and pharmaceutical manufacturing, is the largest manufacturing sector in New Jersey. The chemical industry in New Jersey is the largest manufacturing industry having the largest impact on the state's economy both from job and products that we develop.

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

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

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

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

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

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

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

a very, very minor.

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

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

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

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

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

MR. BIELORY: Yes.

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

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

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

MR. BIELORY: Thank you very much. Tom.

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

If we can go right to the outline summary.

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

Next slide, please.

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

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

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

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

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

Next slide, please.

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

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

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

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

similar air toxics are decreasing.

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

Next slide, please.

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

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

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

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

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

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

Next slide.

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

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

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

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

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

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

We can go to the next slide.

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

the country with action programs.

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

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

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

As I mentioned previously, the program explicitly requires quick corrective action for benzene concentrations exceeding an action level. So what this means according to the refinery manuals, within five days of determining that the action level had been exceeded, the facility has to initiate a root-cause analysis to determine the cause and to determine appropriate corrective action, the root-cause analysis and initial corrective action.

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

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

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

Next slide, please.

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

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

The existing sources are required to conduct a risk assessment

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

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

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

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

We can go to the next slide.

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

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

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

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

Final point. New Jersey's air

toxic community concentrations are largely resulting from nonindustrial source categories, such as transportation emissions. DEP should carefully consider the increasing costs and decreasing of further air toxic requirements for the industrial community.

That concludes our comments. Thank you.

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

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

But at this point in time, I

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

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

(LUNCH RECESS.)

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

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

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

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

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

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

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

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

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

(Short pause for technical difficulties.)

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

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

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

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

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

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

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

Go to the next slide.

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

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

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

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

Next slide, please.

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

Next slide, please.

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

Next slide, please.

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

Next slide.

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

Next slide.

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

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

Next slide.

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

it's really in a hot spot, right?

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

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

Next slide.

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

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

But upwind, we have Philadelphia Metropolitan area. So probably about a half a mile across the river, that's Philadelphia, downtown Philadelphia, the whole Philadelphia Metropolitan area. So this site probably represents more global source and other PM, other source PM from Metropolitan area Philadelphia. This main industry there, metals industry, there's a gypsum plant there and so on and there's vessels in the river that generate sources of PM that are more local. But this probably not so much a hotspot, perhaps it's more like an

urban background spot.

Go to the next slide, please.

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

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

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

So it's the difference between

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

Next slide.

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

Go to the next slide, please.

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

tenfold difference in risk.

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

Next slide.

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

Next slide.

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

Next slide.

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

Next slide.

Formaldehyde again. And then,

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

Next slide.

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

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

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

increments by every minute.

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

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

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

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

Next slide.

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

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

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

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

Next slide.

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

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

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

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

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

particulate matter at Exit 13.

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

Next slide, please.

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

Next slide.

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

And the next slide.

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

Next slide.

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

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

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

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

MR. BIELORY: Thank you very much, Bob.

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

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

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

MR. LAUMBACH: Generally, yes.

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

miles, 50 miles traveling by air. What's the distance travelled by air toxics from a point source?

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

MR. BIELORY: Okay. Thank you very much.

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

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

research scientist and principal investigative participant in NJB Department of Health. She's worked with the Department of Health for the past 20 years as a PI, principal investigator, for the CDC-funded environmental public health tracking operative agreement, which is a multi-factorial -- I think this may be one of the ones that someone was also looking to do the pollen for, the CDC would like to get more of the pollen information into because it does compound and add to the flammatory reaction associated with air pollution in general.

So with no further ado, Dr. Barbara Goun.

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

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

Next slide, please.

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

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

Next slide, please.

This slide is one of the most

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

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

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

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

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

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

Next slide, please.

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

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

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

Next slide, please.

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

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

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

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

Next slide, please.

So what do the epi studies of ambient air pollution, not occupational air pollution but rather ambient in community setting. We certainty see an increased risk of lung cancer in association with exposure to PM 2.5. And we see this risk in both smokers and in

nonsmokers.

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

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

Next slide, please.

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

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

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

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

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

The five-year survival, however,

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

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

Next slide, please.

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

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

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

Next slide, please.

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

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

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

Next slide, please.

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

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

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

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

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

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

Next slide, please.

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

look at all these ethnic breakdowns.

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

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

Next slide, please.

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

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

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

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

Next slide, please.

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

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

Next slide, please.

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

Perfect. Hold that there.

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

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

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

Next slide, please.

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

It's lung and bronchus cancer

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

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

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

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

Next slide, please.

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

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

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

Next slide, please.

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

pretty as we all would like.

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

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

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

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

Next slide, please.

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

And that's my last slide.

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

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

that's where you want to go.

Thank you very much.

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

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

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

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

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

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

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

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

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

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

But we heard a lot this morning

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

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

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

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

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

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

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

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

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

to be purely quantitative but to be able to --

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

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

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

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

MS. GOUN: As you should.
MR. HANNA: And that's happening, but the missing link then is what are the benefits of that reduced exposure and within those benefits, where are there still benefits to gain that are meaningful. And again, you can't evaluate the cost-benefit of future policy --
MS. GOUN: Your question is a great one, but it could be a whole course in graduate school. So I'm afraid I can't answer your question.
Do we have time for another question?
MR. BIELORY: Well, in addition to that, you can't parse out yet in a generation; it takes 40 years to see the impact, 20 to 40 years. So obviously that's -- but I would love from Dr. Gown to get more specific because what -- Toby's raising the question can you parse out the impact of air toxics on the health from cancer specifically, and your answer

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

MS. GOUN: Yes.

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

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

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

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

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

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

Thank you.

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

environmental justice within that umbrella organization.

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

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

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

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

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

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

The incorporation of environmental justice considerations and the permitting process, and I have to say that even though I realize that the new rule was just announced this week a lot considerations have already been put in place, you know, for instance, increased public participation and notification that is not always easy to implement. Certainly the innovative fumigation rule, which is substantially reducing local risk from those fumigants and the also the New Jersey DEP worked with -- from my understanding worked with other states to make sure that

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

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

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

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

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

Next slide, please.

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

Next slide.

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

ethylene oxide.

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

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

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

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

Next slide, please.

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

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

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

Next slide, please.

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

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

Next slide, please.

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

some other states after that.

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

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

in New York.

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

So next slide, please.

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

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

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

should be.

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

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

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

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

an oxide might actually be interfering with another compound.

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

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

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

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

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

effect that probably needs some further evaluation.

Next slide.

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

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

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

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

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

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

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

Next slide, please.

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

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

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

Next slide, please.

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

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

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

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

activities or sources that are contributing all data concentrations.

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

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

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

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

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

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

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

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

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

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

Is there any other questions from the Council, please?

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

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

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

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

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

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

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

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

MR. BIELORY: Thank you.

Any other questions from the Council?

Toby, you have any more questions?

MR. HANNA: No. Thanks, Len.

MR. BIELORY: Okay. Thank you,

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

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

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

So all yours, Melissa Miles.

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

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

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

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

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

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

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

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

In addition, I think speakers like Dr. Laumbach talked about the cumulative impact of living in communities that have multiple sources of pollution. Places like Camden, that have been spoken about, like Newark, where it, for many decades, has been difficult to really quantify certain -- you know, both the amount and the impact of certain chemicals that we know aren't our problems simply based modeling, but we do need to do more to actually be capturing fenceline emissions from facilities

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

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

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

Thank you.

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

Thank you very, very much.

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

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

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

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

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

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

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

Thank you.

And I have a post-educational

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

Thank you.

MR. VALERI: Are there any others?

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

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

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

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

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

[TIME NOTED: 2:35 P.M.]

CERTIFICATION

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

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

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

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

AYELET RUSSO

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