CITY COUNCIL
CITY OF NEW YORK

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TRANSCRIPT OF THE MINUTES

Of the

COMMITTEE ON ENVIRONMENTAL
PROTECTION AND SUBCOMMITTEE ON COVID
RECOVERY AND RESILIENCY

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HELD AT: REMOTE HEARING – VIRTUAL ROOM 2

B E F O R E: James F. Gennaro, Chairperson

COUNCIL MEMBERS:
Jennifer Gutierrez
Kamillah Hanks
Robert F. Holden
Ari Kagan
Julie Menin
Francisco P. Moya
Sandy Nurse
Lincoln Restler
Mercedes Narcisse
Gale Brewer
Robert Holden

A P P E A R A N C E S

Pam Elardo, Deputy Commissioner of the Bureau of Wastewater Treatment in the Department of Environmental Protection
Dr. Francoise Chauvin, Chief of the Laboratory Operations in Bureau of Wastewater Treatment
Dr. Dimitri Katehis, Executive Director of Wastewater Treatment and Resource Recovery Operations
Dr. Celia Quinn, Deputy Commissioner of Disease Control at DOHMH
Ricky Chawla
Dr. John Dennehy, City University of New York Queens College.
Joel Kupferman

SERGEANT KOTOWSKI: Live stream is started. Sergeants, please start your recordings.

COMPUTER: Recording in progress.

SERGEANT BIONDO: Recording to the PC underway.

SERGEANT KOTOWSKI: Cloud recording started.

Good morning, and welcome to today's remote New York City Council Hearing of the Committee on Environmental Protection with COVID Recovery and Resiliency.

At this time, would Council Staff please turn on their video. Please place electronic devices on vibrate or silent.

If you wish to submit testimony, you may do so at testimony@council.nyc.gov. That is testimony@council.nyc.gov.

Thank you. Chair, we are ready to begin.

CHAIRPERSON GENNARO: Thank you, and good morning. I am Jim Gennaro, Chair of the Committee on Environmental Protection, and I am delighted to be holding a joint hearing with the Council's Subcommittee on COVID-19 Recovery and Resiliency

which is chaired by my good friend and great Colleague, Francisco Moya.

Our 2 Committees are holding an oversight hearing on New York City's COVID-19 Wastewater Testing Pilot Program. In response to the COVID-19 pandemic, the Council passed Local Law 28 of 2021 which required DEP in consultation with the Health Department to create a pilot program to test the City's wastewater treatment plants for the presences of SARS-COV-2, the virus that causes COVID, and to submit the results of the program in the form of a report to the City Council.

With COVID, it makes sense to know all that is knowable to try to get ahead of it, try to prepare for the next mutation of the disease, and to develop research and detection protocols that can be applicable to other diseases as well.

The Local Law 28 mandate to test New York City's wastewater is based upon the assumption that any substance introduced by humans into the sewer system that remains stable in wastewater can be used to calculate the original concentration of COVID in a given population. In the past, this framework has been used to calculate the prevalence of drug use,

the prevalence of Tamiflu use during the 2009 influenza pandemic, and to monitor the prevalence of certain diseases. Because viruses don't grow outside of host cells, changes in concentration of viral particles in wastewater can be used for detection of new viral outbreaks, the emergence of new viral strains, and potentially be extrapolated to determine the extent of infection in a given population.

Three weeks ago, right on time, DEP submitted the report mandated by Local Law 28 titled "Analysis of the Effective of a Pilot Program to Monitor SARS-COV-2 Presence in Wastewater in New York City." We thank DEP and the Health Department for their dedicated efforts in producing this report and for the valuable contribution they have made to adding to the growing body of COVID signs. DEP will review the findings of this report at today's hearing.

Overall, it appears that the pilot was highly effective in developing New York City's capacity for wastewater-based epidemiology and has allowed DEP to establish methods of measuring SARS-COV-2 levels, detecting SARS-COV-2 variants in wastewater, and to develop the necessary

relationships with the academic, state, and federal partners to undertake this work in the future as needed.

Using this methodology, DEP has been able to detect the Alpha, Gamma, Beta, Delta, and Omicron variants. These variants continue to be monitored but are spreading now at lower levels in the United States. There is also an Omicron subvariant known as BA.2 which is present in nearly half of the states in the country and is one and a half times more transmissible than the original Omicron strain, which is most ominous.

DEP and it's academic partners were able to identify SARS-COV-2 mutations that were not, repeat not, detected in sequencing of clinical specimens in New York City, and by clinical specimens I mean when people go to have a COVID test at a facility, not detected in the sequencing of clinical specimens in New York City underscoring the importance of this program in identifying and tracking the spread of variants that may not yet be on the radar of public health officials. DEP and Health Department have recommended pushing out the pilot program for one more year, and as of this past

January DEP has been participating in a CDC National Wastewater Surveillance System Program to test wastewater throughout the country for SARS-COV-2. This program, as I said is expected to run for 1 year, will be paid for by the CDC and will help DEP gain further insight into the performance of its analytical methods.

Most importantly, the agency now possesses the capacity to engage in wastewater-based epidemiology in-house which is quite an accomplishment and is ready to use this capability in the future as needed.

I would like to thank the great Committee Staff who have done such dedicated work to prepare for this hearing from the Environmental Protection Committee side. Counsel to Committee Samara Swanston, Policy Analyst Ricky Chawla, Financial Analyst Jonathan Seltzer, and finally my Legislative Director Nabjot Kaur.

Before I introduce Chair Moya, I wish to acknowledge the following members of the Committee on Environmental Protection who have joined us today. I see Council Member Kagan, Council Member Menin, and

Francisco will introduce his Members. Samara, have I covered all the members of our Committee present?

COMMITTEE COUNSEL SAMARA SWANSTON: I think you've gotten the Council Members.

CHAIRPERSON GENNARO: Okay. I just want to make sure I did that. I thank these Council Members for their presence and their welcomed participation in this hearing.

It is now my privilege to introduce my esteemed Colleague, Chair Francisco Moya, for his opening statement.

CHAIRPERSON MOYA: Thank you, Chair Gennaro. Good morning, everyone. I'm Council Member Francisco Moya, Chair of the Subcommittee on COVID Recovery and Resiliency.

I'd like to start off by thanking my good friend and Queens' boy, Chair Gennaro, for all the great work that he's done as well as my Colleagues for being present here today on a very important hearing.

We are here today to discuss COVID-19 testing in wastewater in New York City, its utilities, and how we're going to be looking forward as a city with this.

I'd also like to make mention that we've been joined by Council Members Rivera, Nurse, Narcisse, and Brewer. It's been 2 years since COVID-19 first swept across our city, turning New York and particularly my district in Queens into the epicenter of the pandemic. As Chair of the Subcommittee on COVID Recovery and Resiliency, I'm focused on how we can move forward in a way that is smart, strategic, and that centers on equity. This includes remaining mindful of the ongoing risks of COVID-19 variants and spikes in cases including the particular risk of communities disproportionally impacted by COVID including the African-American, black, Hispanic, Latino, immigrant, and low-income communities. Wastewater monitoring for SARS-COV-2 RNA presents an opportunity for pooled community testing that tracks changes in COVID-19 infection levels through a community. As Chair Gennaro mentioned, the City recently released a report detailing their work and progress in wastewater monitoring. Thus far, wastewater data is unable to be predictive of the spikes in the City's COVID percent positivity, but, however, wastewater testing was able to detect the most prevalent variants, such as Alpha, Delta, and

Omicron in New York City's wastewater including mutations that were not detected in sequencing of clinical specimens in particular neighborhoods. While the DEP was able to demonstrate the utility of the sub sewer shed monitoring in producing localized measurements of SARS-COV-2 RNA, the agency ultimately determined that localizing sampling was too labor intensive. With that information, some of our main questions today are what does all of this mean for our city going forward, can we in fact utilize wastewater testing to better understand the impact of COVID including COVID variants on communities, is there potential benefits here in ways to utilize this work to stay ahead of the next spike in cases, specifically in wastewater testing is at all useful for better protecting our city's most vulnerable and communities that have been most impacted by COVID-19.

With that, I want to again thank Chair Gennaro as well as the Committee on Environmental Protection for joining the hearing today, and I want to thank the Subcommittee Staff for their great work on this issue. As always, the Committee Counsel Harbani Ahuja and Sara Liss, Policy Analyst Em Balkan, Finance Analyst Lauren Hunt, and my Chief of

Staff Meghan Tadio, and Communications Director Carolina Valencia.

With that, I'd like to turn it over to the Moderator so that we can go over the procedures for the hearing. Thank you so much.

CHAIRPERSON GENNARO: Thank you, Chair Moya. Before we turn it over to the Moderator, I have heard you recognize Council Member Nurse who is a Member of my Committee. I neglected to recognize her during my statement. Because she is my Chairperson on the Committee on Sanitation and Solid Waste, I really want do right by her and recognize her myself, but thank you, Francisco, for letting me know about that.

As you said, we'll turn it over to the Moderator for further instructions and then we can proceed.

COMMITTEE COUNSEL SAMARA SWANSTON: I'm Samara Swanston and Counsel to the Environmental Protection Committee. Welcome to this hearing of the Environmental Protection Committee.

Before I begin, I want to remind everyone that you will be on mute until you're called on to testify, when you'll be unmuted by the host. I will be calling on panelists to testify. Please be aware

that there could be a delay in muting and unmuting so please be patient. Please listen for your name to be called. I will be periodically announcing who the next panelists will be.

We will begin with testimony from the Administration which will be followed by testimony from members of the public.

During the hearing, if Council Members would like to ask a question, please use the Zoom raise hand function, and I will call on you in order. We will be limiting Council Member questions to 5 minutes including responses. I will call on you when it's your turn to speak. During the hearing, if Council Members would like to ask a question, please use the Zoom raise hand function, and I'll call on you in the order that you raised your hand.

Now, I would like to hand it off to the Administration. I'm going to deliver the oath to the Administration, and I'm going to call on each of you individually to record your answers to be followed by your testimony.

Please raise your right hands. Do you affirm to tell the truth, the whole truth, and

nothing but the truth before this Committee and to respond honestly to Council Member questions?

DEPUTY COMMISSIONER PAM ELARDO, DEP: Yes.

COMMITTEE COUNSEL SAMARA SWANSTON: Thank you. You may begin when ready.

CHAIRPERSON GENARRO: If I could just jump in for a second. Matter of protocol, I just want to make sure that every Council Member who is present has been recognized. Is there any Council Member on this hearing that has not been recognized? I don't want to spite anyone. Seeing no one, I guess everyone has been recognized as appropriate and welcome Madam Deputy Commissioner. Please proceed with your testimony.

DEPUTY COMMISSIONER PAM ELARDO: Thank you very much. Good morning, Chair Gennaro, Chair Moya, Members of the Committee on Environmental Protection as well as Members of the Subcommittee on COVID Recovery and Resiliency.

My name is Pam Elardo, and I am the Deputy Commissioner of the Bureau of Wastewater Treatment in the Department of Environmental Protection. I lead a team of nearly 1,800 people who operate 14 wastewater resource recovery facilities,

96 pumping stations, and all associated pipelines and facilities, and we treat 1.3 billion gallons per day on a dry day of the City's wastewater. Obviously, we have a 24/7, 365 operation.

Our operations and our laboratory led DEP's portion of the COVID Wastewater Monitoring program since it began in August 2020. I'm joined today by several Colleagues including Dr. Dimitri Katehis. He is a PhD in environment engineering and also a professional engineer, and he is acting as my Executive Director of Wastewater Treatment and Resource Recovery Operations. I also have with me Dr. Francoise Chauvin, PhD in biochemistry, who is the Chief of the Laboratory Operations in the Bureau of Wastewater Treatment.

Then we have Colleagues from the Department of Health and Mental Hygiene, and that is Dr. Celia Quinn who is the Deputy Commissioner of Disease Control at DOHMH as well as her Colleagues are with her as well.

We spoke to the Council last about this program in October 2020 when the Council considered the bill that eventually became Local Law 28 of 2021. At that point, we had been conducting weekly testing

for several months at our Wastewater Resource Recovery Influence. We worked closely with the Council on the final language that was finally enacted. This Local Law required us to keep doing the Wastewater Testing Program as a pilot and then report on the program, which we did on February 17, 2022.

This report was written by us and DEP in consultation with the Health Department and is available on our DEP website. The website also links our information to the NYC Open Data Portal, where we've begun posting wastewater testing data so that it can be accessed by researchers, scientists, and health professionals from around the world.

I'd like to note that this work was really a new horizon for us. At DEP, we originally had no capability in this area. However, since we have laboratory resources and we have staff expertise and with help from experts from around the community and the country, we found that we were really well-positioned to advance the science and established the capability quickly in our laboratory services. Therefore, we diverted time and resources to develop and implement this capability within the city.

Now we have a tool, and that tool is effectively a new science and it's at our disposal. We can reliably use this application, and we extended it over the last 2 years, and thanks to the efforts that we've taken we've become a leader in the national and global communities. I believe that over time this tool has a potential to really become a part of a routine set of tools that wastewater utilities and water utilities can use to inform and support public health.

Our wastewater testing program, as I mentioned, started in the spring of 2020 after COVID-19 pandemic began in New York City. We were testing for the genetic material, the RNA, in SARS-COV-2, and that's the virus that causes COVID-19. We started doing this twice per week at each of the wastewater resource recovery facilities, each of the 14. That sampling effectively covers the entirety of New York City. That dataset, once collected, we sent it to the Health Department where it serves as one of the several data streams that they use to inform them about COVID-19 and its tracking in the community.

In the early days of the pandemic, we were engaging with national experts including

academic researchers from the City University of New York, CUNY, also New York University, Stanford, University of Michigan, and other leading wastewater utilities across the country. We continue to work with CUNY and NYU today. These partnerships are really valuable, and they help us identify and refine our testing methodologies.

We have used the same collection and analyses processes since August 2020. While the legislation's pilot program was concluded, the testing program continues so we're continuing to do the sampling and analysis. Because this has been such a focused effort in the field, it's quite amazing that developing this new branch of our capability typically would take several years but with the staff that we have, the expertise, and working with our partners across the city and nationally, we were able to really accomplish a lot in only 24 months. The advances have been remarkable. However, the tools are still developing and we still have a lot to learn.

In order to ensure that DEP and the Health Department retain our leadership role in the utilization of this tool, we will continue to support the effort that's being led nationally by the Center

for Disease Control and Prevention, and that research and development activities are advancing to fully recognize the potential of this new technology. We're excited to be contributing the City's data to that effort and our expertise towards the CDC's work. The CDC has been a really strong leader in developing and applying this wastewater epidemiology as a new tool. There are 2 specific ways that we're assisting CDC in these efforts.

First, we're sending samples to one of their contract laboratories, and our samples are analyzed using the same methods that CDC uses across 500 different sites in the country so we've become a very valuable contributor to that piece of research.

Secondly, we're participating in what's known as the National Wastewater Surveillance System Utilities Community of Practice. That is a large collaborative group that's promoting the exchange of best practices, knowledge, and training in the area of wastewater surveillance for wastewater utilities. This group's goal is to accelerate and adopt new wastewater-based epidemiology standards and support public health decision making.

DEP and the Department of Health continue to assess how wastewater data can be used to inform public health decisions. The data that we collect at DEP is not a crystal ball. The wastewater data alone cannot be used to precisely predict infectious waves coming or dictate how the City should respond. I understand that at the Health Department there's an existing robust system they have for this purpose which includes COVID testing and reporting in the community, genome sequencing of actual individual patients, and further surveillance and we will continue with them and continue to provide wastewater data for their efforts.

Nonetheless, the initial data from the wastewater pilot shows the potential for wastewater data to be used and to be harnessed as another important tool in the toolbox for public health.

This is really a burgeoning scientific field. It could potentially be used to identify future disease outbreaks and trends or other signals of public health interest. We have the capability now and we're encouraged about how far this program has come in just 2 years. We're optimistic about how it might be helpful in the future, and we look forward

to continuing our collaboration with the Health Department and other experts in the field.

Again, I'm really happy to take this opportunity to testify today, and I'd be happy with my Colleagues at my side to any questions you may have.

CHAIRPERSON GENNARO: Thank you very much, Madam Deputy Commissioner, for your good testimony. At this point just want to do a little bit of housekeeping and recognize some of my esteemed Colleagues who have joined us. Council Member Narcisse who I believe was here from the beginning but was not recognized, and it is my privilege to recognize Council Member Narcisse. Council Member Bob Holden. It's good to see him. He's a brand new member of the Committee and we welcome him to the Committee. Council Member Gutierrez also has not been recognized. It's my privilege to recognize Council Member Gutierrez.

With that, I am going to commence the questioning, but as is my habit with joint hearings I try to engage the Members of my Committee and whatever committee is participating in the hearing so I will just 1 or 2 questions to start things. I'll

turn it over to Chair Moya and then I will wait to ask the bulk of my questions. I'm going to be here for the whole hearing anyway. My Colleagues are very busy. I always like to give them an opportunity to ask their questions and do that.

Just to start things, I have questions from the Committee and my questions that I wrote down. Let me start with this question, Madam Deputy Commissioner. What would you characterize as the most significant success of this pilot program? You talked about we have this new infrastructure in place now that we'll be able to use in a profound way going forward once it's refined. It seems like a national consortium as well. We appreciate that, but so far there are certainly particular successes that we can point to in the pilot program thus far. If you can speak on that, I'd appreciate that.

DEPUTY COMMISSIONER PAM ELARDO: I'd love to do that. We are the Bureau of Wastewater Treatment and what we do everyday 24/7 is phenomenal. We take the city's contaminated wastewater and we create clean water, we clean up harbor waters around the city. We also create green gas resource recovery products that are very valuable for us to achieve

energy and climate goals. We're very well-positioned for that, and we're doing that everyday.

Initially, wastewater treatment is a public health effort so we are a public agency, and that is the genesis of wastewater traffic, wastewater control, and resource recovery from the beginning of the notion of we need to treat our human waste. We fit into the public health realm as part of our genesis.

The beginning of COVID, there was a lot of interest in sampling influent in wastewater systems. I was getting calls constantly from private laboratories, from research laboratories, universities. They wanted our wastewater so they could run data, and I did not really feel comfortable doing that because I wanted to control first of all how it's sampled and secondly what is done with the data once it comes out of those third-party laboratories. Because I am blessed with the 2 brilliant people I just mentioned earlier, Dr. Katehis and Dr. Chauvin, quickly we were able to create this capability within the City of New York, and I am very proud of what they've been able to do. I am utterly amazed first of all at the speed we were

able to do it, and we had help, I see that Council Member Brewer is here, he had a strong interest in supporting this effort, and the fact that we were able to establish that capability in-house that we can use now for this public health purpose, we can use in the future if there is a virus or an outbreak of interest that may materialize in the future. We can also use it for broader environmental protection capabilities like we can test receiving waters that may have a fecal contamination and determine if it's from a dog park or if it's actually from a broken sewer so this capability that we have now is a very useful tool to us and the fact that we're able to do that, to me, is really the most important piece of this entire effort.

CHAIRPERSON GENNARO: Thank you. By this new tool, we're talking about water-based epidemiology. Would that be fair to say so this is the new tool.

DEPUTY COMMISSIONER PAM ELARDO: Yes, the new tool is our ability to sample and monitor at that level, yes.

CHAIRPERSON GENNARO: Are there any other representatives from the Administration who are here

to answer questions that wish to elaborate on the question that I posed to the Deputy Commissioner? Anyone else from the Administration who has something to add to what the Deputy Commissioner has said?

What I want to do now, because as I said, it's not my way to filibuster the hearing and ask all my questions upfront, I can ask my questions towards the back end, I'm going to turn it over to Chair Moya for whatever questions he may have and I'm sure that he has, and Samara it'll be up to you then to engage other Council Members that wish to ask questions, and you'll be doing that as the Moderator. Is that right?

COMMITTEE COUNSEL SAMARA SWANTSON: That's (INAUDIBLE)

CHAIRPERSON GENNARO: Okay. With that, thank you, Madam Deputy Commissioner. I will return for more questioning but as I said I wish to engage other Members of both Committees, and I recognize Chair Moya for questions.

CHAIRPERSON MOYA: Thank you, Chair. Thank you for the time.

Deputy Commissioner, good to see you. I have a couple of questions and then like Chair Gennaro said we'll turn it over to the rest of the

Members of the Committee. Is there any utility to finding out 2 weeks or more later a COVID-19 variant has appeared in the wastewater treatment system?

DEPUTY COMMISSIONER PAM ELARDO: I want to get to the genesis of that question. There's a lot of this 2-week thing that is spoken about, and I do think it has some origins in some early sampling that was done back at the very beginning of COVID perhaps in Europe. I'd like you to clarify your question a little bit. Can you kind of just give me a better idea because then I can turn you to the best person to answer.

CHAIRPERSON MOYA: I'm just looking to find out based on what we had read that if that time period of the 2 weeks or more, are you able to see any of the COVID-19 variants that are coming into the watershed treatment system?

DEPUTY COMMISSIONER PAM ELARDO: I would first like to turn this question over to Dr. Katehis to give you a little background on the relationship between our data and how it works with public health, and then I'd like the Public Health Deputy Commissioner Dr. Quinn to follow up with that. Dimitri, do you mind?

DR. DIMITRI KATEHIS: Certainly.

COMMITTEE COUNSEL SAMARA SWATSON: Sorry to interrupt. I'm actually just going to jump in. Unfortunately we couldn't hear anyone's response to the oath other than Deputy Commissioner so I'm just going to administer it very quickly now.

Do you affirm to tell the truth, the whole truth, and nothing but the truth and to respond honestly to Council Member questions?

DR. DIMITRI KATEHIS: Yes.

COMMITTEE COUNSEL SAMARA SWATSON: Thank you so much, and Dr. Quinn, can we unmute you so we can hear your response as well?

DR. CELIA QUINN: I'm unmuted.

CHAIRPERSON GENNARO: I just wish to jump in for a second. I don't know if she was recognized, but I wish to recognize that Council Member Williams has joined the hearing.

COMMITTEE COUNSEL SAMARA SWATSON: Perfect, and then Dr. Chauvin, can we unmute you to hear your response as well?

DR. FRANCOISE CHAUVIN: Yes.

COMMITTEE COUNSEL SAMARA SWATSON: Perfect. Thank you. Dr. Quinn, just say yes or I do.

DR. CELIA QUINN: Yes, I do.

COMMITTEE COUNSEL SAMARA SWATSON: Perfect. Okay. Sorry to interrupt. Go back to your response. Thank you.

DR. DIMITRI KATEHIS: Thank you. I'm going to start by saying that there's really 2 elements to the work we do. As the Chair noted, there is the tracking of variants, which does require at this point…

CHAIRPERSON MOYA: Did we lose him? I think he froze.

DR. DIMITRI KATEHIS: Actual concentrations of the overall viral RNA that we're targeting which takes approximately 3 days to obtain results from using our current technology.

Now, the utilization of that data, I will have to turn over to Dr. Quinn from DOHMH in terms of how that data could potentially be utilized.

DR. CELIA QUINN: Thanks. Let me first start by just acknowledging the excellent collaboration that we've had with DEP on development of this wastewater epidemiology capability for the City of New York. I really echo all of the things that Deputy Commissioner Elardo mentioned when you

were asked about the accomplishments of this pilot program. These are really important capabilities that have a lot of potential.

I think, Chair Moya, in answer to your question about how would we utilize information about variants that appear in wastewater. There is a lag because to do the sequencing, and I think this is what Dr. Katehis was just explaining, in order to do the sequencing is actually very technically difficult, and so there is a lag in time between when the specimen is collected and when we find out about what variants might be present.

At the Health Department, we're really focused on the population level surveillance of disease. We have a very robust surveillance system for COVID-19 that involves a lot of different data streams, electronic lab recording of clinical specimens, sequencing of clinical specimens, information that we gather from hospitals, etc. We think that our sequencing that we're doing of clinical specimens does allow us to detect the emergence of new concerning variants early and the science and technology for monitoring those variants through wastewater is still developing. We're really

excited about continuing this work with DEP to kind of understand how the information that we're getting about variants in wastewater matches up with our clinical specimens and New York City is a great place to do this because of how robust our surveillance systems are.

CHAIRPERSON MOYA: Great. Thank you for that response. That's what I was looking for. Is DEP currently undergoing wastewater testing for SARS-COV-2 virus?

DEPUTY COMMISSIONER PAM ELARDO: The base SARS RNA is what we are monitoring in our influents. Dr. Katehis mentioned from the day we take a sample to the day we get the results is 3 days through our PCR machine. That's for the SARS-COV-2 RNA. For it to be determined further about the variants or the mutations, that's I think what Dr. Quinn was just touching on, that is a genetic sequencing step. This is where another 2-week thing comes in. That takes about 2 weeks. It's not done by us. It's done by our academic partners who have the technology and the capability of doing that so that's the additional piece that we have from the data we collect.

CHAIRPERSON MOYA: There was a recent article that was reported that a new Omicron subvariant BA.2 was doubling in New York according to the New York State Department of Health. Has the State communicated any additional risks of this subvariant at all?

DEPUTY COMMISSIONER PAM ELARDO: I think that would be best suited by Dr. Quinn to respond to.

DR. CELIA QUINN: Thanks. Yes, we are keeping an eye on BA.2. It's a sub lineage of the Omicron variant meaning that it's related to the Omicron variant that just caused this large surge of cases in New York City and New York State during December and January. We monitor all of the variants of concerns and, in fact, like all of our sequence data that we do on clinical specimens informs how we're understanding what different strains of SARS-COV-2 are circulating in the human population of New York City. We do see that early information is indicating that BA.2 is more infectious than other sub lineages of Omicron and it's growing in proportion. That's one of the things that let's us know that it might be more infectious.

At the same time, within New York City we have not seen an overall increase in cases, probably because of both vaccine-induced and infection-induced immunity in New York City having had a lot of people recently infected. We're continuing to closely monitor this through our existing surveillance system that I touched on a little bit earlier.

CHAIRPERSON MOYA: What other resources would the Department need to make wastewater testing for detectable COVID-19 variants a permanent process?

DEPUTY COMMISSIONER PAM ELARDO: My perspective is that we can, with the right resources, retain the tool for collecting the samples, preparing the samples, and running them through the PCR machine for the RNA test. We as DEP cannot do the genomic tests that subsequently have to get done to do the identification of the variant. That is outside of our current capability, and I don't think it'd be a good investment because our partners are doing that for us.

CHAIRPERSON MOYA: Okay. I just want to ask 2 more questions and then I'll turn it over to my Colleagues. The Department decided to continue the study for an additional year. What does the

Department hope to gain from an additional year of study, and would an additional year start from April 18, 2021, the end of testing period from the pilot study or would it be an additional year from the publication of the study?

DEPUTY COMMISSIONER PAM ELARDO: I'd have to check with the precise budget area there, but what I understand is we're funded through the end of this calendar year. We have diverted the resources and dedicated enough resources until the end of this calendar year.

CHAIRPERSON MOYA: Okay. Who else beside the CDC would have access to the information gained from the continuation of the study?

DEPUTY COMMISSIONER PAM ELARDO: Right now, we're in a huge community. I'm really amazed at how this community pulled together overnight and we had Dimitri and Francoise from my team on webinars like 24/7 over multiple time zones when the science was being refined to the extent that it is today. It's really amazing that we were able to pull that together. Because I was so excited about explaining that, you have to repeat your question because I didn't quite answer it. Sorry.

CHAIRPERSON MOYA: No, it's okay. Is anyone else besides the CDC going to be able to have access of the information gained from the continuation of the study?

DEPUTY COMMISSIONER PAM ELARDO: Those academic partners and the community we're in now with the CDC information, and I talked about the community of practice group within the CDC that we're a part of, we're sharing that everywhere all the time, and I think there's a lot of value with that and just continuing that is helping advance the science and really make the utility of this tool something that could grow to even be a better benefit.

CHAIRPERSON MOYA: Great, and would DEP actually consider publicizing a followup report after the additional year of study?

DEPUTY COMMISSIONER PAM ELARDO: I do like bragging about what we do so whenever the time is right I think. It kind of depends on what happens next and when is it an important time to put this together. There's been a peer-reviewed research that got spit out in the last couple of years over this so I think it's an ongoing effort that is still retaining its value to date.

CHAIRPERSON MOYA: Will the information from the CDC-assisted study be desegrated by county, sewer shed, or sewer treatment plant?

DEPUTY COMMISSIONER PAM ELARDO: The way the CDC operates, I believe they break it down only as granular as state by state. At least in what they publicly put out, they don't have it anything more specific than that.

CHAIRPERSON MOYA: My last question, and I'll come back for the second round is there are numerous sources that have identified an increased incidence of COVID-19 in wastewater in areas where there were more facilities emanating particular matter. Has the Department any association with the location of pollution facilities and the incidence of COVID-19, or is there enough date to potentially examine this potential correlation here?

DEPUTY COMMISSIONER PAM ELARDO: That's an interesting question. I just recently heard about this. Along with obviously the COVID sampling that we're doing, the influent, we sample our influent water for a range of things. Some of it we sample on a 24-composite sample. Some things we sample weekly. Some things we sample daily. We sample suspended

solids every day, multiples times a day, and I believe somebody in some research it sounds like there was a correlation potentially associated with the concentration of suspended solids versus the concentration of the COVID RNA. I'm going to turn to Dimitri Katehis who may know if there's any effort on our side, but that one, I don't think we've dove in there yet so Dimitri.

DR. DIMITRI KATEHIS: Thank you, Deputy Commissioner. I'm not aware of any specific research related to the wastewater loadings. However, I would like maybe to ask that DOHMH can provide any input on that question as I believe the Chair's question related to also other forms of pollution beyond the suspended solids in the wastewater, if I understood that correctly.

CHAIRPERSON MOYA: Correct. Like if the wastewater sheds are in areas where there may be a factory or a plant and there's emissions that come in, like we've known for many, many years throughout the city there's been a high incidence because of pollutants from other areas where we see high asthma rates, different things like that, that's kind of where I was leading with that question.

CHAIRPERSON GENNARO: Also, if I can just piggyback on top of that. I heard the same thing as well. I think what we're really talking about here is particulate matter and whether the particulate matter in an area is in a city that emits particulate matter has some predisposition towards COVID for a variety of factors or whether the presence of particulate matter in the effluent somehow has an effect on the ability of that effluent to reveal more in terms of the COVID that's in there. It could be that the existence of particulate matter is acting as a carrier or like an agent for, it somehow helps the sampling. I don't know if that's the case, but that's at least a possibility so if I could add that onto the Chair's question for consideration and response by the Health Department.

DEPUTY COMMISSIONER PAM ELARDO: I think what you're saying is atmospheric particulate matter or other stressors related to concentration of COVID, and that clearly I would like the Health Department, Dr. Quinn, to reflect on that.

DR. CELIA QUINN: I think this is an important question and it kind of illustrates the need for more study of these methods and how to

understand the information that we're getting from wastewater surveillance in the context of our other surveillance efforts and what we know about COVID transmission from our clinical surveillance systems.

CHAIRPERSON MOYA: This is my last question. Prior to this pilot program, has the wastewater testing every been used before to detect disease in New York City?

DEPUTY COMMISSIONER PAM ELARDO: I'll ask Dr. Katehis to talk about that.

DR. DIMITRI KATEHIS: Not from DEP's perspective. DEP lacked the capability for molecular type work. However, on a daily basis, we do monitor, for example, fecal indicating bacteria in our treatment plant effluents to ensure that we are always meeting our permit requirements in terms of the quality of the treated water that we discharge into our harbors and waterways.

I'm not aware though of any specific effort related to a targeted pathogen similar to what we're doing here for COVID-19.

CHAIRPERSON MOYA: Thank you very much. Now I'm going to turn it over to our Colleagues who have questions here.

CHAIRPERSON GENNARO: Now I believe we're going to call upon Council Members who have raised their hands in the order of which they raised them. Do you have that information?

COMMITTEE COUNSEL SAMARA SWATSON: Gale Brewer.

SERGEANT BIONDO: Starting time.

COUNCIL MEMBER GALE BREWER: Thank you very much. Needless to say, Pam Elardo is my hero. I think everybody's a hero, but she's my number one in the City of New York. I just want to make that clear.

The first question I have is, and this is somewhat answered, but thanks to Pam and her leadership and others, I'm sure DOH also, that we managed to get the lab, the staffing, deal with crazy people at OMB who didn't want to do it, etc. Now the question is, moving into the future, obviously whatever the time period is between DEP, private partners, DOH, etc., DOH is getting a new testing center I believe. I've been in the old one in the 20s, and you're going up to next to Harlem Hospital. I guess I want to know for the future, what do we want? I think you've come amazing strides so far but other countries are doing it more real-time and

perhaps answers some of the questions that you heard from my Colleagues about other ways that we could improve the public health in the City of New York. I guess whether it's Riker's Island, which I know is Pam Elardo's hope for the new treatment plant, but not tomorrow, but what can we do to help you either funding-wise or policy-wise to get to the more real time and public health issues that you would like to address. That's both to DEP, I think it's great that you have a new Commissioner who gets it, I know him very well, and also a great Commissioner (INAUDIBLE) at DOH so this is the time to make these changes. That's my question. What about the future and what do you want?

DEPUTY COMMISSIONER PAM ELARDO: From my perspective, we've developed this capability. It has utility for public health purposes like we're talking about today. It also has utility for environmental purposes that we will use for future decision making on best investments of the public dollar to protect the waterways around New York City and to protect public health. In my mind, I have a new arm of our organization that's very beneficial to our wastewater utility and can be used for public health so I'd like

to retain that capability. I don't want to lose that capability. I'd like to retain that capability. We're going to retain it through this pilot program through the end of the year and I believe year we should assess to what level and what degree do we want to retain it for the purposes internal to DEP, internal to our wastewater and water side, but also with our partnership with DOHMH and others what would they like us to continue to do for these broader purposes.

COUNCIL MEMBER BREWER: Okay, and DOH, what's your answer?

DR. CELIA QUINN: Yes, thank you Council Member. I very much agree. I think that this technology has a lot of potential and having developed this capability we certainly don't want to lose it. I'm glad that you mentioned our new public health laboratory that we're working on moving into. It'll certainly give us more space and ability to continue these kinds of collaborations including with our academic partners and other partners in the community.

I think specific to the wastewater surveillance that we've been talking about today. There is a lot more to learn about how to best

utilize this technology, not just for SARS-COV-2 but for other diseases and about how to interpret the data that we're getting from the wastewater surveillance in the context of our other surveillance streams that we have for COVID-19. One of the challenges with the wastewater data is that people when they're infected with SARS-COV-2 are not shedding the virus at the same level. It's not comparable necessarily across people or during the course of illness so it's very difficult right now to understand what a particular level of virus found in the wastewater means in terms of the total number of cases. It's helpful for looking at trends. It has correlated pretty well with our existing surveillance data, but we really need to continue the work that we're doing with DEP to understand how to interpret the amount of virus that we're seeing in the wastewater and how to utilize it.

COUNCIL MEMBER BREWER: Another quick question I have is data. Now I should know this, public data person that I am, but who does the posting on the open data portal or how do you decide how that gets posted and what gets posted, etc? I

don't know if that's DEP or DOH, but obviously that's important to the public and the timing.

DEPUTY COMMISSIONER PAM ELARDO: We post our data onto the open portal. I believe we upload it on a monthly basis. I don't know like who runs it. I think it's done from the DoITT folks in the City. Dr. Chauvin, do you have any moreinformation on that?

DR. FRANCOISE CHAUVIN: One thing I wanted to make sure we mentioned at this time what we are posing is the concentration data that were obtained in our laboratories at DEP. That of course is in addition to the data that CDC is communicating, and those data would be from the contract laboratory that we talked about earlier.

SERGEANT BIONDO: Time expired.

COUNCIL MEMBER BREWER: Okay, thank you. I could go on and on. Thank you.

We can't hear the Committee Counsel.

CHAIRPERSON MOYA: You're muted.

CHAIRPERSON GENNARO: Samara, you're muted.

CHAIRPERSON MOYA: I think Council Member Narcisse is up.

SERGEANT BIONDO: Starting time.

COUNCIL MEMBER NARCISSE: Good afternoon. Thank you for all the information, Commissioner, and all my team. Thank you, Chair Moya and Chair Gennaro. Thank you for the work.

I have a waste pump by my place which is Paerdegat pumping station that's been a problem for many, many decades since I was a teenager, the smell and everything else, but I'm going to bypass that. Last summer, DEP uncovered 4 previously undiscovered COVID variants which proved to be antibody-resisted. What funding is being provided to continue researching and exploring our wastewater plants and if more needed since we're all here. Are DEP employees working in this condition adequately protected? Do they have their PPE because that was a big concern, that they need to stay safe and get this important work done because they have to get their work done? Treated wastewater is then released into local waterways. What precautions are being taken to ensure that COVID-19 is not being released into public waterways? How sure are we that this is not occurring? Thank you for your time.

DEPUTY COMMISSIONER PAM ELARDO: Thank you for that great question or double questions there.

With every new disease that's discovered, the first thought that goes in my head is is this disease transmissible in the wastewater because it all comes to us. I've got amazing individuals day in, day out, 24/7 working with collecting and treating that wastewater to produce clean water and valuable marine resources from it. When MRSA came out and any time there's, earlier in my career when HIV was a concern, the first thing we do as a wastewater community is look at that question, is it transmissible in the wastewater. With COVID, when this became known I think more than a couple years ago now, that is the first thing the resource community did. Luckily and fortunately, the presence of RNA in wastewater shredded from individuals is there. You can monitor it. You can detect it, but the transmissivity to the wastewater worker to somebody who might be next to a pumping station or in a bathroom where somebody's using the bathroom, that is not transmissible. I remember early in the pandemic there was an article that said if somebody is going to the bathroom and they have COVID and you smell it, that means it's in the atmosphere and that means you're going to get sick. It's understandable because we had a void of

information. The risk to our workers for their public health which is always a concern, number 1 in my mind, it's not there from the COVID transmissivity. There was another question early in the pandemic and you just restated it to me. Is it released into local waterways? Again, if there were, it's not transmissible because again we're looking at fragments of DNA at that point. Even more so, our wastewater treatment system, I invite you to come visit one if you have not already, I will find the one, Paerdegat is a pumping station, but I will take you to the local wastewater resource recovery facility in your neighborhood to show you what the influent looks like and show you what the effluent looks like. There's multiple steps including primary sedimentation, separation, a biologically active community that actually breaks down the wastewater then we have a whole solids processing component that creates a valuable fertilizer product, and when you look at the effluent, with the final step being a disinfection, you see clean water, and it's quite amazing. We're very proud of that. The level of effort it takes is amazing, it's underappreciated. I apologize if there's an odor problem in your

neighborhood. I made it a note. I'm going to send somebody out, but that is not, as you suggested, those risks are not actual in the world, no.

SERGEANT BIONDO: Council Member, you're still muted?

COUNCIL MEMBER NARCISSE: I really appreciate your work. I do. As a nurse, I'm always wondering, and I would love to visit. It's of great concern. Can you imagine without your work how the City will be so you are very appreciated by me. I know so many of my Colleagues, that's why we're here so whatever we can do. Looking forward, and whatever you can do for all the plants including my 46th District, and I will come and visit. I appreciate the time. I appreciate the Chair for giving me the opportunity. Thank you so much.

CHAIRPERSON MOYA: I see we have Council Member Menin's hand up.

SERGEANT BIONDO: Starting time.

COUNCIL MEMBER MENIN: Thank you so much. First of all, thank you Chair Gennaro and Chair Moya for holding this important hearing.

I have a number of questions. First of all, what is DEP's breakdown of the operating costs

of 520,000 over 21 months or 300,000 annually and then attendant to that, in terms of operationally, how does DEP determine the locations where it operate the program and how do you make sure that we'll always focused on equity in terms of those location choices? Thank you.

DEPUTY COMMISSIONER PAM ELARDO: I appreciate the question. I don't off the top of my head have the breakdown costs for the initial setup of the program, 520,000 dollars. It included purchasing new centrifuges, a new PCR machine, reconfiguring some of our laboratory equipment, buying the consumable, the chemicals it takes to actually conduct the analysis, and then the staffing. I could get you a breakdown of all those costs. In fact, I think Francoise might be able to send it to you right now or if she could put it up on a chat or something, that would be possible.

Your second question is how do you decide where to sample. We have 14 wastewater resource recovery facilities. I believe there was a map included in the report we wrote that shows you each of them have a dedicated collection area, which we call a sewer shed, and so essentially we're covering

100 percent of the city in that because, I don't know exact percent, there's a few septic tanks still out there, but it's about 99.9 percent of our population is discharging to one of our facilities.

COUNCIL MEMBER MENIN: Okay, thank you. Another question I have is the report said "It is not currently possible to extrapolate sewage testing data into specific numbers of infected individuals and testing at the treatment plant level would not capture evidence of infected individuals not serviced by the municipal sewer system." I guess the question I have is what other value does the sewage testing data bring us, and how can this data be used to inform public health measures?

DEPUTY COMMISSIONER PAM ELARDO: I'm going to just make a comment and then turn it over to Dr. Quinn. You're seeing similar trends in the influent sewer data in terms of shapes of curves to what you see in the population of public health and that is kind of the key of why we want to keep doing this program.

Dr. Quinn can respond in more detail.

DR. CELIA QUINN: Thank you, and thank you, Council Member, for the question. I have

mentioned this a little bit earlier. We're still really learning about what the data means that's coming from the wastewater and how to interpret it in the context of the surveillance data that we have about COVID-19 citywide. One of the challenges is that it's not possible to directly infer the total number of cases in a sewer shed based on the counts of viral particles that are found through the wastewater surveillance system. One of the reasons for that is because the amount of virus that a person is shedding while they're infected can vary from person to person. It can also vary throughout the course of the disease. We're doing sampling at the sewer shed level, like Deputy Commissioner Elardo just described, it's not very precise when we're looking at that data. It has been pretty consistent with the surveillance data that we do have so that's what makes me think that this is a really promising technology that we need to do further investigation on to understand best how to utilize it and what circumstances it can really provide additional information. I'll just add that we have a really robust surveillance system, not just SARS-COV-2 but for a lot of other disease in New York City, and so

we are looking at this additional tool as yet one more tool that we have to use, not just COVID-19 but for other diseases that might become a problem in the future.

COUNCIL MEMBER MENIN: Okay, great. Thank you so much. I guess one last question. Given the gaps in data and the lag of about 2 weeks that Chair Moya talked about between the wastewater data and the positivity data, is there any way to improve the program to analyze the data in a shorter timeframe?

DEPUTY COMMISSIONER PAM ELARDO: The sampling from day of sample to day of test results that we gain is 3 days. Like I said earlier, the 2-week lag has to do with the genetic variant identification. I believe our 3 days is pretty darn good because there's a sample preparation step, there's a collection step, and there's put it in the machine and get the data out step. I don't do the genetic components, and I don't think the Health Department does either. We send it to our partners in different organizations who are experts in their field. I have no idea if that could be shorter than 2 weeks, and I don't know if Dr. Quinn or Dr. Katehis has any more information on that.

SERGEANT BIONDO: Time expired.

CHAIRPERSON GENNARO: Let me just jump in here to say that if there are other panelists that can speak to Council Member Menin's questions, I will allow their answers even though the time has expired. Does anybody else on this panel wish to speak to Council Member Menin's question?

DR. CELIA QUINN: The Health Department is not doing the sequencing step for the wastewater data. That's the academic partnership that we have that's generating that data. The Health Department does do sequencing on clinical specimens that are collected through our COVID Express testing sites and some other sources that we do sequencing on, and it is a lengthy process. We have a delay even in our sequencing for clinical specimens as well. It's technically more complicated than just detecting the SARS-COV-2 RNA and so we have information about the presence and the amount of SARS-COV-2 RNA in the sewer sheds much sooner than we have the variant data.

At the same time, in New York City we are sequencing a lot of clinical specimens for SARS-COV-2 and we're sharing that data weekly on our website as

well. I think we have fairly robust surveillance for SARS-COV-2 variants in New York City.

CHAIRPERSON GENNARO: Thank you, and before we proceed to other Members that have questions, I am informed by staff that we're joined by Majority Whip Brooks-Powers and by Council Member Restler, who is a Member of the Committee on Environmental Protections. If there's any other Council Members that have not been recognized, please let the Moderator know and we'll be happy to recognize you.

I'll ask the Moderator if there are any other Council Members that have questions. I have one but I want to wait for other Members who may have questions.

COMMITTEE COUNSEL SAMARA SWATSON: I don't see any other members with questions. Wait. Council Member Narcisse raised her hand.

SERGEANT BIONDO: Starting time.

CHAIRPERSON GENNARO: We'll do a second round for Council Member Narcisse because I'm just going to let it go. Council Member Narcisse, please pose your question.

SERGEANT BIONDO: Starting time.

COUNCIL MEMBER NARCISSE: The quick question, not taking long, what are we doing in terms of meeting the inequities? Are we encouraging the black and brown folks, because I don't see them much when we come to water waste, I don't see them much. Is that something you anticipate doing, encouraging the young folks to see for the next generation, to know how we continue doing what we're doing now, the amazing that you're doing?

DEPUTY COMMISSIONER PAM ELARDO: Your question is on our staff and the level of diversity and reflection of our greater community in that staff itself, and we have job security. In fact, people are going to need wastewater services as long as there's people in the city. We do have a lot of retirements, and if there's any young people watching this, please consider a career in the field of wastewater resource recovery.

I have constantly since I've been for the last 6 years tried to figure out ways to increase the interest among young people in our utility work. These are green jobs. They are climate positive jobs. How do we best do that? It's challenging and it's on my mind. You talk about the level of diversity in our

workforce. I've got less than 2 percent women in the field and I came over here from the west coast, did similar work there in King County, Seattle, Washington area. We had 20 percent which was pretty good so I've been a little surprised at how small it is in our world here. I would really like to encourage diversity in our ranks and figure out programs that actually reach down into local communities, like people who live around the treatment plants and people who have an interest in anything related to science technology and mechanics, we can take all those types.

CHAIRPERSON GENNARO: Thank you. I believe Council Member Restler has his hand up, Samara. Is he next to be recognized?

COMMITTEE COUNSEL SAMARA SWATSON: Yes.

SERGEANT BIONDO: Starting time.

COUNCIL MEMBER RESTLER: Thank you so much. Thank you, Chair Gennaro, and congratulations on your return to the Environmental Protection Committee where we're fortunate to have your great experience leading the Committee. (INAUDIBLE)

CHAIR MOYA: Lincoln, you're breaking up. Lincoln, we can come back to you if you're in a bad spot.

COUNCIL MEMBER RESTLER: Should be better now if that works. I apologize. Sorry, Chair Moya. Thank you both. I just wanted to thank the folks at the Department of Health and DEP and all the essential workers who have done so much to keep our community safe through this pandemic day in and day out.

As Chair Moya raised and Council Member Menin underscored, I am concerned about the delays in the information and the analysis of the wastewater data actually being analyzed and informing us of new trends. I think we were just so late on Omicron. It was clear the presence of the variant was widespread before anybody in New York City government really could confirm it or understood it. I'll tell you more broadly, and I think this is for Deputy Commissioner Quinn, I'm concerned that as we are dramatically loosening restrictions on COVID we are also eliminating or phenomenally reducing our testing and tracing infrastructure. I mean I just went to one of the largest testing sites in my area this morning,

which is listed as a testing site, to find that it had been closed with nobody having told us at Modell's over across from Barclay Center so could you provide some context. I realize it's not the core portion of the hearing, but it's certainly pertinent to the reduction in city-supported testing sites that we're experiencing right now and how we can track and monitor the presence of new variants if we do not have adequate testing infrastructure in place?

CHAIRPERSON GENNARO: Before you provide the answer, the question is a little off topic, but I'm very, very happy to give Council Member Restler some latitude here because I think it is a very critical question.

COUNCIL MEMBER RESTLER: Thank you.

DR. CELIA QUINN: Thank you, and I'm happy to answer it so if it's okay with Deputy Commissioner Elardo. I just started. Thanks for the important question. I definitely want to make sure that people know that the Health Department was informing New Yorkers when we started to hear about Omicron circulating globally that it would be coming to New York City and that we expected that it would be here, that it was circulating in early December and as we

started to have more evidence of that we were sharing that very publicly and asking New Yorkers to change their behavior time at a difficult time for them to do that, and many, many of them followed our advice. Thank goodness. As I mentioned earlier, we do have vary robust surveillance systems in New York City to monitor trends of COVID-19 including the different variants that are present.

We expect there to be less need for testing when the cases are low because we recommend that people get tested when they have been exposed, when there's fewer people having COVID then they have fewer exposures, but we're ready to ramp that up when we need to.

At this point in the pandemic, we have a lot of different tools that we have both to monitor the pandemic and to help keep people safe. The wastewater surveillance that we're talking about today is one of the new tools that we have to help us with monitoring. It's not totally clear exactly how to use it separately from the other sources that we have so we need to interpret it in the context of all of the data that we have about COVID-19.

We also have a lot of access to home tests that we did not have even just a few months before the Omicron surge started so that's another change that New Yorkers are utilizing those tests to help keep themselves and their family and their community safe.

Most importantly, we have very high vaccine coverage in New York City for COVID-19 vaccine. Many, many New Yorkers have chosen to become fully vaccinated. We're still emphasizing the need for vaccination, especially in younger age groups, age 5 to 11, and also to encourage people to get their booster shot so that they remain up-to-date because you are right that we are not completely out of the woods and that there could be new variants and further surges of COVID-19.

To that end, I also wanted to remind people that last week the Health Department released a new alert level to help New Yorkers understand how COVID is circulating within New York City and what they can do to protect themselves and their families. This is a really important tool that's based on our existing surveillance systems that can help people

know how to keep themselves safe and what to do as we move through the pandemic.

COUNCIL MEMBER RESTLER: That's helpful. Thank you very much, Deputy Commissioner Quinn.

SERGEANT BIONDO: Time expired.

CHAIRPERSON GENNARO: Thank you, Council Member Restler. Samara, are there other Members of either Committee that have questions for the panel, save myself and Francisco?

Looks like there are not, and if there are we'll certainly bring them on but I'll take this opportunity to ask another question and, as is often the case, when I open it up to Members and hold back on my questions, by the time I ask my questions most of the questions I wanted to ask have been answered so I thank you, Members, for saving me the trouble.

I want to talk about this, Madam Deputy Commissioner. With regard to the upcoming budget you had stated in response to one of the questions that this pilot is funded in the city budget through the end of this calendar year and then there's CDC folks who are picking up some of the funding for this project. As we think about the upcoming city budget, does DEP and the Department of Health have a budget

request that will carry this program through the end of this calendar year and through the end of the CDC-funding program?

DEPUTY COMMISSIONER PAM ELARDO: I want to clarify the role with CDC. Currently, we take samples at our 14 plants. We sample in house, get results on the RNA presence. We send parallel samples to CDC. They run the same tests, and they also put that information into their database so we actually have 2 parallel tracks going on now. CDC is not providing any money to us to continue the program. We just have kind of 2 systems in parallel. The thing that's really great about that is we can verify if our data is really accurate because we've got 2 independent laboratories from each other running the same data so that's what's going on now.

We are funded through the end of the year. It might be a little bit further on, but like I said earlier I think we need to almost on a quarterly basis assess what information we're getting, whether the level of utility that we currently have with it, how we can use it in the future, near-term, long-term and really do that kind of analysis. I'm not ready to

do that now for any future part of the program, but I think we're going to keep that alive constantly.

CHAIRPERSON GENNARO: Thank you, Madam Deputy Commissioner. I will make a note to the Environmental Protections Committee staff that we should raise this as a budget question when we have our budget hearing at the end of the month. We want to know how this program is going to be sustained beyond the end of this calendar year which will only be halfway through the next budget year.

With that question asked, I don't have any questions. I'll ask Chair Moya if he has other questions.

CHAIRPERSON MOYA: I just have one question. I want to go back to one of the original questions that I asked, which was, and I'll read it again so that you can remember. A recent article reported that the new Omicron subvariant BA.2 was doubling in New York despite the immunity from infections and vaccinations according to the New York City State Department of Health. The article further stated that as of Wednesday, wastewater sites in New York City have recorded an increase in the coronavirus genetic material over recent weeks from

February 19th to March 5th. The report also indicated that the new subvariant spiked cases across Denmark and the UK. Meanwhile, New York State and the City have just recently rolled back the health requirements for school and businesses as the new subvariant is showing up. In your opinion, is this wise to remove the COVID restrictions at this time and are we prepared for the possibility of the BA.2 subvariant extending the winter surge that would be coming up as well?

DEPUTY COMMISSIONER PAM ELARDO: That is a Health Department question, and I'd like to pass it on.

DR. CELIA QUINN: Thank you. The BA.2 has been increasing in terms of the proportion of all SARS-COV-2 specimens that are sequenced. The proportion that is BA.2 has increased, but during that same period of time the overall trend has been a decrease in cases. Hospitalizations are very low. Deaths have also continued to decrease so the overall picture is one of transmission decreasing yet at the same time a particular sub lineage of SARS-COV-2 is increasing in proportion to the other variants that are circulating. That's probably because it is

slightly more infectious or might have other competitive advantages against the other circulating sub lineages so that can be a concern that it's more transmissible. At the same time we have high levels of immunity in the population so that may protect against a large further surge. It's definitely something that the Health Department's continuing to watch very, very closely. It's hard to interpret from what's happening in other countries exactly what will happen when it comes to New York City because so many factors are involved in determining what the shape of those curves might look like, but it's certainly something we're looking at very closely.

In terms of your question about starting to change some of the restrictions, like I mentioned earlier the alert level system that we released last week I think will be very helpful to help people understand how we are looking at the data and understanding the risk to New Yorkers at any given moment.

CHAIRPERSON MOYA: Just one quick followup to that. The city has seen a massive drop in testing, possibly due to the at-home kits or fewer concerns about the milder variant, so how will we continue the

COVID-19 trends and the trajectory of community transmission?

DR. CELIA QUINN: We have seen demand for testing decrease as I would have expected when we start to see transmission decrease. We are also looking really closely at the more severe cases of COVID-19 as an important part of our surveillance systems. There is much better ability to detect those cases because people who are seeking healthcare because they're ill are much more likely to get tested than people who might have mild or asymptomatic infections. At the same time, the total amount of reported cases is still an important part of what we're following. That will go up usually before the hospitalizations or severe cases so we continue to use that as part of our understanding of what's going on with transmission within New York City and all of those are part of the alert system that we released last week.

I'll just add on top of that, we also have the wastewater data that we're getting from our Colleagues at DEP that can help to interpret what's happening with the surveillance data that we are looking at.

CHAIRPERSON MOYA: Great. Okay. Thank you very much.

CHAIRPERSON GENNARO: Thank you, Doctor. Thank you, Chair Moya. I believe I'm ready to close, Samara. If there are no more questions from Council Members, we can proceed to the public part of the testimony. Samara, have I got you? You were on my screen; you dropped off.

HOST: It appears that the Moderator is having some technical issues, but that's right, Chair. You can close out the administration portion and just deliver a brief closing and then we'll turn over to the public.

CHAIRPERSON GENNARO: Sure. Let me take this opportunity to thank the Administration, Madam Deputy Commissioner and other representatives from DEP and from the Health Department, for all of your dedicated efforts and moving forward this new capability that has transformative possibilities, and we really do appreciate you working with us on the bill in the first place last year, getting this all rolled out, and bringing this to the national stage and making a profound difference and we look forward

to all the difference that you're going to make so we thank you all for being here.

With that, I would ask the Host or the Moderate to call members of the public to testify. I don't have the witness list so this will be, I'm happy to be surprised by who's going to come forward and testify.

RICKY CHAWLA: Got it. Thank you, all. We will now be turning to public testimony. I'd like to remind everybody that we will be calling on individuals one by one to testify. Each panelist will be given 2 minutes to speak. Please begin once the Sergeant has started the timer and given you the cue to begin. Council Members who have questions for a particular panelist should use the raise hand function on Zoom, and I will call on you after the panelist has completed their testimony.

For panelists, once your name is called, a member of our staff will unmute you and the Sergeant-at-Arms will give you the go ahead to begin upon setting the timer. Please wait for the Sergeant to announce that you may begin before delivering your testimony.

CHAIRPERSON GENNARO: Ricky, I just want to jump in here for a second. I just want to make sure that someone from the administration is going to stay on the hearing and hear all the good testimony that the public is going to provide. Can the Administration make that assurance that people will stay on the hearing and hear the testimony from the public? I just want to make sure we have that handshake?

DEPUTY COMMISSIONER PAM ELARDO: I have several staff on this, and they'll stay on.

CHAIRPERSON GENNARO: Great. I really appreciate that. Sorry, Ricky, please proceed.

RICKY CHAWLA: Not a problem. We will be calling first on Dr. John Dennehy. One moment. Dr. John Dennehy.

SERGEANT BIONDO: Starting time.

DR. JOHN DENNEHY: Hi, everyone. My name is John Dennehy. Thank you to the Committee, Chair Gennaro, and the rest of the Committee for inviting me to share my testimony. I'm part of the team at Queens' College of the City University of New York who has been working the DEP and the DOHMH with developing the protocol to monitor SARS coronavirus

in New York City wastewater. We started doing this in June 2020. I can sincerely say that we appreciate the effort to Deputy Commissioner Pam Elardo for giving us access to the wastewater from New York City, and she basically facilitated all this work. In addition to monitoring the level of RNA in the wastewater, we have also been doing the next generation sequencing of SARS coronavirus in the wastewater and therefore are able to identify the different variants that have been appearing, not just the major circulating variants such as Alpha, Delta, and Omicron, but additionally we've noted a few what we call cryptic variants that have been circulating in New York City wastewater probably since the very beginning of the pandemic.

I am in touch of a large community of the world's leading biologists, and we're very much concerned that these cryptic variants which we believe are coming from immunocompromised patients are going to be the source of what we call Pi. Pi is the next letter in the Greek alphabet after Omicron meaning that it's the next emerging variant, and our concern is just like Omicron and possibly Alpha that the source of this variant will from an

immunocompromised patient. That's what we're currently monitoring. I'm happy to take any questions from the Committee in this regard.

RICKY CHAWLA: Chair Gennaro.

CHAIRPERSON GENNARO: Thank you. Thank you, Dr. Dennehy. You're working out of the main QC campus, are you?

DR. JOHN DENNEHY: I work at Queens College, yes.

CHAIRPERSON GENNARO: You're in my district. Happy to support QC. I taught there for 8 years once upon a time, long time ago. Could you just elaborate a little more on the very end of your statement in which you raised the specter of these new emerging variants? I'm kind of concerned about and like the nexus between those variants and people who have a compromised immune system because I didn't quite follow that. I'd be happy if you could expand on that.

DR. JOHN DENNEHY: What we are seeing is that these new variants, including Omicron, are simulating many new mutations in what we call the receptive binding domain. This is the part of the virus that helps the virus attempt to and get into

host cells. Part of what's going on is that the Omicron variant has accumulated many mutations in the receptive binding domain which we believe has to do with evasion of the immune system. We have a number of the different variants that have appeared, Alpha, Omicron, naturally we all know about which have accumulated many mutations in this receptive binding domain, presumably to help them infect patients that are resist to the virus, that have been vaccinated or have recovered from the virus, and we believe that these variants have originated in patients that are immunocompromised. The reason that they're immunocompromised, they're not completely able to clear the virus from their system, but they can raise some immune response which means over time the virus will accumulate more and more mutation that will enable them to evade the host's immune system. One of the issues is that if these patients are not able to clear the virus so they have been infected for extremely long period, up to a year, and in that time they've acquired a number of different mutations that evade the immune system. That means they can infect new patients that have resistance to the virus from being vaccinated or have been infected with a prior

variant. That is our big concern now is that we're going to see the next variant of concern is going to be resistant to neutralization by antibody mediated immunity from vaccination or from prior infection.

CHAIRPERSON GENNARO: If I can kind of translate that into my own layman's perspective, so you have people who have compromised immune systems, they get infected and it's difficult for them to fight it off, and the virus stays in their system and their compromised immune system is essentially like a playground for the variant to continue to mutate. It's kind of like a mutation playground, so they're like a petri dish for the emergence of new variants. Of course, people realize that people who have compromised immune systems are always going to be a little jammed with regard to any kind of infection. This presents in your view as I understand you a threat to the population at large because these people unfortunately are giving rise to variants that can go from themselves to others that may be able to evade and (INAUDIBLE) all the measures that we have at hand right now, that being vaccination or having been infected by one of the strains thus far, so they could get hit with something that we don't have a

remedy for now. Is that a fair assessment of what you're saying?

DR. JOHN DENNEHY: Spot on. I love your metaphors, petri dish, playground. That's exactly what we're seeing.

CHAIRPERSON GENNARO: It's a little scary, but we thank you for your good work and all the more reason why we should make sure that we keep this research funded in the next city budget which I think is one of the good things to come out of this hearing, make sure that we keep this work going.

DR. JOHN DENNEHY: I do have one other thing to mention if you'll allow me the time.

CHAIRPERSON GENNARO: Sure. You're from Queens College so you get a little latitude. Go ahead.

DR. JOHN DENNEHY: Okay, thank you. The federal government announced a major budget was passed last night. Part of that included community funding project to Queens through the Office of Grace Meng, and they have awarded us a grant to support wastewater epidemiology training laboratory, WET lab, out of Queens College with funding of 1.85 million so we're very happy to hear that. This fits much into

what some of the Council Members were asking also what some of the DOH and DEP members were saying about the importance of training the next generation of scientists and researchers to have these skills to monitor wastewater so we're very happy to hear the project has been funded.

CHAIRPERSON GENNARO: Thank you, and I'm making a note to my own Legislative Director, Nabby, who I know is listening in if you, Dr. Dennehy, would be willing to welcome me for a little tour of what you're doing, I'll come over to the College and you can show me what's going on and what is going to be done with the funding from Representative Grace Meng. Is that okay?

DR. JOHN DENNEHY: We'd be delighted.

CHAIRPERSON GENNARO: I'm fully vaccinated, boosted, the whole thing. Nabby, make sure we make our way over to Queens College to visit with Dr. Dennehy and his Colleagues. Thank you, Doctor, for being here and for being part of this hearing. Thank you.

Moderator, next witness.

RICKY CHAWLA: Sorry. Just a brief moment. Samara's seeing if her issue has been resolved, but

it seems like it's still ongoing so just give us a brief moment. Sorry.

CHAIRPERSON GENNARO: Sure. No problem.

RICKY CHAWLA: Samara keeps toggling on and off. I'm not sure what's going on with that.

CHAIRPERSON GENNARO: Ricky, I would recommend that you just take the torch and move us forward, okay?

RICKY CHAWLA: Got it. Next, we will be hearing from Natalie Flow (phonetic). She does not appear to be here. So next will be Joel Kupferman.

SERGEANT BIONDO: Starting time.

JOEL KUPFERMAN: (INAUDIBLE)

RICKY CHAWLA: You seem to be breaking up a little bit.

JOEL KUPFERMAN: Can you hear me now? This is better?

RICKY CHAWLA: Yes.

JOEL KUPFERMAN: Thank you, everybody, for having this hearing. Thank you, Chair. We go back a long ways. I really commend the City for working on increased testing and monitoring. I ask that we increase the testing of water for pesticides and for pyrethrins. The City conducts their West Nile Virus

spraying every year, spraying all the water in our areas, and I've just learned last week that there is no testing for pyrethrins that are entering the water which are very deleterious to fish and wild life and to the residents of New York City. I put that request in and get information to show why that's very upsetting.

I also appreciate the fact that PM2.5 (INAUDIBLE) Do you hear me?

HOST: Yes, we hear you. You can go ahead.

JOEL KUPFERMAN: Okay. PM2.5 was raised. I believe the City is not paying enough attention to monitoring and enforcing suppression of PM2.5. Recent studies from Harvard have shown that a slight increase in exposure to PM2.5 leads to a major increase in COVID mortality. The City is not doing sufficient air monitoring or suppression of the generation of dust. The City's air monitoring monitors are not enforcing the law. They're not doing sufficient testing around sites, and I think this is really important for the City to look at. There's basically unfettered construction that's going, and a lot of that dust is going into the water and the like.

The third is the question of tainted water. Water is not just going into the sewage. There's problems with city workplaces, including Long Island City where the City rents space for (INAUDIBLE) workers and the like. There is no (INAUDIBLE) I think it's important for the City to look that…

SERGEANT BIONDO: Time.

JOEL KUPFERMAN: Make sure that their own staff and workplaces are well-protected.

CHAIRPERSON GENNARO: Joel, thank you for your testimony. We do, indeed, go back a long way. I gave you a little latitude there. You went beyond the scope of the hearing, but you raised good points. Regarding your first point, if you can write that up and get that to me, I will take that up. You talked about the PM2.5, you talked about, I forget what your first point was but it was something that I wanted you to write up and get over to me and make sure we do something about it in the budget.

Let me just ask you. What was your first point again?

JOEL KUPFERMAN: (INAUDIBLE) you should test for more than just the COVID virus. There's other (INAUDIBLE)

CHAIRPERSON GENNARO: Okay, yeah (INAUDIBLE)

JOEL KUPFERMAN: (INAUDIBLE) the City is doing the spraying of pyrethrins so I think it's…

CHAIRPERSON GENNARO: Yes, and if you could right that up and get that to me, I will talk about it with DEP and also being a former Deputy Commissioner of DEC which has a lot to do with that, I can raise it with them as well. Thank you for participating in the hearing. I don't know if any other Members have questions for Joel.

RICKY CHAWLA: It does not appear that anyone has their hand up.

At this time, it seems that the public is closed, but just in case if we have inadvertently missed anyone who is registered to testify today and has yet to be called, please use the Zoom raise hand function and you will be called in the order that your hand has been raised.

Seeing none, I will pass it back to you, Chair, to give a closing statement.

CHAIRMAN GENNARO: Sure. Thank you, Ricky. Thank you, Samara, and to all the Staff. I want to thank in a special way as I did before the Members of the Administration and members of the public like Joel and people working on this, the doctor from Queens College. I think the takeaway from this hearing for me is to make sure that we continue to fund this good science and even broaden its horizons and use this as a valuable tool as we go forward with maybe an unending string of variants and how we can stay ahead of it. It's been a real delight to chair this hearing, to be doing this with Chair Moya. We're good friends, we're good Colleagues, and it was great to partner on this with him and I'm going to give him the last word.

CHAIRPERSON MOYA: Thank you, Chair Gennaro. Thank you for your kind words and once again a great hearing and your expertise is always so very much appreciated for us here at the Council.

I just want to take the opportunity to thank the members of the public, my Colleagues who are on the Committees, thank you for being here, but in particular I really want to make sure that we acknowledge the hard work that the staff has put in

to ensure that this goes smooth and us 2 Queens boys look good while we're chairing these Committees so again just a big thank you to Harbani, to Sara, to Em, to Lauren, to Meghan, Carolina, and of course to the Committee Counsel from Chair Gennaro's staff, thank you for being the kind folks and letting us share the screen as well with you. Thank you so much. I truly appreciate it. I hope everyone has a wonderful weekend. With that, we will close it out, and this hearing is now adjourned. [GAVEL] Thank you.

CHAIRPERSON GENNARO: Thank you all.

HOST: Recording has stopped, and I'll end the hearing. Thank you all so much.

C E R T I F I C A T E

World Wide Dictation certifies that the foregoing transcript is a true and accurate record of the proceedings. We further certify that there is no relation to any of the parties to this action by blood or marriage, and that there is interest in the outcome of this matter.

Date April 15, 2022