U.S. EPA's Proposed Rule: Water Quality Standards to Protect Aquatic Life in the Delaware River
Transcript for Public Hearing #2 for the Proposed Rule
February 7, 2024 – 4:00 p.m. to 6:00 p.m. Eastern Standard Time

(Slide 1) Kary Phillips: Hello and welcome to today's online public hearing for U.S. EPA's Proposed Rule: Water Quality Standards to Protect Aquatic Life in the Delaware River. This session is sponsored by the United States Environmental Protection Agency's Office of Science and Technology. The purpose of today's public hearing is to provide background on the proposed rulemaking and then for interested parties to provide oral comments on the proposed rule. I am Kary Phillips of Tetra Tech, a contractor to EPA, and I will be moderating today's hearing with support from my colleagues. Thank you for joining us.

Kary Phillips: Before we introduce our EPA representatives today, let's start by going over a few housekeeping items. You should be connected to this session through your computer or mobile device. At this time, you should see a slide titled "Logistics: Options for Audio."

You can listen to the presentation through your computer (or mobile device) speakers but will need a microphone if you would like to make oral testimony. If you do not have speakers or a microphone on your device, you may use a phone to call in. We will provide detailed instructions on how to provide oral testimony after the presentation.

Kary Phillips: Instructions for calling in are available in the menu on your screen to the right of the Unmute button. Select the arrow to the right, then "Switch to Phone Audio" and follow screen prompts. Following the on-screen instructions for calling in will link your phone line to your computer and allow you to use controls on your screen (for example to mute or unmute yourself, or raise your hand to speak).

Kary Phillips: Alternatively, you may also call in directly to (301) 715-8592. The Meeting ID is 856 5713 8734. Once you are connected to the audio, if you hear an echo, please turn off your computer speakers. If you have any technical difficulties, please chat with Tech Support.

If you would like to download a copy of the slides for today's presentation, a PDF of the slides has been posted to the chat window for all participants. If you do not see the PDF, please chat with Tech Support. A copy of the slides will also be posted to EPA's website in the coming weeks after today's presentation.

Kary Phillips: Please note that all lines have been muted upon entry to avoid any echo and sound issues. If you have unmuted your device or phone to test your audio, please mute yourself on the screen, or by pressing *6.

Today's public hearing will be transcribed, and all oral comments will be considered part of the official record for this rule. As such, when developing the official response to public comments and finalizing the rule, the oral comments provided today will become part of the official record along with the written public comments submitted via the docket for this rulemaking. If you provide an oral comment during today's online hearing, you do not have to submit the same comment in writing in order for it to be included in the official record. If you are interested in making a written comment, directions will be provided during this hearing. Please note that EPA will not respond to comments today; however, EPA will respond to the oral comments received at this hearing—along with all comments it receives during

the comment period—in EPA's response-to-comments document that will accompany the final rulemaking. Also, EPA will not be answering questions today.

Today's presentation for the online public hearing has been reviewed by EPA staff for technical accuracy. However, the views of those making an oral comment and their organizations are their own and do not necessarily reflect the views of EPA. Mention of commercial enterprises, products, or publications does not mean that EPA endorses them.

(Slide 2) Kary Phillips: Now that we have completed the discussion of housekeeping items, let's start today's online public hearing. EPA staff who are present for today's hearing include Hannah Lesch, Gregory Voigt, and Wayne Jackson. And with that, we will begin the presentation by EPA. I will now turn it over to Hannah Lesch to provide a brief overview of the proposed rule.

(Slide 3) Hannah Lesch: Thanks, Kary. I am hoping you can hear me, if not, please add something in the chat. We will go ahead and dive right in. We will start with a few slides on background. We will talk briefly about designated uses, and describe EPA's proposed criteria, how we derive the criteria, some criteria alternatives, and then we will finish with a few next steps.

We will start with statutory and regulatory background, which are good things to be aware of. The Clean Water Act section 101(a)(2) establishes a national goal of "wherever attainable, water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." In this presentation and in the rule, you might hear us call these 101(a)(2) goals or 101(a)(2) uses.

Additionally, under Clean Water Act section 303, states have the primary responsibility for establishing and revising water quality standards for their waters. Water quality standards define the desired conditions of waters. Two key aspects of water quality standards are designated uses and water quality criteria. The uses define the goals, while the criteria define the water quality levels that will be needed to meet those goals.

And then finally Clean Water Act section 303(c)(4)(B) authorizes the EPA Administrator to determine that new or revised water quality standards are necessary to meet Clean Water Act requirements.

(Slide 4) Hannah Lesch: So let's talk about the Administration's Determination very quickly. On December 1, 2022, EPA determined, under Clean Water Act section 303(c)(4)(B), that revised water quality standards are necessary to protect the Clean Water Act section 101(a)(2) use of fish propagation in certain zones of the Delaware River.

Currently, the water quality standards provide for the passage and maintenance, but not fish propagation, in these zones. Specifically, EPA determined that a revised designated use to protect fish propagation and corresponding dissolved oxygen criteria to protect that use are necessary in Zone 3, Zone 4, and the upper portion of Zone 5, which in total is river miles 108.4 to 70.0 of the Delaware River, which is approximately from Philadelphia, Pennsylvania, to Wilmington, Delaware. Throughout the presentation and the rule, you might hear us refer to this as the relevant zones or specified zones. When we say that, we are referring to this section of Zone 3, Zone 4, and the upper portion of Zone 5. In these sections of the river, there are two federally listed endangered fish species: the Atlantic Sturgeon, who is shown on the left side of the screen, and the Shortnose Sturgeon, who shown on the right side of the

screen. Available evidence suggests that these two fish species are the most oxygen-sensitive species in these zones of the river.

(Slide 5) **Hannah Lesch:** Here is a map just to orient yourself as to what we're looking at. The Delaware River is shown in blue. The dark blue section is Zone 3 up at the top, Zone 4 in the middle, and the upper portion of Zone 5, where you can see my mouse circling. When we are talking about the zones that are part of today's rule, it is this dark blue area that we are talking about.

(Slide 6) **Hannah Lesch:** Here is a brief summary of EPA's proposed rule. In accordance with the Clean Water Act and EPA's December 2022 Administrator's Determination, on December 13, 2023, EPA issued a proposed water quality standards rule for the relevant zones of the Delaware River.

The proposed rule includes: first, a designated use for aquatic life that includes propagation, and second, criteria for dissolved oxygen to protect the current and proposed designated uses. EPA's proposed dissolved oxygen criteria are based largely on the oxygen requirements of Atlantic Sturgeon because that is one of the most sensitive species. However, EPA's proposed criteria are intended to protect all aquatic life in the relevant zones of the Delaware River.

(Slide 7) **Hannah Lesch:** We will get to the proposed designated use, which is, drum roll, please—protection and propagation of resident and migratory aquatic life. This is the use that we are proposing in this rule.

(Slide 8) **Hannah Lesch:** We will spend a little bit more time talking about the criteria. EPA's proposed dissolved oxygen criteria are divided into three seasons. Each season has one or more criteria that consist of three components: magnitude, duration, and frequency.

Here is a table of what the criteria looks like. I am going to let this sink in for a second and then we're going to go through column by column and explain what everything means.

(Slide 9) **Hannah Lesch:** We will start on the left-hand side of the table in the *Seasons* column. There are three seasons. The seasons are periods that approximate different life phases for Atlantic Sturgeon. EPA has defined the *Spawning and Larval Development* season as March 1st to June 30th, the *Juvenile Development* season is July 1st through October 31st, and the *Overwintering* season is November 1st through the end of February.

(Slide 10) **Hannah Lesch:** The magnitude indicates the required level of dissolved oxygen in the water. In this proposal, the magnitude is expressed in terms of percent oxygen saturation, and we will talk more about that in the following slides.

(Slide 11) **Hannah Lesch:** The duration specifies the time period over which water quality is averaged before comparison with the criteria magnitudes. In this proposal, the criteria duration is the daily average for all seasons.

(Slide 12) **Hannah Lesch:** Finally, the exceedance frequency specifies how often, that is, the percentage of the time, that each criterion can be exceeded in each season while still ensuring that the use is protected. For dissolved oxygen, an exceedance would occur when the oxygen level in the water is below the criterion value.

(Slide 13) **Hannah Lesch:** Let's talk about percent saturation. Here are some definitions to make sure we are on the same page. Saturation refers to the ratio of oxygen concentration in the water to the expected oxygen concentration when that water is in equilibrium with the atmosphere. Another common way to measure dissolved oxygen is in terms of concentration, which would be milligrams of oxygen per liter of water. EPA decided to use percent oxygen saturation in this proposal for two main reasons. First, percent oxygen saturation, when compared with concentration, is the most biologically relevant to aquatic life. The physiological effects of oxygen on aquatic organisms are directly related to percent oxygen saturation and indirectly related to dissolved oxygen concentration. Second, in the Delaware River, the percent oxygen saturation varies with water temperature less than dissolved oxygen concentration. For those two reasons, EPA chose to use percent oxygen saturation when expressing the criterion magnitudes.

(Slide 14) **Hannah Lesch:** For each season, we derive criteria in a slightly different way. For the *Juvenile Development* season, which is the July 1st through October 31st time period, EPA followed a peer-reviewed modeling approach to evaluate the effects of temperature, salinity, and dissolved oxygen on the potential of growth and mortality of a hypothetical cohort, or year class, of Atlantic Sturgeon.

EPA used the model to estimate the rate of change in the aggregate weight of the cohort during the *Juvenile Development* season, given various corresponding water quality conditions. EPA defined this rate of change as the "Habitat Suitability Index," or HSI. A positive habitat suitability index indicates that the cohort may increase in weight, whereas a negative habitat suitability index indicates the cohort will decrease in weight. EPA then selected two different values as the proposed criteria, a 10th percentile, and a median, which is also the 50th percentile, that are expected to result in a positive habitat suitability index if they are met 90% and 50% of the time, respectively.

(Slide 15) **Hannah Lesch:** For the *Spawning and Larval Development* and *Overwintering* seasons, things differ slightly. Because EPA's cohort modeling approach for the *Juvenile Development* season relies on experimental studies conducted on juvenile Atlantic Sturgeon at warmer temperatures, it does not apply to the *Spawning and Larval Development* life stages and has minimal relevance to the cold overwintering period. EPA concluded that the percent oxygen saturations that would be protective of juveniles experiencing stressful, or high, water temperatures during the *Juvenile Development* season would also be protective of larvae and overwintering juveniles that are not experiencing high water temperatures. Therefore, EPA proposed to apply the same 10th percentile criterion from the *Juvenile Development* season to both the *Spawning and Larval Development* and *Overwintering* seasons.

(Slide 16) **Hannah Lesch:** All right, that was the proposed criteria. We will take a brief minute to talk about some of the dissolved oxygen criteria alternatives. EPA is seeking comment on the three alternatives that we proposed. We are requesting comment and additional information on whether and how one or more of these alternatives could protect the current and proposed aquatic life designated uses in the relevant zones of the Delaware River, and, if so, what the anticipated benefits would be associated with the alternatives compared to EPA's proposed criteria.

(Slide 17) **Hannah Lesch:** Starting with the first alternative, which is dissolved oxygen criteria expressed as a concentration rather than the percent oxygen saturation. This table shows what that could look like. The season column is exactly the same as before. The duration and exceedance frequency columns remain the same as before. What has changed is that the magnitude is now expressed as a concentration in milligrams per liter, shown in red on the screen in this third column. There are two

estimates for the *Spawning and Larval Development* and *Overwintering* seasons. The first number is based on a 90th percentile water temperature, which is shown in the left column, whereas the second number is corresponding to an average water temperature. This provides an example of how the criteria could be derived in concentration. For the *Juvenile Development* season, EPA used the same cohort model as described before to derive these numbers.

(Slide 18) Hannah Lesch: The second alternative is dissolved oxygen criteria with a 10% exceedance frequency. What that would look like is removing that 50% exceedance frequency criterion and just having the 10% value remaining. If this were done in concentration, it would be that 5.4 value shown on the previous slide. These alternatives are not mutually exclusive.

(Slide 19) Hannah Lesch: Finally, the third alternative is the inclusion of a one-in-three-year interannual exceedance frequency. What that looks like is shown using the same criteria table as before, but now there is a line at the bottom that says, "criteria cannot be exceeded more than once in every three-year period."

(Slide 20) Hannah Lesch: A few next steps and then we will be opening the floor. So for more information on the proposal, you can visit our website at https://www.epa.gov/wqs-tech/water-quality-standards-delaware-river. The link will be posted in the chat for you. The public comment period closes on Tuesday, February 20th, 2024; please make note of that. Finally, EPA will provide written responses to comments upon promulgation of the final rule. With that, I will turn it back over to Kary, thanks.

(Slide 21) Kary Phillips: In a moment, we will provide instructions for making an oral comment today, but first we will provide instructions for submitting written comments in one of the following ways. Again, if you provide oral comments during today's online hearing, you do not have to submit the same comment in writing. However, if you plan to submit a written comment, you may do so through the website at regulations.gov, our preferred method, mail your comment, or submit a written comment via hand delivery. The instructions for submitting a written comment through these mechanisms are explained in more detail on this slide. Remember, when submitting a written comment, please make sure to reference the Docket ID No. EPA-HQ-OW-2023-0222. I will pause here for a few moments to allow time to record this information.

[Paused for 15 seconds]

Kary Phillips: We will now open the hearing for interested parties to make an oral comment. If you would like to make a comment, please raise your hand. Depending on the device you are using, there are different ways to raise your hand. If you are on a computer or internet-based mobile device, click on the Reactions button in the menu on the bottom of your Zoom window. If you do not see a Reactions button on your computer, hover towards the bottom of your Zoom window, and a menu bar should appear. Over the Reactions button, select Raise Hand.

If you called in using your phone, please press *9 on your phone to raise your hand. When it is your turn to speak, the host will call on you by name or by the phone number you dialed with. At that time, you can unmute yourself by pressing the unmute button on your screen, or dialing *6 on your phone. Please feel free to turn on your video while you are speaking. If you have technical issues, please start a chat with Technical Support. Remember, EPA will not respond to comments today; however, EPA will respond to oral comments received at this hearing—along with all comments received during the

comment period—in EPA's response-to-comments document accompanying EPA's final rule. Also, EPA will not be answering any questions during the hearing today.

Each commenter will be announced before providing an oral comment. Each commenter will have a maximum of five minutes to make an oral comment. A timer will appear on the screen indicating approximately how much time each caller has left. Commenters are responsible for watching their own time. Each commenter will be given a 10-second warning using the timer appearing on the screen. At the five-minute mark, the slide will read "Time is up" and commenters will be muted.

If you provided your oral comment and were stopped after five minutes, you can resume making your comment after all commenters have had the opportunity to provide their comments. Please raise your hand at that time and wait for your name to be called. When it is your time to make an oral comment, your name will be announced, and you will be able to unmute yourself. If you called in using your phone, your phone number will be announced, and you will be able to unmute yourself. Please state and slowly spell your name for the official record and, if applicable, provide the name of your organization. After the self-introduction, your five-minute time will start. We will now begin the public comment process. There may be a short pause before the first commenter is introduced.

Rachel, do we have any commenters in the queue?

Rachel Buzzeo: Looks like we have a few people with their hands raised, we will start with Desmond Kahn. It is now your time to speak. Please unmute yourself and you can begin making your comment.

Comment #1 Desmond Kahn (Oral Comment): Hello, I have a Ph.D. in ecology from the University of Delaware and have 33 years of experience as a fishery biologist and biometrician. The biometrician position was from the Delaware Division of Fish and Wildlife. One last thing I would like to add is that I was a past president of the Northeast Division of the American Fisheries Society, which is the oldest scientific society in the country. I would like to start by talking about one of my co-workers at the Division, who is Matt Fisher. Matt was working on the sturgeon fieldwork in the 2000s, and in 2009 he developed a method to collect young-of-year Atlantic Sturgeon, which had not been seen for at least many years, if ever, out of the Delaware River. He began to survey every year in the fall to try to look at variation in the production of the younger sturgeon with gill nets. What he noticed was that there were 3 years he sampled fish. In 2009, he caught the first third and then 2011 was another year. Hold on one second, my batteries…

[paused here, Desmond Kahn signed off Public Hearing]

Rachel Buzzeo: It looks like Desmond is offline so we can start with another commenter and wait for Desmond to get back on. Kelly Anderson, it is now your time to speak. Please unmute and introduce yourself, and you can begin making your comment.

Comment #2 Kelly Anderson (Oral Comment): Great, thank you. I appreciate the opportunity to comment. My name is Kelly Anderson. I am the director of the Philadelphia Water Department's Office of Watersheds. I am also an environmental scientist and have worked for the department for over 20 years. I am going to share some supplemental comments. My colleague, Jay, is also a scientist that presented yesterday, regarding some specifics on the sturgeon science and I am going to be speaking on a broader perspective from the water department. The Philadelphia Water Department thanks EPA for the opportunity to provide oral comments on this proposed rule. As the largest single source of treated

wastewater in the Delaware Estuary, PWD is proud of the outstanding improvements in water quality that have occurred since the Delaware River Basin Commission was established in 1961. The Clean Water Act, which was signed in 1972, funded, in part with financial assistance in the form of federal taxpayer funds, PWD's three wastewater pollution control plants which are partially responsible for this transformation. Today, iconic native species such as Striped Bass, American Shad, and Atlantic Sturgeon are now spawning in urban areas of the Delaware River which were once too deficient in dissolved oxygen to support propagation of fish. PWD agrees that the available evidence supports fish propagation as an existing use in the Delaware Estuary that must be protected. PWD is very disappointed, however, that in proposing new federal dissolved oxygen criteria for propagation, EPA has relied on inappropriate laboratory and modeling studies while failing to evaluate and fully consider the most up-to-date scientific data on actual fish spawning and juvenile growth in the Delaware River. PWD's preliminary analysis of more than 5,000 fish collected and measured in the Delaware River by state and federal agencies shows that sturgeon are already spawning and growing in Zones 3, 4, and 5 at current dissolved oxygen levels based on actual fish measurements. Years with higher or lower dissolved oxygen levels showed no statistically significant levels in sturgeon growth or condition. The Delaware River sturgeon also appeared to be growing as well as similar fish in the Hudson River where dissolved oxygen levels are typically higher. In PWD's view, the new dissolved oxygen criteria proposed by EPA appear to reflect a preference towards overly conservative dissolved oxygen levels that are higher than needed to support fish propagation in the Delaware River. Proposed new wastewater processes needing to comply with strict ammonia limits would significantly impact water rates in Philadelphia and drastically affect PWD's ability to fund priority projects such as lead and copper line replacement, PFOS, bacteria, CSO management, climate change, salinity, and drought management. Many of these pressing needs directly affect our customer's daily lives or have public health implications. Additionally, these new wastewater processes would have significant negative implications on our climate change expectations and obligations through construction in future floodplain areas and major increases to energy consumption. We continue to support and recognize the existing propagation use in the Delaware River, but we do not support raising dissolved oxygen criteria to the highest possible levels without more careful consideration of the benefits to the fish species and the cost to PWD ratepayers. The science and analyses presented as justification for this proposed regulation are deeply flawed in our opinion. For example, EPA relied on cost estimations grounded in inaccurate assumptions which significantly underestimate the true cost to build and operate new ammonia removal processes to be used at these three water pollution control plants. PWD's written comments to EPA will provide accurate information to address the following: We are looking to provide information on PWD's cost to design, build, and operate new ammonia removal processes. We are looking to provide information on the financial implications to PWD ratepayers. We are looking to provide information that are applicable to the fish science and monitoring data in the Delaware River and modeling findings relating to water quality improvements to wastewater technology. We look forward to EPA's review and consideration of PWD's written comments, which we plan to provide before the date of February 20th. We thank you for the opportunity to provide oral comments on this proposed rule today. Thank you.

Kary Phillips: Thank you for providing your comment. Let's hear from our next commenter. Rachel, do we have another commenter in the queue?

Rachel Buzzeo: Yes, Charles Hurst it is now your time to speak. Please unmute yourself and you can begin making your comment.

Comment #3 Charles Hurst (Oral Comment): Thank you. My name is Charles Hurst. I am the Director of Engineering for the Delaware County Regional Water Quality Control Authority, otherwise known as DELCORA. Like Kelly, we thank you, EPA. We thank EPA for the opportunity to comment on the proposed criteria. DELCORA will submit detailed written comments, but I want to highlight three concerns. Concern number 1, we are very concerned with the apparent lack of public understanding of the impact of the proposed criteria on wastewater rates and the offsetting environmental impacts such as the fact that the technology to meet the proposed limits will impose greenhouse gas emissions equivalent to 100,000 people per year flying from Philadelphia to Los Angeles, or driving 67 million miles per year in a gasoline-powered passenger car. We would have expected more public engagement than we are seeing in these public meetings. Concern number 2, follow the science. As Jay noted yesterday and Kelly just summarized, there are thousands upon thousands of fish data points that are not part of EPA's science; they need to be included and evaluated. Concern number 3, follow the Biden Administration's Environmental Justice policy. A huge element of EJ policy is public engagement. Our neighbors live in Chester, Pennsylvania, an EJ community. I am not aware of a single outreach to Chester residents or any other EJ communities in our service area. They need to understand and weigh in on the financial costs and environmental trade-offs inherent in the proposal. This is especially the case given historic public utility cost increases due to wet weather control, flooding and stormwater issues, PFAS, lead and copper requirements, etcetera. In closing, please take time to complete the scientific work and meaningful EJ engagement before proceeding to adopt any new criteria. Thank you for your time.

Kary Phillips: Thank you for providing your comment. Let's hear from our next commenter. Rachel, do we have another commenter in the queue?

Rachel Buzzeo: Yes, we have two more public commenters in the queue. Anneke van Rossum, it is now your time to speak. Please unmute yourself and you can begin making your comment.

Comment #4 Anneke van Rossum (Oral Comment): Hello, I am Anneke van Rossum. I am the advocacy and policy coordinator with the Delaware Riverkeeper Network, here on behalf of myself and the Delaware Riverkeeper and the Delaware Riverkeeper Network. I am here today to commend EPA for taking an important step forward to protect the Delaware River. For over 50 years, the urban corridor of the Delaware River has not been protected by the basic Clean Water Act protections afforded to rivers and streams throughout the United States. With this proposal, EPA plans to correct that problem for the Delaware River's aquatic life use. It is worth remembering why EPA is taking this action. After over a decade of the Delaware Riverkeeper Network and our partners advocating for higher oxygen criteria and increased protections for the Atlantic Sturgeon—this included a 2013 petition with partner organizations to DRBC and the Basin states and another petition in 2021 with 16 additional partner organizations—DRBC and the states failed to enact any additional protections. The DRBC and the states failed to take even one additional step to protect the critically endangered Atlantic Sturgeon. At first, there were the usual delay tactics, the usual calls for more studies, and in recent years this devolved into blatant misrepresentations of the science itself for how much oxygen Atlantic Sturgeon need to survive. With these repeated and worsening failings by the DRBC and the states, the Delaware Riverkeeper Network and our partners turned to the federal government in petition to USEPA in April 2022 to intervene and to take swift and strong action to protect the Atlantic Sturgeon, to protect the Delaware River, and to finally provide the basic 101(a) aquatic life protections guaranteed under the Clean Water Act. After decades of low dissolved oxygen and the precipitous decline of aquatic life in the Delaware River, EPA's environmental justice evaluations confirmed that investments in clean water will help

reverse the inequities for people of color and for low-income residents in their access to clean water and healthy ecosystems and the benefits those healthy ecosystems provide. For far too long, decision-makers have been willing to support the interests of industry and polluters over the needs of our most vulnerable and disadvantaged communities. That must change, and EPA's proposed upgrade for the Delaware River begins the process of healing for both our river and our communities. Already and not surprisingly, those who wish to keep on polluting the Delaware River and who wish to ignore the harm this pollution causes to our communities and our ecosystems are again raising excuses for their pollution. More alarming are the distortions of science by these polluters to claim that the proposed upgrades and improvements will provide no benefits. EPA must stand firm in its commitment to clean water, to science, and to protecting our communities. Currently, the Delaware Riverkeeper Network is reiterating our January written comment to not extend the comment deadline any further. Sixty days is plenty of time because these polluting industries, dischargers, and polluting stakeholders have been aware of the push for upgraded water quality standards for over a decade and have chosen not to pursue the necessary upgrades that our aquatic life, our river, and our communities are in desperate need of now. The upgrades to wastewater treatment plants under these proposed regulations will require simple conventional technologies that have already been implemented throughout the region and throughout the nation. Time and again, these investments in clean water have been shown to be ecologically relevant and cost-effective. It is only here in the Delaware River where our largest polluters claim that discharging up to 35 milligrams per liter of ammonia into the river causes no harm and continues to be justified 50 years after the Clean Water Act was passed. The gross pollution of the Delaware River year after year must stop, and it must stop now. It is unconscionable that in the 21st century, anyone would argue that discharging such extraordinary levels of pollution and causing severe hypoxia year after year is justified under the Clean Water Act and modern standards of treatment technology. The Delaware Riverkeeper Network will be submitting a full written comment by the comment deadline, but it is our hope that EPA will strike while the iron is hot at this critical moment in time to upgrade the water quality standards to values that allow the aquatic life of our river and our communities to finally and fully thrive. Thank you.

Kary Phillips: Thank you for providing your comment. Rachel, do we have another commenter in the queue?

Rachel Buzzeo: Yes, Desmond Kahn, it is now your time to speak. Please unmute yourself and you can begin making your comment.

Comment #1 (Continued) Desmond Kahn (Oral Comment): Thank you very much. I apologize, I had a technical problem. I was talking about Matt Fisher, about a young-of-year sturgeon survey in the river. Initially, he noticed that the year with the worst oxygen levels had no sturgeon that he could collect, whereas years with higher oxygen levels, the river had sturgeon he was able to collect. So, he developed a hypothesis that the low levels of oxygen in some years in the Delaware may be causing mortality of young-of-year sturgeon. The young-of-year stage is the most sensitive stage for dissolved oxygen in sturgeon. We wrote a report on this but had only a few years of data. However, since that time, there has been a lot of data collected by a lot of people. I'm not at liberty to reveal, but I can tell you that there is now a statistically significant regression model showing that the dissolved oxygen levels in the river have a major effect on the abundance of young-of-year sturgeon produce from year to year. Now, this is an endangered species. To say that we do not need to make a change here in the face of evidence—that the young-of-year sturgeon in this river are subject to mortality from low dissolved

oxygen levels—we cannot afford that kind of thinking. I just want to point out that this has been at 3.5 milligrams per liter for over half a century. Back when it started, the powers that be started to upgrade sewage treatment plants along the river and enforced industrial limits on pollution using funds from the Clean Water Act. By 1987, there was the last sewage treatment plant upgrade. We have extensive data, which I have presented in a PowerPoint at conferences and I revised in a manuscript, showing that as the amount of dissolved oxygen increased, the production and abundance of young-of-year Striped Bass also increased. It is analogous to what you have with sturgeon if the water level of oxygen is raised. But Atlantic Sturgeon, from an evolutionary point of view, are a primitive species. Their physiology is not as efficient as Striped Bass physiology. They are regarded as more sensitive to oxygen than a Rainbow Trout. They are very sensitive, and during the twentieth century, the low abundance of Atlantic Sturgeon in the Delaware River was almost certainly due to the extreme levels of anoxia and hypoxia in the river. That will come out in my written comments. Let me just make another point. We know there is some laboratory analysis and experiments of sturgeon's oxygen saturation. These experiments have a lot of limitations. They sometimes have salinity present, which does not occur for young-of-year sturgeon, and they also used older sturgeon who were less sensitive than the young-of-year in the summer in the Delaware River. Since my time is running out, I'll close it up. Thank you very much.

Kary Phillips: Thank you for providing your comment. Rachel, do we have another commenter in the queue?

Rachel Buzzeo: Yes, Kelly Williams, it is now your time to speak. Please unmute yourself and you can begin making your comment.

Comment #5 Kelly Williams (Oral Comment): Hello, my name is Kelly Williams. I am the commissioner of public works for the City of Wilmington. The City of Wilmington owns and operates the wastewater treatment plant that will be impacted by this water quality standard. We also run a water utility with 120,000 customers, and we operate a stormwater utility, the first in Delaware. I just wanted to say a few comments and address a few concerns. For nearly 200 years, Wilmington has provided safe drinking water and protected the watershed. The city is committed to environmental stewardship, but EPA's proposed rule on water quality standards in the Delaware River raises concerns. Our first concern and the biggest concern is the financial burden. This rule imposes an unfunded mandate requiring the largest bond issuance in our history, estimated at $322.7 million. The utility is always trying to achieve a balance between regulatory compliance and rate affordability. Let's look at affordability—for every additional $650,000 in our budget, the water sewer rate will go up by 1%. According to EPA's own policy, the impact on communities like Wilmington and others must be recognized. Wilmington is an economically disadvantaged community that's determined by the EJScreen, the Justice40 through Climate and Economic Justice Screening Tool, and the EPA economic indicators. So, EPA cannot ignore the economic impact that this regulation will have on our disadvantaged community. The financial impact to the ratepayers will be undeniably significant. We need more time to assess the exact impact on the affordability for our most vulnerable residents. On the regulatory side, at the very same time that you are considering these new water quality standards, our small utility is faced with complying with two other massive regulatory changes that each independently is unaffordable without state and federal assistance. Piling these on top of the water quality standards would be disastrous. First, we have the lead and copper rule inventory that is happening nationally. Wilmington is working hard in complying with the inventory rule, but cities of our age and size have found that almost 40% of our city is lead or galvanized, and those service lines must be replaced under the current proposed rule, which has had

plenty of time to be commented on. I know the utility will have 3 years to plan the replacement and 10 years to actually replace the lead in service lines. In addition, we are going to be receiving funding for this program. On top of all of that, it is not going to be nearly enough to actually support the program itself. It is going to be in the hundreds of millions of dollars, and it's going to impact our ratepayers over the next several years. In addition to the lead and copper rule, we have national standards by EPA that have not been yet determined for drinking water, but we're going to assume that the standards are going to be around zero. The City of Wilmington will be required to modify our two drinking water treatment plants to the tune of $100 million. That does not include the $2 million more in operating expenses that will be recurring year after year for PFOA removal. Add to that the wastewater treatment plant sludge disposal removal costs. Now that PFOA is considered a hazardous substance, we are going to have to find a new way to dispose of our sludge. So again, additional money, additional rate increases that are already happening on top of what you are suggesting here. EPA is now suggesting to us that we make a $322 million modification to our wastewater treatment plant with only less than 60 days to comment without engagement of our disadvantaged community. That is our financial concern. We have scientific concerns just like our counterparts. The rule relies on incomplete fish studies, complex potential inaccuracies, and the model. None of the DRBC modeling was commented on or peer reviewed. We questioned the model's ability to predict the impact on oxygen saturation. All of this could lead to excessive and costly discharge requirements in Wilmington and the other utilities. Our next concern is funding. The Clean Water Act was federally funded. Is there going to be a similar funding? Our funding request goes along with this new regulation. Our last point is that the City of Wilmington urges EPA to address the affordability concerns and consider if you are going to do this regulation, now we have to consider grant funding to ensure a fair and sustainable solution for Wilmington and the environment. We need to conduct further scientific studies to ensure that the rule is based on sound data and that we are achieving the right standard. Lastly, we need to collaborate with the local stakeholders to find a solution that both protects the environment without overburdening or burdening the residents. Thank you everybody for your time. I appreciate it. Thank you so much.

Comment #6 Elizabeth Hahn (Commented in chat): I'm having issues with my microphone, so I'll leave my comments here. I'm a resident of Fishtown in Philadelphia, PA. Fishtown was named as such for a thriving fishing industry in the 1700 and 1800s. While this stretch of the Delaware was best known for its shad population, there were also Atlantic Sturgeon among its residents. We in Fishtown would love to see the reemergence of sturgeon in our waters. The proposed rule needs to be improved to create that possibility: the minimum for saturation level for dissolved oxygen should be set at 80%, it needs to be tested monthly, and the level needs to be evaluated at future points to ensure the sustained higher temperatures of the river haven't created new issues for oxygen levels that impact not only the sturgeon but other aquatic species in the river. Thanks.

Kary Phillips: Thank you for providing your comment. Rachel, do we have another commenter in the queue?

Rachel Buzzeo: Yes, Doug O'Malley, it is now your time to speak. Please unmute yourself and you can begin making your comment.

Comment #7 Doug O'Malley (Oral Comment): Thank you so much. My name is Doug D-O-U-G, O'Malley, O apostrophe, capital M-A-L-L-E-Y. I serve as a state director for Environment New Jersey. We are part of the Environment America network, representing more than a million members and activists

across the country and more than 80,000 members and activists across the Garden State. I wanted to start off obviously by thanking EPA for this opportunity to comment and an opportunity to thank the commenters we have heard from yesterday as well to speakers from yesterday's hearing including Dr. Erik Silldorff from Delaware Riverkeeper Network, Susan Volz from the Clean Air Council, and Sharon Furlong from Bucks Environmental Action, as well as the testimony from the executive director of DRBC, Steve Tambini. We are also deeply thankful to our partners who include the Delaware Riverkeeper Network, Clean Air Council, PennFuture, and PennEnvironment, who have been involved in years of work and filed a joint petition directly to EPA not so long ago. I would be remiss without thanking the work of EPA Region 2 and Region 3 staff that have been working on this comment process, rule proposal, and response to the petition for more than a year. I wanted to start off with a reference to one of my all-time favorites, Yogi Berra, who is a proud native of the People's Republic of Montclair. Sadly, Yogi is no longer with us. He obviously is most remembered for his time as a Yankees catcher. I would also note him as a manager of our beloved metropolitan. Yogi is known for his sayings. One saying that always sticks with me when he was played, he would say, "it gets late early out here." It is getting late early out here for some of the most vulnerable species in the lower Delaware River, especially for the Atlantic Sturgeon. We have heard some of those conversations on the research on this today. We would reference commenters to the petition, which was originally filed by the NGOs that I referenced above, then obviously in the rule proposal from EPA, and to think about the value of following the Clean Water Act. That is where I wanted to start my testimony, really applauding the EPA proposal to upgrade the designated uses in Zones 3, 4, and 5 to include propagation. We applaud the EPA's determination that existing water quality standards for dissolved oxygen, known to many of us on the phone as DO, are not sufficient to ensure the protection of all life stages of Delaware aquatic life species, including the Atlantic Sturgeon, which I think is known as the dinosaur in the Delaware. This is a genetically unique population, and we clearly are behind EPA's decision to take this leadership role in issuing the need for protective standards and to use a science-based approach to ensure that high DO levels that are critical for supporting all stages of the Atlantic Sturgeon are in the river. I wanted to note a reference to this, and I appreciate EPA quoting the Clean Water Act or the Federal Pollution Control Act in slide 3. Obviously, the rationale why we have the Clean Water Act in the first place is because some of us remember the days where the lower Delaware River was very bad. We had a river that was treated as an open sewer. We had a discharge strategy that was focused on no treatment. It was so bad you could smell the Delaware from the air. It would turn the hulls of ships brown and entire parts of the Delaware were considered dead zones. So, the success of the Clean Water Act to bring the Delaware back over the course of the last 50 years should not be minimized, but we also didn't say that the last success of the 50 years means that the job is done and that the DO standard has not shifted since before the Clean Water Act. As we see water temperatures heat up in the summer months, oxygen levels plummet, which makes it most difficult for the species we are talking about, especially the Atlantic Sturgeon. There are only a few hundred Atlantic Sturgeon left in the lower Delaware, so this is an endangered species. We need to be acutely sensitive to the poor water quality that can be lethal for the species. I was referencing slide 3—I will just ask for just a little bit more time here to kind of delve into some of these details. The water quality standards define desired conditions of waters, and two key aspects of the water quality standards are designated uses and the criteria, and the Clean Water Act through section 303(c) authorizes EPA and specifically the EPA Administrator to determine that new or revised water quality standards are necessary to meet the Clean Water Act requirements. That is what this rule is doing, and it is doing it for a very simple reason and that is to protect propagation in the lower Delaware

River Estuary, especially for Atlantic Sturgeon. A couple of things to cite here is that this criteria must be based on sound scientific rationale. This rule proposal gets this right, and I'll talk about that just in a little more detail. But you know, the idea is that the actions, the status quo, what we are doing right is not supported by the science and that is why again we are so grateful for EPA to be taking this action. I also want to reference, and this is included in our petition, but the business-as-usual is creating a near and lethal limit for species like Atlantic Sturgeon. We reference some of the DNREC data for young-of-year Atlantic Sturgeon as well as USGS data for dissolved oxygen. The results are really nothing short of alarming. In the summertime especially, DO levels are not maintained to the science-based recommendation of 6.3 milligrams per liter for 35 days or more. That is a red alarm for our Atlantic Sturgeon, especially for young juveniles. Just to wrap up my testimony, I did want to make a couple of quick points regarding the comment period. This rule did not come out of the ether, this has been in the public debate for decades. Anneke referenced the DRN petition from 2013. This has been an ongoing issue at DRBC for decades. This process itself with the original petition to DRBC and then ultimately the petition at EPA, the acceptance of the EPA petition in December of 2022, and then obviously the rule proposal last December. This should be a surprise for nobody and that is why we strongly encouraged EPA not to extend the public comment period. I did want to wrap up my testimony by saying that we—and this will be included in testimony—we do have concerns EPA did not fully get it right in ensuring full protection of the most vulnerable species in this case the Atlantic Sturgeon. I want to highlight just three areas. One, it is essential that the standards include a minimum level of DO that can never be violated, so simply relying on the medians, averages, and percentiles fails to ensure that the sturgeon and other aquatic life at all times have the level of oxygen that can sustain them. While a median oxygen level in a period of months might look good on paper, in reality it is going to allow those variations through serious dips in oxygen. That has deadly consequences, especially for the young-of-year sturgeon. We cannot rely on the law of averages here. Second, the length of time over which the assessments are conducted and exceedances are allowed must be reduced from being seasonal to monthly. This is especially critical in the summer months, and that is when we see the dangerously low DO levels. So that 4-month window where violations are 50% of the time, that is interesting and can result in huge issues. To use a real-world example, we just had the hottest year in record last year worldwide. In 1967, the highest temperatures that you got within the greater Philadelphia area were in the low 90s; the highest was 93 degrees. You have seen much higher levels last summer getting up to 97 degrees. So, the hottest year, the hottest day in 1967 was the lowest day in 2023, so we are seeing obviously a warmer climate in 2023 exacerbating this issue. Finally, the science is clear that the Atlantic Sturgeon requires 6.5 milligrams per liter of DO. That translates to a 80% saturation value of the August median temperatures to fully support all life stages. So, we do have concerns with the current proposal, which is close, the range of 66% to 74% of saturation. But again, this is a scenario where close enough is not good enough. Close enough is good enough for horseshoes and hand grenades; it is not good enough for an endangered species like the Atlantic Sturgeon with only a few hundred adults left. I know I have gone over time; I appreciate the courtesy. I will be submitting additional comments from the organization and from the public. Thank you all for attending and thank you for the tremendous work of EPA in this entire process.

Kary Phillips: Thank you for providing your comment. Rachel, do we have another commenter in the queue?

Rachel Buzzeo: We do have a person raising their hand to make a public comment. Tim Dillingham, it is now your time to speak. Please unmute yourself and you can begin making your comment.

Comment #8 Tim Dillingham (Oral Comment): Okay, thanks very much. My name is Tim Dillingham, D as in David. I am the executive director of a conservation organization called the American Littoral Society. We are a membership-based organization and have members in Delaware, Pennsylvania, and New Jersey who use the waters of the Delaware who are concerned about its health and on whose behalf I am here to support this rule proposal going forward. It is a welcomed chapter in the long recovery of the Delaware River. I would like to acknowledge all the investments and the hard work that have been made by the Delaware River and all the investments and the hard work that have been made by the utilities, DRBC, EPA, the state governments, and mostly by the communities that live along the river and rely upon it. In getting us to this point, I think nobody can argue with the success of the restoration of this river, but there are still, as we all have mentioned in various comments, remaining challenges, whether those are the DO levels, PFAS, or bacteria that keep us from rightfully recognizing and being able to avail ourselves of the promises of the Clean Water Act of fishable, swimmable waters. There is very clearly an equity issue here. The communities in these zones that we are talking about today are not the only areas in the wrong, it is the entire length of the river where those rights are denied from them because of the water pollution that continues to affect the water. It is no surprise in a larger context that these are often communities of color, often disadvantaged in underserved communities. So, I appreciate EPA's leadership taking this up, moving this promulgation in recognition of the new designated uses and water quality standards as a matter of equity, and as an expression of the administration's commitment to environmental justice. I think for that reason it needs to move forward and it needs to be supported by the investments that will be necessary to reach these water quality uses and standards. I will say that we, my organization, have been supportive of this region, this section of the river, receiving additional federal funds from the IRA, the infrastructure dollars that are available. We are fully supportive of helping to facilitate those dollars coming to this region. There is active support by the utilities in the cities in the region that would have to receive the money, which has been less aggressive and ambitious than you might think. So, you know, the comment by the manager from Wilmington about cost-sharing, I think that is appropriate. It should not start and it can't stop the rule and the designation from moving forward, but it is something that EPA and others should work towards. I think they will have the support of the community to make those investments because of the results that we know will come from investments in clean water. I would argue, when you think about the overall consequences about the economic impacts, that not only do these communities deserve a full range of uses being available on the river, but they will have other offsetting benefits economically that should be considered. Lastly, I would echo the comment to follow the science. There have been concerns raised, Mr. O'Malley just touched on it in his testimony, that perhaps the standards are not sufficient to support sturgeon. Sturgeon, in particular, is the most sensitive species out there and one that is endangered. So, that needs to be right, it cannot be a compromise somewhere. It needs to be one that is tied to the species and to the conditions that they need. Overall, I applaud everybody who has moved this issue forward, and for EPA for really taking on a leadership role and seeing it over to the finish line. But I would urge you not to delay, and not to back off this, but get it right and address the concerns that are legitimate and raised about how we pay for the pollution that we continue to put into this river. The alternative is that we do not want to pay, and we would rather let the pollution continue, which is not only illegal or contrary to the Clean Water Act, but I think it will do more harm than good in the end. Thank you for the opportunity.

Kary Phillips: Thanks for providing your comment. Rachel, do we have any other commenters in the queue?

Rachel Buzzeo: At this moment we do not have any other public commenters in the queue.

[Paused to wait for more commenters]

Kary Phillips: Okay, thank you. We will pause here to wait for more commenters in the queue at this time. If there are no additional commenters and 15 minutes have passed with no comments, the hearing will end early. You are welcome to stay with us or leave the meeting. If you have a comment at this time, please use the Raise Hand function.

[Five minutes pass by]

Kary Phillips: We have gone 5 minutes with no additional comments. We will stay on the line in case there are additional commenters. If there are no additional commenters and another 10 minutes pass with no comments, the hearing will end early. You are welcome to stay with us or to leave the meeting. If you have a comment at this time, please use the Raise Hand function.

[Ten minutes pass by]

Kary Phillips: At this time, I would like to conclude today's public hearing. Thank you to everyone who joined us and provided an oral comment.