HABs Forum Day 2 Recording

[00:00:23.05] Good morning and good afternoon. I'm Rob Greenwood from Ross Strategic. I'll be moderating today's forum.

[00:00:29.59] We'll wait just a minute while attendees join. So please just sit tight. And again, we'll get started here in just about a minute.

[00:01:22.78] All right, good morning and good afternoon, and welcome to this EPA sponsored forum on federal funding for the prevention, monitoring, and treatment of harmful algal blooms. I'm Rob Greenwood from Ross Strategic. I'll be moderating today's forum.

[00:01:39.16] Before we get started, I'd like to turn things over to Ellen Tarquinio from EPA for a quick welcome. So, Ellen, over to you.

[00:01:47.54] Great, thanks so much, Rob. And thanks to all of you for joining today and to the presenters for taking this time to share a little bit about your funding program for harmful algal blooms. If you're joining, it's probably because you're experiencing some harmful algal blooms in your community or some of the communities that you work with. And what we're really hoping you get out of this forum is a little bit more information about some of the federal funding programs that are out there, maybe learn a little bit about a program you didn't know that might offer an opportunity for you to address some of the HABs issues you're facing or the folks you work with are facing.

[00:02:23.87] And so we really encourage you to ask questions. The folks who are here presenting run the federal programs. And it's a great opportunity to have a little bit of dialogue and answer some questions, particularly, if it's something that piques your interest or might be a path you might follow for a little bit of federal funding to help address your issues.

[00:02:46.48] There's been a lot of really great forums and work on some of the technical aspects related to HAB, some of the analysis, some of the research, some of the different models that are available. We're going to stay a little bit away from that. We are going to really just focus on the funding opportunities that are available for you to pursue.

[00:03:06.86] So with that, again, thanks to all the presenters, and feel free to jump in the chat and ask the questions that might come up for you during the presentations.

[00:03:18.09] Great, thanks very much, Ellen. Greatly appreciate that welcome. So again, welcome to day two of this two day forum series.

[00:03:27.18] The forum will run today from 1:00 PM to 4:00 PM Eastern. During yesterday's forum, we had presentations from the National Oceanic and Atmospheric Administration, the US Army Corps of Engineers, the United States Geological Survey, and the EPA WATER Infrastructure and Resiliency Finance Center focused on the Water Finance Clearinghouse.

[00:03:51.18] Our agenda today is structured similarly to yesterday. It's segmented into presentations by different federal agencies. Today, we'll hear from the United States Department of Agriculture and from the US Environmental Protection Agency. Our final segment for today, we'll address additional individual federal funding sources.

[00:04:10.62] Please note we also have presenting today to state level representatives, Indiana State Department of Agriculture and New Hampshire Cooperative Extension at the University of New Hampshire. Both of those are presentations will cover examples of receipt of federal funding and the use of that within those respective states. Representatives will review their HAB related funding sources. And we'll take your questions.

[00:04:37.47] We also have set aside time during each of the federal agency segments to receive your feedback through exploring three questions. And those questions are posted on the agenda will also have those posted on slides when we get to that portion of the agenda. A couple of notes, given our participant numbers, we will lean into using the Q&A function.

[00:04:59.43] Please type your questions into Q&A. As you have them, I will monitor and cue the questions for our speakers. We will handle as many questions as time allows. Just as a reminder in your Zoom controls, you can find the Q&A tab at the bottom of your screen.

[00:05:17.50] Please do not use the chat to put your questions or perspectives in. If you're not seeing the toolbar at the bottom of your screen, if you move your cursor towards the bottom of the screen, you should have those in control show up. And the Q&A tab is quite obvious.

[00:05:34.77] I'd also just like to make a note to our speakers. I will show up briefly on video as you are nearing the last couple of minutes of your allotted presentation time as a signal that it's time to wrap it up. So if I show up, that means you've got about two minutes remaining. And if you could move that along.

[00:05:53.41] We do have quite a bit of presentations to get through today. And I want to make sure that we don't wind up in that awkward situation of the last presentation of the day is having to move at an extra fast pace. OK, well, with those introductions and notes out of the way, I'd like to take us-- actually, can we go ahead and advance the slide one please?

[00:06:17.78] So again, there's an overview of our agenda. I gave the background notes on that. Again, you'll see that we've got USDA up first to provide presentation in the Q&A session.

[00:06:29.77] Next, US EPA, and then finally, an innovative federal funding sources and approaches to wrap us up for the day. So again, that's just our sequencing for our presentations today.

[00:06:44.24] Next slide, please. All right, so I'd like to get us started right away into our first federal thunder profile number, which is number four in the overall forum series. It's the United States Department of Agriculture, USDA. I'd like to introduce the speakers that we'll have.

[00:07:06.01] First, Martin Lowenfish. He's a conservation initiative leader with the USDA NRCS. And David Flesher, community program specialist for water and environmental programs, USDA Rural Development. So Martin and David, I'll turn things over to you for your presentations.

[00:07:26.32] I'll just make a note. We also will have a presentation after Martin and David. That'll be Jennifer Thumb, Deputy Director Division of Soil Conservation for the Indiana State Department of Agriculture. I'll reintroduce Jennifer as we move to her slides. So Martin, I think you're up first. I'll turn things over to you.

[00:07:48.87] All right, wonderful. Thank you very much, Ron. And I will try to be efficient with my time. So let me get to the next slide here, please.

[00:08:03.36] All right, the only thing I'll note for my title slide is that partnering is key to how NRCS delivers all the conservation programs in our portfolio of primarily Farm Bill authorities. And I just want to emphasize that and will throw out the presentation.

[00:08:26.53] So all of you who are in the audience today are key stakeholders likely, even if you haven't thought much about the nature of your interest and how your stakeholders in agriculture. So next slide, please.

[00:08:46.76] And so a key before we get into the programs, there's lots of ways to highlight this fact. But some of the key statistics that I like to point out is that at one time-- anyway, and I've lost the citation-- found that 70% of the land in the lower 48 is owned by private landowners and managed primarily for agriculture and forestry purposes.

[00:09:15.22] So 88% of all surface water falls on those private lands before they reach lake streams and groundwater aquifers. So to those drinking water sources, which may be impaired or impacted by the management activities around them, including in up two halves, which is what we're primarily focused on today. So the quality of that water and the environment generally depends on the millions of individual decisions that private landowners make every day.

[00:09:47.05] And NRCS works with those private landowners to provide them with financial and technical assistance in improving the conservation on their operations as they keep them in production, those working farms, ranches, and forest lands. So next slide, please.

[00:10:08.78] So we're part of the source water collaborative. So I stole one of their graphics here. The source water partnerships in the states can include those state drinking water agencies, drinking water utilities, tribes, soil and water conservation districts for those of you who aren't as familiar with our acronyms, as well as all these units of local government, non-profits, watershed groups, and the likes.

[00:10:39.37] So NRCS recognizes that there's a broad swath of stakeholders that are invested in the issues related to agricultural conservation. And so we have a couple of mechanisms for formally engaging with a broad variety of stakeholders, certainly within the agricultural

community, but also anyone who has an interest in the natural resource management in their states.

[00:11:09.80] So those two primary mechanisms are the State Technical Advisory Committee, which is run by the state conservationists. So that's NRCS leadership position in each state, and then the local working groups, which are scattered throughout the state. The best place to figure out how to engage with those partnership groups is through the NRCS website in each state.

[00:11:38.89] Many of them have posted calendars. And there's contact information to figure out how to get engaged. So I'll start with that and just leave it with you to reach out to the local and state leadership at NRCS to figure out how you can engage.

[00:11:56.26] So next slide, please. The biggest tools that we have are authorized and funded through the Farm Bill, which is about every five years is reauthorized and reconsidered. The 2018 Farm Bill was the most recent Farm Bill that was passed, which means that we're sort of in the middle of the Farm Bill and looking towards future authorization or reauthorization.

[00:12:27.99] One of the things that happened in the 2018 Farm Bill is that an express priority for source water was included in the Farm Bill and applies to each of these four programs, some of the main authorities that NRCS has for providing that financial and technical assistance to agricultural producers. I'll just go through this as a list of programs here broadly with the recognition that all or most of this funding goes directly to farmers and ranchers for implementing conservation.

[00:13:09.95] So there's very few grants that are provided, say, to partners directly. Though, there are some exceptions. But for this high level overview for the purpose of this, the funding is really provided directly from NRCS to farmers and ranchers to implement practices that many of the stakeholders here will be interested in.

[00:13:38.01] So while we don't have grants to say give to a, for the most part, to a watershed group or to a utility, we can work with those partnerships to deliver assistance that's consistent with the interests and needs of those partners. So just going around the circle here starting with environmental quality incentives program, this is-- is most like a traditional cost share program where we provide a percentage, often a high percentage of the cost for farmers to implement conservation practices like, say, cover crops, edge of field, phosphorus reduction structures, bioreactors, any number of management and structural practices.

[00:14:33.11] ACEP, or the Agricultural Conservation Easement Program, is what it sounds like, an easement program that has multiple flavors for general farmland preservation, wetland restoration, and preservation, and other purposes, including grasslands. And the conservation stewardship program that is more focused on management activities to help producers who have already reached a baseline level of stewardship improve the stewardship of their lands. The broad outlines, or the broad types of activities encompassed by these first three programs can all be wrapped up into the regional conservation partnership program, which is a way for NRCS to work more directly with partners who make proposals about how all these conservation activities may be directed in special projects.

[00:15:31.55] I will ask you to go to the next slide. And note that we have these RCPP projects all across the country. There is, in fact, quite a few that are related to water quality. And Jennifer, our partner from Indiana, will be speaking to a particular RCPP project that is in the Western Lake Erie basin. It crosses three states and is directed towards reducing those nutrient loads that can lead to HABs.

[00:16:09.40] So I won't speak much more to that. And Jennifer's experience will probably more informative to you. So next slide.

[00:16:19.49] We have a couple of also what we call landscape conservation initiatives that help us target those authorities to better deliver results or quantifiable results. One of these is the National Water Quality Initiative. Really focused or originally focused on addressing agriculture's agricultural sources of impairments to surface waters. But it has been expanded to protect source waters and all of these-- the focus of these activities is to target small watersheds and address agricultural sources of nutrients, primarily sediments and pathogens.

[00:17:08.96] So all of these can be sources of impairments and, of course, threats to drinking water. And the nutrients, of course, is highly related to harmful algal blooms. And all these targeted small watersheds around the country are selected in partnership with those who are on the state technical committee and the state water quality agencies and state drinking water agencies.

[00:17:39.11] Next slide. MRBI, or the Mississippi River Basin Healthy Watersheds Initiative, is very similar to NWQI in that it also drives NRCS equip but also CSP funding to small watersheds. In this case, though, the mechanism is very similar in that we're targeting conservation to small watersheds and require that a watershed assessment, very similar to a nine element, 319 plan, is in place for those watersheds. But in this case, the alignment of the prioritization and location of these watersheds will be with the state's nutrient reduction strategies.

[00:18:29.89] So each of the 12 states that are part of the hypoxia task force or 10 main stem states along the Mississippi plus Ohio along the Ohio River are part of the hypoxia task force. And all of them have developed nutrient reduction strategies. And the funding that NRCS delivers as an initiative above and beyond normal funding is targeted to support those nutrient reduction strategies.

[00:19:03.41] All right, next slide, please. I mentioned that the 2018 Farm Bill prioritizes harmful algal blooms and prioritizes source water protection among other resource priorities that NRCS must address with our Farm Bill conservation programs. There's a couple methods for that. One is that since the Farm Bill, NRCS has worked in each state to identify high priority areas for drinking water protection in each state.

[00:19:41.29] That's done in collaboration with the state technical committee. And the thrust is to engage and deepen our engagement with drinking water providers. So this is often a new realm for drinking water providers to be engaged in with NRCS. So all of our state conservationists that were looking to engage further with the drinking water providers across the state and

certainly with the state drinking water agencies to figure out how to prioritize watersheds across each state, or prioritize areas across each state.

[00:20:24.34] The Farm Bill further provides that we've got to dedicate at least 10% of funds of those programs that I discussed so far, those four main Farm Bill programs, and that within these high priority areas, to sweeten the product for producers that certain practices identified at the state level and relate it to source water protection would be eligible for a higher payment rate than would normally be available for under the normal programs.

[00:21:05.16] The only thing that I would add that's not on this slide that we did want to focus on those that funding and the tools available for addressing harmful algal blooms is that NRCS has a-- is part of a partnership called CEAP, the Conservation Effects Analysis Project, where we look at the effectiveness of conservation practices in achieving natural resources outcomes.

[00:21:35.61] And HABs have certainly-- HABs and water quality have certainly been a large part of the CEAP project. And speaking for my colleague Lisa Duriancik, when we looked at HABs, she noted particularly that we do have a Beasley lake study down in Mississippi that seeks to establish and has shown real world impacts of agricultural conservation practices and conservation systems on reducing nutrients and other HAB related inputs to surrounding water bodies and then reductions in chlorophyll and algal populations in the lake. So there is a, if not exactly a research program, but an evaluation program seeking to link and improve our conservation practices in addressing water quality concerns and HABs. And with that, and seeing my friend Rob on the screen, I think I'll bring this to a close.

[00:22:50.63] Thanks very much, Martin. And I think we're over to David next. David, welcome.

[00:22:55.34] Thanks, Martin. And thanks, Rob. Again, I'm Dave Fletcher.

[00:22:59.79] I'm a community program specialist with the USDA Rural Development. I appreciate the opportunity to be with you here today. Next slide, please.

[00:23:12.22] Rural development is made up of-- we like to think of it as a three legged stool. We work with rural communities. The various programs we have, we have over 40 programs. And I can't remember. But there's like 10 or 15 different definitions of rural in USDA rural development.

[00:23:35.54] But we have three agencies. One is rural housing and community facilities. So if you're going to have a successful community, sustainable community, you've got to have a place to live. We have a rural business and cooperative service.

[00:23:49.50] So pretty much you've got to have a job. And then we have a rural utility service. You've got to have that infrastructure in place.

[00:23:56.73] And we have our electric program, our telecom and broadband and then the water and environmental programs that I'm going to talk about today. Next slide, please. Our water

environmental program, or WEP as we call it, we've been around a long time. And we're also, like Martin mentioned, we're funded through the Farm Bill.

[00:24:22.50] And last year, our program, we delivered a little over $2 billion across the nation, ended up impacting-- it was in over 500 counties. We did about 700 projects last year. And we're pretty proud of the fact that over 400 of those we're dealing with a health or sanitary standard issue of which the harmful algal blooms can be one of those. We don't have a specific program targeting HABs.

[00:24:58.11] But it is-- if there's an issue with a water or sewer system or even stormwater, again, it's eligible for our program. We also value that you've heard a lot yesterday and today about partnerships. We also really encourage partnerships.

[00:25:22.49] Last year, we did about 20% of our funding. We did an additional 400 million of joint funding with partners on these projects. And we have an existing portfolio of over 14,000 loans and 7,000 borrowers across the nation in the territories.

[00:25:41.66] And it's about $13 billion of principal outstanding. And one other I guess item I wanted to note is you look at the projects we funded last year, the average monthly water and sewer costs for our projects funded last year was between $57 and $59 for water and sewer.

[00:26:06.07] Next slide, please. So our main program, water and waste disposal loans and grants, we can do finance construction or improvement of anything drinking water source, treatment, storage, or distribution. On the sewer side, we can do collection, transmission lines, treatment, and disposal.

[00:26:32.07] We also can do solid waste collection, disposal and closure. And then we also can use these funds for stormwater collection, transmission, and disposal. Next slide, please.

[00:26:47.25] The one other thing that often is involved when we're doing construction projects is there's a lot of soft costs involved and other things. And these are all eligible for assistance when we work with a community or a system to put a project together. And that would include engineering, environmental costs, legal, land acquisition, water and land rights.

[00:27:10.44] And then we also can use some for interest during construction. In some cases, we can do use loan funds for purchase of facilities or also occasionally when we're working with an existing entity. We may need to refinance some non-agency debt in order to keep those user rates at reasonable levels.

[00:27:34.50] Next slide, please. Our eligible applicants for this program are public bodies. They make up about 80% of our applicants and our caseload.

[00:27:47.47] We also work with not-for-profit organizations. It could be homeowners associations, water and sewer companies, and so on. They make up about 18% of our applications and borrowers. And then we also work with all of the federally recognized Indian tribes.

[00:28:08.29] And they make up around 2% of our applications and borrowers. For this program, our direct program, loan grant program, eligible areas that we can assist in, it's defined in the Farm Bill, is any city, town, or unincorporated area of 10,000 or less based on the last decennial census. And so we're still using this fiscal year, the 2010 census.

[00:28:36.43] We do expect we'll be transitioning to the 2020 numbers next fiscal year. We can also help even if a part of a facility is, say, located in an ineligible area, if they're providing service to an eligible area, we could help with a part or portion of that project. Next slide, please.

[00:29:02.42] Our loan, we do have a loan program supplemented by grants. And we have a three-tiered interest rate structure based on the median household income of the service area that system serves. And we base that median household income on each state has a baseline what we call, it's our state non-metropolitan median household income. And that's the benchmark that we use.

[00:29:32.08] And if a community or a system is above that benchmark, then we would be looking at a market rate loan, which is currently two and an eighth. If they're under that benchmark, then we could look at an intermediate rate loan, which would be-- currently, it's 1.75.

[00:29:51.58] And then if that income is less than 80%, plus if the project is alleviating a health or sanitary standard issue, then we can potentially look at a poverty rate loan, which currently is at 1 and 1/4%. Our terms are up to 40 years of the maximum state law.

[00:30:11.42] Some states do have restrictions depending on the instrument that we're using. So sometimes we'll do a, say, for example, some communities we might only be able to do a 25 or a 30 year loan. And that's pretty much all our fees. Next slide, please.

[00:30:30.26] Our grant program also uses that benchmark. And our grants, one thing to kind of remember with our program is loan funds are a very efficient use of federal funds, where our grant program, every grant dollar is a tax dollar. Whereas, our loan funds are paid back.

[00:30:52.46] And so this program actually currently has what's called a negative subsidy rate. So it actually doesn't really cost any tax dollars because of that loan is paid back. And again, we have a very low or current delinquency rate on our portfolio is less than 1/2 of 1%. But we use our grant funds to reduce the user cost to a reasonable level. And that's based on comparing it to similar systems.

[00:31:25.51] And on the grants, if that MHI benchmark is-- if you're above that, then you're not grant eligible. But if you're below, then you can potentially qualify for up to 45 grant of eligible project costs. And if you're less than 80% of that benchmark, plus, the project's alleviating a documented health or sanitary standard issue or problem, then you can potentially qualify for up to a 75% grant. The caveat or the catch is that when we get our funding every year, the last several years we typically will get about 80% loan and 20% grant. And so if a community may qualify for 45 or 75, we don't have the funding to be able to fully fund at those levels. Next slide, please.

[00:32:23.22] The other program we have is a guaranteed program where we are basically working with a private lender to guarantee or insure a loan that they make to help a system or a utility. There's the same eligibility criteria except for this program, we can actually help in communities up to 50,000 residents or less based on that latest decennial census that are not in an urbanized area contiguous to that town or city. Our guarantee percentage is 80% for this fiscal year.

[00:33:01.73] And again, the terms and the interest rates are negotiated between the lender and the borrower. But again, this is a program that allows us to help in some of the larger communities. And if you have some, perhaps, higher income communities that need help, this is an option. Next slide, please.

[00:33:25.15] Our program also has a lot of other set-asides and funding's and technical assistance programs. I'm going to highlight one. I've got one slide.

[00:33:33.88] But I also wanted to mention we also have a set aside for Colonia and Native American grants that amounts to about $50 million a year. And then, again, we have several other technical assistance, grants that we do, including technical assistance and training grant where we fund ARCAP or the rural community assistance partnership, and then also the National Rural Water Association to provide circuit riders out to help communities with their operations and management of their systems.

[00:34:11.50] Next slide, please. The one I wanted to highlight today is our emergency and imminent community water assistance grant program, or ECWAG we call it. If there is an emergency or an event, then we can go ahead-- and if that issue is breaking up, if it's dealing with a transmission line, then we can do grants up to $150,000.

[00:34:37.79] If it's a source issue, which often the HAB does impact source, then we could go up to a million dollars to assist. And this one has been funded roughly at about $35 million a year for the last several years. Next slide, please.

[00:34:57.67] We do have several priorities that we give extra emphasis on with the administration. And again for this year, the focus is obviously recovering from COVID. We do want to make sure all our eligible rural residents have access to our programs. And then we do want to focus on climate pollution and increasing resilience or the impacts on climate change. Next slide, please.

[00:35:30.25] And how to apply. We do have an online application process. We processed over 3,000 applications in this system. It's a lot like TurboTax.

[00:35:41.91] It was launched back in 2015. And it's-- and go ahead and next slide, please. It's very efficient. It's convenient.

[00:35:50.37] It allows you to work, do everything pretty well online. And again, it also can be used by our partners. The way it's set up, a community can give other funders access to it. So that they can utilize this pretty convenient process. Next slide, please.

[00:36:15.30] And just a couple of examples of projects we have funded that have had some algal bloom issues. We've done several surface water projects in New Jersey and New York where basically their surface water was dealing with the algal blooms and couldn't meet standards. And so we either drilled additional wells or we connected them to a larger system.

[00:36:41.27] On the wastewater side, a lot of the projects deal with basically connecting existing residents onto central sewer and getting rid of the septic tanks. And I see Rob's on. So I probably ought to do the next slide, please. And here's our contact information.

[00:37:03.13] The one thing similar to Martin, our program is administered through our field offices and our state offices. We do have 47 state offices if you have a couple to serve a few states. And just like within NRCS, we're located in our service centers. And there's the link there to touch base with contacts in your state. And with that, I'll turn it back over to Rob. Thank you.

[00:37:29.19] Yeah, David. Thanks very much. And Martin, thank you for that overview of the USDA funding sources.

[00:37:36.63] We'll move next to Jennifer Thum, Deputy Director Division of Soil Conservation Indiana State Department of Agriculture. Just, Jennifer, before you get started, I wanted to note for our attendees, please feel free to start typing in your questions to the Q&A. I'll monitor those.

[00:37:58.68] And once Jennifer wraps up, we'll go ahead and put those questions back to Martin, David, and Jennifer. In your questions, it'll be helpful if you indicate to whom you're addressing the question since we will have had three presentations. All right, so again, go ahead and type your questions in. I'll keep an eye on those. Jennifer, over to you and welcome.

[00:38:21.45] Thank you, Bob. Thank you again for extending the invitation to myself to talk a little bit about what we're doing in our state. Next slide, please.

[00:38:33.66] So for today I will be talking about projects that we have in the Western Lake Erie Basin, specifically for the HABs. So again, I know Martin stressed it and so did David. But I will be stressing the importance of partnerships and having partners.

[00:38:49.38] So the projects will be the first RCPP, the Tri-State WLEB, we received in 2015. I'll talk about a project in the Blue Creek. And then I'll talk about the new RCPP. And then I will wrap it up with our story maps, just how we tell our story to the public about our success.

[00:39:08.84] And then I'll end it on what we consider our state secret sauce. So that will be fun. Next slide, please.

[00:39:18.07] So for Lake Erie, Indiana is very fortunate to be part of the Great Lakes system. And we have six counties in the Northeast part of our state that actually drain to Lake Erie. And then these are the concerns that we have, sedimentation, phosphorus, nutrient loading, of course, the HABs that we have talked quite a bit about. Next slide, please.

[00:39:40.86] So the first project is our tri-state Western Lake Erie Basin phosphorus reduction initiative. Lots of words. This was an RCPP that we're very fortunate to be awarded back in 2015. So this RCPP included the three states-- so Indiana, Michigan, and Ohio.

[00:40:01.37] And we focused on 17 sub watersheds to be our primary focus. The wonderful thing about the RCPP is that the partners are in the driver's seat. So NRCS is there to provide financial and very much needed technical assistance and just to be a sounding board for the partners. So for this project, we are awarded $17.5 million.

[00:40:24.30] And we leverage that with about 40 plus partners for about 15 million we're able to leverage in partnership, which was a lot of money. And the way we divided that out was percentage of the states that they have-- that they drain to Lake Erie. So Ohio was at 70%. So they received 70% of the funds.

[00:40:46.17] And with these RCPPs, the partners were there. They had certain projects that could have been cash. Or they would leverage existing projects. Also, part of these, we were able to receive funds from partners to do demonstration farms. Ohio has an amazing demonstration farm thanks to the Farm Bureau as that was one of the key partners.

[00:41:08.25] We were also able to conduct social indicator surveys and pre-and-post surveys to talk about ways that the conservation practices were implemented in what ways we could get more on the ground. So these funds were actually funneled through the equip program from the NRCS. So it's all voluntary efforts.

[00:41:28.71] We did a lot of education and outreach in the first couple of years. And we continue to do that. So this project really kicked off with three states coming together and really making, trying to make that dent into the nutrient loads to Lake Erie to get to that 40% reduction of phosphorus.

[00:41:46.98] We have a long way to go. But I mean, we're getting there. And so this project really, really helped us come together as a unified front to address that. And then also to figure out ways to tell our story. The farmers in this area, they always joke that they farm in a fishbowl because the eyes are on them to see what they're doing. And so it really did help us get the partnership and come together. Next slide, please.

[00:42:15.31] Another one of our projects that received funding for is this Great Lakes Restoration Initiative. So Martin did talk about the Mississippi. So there is a Great Lakes Restoration Initiative.

[00:42:26.31] And we receive funds for a CTA agreement, which is Conservation Technical Agreement. And for this one, we really focus on the Blue Creek, which is part of the Western Lake Erie Basin. That has a very high percentage of nutrients that runoff.

[00:42:45.16] And so we wanted to focus on that particular sub watershed. So for this area, there is also a high concentration of Amish communities that are located in Adams and Allen. And so

we recognize that they don't receive-- they won't apply for federal funding. And so we wanted to work with them. And we knew we really needed to establish relationships.

[00:43:06.27] So we took a step back and formed this new creek task force. So the NRCS DC in Adams really did spearhead this. We made cold calls to farmers.

[00:43:18.75] We stopped at the farms. And this task force is made up of the traditional farmers. There's Amish farmers that are on it, there's staff. And we just talked about what's going on in that subwater shed and what we all can do to work towards getting that reduced. And it's been pretty good. There's been a lot of good conversations. And there's been some uncomfortable conversations.

[00:43:41.82] And then also, we were able to receive funds to run an ACPF. So the agricultural community planning framework tool. So this is using LiDAR data to look at what practices are on the ground and also what practices could go on the ground. So what land could support a filter strip, a grass waterway.

[00:43:59.58] NRCS actually uses this layer now when they do conservation plans. It's another great tool. And then also we received funds to build these educational EduField water kits. So we're able to work with the farmers to have this kit that we bring out when we meet with them to give them an idea of what is running off the field and how much. It's all educational based.

[00:44:22.29] We don't keep track of it. We don't keep the data. They are able to use it. We're there for advice if they need technical assistance. But we have found is after the farmers use these and collect the water that's running off, they come back in.

[00:44:37.05] They recognize that there's an issue. And they want our help to address it. And with the technical assistance, we're able to do that. And they might-- sometimes they will apply for funding, excuse me, which is really good.

[00:44:51.51] And then also, NRC in Adams County, they've partnered on purchasing or building equipment specifically for the Amish. So in the picture, that is actually a highboy seeder that is pulled by a mule or a horse, and it's broadcast cover crop seed. They also have a no-till drill that can be pulled by a team of horses as well. So it's just another way to get conservation on the ground to all of our landowners through the voluntary efforts.

[00:45:19.63] Next slide, please. So the next project is our current RCPP. So this is not a continuation of the first one we received. It's a different application. It's still the three states. So Michigan, Indiana, and Ohio.

[00:45:36.00] We received about $7.7 million. And we were able to leverage about $10 million in partnership funds. And we had about 35 partners. So again, partnership is huge.

[00:45:48.37] And we're really fortunate we've got a great group. And so the effort again, is to get conservation on the ground. So for the first RCPP, Ohio really focused on the livestock

component and reduced the manure that Indiana and Michigan really looked at doing for the road crops.

[00:46:05.91] And it's the same thing how we're really focusing on more of the phosphorus potential projects that can be funded under NRCS. And so that's sort of what we're looking at for these. But our scope area is the Maumee headwaters.

[00:46:19.92] So we knew that the funds were going to be reduced compared to what we received in 15. So we wanted to make sure the money went the farthest. So we're actually in the process of having the first sign up. So we're really excited. And I'm just again, thankful that the three states we're able to work together.

[00:46:38.53] We have a state ranking sheet. It's just the same as it just being spread across the three states, which is not easy to do. And one part of the new RCPP is the science and solutions. So what this is what the three states bring together, water quality experts. So Heidelberg, Purdue, Michigan State, OSU, Stone Lab. We get together to talk about different definitions or to try to come up with a concise message that the three states can use.

[00:47:10.53] We found that when we hear different presenters, one person might use a definition of [INAUDIBLE]. One person might use a message or definition of conservation tillage. And so the goal really is to have the same message, the same topics, the same definitions if we can. So that's one of our goals.

[00:47:29.49] We just feel like that will continue to tell our story. And we can be consistent. So farmers aren't confused when regardless of what state they're in. A lot of them have ground in all three states. So it just helps convey our message.

[00:47:44.02] And then again, it's to tell our story. We've done quite a bit. But we have a ways to go. And so we want to make sure that our partners and the public know what we're doing.

[00:47:54.69] We're receiving financial assistance. And we want to make sure that people understand what we're doing with that those funds. And so that has been very important to all three states.

[00:48:05.02] So we've got a couple of ways that we're able to actually do that. Next slide, please. So one way that we-- gosh, a couple of years ago, ISDA and our sister agency department environmental management got together. And we wanted to show everyone what we're doing as far as the agricultural perspective and then from the urban to address what is going on with our state with our water quantity concerns.

[00:48:38.35] So we put together these different story maps with the GIS. And we were able to really break down the different load reductions. And so at the end of the year, the NRCS, our department, Department of Natural Resources. So they have a layer program, [INAUDIBLE]. They have a 319 program. And so we get all that data at the end of the year to look at what type of conservation practices were applied and where.

[00:49:07.42] And then we won a region five model, and that outputs our load reductions for the watersheds. So if you can see on the map on the right hand side, those are the watersheds where we really focus on-- and if you're a resident or you're curious, you can click on any of the tabs. So Lake Erie has a domestic action plan.

[00:49:27.32] And so you can click on that tab and find out what's going on with the tab and how we're making those goals. So health, that is a big component. And so you can click on that tab and just really find out what we're doing as a state to address our concerns. And there's also a tab we've added recently that specifically for the Western Lake Erie Basin partnership.

[00:49:49.85] And so once that is public, you'll be able to go and see, for example, the soil samples, what soil samples were taken, what sub watersheds, what is the high percentage of phosphorus. It's a very high level. But it's just another way we're communicating what is going on.

[00:50:10.00] And then the urban, there's a lot of urban grants, a lot of urban agreements now with NRCs, Allen County. So water has a really nice one to get their urban conservation going. And so you can click on that tab as well. Next slide, please.

[00:50:27.34] So the overarching guide, if you would, is the Indiana State Nutrient Reduction Strategy. So Martin touched on it when he talked about the Mississippi Initiative. And so we do have a nutrient reduction strategy. And this is a guy that we go to-- when I say we, it's the partners.

[00:50:45.54] We go to really help determine what watersheds we need to focus on, what partners we need to work on. And we use this when we apply for outside funding to really make sure that we as a state are moving in the right direction that we sat down and we determined that we needed to go in. This is online, and it doesn't just sit on a shelf. Let me tell you, we really use this.

[00:51:07.45] Next slide, please. So I will wrap up with our secret sauce. So Ted McKinney, UC Director of ISDA. And I'm stealing this from him. So what we are very fortunate, Indiana, is to have this Indiana conservation partnership. And it's made of eight different agencies-- state, federal, and local.

[00:51:28.52] And we get together once a month. But it's more than that. We have an agreement where we all share our data that then creates those load reductions that I talked about to be able to really tell our conservation message.

[00:51:42.85] We wouldn't be able to do what we're doing without this partnership. It really is our secret sauce. We get asked how are you able to show the data. How are you able to do this?

[00:51:51.37] It's because all of us see the common goal of getting the nutrient reduced to our watersheds and really improving the soil health and working with our landowners to get that voluntary conservation, the best management practices on the ground. It's really neat. We're

pretty-- I think I'm pretty spoiled. My job telling the story is pretty easy because of all these partners.

[00:52:13.75] If anyone wants to know any more information on ICP, let me know, or any of the outputs from the RCPP, I'm happy to share any of that as well. So with that, I see Rob. So thank you, Rob.

[00:52:30.19] Great, Jennifer. Thanks very much. And if you could just stay on your video for a minute. And let's go to the next slide.

[00:52:41.92] So this is our open Q&A period. Invite questions for any one of our three speakers-- Martin, David, or Jennifer. So I'll go ahead and pause here, give our attendees an opportunity to go again use the Q&A tab to ask questions that you have.

[00:53:06.45] We did have one question come in while Jennifer was speaking. And I chatted to Ellen Turquinio to ask if she could respond to this since it relates to information that was conveyed during yesterday's forum. The question is, what is your definition of a harmful algal bloom? So Ellen, I'll let you go ahead and respond to that. And then Martin, David, or Jennifer, if there's anything you'd like to add there in terms of how you're defining it in the context of either grant making or the actual work on the ground, Jennifer, that you're doing. Ellen, go ahead.

[00:53:43.44] Sure, yeah, throughout this forum, if you think of harmful algal blooms or HABs as the overgrowth of algae or cyanobacteria that cause harm to people, animals, or the local ecology, they produce toxins that make people or animals sick. And what we're talking about over the forum are blooms that occur in freshwater, such as lakes and rivers, and saltwater such as oceans or bathes.

[00:54:13.04] Great, Ellen. Thanks. Martin, I saw you come off mute. Go ahead.

[00:54:18.17] Oh, yeah, the only thing that I would add to that, NRCS, as an agency, I don't know that we get involved in the business of defining what HABs are. And the reason I came off mute is because we generally don't directly address HABs themselves. And that was one of the discussions we had as we got ready for this presentation and being part of this forum.

[00:54:49.25] NRCS works with partners who are concerned about HABs. And we work with farmers to address those contributors that may lead to HABs. And certainly, it's not a direct relationship.

[00:55:03.23] But we understand that there is a relationship. We work on the precursors and trying to prevent the conditions that could lead to HABs. But we're really concerned with what happens on the land.

[00:55:17.81] Great, Martin. Thanks very much. I've got a question that's come in for you, Jennifer. I'm interested in how you built the partnerships, especially with the producers. Does your web page provide information on the education outreach process, brochures, et cetera?

[00:55:39.58] Great question. So it does not. I'm happy to get those to you.

[00:55:43.81] But we worked a lot with the DCs, with NRCS, just our conservationists, and then our field staff, the boots on the ground. We did some cold calling. And then, also, specifically for the Amish communities, we made phone booth flyers. So they have phone booths. And we put some informational booths in there. And then also, we created educational guides. We have one specifically, for example, in the 4Rs for the Amish. And so those we actually put out at the counters at the feed stores, that type of thing.

[00:56:20.09] But we also work with our agribusiness council for those retailers to have the education programs. And one way that we're able to entice farmers to show up is to offer PARP credits or continuing education credits for the CCAs. So the soil and water credits that the CCAs require to have tend to be the hardest.

[00:56:42.74] And so if you can tie an education event that offers those credits, you will probably get a pretty good audience as well. So that's one way we've been able to really get them. But as far as the building relationships, it's cold calling. And also we offer a free soil sampling program for in particular in the Lake Erie Basin through an EPA project.

[00:57:06.19] And then also we work with a local lab to give us a reduced rate. And now between the soil sampling and the water kit and just the staff of our partners, we've been able to have some really good conversation in seed conservation go on the ground. But if the individual wants the booklets, I think they've got access to my email. If not, I can put it in the chat. But I'm happily to share any of the education booklets that we have created.

[00:57:30.95] Good, Jennifer, thanks. As part of your answer, you mentioned the four R's. I know that's a fertilizer related initiative. But others of our attendees may not just recognize the acronym. Could you just give a quick--

[00:57:45.37] Sure, it's to get to work with our ag retailers. So it's applying fertilizer at the right rate, the right time, the right source, and the right place. So it's another way to get the nutrient, reduce the nutrients on the ground. And several states have their own program.

[00:57:59.14] Indiana's one. But it's really spearheaded by the ag retailers. So we go in as a third party audit.

[00:58:06.88] So we look at, for example, make sure that you're not applying fertilizer on frozen ground. If you are, then you have to have marked certain things or having a serious conversation about why it's not to prevent the retailer from making fund money. But that's just another good tool in our toolbox. Again, they've got-- the fertilizer Institute has a lot of good information, educational videos that they've got available as well.

[00:58:35.14] Great, Jennifer. Thanks very much. I did want to note that a question has come in. It's outside of the scope of today's forum.

[00:58:43.29] I just wanted to acknowledge it. The question is, where is the testing done for the effects of HABs in food and environmental water soil sediment samples? I'm not going to pose that question to any of you again. The scope of the form today is on funding and financing. So again, thanks for that question. But it's one that we won't put to our speakers.

[00:59:14.82] All right, David, Martin, and Jennifer, if I could ask you to just hang on, just stay on for a few more minutes here. I don't have any further questions that have come in. I'm going to move to our next segment, which is an opportunity for attendees to share their thoughts with us.

[00:59:31.17] And so I'd like to do that depending on how engaged we get with that. And also, this time allows see if any one of the three of you have any just final observations you'd like to make having heard the other presentations. But let me go ahead and first invite some further input from our attendees.

[00:59:52.72] So next slide, please. So as we did yesterday for those that attended yesterday's forum, we have these three questions that we'd really like your feedback on. First one, what successes have you had in applying for and using USDA funding?

[01:00:12.76] Second, what challenges have you encountered in applying for and using USDA funding? And then finally, how can the USDA engage more effectively with localities in need of funding to respond to HABs? So as you might expect, we have a good group, a high degree of attendance today.

[01:00:30.83] And so we really want to reach into your experience as an opportunity to inform and provide some further input for USDA. So you can go ahead and put your responses into the Q&A. I'll go ahead and monitor those. So I'll wait here for a moment to see what comes in.

[01:00:55.49] What I'll also say is if any one of these three questions, either you don't have the particular experience with the programs. So you feel like you can respond to these. A couple of other questions that we'd be interested in hearing about-- they're not here on the slide.

[01:01:12.50] But we'd really like to hear from you on what are the needs you are seeing in your community. And this relates to funding HABs and funding needs. So what needs are you seeing? Go ahead and type that in.

[01:01:31.40] Another one that we have is there any further clarity with respect to the eligibility for tribal funding programs, for funding tribal programs? And another one is what interest have you developed in which of the funding sources that have been described? So again, we got six questions out there right now. See if any of you would like to share your thoughts.

[01:02:04.34] Well, I can start perhaps. Oh, sorry. Those were questions for the group.

[01:02:11.36] Yeah, Martin, while we're waiting to see if anything comes in, it sounds like, again, you have a further contribution. Please go ahead.

[01:02:18.83] Well, I did want to note that I spoke to the eligibility of generally farmers ranchers, forest landowners for the programs, the financial and technical assistance that we have. Tribes are certainly among those groups. And we have some special authorities and special mechanisms for working with tribes, including what we call alternative funding arrangements where we can work to provide a lot of funding directly to the tribes for further delivery of the program. So certainly have some special mechanisms and a focus on working with tribes.

[01:03:07.28] Great, Martin. Thanks very much. Our attendees are in listen mode today, not seeing any contributions via the Q&A. I'd just like to encourage that participation one more time. In the meantime, David, I see you've come off mute. Go ahead.

[01:03:29.27] You know, I just kind of build on what Martin had mentioned. With our limited time, I could just mention, again, our colonia, which is along the four Southern border states, and then our Native American grants. Those are, if you will, 100% grants. And they are a substantial set aside, that can help not only federally recognized tribes on the Native American, but also if you have a community that is not a tribal applicant that has a majority of Native American residents, then we can also assist with those set aside funds.

[01:04:15.65] And one of the things that we run into is especially in the small rural communities is there's a very little economy of scale when folks are upgrading sewers or doing large water projects. And the grant funds are real critical to make those utilities basically sustainable over the long term. And that's something that we strive towards is creating that sustainable community that have user rates that are truly affordable. And similar to Martin, we do have some additional flexibility and working with tribal applicants.

[01:04:59.60] And again, really what we found is in any small community, these projects are, if you will, kind of legacy or once-in-a-generation projects often that are completed. And so with the turnover of local officials, again, that technical assistance is very critical to help them. I'd use a phrase we used to use years ago. It was called providing supervised credit.

[01:05:30.68] We're there as partners not only with other funding partners, but with the applicants. And we really do want it to be an applicant driven process. And we want to provide good customer service and have that community or system end up with something that will serve them now and well into the future.

[01:05:53.78] Great, David. Thanks very much. While you were speaking, we had a contribution come in. I'd like to go ahead and read that out.

[01:06:01.06] And then, Jennifer, I'll wrap back around you to see if there's any final observations that you'd like to make. And I think this is great. This is exactly-- let me just say, to all attendees and panelists, the contribution that I'm going to read out is exactly the type of thing that we were hoping to get today.

[01:06:18.71] So it says we are a drinking water utility serving 600,000 customers in predominantly ag watersheds. Our state NRCS staff is accessible and great to work with. We serve on the state technical committee. But if there is a way for NRCs, EPA, the corps to come

together, assuming the reference there to the US Army Corps of Engineers, to come together and meet with us for a unified attack on our cyanotoxin problem, it would be awesome. All the acronyms and programs seem overwhelming. Could there be meetings that include these entities for local HAB situations?

[01:07:02.23] Jennifer, I'll let you speak to that just because your partnership I think is reflective of trying to unify some of that. But also, just as we wrap up here, David or Martin, if you just have any quick thoughts with respect to that contribution. Jennifer, go ahead.

[01:07:19.42] So we actually-- there is an entity called the Western Lake Erie Basin Partnership that is Indiana, Michigan, Ohio. It's co-chaired by Ohio State conservationists in the Army Corps. We get together, all of us, to talk about-- probably sometimes I think maybe not enough, to talk about HABs, the annex for all of this stuff that the individual-- what a great question and comment-- mentioned.

[01:07:47.44] So we do meet. And again, there's some uncomfortable conversations that we have. But that's how we get conservation on the ground and get stuff done. And we really communicate who needs what and how we can help each other.

[01:08:01.90] There is a plan. The websites out of date. But if that person wants to connect offline, I'm happy to talk about it. Or you can see Davis for NRCS was integral, and Terry Crosby was just amazing to get that off the ground and started. And then Marcy Kaptur, which is a US representative in Ohio, was very instrumental in that as well. But the core in all those are definitely part of it. And we talk about what the core is doing, what NRCS what projects, state projects. And we do have a work plan that we use, and that has been key as well.

[01:08:42.91] I don't know if that answers the question, Rob. But it wasn't-- we still meet in today. And I just feel it's never enough hours in the day to talk about what we're facing together. But yeah--

[01:08:56.05] Great, Jennifer. Thanks. So David and Martin, we've got about a minute left here before I need to move to break. But David, I saw you come off mute. So if you'd like to go ahead. Martin, you did as well. But just stay targeted for me so I stay on time.

[01:09:13.01] Sounds good.

[01:09:13.90] All right.

[01:09:15.04] I was just going to build on what Jennifer said. Our various state offices do have and I have-- I'm based in Idaho, for example. And we do meet with our state partners, including Army Corps and our EPA and our state DEQ and meet on a quarterly basis to address those issues. And to me, it's a perfect example of where all of the funders and the regulators do need to work as a team to get these issues resolved.

[01:09:49.25] Great, David. Thanks. Martin, go ahead.

[01:09:52.61] I think we're decentralized. So as a downside of that is I don't have a one-size, fits all solution for you to say, this is the way that you go forward. But on the other hand, there's a lot of flexibility to come up with a solution. Jennifer spoke to the Western Lake Erie Basin partnership. Indiana also has a very effective-- I'm going to sing your praises here, Jennifer-- has a really effective conservation partnership that was brought together.

[01:10:25.52] It's not in statute or anything like that. Certainly, we have the authority to do that where all the federal agencies and the state agencies with an interest in conservation and agricultural conservation in particular got together to set real goals for themselves and see how they're different authorities and tools can all work to address the broader issues of Indiana. But I think the same issue about the set of watersheds that you're talking about could be applicable. So without giving you a path forward, I think we have the flexibility to do that. And being from NRCS, I would say just bring that issue forward to your state conservationists and see what they have to say because I'm sure there's going to be lots of avenues to address that challenge.

[01:11:15.95] Great, Martin. Thanks. So hey, Jennifer, there's just a note that came in to me. It just said please ask Jennifer to share the education outreach brochure and the plan for the multi-agency work group maybe via the chat.

[01:11:31.19] So if you could look to do that. So let me just say thanks very much, Jennifer, David, and Martin. Great presentations. Thanks for your willingness to also stay around for this panel discussion.

[01:11:46.43] We'll move to a break right now. We'll take a 15 minute break. And when we come back, we'll move into the next federal funder profile, the US and Environmental Protection Agency. So we'll see everybody in 15 minutes. Thank you.

[01:12:00.95] Thanks, everyone.

[01:12:03.06] Thank you.

[01:12:11.89] Welcome back to our attendees and our speakers. We'll get started in just one minute. Thank you.

[01:13:16.00] OK, we'll go ahead and get started. Next slide, please. So we'll move into our next federal thunder profile. It's our fifth federal funder profile for the forum.

[01:13:31.52] It focuses on the US Environmental Protection Agency. There'll be three initial speakers during this segment. So I'll quickly introduce first, Ellie Flaherty, biologist, office of Wetlands Oceans and Watersheds, Susan Holdsworth, Supervisory Ecologist Office of Wetlands Oceans and Watersheds, and Sonia Brubaker, Director Water Infrastructure and Resiliency Finance Center.

[01:14:03.92] Overall, there'll be a 30 minute presentation across these three speakers. After that, we'll move to Q&A. And again, we've also set aside time after Q&A to invite your perspectives

and input as we did during the previous session. So if I can, Ellie, I believe you're up first. Can I invite you to come in? Thanks very much.

[01:14:31.98] Yeah, Hi, Rob. Can you hear me OK?

[01:14:33.80] Yeah, coming through great.

[01:14:35.72] Great.

[01:14:41.52] And go ahead and advance the slides for Ellie, please.

[01:14:47.74] Great. Well, thank you very much. As Rob said, my name is Ellie Flaherty. And I'm going to be talking about the Clean Water Section 319 program, which focuses on Nonpoint Source Pollution. Next slide, please.

[01:15:03.38] So just beginning with some brief background on the Nonpoint Source Program and its history or its origins in the Clean Water Act. So point sources and non-point sources of pollution are defined or addressed differently in the Clean Water Act. Point sources are directly regulated under the act and are considered to be any discernible, confined, and discrete conveyance of water pollution.

[01:15:29.11] So anything that may come from something like a pipe, ditch, channel, or other permitted facility is considered a point source. But non-point sources, on the other hand, are not specifically regulated or defined and are basically any source of water pollution that don't meet that point source definition. So a couple of common types of non-point source pollution, they're addressed by the program, include agricultural runoff as well as unregulated urban stormwater runoff.

[01:15:59.23] Next slide, please. So the types of non-point sources that the program addresses are incredibly diverse. And these types of non-point source are driven largely by land use. And each state, tribal, and territorial program within the non-point source program is tailored to manage or address their unique circumstances and their specific non-point source issues. Next slide, please.

[01:16:29.91] So a few sections of the act to be aware of and just a little bit of policy history, section 319 was established in 1987 and provides the primary framework for federal funding for state, tribal, and territorial non-point source efforts. So a few key parts of the act are first, 319a, which requires that state and tribal programs conduct non-point source assessment reports to essentially assess their non-point source issues within their jurisdiction.

[01:17:01.73] 319b is really the foundation of state and tribal programs and sets the roadmap for how they'll use their 319 funds. 319b requires all-- or when it was enacted required all states to adopt non-point source management programs where they would define their priorities and approaches that would work best for their state or tribal government to address their non-point source issues. And those management programs follow non-point source management plans that are updated on a rolling five year basis.

[01:17:39.15] The final section or the final key section, I should say, of the program is 319h, which is the grant or funding mechanism. Congress appropriates funds annually based on a pre-defined allocation formula through 319h. And then finally, just in addition to the Clean Water Act statutes, states and tribes also follow EPA and 319 specific guidelines when spending 319 funds.

[01:18:07.17] Next slide, please. So this graph illustrates the National allocation that Congress has appropriated specifically to state and territory non-point source programs over time. And you can see over the last 5 to 10 years or so, the funding amount has been fairly steady. In FY20 specifically, Congress appropriated $177 million to the 319 program.

[01:18:31.49] Next slide, please. So as we said earlier, the types of non-point source that the program addresses is quite diverse. And at any given time, there's approximately 1,800 active on-the-ground projects happening all across the country. So we did a poll from our data set to look at a five year window from 2008 to 2013.

[01:18:56.49] So it is a little bit older. But the distribution of project types is still very similar. So we see that some of the most frequently addressed types of non-point source within the program include agriculture and urban sources, followed fairly closely by hydro modification and the category that's labeled as other.

[01:19:19.88] Projects that fall under the other category may include something like a technical analysis or an emerging contaminant study or anything that doesn't really fall neatly into one specific type of non-point source. But then it's followed by some other kind of less frequently addressed pollutants, but you still have a place in our portfolio. Next slide, please.

[01:19:45.83] So like I said, Congress appropriates 319 funds annually to states, tribes, and territories. Once states specifically receive 319 funding, they often run their own individual RFP processes to further distribute the grant funds to subrecipients. And these subrecipients can be a wide range of entities. Often these include watershed groups, conservation districts, university partners, municipalities. Even private sector entities can be eligible for 319 funding as long as the projects that they're proposing are not being used to meet a permit requirement and also work towards goals outlined in the state non-point source management plan.

[01:20:33.67] In addition, there is a few guidelines that grant recipients need to follow. First, there is a 40% non-federal match that grantees are required to put up to match their 319 funds. Our grantees can apply for an undue hardship waiver if it will be too difficult to meet that 40% match. Some tribal programs will take that route. So that can be reduced.

[01:20:58.45] But generally, there's a 40% match requirement. Additionally, for state programs specifically, EPA guidelines required at least 50% of 319 funds go directly to on-the-ground project work that is implementing a watershed plan. And that can be BMP installation, education and outreach, or anything that's directly implementing the watershed plan. Then the 50% or less funds that are still available can be used for program work like watershed planning or staff time. Next slide, please.

[01:21:35.42] Another key component of the 319 program is the watershed approach. So under 319b, states are encouraged to quote the maximum extent practicable, develop and implement a management program under the subsection on a watershed-by-watershed basis within the state.

[01:21:56.18] So meaning, they should implement their non-point source program on a watershed-by-watershed basis using an EPA approved or directed nine element plan. Why do we encourage this because studies conducted through USDA and EPA have identified over and over again that targeting management practices in the right place and addressing specific pollutants in critical areas are essential to achieving water quality results in non-point source management? Next slide, please.

[01:22:33.49] So there are a couple primary components to nine element watershed plans. The nine elements were developed by EPA based on those USDA and EPA studies. And essentially helped to guide plan writers to what might make the most effective watershed plan. But generally, there are two key components, technical and engagement.

[01:22:54.90] So watershed plans are partially a technical work plan, guiding work related to addressing pollutant loads, sources, or types of non-point source, identifying critical areas. So putting the right practices in place to address the right pollutants to have the greatest impact on water quality. But then they're also a tool or a guide for engaging with stakeholders and landowners throughout the process, and really engaging effectively with landowners and communities and identifying other relevant funding mechanisms for this work are really essential to helping these projects succeed. Next slide, please.

[01:23:39.65] So one of the primary ways that we communicate program impact and success is through non-point source success stories. These are two page publications that are produced by our state programs and then published by EPA. And they describe water quality improvements across the country that have resulted from non-point source management work. Next slide, please.

[01:24:04.19] And through these success stories, which at the end of FY20, there were about 670 published stories across the country. We're able to observe different stats across the program. So a couple that I'll highlight, first, through non-point source management, mostly through the 319 program. But these stories can also cover non-point source work that's happening outside of 319 funding.

[01:24:30.76] We've seen about 11,000 miles of streams and rivers restored for at least one type of pollutant and about 250,000 acres of lakes and ponds restored as well. Like I said, at the end of FY20, there were about 670 published stories that covered 940 water bodies. And across these stories, we're able to identify that some of the most frequently addressed pollutants in the non-point source program are nutrients, sediment, pathogens, and as well as acid and metal pollution.

[01:25:05.98] And as of course, as we know, nutrient sediment pollution can contribute to algal growth or harmful algal blooms. And like we saw in the previous slide, agriculture followed closely by urban are a couple of the most common sources. Additionally, almost 200 success

stories mentioned in algal growth or algae in some capacity with some specifically mentioning harmful algal blooms. Next slide, please.

[01:25:34.70] And just to wrap up, this is an example of one non-point source success story that did mention harmful algal blooms specifically. And it was a water quality improvement in Lake Shaokatan in Minnesota. So this story-- each story follows a very similar format.

[01:25:50.84] So this one started talking about the problem, which was agricultural land use causing excessive nutrient and sediment runoff. And then particularly, in the case of this lake, that was causing severe nuisance green algae blooms, low oxygen levels, and periodic fish kills. The story then went on to describe practices, including tile inlet removal, septic system upgrades, as well as other ag conservation practices that were installed within the watershed to address the problem.

[01:26:20.86] And then, finally, they saw great improvements in water quality, eventually to the point that the lake was able to be removed from the state impaired waters list. So happy to answer any questions you may have. And at this point, I'll move it on to the next presenter. Thank you.

[01:26:38.74] Great, Ellie. Thanks very much. And Susan, we'll have you go ahead and come in please. And just a reminder to our attendees, please type in your questions into the Q&A. And we'll be able to get to those once our presenters are finished up. Susan, over to you.

[01:26:59.31] Great. Thank you. Please let me know if you're not able to hear me. I'm sure you will.

[01:27:05.50] I'm Susan Holdsworth. And I use the she/her pronouns. I am joining you, happy to join you from the Potomac River watershed. The Potomac River is in the background of my background photo here.

[01:27:23.62] And I'm really grateful to be able to say that it's one of many water bodies in our area that has retained the name given by the indigenous people from this area. It's an Algonkian name. And it's just a beautiful river, and so glad to be able to experience it. I really appreciate the opportunity to come and talk with you today.

[01:27:53.02] I work for the US EPA. I manage the monitoring and analysis branch. And I'm going to talk a little bit about the Clean Water Act, section 106, State and Tribal Assistance grants, and some products of EPA and its state and tribal partners through those grants and other activities. So the next slide, please.

[01:28:20.45] Just a little background on the Clean Water Section 106 grants. And the resource guide that our host prepared for you has a link to the website to get a lot more information. It's a pretty well developed website. It should be able to give you a deeper dive than I'm going to give you today.

[01:28:44.32] The 106 grant is set up by Congress to assist states and eligible interstates and tribes in administering Clean Water Act programs, programs to report, monitor, and report on water quality, programs to prevent, reduce, and eliminate water pollution, a complement, if you will, to the 319 program, but different in nature and scope.

[01:29:19.18] Some of the programs, the Clean Water Act programs implemented to control pollution include the MPDS permitting program, as well as the TMDL, Total Maximum Daily Load program, to focus on impaired waters and restore them to condition where they're supporting water quality standards. The base 106 grant is about $180 million.

[01:29:51.81] 12% of that is tribal set aside. And the base 106 grant is allocated to states and territories in DC and some eligible interstates following a formula grant. The statute directed the agency to develop a formula for allocation of the 106 grant. And the details of that formula can be found at 40 CFR part 35.162b.

[01:30:30.30] To supplement that, the tribal allocation for 106, I'd mentioned at the beginning, 12% is set aside for tribes. The base allocation for tribes is distributed to the EPA regions based on the number of tribes with treatment as a state under the Clean Water Act that are in each of the different regions and the extent of reservation and trust land within that region and the extent of water and population living on the reservation and trust land in each of those regions.

[01:31:16.42] Another piece of the 106 grant is the monitoring initiative supplement. And that was set up by Congress in 2005 initiated and was established to address some key grants, not key grants, key gaps that had been identified in the early part of this century. And that included the inability of EPA with its state and tribal partners to provide a nationally consistent representative report on the condition of the nation's waters, and so-called for a collaboration that we named the National Aquatic Resource Surveys.

[01:32:08.07] And then the other gap is recognizing that monitoring programs don't have all the resources that they need to address the full range of Clean Water Act data needs. Next slide, please. And so following the initiation of the monitoring initiative, EPA partners with states and tribes to implement the National Aquatic Resource Surveys and to address the gaps that had been identified.

[01:32:44.49] This is a statistically representative survey. So it's a random sample of waters across the US and because of its randomized design, unbiased nature, we are able to estimate conditions for these water resources across the US. It's also nationally consistent and multi-jurisdictional. So it's not constrained by the challenges of different approaches to monitoring and interpreting data and assessing data. So the surveys are implemented on a five year rotation, cycling through this past summer.

[01:33:31.98] We finished collecting samples for wetlands. Next year, we'll be sampling lakes. The other resource types are rivers and streams and coastal waters, which includes both coastal estuarine waters and the Great Lakes near shore waters. And through this effort, we are producing a report on national and regional conditions for core indicators of the chemical, physical, and biological integrity of waters of the US, waters across the United States, indicators

that are relevant to the ability of water to support healthy biological communities and recreational activities and just some that are kind of relevant to our discussion today, our nutrients, like total nitrogen total phosphorus, cyanobacteria, algal toxins primarily, microcystin, chlorophyll, and trophic status in lakes, important indicators of lakes.

[01:34:37.71] And another feature of national surveys is that as we are rotating across resources over time, we're able to track changes in water quality across the US at national and regional scales. Next slide, please. I think it's important to-- it's definitely important to note that with this, these national surveys, we're not characterizing individual water bodies as we're rotating on this five year cycle. We're not getting enough data to support a loan to support local decision making on water bodies. But we are getting data that allows us to-- allows people, yourselves to look at how your water bodies might compare in context with water quality across the US, or the extent of waters that are in different condition categories across the US.

[01:35:45.06] And of course, its primary purpose is to allow us to talk about what is the extent of waters that are in healthy condition, integrated condition, and how is that changing over time. And you can see with this graphic here that what we're seeing in this new data that we are, or this new report that we're preparing for release is that we've seen a loss of high quality lakes looking at statistically significant loss of the number of high quality lakes across the US.

[01:36:27.93] So where this survey of lake sampled 1,000 lakes across the US because of the randomized design, it is speaking to the condition of over 100,000 lakes across the US. And it's showing that we are losing ground with respect to high quality lakes and heading in that direction of increased numbers of eutrophic and hypereutrophic lakes.

[01:36:57.21] And now you know this is a natural process, this eutrophication process. But I think what's concerning is that it's not something that you would expect to see in the time frame that we're reporting out on here. So next slide, please.

[01:37:21.55] Another tool that I wanted to highlight for you all-- and there's a link to it for a deeper dive-- is the CyAN tool. One thing I think is really great about it is that it is a tool that is producing for over 2,00 lakes across the US, daily information about the extent of algal blooms, using cyanobacteria as the indicator and the concentration of cyanobacteria as a signal of the magnitude of algal blooms. And this is a tool that's available as a desktop app, as an Android, smartphone app for water quality managers.

[01:38:17.33] And this graphic here is just trying to convey a little bit of information about the extent of the users of this tool. Each of those circles represents the 10 regions across the United States. They're color coded, and has some examples of users, which range from local lake management agencies, local and national parks, as well as state water quality management organizations who are using this to look for emerging blooms and respond to them and use this information to help them in their public safety notifications to protect recreational users.

[01:39:14.02] And then looking over time, it's also something that can help for those 2,000 large lakes, high recreation used lakes. Over time, looking at this information, can help identify priorities for mitigation and protection activities to reduce the stressors that are contributing to

these blooms. An interesting thing you can find at the website is a map of the US and with each state showing the extent of blooms over time.

[01:39:49.03] And it is very informative to see that there are areas of the country where this is a much more widespread issue than other areas of the country. And just another thing that I think is a really important to point out is that this to me is really a great example of good government. We have EPA working with the USGS, working with NASA to obtain the satellite images, working with NOAA to develop this tool that is basically developed a formula for interpreting the satellite images and through an extensive research process has created a very reliable predictive tool for algal toxins.

[01:40:43.18] Just a couple more things I want to mention as I am running out of time. If we can pop to the next slide, I want to talk briefly about, just to follow up a little bit more on state and tribal monitoring programs. These programs are expanding. They're focused on cyanobacteria and algal toxins as needed based on what's going on in their region of the country and as resources permit. They are sharing the data that they're collecting on algal toxins through the water quality exchange, water quality portal.

[01:41:24.13] I did look at that data, a query of that data, and found there are over 35,000, excuse me, records for microcystin covering more than 2,000 sites across the US. State and tribal programs are extremely resourceful in partnering with local government and resource managers, lake management associations to monitor and to post health advisories as needed.

[01:41:55.16] We've seen examples throughout this meeting of those collaborations and increasingly, embracing the power of the local public and through crowdsourcing and volunteer monitoring. And I'm really excited that-- next slide, please-- that we are going to have the opportunity to do a deeper dive on an example of a program that grew up in New England and has developed tools that are now being used across the US to-- just a very basic tool, developed with that citizen and public user in mind.

[01:42:41.89] Not a lot of data has to be provided, but just enough to be able to get people to use this as an early indication of potential emergence of, or occurrence of algal blooms. And so with that, thank you for the opportunity to share this info with you.

[01:43:03.01] Great, Susan. Thanks very much. Greatly appreciate it. I just did want to note we've had three questions come in during your presentation. So after Sonia has an opportunity to present, we'll bring you back along with Ellie and Sonia and go ahead and work through those questions.

[01:43:22.01] Thanks. I'll be here for the duration.

[01:43:23.74] All right, terrific.

[01:43:25.39] And Sonia, over to you.

[01:43:28.49] All right, those were great presentations from Ellie and Susan.

[01:43:32.38] I'm Sonia. And this presentation is going to round out our session. It's going to cover some additional funding programs from EPA that can be used to address HABs. This isn't an exhaustive list. But these are just some of our larger funding sources that have consistently provide funds that can be used in this area.

[01:43:51.09] So it's going to highlight what they are, who is eligible, and how they can use to address HABs. So let's get to our next slide. And it starts off by just giving a real brief overview of the Water Finance Center.

[01:44:05.56] We provide information to communities who are looking to fund their water infrastructure and looking to finance. And we provide financing sources. And so we don't provide the money. But we work with the programs that do.

[01:44:24.31] So here's some information on them. So the next slide, we're going to start off with our state revolving funds. We have the Clean Water State Revolving Fund, as well as the Drinking Water State Revolving Fund. And together, these programs represent the single largest source of federal funding for water infrastructure in the country.

[01:44:49.66] So to start off with the Clean Water SRF, it's a federal state partnership that provides communities low cost financing for a wide range of their clean water quality infrastructure projects. So it really focuses on the wastewater and the clean water. And I'm going to go over an overview in the next couple of slides.

[01:45:14.21] But each state has their own program. And so here's the link to the state contacts for specific information. And it's also included in the funding resources document that we sent out before.

[01:45:28.25] So on the next slide on how does it work, EPA provides funds to the state programs each year. The states give a 20% match. So all states, as well as Puerto Rico, have a state revolving fund. And then at that point, eligible entities apply for financing through the programs.

[01:45:52.75] So who is eligible? Just real quickly, the communities, private entities, non-profit organizations, citizen groups. While kind of the eligible activities vary by state and project type, these are the general groups that are eligible to apply.

[01:46:15.70] On the next slide, it shows that a lot of activities are eligible. So you see lots of words here. But on the next slide, I'm going to point out just some activities that really focus on nutrient reduction that are eligible. So basically, anything that upgrades, repairs, replace, or is involved in installation or construction of a new nutrient removal processes at publicly owned treatment works are eligible as well as stormwater conveyance and treatment systems, green infrastructure is included in that, as well as riparian buffers, live and livestock waste management systems.

[01:47:05.03] So next just to give at-a-glance to look at the dollars that have gone towards nutrient reduction. Over $26 billion have gone towards advanced wastewater treatment, over

$280 million towards animal access management practices, and over $483 million towards cropland BMPs. And so again, lots of eligible activities and lots of money that has gone towards nutrient reduction.

[01:47:40.44] So next, I'm going to transition to the drinking water state revolving fund. Now this is very similar where each state has their own program. But this is specifically funding for drinking water systems. It emphasizes low cost financing for small and disadvantaged communities.

[01:48:03.58] And it also has the potential to fund technical assistance through states source water activities. And some states are taking a very proactive approach to using the drinking water SRF perhaps. Ohio, for example, offers a low-or-no interest loan to projects that are addressing HABs. But again, look at the state just to be sure for a specific area. And the contacts are listed here on the slide as well as on our resources document.

[01:48:39.87] So next, looking at the assistance, the categories related to HABs that the drinking water SRF can fund, equipment is a category. So basically, a new treatment plant or an expansion to an existing facility to add cyanotoxins removal capability. That could be used.

[01:49:02.69] So what's monitoring? So with the SRFs, generally, operations and maintenance and routine compliance monitoring is not eligible. But HABs and cyanotoxin monitoring may be eligible under the local assistance set aside if it's used to obtain a baseline for contamination levels. Again, you have to talk to the state to get some more specifics on that. But there is some flexibility there as well as in the categories for training and source water protection.

[01:49:44.27] And so next, I talked a little bit about set-asides. There are four main set-asides within the drinking water state revolving fund. But two of them, the local assistance set aside that I mentioned in the slide before, as well as a state program management set aside, they can be used for HABs related activities.

[01:50:10.85] And some examples with some eligible activities include source water, developing source water management plans, upper establishment upkeep, as well as stormwater management, and reconstruction activities. And next, we have another funding program that's newer. It's called WIFIA. It's really focused on larger projects.

[01:50:43.18] It's a very large projects of really a national or regional significance on a watershed basis. And for larger communities, there's a minimum of $20 million it can give. And then for smaller communities, which it defines as a population under 25,000, it can give $5 million dollars.

[01:51:10.26] And for the WIFIA eligibility that we'll see next, really from all of this, you can really look and just say for most of the SRF with the Clean Water SRF, as well as the drinking water SRF, things that are eligible for the SRF are generally eligible for WIFIA.

[01:51:37.48] And to kind of round this out, there are some even additional funding sources related perhaps. We have the EPA'S Urban Water Small Grants, as well as the Great Lakes

Restoration Initiative. And again all of these, it was an exhaustive list. But there are some major funding programs that have been consistently used for HABs.

[01:52:03.46] Our funding resource guide, again, going back to that, it has a fuller list, as well as some other funding, such as the EPA star grants, the National Estuary Program Grants, other geographic area funds. And we just encourage you to look at the different funding sources, combine them if possible, and think of the broad watershed level to address these challenges. And lastly, here is our contact information. If you have any questions on the specific funds, we can definitely get you to the right people.

[01:52:48.91] Sonia, thanks very much. If you want to go ahead and leave your video on, I'd like to invite Susan and Ellie to come back in as well. Thanks.

[01:53:01.69] So a few questions have come in. I'm going to actually start from the bottom of my list and work my way back up. A question came in, Sonia, while you were talking about the Clean Water SRF. It said how about research projects? So again, looking to understand eligibility for research projects under clean water SRF. If you can speak to drinking water SRF as well that'd probably be helpful.

[01:53:30.48] So there's opportunity to do some planning activities under the SRFs that relate to, specifically for the Clean Water SRF that relate to an infrastructure project. On the drinking water side, the set-asides focus on technical assistance that help build the capacity or capability for technical managerial financial capacity.

[01:53:59.01] So there's not a direct link for research most of the time. But if it's activities that help you plan for the infrastructure project then oftentimes those will be eligible. But again, you'd have to contact [INAUDIBLE] to be sure, to be for sure.

[01:54:21.99] Great, thanks very much. Again, I just want to encourage attendees to go ahead and put your questions into the Q&A while we're answering the ones that are already in the queue that I have. And let me just say a quick question just came in with a list of all funding sources, programs shared in this forum be compiled and sent to attendees. And the answer to that is that compilation has already been prepared and is available to attendees.

[01:54:56.49] And my colleague Darcy looks like she's going to go ahead and share something to the chat with everyone. So next question, Susan, is headed in your direction. Is the 106 program anticipating increased funding from the newly passed infrastructure bill?

[01:55:19.09] I would have to double check. But I don't believe so. The 106 appropriation is on its own path.

[01:55:29.86] But I will-- I sent a note to the 106 lead Robin Delahunty just to double check that. And actually, Sonia may have some insights on that with her involvement in the infrastructure side of the house.

[01:55:47.37] Not heard that.

[01:55:49.26] Right, yeah, I hadn't, either.

[01:55:50.10] But I will-- yeah, we'll definitely look into and let you know.

[01:55:55.31] Great. All right, that sounds great. One thing I'm going to do here that was just a request to put, Sonia, to put your contact information back up on the screen. So if we can jump back one slide and just have that up while we continue to take questions. Thanks very much.

[01:56:12.26] OK, another question that came in, Susan, during your presentation, is there a plan to extend CyAN to rivers? And in that context, will there be limits in the application to rivers due to satellite resolution?

[01:56:31.72] So the satellite resolution that-- the principal investigator for that, Blake Shafer at EPA, has indicated that the satellite resolution is the number one driver for the extent of waters that can be reliably tracked with this tool. And so while there is interest in, and maybe some scoping activities going on to explore the output from the higher resolution satellites that have more recently come online, that would require developing, updating the algorithms that are translating the photo images to the cyanobacteria concentrations.

[01:57:19.59] And so the issue, though, is that if the satellite pixels intersect the shoreline, whether it's Lake shoreline in smaller lakes or rivers that impedes the ability to get a good signal there. So it is something people are interested in doing is getting finer resolution. The Army Corps of Engineers is exploring it as well. But it's not something that's on the short term time horizon. Great question. Thank you.

[01:57:55.35] Great, Susan. Thanks very much. Another question that came in that opposed to all three of you. What funding is available to pay for the analysis of algae blooms to sort the hazardous HAB from the merely disgusting algae? And there was a reference here that said that apparently the Virginia DEQ HAB analysis capability is set based upon coast AI HABs and not river. The main question here, is funding available in order to do the analysis of these blooms? Thoughts on that from any one of you?

[01:58:49.95] Well, I think that the same funding that is available to monitor the blooms is generally available for the analysis, the laboratory analysis. Some states have come up with some sort of creative ways of distinguishing what's likely a cyanobacteria algal bloom with the potential to create toxins versus just some other nuisance algae. But yeah, I'm not familiar with-- here's a lab that will just take people's samples without that being set up by one of these other funding sources if anyone else wants to--

[01:59:46.13] Yeah, Susan, thanks. One thing that I'm inclined to do here is to just reference back to yesterday's forum and in particular the participation from NOAA and USGS. And I just wanted to mention that once we move to close out today, we have a slide that will reference all of the speakers across the forum from yesterday and today. And so a person that put that question in, you can note the contact information from NOAA and the USGS.

[02:00:19.07] Their presentations spoke quite a bit to funding available for research and monitoring. Sonia, or Ellie, anything you want to add there? I don't see you coming off mute. So Sonia, go ahead.

[02:00:35.64] Well, no, I was just going to follow up with Susan was saying. And perhaps, if it was establishing a baseline and the state had this set of slides available, maybe-- but it does seem like it's more of like a regular routine. I want to add that that wouldn't be funded. But you can always ask the question.

[02:01:06.85] Great, Sonia. Susan, thanks very much. Another question just came in. Has there been any discussions at EPA to bring back dedicated clean lakes funding, section 314?

[02:01:22.42] That's a great question. At this point, EPA continues to fuel that funding through the 106 program and through the 319 program in particular is a more efficient path for getting resources to protect lake, protect and restore lakes. So no, the answer, no.

[02:01:50.55] Great, thanks. And I need to move on here in just a minute. Although, I'll have the three of you please stay on your videos. We'll go to those three questions to see if attendees would like to provide any input. But just before we go there, one last quick question, Susan, for you, is there a past national survey that addressed cyanotoxins in rivers and streams? If yes, where can the results be found? If not, is such a survey element scheduled for the future?

[02:02:24.96] Yes, great question. The National Rivers and Streams Assessment, one of the NARS surveys, does include microcystin as one of the indicators. And I can maybe drop into the Q&A or the chat link to the data dashboard where folks can look at. I mean, I pulled it up real quick.

[02:02:51.63] Microcystin was detected in the 2013, '14 report, which were the most recent results available that '18, '19 should be out in early 2022. About 37% of river and stream miles had detections of microcystin. The extent with exceedances of the health thresholds, health based thresholds was very, very small, a tenth of a percent. But its occurrence was fairly widespread.

[02:03:30.94] Great. Susan, thanks very much. There's actually one more. I think it's really an observation. But I'll go ahead and read it out.

[02:03:45.13] And then if any one of the three of you have a follow on, go ahead and take that. It says earlier question to Susan. Our ACWA-- So again, someone from ACWA putting this in. Our ACWA understanding is no $106 in the infrastructure bill.

[02:04:07.99] Yeah, that makes sense. And thank you, Jake. ACWA is the Association of Clean Water Agencies. So I appreciate that. Thanks for digging into that and clarifying.

[02:04:21.19] Great. Thanks very much. OK, let's advance the slide, please.

[02:04:26.42] And again, Sonia, Ellie, and Susan, if you could just hang on for a minute. Again, I'd like to invite input from our attendees here with respect to these three questions. Again, this is

the approach we've taken for each of the segments of the federal funding segments that we've done.

[02:04:49.60] So I would like to create space for any contributions that our attendees would like to make here. Again, as I said, the contribution that we did receive during the USDA segment was just the type of contribution that's helpful for the federal agencies to hear. I also wanted to note that, again, if there's interest, a couple of other questions you could feel free to respond to.

[02:05:15.85] What are the needs you are seeing in your community you'd like to share? Is there a need for clarity for tribal program funding? And finally, what interest have you developed and which funding sources as a result of these presentations?

[02:05:34.34] So I'll just give it a minute here to see if we get any contributions. And then I'll also ask Ellie, Susan, and Sonya, if you have any just final observations that you'd like to make. Feel free to come off mute now. I'll continue to monitor the Q&A to see if any observations come in. And I'll give it one more minute.

[02:06:34.00] OK, I'm not seeing any contributions come in. So that will allow us to get started about four minutes early for our final presentation, which I think will be helpful. That one felt a little tight time-wise.

[02:06:47.06] So Sonia and Ellie, Susan, thanks very much for those presentations. And just for our attendees, contact information will be up as we move to our final slide after the next set of presentations. So thanks very much. And we'll move forward.

[02:07:06.18] All right, so our final segment for this two day forum is to tackle innovative federal funding sources and approaches. We have two speakers. The first is Treda Grayson, NRDA Program Manager for the US EPA.

[02:07:27.27] And the second is Shane Bradt, Cooperative Extension State Specialist for the University of New Hampshire. So I'd like to first turn things over to Treda for the presentation. So if you want to come off of your video mute and audio. Great, welcome.

[02:07:50.18] Thank you, and good afternoon, everyone. Yes, my name is Treda Grayson. And I am-- I also use she/her/her pronouns. And I am coming to you from the Washington DC area in Maryland, just outside of DC, the ancestral lands of the Nacotchtank, or otherwise known as the Anacostan people. So it's my pleasure to be here today to share with you.

[02:08:18.98] And I'm going to be talking to you about some of the ways that the Deepwater Horizon Natural Resource Damage Assessment Program addresses HABs and how we, some of the ways in which we use funding to address HABs issues. And so before we get into how we do that, I want to give you a little bit of background about the natural resource damage assessment program. So next slide, please.

[02:08:48.23] So the-- excuse me-- so this is a brief reminder, I'm sure people will never forget this. There was a massive oil spill in the Gulf of Mexico back in 2010. 11 people lost their lives. And this oil spill went on before it was capped for 87 days.

[02:09:08.43] The oil spread from the deep ocean to the surface, and then it entered natural resources in the nearshore environment from Texas to Florida. So the whole northern Gulf Coast. And the oil came in contact with many natural resources. We're talking deep-sea coral, fish, shellfish, wetlands habitats, beaches.

[02:09:30.19] And so after $134 million gallons of oil were spilled after this incident, there was quite a bit of cleanup and restoration to be done. So as you know, well, you may not know. But there's the Oil Pollution Act was brought into play to respond to this oil spill. And it established the role of federal and state natural resource trustees to respond to and assess injuries caused by the spill and to seek payment from responsible parties. So the natural resource damage assessment is a way to make the environment and public whole for the injuries to the natural resources and services that were part of this incident. Next slide.

[02:10:25.10] OK, so the key piece to emphasize is that NRDA is fundamentally a legal process under the Clean Water Act, the Oil Pollution Act where the interested parties are trustee agencies. And they assess the damage to natural resources from oil spills and also determine the amount of restoration that's needed to make the public whole for those injuries. So for all of our Deepwater Horizon work under NRDA, there needs to be this clear connection or nexus to those documented injuries. And then the work that we do is focused on restoring those injuries in those services.

[02:11:08.10] So next slide. So in order to do that, the trustees release what we call the programmatic restoration plan. We call it a PDARP for short. This was released in February 2016. And it's a comprehensive integrated ecosystem restoration plan for the Gulf.

[02:11:26.77] So it has a long term purpose and integration across years. So over time, the portfolio of restoration projects under what we call a restoration type, which we'll talk about in just a second, is intended to address all the goals set out for that restoration type. So we'll talk about that now. Next slide.

[02:11:49.35] So when we talk about restoration types, we talk about the five main goals of the restoration, which you can find in purple. And then we identified 13 restoration types in which those aren't those resources that we're working to those injured resources that we're working to restore.

[02:12:12.59] So everything from wetland coastal nearshore habitats to water quality, nutrient reduction, sturgeon, mesophotic and deep benthic habitats, birds, marine mammals. All of the work that we do all tie back to these particular restoration types. The next slide.

[02:12:37.94] And not only does the work we do tie back to those restoration types. And I know this slide is busy. But I'm just going to tell you what it means.

[02:12:47.63] In the consent decree with BP, in those documents, there were funding amounts that were attributed to each restoration type and for each what we call restoration area. So those restoration areas are the five Gulf states. Then we have one for open ocean. So those highly migratory species, and then region wide. So the entire Gulf wide.

[02:13:14.09] And then-- so we have funding that's allocated to each of those restoration types in those restoration areas. And those type-- that funding amount is what it is. We do not exceed those funding amounts. We can't shift between, let's say, oh, we want to shift somebody from birds, to fish. Can't do that, unless we go back to Department of Justice and ask them to reopen it and redo this consent decree, which you do not want to happen.

[02:13:46.32] So that's a no-go, specific to today's forum, this HABs forum, there's $410 million available to restore water quality and reduce nutrients. $110 million of that is allocated to nutrient reduction, or what we call non-point source restoration across the five Gulf states. And the PDARP describes approaches for reducing nutrient loads to coastal wet watersheds.

[02:14:14.81] There's about 10 projects with $22.2 million funded to date. We'll talk about that in just a second. But it's just important to know that the funding for these restoration types and what I failed to mention is there are roughly $8.8, really $8.1 billion that went into a trust, following the consent decree that goes into this work. So over 15 to 20 years is when we'll be-- all the trustees are drawing from these funds to restore these natural resources.

[02:14:53.86] Next slide. So particular to what we're talking about today, I mentioned we have 10 projects that are currently in implementation phase for our nutrient reduction. And we have three goals under the nutrient reduction restoration type. The first of which is, and I quote, "reduce nutrient loadings to Gulf Coast estuaries, habitats, and resources that are threatened by chronic eutrophication, hypoxia, or harmful algal blooms, or that suffer habitat losses associated with water quality degradation."

[02:15:32.46] And we have a couple other goals about co-locating nutrient projects with other projects to enhance ecological services and enhance existing ecosystem services. Just to get a flavor for what these projects look like, and I only pulled out some that are specifically related to HABs, we have the, excuse me, the Pensacola Bay and Perdido River, and the lower Suwannee River watersheds nutrient reduction projects. And these projects are in Florida.

[02:16:07.43] And they were established to improve water quality by reducing excess nutrients and sediments to receiving waters upstream. We also have the upper Pascagoula water quality enhancement project in Mississippi, which develops and implements conservation plans and practices to reduce nutrient and sediment runoff into coastal watersheds from the chunky [INAUDIBLE] watersheds. So this project is one that EPA is a lead for. And we actually have crews that go out and collect monthly water quality, monitoring data in advance of establishing baseline information and looking at where conditions may indicate that there could be a HABs bloom.

[02:16:52.73] And I failed to mention this slide and the next, the slides are-- these are excerpts from the recently released programmatic review that was released just yesterday, which provides

an overview of the administrative and restoration work done by the trustee council. So it talks about the governance structure, how the financial aspect of the work we've been doing since the settlement, and then also what's happening in each of the restoration types and what types of projects. So I highly suggest that you check that out. I'll even drop the link in the chat as soon as I'm done. So you can take a look at that. Next slide.

[02:17:39.91] And so then the next restoration type that is associated with HABs is the water quality restoration type. And it's important to note that the water quality restoration type is only-- it only pertains to Florida, which experienced a substantial recreational losses due to poor water quality from the spill. And again, the goal, one of the first goals of this restoration type is to reduce pollutant loads entering priority watersheds along the Florida Gulf Coast, which includes nutrients and pathogens that contribute to water quality degradation and can lead to chronic beautification, harmful algal blooms, hypoxia habitat losses, or [INAUDIBLE] shellfish restrictions.

[02:18:27.44] So again, in Florida, this is one of the restoration types we're funding is associated with HABs. And one of the projects I wanted to highlight here is the city of Carrabelle, Lighthouse Estates. And this is a project. Its a septic tank abatement project actually. And it improves water quality in the Apalachicola Bay in St. George Sound by connecting around 110 homes near the bay through central wastewater treatment. So preventing those nutrients from leaching from the septic tanks into the waterways and then causing harmful algal blooms.

[02:19:06.66] Next slide. So one of the things that we're often asked in the NRDA program is we've got billions of dollars, excuse me, that are available for these projects. How can I be involved? What can I do? How can I access that money?

[02:19:24.87] And the one thing I wanted to leave you all with today is the fact that the NRDA program is not a grant program. So we do not give up grants for projects. But what we do is we do solicit project ideas. If, let's say, you have a particular project related to HABs that you think would be worthy of meeting some of the goals of some of these restoration types, you can submit your idea into what we call our project portal.

[02:20:00.33] And I put a clip of that here on the slide. And whenever we have a-- we're doing their restoration thing. Also--

[02:20:10.97] Hi.

[02:20:11.91] Yes.

[02:20:12.87] Are you on another call? I'm sorry, if I'm interrupting you.

[02:20:15.69] I'm sorry. But we always start with a solicitation for proposals and actually for ideas. Can we go to the next slide? And so when we're doing a plan, what we call a restoration plans, or environmental assessment, we have these five major steps. And there are certain points at which we solicit, rather, public participation.

[02:20:47.34] And so before we go out and we write a plan, we request restoration project ideas. So we could submit project ideas in that portal, which is on the previous slide. And then when we have drafted the restoration plan, we have some proposed projects that we plan to-- but we're thinking about implementing, we ask for public comment on those projects. And sometimes we have changed or modified some projects based on public input. So there's always ways to get involved in that way.

[02:21:23.52] And move on the next slide, please. As always, we have a treasure trove of information available about all of the projects that are underway and what's going on in NRDA. I urge you to check out the Gulf Spill Restoration site and all of the trustees. You can find information about all the trustees there.

[02:21:46.32] And EPA has its own Deepwater horizon website, which you can also see here and find information. You can see videos and some of the work that we've done, some of our restoration projects. And with that, I'll take any questions that you may have. Thank you for this invitation.

[02:22:03.83] Yep, Treda. Thanks very much.

[02:22:05.12] Thank you.

[02:22:06.56] You bet. No, great presentation. I'm going to move to Shane first. And then I'll be monitoring the Q&A.

[02:22:16.16] OK, great. Thank you.

[02:22:17.21] Great, OK, thank you. So Shane, we'll go over to you. I just want to do a quick introduction of this topic area. Shane's going to be presenting on the cyanobacteria monitoring collaborative and innovative partnership to address inland HABs. So, Shane, over to you.

[02:22:36.02] OK, thank you. And thank you for everyone who stayed for this, what is the final presentation of these two days. And just to start, I wanted to say that I go by the pronouns of he and him. And I'm coming to you from Seacoast, New Hampshire, which is the traditional ancestral homeland of the Abenaki, Pennacook, and Wabanaki peoples.

[02:22:55.34] And this presentation, I'll give you an idea of what I've been and we have been doing in the cyanobacteria monitoring collaborative. We've heard mention of some of the work before in an earlier presentation. We've been the beneficiary of several regional state tribal innovation project grants over time. And next slide.

[02:23:20.56] The whole collaboration, or collaborative started from a group of people across New England, which is region 1BPA. And it's interesting being in a group of small states because everybody in that region, all six states, could drive within a couple hours to a common location, which was Chelmsford, Massachusetts, where the EPA regional field laboratory is located.

[02:23:44.21] And so we had gatherings of people from state, federal, regional government, tribal communities, local lake associations, individuals, who are just passionate all about this idea related to cyanobacteria. What could be done? How could inland HABs be dealt with? And there was a lot of interest.

[02:24:04.54] But there wasn't a lot of very specific approaches that people could use. So next, please. I've been involved with this group since 2005 as part of my PhD research, looking at remote sensing of cyanobacteria. And so there's been this group gathering over this period of time intrigued and very much interested in trying to understand what they could do.

[02:24:31.72] And two key elements that we really wanted to think about were one, next slide. What could we do that was useful? So not just do something in order to do something, but do something that would be based on good science. And two, next, what would be usable?

[02:24:49.85] So what would people actually use? Because if you had wonderful ideas or advanced technology or lots of very technical approaches, the likelihood of people, especially a vast group of people using it was pretty low. So those were our two driving guiding principles. Next slide.

[02:25:07.46] So what originally started from folks from the New England region has expanded over time to be the cyanobacteria monitoring collaborative, headed up or coordinated by the region one EPA in collaboration with a lot of people, one of the biggest collaborators, being the University of New Hampshire where I work, and next.

[02:25:30.50] One of the most important elements that we focused on was monitoring approaches. And with that group of people that I described, it took a lot of time and effort to think through what could lay people use? What could state programs use, who were willing to change a little bit, but-- well, we're also pretty used to doing things a certain way, or a local lake association? So as we developed these, we also went through the official process of getting them approved and adopted as a QAPP.

[02:26:01.97] Next, and briefly, three of the main ways in which we accomplished this or techniques or tools we developed, one was the BloomWatch app, which had been mentioned previously. And there was a lot of conversation about the best way to develop an app that would very specifically be used to look for and report bloom.

[02:26:25.23] Do it in a way that was useful, and but yet also a way that was possible for regular folks to be able to fill out. And the questions on this page, we spend a lot of time discussing. And you don't want to ask questions that people won't answer or can't answer.

[02:26:42.03] Next, another question was if you report a bloom, that's nice. Do you know what's in the bloom? And so there was a lot of thought put into this approach of how do you train people and give them enough expertise to understand the basic cyanobacteria they may be looking for to start to understand what's in their lake, and next.

[02:27:07.58] Once they were willing to invest in more equipment or more time and wanted to do analysis, what was the convenient way that you could get some sort of an understanding of the percent dominance of cyanobacteria, or the contribution of cyanobacteria in a given sample? Next.

[02:27:25.79] One of the things we thought was important is not only to bring people together, but to try to go out. And so we partnered with a lot of local organizations. And what we affectionately called the cynamobile would go right to their lake and be able to offer training right in communities where people were already instead of trying to draw them to us. Next.

[02:27:49.33] But that was really important. This is one of the big roles I had as one of the key outreach people to have a website that was very clean and clear and provided people with both the complex instructions. So if you wanted the QAPP that was there, but also easy tools, and most recently, help videos so that people either after the trainings or instead of going to the trainings could understand how to use the approaches that we had developed. Next.

[02:28:20.31] One of the most important things that I think everybody struggles with is, do you collect information that stays only with you? Or, do you share it with others? And how do you best do that?

[02:28:30.58] So one of the key features actually in the upgrade recently to BloomWatch is that we change the way in which the data were stored and sent. And in addition to feeding the maps that we have on our website, that data is available for anybody to use to benefit from, using an approach or a software called ArcGIS online. So if you go to ArcGIS online and search for BloomWatch, they should appear. And you can use it in your very own maps and your own apps. Next.

[02:29:02.11] We had some in-person workshops. We actually had a very big in-person workshop in January 2020. And I was scampering around setting up Zoom to broadcast out to the world because some people couldn't attend the event. And it was interesting to see people look at me saying, what are you doing?

[02:29:18.94] Why are you-- what is this Zoom that we're talking about? And of course, in 2021, we had an event. And it was all virtual and on Zoom. But I think that just goes to the idea of thinking about ways to connect with the audience and share information with what we have to share, but also bringing people together and trying to look for even more collaborations. Next.

[02:29:40.18] Just quickly, a few examples of the way people have tangibly used some of the information that we've developed and shared. The town of Wolfeboro has a new committee called Wolfeboro Waters that focused very much on HABs in lakes, looking at shoreline development, impacts of HABs. And they even invited us up. And we did a training a few years ago for 70 people from the town, including lifeguards who we're going to be looking at and using the app during the summer on beaches. Next.

[02:30:12.70] The association to preserve Cape Cod has adopted a whole bunch of the approaches of the CMC. They also use mapping to show different cyanobacteria conditions in

their lakes. And they've been working closely to advance the science with a few UNH researchers, including Dr. James Haney, looking at ways that you could even further expand the CMC approach, look at potential bloom predictions based on monitoring, and then, of course, the wonderful things that shared back with the broader CMC community. Next.

[02:30:47.27] BloomWatch has started to take on more people and become interested. I do know the National Park Service partnership with US Geological Survey recently did this big-- had this grant and this project to look at different approaches for identifying algal toxins, which you can see here, and next. One of the approaches that they use was BloomWatch. So they had folks who were out there doing sampling anyway have BloomWatch and report the blooms that they noticed. So there was one of the examples of something that could be used by anybody but also could be used by people who were out there, specifically doing more advanced research.

[02:31:25.94] Next. And the final example here was only recently came to be where a group in Rhode Island, the Audubon Society of Rhode Island, really wanted to look at specific lakes on this college campus and had people intensively monitoring them using the CMC approaches. They also thought the idea of sharing data via dashboard was great. So they created their own dashboard.

[02:31:51.40] And then, next. The other thing that they did is they were able to stream BloomWatch photos directly in. So they were excited about the idea that they could use BloomWatch to share information more broadly, but also that they could then take that information and directly incorporate it into their specific dashboard to share with their audience, which is something that I think is wonderful and is one of the goals that we have is to make sure that it's not only useful for a broader community. It could be useful for regional visioning, but it also would be directly usable and useful for the people on the ground in different communities and in different situations.

[02:32:31.16] Next. And so as we look out, we hope that people can benefit from what we've done. We hope we can learn more from other folks. And we're definitely interested in sharing what we have and learning as much as we can in advancing everybody's ability to look at and deal with this problem of HABs.

[02:32:55.76] Mostly, we focus on cyanobacteria. But a lot of these ideas could be useful for different types of organisms as well. Next.

[02:33:04.98] And so if you're interested in learning more specifically about cyanobacteria monitoring collaborative, you can go to cyanos.org, which shockingly was available for purchase when we first created the website. And the two key contact people, though, there are many people. We've tried to make a list of everybody involved. And it's bewilderingly long.

[02:33:26.49] But the two key people, I would say, if you're interested in learning more, would be me. I'm mostly focused on the website, the technology part, and then Hillary Snook, who's one of the people who have been a driver through this, in fact throughout the entire process in EPA region I. And that's it.

[02:33:50.39] Shane, thank you very much. Let me go ahead. We've got just a couple of minutes where we could take some questions.

[02:33:57.96] So I'm going to pause. I didn't have any questions come in while Treda was presenting or while you were presenting. But let's give it a minute here and see if any questions come in. So again, I'll just go ahead and pause for a moment.

[02:34:20.18] Let me also say that if there's any further contributions that attendees would like to make, any observations really across the two days of the forum at this point, please feel free to type those into the Q&A. So we can record those. A request, Shane, can you share the link for the project you were using that allowed people to enter HAB info?

[02:34:53.62] The project. So just the website? So the basic website is cyanos.org, which I tried to post to everybody. And now I have.

[02:35:11.89] Great.

[02:35:12.46] I don't know if it was more specific. Everything that I talked about is linked, too, off of that site. And for some reason, they can't find it, they should definitely feel free to reach out to me directly.

[02:35:24.22] Great, Shane. Thank you. All right, I'm not seeing any further questions or observations. And just a thank you came in. So, Shane, that hit the mark. Actually, you know what?

[02:35:46.33] Let me go ahead. A question has come in. I think it's a good one.

[02:35:49.45] Anyone, who's been a panelist today, feel free to pop up video once I read out this question if you have a thought. Has anyone on the panel used voluntary private sector carbon sequestration funds to help improve soil health in nature based projects that help mitigate HABs? So again, any one of our panelists from today, if that's something that you've seen happening or you've had that, go ahead and come on video. I'm not seeing anyone jump in.

[02:36:44.85] And can we go ahead and put Shane's contact? Actually, don't go ahead. We'll have Shane's contact information in just a minute.

[02:36:58.00] All right, so let's go ahead and move to wrap up then. And go to the next slide, please. Just while I'm doing my wrap up, here is the contact information for the speakers that we've had over the past two days of the forum. So go ahead and take a look, and just a reminder that the PowerPoint will be posted on the Water Infrastructure and Resiliency Finance Center website in the very near future.

[02:37:31.17] But let me first say thank you to all of our speakers across this two day forum. Again, they're here on the slide. I greatly appreciate the effort that you've all made to share background information on each of the funding sources that you're connected to. I also want to thank all of our attendees for the very strong participation that we've had in the forum. Again,

we've had-- we've typically been running well over 100 participants throughout the two day forum.

[02:38:04.37] I know the represented federal agencies are really very hopeful that these two days have provided you with a more complete sense of the federal funding landscape, perhaps, prevention, monitoring, and treatment. Certainly, there was an effort here to try to cover a very full range of federal funding availability for different functions that are important to addressing HAB problems in communities. And with that, I'd like just to say to everyone to have a good rest of your day.

[02:38:39.50] And again, note that the presentation will be available on the Water Infrastructure and Resiliency Finance Center website in the near term. Thank you, everybody. Have a good rest of your day.