2013 State Nutrient Reduction Strategies Web Series

Interactive GLRI Watershed Remediation Tracking System and Using Interactive GIS to Plan Nutrient Reductions and Track Implementation

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Cynthia Curtis
Good morning, everyone, and welcome to the thirteenth webisode in our State Level Nutrient Reduction webcast series. Today, we have Andrea Bolks, an ORISE fellow at EPA, and Scott Ristau of Illinois EPA. By the way, I'm Cyd Curtis with US EPA. Thank you. I see several of you have been inputting into the polls which organizations you're with and how many people are on with you. So thank you for that. It certainly helps our speakers know who's on and how to shift their talk accordingly. So what I'd like to do is, right now, hand it off over to Andrea and Scott. As we shift to the screen, just a quick reminder. If you're having any technical difficulties at all, you can use the chat box below, and I'll work with you to resolve any issues you're having. At the end -- if you have any questions that you're thinking of for Andrea and Scott, you can certainly type those in in the chat box, and at the end of their presentations, we'll have a period of Q and A. Thank you. Andrea, you want to take it away?

Slide: Interactive GLRI Watershed Remediation Tracking System

Andrea Bolks
Yep. Thanks so much. Can you hear me okay?

Cynthia Curtis
Yes.

Andrea Bolks
Okay. Wonderful. Well, thank you so much for having me this morning, and happy World Environment Day. My name is Andrea Bolks, and I'm a research fellow for the Oak Ridge Institute for Research and Education, and I'm stationed at US EPA Region 5. I've been in the Watershed and Wetlands branch since August 2010, and I've participated in a wide variety of projects, many of which involve GIS analysis. Today I'm going to show an internal tracking system that I created for Water Division technical experts and decision makers. It stemmed from a vision that the EPA Region 5 water director, Tinka Hyde, had to create a system that promotes better decision making and accountability with regards to watershed remediation projects under GLRI, or the Great Lakes Restoration Initiative.

Slide: Administrative Indicators/Stressors/Response/Stress and Exposure

This graphic shows a path that we would expect a grant -- a successful grant to obtain. At level one, you have the grant being awarded, which then leads to BMP and conservation practices being implemented. From these practices, there are nonpoint source loading reductions, and finally, improvements in water quality are made. This system creates and pulls information from a variety of different programs to tell the story of the watershed remediation GLRI projects going through these steps. The reason this system is so powerful and the stories can be told so well are because of the

spatial context it provides. Different levels are shown in the graphic are different map layers within the tracking system. Included in the system are layers pertaining to the GLRI projects grant information, shown in this illustration as level one, as well as the watershed affected by the grant. At level two we have the project's conservation practices or BMP details that are included to an appropriate level of detail, along with the expected nonpoint source loading reductions. The final level, water quality improvements, is represented by a layer of monitoring locations where we would expect to see water quality improvements over time.

Slide: All GLRI Grants 2010-2012

I'm actually doing this presentation from right inside the tracking system. It was created in a free program from ESRI called ArcGIS Explorer. I'm not going to go into detail today during the presentation about the workings of the program, but if there are questions about how we utilize the program, I can take them at the end of this webinar or by e-mail.

On the top of my scene here, you'll see the ribbon, as you might see in Microsoft programs, in which it allows me to add data or create slides, and I won't be using that today. On the left side of the screen, you'll see the table of contents, where I can turn on and off layers. And on the bottom left side of the screen, you'll see the different preassembled slides. These slides allow me to zoom in to the correct extent of the map and turn on and off the correct layers while remaining interactive. So right now, there's going to be a little bit of a lag time between what is seen in my screen and what is presented. But right now, I'm zooming in to Washington Island, where I can click on one of the GLRI projects. And as I click on that GLRI project, a pop-up will appear, and it will give me information about this project such as the project title, the amount, who funded the GLRI project, and who is the recipient.

Slide: Watershed Remediation GLRI Projects (2010-2012)

Shown on this first slide are all of the GLRI projects from 2010 to 2012. The specific GLRI grants that this system is tracking include the watershed remediation projects that are focused on nonpoint source pollution. I'm going to click on one of these features in the Western Lake Erie Basin for the project called North Central Ohio Sediment Reduction Project. A more detailed pop-up appears and includes details such as the project location, the summary of the project, and there's links to open different documents pertaining to the project. So I can click on this link to open up the workplan for the project, which will then pop right up on my screen. I can also click this link on the pop-up to open up other project documents. This is where we store information such as the progress reports relating to that GLRI project. There's a space to include website information if there's one associated with the project. There's also a link here that I'm clicking on that will bring up the GLTR record for this GLRI project. The GLTR is our internal tracking system for GLRI projects. And we can also see loading reductions that would be expected from this project. For instance, this project has 23,250 pounds of phosphorus expected to be reduced.

Slide: R5 319 Projects

319 program information is another layer included in the tracking system which can be important if the user of this system is interested in where nonpoint source funding under the 319 program was or is currently in place. This helps EPA to make more informed decisions and potentially fund projects that are part of watershed plans that 319 was not able to fund. Again, we can click on any of these features to get a more detailed pop-up. And this pop-up for the 319 projects includes information such as the state, the year that the project was awarded, the grant number and title. It also gives us a link to a project report. The project report shows up from the GRTS database. This will give us very detailed information about the 319 project and detailed information about the loading reductions that are expected from this project's implementation.

Slide: Great Lake/Trib NPS Monitoring Locations

Nutrient monitoring locations have been compiled from across the Great Lakes Basin. There are currently over 1800 stations within the Basin, and I have worked with IJC, the International Joint Council, states in Region 5, and others to incorporate all of these sites. Here's an example of a pop-up that you would get from clicking on any of these monitoring locations. Information about the parameters sampled, the study type, and frequency have been collected. Additional information can be included with links to other documents or websites with more detailed information about the monitoring.

Slide: Monitoring Study Types

This tool can incorporate a wide spectrum of different ways of looking at the data. Here, monitoring locations are symbolized by study type. Currently, there are 960-some sites which are ongoing or dependent funded ongoing. Monitoring locations include programs such as federal programs from the Great Lakes Monitoring Program, USGS's TRIG monitoring program, the National Coastal Condition Assessment, the GLRI Beach Sanitary Survey, state programs from WDNR, OEPA, ODNR, and IEPA, and university monitoring locations from the University of Toledo and Heidelberg University.

Slide: Pigeon River Watershed

After we had just previewed some of the general layers available in this tool, now I'm going to start to pull everything together with projects. For example, this is the Pigeon River Watershed. There are actually two GLRI projects done in this watershed. To get more information about either one, I can click on the yellow pushpins. The watershed that pertains to these GLRI projects is shown in yellow, as well. It can also be clicked on to get more information.

Slide: Pigeon River Corridor Sediment Reduction Project (2010)

This next slide shows the project level details for the 2010 GLRI grant in the Pigeon River Watershed. The Pigeon River Corridor Sediment Reduction Project consists of design and implementation of BMPs at identified critical sites in the Pigeon River Watershed Management Plan that were located within the riparian corridor. Within this tool, we can zoom in to the riparian corridor and actually look at the different problems that were addressed or BMPs that were put in place.

Slide: Targeted Phosphorus Reduction in the Pigeon River Watershed (2011)

This next slide now shows the Pigeon River Watershed GLRI project for 2011. The purpose of this grant was to address the Saginaw Bay's designated use impairment by reducing phosphorus loads from a priority watershed. The project implemented agriculture BMPs such as buffers, cover crops, and conservation tillages in the Lower Pigeon as well as the West Branch HUC 12. We can click on either one of these watersheds to get more information about what was done within them. And in purple here is the Upper Pigeon. In this watershed, they had a goal of addressing livestock sites. And overall, this project is expected to reduce phosphorus loads by 16,500 pounds per year within five years and a goal of reducing 5,000 per year.

You can then bring in other program information.

Slide: Pigeon River GLRI 2010 and 2011 with 319 Projects

So here is all the information for the Pigeon River Watershed, along with the 319 project spatial data. And here we have added monitoring locations. So we can bring in this monitoring location layer to do an initial assessment of what monitoring locations may be ongoing or close to the project or what monitoring locations may be able to give us a baseline for water quality data.

Slide: Salt Creek TMDL

The second example of a GLRI project in this tracking system is in the Salt Creek Watershed, which is located in Northwest Indiana and drains to Lake Michigan. A GLRI contract funded the Salt Creek TMDL for IBC and *E. coli*. The segments are then symbolized by the impairments that this TMDL addresses. There was also a GLRI grant awarded in 2012 for the Thorgren Basin naturalization and retrofit. This information has also been included in the tracking system. We can click on the pushpin to get more information about that GLRI project and see things such as the workplan and the loading reductions, or we can click the project details to see where the basin actually lays spatially.

Here's the Salt Creek TMDL with the 319 project layer added. You can see 319 projects have been incorporated throughout the Salt Creek Watershed. There's also a 319 project in a neighboring watershed up to the top, northeast. Also, see the layer has been added for monitoring locations so an initial assessment could be started.

Slide: Installation of Barnyard Ron-off Controls in Manitowoc County

The final example I'm going to show today is the illustration of the barnyard runoff controls in Manitowoc County, Wisconsin. Over a period of three years, all significant livestock barnyards within 300 feet of streams that flow into Lake Michigan in the Manitowoc County will control runoff. The green flags shown are the actual barnyards that runoff controls will be installed at. Although this tool can be used to gather information about the monitoring location that is being done to the project location, other data sources will be used to gather the monitoring data.

Slide: GLRI Project: Installation of Barnyard Ron-off Controls in Manitowoc County: Beach Closings and Bacteria Monitoring

So this is an assessment that was completed by Jonathan Burian and myself looking at the beach closing and bacterial monitoring locations for this GLRI project.

Slide: GLRI Project Description/EPA Analysis

As I showed before, the goal for the project was to decrease the nutrient bacterial loadings from the runoff controls. And the analysis that was done was by using STORET and NWIS to gather the bacteria monitoring data, and we gathered beach closing data from information that was submitted to US EPA through county health departments and from WIDNR.

Slide: Barnyard Run Off Controls and Beaches

This was a map completed in a GIS program, showing the different beaches that are within the watershed. And this map then shows the active stations for *E. coli* and fecal monitoring that were identified with me and Jonathan Burian's analysis.

Slide: Status

So from that analysis, we then compiled the information. We compiled over 4,800 fecal and *E. coli* monitoring results from STORET and over 2,600 fecal and *E. coli* monitoring results from NWIS. We also looked at the number of beach closings and contaminations from 2010 to 2011, and all this data helped us get a baseline so we could then be ready to compare the water quality results after the GLRI project.

Slide: R5 Interactive GLRI NPS Map

And this sums up my presentation for the GLRI interactive tracking systems. Cyd, is there time for questions now, or will those be held to the end of the presentation?

Cynthia Curtis
I'd like to have both presenters go, and then we'll go through questions then, at that time. So if you want to select "Stop sharing" and then let Scott take over -- Scott, are you ready to go?

Scott Ristau
Yeah, I'm ready, I think.

Cynthia Curtis
Yep, hear you and see your screen, so it's good.

Demonstration of the Resource Management Mapping Service (RMMS)

Scott Ristau
Can you hear me? Excellent. Hi. I'm Scott Ristau. I'm with the Illinois Environmental Protection Agency Nonpoint Source Unit. I'm going to give a quick demonstration of the Resource Management Mapping Service website in terms of how Illinois EPA is using it to plan nutrient load reductions and to track the implementation of best management practices and the estimated pollutant load reductions associated with those BMPs.

The Resource Management Mapping Service, or RMMS, is maintained by the University of Illinois with support from Illinois EPA and other state agencies. The website is located at www.rmms.illinois.edu. RMMS uses a wide range of coordinated natural resource-related databases to provide an online interactive mapping environment designed to help government agencies and others evaluate and manage geographically-based information about Illinois' natural resources, particularly water resources, so that they can more effectively develop and implement appropriate resource protection and enhancement measures. That being the case, there's a lot that RMMS can do, but I'm going to just focus on those aspects that are directly related to nutrient planning and implementation tracking.

To start with, RMMS contains information on water quality conditions of streams and lakes as reported in accordance with Section 305(b) of the Federal Clean Water Act. Let's take a look at that by zooming in on Dupage County and then activating the 305(b) streams and 305(b) lakes data layers. So you can see the physical location of the waterbodies, but the 305(b) assessment data is also in RMMS. So for example, we can take a look at the assessment data for a specific stream reach by using the map identify tool here and then clicking on that stream segment that we're interested in. Then we get a pop-up table that shows us the assessment unit ID, the name of the segment, the use attainment levels, and the causes and sources of impairment. Now, these codes can be explained or looked up by clicking on the metadata, which is found by clicking on the layer of -- the data layer. You see a description of the data layer if you scroll down. You can see the codes for the different causes of impairment and the codes for the different sources of impairment.

RMMS can also display the streams and lakes that have been listed in accordance with Section 303(d) of the Clean Water Act. Let's take a look at that, 303(d) streams, 303(d) lakes. And again, you can use the map identify tool to look at the list information. You can see that this assessment unit ID was listed for total phosphorus, sediment siltation, fecal coliform, and that there's an ongoing DMBL.

Let's clear everything and go back to the statewide view. Now, because we have all this assessment data in RMMS, we can also see geographically where specific pollutants such as nutrients have been

identified as a known cause of impairment. I click on this dead fish tool over here, and click on 305(b) streams, and we're interested in the causes. Because we're interested in nutrients, we'll pick nitrogen/nitrate and total phosphorus. So RMMS will generate a table of all the stream segments that have been identified as being impaired by nutrients, and it will display a map of those nutrient-impaired stream segments. So here we can see the map of all the nutrient-impaired stream segments, and here's the table of all the segments that are impaired by nitrogen/nitrate or total phosphorus.

We also have a layer in RMMS that shows priority watersheds to reduce nutrient loss, which we could overlay then. Let's zoom in on this. Okay. So we can see the watersheds that have been identified as a priority for reducing nutrient loss and also the stream segments within those watersheds that are impaired by nutrients. We also have in RMMS a layer that contains data on watershed-based plans developed to control nonpoint source pollution. Okay. So you can see that we have developed -- let me let this clear out. Okay. So you can see that we have developed several watershed-based plans in priority watersheds to reduce nutrient loss. And again, using the map identify tool, we can see some basic information about an individual plan by clicking on it. We see that this plan was for the Upper Salt Fork of the Vermilion River. It was completed in May of 2007. These are the towns, stream segments, and lakes that are located within that planning area. These are the pollutants that the plan was written to address, the 12-digit Hydrologic Unit Codes within that area, and if you click on this, you can call up an actual copy of the complete plan.

RMMS also allows the user to run various reports. For example, we can run a report to see what nonpoint source pollution control best management practices were recommended by a specific plan. Let's click on public reports. We're interested in watershed plan. We want to know the recommended BMPs in that plan. And for our area of aggregation, we're going to look at a specific watershed-based planning area. Okay. And this is the report that's generated, but it can be downloaded to an Excel file, which is a little easier to look at. So for the watershed-based plan for the Upper Salt Fork of the Vermilion River, these are the BMPs that were recommended in that plan, the quantity and units of those BMPs that were recommended, the associated cost, and the associated pollutant load reduction. In addition to information about BMP recommendations, we also have information in RMMS about BMPs that have actually been implemented. For example, we have a layer in RMMS that contains information on individual BMPs implemented with Section 319 funding. Let's zoom in on that watershed planning area we were looking at and activate the layer for Section 319 BMPs. Okay. Each one of these pink stars represents a BMP implemented with Section 319 funding. And again, using the map identify tool, you can see some basic information about an individual BMP. In the pop-up table, this is the project title and the grant number under which this BMP was implemented. This is the type of BMP, the pollutant load reductions associated with it, the quantity of that BMP -- this one is measured in acres -- and the date that that BMP was implemented.

We also have other BMP implementation programs that are in RMMS. For example, we have the Illinois Department of Agriculture Streambank Stabilization and Restoration Program. And I don't know if you can see it, but there's one in this particular watershed. RMMS also allows the user to run reports on BMP implementation. For example, we can run a report to list the BMPs that were implemented within the area covered by this watershed-based plan that we looked at. So we go to public reports, click on 319, and do a summary report. And again, for our area of aggregation, we'll select that watershed planning area. Okay. So this allows us to compare the units for the BMPs that have been implemented and the load reductions for the implemented BMPs with the BMP recommendations contained in the watershed-based plan to see what kind of progress is being made in terms of implementing that plan. However, as you remember, the plan that we looked at before was completed in May of 2007, so we'd have to make sure that we weed out any BMPs implemented before that date if we want to look at what progress has been made on implementing the plan. We

can do that by looking at a detailed BMP report, and we can tease out the BMPs that are pre-May 2007.

All right. So by combining the RMMS tables that we generated before, we can see what was recommended versus what has been actually achieved. So for the Upper Salt Fork Vermilion River Watershed Plan, these are the BMPs that were recommended under that plan. These are the BMPs that have been implemented under Section 319 since that plan was developed and the quantity remaining. These are the load reductions that were recommended in the plan, the load reductions achieved by BMPs under 319, and the remaining need. The areas highlighted here in pink indicate that this 2007 plan was lacking some detail with respect to recommended load reductions by BMP type, but we're doing a better job of getting that kind of detail with the newer plans. We also have to keep in mind that the BMP data layers in RMMS don't tell the whole story. For example, RMMS doesn't have data on BMPs that have been implemented privately or under certain other governmental programs, such as those administered by NRCS.

One other thing -- okay. Not only does RMMS show us if we're making progress on meeting nutrient load reduction targets set in a watershed plan, but it can also show us if we're making that progress in the right places. For example, most of the BMPs implemented under -- or within this watershed planning area are down here, clustered around Homer Lake. The load reductions associated with those BMPs may be benefiting this downstream nutrient-impaired segment, but they're not doing anything for this upstream nutrient-impaired segment. So RMMS may help suggest some critical areas for future BMP implementation.

And that is pretty much all I had for using RMMS to plan nutrient reductions and track implementation. But I did want to quickly show that we do have base layers beyond just this blank white background. Let's zoom in on an area. Okay. Whoops, that's not what I wanted. Anyway, so you can see we do have the color aerial photos as a base layer, which helps in siting BMPs and that kind of thing. There's other base layers, like land cover, percent imperviousness, which can be useful in developing watershed-based plans. Okay. Well, that is all I had.

Cynthia Curtis
All right. Thank you. Thank you, Scott. Thank you, Andrea. What I want to do is open it up to have an opportunity to take questions from the group. I see a few people are typing right now. If you both could start up your web cams at this point and then also just be ready, we might want to go into one of your sites in that screen below, depending on what kind of question you get. So while people are typing, I'm going to start, I guess, with Scott. One thing I was wondering is -- because it looks like there is a lot of great information, especially like pulling it across into these spreadsheets. How is your state using that information now? And is it just people individually going in and clicking through, or are you preparing information? And if so, exactly what kind of information are you preparing?

Scott Ristau
Well, anybody can log on to the site and generate the same type of report. So the groups are using it for watershed-based plan development, using it in terms of developing recommendations for potential BMPs, making sure that they take into consideration what practices have been implemented around it so that they're not having a potential adverse effect on a downstream BMP by what they're thinking about putting in. We use it for tracking progress on implementing Section 319 projects to make sure that the BMPs that are supposed to go in according to the contract are actually being implemented and then reporting that progress to US EPA as well as the public.

Cynthia Curtis
Good. Well, while we're on BMPs, Wayne Anderson just submitted a question. I'm presuming that's to you, Scott. And it could possibly -- Andrea, if this touches on yours also, please chime in: Could

missing BMP data be added with a reasonable level of effort? For example, could statistical census or survey add privately funded BMPs? Does the system require too much specificity so that it would violate data privacy requirements of NRCS?

Scott Ristau
Well, there's various ways to get information about BMPs into RMMS. If there's a large dataset that's already been developed, we can take that dataset and have it sort of downloaded into RMMS. That's one way, and, in some ways, easier. We're in the process of developing a new layer of "other" nonpoint source BMPs, and that way, things that we become aware of, implemented under other programs or privately, we can enter that information in, or we can give a log in and password to somebody else, an environmental organization or whoever, a municipality, and then they can enter that information into RMMS about their BMP and perhaps use RMMS for their own local tracking of green infrastructure and that kind of thing. We've been working with other state agencies, like the Illinois Department of Agriculture, to get information about their cost-share program BMPs into RMMS and have been successful in doing that. There is some information in there about the Great Lakes Restoration Initiative. We're trying to build some bridges within NRCS, but, yeah, they've got a lot of privacy concerns that have been limiting our progress in that regard.

Andrea Bolks
And if I could just touch on that question real quick too, Cyd.

Cynthia Curtis
Yeah, sure.

Andrea Bolks
Let's see. I'm going to share my screen here. The question about the missing BMPs --

Cynthia Curtis
You're up.

Andrea Bolks
Okay, great. Thank you. The question about the missing BMPs being added or if they would violate requirements from NRCS, I just wanted to point to one of the examples that I showed in my tool here from the Pigeon River Corridor Sediment Reduction Project. If you remember the project level details for the 2010 project, we were really able to get specific and show where actual BMPs were being implemented. But a way that you can show project or BMPs with NRCS data would be through just lumping the BMPs into a watershed and saying, you know, within this watershed, we have these BMPs or conservation practices being implemented. So you can still give them a spatial context. Okay. Thank you.

Scott Ristau
Yeah, that's one approach that we've been trying to work with NRCS on, as well, is getting some of that information aggregated to like a HUC 12 level rather than the site-specific location of the BMP. And that would help. I mean, that would be better than not knowing anything about what's going on in the watershed with regard to NRCS programs.

Cynthia Curtis
Okay. Next question -- and Andrea, if you want to stop sharing, you need to click "Stop sharing" because otherwise we're seeing echoes. There we go. Katherine Dowell is asking: Is the RMMS being used in Illinois nutrient management strategy for prioritizing setting targets statewide?

Scott Ristau
I believe so, although I'm not real sure of the specifics in terms of how it's been used. Again, like I said, we had the -- priority watersheds to reduce nutrient loss are a data layer in there, so we do take that into consideration, and project selection under 319 and other programs. Beyond that, I'm not real sure what's being done with the nutrient management strategy.

Cynthia Curtis
All right. Thank you. So now Steve Dressing from Tetra Tech is asking Scott: Do you account for BMP lifetime in your tracking, for example, annual nutrient management, longer for structures? Do BMPs fall off after their expected lifetime is exceeded?

Scott Ristau
We do account for it, but we haven't removed BMPs from RMMS. We do have the date that the BMP was implemented, so if we're doing checks on how well a BMP is holding up, you know, if it's after its expected life term of ten years or whatever, then we may not try to do any kind of enforcement against the funding recipient to fix maintenance needs, although it may be useful in terms of identifying future potential projects after that life expectancy has expired. The non-structural practices we do, again, identify the date that it was implemented and the type of BMP. So in running reports or looking at the data, you can take that into account that, yeah, it may have been implemented in 2012, but if it was conservation tillage, it may not be there anymore. And we don't fund a lot of conservation tillage. That particular example that we looked at before was more we cost-shared on the rental of the no-till equipment and made that available in that watershed and then tracked where it was being used.

Cynthia Curtis
Okay. Thank you. Next question is from EPA Region 5, and even though it's in all caps, I'm sure they're not shouting. Scott: Is the RMMS tool used to track NPS success stories? Are you able to view the history of 305(b), 303(d) assessments or only the current listing cycle? So it looks like a two-part question there.

Scott Ristau
Yeah, on the first part, yes, we are. There is a layer in RMMS for success stories, and it shows the location. It identifies the pollutants that the story was written for and the associated stream segment or lake assessment unit ID, that that pollutant was removed. And then there's a way to see the actual success story, as well. And it shows not only the success stories that have been formally and finally approved by US EPA, but it also allows us to track the ones that are currently under development. And then for the second part of the question, it does only show the current 305(b) data and the current 303(d) list information. It would be interesting to have historical data in there, but it's not at this point.

Cynthia Curtis
Now they were asking just a quick clarification with the success stories: Is it used to identify potential success stories, or are they just added once they're final?

Scott Ristau
Both. As we're looking at where might be a good stream segment or lake or watershed to write a success story, we'll start entering information to identify the stream segment of interest, the pollutants that came off the list, when they came off the list, and then record that information into RMMS as we're developing the success story. Then we'll make a notation in the database that it was submitted to US EPA on such-and-such date, and it will stay in there we're waiting for feedback from them. And then when it's finally approved by US EPA, we'll change the status to show that it's completed and

approved, and we'll attach a copy of the final success story. So we're sort of using it to track not only where we have these success stories but where they're at in the review and approval process.

Cynthia Curtis
Good. Thank you. All right. Andrea, I have a question for you: What are the ways -- so you were showing all these different flexibilities and information that you have in that system. What are some ways that you know this information has been applied in decision making or implementation?

Andrea Bolks
Okay. Let me share my screen again here. Shown right here, I just had pulled up, kind of from Scott's last question, the question regarding are you showing, you know, 319 projects and their lifetime expectancy. And I just wanted to show a quick way that you can do symbolization to show if projects are completed or if they're underway. And you could use the same symbology to kind of show the lifetime of a project. And once it's past a certain day, maybe the project turns red so you're not -- you can see that it was once there, but maybe it's not brought into your calculations of current loading reductions. And as for Cyd's question about the tool being used, let me look through -- so this GLRI project was the Two-Hearted River Watershed Sediment Reduction Project, and this is a really good example about how we can use this tool and how we can use GLRI money to help push projects forward, or push projects that are within watershed plans forward, that have already had some funding done on the initial projects. So how this symbology is working is if it is a green color, it was funded by EPA. If it's a gold color, it was funded by the local organization. And if it is a checkered flag, it's not quite funded yet or hasn't been funded. And the size is unrelated to the priority of these specific projects. You can see within here that the local organization was able to fund some of the higher priority projects, but then, once the GLRI funding came in, we were able to finish up funding all of the high or very high priority projects as well as the medium priority projects. So the only ones that are left are a couple of low priority and a couple of medium priority projects in the watershed.

Cynthia Curtis
Really nice. Thank you. Now Wayne Anderson has sent in a comment/question if you all want to respond or react to this: The idea of tracking progress is good. Have you thought about what might be the milestones of progress? And I kind of feel like, Andrea, what you were showing got a little bit at that, but if both of you have other thoughts on that, if you'd like to add to that, please do.

Scott Ristau
Well, I mean, we do the bean counting for milestones in terms of looking at the units of BMPs implemented as well as the estimated pollutant load reductions associated with those implemented BMPs. But then, of course, the real milestone or marker of success is a change in the water quality of the stream that you're trying to improve. So having those causes of impairment removed are the ultimate milestone or measure of success.

Cynthia Curtis
Good. Okay, so I have a question for both of you now. Both of you have systems -- like, Scott, yours is designed for Illinois; Andrea, you've got one that's drawing on a lot of databases within -- more internal databases to EPA. If people are interested in using this level of analysis or approach, what would be -- you know, are there things that they could take from you or templates or ideas, or how much would it be starting from scratch versus using something you all had already developed? Scott, do you want to go first, or do you want a little time?

Scott Ristau
I'm not sure I can really answer the question. You know, I'm not the GIS programmer. I didn't develop it. It was primarily the University of Illinois. They had something started, and they were working with the Illinois Department of Natural Resources. We were looking -- this was several years ago -- for a

better way to track our 319 BMPs than just using Microsoft Access or some other database. We got together with them, started explaining what our needs were, what kind of reports that we would need to be able to generate, what kind of information we would need to be able to display, what tools we wanted in terms of showing streams impaired by individual causes and that kind of thing. And through a partnership and a cost-share, we've been able to work with them to develop it. So it's involved an investment not only of IEPA staff time, the University of Illinois' resources, but also Section 319 funding. And, you know, we try to avoid duplication or reinventing the wheel by getting other agencies to participate in RMMS as well so that they're not creating the same sort of thing somewhere else and duplicating that service. So we're trying to maximize the utility by bringing everybody together in one place.

Cynthia Curtis
All right.

Andrea Bolks
All right. And as far as the project that I had shown that was created as an internal tracking tool for US EPA, I think it can be used as an example. And I'm going to share my screen here again. It can be -- it's an example to be able to -- to be able to track all these different levels of progress, as Scott was kind of touching on in the last question, where we can show the grants being implemented and the conservation practices and BMPs going in, along with the nonpoint source loading reductions, and eventually bringing in that level of response. As far as how the states could use this tool beyond just an example for how you can do tracking for accountability, I guess it would be that they could use this actual program from ArcGIS, called ArcGIS Explorer, as at least an initial start to tracking these types of projects. As I said before, it is a free tool that can be used, and creating these spatial stories to be able to show and track these projects, I think, is really powerful. And if we can use tools such as this without having to necessarily get a developer involved, which you may or may not have funding for, this tool could even be used by local groups. And if you're interested in getting started with this tool, there are some guides that I had created for helping, you know, do basic things like bringing in your data from different sources, whether it's in Excel or a shapefile, and then being able to add services that others have already created, so kind of not reinventing the wheel. So EPA has many services, such as water services for 319 projects or services for TMDLs or impaired reaches of water, that could be added to your maps without a lot of additional work.

Cynthia Curtis
Sounds good. So, last question we have: Scott, did you have to change the types of information you collect or how you get the information from grantees in order to be able to generate the types of reports you want to see in RMMS?

Scott Ristau
Yeah, or at least we got better at asking for it in a more consistent and consolidated format. We have -- like, when we write a contract with somebody to implement BMPs, like doing 15 WASCOBs and some streambank stabilization, they have to submit the design specifications for those proposed BMPs as well as a BMP application form that contains a lot of the information that we'll use, then, to populate RMMS, like the type of BMP, the unit size, the pollutant load reductions, the latitude and longitude, the cost information. So that information -- that form is what we use in large part to begin populating RMMS, and then they're supposed to give us a revision of the form to show what the actual implemented costs were as well as identify any changes that happened along the way in terms of the as-builts being different from the original design. So it has evolved.

Cynthia Curtis

Thank you. Well, I'd like to wrap up this thirteenth webisode by thanking both of you, Scott and Andrea. Thank you for some very interesting presentations. A lot of good potential what can be done with data geospatially and interactively. I'd like to remind people that attended that our next webcast is going to be on July 10th. We do have a swap out, and I'll be sending an update on who the speaker is. Right now, it's going to be Rick Wilson from Ohio EPA rather than Wisconsin DNR, and it's going to be Analysis of Effectiveness of Ohio NRCS Practice Standards in Addressing Five Leading Causes of Water Quality Impairment. So until that time, thank you again, Scott. Thank you, Andrea, and I will see you all next time.