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Hypoxia Task Force Members:

The Hypoxia Task Force monitoring workgroup was one of seven workgroups formed at the February 2020 Hypoxia Task Force (HTF) meeting in Washington, D.C. to assist states in achieving nutrient reduction goals in the Mississippi River Basin. The monitoring workgroup consists of representatives with relevant expertise from HTF member states, the U.S. Environmental Protection Agency, the U.S. Geological Survey, and the U.S. Department of Agriculture.

Based on the charge from the February 2020 meeting, workgroup members reached consensus that their primary objective was “to evaluate funding needs to support existing and potential new monitoring in the Mississippi-Atchafalaya River basin, particularly to track loads and trends in large rivers to help states evaluate progress toward meeting nutrient reduction goals and to support adaptive management of nutrient reduction strategies.” This charge was accomplished through monthly conference calls and the development of the attached documents. These documents provide an evaluation of the funding needed to support a baseline nutrient monitoring network to quantify loads and trends from large rivers in HTF states. This evaluation is submitted to the full HTF for consideration of potential next steps.

Sincerely,
Monitoring Workgroup
Hypoxia Task Force

Mississippi River/Gulf of Mexico Hypoxia Task Force
Monitoring Workgroup Evaluation

Introduction

The interagency Mississippi River/Gulf of Mexico Hypoxia Task Force (HTF) established a goal of decreasing total nitrogen and total phosphorus loads to the Gulf by 45 percent by 2035, and an interim 20-percent reduction goal to be reached by 2025. To support these goals, [HTF states](#) have established [strategies](#) to reduce nutrients in local streams, and ultimately to the Gulf. Understanding how these strategies are affecting nutrient transport across the Mississippi/Atchafalaya River Basin (MARB) requires the development of a consistent monitoring approach that allows for comparable evaluations of progress basin-wide.

Multiple federal, state, regional, and local organizations in the MARB conduct monitoring in support of their own priorities; data from these monitoring activities can be combined and leveraged to answer new questions that add value to the original goals of the data collection. Collectively, these monitoring activities provide insight into current nutrient conditions, help identify emerging problems, and can be used to quantify long-term trends. However, different agencies conduct monitoring differently—for example, some may or may not co-locate water-quality sampling at streamgage locations or may prioritize the analysis of different constituents. Different monitoring approaches can make it difficult to consistently characterize progress toward state and basin-wide reduction targets and to develop a consistent understanding of how management investments are affecting nutrient levels in rivers. The HTF Monitoring Workgroup was established to identify opportunities to improve consistency in monitoring across the MARB and to strategically maintain and (or) enhance interagency monitoring to provide further insight into progress toward HTF and state reduction goals.

Objectives

The HTF Monitoring Workgroup consists of representatives with expertise in monitoring from HTF member states, the U.S. Environmental Protection Agency (USEPA), the U.S. Geological Survey (USGS), and the U.S. Department of Agriculture (USDA). The workgroup reached consensus on the following objective: “To evaluate funding needs to support existing and potential new monitoring in the Mississippi-Atchafalaya River basin, particularly to track loads and trends in large rivers to help States evaluate progress toward meeting nutrient reduction goals and to support adaptive management of nutrient reduction strategies.” Among large river sites, two types of priority sites were defined. The workgroup determined that the highest priority was to quantify loads and trends from large rivers leaving HTF States, and thus the highest priority sites (Priority 1 sites) for new and continued monitoring would be located at or

near state boundaries. A secondary priority would be sites (Priority 2 sites) that support the quantification of loads and trends at large rivers within state boundaries.

Along with identifying sites needed to meet monitoring objectives, it was necessary to identify a baseline set of consistent monitoring approaches needed for load and trend computation. To identify these baseline approaches, the monitoring workgroup solicited input from the HTF trends workgroup, which was established by the HTF to identify opportunities to report out on progress toward nutrient reduction goals across the HTF states. The HTF Trends workgroup determined that a baseline approach of monthly sampling for total nitrogen, nitrate, dissolved phosphorus and (or) orthophosphate, and total phosphorus, as well as a nearby continuous streamgage, were preferred for the computation of nutrient trends at a given site. To facilitate future trend and load computations, the monitoring workgroup adopted the trend workgroup recommendations for priority sites in the proposed interagency network.

Site Identification

Quantifying the data and associated funding needed to meet workgroup objectives required an understanding of existing monitoring activities. To develop this understanding, the USEPA contracted with Tetra Tech to conduct an inventory of monitoring data from multiple agencies available in [the National Water Quality Monitoring Council Water Quality Portal](#) to identify sites with the requisite data needed for trend and load computation. Because the workgroup recognized that all agency data may not be available in the Water Quality Portal, an additional need to understand where state and other agencies are actively monitoring, irrespective of whether those data are available in the Water Quality Portal, was identified. The workgroup fulfilled this need by surveying agency representatives regarding ongoing monitoring activities in their states. This survey provided information as to whether agencies are likely to be able to support existing monitoring in future years and helped identify opportunities to get more sites and data into the Water Quality Portal. Data inventory and state survey results were combined to identify and prioritize sites based on previously identified objectives. Priority 1 and 2 sites were identified based on (1) whether sites were on large rivers (defined as being a Strahler stream order 6 or above), (2) proximity to state boundaries and the confluence of other large rivers, (3) the degree to which sites appeared to meet the baseline set of monitoring criteria established by the workgroup, and (4) the amount of historical record (to ensure continuation of long-term trend sites). Figure 1 shows priority 1 and 2 sites for new and continued monitoring identified by the monitoring workgroup for HTF States within the MARB.

Funding to support monitoring

After identifying priority sites, the next objective was to estimate funding needed to support a coordinated, large-river monitoring network in the MARB on an ongoing basis. State contacts were again surveyed to estimate funding needed to augment existing sites to at least monthly

sampling for total nitrogen, nitrate, total phosphorus, and dissolved phosphorus and (or) orthophosphate at or nearby a continuous streamgage location on an annual basis. States were also given the opportunity to list other monitoring, such as continuous sensors or other high priority sites needed to address their own nutrient reduction goals. Table 1 provides aggregated estimates of funding needed for priority 1 sites, priority 2 sites, and other State-requested funding on an annual basis to support a large river monitoring network for loads and trends. Total annual funding needed to meet priority 1 monitoring needs was estimated at \$658,000 among all States, \$365,200 was estimated as needed to meet priority 2 monitoring needs, and \$1,531,400 was estimated as needed to meet other State-identified needs. Although State-requested monitoring extends beyond baseline priorities identified by this workgroup, these requests benefit from on-the-ground knowledge of important contributing areas or specific monitoring needs for trend and load computation. As such, other State-monitoring requests should be viewed on equal footing with priority 1 monitoring needs. As indicated in Table 1, funding requests by states varied substantially. To provide more detail on each request, narratives describing state-specific requests are provided below. Appendix 1 lists individual priority sites and site-specific funding requests. It is important to note that beyond funding needs, States and other monitoring organizations indicated that in many cases, staffing, equipment, and (or) transportation limitations would need to be resolved before establishing any new monitoring.

Future needs

This evaluation identifies priority monitoring objectives for the MARB and the data collection and funding needed to realize those objectives, which fulfills the goals set out by this workgroup. Should funding for this network be realized, representatives from the workgroup could facilitate interactions with State and Federal monitoring agencies to help ensure that needed monitoring is put in place.

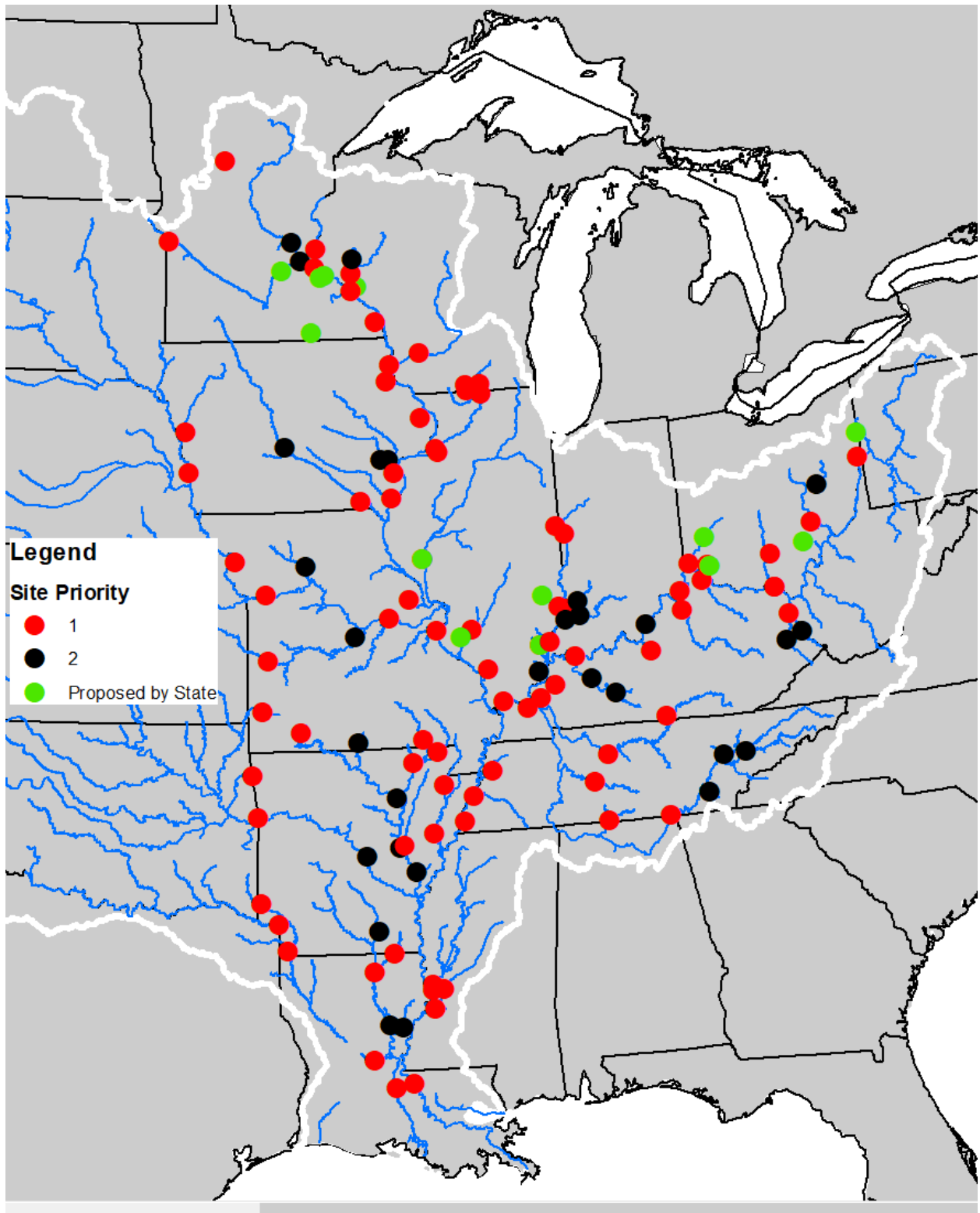


Figure 1. Priority 1 and 2 sites for trend and load analysis identified by the monitoring workgroup.

Table 1. Estimated annual costs for priority 1, priority 2, and additional State needs.

State	Estimated priority 1 site costs to meet baseline criteria	Estimated priority 2 site costs to meet baseline criteria	Other State-Specific Request (continuous monitoring, other high priority sites, etc)	Total
Tennessee	\$186,000	\$89,000	\$0	\$275,000
Minnesota	\$0	\$0	\$80,000	\$80,000
Wisconsin	\$25,000	\$0	\$32,000	\$57,000
Missouri	\$65,000	\$36,000	\$0	\$101,000
Illinois	\$3,000	\$28,000	\$626,000	\$657,000
Kentucky	\$52,000	\$37,000	\$415,000	\$504,000
Indiana	\$28,000	\$50,000	\$120,000	\$198,000
Arkansas	\$115,000	\$87,000	\$0	\$202,000
Iowa	\$3,000	\$3,000	\$0	\$3,000
Mississippi	\$54,000	\$0	\$0	\$54,000
Ohio	\$79,400	\$0	\$258,400	\$337,800
Louisiana	\$47,600	\$35,200	\$0	\$82,800
Total	\$658,000	\$365,200	\$1,531,400	\$2,551,600

Descriptions of HTF State Funding Requests

Arkansas

Ten priority 1 monitoring sites and five priority 2 sites were identified in Arkansas. Funding was requested for streamgaging operation at three priority 1 and three priority 2 sites. To get to baseline sampling/analysis criteria described above, funding was requested to add orthophosphate analysis at 12 sites and for additional sampling at 11 sites.

Illinois

Eight priority 1 sites, and one priority 2 site were identified by the monitoring subgroup along with 4 additional priority sites identified by IL as important to characterize nutrient loads leaving State boundaries. The vast majority of the funding request is to fund continued operation of continuous water-quality sensors at 8 sites on large rivers leaving State boundaries. A relatively small amount of funding (~\$10,000) was requested for additional sample collection at priority and State-identified priority sites, and \$25,000 for streamgaging at the lone priority 2 site.

Indiana

The four priority 1 and two priority 2 monitoring sites identified in Indiana are already sampled every month for total nitrogen, total phosphorus, nitrate, and dissolved phosphorus. Funding

was requested for streamgauge installation and operation at a priority 1 and priority 2 site. Initial installation costs and year 1 operation costs for streamgages are \$28,000 for the priority 1 site and \$50,000 for the priority 2 site, as the priority 2 site requires index-velocity rating. After year 1, operation and maintenance costs for these streamgages decrease to \$14,000/year and \$24,000/year respectively. Indiana also requests \$60,000/year to operate a continuous water-quality sensor operation at the Wabash River SR 234 bridge site, and \$60,000/year to operate a continuous water-quality sensor at the Wabash River at New Harmony site. Funds for the ongoing operation of the New Harmony site would not be required until 2024.

Iowa

Seven priority 1 monitoring sites and three priority 2 monitoring sites were identified in Iowa. Eight of these are sampled monthly (7 by the IA DNR and 1 by the USGS) for priority constituents at a streamgauge location. It is unclear whether the remaining two priority sites are actively sampled, thus the IA DNR estimated a cost of \$3,000/year for monthly grab sampling and nutrient analysis at each of these two sites.

Kentucky

The twelve priority 1 sites and five priority 2 sites identified in Kentucky are all at or near existing streamgauge locations. Funding is requested to add orthophosphate analysis to 16 of the 17 sites, and to increase the sampling at 14 sites to get to a baseline of monthly sampling. For ORSANCO sites, it was noted that staffing would not be adequate to begin sampling in the near-term regardless of a potential increase in funding. Kentucky also requested \$415,000 to ensure continued operation of five continuous water quality gages, as noted in the “Other State monitoring request field” and in appendix 1.

Louisiana

Five priority 1 and two priority 2 monitoring sites were identified in Louisiana. One priority 1 site is monitored by the Arkansas Department of Environmental Quality, estimated costs to add orthophosphate and increase sampling to monthly at this site were obtained from comparable information from the AR survey. The remaining funding request was for the addition of orthophosphate analysis and streamgages at two priority 1 and 2 sites. Should funding be secured, further investigation should be conducted to determine the suitability of these sites for streamgauge operation.

Minnesota

Six priority 1 and two priority 2 sites were identified in MN. All of these sites met baseline criteria for constituent analysis, monthly sampling, and streamgaging. MN also identified four additional priority sites that align with monitoring workgroup goals that meet baseline sampling criteria. Although existing sampling meets minimum criteria for loads and trends, MN is

requesting \$10,000 per site per year to begin continuous monitoring for nitrate at 8 priority sites.

Mississippi

Four priority 1 monitoring sites were identified in Mississippi, two of which already meet baseline network criteria and have stable funding for the foreseeable future. Two priority 1 sites on the Big Black River and Bayou Pierre have been monitored by the USGS in the past, but do not appear to be active monitoring locations. Costs of \$21,600 per site per year for monthly grab sampling and analysis were estimated based on USGS national network costs.

Missouri

Nine priority 1 and three priority 2 sites were identified in Missouri, all sites were at or near at continuous streamgage location. Samples at all sites are analyzed for baseline constituents, but funding was requested to increase sampling at 10 sites to meet monthly sampling criteria. \$65,000 is needed to conduct monthly sampling at the nine priority 1 sites and \$36,000 is needed for monthly sampling at the three priority 2 sites.

Ohio

Six priority 1 and one priority 2 sites were identified in Ohio, all sites appear to be at or near a continuous streamgage location. The Ohio EPA indicated that the priority 2 site identified by the monitoring subgroup on the Tuscarawas River was not a high priority for the State and thus they did not request funding for additional sampling. Of the six priority 1 sites, existing sampling already meets baseline criteria established by the monitoring group at three sites. For the remaining three sites, the Ohio EPA requested \$4,400/year for 8 additional samples to be collected on the Great Miami River, the USGS estimates \$40,000/year to establish sampling on the upstream Ohio River, and \$35,000/year was requested to continue USGS monitoring on the Little Miami River. For these latter two sites, additional funds were also requested to increase sampling frequency to be comparable to other USGS sites operated in Ohio. In addition, Ohio identified 3 additional high priority sites on the East Fork Little Miami River, the Hocking River, and the Mahoning River that need additional or continued funding for sample collection to facilitate computation of loads and trends.

Tennessee

Seven priority 1 and three priority 2 sites were identified in TN; these sites required analysis of orthophosphate and 8 additional samples per year to meet baseline criteria. Additionally, streamgages could not be verified at 8 of the 10 priority sites, an estimated cost of \$17,000 per site was used to estimate this funding need. Although agency contacts were not aware of

streamgages being operated at these priority sites, further investigation should be undertaken to determine if there are nearby sites in operation by other agencies and (or) if these priority site locations are suitable for streamgage operation.

Wisconsin

Seven priority 1 sites, one priority 2 site, and one additional, state-defined priority site were identified in Wisconsin. All sites had monthly sampling for priority constituents, one priority 1 site required streamgage operation at an estimated at \$25,000 per year, and WI requested funding for streamgage operation at \$25,000 per year at the additional priority site.

Appendix 1. Priority large river monitoring sites and funding needs identified by the monitoring workgroup and Hypoxia Task Force States.

Appendix 1. Priority large river monitoring sites and funding needs identified by the monitoring workgroup and Hypoxia Task Force States.

State	How site was identified	Site Priority	Monitoring organization	Latitude	Longitude	Site ID	Site name	Constituents	Current sample frequency	Streamgage (Yes or No)	Current Funding Stability	Sampling needs to meet baseline criteria	Estimated sampling costs to meet baseline criteria	Estimated gaging costs to meet baseline criteria	Other State requested monitoring	Estimated cost for other State requested monitoring	Notes
AR	Data inventory and state survey	1	USGS	36.108611	-94.533333	USGS-07195430	IR-59	Ammonia - N, Nitrate, SRP, TN, TP, TSS	Weekly	Yes	For the next 3 years	None	0	0	None	0	--
AR	Data inventory	1	USGS	35.391758	-94.432437	USGS-07249455	Unknown	TP,DP,TN,NO3	9	Yes	Stable	3 samples per year	5100	0	None	0	--
AR	Data inventory	1	USGS	33.919444	-94.386667	USGS-0734000	Unknown	TP,TN,NO3	6	Yes	Stable	Dissolved P analysis and 6 samples per year	11400	0	None	0	--
AR	Data inventory	1	USGS	33.551944	-94.04111	USGS-07337000	Unknown	TP,TN	7	Yes	Stable	Nitrate and dissolved P analysis and 5 samples per year	10900	0	None	0	--
AR	Data inventory	1	ARDEQ	33.089762	-93.858699	ARDEQH2O_WQX-RED0009	Unknown	TP,TN,NO3	10	Yes	Stable	Dissolved P analysis and 2 samples per year	4600	0	None	0	--
AR	Data inventory	1	USGS	36.401944	-90.541389	USGS-07064000	Unknown	TP,TN,NO3	7	Yes	Stable	Dissolved P analysis and 5 samples per year	9700	0	None	0	--
AR	Data inventory	1	ARDEQ	36.2369	-91.0847	ARDEQH2O_WQX-WHI0005B	Unknown	TP,TN,NO3	7	No	Stable	Dissolved P analysis and 5 samples per year	9700	17000	None	0	--
AR	Data inventory	1	USGS	35.820833	-90.4325	USGS-07040450	Unknown	TP,TN,NO3	7	No	Stable	Dissolved P analysis and 5 samples per year	9700	17000	None	0	--
AR	Data inventory	2	USGS	35.643412	-91.4618	USGS-07061105	Unknown	TP,TN,NO3	9	No	Stable	Dissolved P analysis and 1 samples per year	9700	17000	None	0	--
AR	Data inventory	1	USGS	35.013056	-90.720556	USGS-07047907	Unknown	TP,TN,NO3	11	No	Stable	Dissolved P analysis	2900	17000	None	0	--
AR	Data inventory	2	USGS	34.79444	-91.444722	USGS-07077000	Unknown	TP,TN,NO3	12	Yes	Stable	Dissolved P analysis	1200	0	None	0	--
AR	State survey	1	Arkansas State University	34.833802	-91.352475	--	Cache River	TN, TP, Orthophosphate, NO2, NO3, TSS	Weekly	No	For the next 3 years	None	0	0	None	0	No gaging costs were submitted
AR	Data inventory and state survey	2	USGS	34.681111	-92.151389	USGS-07263620	Arkansas River at David D Terry Lock and Dam below Little Rock, AR	Nutrients, Ions, Sediment	14/year	Yes	Stable	None	0	0	None	0	--
AR	Data inventory	2	USGS	34.378434	-91.126784	USGS-07077820	Unknown	TP,DP,TN,NO3	12	No	Stable	Dissolved P analysis and 5 samples per year	9700	17000	None	0	--
AR	Data inventory	2	USGS	33.378448	-91.959856	USGS-07364012	Unknown	TP,TN,NO3	7	No	Stable	Dissolved P analysis and 8 samples per year	14800	17000	None	0	--
IA	Data inventory	1	COE	41.96503	-95.9725	COEOMAHA_WQX-MORNFLSXR2	Unknown	TP,TN,NO3	9	Yes	Unknown	12/year	3000	0	None	0	Unsure of whether this is an active site, budget request is for 12 samples per year by IA DNR
IA	Data inventory	1	USGS	41.276778	-95.898583	USGS-0661000	Missouri River at Omaha	TP,DP,TN,NO3	14	Yes	Stable	None	0	0	None	0	USGS NWQN site
IA	Data inventory	2	USGS	41.680544	-93.668275	USGS-05481650	Des Moines River near Saylorville	TP,DP,TN,NO3	6	Yes	Stable	12/year	3000	0	None	0	Unsure of whether this is an active site, budget request is for 12 samples per year by IA DNR
IA	Data inventory	1	IA DNR	42.739988	-91.261799	USGS-05412500	Turkey River near Garber	TP,DP,TN,NO3	11	Yes	Stable	None	0	0	None	0	https://programs.iowadnr.gov/aquia/Sites/10220001
IA	Data inventory	1	IA DNR	42.101271	-90.517881	USGS-05418600	Maquoketa River at Spragueville	TP,DP,TN,NO3	11	Yes	Stable	None	0	0	None	0	https://programs.iowadnr.gov/aquia/Sites/10490005

State	How site was identified	Site Priority	Monitoring organization	Latitude	Longitude	Site ID	Site name	Constituents	Current sample frequency	Streamgauge (Yes or No)	Current Funding Stability	Sampling needs to meet baseline criteria	Estimated sampling costs to meet baseline criteria	Estimated gaging costs to meet baseline criteria	Other State requested monitoring	Estimated cost for other State requested monitoring	Notes
IA	Data inventory	2	IA DNR	41.409191	-91.290434	USGS-05465000	Cedar River near Conesville	TP,DP,TN,NO3	10	Yes	Stable	None	0	0	None	0	https://programs.iowadnr.gov/aquia/Sites/10700001
IA	Data inventory	2	IA DNR	41.423778	-91.478528	USGS-05455700	Iowa River near Lone Tree	TP,DP,TN,NO3	4	Yes	Stable	None	0	0	None	0	IA DNR indicated that this site is sampled monthly, no new funding requested. Site link: https://programs.iowadnr.gov/aquia/Sites/10580002
IA	Data inventory and state survey	1	IA DNR	41.178086	-91.182094	USGS-05465500	Iowa River at Wapello	TP,DP,TN,NO3	14	Yes	Stable	None	0	0	None	0	Site is IA DNR and USGS IA DNR link: https://programs.iowadnr.gov/aquia/Sites/10580003
IA	Data inventory and state survey	1	IA DNR	40.727806	-91.959617	USGS-05490500	Des Moines River at Keosauqua	TP,DP,TN,NO3	14	Yes	Stable	None	0	0	None	0	Site is IA DNR and USGS IA DNR link: https://programs.iowadnr.gov/aquia/Sites/10560002
IA	Data inventory	1	IA DNR	40.75365	-91.277094	USGS-05474000	Skunk River near Augusta	TP,DP,TN,NO3	11	Yes	Stable	None	0	0	None	0	https://programs.iowadnr.gov/aquia/Sites/10890001
IL	Data inventory and state survey	1	USGS	41.556111	-90.185278	USGS-05446500	Rock River near Joslin (IL_P-04)	TP, DP, TN, NO3	Monthly	Yes	Not stable	None	0	0	Continued operation of continuous water quality sensors	77407	IL's highest priority is continuation of it's supergauge network near the State border. Sensors include 5-parameter, nitrate, and orthoP.
IL	Data inventory and state survey	1	USGS	41.488923	-90.157619	USGS-05447500	Green River near Geneseo (IL_PB-04)	TP, DP, TN, NO3	Monthly	Yes	Not stable	None	0	0	Continued operation of continuous water quality sensors	77407	IL's highest priority is continuation of it's supergauge network near the State border. Sensors include 5-parameter, nitrate, and orthoP.
IL	Data inventory and state survey	1	USGS	39.70338	-90.645405	USGS-05586300	Illinois River at Florence (IL_D-22)	TP, DP, TN, NO3	12-24 per year	Yes	Not stable	None	0	0	Continued operation of continuous water quality sensors	77407	IL's highest priority is continuation of it's supergauge network near the State border. Sensors include 5-parameter, nitrate, and orthoP.
IL	State identified priority	Proposed by State	USGS	39.703333	-90.645278	USGS-05586100	Illinois River at Valley City (IL_D-32)	TP, DP, TN, NO3	6 weeks	Yes	Stable	3/year	2016	0	None	0	--
IL	Data inventory	1	USGS	38.450605	-89.627593	USGS-05594100	Kaskaskia River at Venedy Station (IL_O-20)	TP, DP, TN, NO3	6 weeks	Yes	Stable	3/year	2016	0	None	0	--
IL	State identified priority	Proposed by State	USGS	38.319722	-89.888611	USGS-5595000	Kaskaskia River at New Athens (IL_O-03)	TP, DP, TN, NO3	6 weeks	Yes	Not stable	None	0	0	Continued operation of continuous water quality sensors	77407	IL's highest priority is continuation of it's supergauge network near the State border. Sensors include 5-parameter, nitrate, and orthoP.
IL	Data inventory and state survey	1	USGS	37.758333	-89.327778	USGS-05599490	Big Muddy River at Murphysboro	TP, DP, TN, NO3	Monthly	Yes	Not stable	None	0	0	Continued operation of continuous water quality sensors	77407	IL's highest priority is continuation of it's supergauge network near the State border. Sensors include 5-parameter, nitrate, and orthoP.
IL	Data inventory	2	USGS	37.648104	-88.241703	USGS-03382530	Saline River (IL_AT-06)	TP, DP, TN, NO3	6 weeks	No	Stable	3/year	2016	25000	None	0	Estimated gaging costs provided by IL
IL	Data inventory and state survey	1	USGS	38.092269	-88.156149	USGS-03381495	Little Wabash River at Carmi, IL (Main St)	TP, DP, TN, NO3	Monthly	Yes	Not stable	None	0	0	Continued operation of continuous water quality sensors	77407	IL's highest priority is continuation of it's supergauge network near the State border. Sensors include 5-parameter, nitrate, and orthoP.
IL	State identified priority	Proposed by State		38.092222	-88.156111	USGS-03381500	Little Wabash River at Carmi, (IL_C-23)	TP, DP, TN, NO3	6 weeks	Yes	Stable	3/year	2016	0	None	0	--
IL	Data inventory and state survey	1	USGS	40.10087	-87.597272	USGS-03339000	Vermillion River near Danville	TP, DP, TN, NO3	Monthly	Yes	Not stable	None	0	0	Continued operation of continuous water quality sensors	77407	IL's highest priority is continuation of it's supergauge network near the State border. Sensors include 5-parameter, nitrate, and orthoP.
IL	State identified priority	1	USGS	38.723611	-87.664444	USGS-03346500	Embarras River at Lawrenceville	TP, DP, TN, NO3	6 weeks	Yes	Not stable	None	0	0	Continued operation of continuous water quality sensors	77407	IL's highest priority is continuation of it's supergauge network near the State border. Sensors include 5-parameter, nitrate, and orthoP.
IL	State identified priority	Proposed by State	USGS	38.936389	-88.0225	USGS-03345500	Embarras River at Ste. Marie (IL_BE-07)	TP, DP, TN, NO3	6 weeks	Yes	Stable	3/year	2016	0	None	0	--

State	How site was identified	Site Priority	Monitoring organization	Latitude	Longitude	Site ID	Site name	Constituents	Current sample frequency	Streamgauge (Yes or No)	Current Funding Stability	Sampling needs to meet baseline criteria	Estimated sampling costs to meet baseline criteria	Estimated gaging costs to meet baseline criteria	Other State requested monitoring	Estimated cost for other State requested monitoring	Notes
IN	Data inventory	1	USGS	38.13088	-87.94142	USGS-03378500	Wabash River at New Harmony, IN	Nutrients, ions, pesticides, suspended sediment	USGS: 14/year; INSTOR: 6/year	Yes	Stable	None	0	0	None	60000	Request to continue supergage operation at this site, funds wont' be needed until FY24.
IN	Data inventory and state survey	1	USGS	38.67944	-87.53917	USGS-384046087322101	Wabash River Old US Hwy 50 Bridge, Vigo St Vincennes	nutrients, ions, metals, tss	Monthly	Yes	Stable	None	0	0	None		--
IN	Data inventory and state survey	1	IDEM	39.95179	-87.41964	INSTOR_WQX-2327	Wabash River SR 234 Bridge, Cayuga (WLV140-0001)	nutrients, ions, metals, tss	Monthly	No	Stable	None	0	\$14K for install, \$14K/year operation	Continuous sensor operation	60000	This is a long term IDEM site and a key site to differentiate loads coming from Illinois into the Wabash. Because this is a key site to differentiate inputs between Indiana and Illinois on the Wabash this would be a good site for a Nutrient Supergage.
IN	Data inventory	2	USGS	38.48977	-87.55023	USGS-03374100	White River at Hazleton Public Access Site (WWL-10-0006)	nutrients, ions, metals, tss	Monthly	Yes	Stable	None	0	0	None	0	--
IN	Data inventory and state survey	2	INSTOR	38.53903	-87.22324	INSTOR_WQX-2619	East Fork White River SR 57 Bridge NE of Petersburg (WEL170-0001)	nutrients, ions, metals, tss	Monthly	No	Stable	None	0	\$26K for install, \$24K/year operation	None	0	Because of backwater issues this requires a surface water radar with an Index Velocity Rating
IN	Data inventory and state survey	2	INSTOR	38.79505	-87.24187	INSTOR_WQX-2515	West Fork White River SR 358 Bridge, SE of Edwardsport (WWL070-0003)	nutrients, ions, metals, tss	Monthly	Yes	Stable	None	0	0	None	0	--
KY	Data inventory and state survey	1	USGS	37.193108	-89.044515	USGS-03612600	Ohio River at Olmsted	TP, DP, TN, NO3	14/year	Yes	Stable	None	0	0	None	0	--
KY	Data inventory and state survey	1	USGS and ORSANCO	37.04028	-88.53389	USGS-03609750	Tennessee River at Paducah, KY	TP, DP, TN, NO3	14/year USGS; 6/year ORSANCO	Yes	Stable	None	0	0	None	0	Combined USGS and ORSANCO data collection more than meet baseline load/trend criteria
KY	State survey	1	ORSANCO	37.18556	-88.23944	Unknown	Pinkneyville	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	4756	0	None	0	ORSANCO staff noted that even if funding is granted there will be challenges in obtaining staff to conduct the sampling.funding needs are just one aspect of po
KY	State survey	1	KY DOW	37.39896	-87.90456	Unknown	PRI112	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	8000	0	None	0	--
KY	Data inventory and state survey	1	USGS and ORSANCO	37.858377	-87.409729	USGS-03321500	Green River nr Spottsville, KY	TP, OP, TN, NO3	Monthly	Yes	Stable	None	0	0	None	75000	--
KY	State survey	2	DOW	37.452963	-87.104537		PRI055	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	8000	0	None	0	--
KY	State survey	2	DOW	37.182442	-86.610402		PRI103	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	8000	0	None	0	--
KY	State survey	1	DOW	37.822668	-85.74787		PRI057	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	8000	0	None	0	--
KY	State survey	2	ORSANCO	38.277778	-85.791667		McAlpine	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	4756	0	None	0	ORSANCO staff noted that even if funding is granted there will be challenges in obtaining staff to conduct the sampling.funding needs are just one aspect of po
KY	State survey	1	DOW	36.68879	-85.5667		PRI007	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	8000	0	None	0	--
KY	Data inventory and state survey	1	DOW	38.445126	-84.957282	USGS-03290500	PRI066	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	8000	0	None	0	--
KY	State survey	1	ORSANCO	38.77472	-84.96444		Markland	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	4756	0	None	0	ORSANCO staff noted that even if funding is granted there will be challenges in obtaining staff to conduct the sampling.funding needs are just one aspect of po
KY	Data inventory and state survey	1	USGS/SD1	38.920342	-84.447995	USGS-03254520		TP, TN, OP, NO3	12/year	Yes	Unknown	None	0	0	None	0	--

State	How site was identified	Site Priority	Monitoring organization	Latitude	Longitude	Site ID	Site name	Constituents	Current sample frequency	Streamgage (Yes or No)	Current Funding Stability	Sampling needs to meet baseline criteria	Estimated sampling costs to meet baseline criteria	Estimated gaging costs to meet baseline criteria	Other State requested monitoring	Estimated cost for other State requested monitoring	Notes
KY	Data inventory and state survey	1	ORSANCO	38.64694	-82.86028	USGS-03216600	Greenup	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	4756	0	None	0	ORSANCO staff noted that even if funding is granted there will be challenges in obtaining staff to conduct the sampling.funding needs are just one aspect of po
KY	State survey	1	ORSANCO	38.17111	-82.63472		Louisa	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	4756	0	None	0	ORSANCO staff noted that even if funding is granted there will be challenges in obtaining staff to conduct the sampling.funding needs are just one aspect of po
KY	State survey	2	DOW	37.729083	-82.754389		PRI094	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	8000	0	None	0	--
KY	State survey	2	DOW	37.837594	-82.409706		PRI002	TP, TN, NO3	6/year	Yes	Stable	6 samples per year and orthoP	8000	0	None	0	--
KY	Other state priority	Proposed by State	USGS	38.920278	84.448056	--	Licking River	Nutrients, ions, sediment	At least monthly	Yes	Not stable	See other State request	0	0	Request long-term funding for this site.	\$95,000/year	--
KY	Other state priority	Proposed by State	USGS	38.438889	84.963333	--	Kentucky River	Nutrients, ions, sediment	At least monthly	Yes	Not stable	See other State request	0	0	Request long-term funding for this site.	\$65,000/year	--
KY	Other state priority	Proposed by State	USGS	38.532056	82.685944	--	Ohio River at Ironton	Nutrients, ions, sediment	At least monthly	Yes	Not stable	See other State request	0	0	Request long-term funding for this site.	\$110,000/year	--
KY	Other state priority	Proposed by State	USGS	Installation ongoing	Installation ongoing	--	Salt River	Nutrients, ions, sediment	At least monthly	Yes	Not stable	See other State request	0	0	Request long-term funding for this site.	\$70,000/year	--
LA	Data inventory	1	ARDEQ	32.990405	-91.655678	USGS-07364200	Bayou Bartholomew near Jones, LA	TP,TN,NO3	12	Yes	Stable	None	12400	0	None	0	Sampled by ARDEQ, estimated costs based on the AR response
LA	Data inventory	1	LADEQ	32.697151	-92.086472	LADEQWPD_WQX-0013	Unknown	TP, TN, NO3	12	No	Stable	None	600	17000	None	0	Not aware of a streamgage at this site, estimating \$17,000/year for streamgage O&M based on typical USGS costs
LA	Data inventory	2	USGS	31.775166	-91.815406	USGS-07369340	Ouachita River at Lock & Dam #2) near Harrisonburg, LA	TP, TN, NO3	12	No	Stable	None	600	17000	None	0	Not aware of a streamgage at this site, estimating \$17,000/year for streamgage O&M based on typical USGS costs
LA	Data inventory	2	USGS	31.724331	-91.544565	USGS-07370190	Tensas River At Clayton, LA	TP, TN, NO3	12	No	Stable	None	600	17000	None	0	Not aware of a streamgage at this site, estimating \$17,000/year for streamgage O&M based on typical USGS costs
LA	Data inventory	1	USGS	31.18352	-92.168461	USGS-311100092100600	Red R @ Mi 70 nr Moncla, LA	TP, TN, NO3	12	No	Stable	None	600	17000	None	0	Not aware of a streamgage at this site, estimating \$17,000/year for streamgage O&M based on typical USGS costs
LA	Data inventory and state survey	1	USGS	30.758517	-91.395946	USGS-07373420	Mississippi R. at St. Francisville	TP, TN, NO3, OP	14	Yes	Stable	None	0	0	None	0	--
LA	Data inventory and state survey	1	USGS	30.690743	-91.736226	USGS-07381495	Atchafalaya R. at Melville, LA	TP, TN, NO3, OP	14	Yes	Stable	None	0	0	None	0	--
MN	Data inventory and state survey	1	MNPCA	45.226667	-96.354167	SDDENR_WQX-UPMINNZUMR14	Yellow Bank River nr Odessa, CSAH40	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	None	0	--
MN	State survey	2	Metropolitan Council Env. Services	45.188051	-93.390289	Unknown	Mississippi River at Anoka, 0.4mi ds of US169	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	Continuous nitrate sensor	10000	Estimated costs for nitrate sensor operation from MN were 5-10K, estimated at \$10K to make sure funding was adequate. This station is high priority for MN
MN	Data inventory and state survey	2	USGS	44.870243	-93.192443	USGS-05330920	Minnesota River at Fort Snelling State Park, MN	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	None	0	--

State	How site was identified	Site Priority	Monitoring organization	Latitude	Longitude	Site ID	Site name	Constituents	Current sample frequency	Streamgage (Yes or No)	Current Funding Stability	Sampling needs to meet baseline criteria	Estimated sampling costs to meet baseline criteria	Estimated gaging costs to meet baseline criteria	Other State requested monitoring	Estimated cost for other State requested monitoring	Notes
MN	State survey	1	Metropolitan Council Env. Services	45.056654	-92.802629	Unknown	St. Croix River at Stillwater, MN36	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	None	0	--
MN	Data inventory and state survey	1	USGS	44.745833	-92.847778	USGS-05331580	Mississippi River at Hastings, MN	Nutrients, Ions, Sediment	14/24/year	Yes	Stable	None	0	0	None	0	--
MN	Data inventory and state survey	1	MNPCA	44.312154	-92.003947	MNPCA-S004-384	Zumbro River at Kellogg, US61	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	Continuous nitrate sensor	10000	Estimated costs for nitrate sensor operation from MN were 5-10K, estimated at \$10K to make sure funding was adequate. This station is high priority for MN
MN	Data inventory and state survey	1	MNPCA	43.781374	-91.446472	MNPCA_BIO-S010-684	Root River nr Mound Prairie, CSAH25	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	Continuous nitrate sensor	10000	MDNR operates a gage at this location. Estimated costs for nitrate sensor operation from MN were 5-10K, estimated at \$10K to make sure funding was adequate. This station is lower priority for MN
MN	Data inventory and state survey	1	USGS	46.620792	-94.98513	USGS-05476000	West Fork Des Moines River at Jackson, River St	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	Continuous nitrate sensor	10000	Estimated costs for nitrate sensor operation from MN were 5-10K, estimated at \$10K to make sure funding was adequate. This station is lower priority for MN
MN	State Survey	Proposed by State	Metropolitan Council Env. Services	44.6927446	-93.641866	Unknown	Minnesota River nr Jordan, MN	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	Continuous nitrate sensor	10000	Estimated costs for nitrate sensor operation from MN were 5-10K, estimated at \$10K to make sure funding was adequate. This station is lower priority for MN
MN	State Survey	Proposed by State	Metropolitan Council Env. Services	44.611723	-92.610192	Unknown	Mississippi River L&D #3 nr Red Wing, Lock and Dam Rd	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	Continuous nitrate sensor	10000	Estimated costs for nitrate sensor operation from MN were 5-10K, estimated at \$10K to make sure funding was adequate. This station is lower priority for MN
MN	State Survey	Proposed by State	Metropolitan Council Env. Services	44.56449	-92.731703	Unknown	Cannon River at Welch, MN	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	Continuous nitrate sensor	10000	Estimated costs for nitrate sensor operation from MN were 5-10K, estimated at \$10K to make sure funding was adequate. This station is lower priority for MN
MN	State Survey	Proposed by State	MNPCA	43.6371842	-92.974664	Unknown	Cedar River nr Austin, MN	total phosphorus; dissolved orthophosphate; nitrate + nitrite nitrogen; total Kjeldahl nitrogen	25-35/year	Yes	Stable	None	0	0	Continuous nitrate sensor	10000	Estimated costs for nitrate sensor operation from MN were 5-10K, estimated at \$10K to make sure funding was adequate. This station is lower priority for MN
MO	Data inventory and state survey	1	USGS	39.75325	-94.856833	USGS-06818000	Missouri River at St. Joseph	Nutrients, Ions/Trace	12/year	Yes	Stable	None	0	0	None	0	--
MO	Data inventory and state survey	2	USGS	39.640028	-93.273694	USGS-06902000	Grand River near Sumner	Nutrients, Ions/Trace	9/year	Yes	Stable	3/year	7147	0	None	0	--
MO	Data inventory and state survey	1	USGS	39.17945	-94.184391	USGS-06894100	Missouri River at Sibley	Nutrients, Ions/Trace	9/year	Yes	Unknown	3/year	7147	0	None	0	--
MO	Data inventory and state survey	1	USGS	38.055861	-94.145417	USGS-06918070	Osage River above Schell City	Nutrients, Ions/Trace	6/year	Yes	Stable	6/year	14294	0	None	64323	--
MO	State survey	1	USGS	37.18	-94.3	USGS-07185764	Spring River above Carthage	Nutrients, Ions/Trace	9/year	Yes	Stable	3/year	7147	0	None	0	--
MO	State survey	1	USGS	36.81	-93.46	USGS-07052500	James River at Galena	Nutrients, Ions/Trace	9/year	Yes	Stable	3/year	7147	0	None	0	--
MO	State survey	2	USGS	36.623028	-92.248139	USGS-07057500	North Fork River near Tecumseh	Nutrients, Ions/Trace	6/year	Yes	Unknown	6/year	14294	0	None	0	--
MO	Data inventory and state survey	2	USGS	38.421444	-92.20825	USGS-06926510	Osage River below St. Thomas	Nutrients, Ions/Trace	6/year	Yes	Stable	6/year	14294	0	None	0	--

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MO	Data inventory and state survey	1	USGS	36.622003	-90.847622	USGS-07068000	Current River at Doniphan	Nutrients, Ions/Trace	9/year	Yes	Stable	3/year	7147	0	None	0	--
MO	Data inventory and state survey	1	USGS	38.709806	-91.4385	USGS-06934500	Missouri River at Hermann	Nutrients, Ions, Sediment	14/year	Yes	Stable	None	0	0	None	0	--
MO	State survey	1	USGS	39.01	-90.98	USGS-05514500	Cuivre River near Troy	Nutrients, Ions/Trace	6/year	Yes	Unknown	6/year	14294	0	None	0	--
MO	Data inventory and state survey	1	USGS	38.462832	-90.414842	USGS-07019280	Meramec River at Paulina Hills	Nutrients, Ions/Trace	9/year	No	Stable	3/year	7147	0	None	0	--
MS	Data inventory and state survey	1	USGS	32.444167	-90.914167	USGS-07288955	Yazoo River below Steele Bayou near Long Lake, MS	TP,DP,TN,NO3	14	Yes	Stable	None	0	0	None	0	USGS NWQN site
MS	Data inventory and state survey	1	USGS	32.339722	-90.9125	USGS-322023090544500	Mississippi River at Vicksburg	TP,DP,TN,NO3	14	Yes	Stable	None	0	0	None	0	USGS NWQN site
MS	Data inventory	1	USGS	32.347778	-90.696944	USGS-07290000	BIG BLACK RIVER NR BOVINA, MS	TP,TN,NO3	11	Yes	Not active	Monthly for all parameters	21600	0	0	0	MS did not respond to this query; Search of USGS NWIS indicates no current sampling, estimated costs based on typical NWQN discrete sampling/analysis costs of 1800/ grab sample
MS	Data inventory	1	MSWQ	32.018	-90.877194	21MSWQ_WQX-07290650	BAYOU PIERRE NR WILLOWS, MS	TP,TN,NO3	11	Yes	Unsure	Monthly for all parameters	21600	0	0	0	MS did not respond to this query; Search of USGS NWIS indicates no current sampling, estimated costs based on typical NWQN discrete sampling/analysis costs of 1800/ grab sample
OH	State survey	1	Ohio EPA	39.2161	-84.7035		SWDO Great Miami River at Miamitown @ Harrison Road 15.49 3274615 H11W20	TP,TN,NO3, OP	4	No	Stable	8/year	4400	0	None	0	Additional sampling proposed to be done by Ohio EPA
OH	State survey	1	Ohio EPA	39.1717	-84.2986		SWDO Little Miami River at Milford @ Wooster Pike 13.07 3245500 M05P11	TP,TN,NO3, OP	100	Yes	Not stable	None	35000	0	OH request continued funding at existing frequency of 100/year	31000	Sampling contract expires June of 2021. USGS estimates \$35,000 for monthly sampling, an additional \$31,000 to increase sampling frequency to be comparable with other USGS sites in OH
OH	Data inventory and state survey	1	USGS and ORSANCO	38.64694	-82.86028	USGS-03216600	Ohio River at Greenup Dam near Greenup, KY	TP,TN,NO3, OP	12	Yes	Stable	None	0	0	None	0	--
OH	State survey	1	Heidelberg and Ohio EPA	39.6525	-81.862		SEDO Muskingum River at McConnellsville @ SR 37/78	TP,TN,NO3, OP	365	Yes	Stable	None	0	0	None	0	--
OH	State survey	2	Ohio EPA	40.2611	-81.6097		SEDO Tuscarawas River @ Newcomerstown @ River St.	TP,TN,NO3, OP	4	Yes	Stable	None	0	0	None	0	OEPA says this site is not a priority in OH
OH	Data inventory	1	USGS	40.619509	-80.589793	USGS-03109670	Ohio River at Mile 44.5 at Newell, WV	TN, TP	7	Yes	Stable	12/year	40000	0	None	31000	USGS estimates \$40,000 for monthly sampling at the Ohio River site, an additional \$31,000 to increase sampling frequency to be comparable with other USGS sites in OH
OH	Other state priority	Proposed by State	Ohio EPA	39.6445028	-84.289664	USGS-03271500	Great Miami River at Miamisburg OH	TP,TN,NO3, OP	365	Yes	Stable	See other State request	0	0	None	0	--
OH	State survey	1	Heidelberg and OEPA	39.2122893	-82.863785	USGS-03234500	Scioto River at Higby OH	TP,TN,NO3, OP	100	Yes	Stable	None	0	0	None	0	--
OH	Other state priority	Proposed by State	USGS	39.1370055	-84.237992	USGS-03247500	East Fork Little Miami River at Perintown OH	TP,TN,NO3, OP	100	Yes	Not stable	See other State request	0	0	Continued sampling of nutrients for load computation at 100/year	66000	Existing priority large river site for OH that lacks commitment for long-term funding

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OH	Other state priority	Proposed by State	USGS	39.3289619	-82.087644	USGS-03159500	Hocking River at Athens OH	TP,TN,NO3, OP	100	Yes	Not stable	See other State request	0	0	Continued sampling of nutrients for load computation at 100/year	66000	Existing priority large river site for OH that lacks commitment for long-term funding
OH	Other state priority	Proposed by State	USGS	41.036726	-80.536182	USGS-03099500	Mahoning River at Lowellville OH	TP,TN,NO3, OP	4	Yes	Stable	See other State request	0	0	Additional sampling and streamgaging is requested	64400	Priority large river site for OH
TN	State survey	1	TDECWR	36.14512	-86.89108	CUMBE174.5DA	TNW000001550	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	A nearby Cumberland River gage at Nashville or Ashland City might represent flows without the need for a new gage
TN	Data inventory and state survey	1	TDECWR	35.69444	-87.22082	DUCK113.9MY	TNW000001864	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	A nearby Duck River gage abv Williamsport might represent flows without the need for a new gage
TN	Data inventory	1	USGS	35.014236	-86.994657	ELK036.5GS	TNW000002166	TP, NO3	6/year	Yes	Stable	6/year	9318	0	None	0	Unsure of whether it is possible to gage this location (possible backwater)
TN	Data inventory and state survey	1	TDECWR	34.994014	-85.698327	TENNE416.5MI	TNW000006262	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	Unsure of whether it is possible to gage this location (possible backwater)
TN	State survey	2	TDECWR	35.32464	-84.82031	HIWAS013.4MY	TNW000002959	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	Unsure of whether it is possible to gage this location (possible backwater)
TN	State survey	2	TDECWR	35.92166	-84.43277	CLINC010.0RO	TNW000001264	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	Unsure of whether it is possible to gage this location (possible backwater)
TN	State survey	2	TDECWR	35.93194	-83.95416	TENNE643.3KN	TNW000006322	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	Unsure of whether it is possible to gage this location (possible backwater)
TN	State survey	1	TDECWR	36.0291	-89.3866	NFFDE005.3DY	TNW000004402	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	Unsure of whether it is possible to gage this location (possible backwater)
TN	State survey	1	TDECWR	35.60354	-89.82331	HATCH009.1TI	TNW000002854	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	Unsure of whether it is possible to gage this location (possible backwater)

State	How site was identified	Site Priority	Monitoring organization	Latitude	Longitude	Site ID	Site name	Constituents	Current sample frequency	Streamgage (Yes or No)	Current Funding Stability	Sampling needs to meet baseline criteria	Estimated sampling costs to meet baseline criteria	Estimated gaging costs to meet baseline criteria	Other State requested monitoring	Estimated cost for other State requested monitoring	Notes
TN	State survey	1	TDECWR	35.189717	-90.043519	WOLF000.7TI	TNW000006875	DO, pH, Conductivity, Temperature, NO3+NO2, Total Phosphorus, Ammonia, TKN, Calculated Total Nitrogen	4/year	No	Stable	8/year	12424	17000	None	0	Unsure of whether it is possible to gage this location (possible backwater)
WI	State identified priority	Proposed by State	N/A	44.3916322	-91.848771	USGS-05372000	Buffalo River near Tell, WI	None	None	No	Not established	12/year	15000	17000	None	0	Suggested by WIDNR, need new gage and sampling, costs estimated
WI	State survey	1	WDNR	43.024707	-91.17263	N/A	Mississippi R. at LD 9	TKN, NO2+3, NH3, TP, Ortho-P, TSS, Chl a	12/year	No	Stable	None	0	25000	None	0	Estimated costs to reestablish a gage at the McGregor, IA site to pair with this sampling, increased to \$25K because gaging may be more complicated at a large river site
WI	Data inventory and state survey	1	WIDNR	44.62828	-91.96882	WIDNR_WQX-473025	Chippewa R. at Durand	TKN, NO2+3, NH3, TP, Ortho-P, TSS, Chl a	12/year	Yes	Stable	None	0	0	None	0	--
WI	Data inventory and state survey	2	WIDNR	44.875278	-91.938056	WIDNR_WQX-173208	Red Cedar R. at Menomonie	TKN, NO2+3, NH3, TP, Ortho-P, TSS, Chl a	12/year	Yes	Stable	None	0	0	None	0	--
WI	Data inventory and state survey	1	WIDNR	43.198056	-90.443333	WIDNR_WQX-223282	Wisconsin R. at Muscoda	TKN, NO2+3, NH3, TP, Ortho-P, TSS, Chl a	12/year	Yes	Stable	None	0	0	None	0	--
WI	Data inventory and state survey	1	WIDNR	42.510227	-89.380115	WIDNR_WQX-233002	Pecatonica R. at Martintown	TKN, NO2+3, NH3, TP, Ortho-P, TSS, Chl a	12/year	Yes	Stable	None	0	0	None	0	--
WI	Data inventory and state survey	1	WIDNR	42.611847	-89.398476	WIDNR_WQX-233001	Sugar R. at Broadhead	TKN, NO2+3, NH3, TP, Ortho-P, TSS, Chl a	12/year	Yes	Stable	None	0	0	None	0	--
WI	Data inventory and state survey	1	WIDNR	42.609148	-89.070579	WIDNR_WQX-543280	Rock R. at Afton	TKN, NO2+3, NH3, TP, Ortho-P, TSS, Chl a	12/year	Yes	Stable	None	0	0	None	0	--
WI	Data Inventory	1	WIDNR	42.44861	-89.069725	WIDNR_WQX-543258	Unknown	TKN, NO2+3, NH3, TP, Ortho-P, TSS, Chl a	12/year	Yes	Stable	None	0	0	None	0	--