



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

June 9, 2022

MEMORANDUM

SUBJECT: Bipartisan Infrastructure Law: Gulf Hypoxia Program FY 22 Guidance for State Cooperative Agreements

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Assistant Administrator

A handwritten signature in black ink, appearing to be "Radhika Fox", written over a horizontal line.

TO: EPA Regional Water Division Directors
State Hypoxia Task Force Members

1. Introduction

On November 15, 2021, President Biden signed the Bipartisan Infrastructure Law (BIL, P.L. 117-58), also known as the “Infrastructure Investment and Jobs Act of 2021” (IIJA). The law’s investment in clean water is nothing short of transformational. It includes approximately \$50 billion to the U.S. Environmental Protection Agency (EPA), the single largest investment in clean water that the federal government has ever made.

Through the BIL, EPA will be able to invest in critically needed strategies to improve water quality in the Mississippi River/Atchafalaya River Basin (MARB) and the Gulf of Mexico (Gulf) and reduce the low oxygen (hypoxic), or “dead,” zone in the northern Gulf. Specifically, the BIL includes \$12 million per year for five years (\$60 million in total) for actions to support the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force’s (Hypoxia Task Force or HTF) Gulf Hypoxia Action Plan.

Nutrient loads from the MARB contribute to a hypoxic “dead” zone in the northern Gulf of Mexico that is one of the largest in the world. The HTF is a partnership that works collaboratively on reducing nutrient loads in the MARB and the Gulf’s hypoxic zone. While EPA has long supported the HTF, with general support for their water quality programs and small, intermittent grants, the BIL provides for dedicated, sustained funding for implementing the Gulf Hypoxia Action Plan.

The HTF is composed of five federal agencies,¹ 12 states² bordering the Mississippi and Ohio rivers, and the National Tribal Water Council on behalf of tribes. EPA and the State of Iowa serve as Co-Chairs of the HTF. Three multi-state sub-basin committees and a Land Grant University (LGU) consortium are key partners.

¹ National Oceanic and Atmospheric Administration, U.S. Army Corps of Engineers, U.S. Department of Agriculture, U.S. Department of Interior, and U.S. Environmental Protection Agency.

² Arkansas, Illinois, Indiana, Iowa, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Ohio, Tennessee, and Wisconsin.

Through this BIL investment, EPA will build on its partnership with the states, tribes, sub-basin committees, and the LGU consortium to make significant progress toward reducing nutrient loads that will improve water quality in the Gulf and throughout the MARB. The BIL Gulf Hypoxia Program (GHP) will enable the states to provide tangible benefits to communities and ecosystems across the region that depend on clean water. Through improved water quality, communities across the MARB can benefit from safer drinking water, protected fisheries, and a more stable economy. The tourism industry alone loses close to \$1 billion each year from reduced fishing and boating activities due to degraded water quality from nutrient pollution, which can cause a significant strain on local communities. Urban and rural partnerships will provide farmers and city-dwellers alike with a more resilient landscape and improved local water quality as they have the support they need to implement watershed plans and expand business plans to include conservation systems.

EPA will award and administer the BIL GHP funds appropriated to the Environmental Programs and Management (EPM) account in the BIL. This memorandum provides information and guidelines on how the GHP will distribute funds as cooperative agreements³ to the 12 HTF member states. This implementation memorandum will apply to FY 22 BIL appropriations and may be supplemented or replaced by guidance for FYs 23-26. This memorandum is organized in the following manner:

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BIL GHP amounts per recipient are provided in Table 1. The total allotment for states will comprise 96.5% of the total BIL funding in FYs 22 and 26, and 74.8% in FYs 23, 24, and 25.

Table 1. BIL GHP Funding Levels FY 22–26

	FY 22 \$	FY 23 \$	FY 24 \$	FY 25 \$	FY 26 \$
Total State Base	11,580,000	8,980,000	8,980,000	8,980,000	11,580,000
Each of 12 States	965,000	748,333	748,333	748,333	965,000
Eligible Tribes ⁴	0	2,000,000	2,000,000	2,000,000	0
Sub-Basin Committees	0	400,000	400,000	400,000	0
LGU Consortium	0	200,000	200,000	200,000	0
EPA 3% Set Aside	360,000	360,000	360,000	360,000	360,000

³ GHP grants and cooperative agreements are awarded under Federal Assistance Listing 66.485.

⁴ Eligible tribes are the 21 federally recognized Indian tribes that have Indian country in the MARB parts of the 12 HTF state area with current CWA 106, 319, and/or GAP program grants.

	FY 22 \$	FY 23 \$	FY 24 \$	FY 25 \$	FY 26 \$
EPA 0.5% Inspector General Set Aside	60,000	60,000	60,000	60,000	60,000

EPA will issue separate guidance memoranda for eligible tribes, sub-basin committees, and the LGU consortium.

2. HTF and BIL GHP Background

In 1995, EPA and the State of Louisiana received a petition under Section 319(g) of the Clean Water Act (CWA) asking for an interstate management conference on the hypoxic zone. In response, EPA convened the Principals of the Hypoxia Interagency Group in 1996 which agreed to make hypoxia a priority, formed an Interim Working Group on Hypoxia, and asked the White House Committee on Environment and Natural Resources (CENR) to address the questions concerning the Gulf of Mexico hypoxia zone. The current HTF was chartered in 1998,⁵ setting forth its mission, roles and responsibilities, and members.⁶

In the mid-2000s, the HTF undertook a science reassessment,⁷ and published the 2008 Gulf Hypoxia Action Plan, which established an ambitious goal (revised in 2015) to limit the dead zone to no more than 5,000 square kilometers by 2035, using a dual nitrogen and phosphorus reduction strategy. For perspective, the current 5-year average of 2017-2021 is approximately 14,000 square kilometers. To reach the goal, in 2007 the EPA Science Advisory Board⁸ recommended a 45 percent reduction in nitrogen and phosphorus loads. This was confirmed by Fennel and Laurent 2018.⁹ In 2015, the HTF adopted an interim goal to reduce nutrient loading of nitrogen and phosphorous by 20 percent by 2025. The BIL will support strong progress toward these goals.

The Gulf Hypoxia Action Plan¹⁰ goals are:

1. **Coastal Goal** (2008, updated 2015¹¹): We strive to reduce the five-year running average areal extent of the Gulf of Mexico hypoxic zone to less than 5,000 square kilometers by the year 2035. Reaching this final goal will require a significant commitment of resources to greatly accelerate implementation of actions to reduce nutrient loading from all major sources of nitrogen and phosphorus in the MARB. An Interim Target of a 20 percent reduction of nitrogen and phosphorus loading by 2025 is a milestone for immediate planning and implementation actions, while continuing to develop future action strategies to achieve the final goal through 2035. Federal agencies, states, tribes, and other partners will work

⁵ <https://www.epa.gov/ms-htf/charter-mississippi-rivergulf-mexico-watershed-nutrient-task-force>.

⁶ With public awareness around harmful algal blooms (HABs) growing in the United States, Congress recognized the severity of threats that came as a result of hypoxic events and authorized the Harmful Algal Bloom and Hypoxia Research and Control Act in 1998 (HABHRCA 1998; embedded in Public Law 105-383). This led to the formation of multiple research programs on HABs and hypoxia. HABHRCA Section 604(b) specifically called for the submission of a “plan for reducing, controlling, and mitigating Gulf hypoxia by March 31, 2000”, and as a result, the White House tasked the HTF with developing an action plan. The CENR and the White House National Science and Technology Council (NSTC) published the Integrated Assessment of Hypoxia in the Northern Gulf of Mexico in 2000 to set the scientific basis for the HTF’s 2001 Gulf Hypoxia Action Plan that first established a nitrogen reduction-focused goal.

⁷ <https://www.epa.gov/ms-htf/history-hypoxia-task-force>.

⁸ <https://www.epa.gov/ms-htf/hypoxia-northern-gulf-mexico-update-epa-science-advisory-board>.

⁹ Fennel, K. and Laurent, A. 2018. N and P as ultimate and proximate limiting nutrients in the northern Gulf of Mexico: implications for hypoxia reduction strategies. *Biogeosciences* 15:3121–3131. <https://doi.org/10.5194/bg-15-3121-2018>.

¹⁰ <https://www.epa.gov/ms-htf/gulf-hypoxia-action-plan-2008>.

¹¹ <https://www.epa.gov/ms-htf/hypoxia-task-force-new-goal-framework>.

collaboratively to plan and implement specific, practical, and cost-effective actions to achieve both the Interim Target and the updated Coastal Goal.

2. **Within Basin Goal** (2008): To restore and protect the waters of the 31 states and tribal lands within the MARB through implementation of nutrient and sediment reduction actions to protect public health and aquatic life as well as reduce negative impacts of water pollution on the Gulf of Mexico.
3. **Quality of Life Goal** (2008): To improve the communities and economic conditions across the MARB, in particular the agriculture, fisheries and recreation sectors, through improved public and private land management and a cooperative, incentive-based approach.

To date, HTF states have used base program grants from EPA to support their work on the Gulf Hypoxia Action Plan. EPA has also provided modest funding to the HTF states specifically targeted toward implementing the Gulf Hypoxia Action Plan. In 2019–2020 EPA provided \$200,000 grants to each of the 12 states.

3. BIL GHP Priorities

BIL funds will significantly expand and enhance capacity to reach the goals of the HTF’s Gulf Hypoxia Action Plan. Consistent with the goals of the Gulf Hypoxia Action Plan and the BIL direction, EPA will focus on the following priorities as it undertakes program implementation:

- **Support states as they scale up implementation of their nutrient reduction strategies.** BIL funds shall be used by states to scale up implementation of nutrient reduction strategies to advance bold, systemic actions that accelerate nutrient load reductions in the MARB and to the Gulf. EPA expects states to develop workplans that prioritize those actions most effective at reducing nutrient loads, using both proven and innovative approaches, that are now possible with BIL funding for the Gulf Hypoxia Action Plan.
- **Support tribes in leveraging existing nutrient reduction strategies or developing new ones to advance HTF goals.** EPA will convene a tribal consultation in 2022 to guide how BIL funds will support tribes.
- **Advance multi-state collaboration through support for multi-state organizations that will help to achieve the goals of the Gulf Hypoxia Action Plan.** Multi-state organizational support will enable coordination of regional, state, and tribal stakeholders not represented on the HTF, including additional basin states, agencies, and interested parties and organizations; consolidate and improve access to data collected by state, tribal, and federal agencies; and help to present regional progress towards the Action Plan goals. The sub-basin committees are committed through the Gulf Hypoxia Action Plan to support states and tribes in the respective MARB regions as they implement comprehensive nutrient reduction strategies across state and tribal boundaries.
- **Document and communicate progress towards HTF goals at the Basin scale.** BIL GHP resources will provide the HTF with long-needed support to document and communicate progress towards HTF goals at a basin scale to the public. The HTF, with support and facilitation by the LGU consortium, will evaluate and adopt new methodologies to document nutrient reduction progress. The consortium’s support will enable the HTF to better account for the progress made by agricultural producers in implementing conservation practices without federal and state financial assistance, which are often omitted from current practice inventories.
- **Advance research in support of nutrient reduction strategies.** The BIL GHP funds will primarily support scale up of nutrient reduction strategies. In doing so, states, tribes, sub-basin

committees and the LGU consortium will identify new challenges and research questions, which they will present to federal partners and foundations for their support in pursuing solutions.

- **Leverage resources and coordinate with other federal, foundation, state, and tribal programs.** No match is required for the funding authorized by the BIL GHP, and these funds can be used to leverage resources in the many federal agency and foundation grant programs operating in the MARB that require matching funds. For example, there are philanthropic foundations that have made significant investments in supporting nutrient reduction programs and projects in the MARB. With these BIL funds, the entities receiving GHP resources can leverage other resources and scale up actions that support the Gulf Hypoxia Action Plan.

4. BIL GHP Cross-Cutting Priorities

Consistent with EPA’s implementation of the BIL, EPA will administer BIL GHP funding in a manner to achieve the following agency-wide priorities:

- **Ensure that GHP benefits are realized by disadvantaged communities.** EPA recognizes that negative environmental impacts – whether in rural, suburban, or urban areas – disproportionately impact communities that are low-income, predominately of color, indigenous, linguistically isolated, and/or impacted by other stressors. Work funded under the BIL GHP should include a discussion of how activities will improve water quality in areas that both advance Gulf Hypoxia Action Plan goals and benefit disadvantaged communities. Example activities can include expanding the adaptive capacity of disadvantaged communities and/or deepening engagement or representation of disadvantaged communities in development of nutrient reduction strategies and watershed-based planning efforts.
- **Advance water quality actions that have climate adaptation or mitigation co-benefits.** More frequent and intense storms and increased temperatures associated with climate change are anticipated to cause a range of impacts on nutrient loads and the formation and duration of the hypoxic zone, creating challenges for ecosystem and waterbody health.¹² Increasing the capacity of the landscape to store carbon, attenuate floodwaters, retain nutrients, and withstand the impacts of extreme events can help to reduce hypoxia and harmful algal blooms (HAB), mitigate impacts on coastal ecosystems and communities, and build capacity for carbon sequestration across the MARB and other watersheds.¹³

¹² Laurent, A., K. Fennel, D.S. Ko, and J. Lehrter. 2018. Climate change projected to exacerbate impacts of coastal eutrophication in the northern Gulf of Mexico. *Journal of Geophysical Research: Oceans* 123:3408–3426. <https://doi.org/10.1002/2017JC013583>; Lehrter, J.C., D.S. Ko, L.L. Lowe, and B. Penta. 2017. Predicted Effects of Climate Change on Northern Gulf of Mexico Hypoxia. In *Modeling Coastal Hypoxia*, D. Justic, K. Rose, R. Hetland, and K. Fennel, eds. Springer, Cham. https://doi.org/10.1007/978-3-319-54571-4_8; Lu, C., J. Zhang, H. Tian, W.G. Crumpton, M.J. Helmers, W.-J. Cai, C.S. Hopkinson, and S.E. Lohrenz. 2020. Increased extreme precipitation challenges nitrogen load management to the Gulf of Mexico. *Communications Earth & Environment* 1, 21. <https://doi.org/10.1038/s43247-020-00020-7>; Rabalais, N.N. and R.E. Turner. 2019. Gulf of Mexico hypoxia: Past, present, and future. *Limnology and Oceanography Bulletin* 28(4):117–124. <https://aslopubs.onlinelibrary.wiley.com/doi/full/10.1002/lob.10351>.

¹³ Hatfield, J. L., R.M. Cruse, and M.D. Tomer. 2013. Convergence of agricultural intensification and climate change in the Midwestern United States: implications for soil and water conservation. *Marine and Freshwater Research* 64:423–435. <https://doi.org/10.1071/MF12164>; McLellan, E., D. Robertson, K. Schilling, M. Tomer, J. Kostel, D. Smith, and K. King. 2015. Reducing Nitrogen Export from the Corn Belt to the Gulf of Mexico: Agricultural Strategies for Remediating Hypoxia. *Journal of the American Water Resources Association* 51(1):263–289. <https://doi.org/10.1111/jawr.12246>; Porter, P. A., R.B. Mitchell, and K.J. Moore. 2015. Reducing hypoxia in the Gulf of Mexico: Reimagining a more resilient agricultural landscape in the Mississippi River Watershed. *Journal of Soil and Water Conservation* 70(3):63A–68A. <https://doi.org/10.2489/jswc.70.3.63A>; Wedding, L.M., M. Moritsch, G. Verutes,

- **Fully enforce civil rights.** Under Title VI of the Civil Rights Act, EPA has a responsibility to ensure that federal funds are not being used to subsidize discrimination based on race, color, or national origin. This prohibition against discrimination under Title VI has been a statutory mandate since 1964, and EPA has had Title VI regulations since 1973. EPA’s nondiscrimination regulations prohibit recipients of EPA financial assistance from taking actions in their programs or activities that are intentionally discriminatory and/or have a discriminatory effect based on race, color, national origin (including limited English proficiency), age, disability, or sex. EPA intends to carefully evaluate the implementation of GHP funding under the BIL to ensure compliance with civil rights laws. EPA will provide interested states with technical assistance and training to support their compliance with Title VI obligations.
- **Support the American worker and build a strong conservation workforce.** The BIL is not only an opportunity to reinvest in America’s communities and ecosystems, but also an opportunity to invest in the American workers who support them. BIL investments will create jobs in construction, operations, and maintenance, and other family-supporting careers, including building a strong restoration and conservation workforce. Consistent with Executive Order 14052, Implementation of the Infrastructure Investment and Jobs Act, as states implement GHP workplans they should enforce long-standing Davis-Bacon related act prevailing wage requirements across projects that receive GHP resources, as required under federal law; encourage pre-apprenticeship, registered apprenticeship, and youth training programs that open pathways to employment; and encourage any state GHP funded subgrantees or contractors to support safe, equitable, and fair labor practices, for example by considering, among other things and where applicable and consistent with state and local law, adoption of collective bargaining agreements, local hiring provisions, project labor agreements, and community benefits agreements.
- **Support domestic manufacturing.** Acting in a bipartisan fashion, Congress passed the Build America Buy America (BABA) Act in 2021, concurrently with the BIL. Congress established this domestic preference program to create long-term opportunities for domestic manufacturers and manufacturing jobs and build resilient domestic supply chains for a wide range of products used in construction and infrastructure. All products used in the construction of infrastructure that is permanent, fixed, and serves a public function are covered by this new law. EPA will work with the HTF states to determine the types of projects that may be covered by this new law and will support compliance or relevant waiver provisions where necessary. Additional implementation procedures for the GHP will be forthcoming, but for now, waiver options are available that are pursuant to the public interest waivers section in the Office of Management and Budget’s Memorandum *Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure*.¹⁴

4.1 Prioritizing and Defining Disadvantaged Communities

As they implement BIL GHP funding, EPA encourages states to prioritize funding in areas, consistent with state nutrient reduction strategies, that benefit disadvantaged communities. In addition to the 10 percent tribal set aside, EPA will work with states to target at least 30 percent of state projects to reduce nutrient pollution invest in watersheds that will directly benefit downstream disadvantaged communities, and where possible seek to build the capacity of historically underserved communities to participate in nutrient pollution reduction activities. In recent EPA listening sessions regarding equity, states and tribes

K. Arkema, E. Hartge, J. Reiblich, J. Douglass, S. Taylor, A.L. Strong. 2021. Incorporating blue carbon sequestration benefits into sub-national climate policies. *Global Environmental Change*. Volume 69. 102206. ISSN 0959-3780. <https://doi.org/10.1016/j.gloenvcha.2020.102206>.

¹⁴ <https://www.whitehouse.gov/wp-content/uploads/2022/04/M-22-11.pdf>.

have identified the need to build capacity in disadvantaged communities as a key foundation to equitable implementation of water programs.

Several efforts are under way at EPA and across the federal government to define and identify disadvantaged communities. EPA looks forward to the release of the final version of the Climate and Economic Justice Screening Tool (CEJST)¹⁵ that will provide a consistent definition of disadvantaged communities for purposes of Justice40.

EPA has created agency specific Justice40 Interim Disadvantaged Communities Indices that HTF states should use when implementing the GHP. The Justice40 Interim Disadvantaged Communities Indices are a new five-factor demographic index that was developed using the EJScreen¹⁶ methodology. EPA plans to host this information on a public webpage and incorporate the Justice40 Interim Disadvantaged Communities Indices into the public version of EJScreen during the next update. This next tool update is tentatively scheduled to take place in summer of 2022. The Justice40 Interim Disadvantaged Communities Indices will not replace the current indices in EJScreen, rather, both the indices (already in EJ Screen) and the Justice40 Interim Disadvantaged Communities Indices will be incorporated in EJScreen so they are clearly distinguishable and available for analysis and comparison.

The Justice40 Interim Disadvantaged Communities Indices are:

- Percent low-income
- Percent linguistically isolated
- Percent less than high school education
- Percent unemployed
- Low life expectancy

Figure 1 shows areas above the 80th, 90th, and 95th percentiles of these Justice40 Interim Disadvantaged Communities Indices when compared to the state or the nation. These areas are then overlaid with the HTF states' 2016 priority watersheds (EPA recognizes that these watersheds are potentially out of date in 2022). The map in Figure 1 is a first step to show co-location of GHP nutrient reduction priority areas with disadvantaged community priority areas.

EPA will support HTF states in their use of both methodologies for analysis as states are developing their GHP workplans. HTF states will be required to provide reporting on grant outcomes annually, see Section 7, number 12.

Consistent with Office of Management and Budget's (OMB) *Interim Implementation Guidance for the Justice40 Initiative*, this GHP funding guidance offers flexibility to HTF states in defining priorities to support disadvantaged communities. HTF states may consider appropriate data, indices, and screening tools to determine the best uses of GHP funding to support implementation of state nutrient reduction strategies and the realization of these benefits in disadvantaged communities. If an HTF state prefers to use a different definition of disadvantaged communities (e.g., a state already has an established definition or the screening tools listed above do not reflect any disadvantaged communities in state

¹⁵ In February 2022, the White House Council on Environmental Quality released a beta version of CEJST help agencies identify disadvantaged communities (<https://screeningtool.geoplatform.gov/en/#3/33.47/-97.5>).

¹⁶ EJScreen (<https://www.epa.gov/ejscreen>) is EPA's EJ mapping and screening tool with a nationally consistent dataset and approach for combining environmental and demographic indicators. EJScreen currently includes 12 environmental indicators, 7 demographic indicators, and 12 EJ indexes. There are five Justice40 Interim Disadvantaged Communities Indices that will soon be added to EJScreen.

nutrient reduction strategy priority areas), EPA will support HTF states in developing an approved alternative.

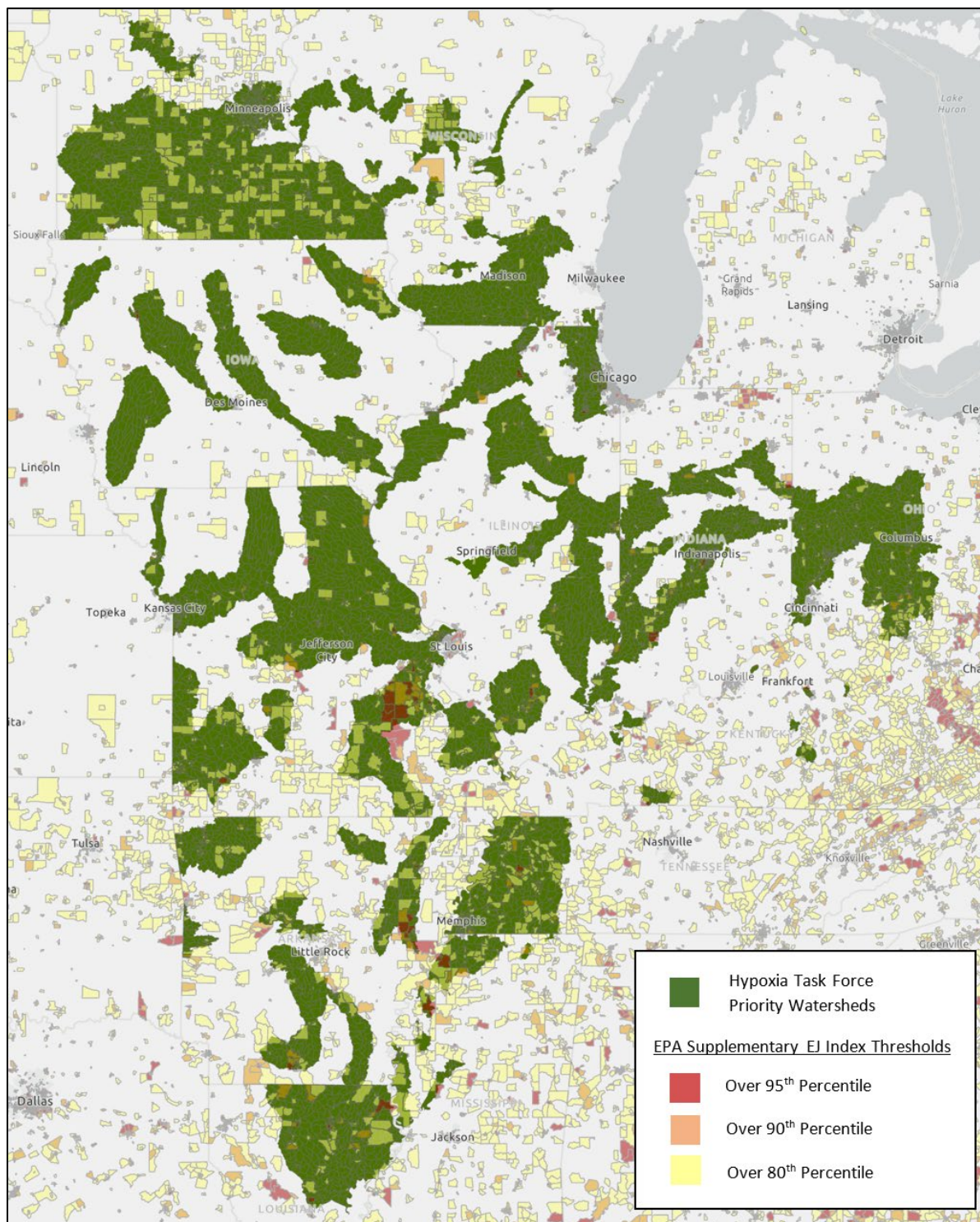


Figure 1. Draft Overlay of the Extent of the 2016 HTF State Priority Watersheds and Justice40 EPA Interim Disadvantaged Communities Indices.

4.2 Building Resilience and Climate Mitigation into GHP Workplans

EPA is committed to taking necessary actions to anticipate, prepare for, adapt to, and recover from the impacts of climate change, while advancing the climate resilience of tribes, states, territories, and communities across the nation. States should consider how their water programs (and planning supporting such programs) anticipate and prepare for climate-related impacts and disasters (e.g., droughts, floods, sea level rise and storm surge, changing salinity, extreme heat, wildfires); identify water quality actions that can also yield climate adaptation or mitigation co-benefits (e.g., nature-based solutions for natural hazard mitigation); and ensure that other water program investments increase resilience to climate change.

The Federal Flood Risk Management Standard (FFRMS) is unlikely to apply to ecosystem restoration, conservation systems, best management practices (BMPs), etc. However, if a workplan includes a hard infrastructure investment that constitutes construction/significant improvement, the state would need to evaluate and implement their project in accordance with the FFRMS. Further implementation procedures will be forthcoming regarding the FFRMS.

4.3 Implementation of Equity and Climate Priorities in GHP Workplans

Environmental justice (EJ) and addressing climate change are key EPA priorities reflected in the *FY 2022–2026 EPA Strategic Plan*,¹⁷ which provides the framework for EPA to integrate EJ considerations into its programs, plans, and actions, and to ensure equitable and fair access to the benefits from environmental programs for all individuals in both urban and rural communities. Consistent with Executive Order 14008 Section 223, *Tackling the Climate Crisis at Home and Abroad*,¹⁸ the Justice40 Initiative, and OMB’s *Interim Implementation Guidance for the Justice40 Initiative*,¹⁹ the Strategic Plan establishes goals to reduce emissions that cause climate change and to accelerate resilience and adaptation to climate change impacts; promotes EJ; and protects civil rights at the federal, state, and local levels.

As the BIL GHP contributes to these goals, EPA encourages GHP funding to be targeted towards equity and climate resilience where possible and appropriate.

In FY 22, EPA will issue guidance to state water quality programs for funding increases they will receive under the BIL for water quality management planning under CWA Section 604(b). In that guidance, EPA will recommend that states complete a comprehensive assessment of how their water quality programs support disadvantaged communities and climate resilience. EPA recommends that HTF states use these assessments to develop and implement a plan for supporting disadvantaged communities and climate adaptation or mitigation activities across their CWA grants and BIL funding in FYs 23–26. Thus, EPA recommends that the HTF states use these assessments to identify actions they can take with their GHP funding to support disadvantaged communities and climate resilience efforts. In advance of the availability of these assessments, **states should identify and prioritize eligible activities in GHP workplans that will accrue benefits to disadvantaged communities and advance climate goals.**

Examples of actions that further EJ and climate goals and that can be integrated into BIL GHP state workplans through the strategic outcomes described in Section 6 include:

¹⁷ <https://www.epa.gov/planandbudget/strategicplan>.

¹⁸ <https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad>.

¹⁹ Federal agencies are required to consider how certain investments might be made toward a goal that 40 percent of the overall benefits of such investments flow to disadvantaged communities (<https://www.whitehouse.gov/wp-content/uploads/2021/07/M-21-28.pdf>).

- Reducing greenhouse gas (GHG) emissions and/or enhancing carbon sequestration. (Strategic outcomes 2, 3)
- Creating community resilience plans that specifically include addressing needs of disadvantaged communities. (Strategic outcome 1)
- Increasing technical assistance and community engagement with disadvantaged communities. (Strategic outcome 1)
- Increasing flood mitigation benefits (e.g., green stormwater infrastructure, floodplain, and wetland restoration). (Strategic outcomes 2, 3)

5. BIL GHP Requirements

Tracking of funds. BIL GHP funds are required to be awarded and tracked separately from other EPA State and Tribal Assistance Grants (STAG) or EPM funds, such as those from CWA 319, 106, Gulf of Mexico Division Farmer to Farmer grant programs, or those in a state Performance Partnership Grant. States may use BIL GHP cooperative agreement funds to provide subawards or contracts, grants, or interagency agreements, but the funds must be tracked separately from other EPA STAG or EPM funds, either through a separate task or a phased approach. EPA will provide further guidance on these processes and requirements.

Match. There are no match requirements in the BIL applicable to the GHP funds; states must justify any sub-grantee match requirements.

Cooperative agreements. EPA will award most of the BIL funding in equal portions to states through cooperative agreements. EPA also intends to make modest awards to eligible tribes, sub-basin committees, and an LGU consortium. As noted above, EPA will issue separate memoranda for those awards.

Cooperative agreement timelines are to be no more than five years. States should plan for multiple-phased cooperative agreements throughout the five years of this program. For example, the first cooperative agreement may cover year one or years one and two, and a second cooperative agreement may cover years three to five. The estimated project period for cooperative agreements will begin in the fourth quarter of 2022.

Non-competitive awards. EPA will make awards on a non-competitive basis, which will allow for close collaboration between EPA and individual states to advance the Gulf Hypoxia Action Plan goals. State recipient agencies are to be determined by the states; they must be a state-funded entity or state agency.

Authority. The BIL statutory language is the authority for the state cooperative agreements and directs that equal funds shall be provided annually to the 12 HTF member states. Appropriations are provided for annual funding for FYs 22–26.

Project areas. The BIL authorizes funds to be used to support implementation of the Gulf Hypoxia Action Plan; therefore, project funding must be expended in the MARB²⁰ part of HTF member states and tribal lands. *BIL GHP-funded state staff must support Gulf Hypoxia Action Plan implementation.* These BIL GHP-funded staff can also work on broader state nutrient reduction projects or projects in other geographic areas, provided other funds are used to support their work in areas of the state outside

²⁰ The MARB is defined as HUC Codes 05, 06, 07, 08, 10, and 11 (<https://water.usgs.gov/GIS/huc.html>).

of the MARB. States should note the percentage of staff time in the budget worksheet (see Appendix 1, Documents 2 and 5) that will be used to support the Gulf Hypoxia Action Plan.

6. BIL GHP Eligible Activities for State Workplans

The 12 HTF states must submit a workplan for the desired length of the cooperative agreement to receive their allotment on an annual basis.²¹ EPA expects states to use BIL funds to scale up implementation of nutrient reduction strategies to advance bold, systemic actions that accelerate nutrient load reductions in the MARB and to the Gulf of Mexico. EPA expects states to develop workplans that prioritize those actions most effective at reducing nutrient loads, using both proven and innovative approaches, that are now possible with BIL funding for the Gulf Hypoxia Action Plan.

Workplans must support the five strategic outcomes described below. Sub-bullets are *examples* of activities that can be included in the workplan to support these strategic outcomes. Proposed workplan activities should reference the portion of an existing or updated State Nutrient Reduction Strategy that these activities support (see item 9 in Section 7, BIL GHP Documentation and Reporting):

1. **Support staff to implement the workplan.** States should strategically deploy staff to accomplish the goals of the GHP, convene public meetings, engage with tribes, and support state, regional and basin-wide progress tracking. Staff can undertake a range of activities, such as:
 - Set priorities.
 - Convene and engage partners and stakeholders in priority MARB watersheds, including county and local governments, farmers and ranchers, and tribes.
 - Participate in multi-state collaborations and agriculture-sector led convenings for coordination and knowledge sharing.
 - Lead and facilitate actions to reduce nutrient loads.
 - Advance Gulf Hypoxia Action Plan goals in disadvantaged communities and on tribal lands.
2. **Reduce nonpoint source nutrient pollution as articulated in state strategies.** States should utilize BIL funding for a range of projects, partnerships, and materials that concretely advance nonpoint source nutrient reduction goals articulated in their state strategies. States have the flexibility to invest in a range of interventions, such as:
 - Accelerate technology adoption via strategic pay-for-success/outcome approaches and/or incentives.
 - Procure agricultural equipment (e.g., cover crop seeders) that can be shareable across thousands of acres.
 - Work with the agricultural sector to deploy farmer-led or supported efforts to document conservation advances through private investments.
 - Engage in innovative agriculture-water sector collaborations for water quality.
 - Deploy remote-sensing tools to efficiently identify critical source areas across HUC12 watersheds.
 - Enable partner-led trainings, support farmer-led education and demonstrations, and employ new outreach approaches to increase participation of absentee landowners.

²¹ EPA will issue separate memoranda describing workplans that eligible tribes, sub-basin committees, and the LGU consortium will need to submit for their allotments.

State workplans and actions should support measures for documenting, validating, and verifying conservation practice systems to quantify expected nutrient reduction, including practices with climate resilience benefits, such as carbon sequestration and flood and drought mitigation.

See Appendix 2 for additional examples of state approaches for reducing nonpoint sources of nutrient loads.

- 3. Prioritize and target watersheds with the greatest opportunities for nutrient reductions.** States should focus project implementation in those high-impact watersheds and critical areas where the greatest nutrient reductions can be achieved. For example, states can:
 - Identify major sources of nutrients and prioritize watersheds for implementation of high-impact load reduction actions.
 - Assess and prioritize nutrient reduction actions that maximize benefits to disadvantaged communities and tribes and strengthen the adaptive capacity of communities and ecosystems to climate change.
 - Develop milestones/interim goals (state- or watershed-wide) to measure progress.
- 4. Collaborate across state boundaries with HTF partners.** States should leverage BIL funds to engage with HTF members, partners, and stakeholders to assess, track, report, and communicate progress to the HTF member states and the public at the state, regional, and MARB scales. States should coordinate, consolidate, and improve access to data collected by state, tribal, and federal agencies, and present basin-wide and sub-basin progress towards Gulf Hypoxia Action Plan goals.
- 5. Use state-level water quality programs and actions to better support nutrient reductions.** Activities could include:
 - Conduct discrete and continuous real-time water quality monitoring, including in the ways described in Appendix 3.
 - Expand use of numeric nutrient criteria and water quality standards, including:
 - Develop, revise, and review numeric nutrient criteria and water quality standards.
 - Conduct water quality monitoring to support state development of numeric nutrient criteria.
 - Apply EPA’s national statistical models for identifying numeric nutrient criteria for lakes and reservoirs and, if desired, incorporate any local data into these models.
 - More fully use the CWA assessment and listing process and prioritize and implement Total Maximum Daily Loads (TMDLs) and existing watershed plans for reducing nutrient pollution.
 - Further reduce nutrient loads from point sources.
 - Reduce nutrient loads from decentralized wastewater treatment systems, including straight pipes in disadvantaged communities, where a watershed plan developed under the CWA Section 319 grant program or another program indicates that they are critical sources. States may also develop new and/or amend existing watershed plans to identify additional critical source areas as appropriate. Work under these cooperative agreements should support coordinating with and leveraging the CWSRF and other funding sources.

States are encouraged to invest in innovative financing approaches with BIL funding, consistent with the CWA regulatory framework. Opportunities include supporting market-based approaches to reducing nutrient pollution, including water quality trading; third-party credit aggregation and banking; and stronger agriculture-water sector partnerships.

Workplans must reflect strategic outcomes 1-5 described above in addition to any further outcomes that are most suitable and beneficial to each state. Other potentially eligible activities may be

evaluated on a case-by-case basis by EPA. States should work with EPA as appropriate to explore the eligibility of actions proposed in workplans.

States can potentially include certain on-the-ground activities (e.g., construction of conservation practices) in FY 22 workplans. EPA is currently assessing what National Environmental Policy Act (NEPA) and other documentation may be needed for on-the-ground practices, such as agricultural conservation practices, supported by GHP grants. States interested in including on-the-ground conservation practices in workplans should consult the EPA project officer.

7. BIL GHP Documentation and Reporting

State BIL GHP workplans are the primary vehicles for documenting activities undertaken with BIL GHP funds. The state workplans will provide transparency and communicate the intended outputs and outcomes of BIL GHP funded actions on advancing the Gulf Hypoxia Action Plan, including equity and climate priorities.

EPA is building out a simplified GHP module in the existing Nonpoint Source Program Grants Reporting and Tracking System²² (GRTS) that will be used to house GHP annual reports. States will report water quality monitoring data into the Water Quality Exchange (WQX). The following information will be reported for each cooperative agreement in GRTS. The type of data entered for each item is shown in parentheses:

1. State FTEs funded by the GHP cooperative agreements (number)
2. Dollars awarded to sub-recipients, grants, and contracts (amount)
3. Project title (narrative)
4. Project description (overview narrative, objective, and methods)
5. Project budget (breakdown per federal/GHP/other, state, in-kind, etc.)
6. This project will/did result in pollutant load reductions for nitrogen (yes/no); estimate (narrative: load reduction amount, units, method (model name, or direct measure/monitoring data))
7. This project will/did result in pollutant load reductions for phosphorus (yes/no); estimate (narrative: load reduction amount, units, method)
8. This project will/did result in pollutant load reductions for sediment (yes/no); estimate (narrative: load reduction amount, units, method)
9. Description of anticipated outputs and outcomes (qualitative and quantitative), referenced by strategic outcome number in Section 6 (narrative for each of 1–5)
10. Description of additional anticipated outputs and outcomes that support the goals of the Gulf Hypoxia Action Plan (narrative)
11. Description of actions that provide climate adaptation or mitigation co-benefits (narrative)
12. Description of actions and opportunities provided to ensure disadvantaged communities realize the benefits of the GHP to the greatest extent possible; include the state’s definition of disadvantaged communities (narrative); report the percentage of investments going to disadvantaged communities (%)
13. Description of planning and review of GHP workplan and implementing activities to ensure compliance with Title VI (narrative)
14. Nonpoint source staffing subsection, if “nonpoint source state staff activities” is selected (drop-down menu)
15. Public meetings convened, location, date, and number participants (narrative)

²² <https://www.epa.gov/nps/grants-reporting-and-tracking-system-grts>.

16. Sources of point and nonpoint source pollution (drop-down menu)
17. Watershed plan (narrative title and attachment or website link)
18. Project schedule (start date and completion date)
19. Waterbody information (waterbody type, facilitate with ATTAINS²³ link if possible) (drop-down menu)
20. Drainage areas (if ATTAINS link is used, HUC12 may auto-populate; otherwise manually enter area of work into the mapping tool)
21. Conservation practices and systems implemented (acres, feet, etc.); identify the drainage area treated by these practices and systems (acres)
22. Project progress reports and final reports (attachments: state uploads reports submitted by sub-recipients)

EPA regional offices shall transmit all final GHP state workplans (and any future updated workplans) to EPA headquarters via a SharePoint site.

EPA may include additional reporting requirements and, if so, will provide them to the states.

8. BIL GHP Regional Oversight and EPA Staff Support

In accordance with 40 CFR 35.115, Regions will oversee performance of state GHP funded assistance agreements. Oversight entails evaluating progress towards completing the outputs identified in approved workplans; providing findings/feedback to each recipient; including findings in the cooperative agreement file; and in cases where deficiencies are noted, developing an action plan to address performance problems. Regions should specifically evaluate draft workplan documentation of efforts to advance equity and climate priorities with BIL GHP funds and provide technical assistance, as appropriate, to states to support them in meeting the aims of this guidance.

EPA regional staff will serve as project officers for state cooperative agreements; EPA headquarters will review the state workplans. EPA headquarters and regional staff will provide direct technical support to states that is tailored to the specific needs of each state and their projects. For example, EPA can help identify opportunities for states to leverage federal and/or private foundation programs in support of their projects; provide expert technical and policy support in implementing CWA programs; help states overcome programmatic barriers to progress by engaging other federal agencies; adaptively manage and assess progress toward reaching the Gulf Hypoxia Action Plan goals; assist with data compilation and reporting; and promote innovative research at EPA and other agencies in support of state needs.

9. EPA Contacts

For more information or for general questions, please reach out to Katie Flahive, flahive.katie@epa.gov, 202-566-1206.

²³ The Assessment, Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS) is an online system for accessing information about the conditions in the nation's surface waters (<https://www.epa.gov/waterdata/attains>).

Appendix 1: Content of Application Submission

The cooperative agreement application materials must be submitted through [Grants.gov](https://www.grants.gov/web/grants/view-opportunity.html?oppId=340988) (<https://www.grants.gov/web/grants/view-opportunity.html?oppId=340988>) by **11:59pm EDT on Tuesday, July 26, 2022**. The application package must include the following application forms and attachments:

- 1. Application for Federal Assistance Standard Form (SF) 424:** The electronic submission of the application must be made by an Authorized Official Representative of the state who is registered with Grants.gov and is authorized to sign applications for Federal assistance. Applicants need to ensure that the Authorized Official Representative who submits the application through Grants.gov and whose Unique Entity Identifier (UEI) is listed on the application is an Authorized Official Representative for the applicant listed on the application. Applicants must ensure that the UEI listed in Block 8.c. is assigned to the applicant organization in Block 8.a.
- 2. SF-424A, Budget Information:** Applicants are to characterize costs for construction contractors as “Construction” and costs for architectural and engineering services as “Contractual.”
- 3. EPA Form 4700-4, Pre-Award Compliance Review Report.** Collects information that enables EPA to determine whether applicants are developing projects, programs, and activities on a non-discriminatory basis.
- 4. EPA Key Contacts Form 5700-54:** A minimum of two contacts should be identified. Please be sure the contacts on this form are consistent with the other forms. The Authorized Official Representative on this form must be the signatory on the other forms. If additional pages are needed, attach these additional pages to the electronic application package by using the “Other Attachments Form” in the “Optional Documents” box.
- 5. Project Narrative Attachment Form:** Includes Project Approach, Environmental Results, Milestone Schedule, Detailed Budget Narrative, Quality Assurance. Prepare as described below. Use this form to submit the **Summary Information Page and Project Workplan**.

Application Preparation and Submission Instructions (see Grants.gov instructions at the end of this Appendix 1):

Documents 1 through 5 listed under Application Materials above should appear in the “Mandatory Documents” box on the Grants.gov Grant Application Package page.

For Documents 1 through 4, click on the appropriate form and then click “Open Form” below the box. The fields that must be completed will be highlighted in yellow. Optional fields and completed fields will be displayed in white. If an invalid response or incomplete information in a field is entered, an error message will display. When finished filling out each form, click “Save.” Return to the electronic Grant Application Package page, click on the completed form, and then click on the box that says, “Move Form to Submission List.” This action will move the document over to the box that says, “Mandatory Completed Documents for Submission.”

For Document 5, attach electronic files. Prepare the narrative workplan as described in the box below and save the documents as a PDF file. To attach the workplan to the application package, click on “Project Narrative Attachment Form,” and open the form. Click “Add Mandatory Project Narrative File,” and then attach the PDF file workplan using the browser window that appears. Click “View Mandatory Project Narrative File” to view it. Enter a brief descriptive title of the project in the space beside “Mandatory Project Narrative File Filename;” the filename should be no more than 40 characters

long. If there are other attachments to submit to accompany the workplan, click “Add Optional Project Narrative File” and proceed as before. When finished attaching the necessary documents, click “Close Form.” Return to the “Grant Application Package” page, select the “Project Narrative Attachment Form,” and click “Move Form to Submission List.” The form should now appear in the box that says, “Mandatory Completed Documents for Submission.”

*Describe each item in sufficient detail for EPA to determine cost-effectiveness, reasonableness and allowability of costs. Cost-effectiveness will consider the organizational overhead (indirect costs), direct costs and ability to control costs versus anticipated results of services.

Do not include confidential business information in the workplan. States should be aware that under Public Law No. 105-277, data produced under an award, and any information provided to EPA, is subject to the Freedom of Information Act.

Template for Document 5 Summary Information Page and Project Workplan
<p style="text-align: center;">Summary Information Page (Should not exceed two pages)</p> <p>Project Title: Please limit to 60 characters. EPA reserves the right to change the project title for its administrative convenience.</p> <p>Organization Information: Include organization name, address, contact person, phone number, e-mail address. Do not include private information.</p> <p>Proposed Funding Request. Total dollar amount requested from EPA. See Table 1 in the memorandum to determine the amount of funding for the total length of the requested assistance agreement.</p> <p>Brief Project Description. Summarize the workplan for implementing the Gulf Hypoxia Action Plan in a clear and succinct manner using plain language and in 100 words or less. Do not use acronyms. This description may be posted to the EPA Web, published in EPA press releases, and the HTF Newsletter. Include programmatic links to the state’s programmatic website(s). EPA reserves the right to make unilateral changes to conform to posting requirements.</p> <p>Environmental Results: Please describe major environmental results anticipated from this project. (Details will be included in the Workplan, this is a high-level summary.)</p> <p>Place of Performance: Ensure the boundary is within the 12 HTF Member states and in the MARB. Identify the place of performance, defined as the geographic extent of where work will occur, of the cooperative agreement.</p> <p>Project Period: Provide anticipated project start date and anticipated project completion date. The estimated project period will begin in Fall 2022.</p>
<p style="text-align: center;">Project Workplan (No page limit)</p> <p>Project Approach: Describe the approach and include any maps, charts, and/or figures.</p>

Include a sentence briefly stating how the project supports EPA Strategic Plan Goal 5: Ensure Clean and Safe Water for All Communities, Objective 5.2: Protect and Restore Waterbodies and Watersheds.

Workplans should reflect the required five strategic outcomes described in Section 5 and any further outcomes that are most suitable and beneficial to the state.

Include information about how the state will manage and monitor subawards for successful completion of projects, and ensure subawardees comply with quality assurance, financial, and reporting requirements.

Include proposed public meeting dates, locations, and outreach strategies.

Include a discussion of how state activities will advance Gulf Hypoxia Action Plan goals in disadvantaged communities.

Include the definition that the state will use to define disadvantaged communities.

States should identify and prioritize eligible activities in their FY 22 GHP workplans that will advance EJ and climate goals. States should ensure that the development and implementation of their Nutrient Reduction Strategies and projects proposed for the GHP cooperative agreements are in compliance with the requirements of Title VI.

Budget resources necessary for completing a Quality Management Plan (QMP) or Quality Assurance Project Plan (QAPP), if applicable, sharing project information broadly, and reporting progress, should be included.

Environmental Results: Include the following:

- Describe anticipated outputs and outcomes for strategic outcomes 1–5 defined in Section 5 of this guidance (qualitative and quantitative, include social indicator(s)).
- Describe the anticipated products/results which are expected to be achieved from accomplishment of the project.
- Describe how the state will qualitatively and quantitatively measure and track the environmental results and pollutant load reductions (nitrogen, phosphorus, and co-benefits) from subaward projects and report those results (outputs and outcomes) to EPA.

Milestone Schedule: Provide a milestone schedule that covers each year of the total project period requested (up to five years for the cooperative agreement) and provide a breakout of the project activities into phases with associated tasks and a timeframe for completion of tasks. The milestone schedule should show timeframes and major milestones to complete significant project tasks. Include an approach to ensure that (1) any subawards are completed in sufficient time to allow the state to aggregate results and lessons learned and to ensure subawardees have been reimbursed for eligible incurred costs and (2) awarded funds will be expended in a timely and efficient manner. The schedule must include a detailed table.

Transferability of Results and Dissemination to Public: Describe the plan to transfer results to similar projects and disseminate to the public, including:

- Gather and share information and lessons learned from the project(s) to include a written summary to be shared with the public at HTF meetings, materials to share on EPA’s GHP website, blurbs to

send to EPA for publication in the Hypoxia Task Force Newsletter, any targeted materials to share with state stakeholders and partners, and any other plans to share results from the proposed projects.

- Efforts to support state, regional and basin-wide progress tracking.

Technical Support: Describe how the state will provide technical support to subawardees. Technical support should include a description of how the state will ensure QAPPs submitted by subawardees meet EPA requirements but could also include other forms of technical expertise.

Detailed Budget Narrative: Provide a detailed budget narrative referencing each category identified in the SF-424A (Document 2) and estimated funding amounts for each workplan component/task not easily understandable or that require additional information. Describe each item in sufficient detail for EPA to determine cost-effectiveness, reasonableness, and allowability of costs. Common examples where this is necessary are:

- Description of the roles and responsibilities of personnel.
- Description of what supplies will be used for.
- Description of why the purchase of equipment is preferable to rental of equipment.
- Contract details such as whether it will be sole source or competed and why that choice was made.
- Description of activities of a subawardee, etc.
- All subaward funding should be located under the “other” cost category.

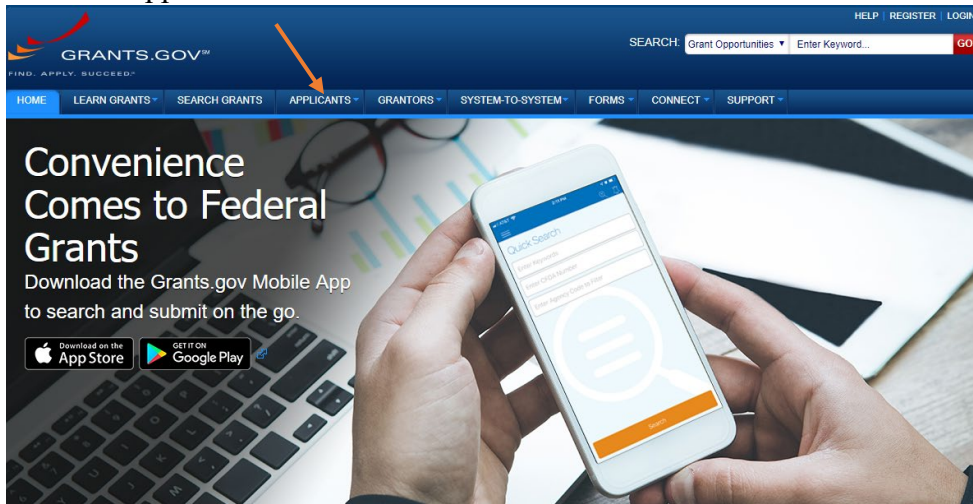
States can refer to this guidance on budget development <https://www.epa.gov/sites/default/files/2019-05/documents/applicant-budget-development-guidance.pdf>, and specifically Appendix 2 for a sample Detailed Budget Narrative. In addition to this guidance, additional support that may be used by applicants when preparing budgets which can be found on EPA’s [General Budget Development Guidance for Applicants and Recipients of EPA Financial Assistance](#) webpage.

Quality Assurance: If the state or a subawardee plan to collect or use environmental data or information, explain how the state will comply with quality assurance requirements.

Grants.gov instructions

1. Go to Grants.gov - <https://www.grants.gov>

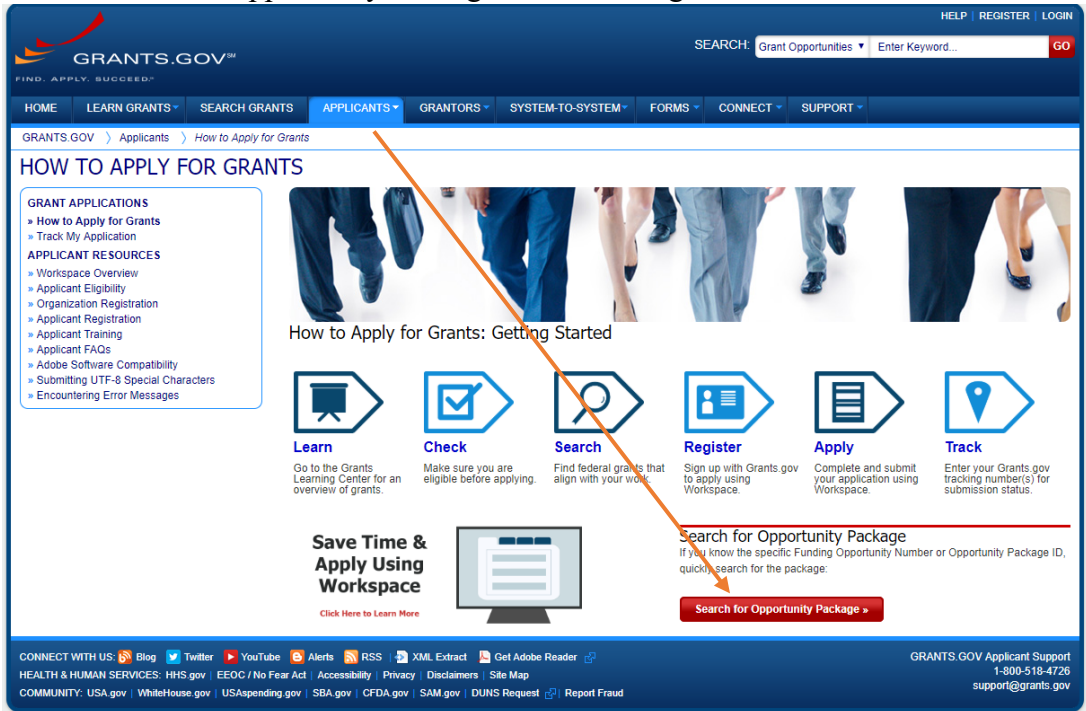
2. Click on the Applicants tab



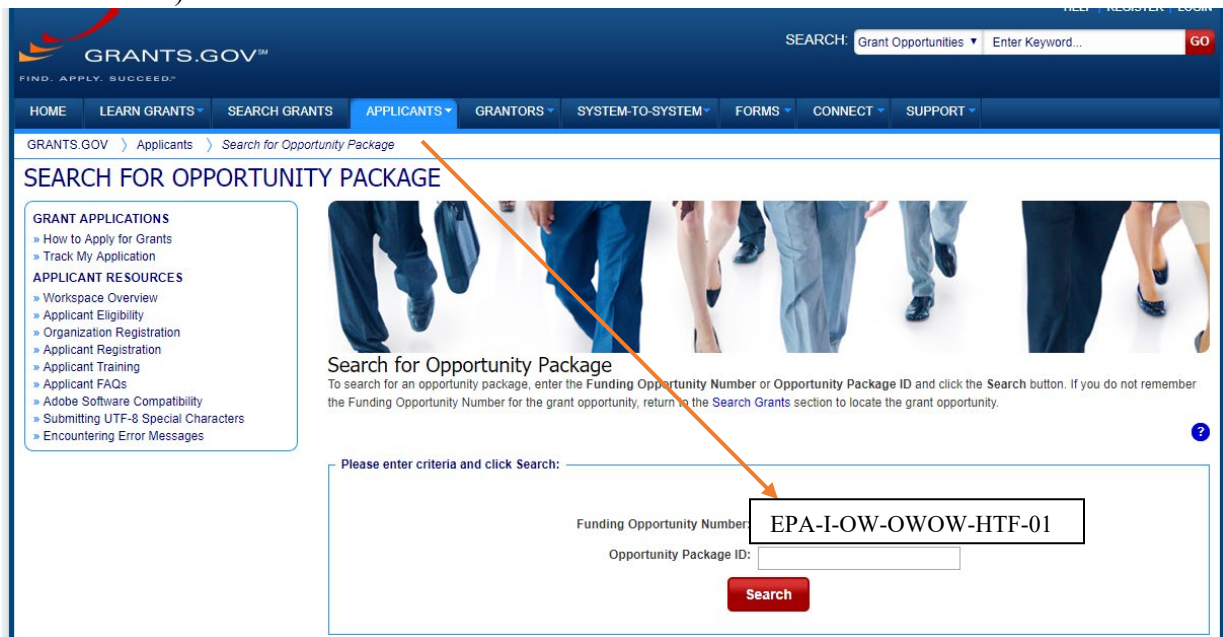
3. Click on “Apply for a Grant Opportunity Today” under the Apply for Grants section



4. Click on “Search for Opportunity Package” at bottom right side.



5. Type in the Funding Opportunity Number in the Funding Opportunity Field – (Type in EPA-I-OW-OWOW-HTF-01)



6. Clicking on Search will open the View Opportunity page.
7. Click on preview to view the application forms.
8. Applicants that need technical assistance with submission using Grants.gov should contact Grants.gov customer service (<https://www.grants.gov/support.html>) and visit the applicant resource page (<https://www.grants.gov/applicants/apply-for-grants.html>), which has tools and documents to assist with Grants.gov.

Appendix 2: BIL GHP Potential Nonpoint Source Project Ideas to Advance Implementation of State Nutrient Reduction Strategies

Innovative approaches have the potential for scaling-up and accelerating control of nonpoint sources of nutrient pollution through BIL support for HTF state workplans. Examples of successful innovations are provided below. States may choose to adopt or adapt these examples or propose other project ideas that prioritize and target the most significant nutrient loss reduction challenges. Additional ideas and project examples can be found on the [HTF Success Stories Website](#).

Existing Innovative Voluntary Approaches

States, tribal nations, non-governmental organizations, corporations, and other stakeholders have employed a range of programs and activities to address nonpoint source nutrient pollution, strengthen incentives for nutrient management, control nutrients upstream, and/or bundle water quality outcomes with other environmental services that are sold to interested buyers. While these policies and programs have not been specifically evaluated by EPA (or in many cases on a statewide scale), they may drive greater watershed nutrient reductions versus a traditional approach of cost-share coverage by willing landowners, and thus could be considered for applicability on a broader scale:

- [Virginia’s Poultry Litter Transport Incentive Program](#) provides financial reimbursement to poultry litter end-users for the transportation cost of relocating poultry litter outside of intensive litter-producing counties. The program is partially funded by poultry integrators. [Maryland has a similar program](#). [Virginia’s Resource Management Planning Program](#) provides nine years of “regulatory certainty” – guaranteed compliance with any new state nutrient, sediment, and water quality standard(s) and Chesapeake Bay-specific regulations – provided farmers voluntarily implement best management practices.
- [The Soil and Water Outcomes Fund](#) partners with [Iowa](#), is expanding in Illinois and Ohio, and is interested in developing additional partnerships. This venture bundles water quality outcomes with other environmental services such as carbon sequestration credits and pays farmers for outcomes versus the traditional cost-share model. The organization validates the credits, and delivers farmer-focused, effective conservation that provides stacked benefits, regulatory certainty, and innovation beyond any standard need.
- Utilities in some states pursue adaptive management approaches with agricultural stakeholders to meet wastewater and drinking water requirements/standards while avoiding expensive facility upgrades.
 - [Silver Creek Pilot Project](#), Green Bay, WI: a new water utility works with agricultural stakeholders to reduce phosphorus runoff by improving soil health, implementing operational improvements, and installing conservation practices.
 - [Yahara Watershed Improvement Network \(WINS\)](#), Madison, WI: The utility’s NPDES permit allows them to reduce phosphorus through a collaborative approach, working with landowners throughout the watershed, to meet watershed-scale water quality goals. A full-scale 20-year project began in 2017 to achieve the utility’s permit requirements and the Rock River TMDL goals by 2036. If the project is successful, it will reduce approximately 96,000 pounds of phosphorus annually, while saving local residents \$13.5 million per year. In 2020, the project reported a total annual reduction of 61,823 pounds through new and existing conservation practices, and conducted research to explore new practices, such as treating liquid animal waste to reduce phosphorus and removing legacy sediment via a [“Suck the Muck” project](#).
 - [Middle Cedar Partnership Project](#), Cedar Rapids, IA: This project aims to reduce nitrates in shallow alluvial wells supplying residential and industrial customers through nutrient management and flood reduction practices. Through 2018, [the partnership entered into 54 contracts with landowners](#) on 10,297 acres to implement soil and water conservation practices,

with U.S. Department of Agriculture (USDA) funding obligated to the contracts of over \$1.4 million.

- [In Dubuque, Iowa, the state, and city \(utility manager\) signed an MOU](#) whereby the city is responsible for coordinating the watershed planning and implementation work in the HUC8 watershed of the utility. The city can use the framework to achieve compliance with current requirements and potential future requirements, including NPDES permit requirements.
- [Watershed prioritization and BMP targeting activities in Michigan](#) to reduce nutrient loads into western Lake Erie include focused and accelerated activities at localized and subwatershed levels to better understand the current conditions on the landscape and focus on BMP implementation. The state is planning and implementing agricultural inventories in 13 priority subwatersheds and ramping up monitoring to assess this more targeted BMP implementation approach and to better detect changes at the subwatershed level.
- Illinois has property tax relief provisions for wooded lands maintained for their conservation value, including vegetated streamside buffers. Under the state Conservation Stewardship Law, certain wooded lands that contain five or more contiguous acres are [valued at 5% of fair cash value for property tax purposes](#).
- [Integrating state water resource plans](#) (e.g., stormwater management, source water protection, nonpoint source pollution control) with Federal Emergency Management Act (FEMA) hazard mitigation plans [can help to achieve multiple water quality, flood mitigation, funding acquisition, and other benefits](#).

State-specific Regulatory Approaches for Nonpoint Source Nutrients

In addition to voluntary, incentive-based approaches, many states have chosen to adopt regulatory approaches for controlling some aspects of nutrient nonpoint source pollution. These approaches are developed independently by states, working with their stakeholders, to meet the needs and priorities of the state. Some states that require training and planning, industry and non-profit partners have enhanced the regulatory requirements with additional training or certification opportunities.

- [Ohio requires](#) that all persons that apply fertilizer for agricultural production must be certified by the state.²⁴ “Agricultural production” is defined as the cultivation, primarily for sale, of plants or any parts of plants on more than 50 acres. Anhydrous ammonia applications are included in this requirement; startup fertilizer applied through a planter is exempt. Also in Ohio, the Fertilizer Institute and The Nature Conservancy have partnered and offer similar trainings and certifications for agronomists in the state that sell nutrient material to those applicators taking the trainings.
- Kentucky requires all landowners with 10 or more acres being used for agriculture or silviculture to develop and implement a water quality plan consistent with the Kentucky Agriculture Water Quality Plan, under the [Agriculture Water Quality Act](#). The Act is a compilation of best management practices (BMPs) from six different areas: crops, livestock, farmstead, pesticides and fertilizers, silviculture, and streams and other waters. Technical assistance and cost-share funding is available through local conservation district offices with assistance from the USDA Natural Resources Conservation Service, Cooperative Extension Service, and others. Kentucky provides an [online tool](#) for landowners to assist with completing their plans, which is also available in an [offline version](#).
- Tennessee requires all persons who wish to make any physical alteration to the properties of a stream, river, lake, or wetland to obtain an [Aquatic Resource Alteration Permit \(ARAP\)](#) or a Clean Water Act Section 401 Water Quality Certification. An applicant who seeks coverage under a

²⁴ See Chapter 3 of *A National Evaluation of the Clean Water Act Section 319 Program*, US EPA, Nov. 2011 (<https://www.epa.gov/sites/production/files/2015-09/documents/319evaluation.pdf>). These state restrictions are also summarized on pp. 2-4 in Issue 91 of EPA’s Nonpoint Source News-Notes, May 2012 (<https://www.epa.gov/sites/production/files/2016-02/documents/91issue.pdf>).

general permit must apply for an ARAP (form CN-1091) and other information to the environmental field office for that region. Once the application has been accepted, the permittee retains the right to proceed with permitted activities. Tennessee Department of Environment and Conservation has the right to inspect the site when deemed necessary, and to revoke, suspend, or modify a permit for any violation of permit conditions or other provisions of the Tennessee Water Quality Control Act of 1977.

- [Florida Department of Environmental Protection \(DEP\) adopts basin management action plans \(BMAPs\)](#) as a framework for water quality restoration for local and state entities. The BMAPs contain solution sets for reducing pollutant loading such as permit limits on wastewater facilities, urban and agricultural BMPs, and conservation programs for achieving pollutant reductions established by a TMDL. The BMAPs are developed with local stakeholders and utilize local input and commitment for adaptation and successful implementation. BMAPs are adopted by the Florida Secretarial Order and are legally enforceable. DEP must report on water quality monitoring in the area of each nutrient BMAP and summarize the costs and benefits of BMAP wastewater projects.
- [Florida DEP's Environmental Resource Permit \(ERP\) Program](#) serves to regulate activities involving the alteration of surface water flows. This includes, but is not limited to, new activities in uplands that generate stormwater runoff from upland construction, dredging and filling in wetlands and other surface waters, various waste streams, mining, power plants, docking facilities, and seaports. The ERP applications and state-owned submerged lands authorizations are processed by one of the DEP's six district offices or one of Florida's five water management districts (WMDs). DEP and each WMD have ongoing operating agreements that determine how DEP's generally reviews and takes actions on applications.
- [North Carolina requires all incorporated municipalities with planning jurisdictions within or partially within the Jordan Lake Watershed to comply with the Jordan Lake Rules](#), a nutrient management strategy for restoring water quality in the lake by reducing upstream pollution. The rules include agricultural BMPs, stormwater management for new and existing development, protection and mitigation of existing riparian buffers, wastewater discharge requirements, stormwater requirements for state and federal entities, fertilizer management, and nutrient load offsets. Jordan Lake One Water (JLOW) and the North Carolina Division of Water Resources (DWR) are developing an integrative watershed management plan for the Jordan Lake Watershed. The JLOW website contains its workplan, timeline, collaborative process, and other important information. DWR and its partners also monitor water quality in the Jordan Lake Watershed and routinely assess performance against water quality standards.
- [North Carolina DWR has developed a Catalog of Nutrient Reduction Practices](#) to support implementation of the state's nutrient management strategy rules. The catalog provides a comprehensive list of all approved practices to date, as well as references for design standards and nutrient reduction credit accounting. For each nutrient reduction practice, the catalog "identifies applicable rules, suitability for trading, and use in permanent or term applications." It guides users in selecting a suitable practice and provides both a template and instructions for new practice type approvals. These practices can be used to comply with stormwater rules for new or existing development and to generate nutrient reduction credits for offset or trading.

Appendix 3: BIL GHP Water Quality Monitoring Strategies

State workplans can support discrete and continuous real-time water quality monitoring, including:

- Continued funding support for existing monitoring systems/locations.
- Funding new monitoring locations to help measure loads and progress.
- Supporting better, more cost-effective technology for water quality monitoring.

Workplans must comment on the planned water quality monitoring objective, parameters, and frequency of the water quality monitoring that will be conducted, reflecting the following guidance:

Priority Parameters for Monitoring
Parameters are tiered based on the planned water quality monitoring objective: Tier one: Total nitrogen (TN), total dissolved nitrogen (TDN), nitrate, total phosphorus (TP), dissolved TP and/or orthophosphate, total suspended solids (TSS) and/or suspended sediment concentration. Tier two: Flow data from a nearby continuous stream gage, turbidity, dissolved oxygen (DO) vertical profile*, dissolved organic carbon (DOC), chlorophyll <i>a</i> , temperature, algal toxin concentrations with observed bloom events at same time as chlorophyll <i>a</i> , and maximum lake depth**. Tier three: Zooplankton and phytoplankton biomass. *Consider DO profiles especially if lake hypoxia is a concern for cold and cool water fish survival. ** Indicates a onetime measurement specific only to lakes.

If the GHP Water Quality Monitoring Objective is to conduct discrete and continuous real-time water quality monitoring to assess trends:

Parameters: At a minimum, monitor for tier one parameters. Additionally, when possible, monitor for tier two parameters.

If monitoring:

- Lakes and Reservoirs, at minimum monitor monthly.
- Streams and Rivers, at minimum monitor monthly. Samples should occur across a range of stream flow conditions.
- Edge of Field, at minimum monitor monthly. However more frequent sampling is suggested.

Considerations:

- It is sufficient to only monitor for biological parameters during the growing season.
- More frequent samples can help more clearly detect and quantify water quality trends.
- Consider deploying sensors that can measure parameters continuously such as DO, temperature, and/or nitrate and orthophosphate. This can be especially useful in targeted areas with a goal of assessing the effectiveness of BMPs or tracking nutrient reduction.

- Consider prioritizing chlorophyll *a* sampling, especially in lakes and reservoirs, along with tier one parameters.
- Because data over long periods of time are essential to track trends, consider supplementing sample collection in water bodies with existing historical records.
- However, also consider ramping up monitoring in areas with a lack of data.
- If situated along the coast, consider extending monitoring sites to include estuary and near shore locations.

If the GHP Water Quality Monitoring Objective is to collect data that can be used to develop numeric nutrient criteria:

Parameters: At a minimum, monitor for tier one and tier two parameters and when possible nutrient response parameters in tier three.

If monitoring:

- Lakes and Reservoirs, at minimum collect one sample per year to characterize a range of lake characteristics across the state (broad spatial coverage) or more frequent sampling on a smaller number of lakes to understand temporal variability in different parameters (at minimum monthly samples).
- Streams and Rivers, at minimum monitor monthly. Samples should occur across a range of stream flow conditions.

Refer to <https://www.epa.gov/nutrient-policy-data/ambient-water-quality-criteria-address-nutrient-pollution-lakes-and-reservoirs> for information on numeric nutrient criteria for lakes.