INDIANA COASTAL NONPOINT PROGRAM
NOAA/EPA DECISIONS ON CONDITIONS OF APPROVAL

FOREWORD

The Coastal Nonpoint Pollution Control Program, set forth in Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), 16 U.S.C. § 1455b, addresses nonpoint source pollution problems in coastal waters. Section 6217 directs states and territories with approved coastal zone management programs to develop and implement management measures for nonpoint pollution control to restore and protect coastal waters (coastal nonpoint programs).

This document provides the bases for the determination by the National Oceanic and Atmospheric Administration (NOAA) and the United States Environmental Protection Agency (EPA) (collectively, federal agencies) that Indiana has met the conditions that the federal agencies had identified in their earlier approval of Indiana's coastal nonpoint program on January 15, 2008, pursuant to CZARA (2008 findings). In this document, the federal agencies describe how the State program modifications since that time satisfy each of the conditions identified in the 2008 findings.

DECISION

The federal agencies issued findings on January 15, 2008, approving Indiana's coastal nonpoint program submission subject to conditions. Those findings are available at https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217in_fnl.pdf. Since that time, Indiana has undertaken a number of actions to address each of the conditions identified in the 2008 findings. Based on those actions and the materials provided by the State that document how its program meets each condition, NOAA and EPA find that Indiana has satisfied all conditions on its coastal nonpoint program.

INTRODUCTION

CZARA directed EPA to develop technical guidance to assist states and tribes in designing coastal nonpoint programs. On January 19, 1993, EPA issued that guidance in the document titled *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*, 840-B92-002 (January 1993), which addresses five major source categories of nonpoint pollution: (1) urban runoff; (2) agriculture runoff; (3) forestry runoff; (4) marinas and recreational boating; and (5) hydromodification. The guidance also addresses nonpoint source pollution issues associated with the loss of or damage to wetlands and riparian areas. The guidance is commonly referred to as the 6217(g) guidance because the statutory direction to EPA appears in CZARA Section 6217(g).

This document is organized following the same structure that was used in the federal agencies' 2008 findings to support approval of Indiana's program, with conditions, grouping together the conditions related to each major nonpoint source category or subcategory. In the 2008 findings, the federal agencies determined that Indiana met the requirements of the 6217(g) guidance for the following management measures: coastal nonpoint boundary; public participation; program

coordination; the pollution prevention management measure under the urban category; all of the management measures for marina siting and design except for shoreline stabilization, storm water runoff, and fueling station design; and all of the management measures for marina and boat operation and maintenance except for petroleum control and boat cleaning. In addition to the marina management measures noted above, the agencies approved Indiana's program subject to conditions related to the agriculture management measures (except where exempted as noted below), the urban management measures (except pollution prevention, as noted above, and where exempted, as noted below), hydromodification management measures (except where exempted as noted below), and wetland and riparian areas management measures, as well as programmatic elements related to critical coastal areas, additional management measures, and technical assistance and monitoring.

In the 2008 findings, the federal agencies determined that Indiana had provided sufficient justification to support its request to categorically exclude the forestry management measures and the irrigation water management measure for irrigated agricultural lands from its coastal nonpoint program. The State is also exempt from meeting the construction site erosion and sediment control and the construction site chemical control management measures under the urban and hydromodification (dams) categories because these activities are covered under the National Pollution Discharge Elimination System (NPDES) Phase II Storm Water Permit Program.

For each outstanding condition, this approval decision repeats the original finding and condition identified in 2008 and provides a rationale detailing how the State has met the condition. For reference purposes, a list of acronyms is included at the end of this document.

For further understanding of terms in this document, please refer to the following:[1]

- *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (EPA, January 1993)
- *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance* (NOAA/EPA, January 1993)
- *Flexibility for State Coastal Nonpoint Programs* (NOAA/EPA, March 1995)
- *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance for Section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA)* (NOAA/EPA, October 1998) ("Final Administrative Changes")
- *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations* (NOAA/EPA, December 2002).

The federal agencies rely on, but do not repeat here, except as relevant to the decision, the extensive information that the State included in various submittals to support its coastal nonpoint program. Further information and analysis are contained in the administrative record for this approval decision and are available upon request at the following locations:

[1] All guidance documents for the Coastal Nonpoint Pollution Control Program are available online at: https://coast.noaa.gov/czm/pollutioncontrol/.

U.S. EPA Headquarters, Office of Water
Nonpoint Source Management Branch
1200 Pennsylvania Ave., NW (4503-T)
Washington, DC 20460
Contact: Don Waye (202/566-1170)

NOAA, Office for Coastal Management
SSMC-4, N/OCM6
1305 East-West Highway
Silver Spring, MD 20910
Contact: Allison Castellan (202/596-5039)

U.S. EPA Region 5, Water Division
77 W. Jackson Blvd.
Chicago, IL 60604-3608
Contact: Stephen Feely (312/886-6744)

II. AGRICULTURE[2]

2008 FINDING: Indiana's program may include management measures in conformity with the 6217(g) guidance, however additional clarification is needed. The State has identified a back-up enforceable authority but has not yet demonstrated the ability or the authority to ensure implementation throughout the coastal nonpoint program management area by submitting a legal opinion, demonstrating the authority and commitment to use the enforcement mechanisms where necessary, describing the laws and processes linking the implementing agencies with the enforcement agency, and describing the monitoring and tracking mechanisms the State will employ to ensure that the voluntary programs are being implemented sufficiently. Indiana has presented sufficient justification to grant an exclusion of the irrigation water management measure for irrigated agricultural lands.

2008 CONDITION: Within five years, Indiana will demonstrate that it has programs in place to conform with the 6217(g) guidance. Within five years, Indiana will submit a legal opinion and other supporting documents as described in the *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance*[3] (October 1998) to demonstrate that it has adequate back-up authority to implement the agricultural management measures throughout the coastal nonpoint program management area.

2024 DECISION: Indiana has satisfied this condition.

[2] This section begins with Roman numeral two because it follows the organization of the federal agencies' 2008 findings to support the approval of Indiana's program with conditions available at https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217in_fnl.pdf. Gaps in numbering and/or lettering of subsequent sections and subsections exist for this similar reason.
[3] NOAA and EPA. 1998. Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance. Accessed 09/01/2022. https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217adminchanges.pdf

RATIONALE: Indiana has satisfied this condition through a variety of regulatory and voluntary approaches, including its combined feeding operation rule, fertilizer and pesticide rules, and extensive outreach and technical assistance efforts through partnerships with the United States Department of Agriculture (USDA) National Resource Conservation Service (NRCS), local soil and water conservation districts, and Purdue University Extension Service (Purdue Extension). The State has also provided a legal opinion and supporting documentation that demonstrate it has adequate back-up authority to implement the agriculture management measures throughout the coastal nonpoint program management area.

Erosion and Sediment Control
The 6217(g) agriculture management measure for erosion and sediment control calls for states to:

1. Apply the erosion component of the Conservation Management System (CMS) as defined in the Field Office Technical Guide of the USDA – Soil Conservation Services (SCS) to minimize the delivery of sediment from agricultural lands to surface waters, *or*
2. Design and install a combination of management and physical practices to settle the settable solids and associated pollutants in runoff delivered from the contributing area for storms of up to and including a 10-year, 24-hour frequency.

Indiana implements the erosion and sediment control management measure through an active voluntary technical and financial assistance effort led by local Soil and Water Conservation Districts (SWCDs) that encourage the use of USDA NRCS Field Office Technical Guide (FOTG) best management practices (BMPs) such as conservation tillage/no till (FOTG Code 329),[4] conservation cover (FOTG Code 327),[5] contour farming (FOTG Code 330),[6] buffer strips (FOTG Code 332),[7] filter strips (FOTG Code 393),[8] and others, to reduce erosion and sediment runoff from agricultural practices consistent with the 6217(g) guidance. SWCDs in the three Lake Michigan counties within the coastal nonpoint program management area consistently identify soil erosion as a top agriculture resource concern and develop annual work plans to address these priority concerns within their counties. SWCDs partner with NRCS to educate farmers about BMPs to reduce erosion and control sediment from farm fields through presentations, field days, monthly board meetings, and annual meetings and newsletters. They also make site visits to interested farmers to provide one-on-one technical assistance.[9] During the site visits, SWCD and NRCS staff conduct site surveys and create property maps that are used to develop a comprehensive conservation plan for each property. SWCD and NRCS staff then work with the farmer to identify problem areas and suitable BMPs to install, as well as

[4] NRCS. 2016. Conservation Practice Standard: Residue and Tillage Management, No Till. Code 329. September 2016. Accessed 02/28/2023. https://www.nrcs.usda.gov/sites/default/files/2022-09/Residue_And_Tillage_Management_No_Till_329_PO_Sep_2016_0.pdf
[5] NRCS. 2016. Conservation Practice Standard: Conservation Cover (Code 327). Accessed 01/30/2023. https://efotg.sc.egov.usda.gov/api/CPSFile/5177/327_IN_CPS_(Con)servation_Cover_2016
[6] NRCS. 2018. Conservation Practice Standard: Contour Farming (Code 330). November 2018. Accessed 01/30/2023. https://efotg.sc.egov.usda.gov/api/CPSFile/5189/330_IN_CPS_(Con)tour_Farming_2018
[7] NRCS. 2015. Conservation Practice Standard: Contour Buffer Strips (Code 332). October 2015. Accessed 01/30/2023. https://efotg.sc.egov.usda.gov/api/CPSFile/5193/332_IN_CPS_(Con)tour_Buffer_Strips_2015
[8] NRCS. 2018. Conservation Practice Standard: Filter Strip (Code 393). January 2018. Accessed 01/30/2023. https://efotg.sc.egov.usda.gov/api/CPSFile/9413/393_IN_CPS_Filter_Strip_2018
[9] NRCS. Undated. Conservation Technical Assistance (website). Accessed 09/01/2022. https://www.nrcs.usda.gov/conservation-basics/conservation-by-state/indiana

cost-share funding opportunities from the State that can help offset the cost of implementing the BMPs. Projects that help address priority concerns, such as erosion and sediment control, receive priority consideration when applying for funding.[10] State and federal farm programs also give priority funding to projects within the Lake Michigan watershed, further encouraging the implementation of erosion and sediment control BMPs within the coastal nonpoint program management area.

Additionally, Indiana promotes implementation of erosion and sediment control practices through its watershed management planning process (discussed further under the watershed protection section below). For example, the Little Calumet-Galien watershed predominately consists of forested area and land zoned for agriculture. The Little Calumet River East Branch watershed management plan (WMP) identifies multiple stretches of streambank erosion and miles of insufficient or limited buffers within all three subwatersheds (Coffee Creek, Reynolds Creek, and Kemper Ditch). Several projects being implemented by the Porter County SWCD in the Kemper Ditch subwatershed have supported the use of cover crops and have planted native plants and trees on agriculture land to reduce erosion and improve water quality and the health of the subwatershed.[11]

SWCDs and NRCS also develop partnerships with other state and federal agencies, as well as nonprofit and private organizations, to fund and implement agricultural BMPs to improve water quality. Between 2017 and 2021, the Indiana Conservation Partnership (ICP) which consists of eight Indiana agencies and organizations, installed over 1300 conservation and farm BMPs in Indiana's three counties within the coastal nonpoint program management area. These practices were modeled to reduce sediment loads to Indiana waterways by 39.8 million pounds.[12,13,14]

Facility Wastewater and Runoff from Confined Animal Facility Management (Large and Small)
The goal of this management measure is to limit the discharge from confined animal facilities to surface waters by:

For large units:

1. Storing both the facility wastewater and the runoff from confined animal facilities that is caused by storms up to and including a 25-year, 24-hour frequency storm. Storage structures should:
    a. Have an earthen lining or plastic, membrane lining or
    b. Be constructed with concrete or
    c. Be a storage tank; and

[10] NRCS. Undated. Environmental Quality Incentives Program (website). Accessed 09/01/2022. https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives/indiana/environmental-quality-incentives
[11] Porter County SWCD. Kemper Ditch East Branch Little Calumet River Project. 2020. Accessed 09/01/2022. https://storymaps.arcgis.com/stories/9823c472ca8b4af6aacb64548e7ef55b
[12] ICP. 2021. LaPorte County Nutrient and Sediment Load Reductions: 2021. Accessed 09/01/2022. https://www.in.gov/isda/files/Laporte2021.jpg
[13] ICP. 2021. Porter County Sediment and Nutrient Load Reductions: 2021. Accessed 09/01/2022. https://www.in.gov/isda/files/Porter2021.png.jpg
[14] ICP. 2021. Lake County Nutrient and Sediment Load Reductions Report: 2021. Accessed 09/01/2022. https://www.in.gov/isda/files/Lake2021.png.jpg

2. Managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

For small units:

1. Designing and implementing systems that collect solids, reduce contaminant concentrations, and reduce runoff to minimize the discharge of contaminants in both facility wastewater and in runoff that is caused by storms up to and including a 25-year, 24-hour frequency storm. Implementing these systems to substantially reduce significant increases in pollutant loadings to ground water; and
2. Managing stored runoff and accumulated solids from the facility through an appropriate waste utilization system.

The Indiana Department of Environmental Management (IDEM) updated its combined feeding operation rule (327 IAC 19-12-4) in 2012, which brought it into conformity with the 6217(g) guidance for both the large and small confined animal facility management measures. Under the rule, all new manure storage structures for confined feeding operations must be designed, constructed, and maintained with a combined storage capacity of at least 180 days storage for all materials entering the storage structure (327 IAC 19-12-4(c)). Structures must also be constructed and lined appropriately to protect human health and environmental safety in accordance with Section 5 of Rule 327 IAC 19-12 (327 IAC 19-12-4(g)). For example, 327 IAC 19-12-4(d) requires all liquid manure storage facilities to be constructed in accordance with the Indiana NRCS Conservation Practice Standard Code 313: Waste Storage Facility (FOTG Code 313).[15] Practices required by IDEM's updated combined feeding operation rule include designing structures with reinforced concrete, steel or masonry materials, protecting waste storage facilities from a 25-year, 24-hour precipitation event, and, at a minimum, including freeboard heights of six inches for vertical walled tanks and 12 inches for all other facilities. Where storage tanks are in environmentally sensitive areas, a flexible membrane liner should be installed to provide secondary liquid containment. In addition, manure storage facilities that contain solid manure may not be constructed in sand or gravel soils, unless they are specially designed with an approved liner, in accordance with 327 IAC 19-12-4(g).

Indiana implements the waste utilization condition through the same active voluntary technical and financial assistance effort discussed in the erosion and sediment control section above which encourages the use of the NRCS FOTG for waste utilization (FOTG Code 633).[16] This practice applies where agricultural wastes (including animal manure and contaminated water from livestock and poultry operations), solids and wastewater from municipal treatment plants, and agricultural processing byproducts are generated and/or utilized. The practice includes a variety of BMPs to reduce polluted runoff when applying agricultural wastes to land and calls for developing waste utilization plans that incorporate these best practices. For example, the timing, application, and handling of wastes will be performed in a manner that maximizes the utilization of nutrients by crops and is consistent with the facility's waste treatment plan,

[15] NRCS. 2017. Conservation Practice Standard: Waste Storage Facility (Code 313). November 2017. Accessed 01/30/2023. https://efotg.sc.egov.usda.gov/api/CPSFile/20940/313_OH_CPS_Waste_Storage_Facility_2017
[16] NRCS. 2017. Conservation Practice Standard: Waste Recycling (Code 633). October 2017. Accessed 01/30/2023. https://www.nrcs.usda.gov/sites/default/files/2022-10/Waste_Recycling_633_CPS_Oct_2017b.pdf

including a nutrient management plan for proper land application of byproducts, if applicable.[17] Waste utilization plans also need to include operational requirements for emptying the storage facility, including the locations, times, rates, and volumes at which waste is to be removed and utilized.

Nutrient Management

The goal of the agriculture management measure for nutrient management is to develop, implement, and periodically update a nutrient management plan to: (1) apply nutrients at rates necessary to achieve realistic crop yields, (2) improve the timing of nutrient application, and (3) use agronomic crop production technology to increase nutrient use efficiency. When the source of the nutrients is not commercial fertilizer, the plan must include provisions to determine the nutrient value and the rate of availability of the nutrients. The plan must determine and credit the nitrogen contribution of any legume crop. Soil and plant tissue testing should be used routinely. Nutrient management plans must contain the following core components:

1. Farm and field maps showing acreage, crops, soils, and waterbodies;
2. Realistic yield expectations for the crop(s) to be grown, based primarily on the producer's actual yield history, State Land Grant University yield expectations for the soil series, or SCS Soils-5 information for the soil series;
3. A summary of the nutrient resources available to the producer, which at a minimum include:
    a. Soil test results for pH, phosphorus, nitrogen, and potassium;
    b. Nutrient analysis of manure, sludge, mortality compost (birds, pigs, etc.), or effluent (if applicable);
    c. Nitrogen contribution to the soil from legumes grown in the rotation (if applicable); and
    d. Other significant nutrient sources (e.g., irrigation water);
4. An evaluation of field limitations based on environmental hazards or concerns, such as:
    a. Sinkholes, shallow soils over fractured bedrock, and soils with high leaching potential;
    b. Lands near surface water;
    c. Highly erodible soils; and
    d. Shallow aquifers;
5. Use of the limiting nutrient concept to establish the mix of nutrient sources and requirements for the crop based on a realistic yield expectation;
6. Identification of timing and application methods for nutrients to: provide nutrients at rates necessary to achieve realistic crop yields; reduce losses to the environment; and avoid applications as much as possible to frozen soil and during periods of leaching or runoff; and
7. Provisions for the proper calibration and operation of nutrient application equipment.

Indiana has met the first six of the seven parts of the nutrient management measure through passage and implementation of the statewide fertilizer rule (355 IAC 8). The rule requires any

[17] NRCS. 2020. Conservation Practice Standard: Waste Treatment (Code 629). September 2020. Accessed 03/07/2023. https://www.nrcs.usda.gov/sites/default/files/2022-10/Waste_Treatment_629_CPS_9_2020.pdf

person applying fertilizer material for the purposes of producing agriculture crops[18] to develop a fertilizer application plan and to apply fertilizer in accordance with the application plan for the targeted application site to achieve realistic crop yields (355 IAC 8-3-1). This rule also limits the application of fertilizer on highly erodible land (355 IAC 8-3-3) and prohibits the application of fertilizer directly to surface water, saturated or snow-covered ground, or from public roads (355 IAC 8-3-4). The rule provides setbacks for application of unmanipulated organic fertilizer (such as manure). Unless there is a gradient barrier and a minimum setback of 10 feet or a filter strip with a minimum width of 50 feet located between the application site and any known feature identified in the rule, a person shall apply unmanipulated organic fertilizer according to setback distances described in 355 IAC 8-3-2. A setback distance of 500 feet is required for public water supplies, wells, and surface intakes, a setback distance of 25 to 200 feet is required for surface waters and sink holes, and a setback distance of 50 to 200 feet is required for private water wells. The setback distance depends on the type of application used and the steepness of the slope (e.g., farther setback distances are required for slopes that have greater than a six percent slope) (355 IAC 8-3-2). The rule also requires any person who applies unmanipulated organic fertilizer to monitor the application site soil conditions and weather forecast 24-hours prior to, during, and immediately following application (355 IAC 8-3-5). Violators of the statewide fertilizer rules may be subject to civil fines (IC 15-16-2-49.5; 355 IAC 9) and injunctive relief (IC 15-16-49).

Indiana has met the seventh element of the nutrient management measure, proper calibration and operation of nutrient application equipment, through the State's licensing of agricultural fertilizer applicators, and by promoting the FOTG standard for nutrient management (FOTG Code 590) through its technical assistance outreach programs.[19] In order to legally use (apply, handle, transport) for hire or use organic fertilizer (including manure) from a combined feeding operation for purposes of producing an agricultural crop, a person must obtain a commercial applicator license or private applicator certification by passing the Category 14 Agriculture Fertilizer Application exam (355 IAC 7-3 and 355 IAC 7-4-1). The exam includes questions to test the applicators' knowledge about equipment calibration and other aspects of fertilizer application.[20,21] To maintain their license, applicators must accumulate at least three service-learning credits before the expiration of their license, which occurs at the end of the fourth calendar year following passage of the applicator's exam (355 IAC 7-4-2).[22] FOTG 590 requires calibrating application equipment to ensure accurate distribution of material at planned rates.

Pesticide Management

[18] The rule exempts persons applying or distributing less than 10 cubic yards per year or four thousand (4,000) gallons of fertilizer material in a calendar year. 355 IAC 8-1-2.
[19] NRCS. 2018. Conservation Practice Standard: Nutrient Management (Code 590). November 2018. Accessed 09/01/2022. https://efotg.sc.egov.usda.gov/api/CPSFile/9511/590_IN_CPS_Nutrient_Management_2018
[20] Office of Indiana State Chemist. Purdue University. Pesticide. Category 14: Agricultural Fertilizer Management. Undated. Indiana Pesticide Applicator Requirements (website). Accessed 01/20/2023 https://oisc.purdue.edu/pesticide/14.html
[21] Purdue University Extension. PPP-14. 2022. Indiana Fertilizer Applicator Training Manual. Category 14: Agricultural Fertilizer Applicator. February 2022. Accessed 01/30/2023.
[22] Office of Indiana State Chemist. Indiana Commercial Pesticide and Fertilizer Applicator Continuing Certification Program. Category 14, Agricultural Fertilizer Program. Accessed 09/01/2022. https://oisc.purdue.edu/pesticide/continuing_certification_program.html

The goal of the agriculture management measure for pesticide management is to reduce contamination of surface water and ground water from pesticides through the:

1. Evaluation of pest problems, previous pest measures, and cropping history;
2. Evaluation of soil and physical characteristics of the site including mixing, loading, and storage areas for potential leaching or runoff of pesticides. If leaching or runoff is found to occur, steps should be taken to prevent further contamination;
3. Use of integrated pest management strategies that apply pesticides only when economic beneficial to the producer or when runoff losses are unlikely;
4. Consideration of the persistence, toxicity, runoff potential, and leaching potential of products in making a selection of registered materials;
5. Periodical calibration of pesticide spray equipment; and
6. Use of anti-backflow devices on hoses used for filling mixture tanks.

Indiana addresses the pesticide management measure largely through its pesticide laws and regulations (IC 15-16-4 and IC 15-16-5), which require anyone who applies pesticides to follow pesticide label requirements. In addition, those who apply pesticides for hire must pass a pesticide licensing exam to become a licensed applicator (IC 15-16-5-48 and IC 15-16-5-54). The license is good for five years and requires continuing education hours (IC-15-16-5-43). A license exam is also required for private pesticide applicators who buy and apply restricted-use pesticides to property they own, rent or otherwise control, for the purpose of producing an agricultural commodity.[23] Commercial agricultural pesticide applicators must pass additional exams specific to agricultural pest management.[24] Due to liability concerns associated with using pesticides on agriculture land near residential areas, most large pesticide applications in the coastal nonpoint program management area are provided by commercial applicators.[25]

The State partners with Purdue Extension to provide pest management training, licensing exams, and continuing education training for pesticide applicators. Consistent with the 6217(g) guidance, the applicators license training and exam cover the need to evaluate: 1) soil and physical characteristics of the site and take steps to prevent leaching and runoff of pesticides if the potential exists; 2) cropping history; and 3) previous pest control measures when applying pesticides. The training and exam materials also address pesticide mixing, loading, and storage procedures consistent with the 6217(g) guidance (355 IAC 5; 357 IAC 1).[26]

Violators of the statewide pesticide rules may be subject to civil fines (IC 15-16-2-49.5; 57 IAC 1-6-2) and injunctive relief (IC 15-16-49). In particular, the State may impose civil penalties for applying restricted use pesticides without the required license, applying pesticides inconsistent

[23] Office of Indiana State Chemist. Undated. Pesticide. Farmers: Private Applicators (website). Accessed 01/30/2023. https://oisc.purdue.edu/pesticide/private_applicators.html
[24] Purdue University Extension. 2009. Pesticide Applicatory Certification. PPP-25. July 2009. Accessed 09/01/2022. https://www.extension.purdue.edu/extmedia/ppp/ppp-25.pdf
[25] Indiana Lake Michigan Coastal Program. 2016. 6217 Nonpoint Source Pollution Control Program Submission for Programmatic Approval. April 2016. Copy available upon request.
[26] Perdue Extension. Undated. Pesticide Training Manuals (website). Accessed 03/07/2023. https://mdc.itap.purdue.edu/wk_group.asp?tgroup=PPPManuals

with the label, improperly storing pesticides, or operating in a careless or negligent manner (357 IAC 1-6-2).[27]

Purdue Extension also holds local and regional workshops, field days, and publishes a variety of newsletters, technical memoranda, and guidance documents to educate farmers about the latest in pesticide management and to promote best practices consistent with the 6217(g) guidance. For example, the FOTG for Integrated Pest Management (IPM) and the associated IPM checklist and Agronomy Technical Note 4 discuss the need to regularly calibrate pesticide spray equipment and to apply pesticides only when an economic benefit to the producer will be achieved (i.e., applications based on economic thresholds).[28,29,30,31] Perdue Extension's "Managing Farm Chemicals" brochure, referenced in the FOTG for IPM, also notes that anti-back flow devices should be placed on all wells and other water sources.[32] Purdue Extension also provides technical guidance through their *Field Assessment for Water Resource Protection Guide*, which recommends installation of anti-backflow devices on hoses and wells to prevent backwash of pesticides.[33] In addition, the guide directs readers to the Purdue Pesticide Program's *Pesticide Safety Tips for the Workplace and Farm* which recommends installation of anti-backflow devices on water tanks, faucets, water lines, and/or hoses to prevent pesticide mixtures from being siphoned into a water supply.[34]

Grazing Management
The goal of the agriculture management measure for grazing management is to protect range, pasture, and other grazing lands by:

1. Implementing one or more grazing BMPs to protect sensitive areas such as streambanks, wetlands, estuaries, ponds, lake shores, and riparian zones from physical disturbance and to reduce direct loading of animal waste and sediments; and
2. Implementing the range and pasture components of a CMS as defined in the Field Office Technical Guide of the USDA-SCS by applying the progressive planning approach of the USDA-SCS to reduce erosion, or maintain range, pasture, and other grazing lands in

[27] Perdue Extension. Pesticide Training Manuals (website). Accessed 2/6/2023. https://mdc.itap.purdue.edu/wk_group.asp?tgroup=PPPManuals
[28] NRCS, Pest Management Conversation System. Undated. Pest Management Checklist. Accessed 03/07/2023. https://www.nrcs.usda.gov/wps/portal/nrcs/in/technical/ecoscience/pest/
[29] NRCS. 2012. Conservation Practice Standard Code 595: Integrated Pest Management. November 2012. Accessed 03/07/2023. https://efotg.sc.egov.usda.gov/api/CPSFile/19549/595_NE_CPS_Integrated_Pest_Management_2011
[30] NRCS. 2010. Agronomy Technical Note 4: Pest Management in the Conservation Planning Process. September 2010. Accessed 03/07/2023. https://efotg.sc.egov.usda.gov/api/CPSFile/12831/595_IN_OTH_Integrated_Pest_Management-Agronomy_Technical_Note_4_2010
[31] Purdue Pesticide Programs. 2007. Managing Farm Chemicals Brochure. March 2007. Accessed 03/07/2023. https://www.extension.purdue.edu/extmedia/PPP/PPP-50.pdf
[32] Purdue Extension. 2007. Managing Farm Chemicals Brochure. March 2007. Accessed 03/07/2023. https://www.extension.purdue.edu/extmedia/PPP/PPP-50.pdf
[33] Purdue Extension. 2003. Field Assessment for Water Resource Protection. December 2003. Accessed 03/07/2023. https://www.extension.purdue.edu/extmedia/WQ/WQ-42.pdf
[34] Purdue Extension. 2003. Pesticide Safety Tips for the Workplace and Farm: A Pictorial Guide to Best Pesticide Management Practices. PPP-61. September 2003. Accessed 03/07/2023 https://www.extension.purdue.edu/extmedia/ppp/ppp-61.pdf

accordance with activity plans established by either the Bureau of Land Management of the U.S. Department of the Interior or the Forest Service of USDA.

Indiana estimates the three coastal counties (Lake, Porter, and LaPorte) within the coastal nonpoint program management area accounted for less than 2.5 percent of grazing livestock state-wide in 2021.[35] Indiana implements a voluntary outreach and technical assistance program to address nonpoint source pollution problems that may arise in this area. Through the ICP, the State works closely with SWCDs, NRCS, Purdue Extension, and others to provide training and technical assistance to the agricultural community related to grazing management. The trainings and technical assistance these groups provide promote NRCS FOTGs and other Purdue Extension materials that include BMPs consistent with the 6217(g) grazing management measure, such as the installation of watering facilities to limit livestock access to ponds and water bodies, the installation of fencing to exclude animals from waterways, the installation of stream crossings for livestock, and the use of prescribed grazing systems.[36,37]

Enforceable Policies and Mechanisms for the Agriculture Management Measures
Indiana provided a legal opinion from its Attorney General stating that the State has the authority through IC-15, IC 13-18, IC-13-30, and their implementing regulations, to require implementation of the 6217(g) measures, including the agriculture measures, as necessary. IDEM also sent a letter further describing the mechanism and process that links the implementing agencies with the enforcement agency (IDEM) and provided an example of an enforcement action that was taken demonstrating the State's commitment to use its back-up authority, when needed, to ensure implementation of the 6217(g) management measures.[38] The Lake Michigan Coastal Program (LMCP) works closely with the Indiana Department of Agriculture, SWCDs, NRCS, and IDEM to coordinate the implementation of the 6217(g) agriculture management measures. To help track implementation, the Indiana Department of Agriculture, through the ICP, has developed maps indicating where agriculture BMPs have been implemented within the coastal nonpoint management area and is using these maps to model nutrient and sediment load reductions to identify when and where additional nonpoint source pollution reduction efforts may be needed.[39,40]

[35] United States Department of Agriculture, National Agricultural Statistics Service Indiana Field Office. County Data; All Cattle, Beef Cows, and Milk Cows 2020-2021. October 2021. Accessed 03/07/2023. https://www.nass.usda.gov/Statistics_by_State/Indiana/Publications/Annual_Statistical_Bulletin/2021/pg82-83.pdf
[36] Purdue Extension. 2004. Field Assessment for Water Quality. WQ-42. January 2004. Accessed 03/07/2023. https://www.extension.purdue.edu/extmedia/WQ/WQ-42.pdf
[37] NRCS. 2018. Conservation Practice Standard: Prescribed Grazing. (Code 528). January 2018. Accessed 01/30/2023. https://efotg.sc.egov.usda.gov/api/CPSFile/9474/528_IN_CPS_Prescribed_Grazing_2018
[38] IDEM. 2016. Letter from Elizabeth Admire, State Natural Resource Co-Trustee Office of Legal Counsel to Mike Molnar, Program Manager Lake Michigan Coastal Program, RE: Enforceable policies and mechanisms for nonpoint source pollution, June 2, 2016. (Available upon request))
[39] Indiana Department of Agriculture. 2021. Indiana's Sediment and Nutrient Load Reductions Tool and ArcGIS StoryMaps. Accessed 09/01/2022. https://www.arcgis.com/apps/webappviewer/index.html?id=19252aff567c43aea086e28127c9094c
[40] Indiana Department of Agriculture. 2014. Indiana Conservation Partnership Data Consolidation, Quality Control and Mapping Utilizing the EPA Region 5 Load Reduction Model. Accessed 09/01/2022. http://icp.iaswcd.org/wp-content/uploads/2014/03/2013-ICP-Region-5-Model-Load-Reductions-Poster.pdf

IV. URBAN

A. NEW DEVELOPMENT AND SITE DEVELOPMENT

2008 FINDING: Indiana may have programs in place to implement the site development management measure, but additional clarification, with a few examples, is needed. The State does not have programs in place to ensure implementation of the new development management measure outside of urbanized areas subject to NPDES Phase II municipal separate stormwater system (MS4) permits. The State has identified a back-up enforceable authority, but has not yet demonstrated the ability of the authority to ensure implementation of the new and site development measures throughout the coastal nonpoint program management area by submitting a legal opinion, demonstrating the authority and commitment to use the enforcement mechanisms where necessary, describing the laws and processes linking the implementing agencies with the enforcement agency, and describing the monitoring and tracking mechanisms the State will employ to ensure that the voluntary programs are being implemented sufficiently.

2008 CONDITION: Within five years, Indiana will demonstrate it has programs in place to implement the site development measure throughout the coastal nonpoint program management area and demonstrate that areas within the coastal nonpoint program management area not subject to NPDES Phase II MS4 permits will implement the new development management measure. Also, within five years, Indiana will submit a legal opinion and other supporting documents as described in the *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance*[41] to demonstrate that it has adequate back-up authority to implement the new and site development management measures throughout the coastal nonpoint program management area.

2024 DECISION: Indiana has satisfied this condition.

RATIONALE: The 6217(g) new development management measure calls for states to ensure they have programs and authorities in place that meet the following criteria:

1. By design or performance:
    a. After construction has been completed and the site is permanently stabilized, reduce the average annual total suspended solid (TSS) loadings by 80 percent, or
    b. Reduce the post-development loadings of TSS so that the average annual TSS loadings are no greater than pre-development loadings; and
2. To the extent practicable, maintain post-development peak runoff rate and average volume at levels that are similar to pre-development levels.

All three counties and independent cities within the coastal nonpoint program management area are subject to NPDES Phase II MS4 permits and must undertake specific actions to control stormwater, according to 327 IAC 15-13. In 2002, NOAA and EPA determined that state coastal nonpoint programs are no longer required to include the new development management

[41] NOAA and EPA. 1998. Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance. Accessed 09/01/2022. https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217adminchanges.pdf

measure in urbanized areas subject to Phase I or Phase II NPDES MS4 permits because these regulations are redundant with this management measure for those permitted areas.[42] Thus, Indiana is exempt from the new development management measure because the entire coastal nonpoint management area is subject to NPDES MS4 permit stormwater requirements.

The site development management measure calls for states to plan, design, and develop sites to:

1. Protect areas that provide important water quality benefits and/or are particularly susceptible to erosion and sediment loss;
2. Limit increases of impervious areas, except where necessary;
3. Limit land disturbance activities such as clearing and grading, and cut and fill to reduce erosion and sediment loss; and
4. Limit disturbance of natural drainage features and vegetation.

Indiana implements the site development management measure through direct regulatory authorities (local ordinances) and IDEM's voluntary *Indiana Storm Water Quality Manual.*[43] The State has also provided a legal opinion and supporting documentation that demonstrates it has adequate back-up authority to implement the site development management measure throughout the coastal nonpoint program management area.

The *Indiana Storm Water Quality Manual* provides guidelines and specific BMPs for site clearing that are consistent with the site development management measure. For example, the manual calls for preserving natural vegetation, riparian buffers, and natural drainage patterns, limiting land disturbance activities, and includes practices to limit the creation of impervious surfaces. The manual is promoted through IDEM's website and electronic copies of the manual have been distributed during storm water workshops sponsored by the Northwest Indiana Regional Planning Commission and IDEM.[44]

Specific county ordinances that address the site development management measure include the Municipal Code of the City of La Porte, the Porter County Unified Development Ordinance, and the Lake County Stormwater Management and Clean Water Regulations Ordinance. Chapter 30, Article 4 of the LaPorte County Municipal Code contains site plan review and development plan requirements that control the amount of open space and impervious surfaces within a development and limit the intensity of development in areas of sensitive natural resources or natural features to reduce or eliminate adverse environmental impacts (Sec. 30-76(5)). The Porter County Unified Development Ordinance Chapter 7, Section 15, prohibits clearing and grading of natural resources such as woodlands, stream corridors, and wetlands, and restricts cut and fill on slopes no greater than a 3:1 ratio, except as approved. It also requires that development be sited and constructed to retain natural vegetation and preserve natural drainage patterns and requires that, where possible, cut and fill construction should fit the

[42] NOAA and EPA. 2002. Policy Clarification on Overlay of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations. Accessed 09/01/2022.
https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf
[43] IDEM. 2007. Indiana Storm Water Quality Manual. Accessed 09/01/2022.
https://www.in.gov/idem/stormwater/2363.htm
[44] IDEM. Undated. Indiana Storm Water Quality Manual (website). Accessed 03/07/2023.
https://www.in.gov/idem/stormwater/resources/indiana-storm-water-quality-manual/

topography and soils of the site to minimize the potential for erosion. Chapter 3, Section 2-B of the Lake County Stormwater Management and Clean Water Regulations Ordinance establishes that property owners are responsible for maintaining the natural features and drainage patterns on their lots and taking preventive measures against any and all erosion and/or deterioration of natural or constructed drainage features on their lots including overland flow patterns. Chapter 4, Section 2 of the Lake County ordinance requires a Stormwater Pollution Plan for construction plans and land disturbing activity greater than one acre that considers these principles:

1. Development design should fit the natural topography and soils of the site to minimize the potential for soil erosion;
2. Existing natural vegetation should be retained and protected where possible;
3. Areas immediately adjacent (within 25 feet of top of bank) to watercourses and lakes also should be left undisturbed wherever possible; and
4. Collected runoff leaving a project site must be either discharged directly into a well-defined, stable receiving channel, or diffused and released to adjacent property without causing an erosion or pollutant problem to the adjacent property owner.

Indiana provided a legal opinion from its Attorney General stating that the State has the authority through IC-15, IC 13-18, IC-13-30, and their implementing regulations, to require implementation of the 6217(g) measures, including the site development management measure, as necessary. IDEM also sent a letter further describing the mechanism and process that links the implementing agencies with the enforcement agency (IDEM) and provided an example of an enforcement action that was taken demonstrating the State's commitment to use its back-up authority, when needed, to ensure implementation of the 6217(g) management measures.[45] Indiana tracks implementation of the site development management measure through annual reporting of its Clean Water Act (CWA) Section 319 Nonpoint Source (NPS) Management Program.[46]

B. WATERSHED PROTECTION AND EXISTING DEVELOPMENT

2008 FINDING: Indiana's program has measures in place to address the watershed protection measure and the second two elements of the existing development measure. The State does not have programs to identify priority local and/or regional watershed pollutant reduction opportunities nor does it have a schedule for implementing appropriate controls. Indiana has identified back-up enforceable authorities, but has not yet demonstrated the ability of the authority to ensure implementation of the watershed protection and existing development measures throughout the coastal nonpoint program management area by submitting a legal opinion, demonstrating the authority and commitment to use the enforcement mechanisms where necessary, describing the laws and processes linking the implementing agencies with the enforcement agency, and describing the monitoring and tracking mechanisms the State will employ to ensure that the voluntary programs are being implemented sufficiently.

[45] IDEM. 2016. Letter from Elizabeth Admire, State Natural Resource Co-Trustee Office of Legal Counsel to Mike Molnar, Program Manager Lake Michigan Coastal Program, RE: Enforceable policies and mechanisms for nonpoint source pollution, June 2, 2016. (Available upon request)
[46] IDEM. Undated. Nonpoint Source Program Annual Reports (website). Accessed 02/24/2023. https://www.in.gov/idem/nps/resources/nonpoint-source-annual-report/

2008 CONDITION: Within five years, Indiana will demonstrate that it has programs in place to identify priority local and/or regional watershed pollutant reduction opportunities and develop a schedule for implementing appropriate controls. Within five years, Indiana will submit a legal opinion and other supporting documents as described in *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance*[47] to demonstrate that it has adequate back-up authority to implement the watershed protection and existing development management measures throughout the coastal nonpoint program management area.

2024 DECISION: Indiana has satisfied this condition.

RATIONALE: The 6217(g) watershed protection management measure calls for states to ensure they have programs and authorities in place that:

1. Avoid conversion, to the extent practicable, of areas that are particularly susceptible to erosion and sediment loss;
2. Preserve areas that provide important water quality benefits and/or are necessary to maintain riparian and aquatic biota; and
3. Site development, including roads, highways, and bridges, to protect to the extent practicable the natural integrity of waterbodies and natural drainage systems.

The existing development management measure calls for states to develop and implement watershed management programs to reduce runoff pollutant concentrations and volumes from existing development by:

1. Identifying priority local and/or regional watershed pollutant reduction opportunities, e.g., improvements to existing urban runoff control structures;
2. Developing a schedule for implementing appropriate controls;
3. Limiting destruction of natural conveyance systems; and
4. Where appropriate, preserving, enhancing, or establishing buffers along surface waterbodies and their tributaries.

As noted in the 2008 findings, IDEM had already developed a watershed planning program that addressed the programmatic elements of the watershed protection management measure as well as elements 3 and 4 of the existing development management measure. Since receiving approval, with conditions, Indiana has continued to develop and promote watershed planning to address the watershed protection and existing development measures (as well as other management measures) throughout the coastal nonpoint program management area. The State has also provided a legal opinion and supporting documents to demonstrate it has adequate back-up authority to implement the voluntary-based watershed planning approach.

In 2009, IDEM updated its watershed management plan checklist to further emphasize that watershed management plans (WMP) developed within the coastal nonpoint program management area should be consistent not only with EPA's nine element plans for watershed planning but also the 6217(g) guidance, including by identifying priority pollutant reduction

[47] NOAA and EPA. 1998. Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance. Accessed 09/01/2022. https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217adminchanges.pdf

opportunities and developing a schedule for implementing appropriate controls.[48] The watershed management plan checklist specifically requires that individuals implementing projects within the coastal nonpoint management area "work with the Indiana Department of Natural Resources (IDNR) Coastal Programs to ensure their '6217'requirements are incorporated into the WMP. 6217 requires that the WMP addresses agriculture, silviculture, urban and rural areas, marinas, and recreational boating, and hydromodifications." The checklist is intended to assure that each plan includes interim measurable milestones for carrying out identified pollution reduction opportunities. To be eligible for EPA's CWA Section 319 funding, watershed projects must meet the checklist requirements.

The coastal nonpoint program management area is entirely within the Little Calumet-Galien watershed. Within the Little Calumet-Galien watershed there are eight subwatersheds with WMPs that encompass approximately 91 percent of the watershed.[49] The Little Calumet River East Branch WMP is an example of how the 6217(g) management measures have been incorporated into WMPs. Stormwater management is identified as a top priority within the watershed.[50] The WMP specifically identifies Reynolds Creek, Kemper Ditch and Coffee Creek as areas of opportunity to reduce stormwater runoff flow and volume from existing development, and it identifies specific BMPs such as increasing pervious surfaces, installing infiltration swales and extended detention acreage, improving existing urban runoff control structures, limiting the destruction of natural conveyance systems, and establishing buffers along waterbodies to achieve this goal. For each recommended project, the WMP also identifies milestones, costs, and partners.

The Deep River-Portage Burns Waterway WMP also identifies opportunities to reduce nonpoint source pollution from developed areas.[51] The WMP recommends stormwater drainage enhancement, stormwater storage creation, subdivision stormwater controls, retrofits to existing stormwater ponds and other existing urban runoff structures, and the use of low-impact development practices and improvements to existing urban runoff structures. One specific project implemented under the WMP involved green infrastructure improvements in the Headwaters Turkey Creek watershed to maintain and improve floodplain capabilities to decrease peak flows and maximize available storage volume in the upper watershed.

Enforceable Policies and Mechanisms for the Watershed Protection and Existing Development Management Measures

Indiana provided a legal opinion from its Attorney General stating that the State has the authority through IC-15, IC 13-18, IC-13-30, and their implementing regulations, to require

[48] IDEM. 2009. Watershed Management Plan Checklist and Instructions (2009). Accessed 09/01/2022. https://www.in.gov/idem/nps/watershed-planning/watershed-management-planning/watershed-management-plan-checklist-and-instructions-2009/

[49] IDEM. Watershed Management Plans. Region 1, Northwest, Little Calumet (04040001). Accessed 09/01/2022. https://www.in.gov/idem/nps/resources/watershed-management-plans/

[50] Little Calumet East Branch River Watershed Management Plan. 2015. Accessed 09/01/2022. https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83086341&dDocName=83086346&Rendition=web&allowInterrupt=1&noSaveAs=1

[51] Deep River Portage Burns Waterway Watershed Management Plan. 2016. Accessed 09/01/2022. https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83085309&dDocName=83085242&Rendition=web&allowInterrupt=1&noSaveAs=1

implementation of the 6217(g) measures, including the watershed protection and existing development management measures, as necessary. IDEM sent a letter describing the mechanism and process that links the implementing agencies with the enforcement agency (IDEM) and an example of an enforcement action that was taken demonstrating the State's commitment to use its back-up authority, when needed, to ensure implementation of the 6217(g) management measures.[52] Indiana tracks implementation of its watershed planning program and actions to address polluted runoff for existing development through the annual reporting of its Section 319 NPS Management Program.[53]

D. NEW AND OPERATING ONSITE DISPOSAL SYSTEMS (OSDS)

2008 FINDING: Indiana's program includes management measures and enforceable policies and mechanisms in conformity with the 6217(g) guidance, except that it does not include measures or enforceable polices and mechanisms for: 1) inspection and maintenance of existing OSDS; 2) establish protective vertical separation distances to groundwater; and 3) use of denitrifying systems in nitrogen sensitive areas for new and existing OSDS.

2008 CONDITION: Within five years, Indiana will include in its program management measures and enforceable mechanisms and policies for inspection of existing OSDS. Within five years, Indiana will include in its program management measures and enforceable mechanisms and policies for protective separation distances to groundwater in conformity with the 6217(g) guidance for new OSDS. Finally, within five years, Indiana will include in its program management measures and enforceable mechanisms and policies for denitrifying systems where nitrogen-limited surface waters may be adversely affected by nitrogen loading from OSDS, in conformity with the 6217(g) guidance for new and operating OSDS.

2024 DECISION: Indiana has satisfied this condition.

RATIONALE: The purpose of the new OSDS management measure is to protect the coastal nonpoint management area from pollutants discharged from OSDS. To achieve this goal, the 6217(g) guidance calls for states to:

1. Ensure that new OSDS are located, designed, installed, operated, inspected, and maintained to prevent the discharge of pollutants to the surface of the ground and to the extent practicable reduce the discharge of pollutants into groundwaters that are closely hydrologically connected to surface waters;
2. Direct placement of OSDS away from unsuitable areas;
3. Establish protective setbacks from surface waters, wetlands, and floodplains for conventional as well as alternative OSDS;
4. Establish protective separation distances between OSDS system components and groundwater which is closely hydrologically connected to surface waters; and

[52] IDEM. 2016. Letter from Elizabeth Admire, State Natural Resource Co-Trustee Office of Legal Counsel to Mike Molnar, Program Manager Lake Michigan Coastal Program, RE: Enforceable policies and mechanisms for nonpoint source pollution, June 2, 2016. (Available upon request)
[53] IDEM. Undated. Nonpoint Source Program Annual Reports (website). Accessed 02/24/2023. https://www.in.gov/idem/nps/resources/nonpoint-source-annual-report/

5. Where conditions indicate that nitrogen-limited surface waters may be adversely affected by excess nitrogen loadings from groundwater, require the installation of OSDS that reduce total nitrogen loadings by 50 percent.

For operating OSDS, the 6217(g) guidance directs states to:

1. Establish and implement policies and systems to ensure that existing OSDS are operated and maintained to prevent the discharge of pollutants;
2. Inspect OSDS at a frequency to ascertain whether OSDS are failing; and
3. Where conditions indicate that nitrogen-limited surface waters may be adversely affected by groundwater nitrogen loadings from OSDS and where nitrogen loadings from OSDS are delivered to groundwater that is closely hydrologically connected to surface water, consider replacing or upgrading OSDS to treat influent so that total nitrogen loadings are reduced by 50 percent.

In the 2008 findings, NOAA and EPA found that Indiana had satisfied elements 1, 2 and 3 of the new OSDS management measure and element 1 of the operation OSDS management measure. Since then, Indiana has strengthened its efforts to manage nonpoint source pollution from OSDS. The State relies on a mix of regulatory and voluntary approaches to address the conditions related to OSDS. Specifically, the State achieves protective separation distances to groundwater through state regulations and achieves routine inspections of operating OSDS through local ordinances and proactive outreach efforts. In addition, Indiana provided information that nitrogen-limited waters adversely affected by nitrogen loading from OSDS are not an issue for the freshwaters that comprise Indiana's coastal nonpoint program management area.

Indiana's regulations for Residential Sewage Disposal (410 IAC 6-8.1) establish a permitting program for the construction and installation of new OSDS. Specific requirements for vertical separation distances for groundwater vary based on the type of system but range from 20-30 inches above either the seasonal high-water table or any soil horizon with a soil loading rate less than 0.25 gallons per day per square foot (410 IAC 6-8.1-50 and 410 IAC 6-8.1-51). These separation distances were developed and approved based on EPA's 1980 *Design Manual for Onsite Wastewater Treatment and Disposal Systems* and other research from the region.[54] EPA's 6217(g) guidance recommends following the 1980 design manual for guidance on vertical separation distances, making Indiana's regulations consistent with the 6217(g) guidance.[55]

Regarding the condition related to denitrifying systems, the 6217(g) guidance requirements for denitrification systems apply only to nitrogen-limited waters. Phosphorus, not nitrogen, is the primary limiting nutrient in many freshwater systems. The Indiana State Department of Health and IDEM's 2008 report, "*Nitrates, Groundwater, and Onsite Sewage Systems in Indiana*"

[54] EPA. 1980. Design Manual for Onsite Wastewater Treatment and Disposal Systems. October 1980. EPA 625/1-80-012. Accessed 09/01/2021. https://www.epa.gov/sites/production/files/2015-06/documents/septic_1980_osdm_all.pdf

[55] EPA. 1993. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters. January 1993. Accessed 02/23/2023. https://water.epa.gov/polwaste/nps/czara/index.cfm.

supports this conclusion for Indiana's coastal waters.[56] Therefore, NOAA and EPA grant the State an exemption from the denitrifying systems requirement of the new and operating OSDS measures.

Indiana addresses the inspection requirement for operating systems through a mix of direct regulatory requirements and voluntary-based programs. La Porte County, which has roughly 7,000 of the estimated 33,000 OSDS within the Indiana coastal nonpoint program management area, has two ordinances that require routine inspections of operating OSDS consistent with the 6217(g) guidance. In 2012, the county adopted an ordinance that requires operating permits for any new OSDS installed after the ordinance was adopted. The operating permits require inspections every three to five years depending on the type of system.[57] To reach older OSDS that pre-date the 2012 ordinance, in 2016, La Porte County also adopted an ordinance requiring certified inspections of all OSDS before the property is sold or otherwise transferred.[58]

Although the two remaining counties within Indiana's coastal nonpoint program management area, Lake and Porter, do not have ordinances in place that require routine inspections of operating OSDS, Indiana has developed a strategy for achieving voluntary-based inspections through proactive outreach programs to homeowners, realtors, and OSDS professionals. The State has committed to the goal of inspecting 67 percent of the OSDS within these two counties through this voluntary approach over the next 15 years.[59]

Indiana's LMCP formed the Northwest Indiana Septic System Work Group in 2013 to support voluntary inspections of OSDS. The work group, made up of federal, state, and local OSDS stakeholders, works to identify and address potentially failing OSDS within the coastal watersheds and conducts outreach and education programs for OSDS including proper system maintenance. The work group launched a Good Neighbor Program to encourage homeowners within identified hot spot areas of potentially failing OSDS to properly maintain and inspect their systems.[60,61,62] The Good Neighbor Program recruited local neighborhood ambassadors to distribute outreach materials to homeowners. The work group also partners with the Greater Northern Indiana Association of Realtors (GNIAR) and the Indiana Onsite Wastewater Professionals Association (IOWPA) to develop and distribute New Neighbor Welcome Packets

[56] Indiana State Department of Health and IDEM. 2008. "Nitrates, Groundwater, and Onsite Sewage Systems in Indiana. Report to the Legislature. December 2008.
[57] La Porte County. 2012. Ordinance Establishing On-site Sewage System Regulations. Ordinance No. 2012-01. Accessed 09/01/2022. https://laporteco.in.gov/Resources/Commissions/2012/Ordinances/Ordinance2012-01.pdf
[58] LaPorte County. 2016. La Porte County Property Transfer Ordinance. Ordinance No. 2016-02. Accessed 09/01/2022. https://www.laportecounty.org/Resources/HealthDept/PropertyTransferOrdinance.pdf
[59] Indiana LMCP. 2021. 6217 OSDS Measure Submission for Inspection and Maintenance of Existing Septic Systems (OSDS) Management Measure in the Indiana Coastal Watershed. 2021. Copy available upon request.
[60] IDNR. Undated. Clean Water Ambassador Program (website). Accessed 03/01/2023. https://www.in.gov/dnr/lake-michigan-coastal-program/septic-smarts-clean-water-ambassadors/
[61] IDNR. 2019. Good Neighbor Program Brochure. Accessed 03/01/2023. (outside) https://www.in.gov/dnr/lake-michigan-coastal-program/files/lm-HSS_Good_Neighbor_Brochure_2_Outside.pdf and
[62] IDNR. Undated. Be a Good Neighbor: Homeowner Maintenance Record Keeping Folder. Accessed 03/01/2023. (front) https://www.in.gov/dnr/lake-michigan-coastal-program/files/lm-HSS_Good_Neighbor_Septic_Folder_1_Front.pdf. https://www.in.gov/dnr/lake-michigan-coastal-program/files/lm-HSS_Good_Neighbor_Septic_Folder_1_Front.pdf; (back) https://www.in.gov/dnr/lake-michigan-coastal-program/files/lm-HSS_Good_Neighbor_Septic_Folder_2_Back.pdf

to all new homeowners with septic systems. The work group also organizes an outreach and social media campaign in conjunction with Septic Smart Week, an EPA-driven initiative that raises awareness about the impacts of septic systems on water quality and encourages proper system maintenance, including regular inspections and tank pumping.

Indiana also has developed several training programs that promote the importance of and need for routine inspections of existing OSDS. The LMCP, IDEM, GNIAR and IOWPA work together to provide annual training for realtors and certified IOWPA inspectors in Northwest Indiana on the importance of OSDS inspections, especially during property transfers for the realtor audience. The realtor training is part of GNIAR's continuing education requirements that realtors must take to maintain their real estate licenses. Similarly, decentralized wastewater professionals are required to attend the training to receive and maintain their IOWPA certifications.

In addition to the in-person trainings geared toward professional audiences, the LMCP and IDEM are partnering with Purdue Extension, Illinois-Indiana Sea Grant, the Indiana Department of Health, GNIAR and IOWPA to develop online septic system education modules to facilitate virtual learning. The online modules will be adaptable to target several different audiences including homeowners, realtors, IOWPA members, and local communities. The State plans to hold virtual training events several times a year for these target audiences located within the coastal nonpoint program management area and post the education material online so that interested individuals will be able to access it at any time.

In addition to these voluntary programs to encourage inspections, some communities also have implemented free OSDS pump-out and inspection programs. As of 2019, the Town of New Chicago in Lake County, with a population of approximately 2,000, pumps about 450-475 systems every five years and conducts operational inspections when the systems are pumped. In February 2021, Lake County approved a $79 million plan to extend sewer lines to portions of the county with high septic failure rates southwest of Gary, Indiana.[63] With federal funding from the American Rescue Plan, the county has committed to extending central sewer lines to more than 1,000 existing homes by 2026. If additional financing becomes available, the county will extend sewer service to more communities outside Gary.

Indiana will track voluntary inspections through partnerships with Porter and Lake Counties and IOWPA. With support from the LMCP, Porter County recently moved to a cloud-based system for tracking OSDS inspections that will be queried annually to determine the number of inspections of existing OSDS. Although Lake County currently lacks an electronic inspection database, the LMCP has committed to meeting with Lake County Health Department staff annually to review their paper files on OSDS inspections. In addition, the LMCP will continue to partner with Lake County to encourage and support the county to move to an electronic tracking system. The LMCP is partnering with IOWPA to acquire software that can be used to track inspections performed by IOWPA-certified inspectors within Lake and Porter Counties. The use of this software will assist the counties in tracking voluntary inspections.

[63] The NWI Times, Munster, IN." Federal Funds to Help Lake County Replace Septic Systems with Sanitary Sewers". Accessed 09/01/2022. https://www.nwitimes.com/news/local/lake/federal-funds-to-help-lake-county-replace-septic-systems-with-sanitary-sewers/article_45016349-e0e2-5117-8a10-e11c24fe38b4.html

The State is committed to an adaptive approach to ensure it will achieve its voluntary inspection targets. Every five years, Indiana will assess the number of inspections that have occurred within Lake and Porter Counties to determine if they are on target for reaching the State's goal of inspecting 67 percent of the operating OSDS within these counties over the next 15 years. The State has committed to adjusting its strategy, as needed, and to considering additional approaches that may be needed to achieve its goal. In addition, the LMCP is committed to continuing to provide technical assistance to Porter and Lake Counties to encourage them to adopt ordinances that will result in routine inspections of operating OSDS and that mirror the ordinance that LaPorte County has enacted. The LMCP and IDEM also will continue to support efforts to adopt state-wide inspection requirements.

Enforceable Policies and Mechanisms for the OSDS Management Measures
Indiana provided a legal opinion from its Attorney General stating that the State has the authority through IC-15, IC 13-18, IC-13-30, and their implementing regulations, to require implementation of the 6217(g) measures, including the OSDS management measures, as necessary. IDEM also sent a letter further describing the mechanism and process that links the implementing agencies with the enforcement agency (IDEM) and an example of an enforcement action that was taken demonstrating the State's commitment to use its back-up authority, when needed, to ensure implementation of the 6217(g) management measures.[64]

F. PLANNING, SITING, AND DEVELOPING ROADS AND HIGHWAYS; SITING, DESIGNING AND MAINTAINING BRIDGES; ROAD, HIGHWAY AND BRIDGE OPERATION AND MAINTENANCE; ROAD, HIGHWAY AND BRIDGE RUNOFF SYSTEMS

2008 FINDING: Indiana's program may have programs in place to implement the planning, siting and developing measure for roads and highways and the management measure for bridges for state and local roads, but additional clarification is needed. Additionally, the State has not identified enforceable mechanisms and policies for these measures. Although state roads are exempt from the operation and maintenance and runoff management measures because they are subject to NPDES Phase II MS4 permits, Indiana has not demonstrated it has programs or enforceable policies in place to address the operation and maintenance and runoff control measures for local roads throughout the coastal nonpoint program management area.

2008 CONDITION: Within five years, Indiana will demonstrate it has programs in place to implement the planning, siting and developing measures for roads, highways and bridges for state and local roads. Also, within five years, Indiana will develop programs to address the operation and maintenance and runoff control measures for local roads. Finally, within five years, Indiana will submit a legal opinion and other supporting documents as described in the *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance*[65]

[64] IDEM. 2016. Letter from Elizabeth Admire, State Natural Resource Co-Trustee Office of Legal Counsel to Mike Molnar, Program Manager Lake Michigan Coastal Program, RE: Enforceable policies and mechanisms for nonpoint source pollution, June 2, 2016. (Available upon request)
[65] NOAA and EPA. 1998. Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance. Accessed 09/01/2022. https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217adminchanges.pdf

to demonstrate that it has adequate back-up authority to implement all roads, highways and bridge management measures throughout the coastal nonpoint program management area.

2024 DECISION: Indiana has satisfied this condition.

RATIONALE: Indiana relies on local ordinances, its stormwater quality manual, and watershed planning to address the management measures for planning, siting, and developing state and local roads and bridges and is exempt from the operation and maintenance and runoff control management measures for local roads due to NPDES permit coverage. Because the State is either exempt from the management measures or meets them through direct local authorities, a legal opinion to demonstrate it has adequate back-up authority to ensure implementation of the roads, highways and bridges management measures is no longer needed.

Planning, Siting and Developing Roads, Highways and Bridges
The goal of this management measure is to plan, site, and develop roads and highways to:

1. Protect areas that provide important water quality benefits or are particularly susceptible to erosion or sediment loss;
2. Limit land disturbances such as clearing and grading and cut and fill to reduce erosion and sediment loss; and
3. Limit disturbance of natural drainage features and vegetation.

As described under the new and existing site development management measures section, all three coastal counties that comprise the coastal nonpoint program management area (Lake, Porter, and LaPorte) have adopted ordinances to manage stormwater runoff during site development, including the development of roadways and bridges, which is consistent with the 6217(g) guidance. The ordinances (Lake,[66] Porter,[67] and LaPorte[68]) call for stormwater pollution prevention plans that require the design of developments and roads be conducted in a manner that retains natural vegetation, drainage patterns and hydrological features and that these landscape alterations be sited and designed to fit the natural topography of the site and soils of the site to minimize soil erosion and nonpoint source pollution. In other words, the stormwater management practices and facilities for a site shall be chosen based on the physical conditions of the site, including topography, water table, soil type, and location in relation to environmentally sensitive areas or other special features that provide important water quality benefits. Additionally, inspection during construction by a State-certified professional engineer or land surveyor is required to ensure compliance with the provisions of the ordinance and the stormwater pollution prevention plan.

Operation and Maintenance and Runoff Systems

[66] Lake County, Indiana Code of Ordinances Volume II. Accessed 01/30/2023. https://lakecounty.in.gov/departments/ms4-stormwater-quality/ordinances-manuals-and-forms/?f=/departments/ms4-stormwater-quality/ordinances-manuals-and-forms/Lake_Co_Stormwater_Ordinance.pdf.pdf#view=Fit
[67] Porter County Unified Development Ordinance. Zoning District Development Standards. Accessed 01/30/2023. https://www.porterco.org/DocumentCenter/View/337/Chapter-05-Zoning_District_Development_Standards?bidId=
[68] LaPorte County Zoning Ordinance. Article 20 Stormwater Management. Accessed 01/31/2023. https://laporteco.in.gov/Resources/Planner/Articles/20StormwaterManagement.pdf

The operation and maintenance management measure calls on states to incorporate pollution prevention procedures into the operation and maintenance of roads, highways, and bridges to reduce pollutant loadings to surface waters.

To address the management measure for road, highway, and bridge runoff systems, states must have in place runoff management systems for existing roads, highways, and bridges to reduce runoff pollutant concentrations and volumes entering surface waters that:

1. Identify priority and watershed pollutant reducing opportunities; and
2. Establish schedules for implementing appropriate controls.

The three coastal counties that comprise Indiana's coastal nonpoint program management area are designated MS4s under the NPDES Phase II stormwater management program. State roads are also designated MS4s. In December 2002, NOAA and EPA issued a policy clarification that stated that in designated MS4 areas, road, highway and bridge operation and maintenance and runoff systems were no longer subject to the requirements of the CZARA Section 6217 Coastal Nonpoint Pollution Control Program due to their coverage by the NPDES stormwater permit program (Phase I and II).[69] Therefore, Indiana is exempt from the roads, highways and bridges operation and maintenance management measure due to the coastal nonpoint program management area's coverage under NPDES permits.

V. MARINAS AND RECREATIONAL BOATING

A. MARINA SITING AND DESIGN

2008 FINDING: Indiana's program is in conformity with the 6217(g) guidance for water quality, habitat assessment, marina flushing, and sewage facility management. Based on the information provided, Indiana's program is not in full conformity with the 6217(g) guidance for shoreline stabilization, storm water runoff, and fueling station design.

2008 CONDITION: Within five years, Indiana will demonstrate that it has programs in place to implement the shoreline stabilization, storm water runoff, and fueling station design management measures.

2024 DECISION: Indiana has satisfied this condition.

RATIONALE: Indiana has satisfied the marina siting and design management measures through a mix of direct regulatory requirements (327 IAC 15-6 (Rule 6) and 40 C.F.R. Parts 280 and 281) and the voluntary Clean Marina Program and guidebook. The State has also provided a legal opinion and supporting materials demonstrating it has adequate back-up authority to ensure implementation the management measures and is committed to using that authority, when needed.

Shoreline Stabilization

[69] NOAA and EPA. *Policy Clarification on Overlap of 6217 Coastal Nonpoint Programs with Phase I and II Storm Water Regulations*. 2002. Accessed 02/28/2023. https://coast.noaa.gov/data/czm/pollutioncontrol/media/NPDES_CZARA_Policy_Memo.pdf

According to the 6217(g) marina siting and design management measure for shoreline stabilization, shorelines should be stabilized where shoreline erosion is a nonpoint source pollution problem; vegetative methods are strongly preferred. Structural methods are acceptable only if they are more cost effective or appropriate given the severity of the wave and wind erosion, offshore bathymetry, and the potential adverse impact on other shorelines and offshore areas.

Indiana frequently addresses shoreline stabilization through the permitting process for newly proposed or expanding marinas, and existing marinas as they address erosion occurring within the marina basin. Installation of erosion control measures typically requires a permit from the U.S. Army Corps of Engineers pursuant to the Rivers and Harbors Act of 1899 and Section 404 of the CWA, a Section 401 Water Quality Certification from IDEM, and a permit under the Navigable Waterways Act from IDNR. To qualify for the Regional General Permit for the Section 401 Water Quality Certification, natural shoreline stabilization methods that benefit the aquatic environment by incorporating organic materials to produce functional structures, provide wildlife habitat, and provide areas for revegetation are required where there is no pre-existing seawall or other shoreline hard armament.[70]

In addition to direct regulatory requirements, Indiana also addresses this management measure through its Clean Marina Program and the *Clean Marina Guidebook* (guidebook).[71,72] Through the Clean Marina Program, state staff (IDEM and IDNR) provide technical assistance through workshops and one-on-one assistance to help marinas adopt the BMPs identified in the guidebook in order to reduce nonpoint source pollution from marina activities.[73,74] The Clean Marina Program website has recorded presentations and digital materials that include information on the process and benefits of becoming a "clean marina."[75,76] IDEM designates marinas "clean marinas" if they meet all federal and state laws pertaining to marinas and implement at least 80 percent of the clean marina BMPs listed in the guidebook and complete the Indiana Clean Marina Program Designation Checklist.[77] The largest marina along Indiana's Lake Michigan coast that has 918 slips, constituting nearly a third of the slips within the coastal nonpoint program management area, is a certified clean marina.[78]

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[70] IDEM. Undated. Terms and Conditions for the IDEM Regional General Permit Notification Form (website). Accessed 01/31/2023. https://www.in.gov/idem/wetlands/information-about/section-401-water-quality-certification/terms-and-conditions-of-the-idem-regional-general-permit-notification-form/
[71] IDEM. Indiana Clean Marinas (website). Accessed 01/31/2023. https://www.in.gov/idem/lakemichigan/indiana-clean-marinas/.
[72] IDEM. 2012. *Indiana Clean Marina Program Guidebo*ok. Accessed 01/31/2023. https://www.in.gov/idem/lakemichigan/resources/indiana-clean-marina-guidebook/
[73] IDEM. Compliance and Technical Assistance Program. Accessed 01/31/2023. https://www.in.gov/idem/ctap/
[74] IDEM. Clean Marina Program. Accessed 01/31/2023. https://www.in.gov/idem/lakemichigan/indiana-clean-marinas/certified-indiana-clean-marinas/
[75] IDEM. Clean Marina Program. Accessed 01/31/2023. https://www.in.gov/idem/lakemichigan/indiana-clean-marinas/
[76] IDEM. Clean Marina Program. How Marinas Can Participate. Accessed 01/31/2023. https://www.in.gov/idem/lakemichigan/indiana-clean-marinas/how-marinas-can-participate/
[77] IDEM. 2012. Indiana Clean Marina Program Designation Checklist. See Appendix C in Section 4: Appendices of the Indianan Clean Marina Guidebook. Accessed 01/31/2023. https://www.in.gov/idem/lakemichigan/resources/indiana-clean-marina-guidebook/
[78] IDEM. Clean Marina Program Interactive Map of Certified Marinas in Indiana. Accessed 01/31/2023. https://indianadem.maps.arcgis.com/apps/Shortlist/index.html?appid=dea97b86c805434b965da37d5b42b9bf

The Clean Marina Guidebook contains a variety of BMPs for stabilizing eroding shorelines at marinas. The guidebook encourages the use of vegetative shoreline stabilization methods except in cases where structural shoreline stabilization may be the only alternative given the space and uses present. In these instances, the guidebook contains recommendations for the use of riprap revetments over vertical bulkheads to help decrease wave energy and erosion and the use of vertical bulkheads only where shoreline space is limited and reflected waves will not endanger shorelines or habitat. Retention of natural shoreline features at boat ramps, to the extent feasible, to reduce erosion from water running off the ramp also is encouraged.

Stormwater Runoff
The management measure for stormwater runoff calls for states to implement effective runoff control strategies including the use of pollution prevention activities and the proper design of hull maintenance areas to reduce the average annual loadings of TSS in runoff from hull maintenance areas by 80 percent.

In 2003, IDEM revised its general NPDES rules to require a general NPDES permit for the point source discharge of stormwater exposed to industrial activity (327 IAC 15-6). Marina facilities in Standard Industrial Classification (SIC Code 4493 and boatyards and boat builders that repair, clean, and/or fuel boats (SIC Code 3732) are among the industrial activities that must abide by this requirement.[79] Marina facilities included in SIC Code 4493 rent boat slips, store boats, and generally perform a range of other marine services including boat cleaning and incidental boat repair. Boat maintenance activities conducted at SIC Code 4493 facilities including rehabilitations, mechanical repairs, painting, fueling, and lubrication or equipment cleaning operation, are considered industrial activities and are covered under the NPDES stormwater regulations (327 IAC 15-6-2(a)(5)). SIC Code 4493 facilities that are not involved in equipment cleaning or boat maintenance activities but allow patrons to work on their boat either in-water or out of the water are also covered under the NPDES requirements.[80] Therefore, Indiana is exempt from the marina siting and design stormwater management measure where marinas are covered by NPDES permits.[81]

In addition to the NPDES general permit requirements, Indiana also promotes the stormwater runoff management measure through the Clean Marina Program and guidebook, discussed in more detail in the shoreline stabilization section above. The guidebook contains recommendations for the implementation of effective runoff control strategies which include the use of pollution prevention activities and the proper design of hull maintenance areas to reduce nonpoint source pollutants from entering adjacent waterbodies. The guidebook contains recommendations that boat repair and maintenance should be performed inside enclosed work

[79] The Standard Industrial Classification (SIC) system was replaced by the North American industry Classification System (NAICS) in 1997. SIC Code 4493 (marinas) is now NAICS 713930. SIC Code 3732 (boat yards and boat builders) is now identified by NAICS as 336612 (boat building) and 811490 (other personal and household goods repair and maintenance).
[80] NOAA and EPA. 1993. *Coastal Nonpoint Pollution Control Program Development and Approval Guidance.* January 1993. Accessed 09/6/2022. https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217progguidance.pdf
[81] NOAA and EPA. 1993. *Coastal Nonpoint Pollution Control Program: Program Development and Approval Guidance.* January 1993. Accessed 02/23/2023.
https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217progguidance.pdf

buildings and protected from wind, as much as possible. Where hull maintenance activities cannot be conducted inside, the guidebook recommends that blasting and sanding be performed within enclosed spray booths or tarp enclosures to help reduce the spread of residue and particulates from these activities. Performing hull maintenance activities over an impervious surface, such as a designated concrete pad, is also encouraged in the guidebook. The guidebook recommends that, where possible, sanders be equipped with vacuums and work only be allowed on clear, non-windy days. The guidebook recommends against blowing of dust and debris. In addition, the guidebook recommends that dust and residue be cleaned up and removed immediately after work is performed or at a minimum of once per day. Any collected waste from hull maintenance activities should be stored under cover and in a secure container to reduce the possibility of it entering stormwater. The guidebook also recommends that permeable tarps, screens, or filter cloths be readily available under cradles or stands before a boat is dry docked to capture and filter pollutants from runoff. Finally, the guidebook recommends that hull and boat maintenance areas should be clearly designated, well-marked with a list of posted rules, and located away from the water's edge.

In addition to the specific hull maintenance BMPs listed above, the guidebook contains recommendations for several general stormwater BMPs to reduce the average annual loadings of TSS in runoff from hull maintenance areas by 80 percent consistent with the 6217(g) stormwater runoff management measure. For example, the guidebook contains recommendations for: 1) the siting of vegetated areas between impervious surface areas; 2) the placement of permeable concrete on top of a filter layer consisting of a stone reservoir and a filter fabric; 3) the installation of oil/grit separators and/or vertical media filters to capture pollutants in runoff; 4) the use of catch basins where stormwater enters the marina in large pulses to allow sediment to settle and be disposed of; and 5) the addition of inlet filters to storm drains that are located near designated work areas. All of these practices can be employed to remove pollutants and sediment from stormwater runoff before it enters nearby waterways.

Fueling Station Design

The fueling station design management measure calls on states to design fueling stations to allow for ease in cleanup of spills. Indiana meets this management measure through a mix of regulatory and voluntary mechanisms.

Indiana utilizes federal and state regulations to meet the fueling station design management measure. Federal regulations require that any marina have a spill prevention, control and countermeasure plan if it has the capacity to store greater than an aggregate of 1,320 gallons of petroleum above ground, including any container of 55 gallons or more, or more than 42,000 gallons underground that is not subject to the underground storage tank standards found in 40 C.F.R. Parts 280 and 281, and has a reasonable expectation of an oil discharge into or upon navigable waters of the United States (40 C.F.R. Part 112).

Under 329 IAC 9-2-2, Indiana requires owners and operators of new or replaced underground storage tanks to certify that the following requirements are met: (1) tank and piping installation requirements under 40 C.F.R. § 280.20; (2) cathodic protection of steel tanks and piping standards under 40 C.F.R. § 280.20; (3) release detection under 40 C.F.R. Part 280 Subpart D; and (4) financial responsibility under 329 IAC 9-8. In reviewing this information, the State may

require the owner and operator to develop a corrective action plan for responding to contaminated soils and ground water. The corrective action plan also needs to consider the proximity, quality, and current and future uses of nearby surface water and ground water, as well as the potential effects of residual contamination on nearby surface water and ground water (329 IAC 9-5-7). In the event of an oil spill or release from an underground system, the owner or operator has 24 hours to report the release to the State, take immediate action to prevent any further release into the environment, identify and mitigate fire, explosion, and vapor hazards, and mitigate, to the extent practicable, adverse effects on human health and the environment (329 IAC 9-5-2).

In addition, the *Clean Marina Guidebook* recommends fueling stations be designed to include automatic shutoffs on fuel lines and at the hose nozzles to reduce fuel loss and spills. Personal watercraft floating docks should also be included at fuel docks to help drivers refuel without spilling. The guidebook also contains recommendations that marinas provide a clearly marked area containing spill equipment such as absorbent pads, booms, empty sandbags, sewer pipe plugs, dry absorbent and drain covers at the pumps to help contain spills if they occur.

Enforceable Policies and Mechanisms for the Marina Siting and Design Management Measures
In cases where the voluntary-based Clean Marina Program is used to help meet the marina siting and design management measures, Indiana has provided a legal opinion from its Attorney General asserting that the State has adequate back-up authority through the Indiana Clean Water Act (IC 13-18-3) to require implementation of the 6217(g) management measures, including the marina management measures for shoreline stabilization, stormwater runoff, and fueling station design, as necessary. The State also has described how the implementing agencies (IDNR, IDEM) will work with the enforcing agency (IDEM) to ensure enforcement action is taken when needed. Indiana also provided an example of an enforcement action that demonstrates the State's commitment to using this back-up authority when necessary.[82] Indiana tracks the number of certified clean marinas to evaluate overall implementation of the marina siting and design management measures where it relies on voluntary-based approaches for shoreline stabilization, stormwater runoff and fueling station design.

B. MARINA AND BOAT OPERATION AND MAINTENANCE

2008 FINDING: Indiana's program includes programs and enforceable policies and mechanisms in conformity with the above management measures except for petroleum control and boat cleaning.

2008 CONDITION: Within five years, Indiana will demonstrate that it has programs in place to implement the petroleum control and boat cleaning management measures.

2024 DECISION: Indiana has satisfied this condition.

[82] IDEM. 2016. Letter from Elizabeth Admire, State Natural Resource Co-Trustee Office of Legal Counsel to Mike Molnar, Program Manager Lake Michigan Coastal Program, RE: Enforceable policies and mechanisms for nonpoint source pollution, June 2, 2016.

RATIONALE: Indiana addresses the petroleum control and boat cleaning management measures through its Clean Marina Program and guidebook which are discussed in more detail under the marina siting and design section. The State has provided a legal opinion and other supporting documents asserting that it has adequate back-up authorities to ensure implementation of these management measures and is committed to using its authorities, when needed.

Boat Cleaning

The goal of the boat cleaning management measure is to ensure that cleaning operations minimize, to the extent practicable, the release of harmful cleaners, solvents, and paint from in-water hull cleaning to surface waters. Consistent with this management measure, the *Clean Marina Guidebook* recommends washing boat hulls above the waterline by hand using a soft sponge, using cleaning products sparingly, and using environmentally friendly cleaning products.[83] The guidebook recommends that using caustic cleaners such as bleach, ammonia, or lye and washing the boat below the waterline should be avoided. In addition, the guidebook recommends that boat hulls be cleaned frequently enough to reduce the use of harmful cleaners in the first place and using long-lasting or low-toxicity antifouling paint to minimize the need for hull cleaning. To accompany the guidebook, the Clean Marina Program developed a Clean Boater Tip Sheet on boat cleaning to help educate boaters about the harmful effects of cleaning products on the surrounding environment.

Petroleum Control

The goal of the petroleum control management measure is to reduce the amount of fuel and oil from boat bilges and fuel tank air vents entering marina and surface waters. To achieve this goal, the *Clean Marina Guidebook* recommends the use of absorbent bilge pads and socks to soak up oil and fuel to prevent collected liquids in the bottom of the bilge from being discharged to surrounding waters and notes that used bilge pads and socks should be properly recycled or disposed of after use. The guidebook also recommends that boaters avoid pumping bilge water that has an oily sheen and that boaters drain all water from the bilge, livewell and motor on land. The installation of fuel/air separators on inboard fuel tank air vents to help reduce the amount of fuel spilled into surface waters while fueling also is recommended. The Clean Marina Program also developed and promotes a Clean Boater Tip Sheet on bilge maintenance that includes BMPs to control spills and drips that are consistent with the 6217(g) management measures for petroleum control.[84] In addition, the bilge tip sheet recommends that boaters maintain boat engines to prevent leaks, repair leaking hoses, gaskets and seals, and use non-spill vacuum-type systems when changing engine oil. The bilge tip sheet recommends that there should be an inch or two of water in the bilge when installing bilge pump and bilge water filters. The tip sheet also recommends that installed bilge water filters be covered with plastic bags before removal to catch drips.

Enforceable Policies and Mechanisms for the Marina Operation and Maintenance Management Measures

[83] Indiana Department of Environmental Management. 2012. *Indiana Clean Marina Guidebook*. Accessed 01/31/2023. https://www.in.gov/idem/lakemichigan/resources/indiana-clean-marina-guidebook/
[84] IDEM. Indiana Clean Marina Program Clean Boater Tip Sheet: Bilges. Accessed 01/31/2023. https://www.in.gov/idem/lakemichigan/files/marinas_boaters_sheet_bilges.pdf

Indiana has provided a legal opinion from its Attorney General asserting that the State has adequate back-up authority through the Indiana Clean Water Act (IC 13-18-3) to require implementation of the 6217(g) measures, including the marina management measures for boat cleaning and petroleum control, as necessary. The State also described how the implementing agencies (IDNR, IDEM) will work with the enforcing agency (IDEM) to ensure enforcement action is taken when needed.[85] Indiana also provided an example of an enforcement action that demonstrates the State's commitment to using this back-up authority when necessary. Indiana tracks the number of certified clean marinas to evaluate overall implementation of the marina operation and maintenance management measures.

VI. HYDROMODIFICATION

2008 FINDING: Indiana's program includes management measures and enforceable policies and mechanisms in conformity with the 6217(g) guidance except for: 1) a process to improve surface water quality and instream and riparian habitat restoration through the operation and maintenance of existing modified channels; 2) the protection of surface water quality and instream and riparian habitat during the operation of dams; and 3) the management measures for eroding streambanks and shorelines. Indiana's program is exempt from the erosion and sediment control and chemical and pollutant control management measures because these areas are being addressed through the NPDES Phase II Storm Water Program. The State has identified a back-up enforceable policy, but has not yet demonstrated the ability of the authority to ensure widespread implementation throughout the coastal nonpoint program management area by submitting a legal opinion, demonstrating the authority and commitment to use the enforcement mechanisms where necessary, describing the laws and processes linking the implementing agencies with the enforcement agency, and describing the monitoring and tracking mechanisms the State will employ to ensure that the voluntary programs are being implemented sufficiently.

2008 CONDITION: Within five years, Indiana will develop a process to improve surface water quality and instream and riparian habitat through the operation and maintenance of existing modified channels. Also, within five years, the State will develop programs for the protection of surface water quality and instream and riparian habitat during the operation of dams and implement the management measure for eroding streambanks and shorelines. Finally, within five years, Indiana will submit a legal opinion and other supporting documents as described in the *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance*[86] to demonstrate that it has adequate back-up authority to implement the hydromodification management measures throughout the coastal nonpoint program management area.

2024 DECISION: Indiana has satisfied this condition.

[85] IDEM. 2016. Letter from Elizabeth Admire, State Natural Resource Co-Trustee Office of Legal Counsel to Mike Molnar, Program Manager Lake Michigan Coastal Program, RE: Enforceable policies and mechanisms for nonpoint source pollution, June 2, 2016. (Available upon request)
[86] NOAA and EPA. 1998. Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance. Accessed 01/31/2023. https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217adminchanges.pdf

RATIONALE: Indiana employs its voluntary watershed planning efforts to protect and improve surface water quality and instream and riparian habitat through the operation and maintenance of existing modified channels and dams, as well as to implement the management measure for eroding streambanks and shorelines. In addition, the State has provided a legal opinion and other supporting documents to demonstrate that it has adequate back-up authority to implement the hydromodification management measures throughout the coastal nonpoint program management area.

Channelization and Channel Modification
The channelization and channel modification management measures call on states to:

1. Evaluate the potential effects of proposed channelization and channel modification on the physical and chemical characteristics of surface waters and instream and riparian habitat in coastal areas;
2. Plan and design channelization and channel modification to reduce undesirable impacts; and
3. Develop an operation and maintenance program for existing modified channels that includes identification and implementation of opportunities to improve physical and chemical characteristics of surface waters and instream and riparian habitat in those channels.

In their 2008 findings, NOAA and EPA concluded that Indiana had already satisfied the first two elements of these management measures. To satisfy the third element of the management measure that addresses the operation and maintenance of existing modified channels, Indiana relies on its watershed planning process to implement appropriate BMPs. As described in more detail in the watershed protection section, IDEM developed a watershed management plan checklist to ensure that watershed management plans within the coastal nonpoint program management area are consistent with the 6217(g) management measures, including the identification of opportunities to improve the physical and chemical characteristics of surface waters and instream and riparian habitat in modified channels, when needed.[87]

For example, the Salt Creek WMP identifies channelization, ditches and drains as potential sources of pollution within the watershed and includes actions to promote and install practices that restore natural hydrology of these modified channels and ditches.[88] Projects have included a study to determine the feasibility of daylighting the headwaters of Robbin's Ditch and enhancing Thorgren Basin, a roughly two-acre concrete detention basin for collecting

[87] IDEM. 2009. Watershed Management Plan Checklist and Instructions (2009). Accessed 01/31/2023. https://www.in.gov/idem/nps/watershed-planning/watershed-management-planning/watershed-management-plan-checklist-and-instructions-2009/
[88] Save the Dunes Conservation Fund. 2008. *Salt Creek Watershed Management Plan.* Accessed 02/02/2023. https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83088881&dDocName=83088886&Rendition=web&allowInterrupt=1&noSaveAs=1

stormwater.[89,90] As a result of the feasibility study, the concrete-lined channels in Thorgren Basin were replaced with bio-swales and native vegetation to enhance water quality and instream and riparian habitat. Channels entering the basin were also lined with sediment traps and re-constructed to meander to slow stormwater flow.[91]

See the *Enforceable Mechanisms and Policies for Hydromodification* subsection below for a discussion of Indiana's back-up authority that supports voluntary implementation of the channelization and channel modification management measures.

Dams—Protection of Surface Water Quality and Instream and Riparian Habitat
The goal of this management measure is to develop and implement a program to manage the operation of dams in coastal areas that includes an assessment of:

1. Surface water quality and instream and riparian habitat and potential for improvement; and
2. Significant nonpoint source pollution problems that result from excessive surface water withdrawals.

IDEM's watershed management planning program, discussed in the watershed protection and channelization sections above, also helps the State implement the dam management measure. All watershed management plans need to meet the requirements of IDEM's watershed plan checklist and EPA's nine element plans, including consistency with the 6217(g) management measures, to be eligible for Section 319 NPS Management Program funding[92] This means that where a dam operation negatively impacts surface water quality or instream and riparian habitat, watershed plans need to identify priority actions to address these issues.

For example, the Trail Creek WMP included an action to locate and evaluate dams within the Trail Creek watershed, assess the impact they have on water quality and instream habitat, and identify potential areas for improvement.[93] The assessment identified nine dams for improvement. The Deep River-Portage Burns Waterway WMP identifies the Deep River Dam as a source of nonpoint source pollution and an area of interest for restoration, modification, or

[89] Save the Dunes Conservation Fund. 2008. *Salt Creek Watershed Management Plan.* pg. 150. Accessed 02/02/2023.
https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83088881&dDocName=83088886&Rendition=web&allowInterrupt=1&noSaveAs=1
[90] Save the Dunes. 2010 Salt Creek Engineering Feasibility Study. Accessed 02/02/2023.
https://larereports.dnr.in.gov/
*Search Salt Creek Watershed
[91] IDNR. 2016. Thorgren Basin: Changes is Good—Both for Flood Control and the Environment, *Waterlines.* Winter 2016. Accessed 02/24/2023. https://content.govdelivery.com/accounts/INDNR/bulletins/12c7006
[92] IDEM. Watershed Management Plan Checklist. 2009. Accessed 01/31/2023.
https://www.in.gov/idem/nps/watershed-planning/watershed-management-planning/watershed-management-plan-checklist-and-instructions-2009/
[93] Trail Creek Watershed Management Plan. 2007. Accessed 01/31/2023.
https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83088935&dDocName=83088940&Rendition=web&allowInterrupt=1&noSaveAs=1

removal.[94] A feasibility study determined that installing a rock riffle on the downstream side of the dam was the best course of action to improve water quality and habitat.[95] Construction was completed in 2021. By leaving the dam in place, the wetlands along the backwater pool were not affected, streambank erosion downstream of the dam is expected to decrease, and, as the dam deteriorates, the riffle construction will provide necessary structural support to prevent failure.

See the *Enforceable Mechanisms and Policies for Hydromodification* subsection below for a discussion of Indiana's back-up authority to ensure implementation of the dam management measure.

Eroding Streambanks and Shorelines
The eroding streambanks and shorelines management measure calls on states to:

1. Stabilize streambanks and shorelines where streambank or shoreline erosion is a nonpoint source pollution problem. Vegetative methods are strongly preferred unless structural methods are more cost-effective, considering the severity of wave and wind erosion, offshore bathymetry, and the potential adverse impact on other streambanks, shorelines, and offshore areas;
2. Protect streambank and shoreline features with the potential to reduce nonpoint source pollution; and
3. Protect streambanks and shorelines from erosion due to uses of either the shorelands or adjacent surface waters.

IDEM's watershed management planning program, discussed in the previous section, also includes actions to stabilize and protect eroding streambanks and shorelines. All watershed management plans need to meet the requirements of IDEM's watershed plan checklist and EPA's nine element plans, including consistency with the 6217(g) management measures, to be eligible for Section 319 NPS Management Program funding.[96]

The Trail Creek WMP contains actions to identify significant areas of streambank erosion and instability and to implement streambank stabilization projects at these priority locations.[97] Implementation actions include coordination with LaPorte County and appropriate agencies to implement policies and procedures to encourage riparian buffer restoration and mandatory

[94] Deep River-Portage Burns Waterway Watershed Plan. September 2016. Accessed 03/01/2023. https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83085309&dDocName=83085242&Rendition=web&allowInterrupt=1&noSaveAs=1
[95] Northwest Indiana Regional Planning Commission. 2018. Deep River Dam Engineering Feasibility Study. Accessed 01/31/2023. https://nirpc.org/wp-content/uploads/2018/06/FeasibilityReport_DeepRiverDam_NIRPC_62118.pdf
[96] IDEM. Watershed Management Plan Checklist. 2009. Accessed 01/31/2023. https://www.in.gov/idem/nps/watershed-planning/watershed-management-planning/watershed-management-plan-checklist-and-instructions-2009/
[97] Trail Creek Watershed Management Plan. 2007. Accessed 01/31/2023. https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83088935&dDocName=83088940&Rendition=web&allowInterrupt=1&noSaveAs=1

setbacks from the creek. The Little Calumet East Branch WMP also identifies specific priority areas for shoreline stabilization and riparian buffers to reduce nonpoint source pollution.[98]

Enforceable Policies and Mechanisms for Hydromodification
To support the voluntary watershed planning efforts, Indiana has provided a legal opinion from its Attorney General asserting that the State has adequate back-up authority through its CWA (IC 13-18-3) to require implementation of the 6217(g) management measures, including the hydromodification management measures, as necessary. IDEM sent a letter describing the mechanism and process that links the implementing agencies with the enforcement agency (IDEM) and included an example of an enforcement action that was taken demonstrating the State's commitment to use its back-up authority, when needed, to ensure implementation of the 6217(g) management measures.[99] Indiana tracks voluntary implementation of the hydromodification management measures through annual reporting of its Section 319 NPS Management Program and through the interactive online Watershed Management Plan and Total Maximum Daily Load Reports Search (WATRS) map.[100,101]

VI. WETLANDS, RIPARIAN AREAS, AND VEGETATED TREATMENT SYSTEMS

2008 FINDING: Indiana has identified several federal and state programs that have the potential to adequately implement the management measures for protection and restoration of wetland and riparian areas but has not yet demonstrated the ability of these programs to ensure implementation of the measures within the coastal nonpoint program management area. The State's program includes management measures for vegetated treatment systems. The State has identified a back-up enforceable policy and mechanism, but has not yet demonstrated the ability of the authority to ensure widespread implementation throughout the coastal nonpoint program management area by submitting a legal opinion, demonstrating the authority and commitment to use the enforcement mechanisms where necessary, describing the laws and processes linking the implementing agencies with the enforcement agency, and describing the monitoring and tracking mechanisms the State will employ to ensure that the voluntary programs are being implemented sufficiently.

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[98] Little Calumet River East Branch Watershed Management Plan. 2015. Accessed 01/31/2023. https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83086341&dDocName=83086346&Rendition=web&allowInterrupt=1&noSaveAs=1

[99] IDEM. 2016. Letter from Elizabeth Admire, State Natural Resource Co-Trustee Office of Legal Counsel to Mike Molnar, Program Manager Lake Michigan Coastal Program, RE: Enforceable policies and mechanisms for nonpoint source pollution, June 2, 2016. (Available upon request)

[100] IDEM. Undated. Nonpoint Source Program Annual Reports (website). Accessed 02/24/2023. https://www.in.gov/idem/nps/resources/nonpoint-source-annual-report/

[101] IDEM. Undated. Watershed Management Plan and Total Maximum Daily Load Reports Search. Accessed 01/31/2023. https://indianadem.maps.arcgis.com/apps/webappviewer/index.html?id=bc47efd179324774adb7136ca95b3352&marker=-87.43733714408911%2C39.293585819372474%2C%2C%2C%2C&markertemplate=%7B%22title%22%3A%22Middle%20Wabash-Busseron%22%2C%22longitude%22%3A-87.43733714408911%2C%22latitude%22%3A39.293585819372474%2C%22isIncludeShareUrl%22%3Atrue%7D&level=7

2008 CONDITION: Within five years, Indiana will demonstrate that it has programs in place for the protection and restoration of wetland and riparian areas. Also, within five years, Indiana will submit a legal opinion and other supporting documents as described in *Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance*[102] to demonstrate that it has adequate back-up authority to implement the wetland, riparian and vegetated treatment system management measures throughout the coastal nonpoint management area.

2024 DECISION: Indiana has satisfied this condition.

RATIONALE: Indiana relies on a regulatory approach for the protection of wetlands and riparian areas and their existing functions through the Section 401 Water Quality Certification process, and several programs that promote the restoration of the preexisting functions in damaged and destroyed wetlands including the *2015 Indiana Wetlands Program Plan*, the *2019 Indiana State Nonpoint Source Management Plan*, the NRCS Wetland Reserve Enhancement Program, the Volunteer Compensatory Mitigation tool, the IDNR Lake and River Enhancement (LARE) Program, and the LMCP. Indiana now satisfies the wetlands and riparian protection management measure through direct regulatory programs, therefore, the State no longer needs to provide a legal opinion and supporting documents to demonstrate it has adequate back-up authorities. In addition, the 1993 *Coastal Nonpoint Pollution Control Program Development and Approval Guidance* does not require states to include enforceable policies and mechanisms for the promotion of wetlands and riparian areas and vegetated treatment systems management measures.[103]

The management measure for wetlands and riparian areas calls for states to:

1. Protect wetlands and riparian areas that are serving a significant nonpoint source pollution abatement function from adverse effects and maintain these functions while protecting the other existing functions of these wetlands and riparian areas as measured by characteristics such as vegetative composition and cover, hydrology of surface water and ground water, geochemistry of the substrate, and species composition; and
2. Promote the restoration of the preexisting functions in damaged and destroyed wetlands and riparian systems in areas where the systems will serve a significant nonpoint source pollution abatement function.

Indiana protects wetlands and riparian areas through its Section 401 Water Quality Certification Program and Isolated Wetlands Program. Any person who places fill materials, excavates, dredges, or mechanically clears within waters covered by the CWA must obtain a water quality certificate from IDEM under Section 401 of the CWA.[104] In addition, IDEM reviews projects in isolated wetlands under its Isolated Wetlands Law (IC 13-18-22). The *Waterways Permitting Handbook* describes how IDEM assesses, avoids, and minimizes adverse impacts to wetlands

[102] NOAA and EPA. 1998. Final Administrative Changes to the Coastal Nonpoint Pollution Control Program Guidance. Accessed 01/31/2023. https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217adminchanges.pdf
[103] NOAA and EPA. 1993. *Coastal Nonpoint Pollution Control Program Development and Approval Guidance*. January 1993. Accessed 01/31/2023. https://coast.noaa.gov/data/czm/pollutioncontrol/media/6217progguidance.pdf
[104] IDEM. Undated. Section 401 Water Quality Certification (website). Accessed 02/24/2023. https://www.in.gov/idem/wetlands/information-about/section-401-water-quality-certification/

and riparian areas through its water quality certification and isolated wetlands review processes, which is consistent with the 6217(g) guidance for protection of wetlands and riparian areas.[105]

While wetland preservation, rather than mitigation, is IDNR's first priority in the coastal region, IDNR's statewide In-Lieu Fee Mitigation Program for wetland and stream mitigation allows permit applicants (developers) to pay a fee to support the restoration or conservation of wetland areas in a different location where permitted damage or destruction of wetlands occurs at a project site.[106] The In-Lieu Fee Mitigation Program fulfills the compensatory mitigation requirements for permitted impacts under Sections 404 and 401 of the CWA, Section 10 of the Rivers and Harbors Act, and Indiana's State Isolated Wetlands Law (IC 13-18-22). The program is designed to protect and preserve wetland and stream function by targeting larger ecologically valuable parcels for restoration and conservation on a landscape or watershed scale. The program involves scientific analysis and planning to ensure management measures are implemented to preserve and restore wetland functions, including the abatement of nonpoint source pollution where such pollution is negatively affecting wetland functions. The IDNR has identified stream and wetland restoration and conservation areas in the three coastal counties (Porter, Lake and LaPorte) as potential sites where future mitigation projects are to be prioritized.[107]

Indiana also protects wetlands and riparian areas through its Indiana Flood Control Act (IC 14-28-1). The act regulates various development activities (e.g., structures, obstructions, deposits, and/or excavations) within the floodway of any State waterway. Specifically, activity in the floodway cannot result in unreasonably detrimental effects upon fish, wildlife, or botanical resources, such as wetlands and riparian areas (IC 14-28-1-20(2)(B)(ii)). As part of the IDNR Flood Control Act permit review process, the Division of Water conducts an environmental review that considers the physical and hydraulic impacts of the project.[108] Other divisions, such as the Division of Fish and Wildlife, have an opportunity to comment on projects to ensure impacts to habitat and aquatic life are minimized. Each division can include special requirements within the permit to ensure protection of water quality, wetlands, and riparian areas. Indiana has provided several examples of how this review process leads to the protection of wetland and riparian areas. For example, during the review of a planned bridge replacement, an IDNR biologist noted that nearby wetlands may be impacted during construction. As a result, the staging area and bridge construction was designed to minimize impacts such that less than 0.1 acre of wetlands was ultimately impacted. In another project involving the installation of a pipeline, IDNR staff worked with the applicant to identify wetlands impacted by the proposed

[105] Indiana Department of Environmental Management. 2008. 401 Water Quality Certification and Isolated Wetland Program. Waterways Permitting Handbook. September 2008. Accessed 01/31/2023. https://www.lrc.usace.army.mil/Portals/36/docs/regulatory/pdf/INWWB.pdf
[106] IDNR. Stream and Wetland Mitigation Program. In-Lieu Fee Mitigation Program. Accessed 01/31/2023. https://www.in.gov/dnr/land-acquisition/stream-and-wetland-mitigation-program/
[107] IDNR. Indiana Stream and Wetland Mitigation Program Annual Report. 2021. Accessed 01/31/2023. https://www.in.gov/dnr/land-acquisition/files/la-2021-INSWMP-AnnualReport.pdf
[108] Indiana LMCP. 2016. 6217 Nonpoint Source Pollution Control Program for Programmatic Approval. February 2016. Copy available upon request.

route and worked with the applicant to apply directional boring under the wetlands to avoid impacts.[109]

There are several other programs in the State that also help to protect wetlands and riparian areas. For example, the *2015 Indiana Wetlands Program Plan* serves as a guide to wetland conservation and restoration efforts in the State.[110] The plan includes goals and action items to protect and restore wetlands, such as undertaking wetland mapping and promoting wetland conservation. As part of this planning effort, the State has developed a tool to identify and map high-priority wetland conservation sites. The tool improves tracking of existing high-quality wetland areas and helps to target these valuable areas for protection.

The *2019 Indiana State Nonpoint Source Management Plan* provides information on a number of programs the State uses to promote the restoration of damaged and destroyed wetlands and riparian systems. Programs and initiatives include targeted CWA Section 319 funds, the United States Fish and Wildlife Service Partners for Fish and Wildlife Program, the NRCS Wetland Reserve Enhancement Program, Great Lakes Restoration Initiative (GLRI), the Volunteer Compensatory Mitigation tool, and IDNR's LARE program.[111] All of these programs play important roles in promoting restoration of wetlands and riparian areas. For example, two recent GLRI-supported projects have restored approximately 80 acres of wetland and riverine habitat within the Grand Calumet River area of concern to improve water quality and aquatic habitat and an additional 2,000 acres of critical coastal wetlands in the Calumet Region of Lake County.[112,113] The Clean Water State Revolving Fund has also been used to protect and restore wetlands and riparian conservation easements to address nonpoint source problems.[114]

VII. CRITICAL COASTAL AREAS, ADDITIONAL MANAGEMENT MEASURES, AND TECHNICAL ASSISTANCE

2008 FINDING: Indiana's program does not include processes for the identification of critical coastal areas or for the development and continuing revision of management measures applicable to critical coastal areas and cases where the 6217(g) measures are fully implemented but water quality threats or impairments persist. The program does not describe efforts to

[109] Indiana LMCP. 2016. 6217 Nonpoint Source Pollution Control Program for Programmatic Approval. February 2016. Copy available upon request.
[110] IDEM. Wetland Program Plan 2015. Accessed 02/09/2023. https://www.in.gov/idem/wetlands/files/program_plan.pdf
[111] IDEM, Office of Water Quality. Indiana State Nonpoint Management Plan 2019 Update. Accessed 01/31/2023. https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83145821&dDocName=83146426&Rendition=web&allowInterrupt=1&noSaveAs=1
[112] GLRI. 2019. Lake George Branch Wetlands Restoration Project Phase 2. Accessed 01/31/2023. https://www.glri.us/projects
*Search in Project Table for project name: Lake George Branch Wetlands Restoration Project Phase 2
[113] GLRI. Restoring Calumet Coastal Wetlands Through Collaborative Restoration and Management (IL, IN). 2018-2021. Accessed 09/01/2022. https://www.glri.us/projects
*Search in Project Table for project name: Restoring Calumet Coastal Wetlands Through Collaborative Restoration and Management (IL, IN)
[114] Indiana Finance Authority. State Revolving Fund Loan Program. Accessed 01/31/2023. https://www.in.gov/ifa/srf/about-srf/

provide technical assistance to agencies and the public for implementing additional management measures.

2008 CONDITION: Within five years, Indiana will develop a process for the identification of critical coastal areas and a process for developing and revising management measures to be applied in critical coastal areas and in areas where necessary to attain and maintain water quality standards. Within five years, Indiana will also develop a program to provide technical assistance in the implementation of additional management measures.

2024 DECISION: Indiana has satisfied this condition.

RATIONALE: Indiana uses its watershed management planning process, discussed in more detail in the watershed protection section above, as the basis for identifying critical areas for the implementation of additional management measures and for the development and revision of management measures within these critical coastal areas. The State's Watershed Planning Guide instructs watershed planners how to identify critical areas within the watershed where BMPs will be needed to address nonpoint source pollution and achieve the goals of the WMP by using information collected during the watershed inventory, including identified sources of pollutants and pollutant loads.[115] Watershed planners then identify the BMPs that would be appropriate for each critical area and explain why that area was designated as critical. The identified critical areas may be updated as nonpoint source issues are resolved, new issues are identified, and lower priority areas move up in terms of priority rank.

Indiana promotes watershed planning as the standard practice in watershed management. Many funding sources that support nonpoint source management projects, such as Section 319 NPS Management Program implementation funds and the LARE Watershed Land Treatment Program, among others, require that an approved watershed management plan is in place to be eligible for funding.[116,117] Other private, competitive funding sources have also shown a preference for projects that follow a larger strategy or that can be shown to be working toward some kind of measurable result against a baseline. Creating a watershed plan is a natural fit for both conditions. Additionally, the State employs regional Watershed Specialists who share information on creating watershed plans and providing the technical assistance to complete the planning process. Finally, the Indiana Watershed Leadership Academy, an extension program that is focused on the watershed restoration process, emphasizes planning as the basis for future restoration activities.[118]

IDEM requires that watershed plans within in the Little Calumet-Galien watershed, which includes Indiana's coastal nonpoint program management area, be developed in coordination

[115] IDEM. 2010. Indiana Watershed Planning Guide. Accessed 01/31/2023. https://www.in.gov/idem/nps/resources/indiana-watershed-planning-guide/
[116] IDEM. Undated. Clean Water Act Section 319(h) Grants. (website). Accessed 02/24/2023. https://www.in.gov/idem/nps/funding/clean-water-act-section-319h-grants/
[117] IDNR. 2021. Watershed Land Treatment Program (WLTP) Cost-Share and Incentive-Payment Projects and Policies. July 2021. Accessed 02/24/2023. https://www.in.gov/dnr/fish-and-wildlife/files/fw-LARE_Policies_Watershed_Land_Treatment_Program.pdf
[118] Purdue Extension Indiana Watershed Leadership Academy. (website). Indiana Watershed Leadership Program. (website). Accessed 02/09/2023. https://engineering.purdue.edu/watersheds/index.html

with IDNR to ensure that the 6217(g) guidance requirements, including the need to identify critical coastal areas and the implementation of additional management measures when needed, are incorporated into the WMP.[119] Once a coastal WMP is approved, IDEM conveys the approval information to IDNR's LMCP. To easily track all critical areas within the coastal nonpoint program management area, the LMCP maps the critical areas identified in the coastal area watershed plans.

The listing process for identifying CWA Section 303(d) impaired waters provides Indiana with another mechanism for identifying critical coastal areas where the identification and implementation of additional management measures are needed to address nonpoint source pollution problems. IDEM issues an Integrated Water Monitoring and Assessment Report every two years to meet the requirements of Sections 303(d) and 305(b) of the CWA. In accordance with Section 305(b), the report assesses whether state waters support beneficial uses designated under Indiana's water quality standards.[120] IDEM then uses this information to update the State's list of 303(d) impaired waters (i.e., those waters not meeting water quality standards) which is also included in the report. The integrated report helps Indiana to identify critical coastal areas where impairments are occurring and to determine if and what additional management measures are needed to correct the impairment. After IDEM releases the report, the LMCP identifies and revises the master list of critical coastal areas based on the report findings. The State then provides technical assistance to help the target audience implement the identified additional management measures.

Indiana has several technical assistance programs in place to help local governments and the public implement additional management measures, when needed. Through the ICP, eight Indiana agencies, including IDEM, IDNR, Indiana State Department of Agriculture Division of Soil Conservation, SWCDs, and NRCS, work together to provide technical, financial, and educational assistance to promote a common conservation goal and sound land and water stewardship decisions. ICP partners, principally the SWCDs, NRCS, and Purdue Extension, operate a robust technical assistance program to help agricultural producers reduce polluted runoff and improve water quality.

IX. MONITORING

2008 FINDING: Indiana's program does not yet include a plan to assess over time the success of the management measures in reducing pollution loads and improving water quality.

2008 CONDITION: Within five years, Indiana will develop a plan that enables the State to assess over time the extent to which implementation of management measures is reducing pollution loads and improving water quality.

2024 DECISION: Indiana has satisfied this condition.

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[119] IDEM. 2009. Watershed Management Plan Checklist. Accessed 01/31/2023. https://www.in.gov/idem/nps/watershed-planning/watershed-management-planning/watershed-management-plan-checklist-and-instructions-2009/

[120] IDEM. Undated. Integrated Water Monitoring and Assessment Report (website). Accessed 02/09/2023. https://www.in.gov/idem/nps/watershed-assessment/water-quality-assessments-and-reporting/integrated-water-monitoring-and-assessment-report/

RATIONALE: The 6217(g) guidance calls for a description of any necessary monitoring techniques to accompany the management measure to assess over time the success of the measures in reducing pollution loads and improving water quality. The monitoring program should be designed to measure change in pollution loads and water quality that may result from the implementation of management measures, as well as ensure management measures are properly implemented, inspected, and maintained.

Indiana has demonstrated its ability to meet the monitoring requirements by integrating IDEM's monitoring initiatives, which include probabilistic, fixed station, blue-green algae, baseline, and follow-up (success) monitoring, with other efforts in the State such as the Hoosier River Watch (citizen monitoring). IDEM monitoring activities and programs are coordinated with other state and federal agencies through the State's monitoring strategy, which has been designed to meet EPA's recommendations for a State Comprehensive Monitoring and Assessment Program.[121]

Indiana's probabilistic monitoring effort is a nine-year rotating basin (one basin per year) monitoring approach that allows the State to assess the condition of its waters for CWA Section 305(b) reporting and Section 303(d) listing purposes. Other efforts, such as fixed station monitoring, baseline characterization for WMPs, follow-up success monitoring, water quality sampling for total maximum daily loads, and special projects, provide site-specific program support. Water quality data collected as a requirement for State-approved WMPs and through other grant-funded actions is also integrated within IDEM's overall efforts to report on environmental conditions.

Recipients of funding from IDEM's Section 319 NPS Management Program use the *EPA Region 5 Model for Estimating Pollutant Load Reductions* and the *Pollutant Load Estimation Tool* to estimate the pollutant load reductions for each BMP they implement, pursuant to WMPs, and provide their results to IDEM as part of their grant agreement. EPA Region 5's load reduction model is a tool that provides a gross estimate of sediment and nutrient load reductions from the implementation of agricultural and urban BMPs and estimates water quality improvements.[122] In order to be eligible for CWA Section 319 funding, all WMPs also need to include a monitoring component.[123] The WPM's monitoring strategy evaluates the effectiveness of implementation efforts over time, measured against a set of defined criteria that can be used to determine whether loading reductions are being achieved and whether progress is being made toward attaining water quality standards.

The Indiana State Department of Agriculture and the ICP track agricultural BMP implementation using EPA Region 5's load reduction model to generate a comprehensive

[121] IDEM. 2017. Water Quality Monitoring Strategy. Accessed 01/31/2023. https://ecm.idem.in.gov/cs/idcplg?IdcService=GET_FILE&dID=83258315&dDocName=83260120&Rendition=web&allowInterrupt=1&noSaveAs=1&fileName=83260120.pdf
[122] EPA. 2018. Spreadsheet Tool for Estimating Pollutant Loads (STEPL) and Region 5 Model. Accessed 01/31/2023. https://19january2021snapshot.epa.gov/nps/region-5-model-estimating-pollutant-load-reductions_.html
[123] IDEM. 2009. Watershed Management Plan Checklist and Instructions. Accessed 01/31/2023. https://www.in.gov/idem/nps/watershed-planning/watershed-management-planning/watershed-management-plan-checklist-and-instructions-2009/

picture of the impact of voluntary conservation practices across the State, including within the coastal nonpoint program management area. The ICP uses the model results to establish baselines and measure load reduction trends by watershed each calendar year and to prioritize workload, staffing, and financial needs.[124]

Additional efforts to track implementation of specific 6217(g) management measures are discussed further in each management measure section and include the WATRS interactive map for watershed planning and the system for tracking the number of annual OSDS inspections. The LMCP utilizes data collected from all these efforts to assess over time the extent to which implementation of the 6217(g) management measures is reducing pollutant loads and improving water quality. The LMCP analyzes the data specifically for the objectives of the coastal nonpoint program and suggests additional management measures and practices, as needed. This information is shared with watershed groups and local governments in a report to encourage the implementation of practices that will most effectively improve water quality in Indiana's coastal nonpoint program management area. The LMCP coordinates with IDEM on the development of sampling plans, the selection of water quality parameters, and the analysis of water quality data to ensure that monitoring under various programs is in accordance with coastal nonpoint program objectives.

[124] Indiana LMCP. 2014. 6217 Nonpoint Source Pollution Control Program Submission for Programmatic Approval. Indiana Conservation Partnership Data Consolidation, Quality Control and Mapping Utilizing the EPA Region 5 Load Reduction Model. December 2014. Copy available upon request.

List of Acronyms

6217(g)	Section 6217(g) of the Coastal Zone Act Reauthorization Amendment
BMP	best management practice
C.F.R.	Code of Federal Regulations
CMS	Conservation Management System
CWA	Clean Water Act
CZARA	Coastal Zone Act Reauthorization Amendments
EPA	U.S. Environmental Protection Agency
FOTG	Field Operating Technical Guides
GLRI	Great Lakes Restoration Initiative
GNIAR	Greater Northern Indiana Association of Realtors
IAC	Indiana Administrative Code
IC	Indiana Code
ICP	Indiana Conservation Partnership
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources
IPM	integrated pest management
IOWPA	Indiana Onsite Wastewater Professional Association
LARE	Lake and River Enhancement Program
LMCP	Lake Michigan Coastal Program
MS4	municipal separate stormwater system
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source pollution
NRCS	National Resource Conservation Service
OSDS	onsite disposal system
SCS	Soil Conservation Service
SIC	standard industrial classification
SWCD	soil and water conservation district
TSS	total suspended solid
USDA	United States Department of Agriculture
WATRS	Watershed Management Plan and Total Maximum Daily Load Reports Search
WMP	watershed management plan