



Indiana Department of Environmental Management

INDIANA Wetland Program Plan

Prepared by the Indiana Department of Environmental Management's Office of Water Quality Pursuant to the U.S. Environmental Protection Agency's Enhancing State and Tribal Wetland Programs (ESTP) Initiative | March 2015



The graphic features the word "INDIANA" in large, dark blue, bold, sans-serif capital letters. Below it, the words "Wetland Program Plan" are written in a smaller, blue, sans-serif font. The "W" in "Wetland" is white with a blue outline. The text is overlaid on a blue-toned image of a wetland landscape with water and reeds. A white outline of the state of Indiana is positioned behind the text, with the wetland image filling the interior of the outline.

INDIANA Wetland Program Plan

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The logo features a stylized map of Indiana in shades of blue and purple, overlaid with a circular ripple effect. The word "INDIANA" is written in large, bold, dark blue capital letters across the top of the map. Below it, the words "Wetland Program Plan" are written in a smaller, bold, light blue font.

INDIANA Wetland Program Plan

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ACRONYMS & ABBREVIATIONS

1 INTRODUCTION

1.1 About This Plan

It is now widely accepted that wetlands are a vital resource providing services to both humans and the greater environment. Some of the commonly listed services include protecting and improving water quality, floodwater storage, groundwater recharge, maintaining surface water flow during dry periods, providing habitat for fish and wildlife, recreation and aesthetics.

However, Indiana has lost most of its wetlands. In the 1800s and 1900s millions of acres of wetlands were converted into farms, cities, roads, and to protect human health. Best estimates from a 1991 Indiana Department of Natural Resources report suggest that Indiana has lost over 85% or 4.7 million acres of the approximately 5.6 million acres of wetlands that existed in Indiana circa 1780. This knowledge has encouraged Hoosiers to support conservation and restoration of wetlands across the state in various ways.

The intent of this document is to guide continued wetland conservation and restoration efforts by developing a state wide Wetland Program Plan (WPP). A WPP is a voluntary plan that describes what goals a state or tribe wants to achieve related to its wetland resources over time. The WPP is not a rule making or regulatory document, nor is it a strict commitment by the state to achieve all aspects of the plan, but is a guide for future prioritization and action. The vision of this Indiana Wetland Program Plan (IWPP) is to advance the understanding of the services and benefits that wetlands provide to the State, to promote the restoration and creation of high quality wetlands throughout the state, and to conserve and protect Indiana's remaining wetlands. The IWPP includes priorities, goals, and action items reflecting the opinions and needs of many wetland stakeholders located throughout the state. Its implementation is dependent upon the continued engagement of all stakeholders.

The IWPP was coordinated by the Indiana Department of Environmental Management (IDEM) and its partners, CHA Consulting, Inc., Empower Results, LLC, and Siyan Communications, Inc. Although IDEM is the lead state agency, the IWPP was developed through a collaborative state and federal effort that included input from the Indiana Department of Natural Resources (IDNR), the Indiana State Department of Agriculture (ISDA), the U.S. Army Corps of Engineers (USACE), the National Resource Conservation Service (NRCS), the U.S. Fish and Wildlife Service (U.S. FWS), the U.S. Geological Survey (USGS), and the U.S. Environmental Protection Agency (U.S. EPA). This group of agencies represents the Steering Committee for this Plan. Additionally, input was sought from hundreds of stakeholders including public and private organizations and individual members of the public (see Appendix A for a full list of participants).

Funding for this planning effort was provided by a U.S. EPA Wetland Program Development Plan grant, CD-00E00962. For more detailed information or to participate in implementation action items please contact the IDEM Wetlands Program.



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1.2 Plan Priorities and Goals

PRIORITY 1: INCREASE WETLAND EDUCATION

Goal 1: Expand Wetland Awareness

Goal 2: Provide Wetland Training

PRIORITY 2: LOCATE WETLAND RESOURCES

Goal 3: Develop Robust Wetland Mapping

PRIORITY 3: PROTECT AND INCREASE WETLAND RESOURCES

Goal 4: Promote Wetland Conservation

Goal 5: Encourage Wetland Restoration

PRIORITY 4: UNDERSTAND WETLAND FUNCTIONS, VALUES, AND QUALITY

Goal 6: Advance Wetland Assessment

Goal 7: Guide Wetland Monitoring

PRIORITY 5: ADVANCE STATEWIDE LEADERSHIP

Goal 8: Administer Wetland Regulation

Goal 9: Coordinate Wetland Strategies

1.3 Plan Development

Though historically there has been controversy about wetlands management, the focus of this project is about finding common ground and moving forward. The Indiana Wetlands Conservation Plan (IWCP), published in 1996, provided the groundwork for the development of a Wetlands Program Plan. One thing was made clear during the 1996 process; strong collaborative partnerships with local focus groups were vital to effective wetland conservation, and providing resources to these groups resulted in projects moving forward.

In recognition of this, IDEM and its partners sought input from hundreds of stakeholders including organized groups and individual members of the general public. The Indiana wetland community (both public and private) was asked to identify what aspects of current programs were working, which programs and approaches were providing the highest level of benefit, what elements were compatible with their goals, and finally, which aspects of various programs were not working or needed improvements/resources to be more effective. Input was solicited via an on-line survey, statewide public meetings and direct in-person discussions. This comprehensive public input process and associated data is described in detail in Appendix A, and in supporting materials.



1.4 U.S. EPA Core Elements

The United States Environmental Protection Agency (U.S. EPA) has encouraged states and tribes to develop wetland program plans through its "Enhancing State and Tribal Programs" (ESTP) initiative. Subsequently, the U.S. EPA has defined four broad "Core Elements", or common program objectives, required for a comprehensive wetland program. The IWPP uses representative icons to link the priorities, goals and the implementation plan developed from the public input process to their respective, relevant Core Element. Additionally, the IWPP



provides a brief overview of existing wetland efforts related to the Core Elements within each Goal description. This comprehensive approach ensures that progress is made on each Core Element and that Indiana has the most robust plan possible.

According to the U.S. EPA, the four Core Elements include the following:



Voluntary Restoration and Protection (R&P) – “activities not required by statutes or regulations ... restoration is the manipulation of former or degraded wetland’s physical, chemical, or biological characteristics to return its natural functions ... protection is defined as removing a threat or preventing the decline of wetland conditions.”



Monitoring and Assessment (M&A) – “establishment and operation of appropriate devices, methods, systems and procedures necessary to monitor, compile, and analyze data on the condition of wetlands in a state or tribe.”



Water Quality Standards for Wetlands (WQS) – Water quality standards (WQS) are criteria that define physical, chemical, and biological conditions that are desired or expected in state or tribal waters. The EPA guidance on WQS for wetlands includes the following five key steps; 1) define wetlands as “state waters”; 2) designate uses that protect the structure and function of wetlands; 3) adopt narrative criteria and appropriate numeric criteria in the standards to protect designated uses; 4) adopt narrative biological criteria in the standards; 5) extend the anti-degradation policy and implementation methods.



Regulation (Reg) – “regulatory protections for wetlands ... a jurisdictional scope, a method to authorize impacts to aquatic resources and assess proposed authorizations, and a method of assuring compliance.”

1.5 Grants Program

The U.S. EPA provides funding through Wetland Program Development Grants to carry out one or more actions under a Core Element(s) that will develop or refine a state, tribe, or local government’s wetland program or grant-eligible actions articulated in a U.S. EPA-approved WPP. In addition, priority for funding will be given toward projects that involve developing a monitoring and assessment program, improving the effectiveness of compensatory mitigation, and refining the protection of vulnerable wetlands. Indiana’s wetland community is willing and excited to advance the action items outlined in the plan and looks forward to future funding and cooperative initiatives to do so.



2 PRIORITY 1: INCREASE WETLAND EDUCATION

2.1 Goal 1: Expand Wetland Awareness

Indiana Stakeholders ranked this priority and its associated goals the highest of all other priorities and goals. It continues to be an important subject in the wetland community, yet no single agency or partner organization provides coordinated, methodical outreach to the general public on wetland topics. Some State and Federal agencies have websites and brochures that address wetland regulation or voluntary restoration/conservation programs. Likewise, some partner organizations promote particular unique or special wetland resources or key wetland conservation priority areas through their public outreach and fundraising mechanisms. A handful of these partners also have a few educational graphics and PowerPoint presentations that describe the benefit of wetlands or wetland types. The Indiana Department of Natural Resources (IDNR) program “Project WET” (Water Education for Teachers) has a presence in the State and its associated wetlands guide (WOW Wonder of Wetlands) has been used to deliver some workshops on an intermittent basis.



To better understand what would be needed to develop a targeted education and awareness program, the IWPP presents a Communication Matrix (Appendix B). This matrix begins by identifying target audiences and then considers the venues for reaching such audiences and the materials needed to do so. The needs identified in this matrix were brought into the Implementation Plan as action items.

2.2 Goal 2: Provide Wetland Training

Access to professional level wetland training in Indiana is very limited. Wetland professionals should have a consistent knowledge of the value and benefits wetlands provide, an understanding of wetland delineation techniques, the ability to identify wetland plants, soils, and hydrology, be familiar with wetland assessment techniques and with various indexes relevant to wetland flora and fauna, and have an understanding of wetland regulations and mitigation techniques applicable to Indiana. Most agency staff and partner organization staff (e.g. The Nature Conservancy (TNC), land trusts, watershed alliances, etc.) are trained ‘on the job’



by colleagues. Some agencies, such as NRCS, conduct regular in-house training but no formal course work or certifications are offered on any regular basis. Some cross-agency training occurs relative to regulatory authorities and permits. Most private sector consultants and other certified Professional Wetland Scientists seek training outside of the state.



The Implementation Plan addresses this goal by outlining the necessary action items to increase in-state training and work toward certification programs.



3 PRIORITY 2: LOCATE WETLAND RESOURCES

3.1 Goal 3: Develop Robust Wetland Mapping

In 2010, Indiana updated the National Wetland Inventory (NWI) maps for the state utilizing recent aerial photography and improved methodology. This tool is useful in more accurately identifying wetland locations, extent, types, and trends than the original version completed in the 1980s. While NWI wetland maps have not been ground truthed, they can be utilized for large scale planning efforts. The NWI is a GIS shapefile that can be downloaded from the U.S. Fish and Wildlife Service website or viewed on an internet based viewer. Functional assessments have been established on the NWI polygons covering the 8 digit St. Joseph River watershed in north-eastern Indiana and extending into Michigan utilizing the Landscape Level Wetland Functional Assessment (LLWFA) tool. The purpose of a GIS level functional assessment is to understand the relationship between wetland loss and degraded surface water quality on a watershed context. This information can be utilized in watershed management plans or other local planning efforts to assist with wetland conservation and restoration strategies and associated projects.



**Where are our
most important
wetlands?**

Methodology to identify high priority wetland conservation sites and potential wetland restoration sites was developed in tandem with this plan. The methodology for developing potential wetland restoration sites mapping was adapted from *Spatial identification and optimization of upland wetlands in agricultural watersheds* (Babbar-Sebens, Meghna et al. Ecological Engineering. 52 (2013) 130-142). This methodology consisted of defining land cover types suited toward wetland restoration, soil survey drainage classes with dominant

conditions of poorly drained, and determining the slope and hydrologic catchment area. The process involved clipping each of these existing and constructed GIS layers in a certain order to produce a final shapefile of "Potential Wetland Restoration Sites" (PWRS). The high priority sites methodology consisted of an inventory of partners' priorities and mapping of known high quality or high value wetlands. These two tools are further described in Section 4 as they pertain to the priority of protecting and increasing wetland resources. Results of this mapping exercise can be viewed on the IDEM website at: www.idem.IN.gov/wetlands/2395.htm.

A number of partners provided input stating that simply knowing where wetlands are located would be an important step forward. Second only to that goal was the desire to know the functional values of those wetlands. The Implementation Plan includes action items needed to identify the functions of Indiana's remaining wetlands and maximize existing personnel and technical resources to ground truth existing wetlands and assess their condition. Wetland mapping layers will require periodic updating to maintain functionality.



4 PRIORITY 3: PROTECT AND INCREASE WETLAND RESOURCES

4.1 Goal 4: Promote Wetland Conservation

Threats to the remaining Indiana wetlands include quality and quantity of runoff from urban, suburban, and agricultural landscapes, isolation/fragmentation of habitats, increased development/conversion, agricultural drainage practices, failed mitigation, invasive species, and unaccounted functional losses. A key aspect of wetland conservation is determining the most important wetlands to conserve and protect. A group of wetland types known as 'Rare and Ecologically Important Wetland Types' receive priority protection in Indiana under 327 IAC 17-1-3(3)(B) and IC 13-11-2-25.8(a)(3)(B). These wetlands include acid bog, acid seep, circumneutral bog, circumneutral seep, cypress swamp, dune and swale, fen, forested fen, forested swamp, marl beach, muck flat, panne, sand flat, sedge meadow, shrub swamp, sinkhole pond, sinkhole swamp, wet floodplain forest, wet prairie, and wet sand prairie. The definitions provided are based on undisturbed examples. Proposed impacts to these wetlands cannot be approved under the Regional General Permit or Nationwide Permit programs in Indiana. Similarly, these types of wetlands receive higher protection under Indiana's isolated wetland regulations (IC 13-11-2-25.8).



Incentives for the protection of existing wetland resources can include financial incentives such as tax abatements, easement payments, or reimbursement for maintenance or enhancements. Conservation incentives can also include societal incentives such as valuation of functions such as flood storage or wildlife habitat. Lastly, regulatory incentives such as reduced mitigation ratios or expedited permit reviews could be used to increase the long-term protection of existing high quality wetlands as well. Current conservation initiatives led by agencies and partner organizations mostly focus on the conservation of wetlands for the protection, reproduction, care, management, survival, and regulation of wild animal populations. The protection of these high quality conservation targets as well as the areas that may buffer them is accomplished through land acquisition, conservation easements, and cooperative management partnerships. Appendix C provides a snapshot of the various programs and activities that are offered to support wetland conservation.

As part of this IWPP, a tool was developed for identifying and mapping high priority wetland conservation sites (HPWCS). The intention of this tool is to improve tracking of existing high quality wetland sites and target them for protection (including appropriate buffers). In addition, certain wetlands and geographic areas have been identified as priorities due to ecological significance, high potential benefit, or other needs. The HPWCS GIS layers can be combined with many other layers (suggestions provided within the tool) to tailor conservation aims to specific goals. It can also be used to coordinate efforts among partners and other interested parties. A number of conservation partners are available throughout Indiana to assist in the implementation of the IWPP including wetland conservation action items. Partners that have conservation goals have been identified and their priority areas have been compiled as part of this tool's layers. Users of the HPWCS tool can contact the appropriate partner to find assistance and coordinate efforts. Such efforts and assistance could include shared project goals, technical assistance, monitoring, future ownership, and/or leveraged funding. Representative maps can be viewed at www.idem.IN.gov/wetlands/2395.htm.

4.2 Goal 5: Encourage Wetland Restoration

A number of agencies and partner organizations have wetland restoration programs. Appendix C provides a snapshot of the various programs and activities. Many programs pay for the physical restoration of the site while some also provide incentives or annual payments. The various agencies and organizations have different criteria for determining priority areas.

Regulatory mitigation is another common means of encouraging wetland restoration. However, these restorations are linked to impacts (wetland conversion) elsewhere. In an effort to align mitigation projects with





interested landowners or conservation organizations, a Volunteer Mitigation website was initiated by IDEM to assist in the matching of mitigation needs and available sites for restoration. This public GIS map is hosted on IDEM's website.

As part of this IWPP development, a tool was created for identifying and mapping potential wetland restoration sites. This Potential Wetland Restoration Site (PWRS) shapefile can be combined with several other layers (suggestions provided within the tool) to tailor restoration needs to specific goals and support the efforts of partner



organizations. This tool is intended to better direct mitigation efforts and assist in watershed management efforts. In addition, a number of restoration partners are available throughout Indiana to assist in the implementation of the IWPP and this particular goal. Partners that have restoration goals have been identified and their priority areas have been compiled as part of this tool. Users of the PWRS tool can contact the appropriate partner to find assistance and coordinate efforts. Such efforts and assistance could include shared project goals, technical assistance, monitoring, future ownership, and/or leveraged funding.



5 PRIORITY 4: UNDERSTAND WETLAND FUNCTIONS, VALUES, AND QUALITY

5.1 Goal 6: Advance Wetland Assessment

Indiana does not currently routinely assess wetlands or have water quality standards specific for wetlands. However, because wetlands are defined by statute as “waters” they are covered by the state’s current Water Quality Standards (327 IAC 2) for open water. Because wetlands are so variable, wetland assessment and water quality standards for wetlands need to consider the many functions they provide. Several advancements have been outlined in the Implementation Plan herein that will aid in advancing both the way Indiana assesses wetlands and how that data can be assimilated. Likewise, such steps would begin to lay the foundation for potential tiered use standards to be developed in the future.

The Indiana Wetland Rapid Assessment Protocol (In-WRAP) (Taylor University Environmental Research Group, 2005) was developed to provide a methodology for assessing the quality of wetlands in Indiana. Specifically, the “Wetland Communities of Indiana” and associated key provide a standardized approach to defining the structure and species composition of a wetland type. This tool utilizes NWI polygons as the basis for building a wetland assessment. The tool then divides the wetland assessment into three tiers based on the level of information available, with Tier 1 being an overview and Tier 3 requiring more scientific expertise. This tool is publicly available but is not being fully implemented by any State or Federal programs. In-WRAP could be more extensively utilized to determine existing wetland function and values.



Similarly and related, a floristic quality index was developed in Indiana under a U.S. EPA Wetland Program Development Grant to provide additional measures for the assessment of plant community quality and function. The report titled *Floristic Quality Assessment in Indiana: The Concept, Use, and Development of Coefficients of Conservatism* (Paul E. Rothrock, 2004) is an analytical tool which includes metrics and techniques for vegetation monitoring to produce consistent results. This tool is publicly available but is not being fully implemented by any State or Federal programs. This tool could be utilized to determine a wetland’s current condition, as well as measuring wetland restoration or creation outcomes.



The Implementation Plan calls for further review of both of these tools and future standardized use and training related to the tools. A number of programs and partners could utilize these tools as part of assessment and monitoring activities. Reporting of such activities and submitting scores to a publically accessible database (voluntary submission) could be an important step toward the goal of advancing wetland assessment.

5.2 Goal 7: Guide Wetland Monitoring

Monitoring is required for mitigation sites permitted under a Section 401 Water Quality Certification (WQC) or Isolated Wetland Permit. The applicant must show that the success criteria are being met before they can be released from the permit. Success criteria typically include targets such as wetland size based on wetland delineation, wetland Cowardin type, presence and abundance of invasive species, tree stem density, bare ground or open water abundance, and any additional site specific criteria established in the mitigation and monitoring plan. Mitigation monitoring is typically required for a period of five to ten years. In 2001, IDEM received a grant to study whether the mitigation program was successful in meeting the no net-loss goal. These reports are available online at: www.idem.IN.gov/wetlands/2332.htm .



Look for: *Compensatory Mitigation: Inventory 2001, and Compensatory Mitigation: Area Analysis 2001*. At that time, it appeared that overall mitigation goals were not being fully achieved.

No standard protocols have been established in Indiana for wetland mitigation monitoring. The USACE provides brief guidance on monitoring report contents in Regulatory Guidance Letter No. 08-03.

Concurrently, some other agencies and partners are monitoring wetlands including the NRCS, IDNR, and TNC. Much of this monitoring occurs to meet specific objectives such as ensuring that no encroachment is occurring on an easement or whether or not rare plants are present and increasing or decreasing in abundance over time. None of this monitoring employs a formal assessment protocol.

Wetland monitoring when done holistically can include water quality data in addition to functional assessment or floristic quality evaluations. While IDEM currently routinely collects water quality data on streams and lakes throughout Indiana, they do not collect wetland water quality data. Data collected on streams and lakes are used to generate the Integrated 305(b) / 303(d) Report and to inform the TMDL (total maximum daily load) program. Data collection efforts conducted by IDEM are outlined in Indiana's Water Quality Monitoring Strategy and stored in the Assessment Information Management System (AIMS) database. Specific sampling protocols and quality assurance project plans (QAPPs) have been developed to direct sampling efforts. In addition, IDEM trains volunteers to conduct stream assessments in the Hoosier Riverwatch program and funds lake monitoring efforts via a grant to Indiana University SPEA and the Clean Lakes Program. Currently, these programs do not specifically collect data on wetlands. Some limited Indiana wetland data was collected in 2011 as part of the National Wetland Condition Assessment Report conducted by U.S. EPA and its State, Tribal, and Federal partners.



This marked the first-ever national survey on the condition of the Nation's wetlands. The survey was designed to provide regional and national estimates of wetland ecological integrity and rank the stressors most commonly associated with poor conditions. Results from this initial survey are forthcoming from the U.S. EPA.

The Implementation Plan considers all of the above opportunities as means for better understanding Indiana's wetlands' functions and quality. Action items specifically address how existing resources or programs could be enhanced to guide better wetland monitoring. These actions stretch beyond agreed upon protocols to include training and coordinated collection efforts.



6.1 Goal 8: Administer Wetland Regulation

The IWPP is not a rule making or regulatory document. Some stakeholders did however raise concerns with aspects of the current wetland regulatory process. Concerns ranged from failed mitigation, to functional loss within an 8-digit HUC watershed, to not having a standard wetland assessment methodology, and inconsistencies across regulatory agencies related to permitting and mitigation requirements. The Implementation Plan identifies action items that will improve discussions and decision-making regarding functional losses within a watershed based on field assessments and available wetland data. It also recognizes the role of local regulatory protection and more strategic mitigation project planning.

Currently, wetland regulations applicable in Indiana are primarily administered by three government agencies; the U.S. Army Corps of Engineers (USACE), the Indiana Department of Environmental Management (IDEM), and the Indiana Department of Natural Resources (IDNR). The USACE administers the Clean Water Act Section 404 Dredge and Fill Permit Program in Indiana. Three USACE districts have responsibility within the state; the Chicago District, the Detroit District, and the Louisville District. The USACE has final authority over the jurisdictional determination of “Waters of the US” (WOTUS) and wetlands adjacent to or abutting a WOTUS. A permit is required for construction activities occurring within a WOTUS and jurisdictional wetlands. In order to determine regulated impacts, a wetland delineation must be conducted on the property and a report submitted to the USACE for verification and a jurisdictional determination. Mitigation for impacts to WOTUS may also be required.



The IDEM administers the Clean Water Act (CWA) Section 401 Water Quality Certification program for wetlands and other Waters of the U.S. Wetlands which are considered isolated are regulated under Indiana Code (IC 13-18-22) which requires a permit to conduct an activity within a state regulated wetland. The Section 401 Water Quality Certification and Isolated Wetland Permit programs review proposed impacts to wetlands to determine compliance with approved terms and conditions. When a proposed wetland impact exceeds the conditions for an available general permit an individual permit is required. Within the individual permit program the applicant must provide a justified purpose and need for the impact(s), assess the project for avoidance and minimization measures, and then provide appropriate mitigation. Projects are reviewed with the goal of no “net loss” of wetlands for the state of Indiana. Mitigation may be accomplished through permittee-responsible mitigation, mitigation banks (limited availability), and in-lieu fees (under development). Federal guidance for developing a mitigation plan is available in the 2008 Mitigation Rule (CFR Part 332 – Compensatory Mitigation for Losses of Aquatic Resources). Permittee-responsible mitigation must occur within the same 8-digit watershed hydrologic unit code (HUC), be of the same wetland type, and replace lost wetland function based on an appropriate mitigation ratio.

The IDNR regulates wetlands through the Flood Control Act (IC 14-28-1) and the Lake Preservation Act (IC 14-26-2). Wetlands that fall within the regulated floodway of a stream or the waterline of a public freshwater lake are subject to IDNR’s permit review process for construction activities.

To help navigate the various regulations, requirements, and agency contacts, IDEM has two important publications available on their website: the Waterways Handbook and a Filling, Dredging, and Excavation brochure. IDEM also routinely engages in regulatory outreach via local and professional workshops and conferences as well as face-to-face early coordination meetings.



6.2 Goal 9: Coordinate Wetland Strategies

A variety of organizations, including governmental agencies and non-governmental organizations (NGOs), engage in the full suite of wetland activities. Government agencies include those partner members of the Steering Committee, while NGOs include formal non-profits like land trusts, The Nature Conservancy and Ducks Unlimited (DU), as well as more loosely organized local lake and watershed groups and even neighborhood associations. Governmental agency programs like the Wetland Reserve Easements (WRE), the Environmental Quality and Incentives Program (EQIP), the Conservation Reserve Program (CRP), and the Conservation Reserve Enhancement Program (CREP) provide important conservation funding to wetlands restoration. Several IDNR programs including the Indiana Heritage Trust, the Bicentennial Nature Trust, the Lake Michigan Coastal Program, the Lake and River Enhancement Program and the Healthy Rivers Initiative all engage in targeted wetland planning and restoration activities as well. Appendix C provides more detail on these programs. Concurrently, locally led initiatives via the NGOs results in thousands of acres of wetlands being protected, enhanced, or restored. Some of this restoration work and associated planning and education occurs as part of funding linked to Section 319(h) and 205(j) of the Clean Water Act or as part of the U.S. FWS's North American Wetland Conservation Act (NAWCA) grants. In the regulation of wetlands, the 2014 House Enrolled Act 1217 amended Indiana Code (IC) 14-8-2-199 and added IC 14-28-1-37 and 38. This Act tasks the regulatory agencies with streamlining the programs, minimizing duplication of effort, and providing clarity for the public. This has led to a collaborative effort to develop a permit flow chart to assist the public with identifying which agencies and permit applications are necessary for their project.

These combined efforts of program resources and technical expertise positions Indiana's wetland leaders to progress towards achieving the goals in the IWPP. However, to do so efficiently, given ever-shrinking budgets and ever-growing staff responsibilities, the IWPP recommends formation of an Interagency Wetlands Leadership Group (INWLG) to guide the Implementation Plan. This recommendation resulted in part from the review of other states' successful strategies for advancing wetland protection, as well as recognizing throughout the planning process that certain elements of wetland protection could be improved by simply coordinating efforts across agencies in targeted ways. The composition of the INWLG would be similar to that of the Steering Committee utilized for the development of this plan. A number of items in the Implementation Plan have been identified as items best suited to such a group as they encompass multiple goals and cross several Core Elements. To facilitate this recommendation, these items have been pulled out and summarized in Appendix D. This list of actions represents potential future agenda items or directives for an INWLG. Strong leadership and a clear plan forward will help Indiana realize this plan's priorities:

- Increase Wetland Education
- Locate Wetland Resources
- Protect and Increase Wetland Resources
- Understand Wetland Function and Quality
- Advance Statewide Leadership



7 IMPLEMENTATION PLAN

7.1 Seven-Year Plan and Beyond

Each of the above mentioned priorities and goals are accompanied by strategic actions for implementation. These actions have been assessed for timeframe completion based on priorities. In addition, many actions lay the framework for future actions and therefore need to be completed in sequence. Timeframe targets are grouped into four divisions: Years 1-3, Years 4-5, Years 6-7, and Years 7+. Potential partners for accomplishing each action are named as well as simple estimate of relative costs. It is important to note that all action items have associated costs which may affect the feasibility of implementation. Costs may come in the form of agency staff time, outside contractor time, or raw material costs. Costs are grouped in general terms from low cost (\$), moderate cost (\$\$), and high cost (\$\$\$). Low costs are likely in the range of \$100 to a few thousand dollars and/or could be supported by existing staff's time. Moderate costs range from a few thousand to approximately ten thousand dollars. High costs represent a potential need for tens of thousands to hundreds of thousands of dollars. High cost items tend to be those items that may require new staff, IT advancements, or conducting extensive monitoring activities.

Given the fact that all proposed action items have associated costs, the implementation timelines are suggested targets pending the availability of funds and/or staff resources. Additionally, agency or partner initiatives will determine implementation priorities. The Implementation Plan is in no way a strict commitment for the State to achieve these actions by the proposed timeline targets. Rather it should be seen as a road map for coordinated State efforts and opportunities for partner groups to assist through their individual means or future grants.



7.2 Implementation Plan Table

The Implementation Plan Table provides a road map/framework for future wetland initiatives. The table includes specific action items for each plan goal, a suggested implementation timeline, potential implementation partners, and an estimated implementation cost. Additionally, the table links specific action items with a related U.S. EPA Core Element. Indiana is committed to progressing the priorities, goals and action items in this Plan to address the U.S. EPA Core Elements of a comprehensive wetland program plan.





REG



R&P



M&A



WQS

	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 1: Expand Wetland Awareness (General Education Content)				
Update website with informational tools and educational resources, including partner materials; Tools to include: new mapping tools, regulatory compliance (permit flow chart), basic definitions and FAQs, available funding/restoration or easement programs, restoration guidance; Educational topics to include: value of wetlands, how wetlands work, plants and animals of wetlands, wetland mapping (NWI and INMAP), and general educational/explanatory graphics. List serve for updates.	Yrs 1-3	IDEM	R&P	\$
Identify key messages for all future wetlands outreach efforts; standardize/unite messages across all agency and partner groups to increase repeated exposure of the public to those messages; update website to reflect key messages	Yrs 1-3	INWLG, Partner Groups	R&P	\$
Update existing resource materials with new regulations, key messages, current wetland data, agency contact info (ie. Waterways Handbook, Filling, Dredging, and Excavation brochure)	Yrs 1-3	IDEM	R&P	\$
Develop standardized presentation(s) on various wetland restoration programs, wetland types/values, regulations, success stories; make available for web download	Yrs 1-3	INWLG, IDEM	Reg, R&P	\$
Routinely present wetland topics at professional conferences, storm water workshops, INAFSM, IACT, IASWCD, IWRA, MS4 annual meeting, IN Watershed Leadership Academy, NAI Region 5, EEAI, INPAWS, Wildlife Society, agency employee trainings, land trust alliance meetings, Hoosier Association of Science Teachers, Farm Bureau, NAHB, APA, utility companies, large land owning industries, etc. Also Master Naturalists and Master Gardener conferences and courses.	Yrs 1-3	IDEM, IDNR	R&P	\$
Explore media opportunities and partnerships; consider documentary or short videos	Yrs 1-3	IDEM, IDNR	R&P	\$
Gather and synthesize resources to help enumerate the economic value of wetlands; develop fact sheet	Yrs 1-3	IDEM, Contractor	R&P	\$\$
Develop attractive brochures on specific types of wetlands (flatwoods, fens, etc.) for use when approaching landowners; review county inventory booklet from IDNR DNP for content on community types	Yrs 1-3	IDEM, IDNR, TNC	R&P	\$\$
Develop common wetland invasive species ID brochure (utilize current IDNR invasive species resources and other states resources)	Yrs 1-3	IDEM, IDNR	R&P	\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 1: Expand Wetland Awareness (General Education Content)				
Develop publically available photo database of professional-grade wetlands photos for reference on website, to use on social media, in brochures, etc. Develop themed galleries for public education: what is a wetland? Wetlands before and after, wetlands across the seasons, etc.	Yrs 1-3	IDEM, Contract	R&P	\$\$
Formally observe American Wetlands Month (May). Could include special events, specially designed content for month-long social media campaign, art contests, tours of wetlands, newspaper ads with info-graphics, etc.	Yrs 1-3	IDEM, Partner Groups	R&P	\$\$
Create simple activity kits for staff to use at outreach events (booths at festivals, etc.). Activities communicate basic wetland concepts in a hands-on way.	Yrs 1-3	IDEM/IDNR, Contractor	R&P	\$
Inventory existing wetlands content for youth (informal and formal) and identify gaps: state education standards, Girl and Boy Scout merit badges, 4H projects, interpretive programming across parks. Identify opportunities for new content and programming and work to create and/or integrate.	Yrs 1-3	IDEM, Contractor	R&P	\$\$
Develop an informational wetland regulation fact sheet and distribute to local planning and building departments for inclusion in issuance/approval of plats/permits	Yrs 1-3	IDEM	R&P	\$
Conduct public awareness days/workshops/festivals/restoration planting days; coordinate with 319 project activities and funding	Yrs 4-5	Partner Groups	R&P, M&A	\$\$
Identify high quality outreach opportunities for promoting wetlands, e.g. host activity booth at public events. Ex., Hoosier Outdoor Experience, State Fair Pathway to Water Quality. Consider developing cadre of volunteers to staff booths.	Yrs 4-5	IDEM	R&P	\$\$
Develop Adopt-a-Wetland program; link to existing Adopt-a-River program	Yrs 4-5	IDEM, Partner Groups	R&P	\$\$
Create video testimonials profiling people who have restored wetlands, installed wetlands, etc. Post these videos on You Tube, use at conferences, etc.	Yrs 4-5	IDEM	R&P	\$\$\$
Develop social media presence and post regular happenings (see Healthy Rivers Initiative on Facebook as example); topics to include successful projects, workshops/trainings, wetland plant of the month, grant announcements and deadlines, etc.; create annual content calendar for posts; reach out to partner groups to like and share posts	Yrs 4-5	IDEM	R&P	\$

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REG



R&P



M&A



WQS

	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 1: Expand Wetland Awareness (General Education Content)				
Publicize the construction or completion of large restoration projects to media partners; engage agency public information officers (PIOs) to pitch wetland stories to media contacts	Yrs 4-5	ICP	R&P	\$
Develop public awareness campaign materials - focus on items that get public visibility (e.g.. car window clings, license plate holders, etc.) and items that partner groups can use and promote to their audiences (e.g.. short videos/spots, screen saver with IN wetland images, ring tones, etc. for download)	Yrs 4-5	IDEM, Partner Groups	R&P	\$\$
Provide campaign materials (e.g.. window clings, license plate holders, etc.) to licensees (hunting/fishing/boating) to show support for wetlands; distribute at partner events or speaking engagements	Yrs 4-5	ICP, Partner Groups	R&P	\$\$
Utilize/support existing curriculums WOW and WET; engage students, teachers and citizen scientists via annual wetland focused workshop(s); coordinate with 319 sponsors' education activities and IDNR WET facilitators network	Yrs 4-5	IDNR, Partner Groups	R&P	\$\$
Cultivate partners to sponsor tours of wetlands (nature hikes, bog walks, swamp slosh, kayak tours); invite key public officials or community leaders	Yrs 6-7	IDNR, Partner Groups	R&P	\$\$
Update displays about wetlands at all State Parks and other public lands buildings (NRCS field offices, INDOT rest areas, etc.); develop and provide updated materials with united key messages (see above action item on unified messaging) to integrate into existing displays and programming; develop complementary handout/brochure to accompany the displays	Yrs 6-7	IDNR, ICP	R&P	\$\$
Leverage and capitalize on existing programming occurring at 'teaching wetlands' throughout the state; compile list of the best/most active teaching wetlands, convene naturalists to do needs assessment to determine gaps in materials, infrastructure, training, etc. for possible future grant requests; maximize these existing teaching resources; (Note: 'teaching wetlands' include those publically accessible wetlands that have a lot of education/interpretive programming around them, extra infrastructure like boardwalks, interpretive signage, etc. They are featured aspects of certain parks that extra programming has developed around, e.g. Howell Wetlands in Evansville, Celery Bog in West Lafayette, Little River Wetlands, etc.)	Yrs 6-7	IDEM and teaching wetlands	R&P	\$\$
Develop and post to website local planning and ordinance guidance or samples/templates regarding sustainable development and wetlands protection	Yrs 6-7	IDEM, Partner Groups	Reg, R&P	\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 1: Expand Wetland Awareness (General Education Content)				
Develop and post to website fact sheet on what it means to own a wetland (value, regulations, basic maintenance/invasive species control, etc.) for real estate, planning/zoning departments	Yrs 6-7	IDEM, Partner Groups	R&P	\$
Develop multimedia materials (PSAs – video and audio, possibly partner with public broadcasting affiliate) and inventory of media contacts; post to website for download. Emphasize ID and functions/benefits.	Yrs 6-7	ICP	R&P	\$\$
Partner with education institutions on traveling display(s) (museums, zoos, gardens, etc.)	Yrs 6-7	IDEM, Partner Groups	R&P	\$\$
Publish quarterly e-newsletter; topics to include: successful projects, lessons learned, upcoming conferences, training opportunities, updates to regulatory/procedures, promote volunteer restoration programs/incentives, highlight educational resources, promote mapping tools, share contact info for partner groups and state/federal technical resources; promote list serve sign up on website and via ICP and partner groups	Yrs 4-5	IDEM	R&P	\$\$
Host Hoosier Riverwatch workshop focused on wetlands and wetland monitoring	Yrs 4-5	IDEM	M&A	\$\$
Develop and deliver longer presentations/workshop style wetlands modules for delivery at professional conferences, storm water workshops, INAFSM, IACT, IASWCD, IWRA, MS4 annual meeting, IN Watershed Leadership Academy, etc.; coordinate with such host organizations to theme their annual conference around wetlands	Yrs 6-7	IDEM	Reg, R&P, M&A	\$\$
Develop awards/recognition program; issues press releases; promote via e-news and social media	Yrs 6-7	INWLG	R&P	\$\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 2: Provide Wetland Training (Advanced Technical Content)				
Continue 401 regional regulatory training sessions; topics to include permits, mitigation, exemptions, etc.); invite partner agencies as well as consultants to attend	Yrs 1-3	IDEM, IDNR, USACE	Reg	\$
Cross train between agencies on regulatory differences, funding assistance, tools, and protocols	Yrs 1-3	INWLG	Reg	\$
Ensure internal IDEM wetlands and storm water professionals are trained to administer the Wetland Program Plan by identifying needs, prioritizing external training, and scheduling staff to attend	annually	IDEM	Reg	\$\$
Provide/Host routine training and certification courses; include online courses; (Note: MN has a five day model program that may serve as example)	Yrs 1-7+	IDEM	Reg, M&A	\$\$\$
Phase 1 Topics:	Yrs 4-5		Reg, M&A	\$\$
Wetland Delineation & Waters of the US determinations training	Yrs 1-3	USACE/IDEM/NRCS		
Section 401/404 Permit application training	Yrs 1-3	USACE/IDEM		
Functional Assessment (INWRAP)/Community ID training	Yrs 1-3	IDEM, IDNR, Hoosier Riverwatch, Universities		
Plant ID (typical plants in wetland communities)	Yrs 4-5	IDEM, IDNR, Universities		
Wetland monitoring protocols and reporting	Yrs 4-5	IDEM, Universities		
Invasive Species ID and Control Methods training	Yrs 4-5	IDNR (F&W and DNP)		
Phase 2 topics:	Yrs 6-7		Reg, M&A	\$\$\$
Fauna ID (bird, amphibian, reptiles, etc.)	Yrs 6-7	IDNR, Partner Groups		
Mitigation/Restoration design concepts	Yrs 6-7	IDEM, USACE, NRCS		
Sustainable development strategies	Yrs 6-7	IDEM, Partner Groups		
Universal database reporting	Yrs 6-7	IDEM, Universities		
Provide downloadable pamphlets/field guides on wetland flora, fauna, and soils)	Yrs 6-7	ICP, Partner Groups	Reg, R&P, M&A	\$\$
Develop certification programs as part of the training sessions	Yrs 7+	IDEM	M&A	\$\$
Require those conducting delineations as part of permitting to have attended training and be certified	Yrs 7+	IDEM	Reg	\$

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**REG****R&P****M&A****WQS**

	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 3: Develop Robust Wetland Mapping				
Make Potential Wetland Restoration Sites (PWRS) mapping tool available to public; provide instructions; promote its use to consultants involved in mitigation/permitting	Yrs 1-3	IDEM	R&P	\$
Make High Priority Wetland Conservation Sites (HPWCS) mapping tool available to public; provide instructions; promote its use to consultants involved in mitigation/permitting	Yrs 1-3	IDEM	R&P	\$
Encourage and facilitate submission of additional wetland data for HPWCS mapping tool, including voluntary restoration sites, priority areas, rare and/or high quality sites	Yrs 1-3	ICP, Partner Groups	R&P	\$
Explore development of phone/tablet app that can be used to gather and submit wetland information from the field	Yrs 1-3	IDEM, Partner Groups	R&P	\$\$
Participate in the ASWM sponsored Wetland Mapping Consortium	Yrs 1-3	IDEM	R&P	\$
Host regular stakeholder meetings to update maps, discuss new projects or efforts, set priorities, track progress and outcomes	Yrs 1-3/Yrs 4-5/Yrs 6-7	IDEM	R&P	\$\$
Continue to update/populate HPWCS mapping tool with partner data	Yrs 4-5	INWLG, IDEM	R&P	\$
Continue to update PWRS mapping tool, possibly write Python code for automated public layer updates	Yrs 4-5	IDEM, Universities	R&P	\$
Assess HPWCS mapping tool usage; make adjustments	Yrs 4-5	IDEM	R&P	\$
Assess PWRS mapping tool usage; make adjustments	Yrs 4-5	IDEM	R&P	\$
Develop methodology to ID and map fens/seeps, promote restoration of buffers to fens/seeps	Yrs 4-5	IDEM	R&P	\$\$
Develop a system for iterative, up-to-date land cover dataset to assist with target area ID	Yrs 6-7	State Land Office, IN MAP	R&P	\$\$
Assess agency GIS resources and determine if/where there is capacity to routinely update wetlands GIS layers with data that has been submitted to new publically accessible database; ID and implement best way to keep GIS updated	Yrs 6-7	INWLG, Contractor	R&P, M&A	\$\$\$
Digitize all past mitigation wetland sites into GIS either as polygons or points	Yrs 7+	IDEM	M&A	\$\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 4: Promote Wetland Conservation (Protect What We Have)				
Promote HPWCS tool to identify preservation opportunities (in combination with other mitigation methods), incentives to include possible reduced mitigation ratios	Yrs 1-3	IDEM, IDNR	Reg	\$
Generate a Top 20 list of high quality/priority conservation wetlands and adjacent buffer lands for acquisition or easement; ID who owns the properties; determine if/who (which agency or partner group) may have approached them already	Yrs 1-3/Yrs 4-5/Yrs 6-7	INWLG, Partner Groups	R&P	\$\$
ID what conservation programs are applicable for each Top 20 property	Yrs 1-3/Yrs 4-5/Yrs 6-7	INWLG	R&P	\$
ID what technical assistance is available in each Top 20 priority conservation area; compile list of technical assistance contacts for each priority area	Yrs 1-3/Yrs 4-5/Yrs 6-7	INWLG	R&P	\$
Develop volunteer conservation outreach program materials (introductory land owner letter, brochure explaining why wetlands are so special, technical assistance contact info, synopsis of all financial incentive programs, etc.); add brochure and synopsis to website	Yrs 4-5	INWLG, ICP, Partner Groups	R&P	\$\$
Develop publically accessible database that can be used to submit locations of verified wetlands or restored or protected wetlands; encourage/require agency staff to utilize it; allow for upload of GIS files	Yrs 6-7	IDEM, Contractor, INWLG	R&P	\$\$\$
Reach out to top 20 wetland owners and others in priority conservation areas (e.g., mailings, calls, meetings, etc.)	Yrs 4-5	ICP, Partner Groups	R&P	\$\$
Coordinate local tax abatements; incentive for wetland protection	Yrs 4-5	IDEM	R&P	\$
Assess revising IC 6-1.1-6-5 to reduce acreage for "wildlands" from 10 acres to 5 acres for property tax credits	Yrs 4-5	IDEM	R&P	\$
Purchase media advertisements in priority conservation areas	Yrs 6-7	Partner Groups	R&P	\$\$\$
Secure easements to priority conservation wetlands and buffers	Yrs 6-7	ICP, Partner Groups	R&P	\$\$\$
Establish a recognition/awards program for landowners; send thank you note/gift (i.e.. wetlands promotional items, see Goal 1); issue press releases in landowner's area; promote in wetlands e-news and social media	Yrs 6-7	INWLG	R&P	\$\$
Comprehensive plan coordination with land planners	Yrs 6-7	Municipalities, Partner Groups	R&P	\$\$
Create wetland category for Outstanding State Resource Waters list	Yrs 7+	INWLG	R&P	\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 5: Encourage Wetland Restoration (Increase Wetland Acreage and Functions)				
Provide links to existing restoration guidance documents on IDEM webpage (see other states' examples)	Yrs 1-3	IDEM	R&P	\$
Generate list of Top 50 12 digit HUCs priority restoration areas; utilize watershed plans, TMDL assessments, and 12 digit HUC wetland loss analyses, to target wetland restoration priorities to improve impaired/threatened streams or restore watershed function	Yrs 1-3/Yrs 4-5/Yrs 6-7	INWLG	R&P, M&A	\$\$
ID what conservation programs are applicable for each Top 50 12 digit HUC priority restoration area	Yrs 1-3/Yrs 4-5/Yrs 6-7	INWLG	R&P	\$
ID what technical assistance is available in each Top 50 12 digit HUC priority restoration area; compile list of technical assistance contacts for each priority area	Yrs 1-3/Yrs 4-5/Yrs 6-7	INWLG	R&P	\$
Develop guidance document for wetland restoration concepts, including mitigation, in IN; include use of PWRS tool in guidance	Yrs 4-5	ICP, Partner Groups	R&P, Reg	\$\$
Educate storm water professionals about the benefits of constructed wetland systems for treatment of storm water: through training, creation of facts sheets, and/or establishing standards in the Indiana Storm Water Quality Manual	Yrs 4-5	IDEM, Partner Groups	R&P	\$\$
Update Storm Water Quality Manual with restoration objectives	Yrs 4-5	IDEM, Partner Groups	R&P	\$\$
Develop volunteer restoration outreach program materials (introductory land owner letter, brochure explaining why wetland restoration is important in that area, technical assistance contact info, synopsis of all relevant financial incentive programs, etc.); add brochure and synopsis to website	Yrs 4-5	INWLG, IDEM	R&P	\$\$
Develop consistent strategy to monitor success of restoration projects; develop wetland monitoring guidance document	Yrs 4-5	INWLG, Partner Groups	M&A	\$\$
Reach out to landowners in priority restoration areas (e.g., mailings, calls, meetings, etc.)	Yrs 4-5	ICP, Partner Groups	R&P	\$\$
Host field days or landowner workshops in priority restoration areas; coordinate with 319 projects and funding	Yrs 6-7	ICP, Partner Groups	R&P	\$\$
Purchase media advertisements in priority restoration areas	Yrs 6-7	Partner Groups	R&P	\$\$\$
Develop indicators of success for landowners with new restorations (checklist, things to watch for, etc.); add to restoration/mitigation guidance document	Yrs 6-7	INWLG, IDEM	M&A	\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 5: Encourage Wetland Restoration (Increase Wetland Acreage and Functions)				
Utilize quarterly e-newsletter to promote financial and technical assistance programs, priority areas, and successful projects	Yrs 6-7	IDEM	R&P	\$
Target restoration of key properties via State or private resources; leverage financial resources between agencies and with partner organizations, municipalities	Yrs 6-7	ICP, Partner Groups	R&P	\$\$
Establish a recognition/awards program for landowners; send thank you note/gift (i.e.. wetlands promotional items, see Goal 1); issue press releases in landowner's area; promote in wetlands e-news and social media	Yrs 6-7	INWLG	R&P	\$\$
Explore the expansion of new planning and scenario-based tools to aid identifying restoration targets (e.g.. WRESTORE tool, Oregon State)	Yrs 6-7	Universities	R&P	\$\$\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 6: Advance Wetland Assessment				
Review and compare various rapid wetland functional assessment tools (ORAM, INWRAP, NRCS's field method); decide best method for IN; make any necessary updates to the method to get all partners on board with using it as the standard protocol for functional assessments	Yrs 1-3	IDEM, Universities, Contractor	M&A	\$\$\$
Utilize agreed upon rapid assessment tool in existing field work	Yrs 1-3	ICP, Partner Groups	M&A	\$\$
Require rapid functional assessments in wetland permitting	Yrs 4-5	IDEM	Reg	\$
Include instruction about utilizing rapid functional assessment in the restoration/mitigation guidance document (see Goal 5) and the monitoring guidance document (see Goal 7)	Yrs 4-5	ICP	M&A, R&P	\$
Incorporate a functional assessment data field into the publically accessible database being developed for reporting existing and restored wetlands (see Goals 4 and 5)	Yrs 4-5	IDEM, Contractor	M&A, R&P	\$
Add functional assessments to NWI mapping in Indiana	Yrs 4-5	Contractor	M&A, R&P	\$\$\$
Plan for resources to conduct regular updates to NWI maps every 10 years to allow for summarizing of wetland acreage and trends over time, and include process for on-site confirmation of NWI wetlands	Yrs 4-5	IDEM, Contractor	M&A	\$\$
Perform quality control check for NWI functional assessments	Yrs 6-7	Contractor, Universities	M&A	\$\$
Update Indiana Wetland Status and Trends report	Yrs 6-7	IDEM	M&A, WQS	\$
Explore feasibility of incorporating U.S. EPA 3 Tier Wetland Assessment	Yrs 6-7	IDEM	M&A, WQS	\$
Participate in National Wetland Condition Assessment	Yrs 6-7	IDEM	M&A, WQS	\$
Participate in National Wetland Monitoring & Assessment Work Group	Yrs 6-7	IDEM	M&A, WQS	\$
Utilize NWI functional assessment mapping to draw conclusions about water quality trends; explore relationship between wetland conditions and the services they provide	Yrs 6-7	IDEM	M&A, WQS	\$\$
Develop biological indicators to assess wetland condition	Yrs 6-7	Universities	M&A, WQS	\$\$\$
Develop wetland use designations	Yrs 6-7	IDEM	M&A, WQS	\$
Support research to better understand hydrology of wetlands; understand more about hydrologic and biological function	Yrs 7+	IDEM	M&A, WQS	\$\$\$
Develop wetland condition categories and criteria for all wetlands, based on functional assessment	Yrs 7+	IDEM	M&A, WQS	\$

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**REG****R&P****M&A****WQS**

	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 7: Guide Wetland Monitoring				
Review National Wetland Condition Assessment Report; determine value to statewide monitoring planning and framework	Yrs 1-3	IDEM	M&A	\$
Define statewide monitoring objectives	Yrs 1-3	INWLG	M&A, WQS	\$
Survey university and agency researchers regarding ongoing or past wetland monitoring; host research meeting to explore details of current and past research, ID gaps, ID opportunities, collaborate on data reporting and conclusions	Yrs 1-3	IDEM, Universities	M&A	\$\$
Include wetlands status in the narrative section of the Integrated 305(b)/303(d) Report	Yrs 1-3	IDEM	M&A	\$
Collaborate with researchers to select and pilot sites for continued or future water quality monitoring; coordinate with IDEM Assessment staff to ensure data achieves the highest standard for third party data; coordinate with IN Water Monitoring Council	Yrs 4-5	INWLG, Universities, IDEM	M&A	\$\$
Explore Hoosier Riverwatch program as mechanism for gathering and storing voluntary wetland monitoring data (both water quality and functional assessments); expand Hoosier Riverwatch to include wetland module	Yrs 4-5	IDEM, Contractor	M&A	\$\$
Develop consistent strategy to monitor success of restoration projects; develop wetland monitoring guidance document	Yrs 4-5	ICP, Partner Groups, Universities	R&P, M&A	\$\$
Explore and develop ways to garner water quality monitoring data through existing programs such as 401 permitting, 319 watershed planning, storm water programs, etc.	Yrs 4-5	IDEM	M&A	\$
Incorporate water quality monitoring fields into the publicly accessible database being developed for reporting existing and restored wetlands (see Goals 4 and 5); coordinate with Hoosier Riverwatch to encourage volunteer monitors to utilize this database instead of, or in addition to, the HR database	Yrs 6-7	IDEM, Contractor	M&A	\$\$
Encourage partners to do long-term monitoring to help understand the typical conditions of restored wetlands, best practices, pitfalls; submit data to monitoring database	Yrs 6-7	INWLG, Partner Groups, Contractor	M&A	\$\$\$
Determine best sampling protocol and sampling design for State supported wetland sampling; establish protocol for long-term monitoring sites and probabilistic/random basin sites; consider aligning to ongoing IDEM stream and lake assessment schedules/approaches	Yrs 6-7	IDEM	M&A	\$\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 7: Guide Wetland Monitoring				
Conduct needs assessment to understand what it would take to develop state administered wetland water quality and functional assessment sampling program according to suggested protocol and sampling design	Yrs 6-7	IDEM	M&A	\$
Explore possibility of eco-region level wetland water quality monitoring and assessment in cooperation with nearby states	Yrs 6-7	IDEM	M&A	\$\$
Explore AIMS database to identify any data field updates that would be needed to utilize it for future IDEM wetland sampling data input	Yrs 6-7	IDEM	M&A	\$
ID funding mechanisms for long-term wetland water quality monitoring; staff, materials, lab costs, etc. (i.e.. S 106 CWA, state agency budget, etc.)	Yrs 6-7	IDEM	M&A	\$
Develop landowner outreach materials to gain routine access on private property sites	Yrs 6-7	IDEM	M&A	\$
Update Indiana Water Quality Monitoring Strategy document to include any above advancements	Yrs 6-7	IDEM	M&A	\$
Assess success/failure of past mitigation sites (those greater than 5 years old) using monitoring protocols and success criteria	Yrs 7+	IDEM	M&A	\$
Summarize and translate wetland monitoring and assessment data into information that can be utilized for agency leadership decision-making	Yrs 7+	IDEM	M&A	\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 8: Administer Wetland Regulation				
Coordinate In-Lieu Fee Program projects with priority restoration areas (see Goal 5)	Yrs 1-3	IDNR, USACE, IDEM	Reg	\$
Improve/expand/encourage mitigation banking to address priority restoration areas (see Goal 5)	Yrs 1-3	IDEM	Reg	\$
Complete the Interagency Permit Guidance Flow Chart, post on website, promote to potential permit applicants	Yrs 1-3	IDEM	Reg	\$
Increase regulatory consistency between agencies when possible; utilize same assessment protocols	Yrs 4-5	INWLG	Reg	\$\$
Develop database associated with IDEM's WET site that improves permit tracking, impacts, mitigation, cumulative impacts; coordinate it with the publically accessible database suggested in earlier goals	Yrs 4-5	IDEM, Contractor	Reg, R&P	\$\$
Require mitigation projects to utilize the publically accessible database being developed for reporting existing and restored wetlands for submission of GIS data	Yrs 4-5	IDEM	Reg, R&P	\$
Require GIS files be submitted as part of the final mitigation monitoring report	Yrs 4-5	IDEM	Reg, R&P	\$
Require any delineated wetlands that were avoided to also be reported to the database and their GIS files uploaded	Yrs 4-5	IDEM	Reg, R&P	\$
Require rapid functional assessments be submitted as part of wetland permitting	Yrs 4-5	IDEM	Reg	\$
Develop consistent strategy to monitor success of restoration projects; develop wetland monitoring guidance document including template reports	Yrs 4-5	ICP, Partner Groups, Universities	R&P, M&A	\$\$
Require functional assessments be conducted at mitigation monitoring closeout; require submission of monitoring data and functional assessment to the new publically accessible database being developed for reporting existing and restored wetlands	Yrs 4-5	IDEM	Reg, R&P	\$
Improve mitigation performance standards; include functional target value	Yrs 4-5	IDEM	Reg	\$
Review 12 digit HUC gains/losses maps (see Goal 9) during early coordination to better inform decision-making about permits and provide permit/mitigation guidance to permittee	Yrs 4-5	IDEM	Reg, R&P	\$
Improve online notification and tracking of permits (by watershed)	Yrs 6-7	IDEM	Reg	\$\$

* Potential Partner Groups = SWCDs, watershed groups, NGOs (TNC, DU, Land Trusts, etc.), INWLG = Interagency Wetland Leadership Group, ICP = Indiana Conservation Partnership

Core Elements (page 6): **R&P - Restoration and Protection; **M&A** - Monitoring and Assessment; **Reg** - Regulation; and, **WQS** - Water Quality Standards for Wetlands





	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 8: Administer Wetland Regulation				
Consider offering incentives to mitigation permittees for utilizing mapping tools, engaging with key partners, considering watershed functional values for siting mitigation projects, etc.	Yrs 6-7	IDEM	Reg	\$
Increase/Implement municipal ordinances for protection of high priority conservation wetlands	Yrs 6-7	Counties, Cities	Reg	\$\$
Increase/Implement municipal ordinances for sustainable development strategies	Yrs 6-7	Counties, Cities	Reg	\$\$
Establish tiered water quality criteria/uses and adopt standards for wetlands	Yrs 7+	IDEM	Reg	\$

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	Implementation Timeline	Potential Partners*	Core Element**	Cost
Goal 9: Coordinate Wetland Strategies (Interagency Leadership)				
Implement Interagency Wetland Leadership Group (INWLG); assign staff/admin to coordinate; develop work plan	Yrs 1-3	INWLG	all	\$
Inventory training and assessment resources available throughout agencies	Yrs 1-3	INWLG	Reg, M&A	\$
Every two years evaluate cumulative permit impacts (losses) by watershed; map these for comparison with gains (restorations) and water quality impairments	Yrs 4-5	INWLG	M&A, R&P	\$\$
Utilize top 20 conservation priority areas and top 50 12 digit HUC restoration priority areas to guide planning initiatives and implementation funding across all programs (205j, 319, LARE, IHT, BNT, etc.)	Yrs 4-5	INWLG	R&P	\$\$
Engage in routine meetings with non-agency wetland protection/restoration partners to plan for projects, address challenges, and track project progress/outcomes	Yrs 4-5	INWLG	R&P	\$
Coordinate monitoring and implement universal protocols for monitoring and data storage	Yrs 4-5	INWLG	R&P, M&A	\$\$
Develop dedicated position for statewide wetlands coordination (coordinate projects across departments, across various plans such as the Wildlife Action Plan and watershed plans, provide public education, orchestrate training programs, outreach to key partners, serve as support staff for INWLG)	Yrs 6-7	INWLG, IDEM or IDNR or Contractor	all	\$\$\$
Review and track progress on WPP action items	Yrs 4-5/Yrs 6-7	INWLG	all	\$
Integrate wetland loss into TMDL assessments and watershed planning	Yrs 7+	IDEM	M&A	\$
Marry water quality planning aspects (IDEM monitoring and assessment) with natural area planning (IDNR and partner group initiatives)	Yrs 7+	INWLG	M&A	\$

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