Indiana's State Nutrient Reduction Strategy – Milestones and Action Items Table

Last updated on February 26, 2021

Objectives/Goals	Action/Activity	Tools/Resources	Responsible Party	Timeframe	Target Date	Status & Results (as applicable)
Provide an update of the SNRS every five years	Updates of SNRS will be prepared as necessary; keep track of accomplishments and adaptive management changes	-SNRS -Annual ICP Accomplishment Reports	ISDA; IDEM; and SNRS Workgroup	12/2020 - 12/2025	12/2025	On-going
Update Milestones and Action Items table	SNRS Workgroup will meet at least annually to review and discuss this table and make necessary changes.	-SNRS -Milestones and Action Items table -Partnership efforts	ISDA; IDEM; and SNRS Workgroup	Annually	Dec. 2021-Dec. 2025	On-going
Watershed Prioritization						
Watersheds with drinking water reservoirs	Map Drinking water areas	GIS	IDEM	NA	NA	Completed
Groundwater sources	Groundwater Vulnerability Maps	Ground Water Monitoring Network (GWMN); GW staff	IDEM GW staff	NA	NA	Completed -Page 23-24 of SNRS
Watershed Prioritization within the nine major river basins	-Analyze fixed station data for the period of the last 10 years for each of the nine basins in this order: 1. Great Lakes a. Lake Erie b. Lake Michigan 2. Upper Wabash 3. White River, West Fork 4. White River, East Fort 5. Lower Wabash 6. Upper Illinois 7. Ohio River Tributaries 8. Great Miami 9. Patoka -Analyze USGS water quality monitoring data and discharge data	- P and N data from AIMS II will be modeled for the period of the last 10 years using Load Duration Curves and LOADEST - WQ monitoring data - Drinking water maps - GW Vulnerability maps - State Resource Assessment (SRA) - WQ Monitoring Data from USGS and other organizations - Results of nutrient load trends from WRTDS model - Indiana Science Assessment	IDEM WAPB staff; ISDA; USGS; monitoring agencies	September 2019 – December 2021	December 2022	1(a) 100% completed 1(b) in process 2-9: in process

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Select critical watersheds at the HUC 12 level within the nine basins.	Identify the intersection of monitoring data, maps of critical areas from WMPs, NRCS modeling, etc. to determine the 12 digit HUC priority areas.	- Monitoring Data - IDEM Watershed Management Plans (WMPs) - Drinking water maps - GW Vulnerability maps - Modeling Data - Nutrient load trends Indiana Science Assessment	SNRS Workgroup; Indiana Conservation Partnership (ICP)	On-going	December 2022	On-going
Measuring Impacts						
List what type of management will need to be done in the newly selected HUC12 critical areas/priority watersheds to address issues	Identify BMPs that could be implemented based on type of management needed to address resource issues	- Monitoring Data - IDEM WMPs - Drinking water maps - GW Vulnerability maps - Modeling Data - Indiana Science Assessment	SNRS Workgroup; ICP	On-going	On-going	On-going
Inventory the new BMPs that are implemented in the newly selected critical areas/priority watersheds at the HUC 12 level, and show impacts of this BMP implementation.	-IDEM CWA 319 funds -IDEM CWA 205j funds -Use Region 5 Model to analyze and show sediment and nutrient load reductions	- Performance Measures Monitoring - Region 5 Model	ICP	Annually	December 2025	On-going http://www.in.gov/idem/nps/3360.htm
Continue to inventory BMPs implemented through conservation programs and show impacts of the *assisted* BMP implementation statewide.	Use Region 5 Model to analyze and show sediment and nutrient load reductions	- Region 5 Model - Tillage Transects - Cover Crop Transects	ICP	On-going annually	March of every year	ICP Accomplishments Report and Load Reduction maps
Continue to conduct the spring tillage transect survey statewide, and to use the data results from these transects.	Partnership staff in each county will conduct this transect in the spring following planting on a bi-annual basis.	Conservation Partnership Staff	ICP	Every two years April-June	NA	Cover Crop and Tillage Transect Data website
Continue to conduct the fall cover crop and tillage transect survey statewide, and to use the data results from these transects.	Partnership staff in each county will conduct this transect in the fall following harvest each year.	Conservation Partnership Staff	ICP	Annually from Oct.-December	NA	Cover Crop and Tillage Transect Data website

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Monitoring						
Use monitoring gaps determined by the InWMC Whitepaper titled *An Assessment for Optimization of Water-Quality Monitoring in Indiana, 2017* to prioritize new monitoring sites (statewide)	Determine scale of new monitoring sites: compare the SNRS 12-digit priority HUCs with 8-digit pour points	*Integrated Water Monitoring Network Optimization Taskforce*; *An Assessment for Optimization of Water-Quality Monitoring in Indiana, 2017*; GIS; HUC maps	InWMC; ISDA; IDEM; and USGS	On-going	NA	On-going
Determine funding needs for the new priority monitoring sites	Identify various funding sources	Federal, State and Local funding; Foundation funding; NGO funding	SNRS Workgroup; ICP	On-going	NA	On-going
Determine existing monitoring locations that need continued funding in order to continue long-term water quality monitoring.	USGS, IDEM and ISDA staff discuss locations with this need and work with the Hypoxia Task Force Monitoring Workgroup and GLWQA Annex 4 Sub-Committee to determine and discuss location and funding needs.	Existing monitoring data sets; USGS and IDEM data; Indiana Science Assessment;	USGS; IDEM; ISDA	On-going	NA	On-going
Add capacity to sample for DRP in the following areas: 1. Laboratory analysis 2. Monitoring resources beginning in the WLEB with Fixed Stations	1. Secure laboratory equipment for the ISDH; 2. Investigate necessary resources for collecting and analyzing for DRP	1. MOU between IDEM & ISDH; IDEM lab account funding 2. Time/travel study	IDEM & ISDH	October 2016 – June 2017	1. 1/2017 2. 3/2017	1. 100%-Funds secured, 100% complete 2. Complete
Diurnal Dissolved Oxygen Pilot project planning for development of TP multi-parameter numeric criteria	Develop work plan and secure funding for sampling in 2017	Scientific literature; OH EPA personnel; USGS personnel; equipment manufacturers	IDEM and USGS	April 2016 – December 2016	December 31, 2016	100% complete
Implement Diurnal Oxygen Pilot project	Monitoring of approximately 28 sites	IDEM and USGD staff and equipment	IDEM	March 2017-Oct. 2017	October 2017	100% complete
Plan the project for Performance Measures monitoring for 2017 to determine if BMP implementation has improved water quality	Based on information/data from ICP and the AIMS II database, determine the 12-digit HUC for follow-up sampling	AIMS II database; cost-share information from ICP; Region 5 model outputs	IDEM	October 2016 – Feb. 2017	February 2017	100% complete
Implement performance measures monitoring	Develop work plan, conduct recon	GIS mapping; AIMS II database; field survey	IDEM	April 2017 – Oct. 2017	October 2017	100% complete

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All 144 major wastewater treatment plants have 1mg/L phosphorus limits in their NPDES permits and are discharging at that limit or below.	82% of the NPDES permitted major facilities are discharging with those limits and 18% are on compliance schedules.	Monthly discharge monitoring reports (DMRs)	Municipalities; Industries; IDEM	Monthly reporting to IDEM	December 2023	On-going
Education and Outreach						
Explore opportunities to work with Certified Crop Advisers (CCAs) and private sector to help promote agronomic conservation practices and technologies.	-Support CCA Annual Meeting in December -Hold field days and invite CCAs -Develop possible grant opportunities to work with CCAs	ICP staff	State Soil Conservation Board (SSCB); ICP	On-going	NA	On-going
Promote 4R Nutrient Stewardship Certification Program across Indiana.	-Work with Indiana ACI, Ag Retailers and CCAs statewide in promotion of the 4Rs. -Certify more Indiana Ag Retailers and CCAs throughout Indiana.	ACI members; IANA; ICP staff; TNC; Purdue Extension; WLEB Partnership	Indiana Agribusiness Council; IANA	On-going	NA	On-going
Expand cover crop use among farmers by promoting the new Cover Crop Premium Discount Program for growers in the Upper White watershed in Randolph, Madison, Delaware, Henry, Hamilton, and Tipton counties. The goal for 2021 is to enroll 10,000 acres.	Focus is to target first time cover crops users, but others are eligible as well. Provide participants with a $5/acre premium discount on the following year's crop insurance invoice for verified acres; 500-acre cap per grower.	ISDA Program Manager; ISDA Resource Specialist staff; SWCD County staff; FSA-578 Form; Funds from TNC	ISDA; USDA Risk Management Agency; TNC; IANA	3 years (2021-2023)	Sign-up is by March 1 of each year	In process
Program Goals						
Enroll 26,250 acres into the Indiana CREP program within all 11 CREP watersheds.	Annually enroll at least 750 acres of new practices within the 11 Indiana CREP watersheds.	CREP promotional materials; CREP staff	ISDA CREP staff; FSA; NRCS; IDNR	Until acreage enrollment goal is met.	NA	On-going, 83%. CREP website link
Annual Nutrient Load Reduction goal within CREP	-2,450 tons/year of sediment -2,400 lbs./year of phosphorus -4,700 lbs./year of nitrogen	Use Region 5 Model to analyze reduction numbers	CREP Leaders and CREP Program Manager	Calendar year	December 31, 2021	Results are available in CREP Annual Reports
Enroll at least 100 growers in the INfield Advantage (INFA) program with a goal of 5,000 acres in 2021.	Growers can enroll a maximum of 70 acres.	ISDA, INFA Program Manager; INFA Group Leaders; INFA promotional materials	INFA Program Manager; Indiana Corn and Soy; PU	Calendar year 2021	September 2021	On-going -Page 64 of strategy

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ISDA and Soil and Water Conservation Districts (SWCDs) have an annual goal to reduce nitrogen from entering waters of the State by:	275,000 lbs. of Nitrogen reduced	CREP; Clean Water Indiana (CWI); IDNR, LARE Program; Technical Assistance	ISDA; SWCD	Calendar year 2021	December 31, 2021	On-going
ISDA and SWCDs have an annual goal to reduce phosphorus from entering waters of the State by:	150,000 lbs. of Phosphorus reduced	CREP; Clean Water Indiana; IDNR, LARE Program; Technical Assistance	ISDA; SWCD	Calendar year 2021	December 31. 2021	On-going
ISDA and SWCDs have an annual goal to see at least 1,000 new conservation BMPs installed.	1,000 new conservation BMPs installed or implemented	CREP; CWI; IDNR, LARE Program; Technical Assistance	ISDA; SWCD	Calendar year 2021	December 31, 2021	On-going
IDEM has an annual goal to reduce nutrients from entering waters of the State by:	Providing federal pass-through funding for watershed planning and implementation projects.	CWA §319 and §205 funding with IDEM staff technical assistance and grant management	IDEM	Annually with 3-5 year grant agreements	NA	On-going
Indiana NRCS has a goal to write stewardship plans on 57,902 acres through the Conservation Stewardship Program (CSP) in Federal FY2021.	Work with landowners and participants to address natural resource concerns, enroll them in the program and process paperwork.	Conservation Stewardship Program; NRCS Staff	NRCS	Federal Fiscal Year 2021	September 30, 2021	On-going -Page 72 in SNRS
Indiana NRCS: write Conservation Plans for landowners in Indiana in 2021 through technical assistance.	Work with landowners to address natural resource concerns.	Federal Farm Bill Programs; NRCS Staff	NRCS	Federal Fiscal Year 2021	September 30, 2021	On-going -Page 72 in SNRS
Conservation Implementation						
Increase acres of cover crops planted statewide	-Provide continued technical assistance to farmers who have used cover crops, and new technical assistance to those who have not. -Increase contacts with seed sales/companies -Educate on the benefits of cover crops -Assess results of the Cover Crop Transect done by the ICP	-Cover Crop and Tillage Transect data by ICP -Federal Farm bill programs; State Conservation Programs; Technical assistance -IANA support -CCSI support	SSCB; ICP; IANA	On-going	NA	On-going, Link to Transect Data; Link to ICP Accomplishments report

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Increase no-till implementation statewide based on tillage transect results	-Provide technical assistance -Work with those who have a negative opinion of no-till. High residue systems have benefits. -Increase the promotion of strip-till since it has many of the same benefits as no-till and can get nutrients injected below ground. -Assess results of Tillage Transect done by ICP.	-Tillage Transect data by ICP -Federal Farm bill programs; State Conservation Programs; Technical assistance -IANA support -CCSI support	SSCB; ICP; IANA	On-going	NA	On-going, Link to Transect Data; Link to ICP Accomplishments Report
Increase conservation tillage implementation statewide based on tillage transect results	-Provide technical assistance -This practice can be used as a transition to the use of cover crops and not-till. -Use Tillage Transects done by ICP to look at trends and past accomplishments	-ICP Tillage Transect data -Federal Farm bill programs; State Conservation Programs; Technical assistance -IANA support -CCSI support	SSCB; ICP; IANA	On-going	NA	On-going. Link to Transect Data; Link to ICP Accomplishments Report
Increase acres of wetland restorations	-Provide technical assistance -Look at trends and past accomplishments	CREP; HRI; Federal Farm Bill Programs; Technical Assistance	ICP	On-going	NA	On-going -CREP Annual Report
Increase acres of floodplain restorations (tree plantings)	-Provide technical assistance -Look at trends and past accomplishments	CREP; HRI; Federal Farm Bill Programs; Technical Assistance	ICP	On-going	NA	On-going -CREP Annual report -HRI website
See a measurable increase in the number of joint sediment and nutrient reduction projects among SWCDs funded through CWI.	SWCDs apply for CWI funding; this is a goal of the State Soil Conservation Board (SSCB)	CWI funding; ISDA District Support Specialists; ISDA Resource Specialists	SSCB	On-going	NA	On-going CWI website
Increase the amount of regular soil sampling performed by Indiana farmers that aid in nutrient management on ag land	-Get 100% of farmers to adopt soil sampling practices -Provide technical assistance -Explore funding opportunities to assist farmers	Statewide Social Survey data; 4R Nutrient Stewardship Certification Program	IANA	On-going	NA	On-going
See an increase in the use and implementation of nutrient management plans by Indiana farmers	-Get 100% of farmers to use and implement NMPs -Provide technical assistance -Explore funding opportunities to assist farmers	Statewide Social Survey data; 4R Nutrient Stewardship Certification Program	IANA	On-going	NA	On-going

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Planning						
Conduct an Indiana Science Assessment to determine historic and ongoing nutrient loads leaving the state, and also by watershed basins used in the State Nutrient Reduction Strategy.	-Collect and analyze USGS Stream gage data and IDEM Fixed Station water quality data at pour points at state borders and within the watershed basins. - Run data through the USGS WRTDS model to determine nutrient load trends.	SNRS; NREF Workshop; USGS Stream Gage Data; IDEM Fixed Station WQ Monitoring Data; USGS WRTDS Model	Science Assessment Core Team; ISDA; USGS	November 2018-December 2020	December 2021	75% complete; Working on communication of results.
Conduct an Indiana Science Assessment to improve method to quantify nutrient reductions from conservation practices, including dissolved nutrients, and determine efficiency of practices in reducing loads.	-Work with research associate hired through an EPA grant to work at Purdue to compile and review research which will be used to develop or identify a tool for calculating nutrient load reductions, and be used to determine the percent efficiency of certain conservation practices on reducing the nitrogen and phosphorus loads. -Have a collective list and consistent definitions of conservation practices. -Work with Science Committee	SNRS; NREF Workshop; Modeling data; Monitoring Data; EPA Grant; Academic research; other states studies and strategies	ISDA; Purdue University; Science Assessment Core Team; Science Assessment Science Committee	November 2018-December 2020	December 2022	In-process
Develop list of most effective Nitrogen reduction practices - Urban vs. Rural - Soil Health - Nutrient Management - Agricultural Drained Lands	-Work with members of the SNRS to develop consistent message on the best practices for nitrogen reduction. -Use Indiana Science Assessment	University publications; NRCS publications; expertise of conservation partnership staff; WQ monitoring data	ICP; SNRS Workgroup; and Science Assessment Core Team	November 2016 – December 2022	December 2022	In process
Develop list of most effective Phosphorus reduction practices - Urban vs. Rural - Soil Health - Nutrient Management - Erosion Control	-Work with members of the SNRS to develop consistent message on the best practices for phosphorus reduction. -Use Indiana Science Assessment	University publications; NRCS publications; expertise of conservation partnership staff; WQ monitoring data	ICP; SNRS Workgroup; and Science Assessment Core Team	November 2016 - December 2022	December 2022	In process

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Assess the Funding needs and Research needs and gaps within Indiana.	-For monitoring needs and costs, both surface and groundwater; -Edge-of-field Research -Science Assessment	-WQ Monitoring Strategy -Ground Water Monitoring Network (GWMN) -University Research -HTF Research Needs Workgroup	ICP; SNRS Workgroup	January 2021 – December 2022	December 2022	In process
Work with the State Department of Health on addressing septic tank issues throughout the state.	-Understand issues related to septic tank failures in the state	Indiana State Department of Health; educational materials; County Health Departments	ISDA, Water Quality Initiatives Program Manager; ISDH; IDEM	January 2021- December 2021	December 31, 2021	On-going