

Iowa Watershed Approach: Year 3 Evaluation Executive Summary

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As submitted to:

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Introduction

The central foci for the evaluation of Year 3 of the Iowa Watershed Approach (IWA), carried out by the Center for Evaluation and Assessment (CEA), continued to be on process monitoring and providing timely formative feedback to key stakeholders for project improvement. During Year 3, the CEA continued to follow each of the evaluation plans prepared in collaboration with the IWA Planning Partners. Accordingly, the evaluation methods for the IWA evaluation during Year 3 consisted of participant observation in project meetings and meetings of affiliate groups, as well as conducting interviews and/or surveys with the following stakeholder groups:

- Project coordinators (PCs)
- WMA board members
- Watershed planners
- IWA project partners
- Bee Branch Healthy Homes (BBHH) clients, contractors, and team members
- Iowa Watershed Approach Information System (IWAIS) users
- IWA stakeholders (leverage partners)
- Iowa Water Conference attendees
- Community partners in Vinton

This executive summary is organized into major themes and provides a summary of the IWA activities and accomplishments during Year 3. For additional information about the program evaluation activities and findings, consult the body of the report and the corresponding appendices.

Watershed Management Authority (WMA) Activities

Each watershed functions as a distinct entity, forging somewhat unique paths to accomplish the goals of the IWA. Each WMA receives consistent support through IWA funding and partners, but each watershed is distinct in terms of local terrain, culture, priorities, strengths, and challenges.

The WMAs are the focus points for both partner support and program funding, so the activities being implemented at the watershed-scale are varied. This section describes progress in the following areas: WMA operations, the process of project implementation, the role of project coordinators, and the development of watershed plans.

WMA Operations

In Year 3, all WMAs were operating and making progress toward the goals of the IWA. Additionally, nearly all IWA WMAs had begun to focus on and discuss their future sustainability through activities like applying for additional funds for installing conservation practices or planning, approving letters of support for complementary water resources efforts, participating in WMAs of Iowa (a group organized by the ISU IWC to provide networking opportunities for WMAs), or adding a section focused on WMA sustainability into their watershed plans.

In a survey administered by the CEA, WMA board members expressed satisfaction with their WMA, indicating that they understood and agreed with the mission of their WMA, were familiar with its current work, felt informed enough to make decisions on behalf of their WMA, and agreed that they had adequate opportunities to provide input to their WMA. They also expressed a great deal of optimism

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about the effectiveness of the work of their WMAs, as well as the individuals that were involved in leadership roles within the WMA.

One of the major themes that consistently emerged in some form across nearly all the watersheds was the notion of engagement; however, sometimes it was named as a strength, sometimes as a challenge, and sometimes both. For example, board members from four WMAs highlighted as strengths the diversity of the individuals and partner groups (both geographical and urban versus rural) engaged in their WMA either prior to IWA or because of it. However, board members in the western watersheds reported that collaboration and engagement have been both a critical component and an ongoing challenging requiring careful attention.

Board members described that it has become increasingly difficult for WMAs to maintain full participation and involvement from the range of entities that together make up the board. For some WMAs, the struggle to achieve quorum at meetings has recently become a critical challenge. Regardless of the reasons for the decline in attendance, board members generally emphasized the critical nature of ensuring as much participation and cooperation across all entities as possible so that current projects and planning will continue to be carried effectively and in a timely manner.

Related to the challenge of educating the public and conducting outreach, several board members said they did not have enough landowners and interested citizens who attend WMA meetings. When asked who else should be involved in the WMA, respondents listed: government officials, federal entities, agricultural groups, environmental groups, and members of other watershed coalitions.

Process of Project Implementation

Board members from various watersheds also acknowledged the vital role of the financial assistance they received through the IWA, enabling them to more successfully implement practices in their watersheds.

By the end of Year 3 all WMA watersheds:

- Actively recruited landowners
- Accepted and approved applications from landowners or projects of interest (Application approval is ongoing as funds are available and projects meet program requirements.)
- Hired engineers
- Identified priority HUC 12s (additional eligible watersheds were added in Year 3)
- Began marketing the new level of cost share, which was adjusted from 75%/25% to 90%/10% with an opportunity for a waiver for projects constructed on public land

At the time of this report, all but one of the watersheds had bid packages already approved by the board or currently under review, and all watersheds were making progress toward conducting environmental review, hiring contractors, and beginning construction. All the eastern Iowa watersheds had hired archaeologists. The Middle Cedar Watershed Management Authority (Middle Cedar WMA) set the curve for practices with their first project out for bid, and subsequently, the first project under construction. WMAs were also at very different stages related to allocating their funds for specific projects. In three watersheds, during WMA meetings, several PCs reported that they were close to their maximum budget for practices if they were to complete all the projects in the pipeline. However, in a couple of the watersheds where they did not anticipate spending the money currently allotted to them, Iowa Economic Development Authority (IEDA) has mentioned that they may need to reallocate funds to other watersheds with additional projects lined up for construction.

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PCs and WMA board members described various motivations and barriers to progress on the part of landowners related to the implementation of practices through the IWA. Through interactions with landowners, some PCs reported learning that they were typically interested in participating in the IWA because they wanted practices for their own land or because they wanted to be “part of the bigger project.” Conversely, both PCs and board members cited the cost to landowners or financial concerns as the most significant barrier to participation. Additionally, both groups focused on additional challenges related to this process including: extensive flooding in 2019; defining a process for compensatory stream mitigation for projects; bureaucracy inherent in a large project; the lingering impact of the Des Moines Waterworks lawsuit in the North Raccoon watershed, and navigating construction issues related to karst topography in the Upper Iowa watershed

During their interviews in fall 2018, several PCs expressed regret that they did not yet have projects in the implementation phase in their watersheds. However, they readily identified the following indicators of success: initial landowner engagement and long lists of applicants; locating promising implementation sites; hiring an engineer; projects submitted to engineers for preliminary design; dollar amount associated with potential projects; getting bid packets ready to go out; getting through the environmental/archeological assessment process; and discussions with landowners about other conservation practices. PCs were excited to get construction underway as soon as possible to add this achievement to the growing list of current project successes.

Project Coordinators

An important aspect of the IWA is the presence in each of the IWA watersheds of a dedicated PC who is responsible for coordinating the IWA work in the watershed. During evaluation interviews with board members, many specifically praised the work of their PCs, describing the board’s confidence in their PC’s capacity to successfully carry out the work of the WMA.

PCs’ work priorities have naturally centered on project implementation. They self-reported the following activities as being central to their role in the IWA: making connections between all stakeholders involved in the project; recruiting landowners and soliciting interest in the project; serving as conduit between interested landowners and the project resources; identifying potential projects; and implementing the vision of IWA on the ground. Additionally, during WMA meetings, many PCs reported doing some sort of outreach in their watershed, and three PCs described specifically engaging or planning to engage women landowners in these efforts. Additional priorities mentioned by the PCs included reviewing and finalizing watershed plans and supporting efforts for water quality monitoring.

In addition to support from IWA partners and other stakeholders, the PCs also reported that a great source of support came in the form of interactions with other IWA PCs, both informally and formally. They described the group meetings or conference calls as valuable opportunities to share critical information and support each other through challenges.

Watershed Plans

The purpose of the watershed planning effort in each of the IWA watersheds was to produce a FEMA-aligned, comprehensive watershed plan that addresses factors that contribute to flooding and water quality within the watershed. As of August 2018, all IWA watersheds had engaged watershed planners.

Each of the watersheds were at different stages with respect to the planning and development of their respective watershed plans. Two watershed planners presented final versions of their plans, three

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watershed planners made drafts available for the board and public comment, and one watershed planner continued to share elements of the plan with the intention to provide a draft for official review in late summer 2019. North Raccoon WMC was the last IWA WMA to select their planner and start the process. In surveys and during WMA meetings, planners described the following activities as parts of their planning process: community and board input sessions; integrating data received from partners; hiring additional contractors for support; and facilitating a flood resiliency simulation activity. Additionally, two WMAs extended their planning contracts during this grant year to allow planners adequate time to integrate additional data and feedback.

Toward the end of Year 2, planners indicated that they were on schedule to complete their watershed plans by the time designated; however, two expressed some concern that the workload was heavy for the established timeline. Then, in Year 3, two planners indicated that they were no longer on schedule, and three planners indicated that the workload was not reasonable for the established timeline. In Year 3, planners were asked their opinions about integrating hazard mitigation information into the plans, and all indicated that integrating and organizing information related to hazard mitigation plans went smoothly. They also agreed that working with the IWA partners in this process was going well.

When asked about the future utility of their watershed plans, planners agreed that securing a sustainable funding source and implementing the plan were the most important tasks that remained for WMAs. Moreover, the planners indicated that a PC would be needed in order to carry out these tasks.

Partner Contributions

By design, the IWA has been a collaborative effort coordinated and supported by a group of key partner organizations from across the state, each of whom was selected because of their unique expertise and ability to contribute to the overall mission of the program. The IWA planning partners (who have provided direction and oversight for the broader program) are:

- University of Iowa Iowa Flood Center (UI IFC)
- Iowa Department of Natural Resources (IDNR)
- Iowa Economic Development Authority (IEDA)
- Iowa Homeland Security and Emergency Management Department (HSEMD)

The remaining IWA partners, who have been contracted to provide technical assistance, support, or other deliverables, include the following organizations:

- Iowa State University Extensions and Outreach (ISU EO)
- Iowa State University Iowa Water Center (ISU IWC)
- Iowa State University Iowa Nutrient Research Center (ISU INRC)
- University of Iowa Flood Resilience Team (UI FRT)
- University of Northern Iowa Tallgrass Prairie Center (UNI TPC)
- Iowa Department of Agriculture and Land Stewardship (IDALS)

During Year 3, the IWA partners came together with project coordinators, grant administrators, WMA board members, and other program stakeholders two times for project management meetings. The meetings were opportunities to describe progress, answer questions, discuss important topics, and hear from project leverage partners.

Many of the IWA partners' activities through the midpoint of the grant could be broadly described as providing key resources and support to the project coordinators (PCs), as well as the members of the

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WMA boards. However, many of their major contributions to the work of the IWA were unique to the specific roles and functions of their organizations within the project. In simplified terms, partners¹ described the following as their organization's most important contribution(s):

- UI IFC: Providing consistent, participatory, and value-added leadership and vision for the project and support for WMA leadership; hydrologic assessments and modeling
- IDNR: Supporting the formation of the WMAs for IWA and across the state; supporting the development of a process and guidance for hiring watershed planners; conducting field work to collect land use assessment data
- IEDA: Administering IWA grant funds; assisting IWA partners and WMAs with federal grant compliance
- HSEMD: Providing resources and information to the PCs, enabling them to more effectively define problems, identify available resources, and scale their flood mitigation projects
- ISU EO: Developing education and outreach resources; supporting outreach events; providing local support for WMAs
- ISU IWC: Offering the Iowa Water Conference; providing Daily Erosion Project data with PCs and planners
- ISU INRC: Conducting research to inform a more thorough understanding of the effectiveness and economic benefits of the practices identified in the Iowa Nutrient Reduction Strategy for improving water quality
- UI FRT: Supporting the development of a FEMA-recognized process for applying for multijurisdictional hazard mitigation assistance
- UNI TPC: Responding to PCs' needs and providing them with resources and support related to prairie restoration (e.g., list of contractors)

During Year 3, in a series of evaluation interviews and surveys conducted by the CEA, PCs, WMA board members, and watershed planners all described ways in which they have been supported by IWA partners. PCs reported receiving varying degrees of support from IWA partners, with the most common types of support including providing information relevant to their work, answering questions, and providing feedback about materials developed. In listing the benefits of being involved with the IWA, WMA board members from six of the eight WMAs directly acknowledged the support they received from various partners. Whether in the form of sharing expertise and information or providing general direction and assistance as the coalitions were forming, several board members expressed deep appreciation for the critical role that their partners have played thus far. Watershed planners identified IWA partners as important collaborators in the development of watershed plans. Planners specifically named hydrologic assessment reports (including modeling and ACPF/BMP map analyses) (UI IFC) and guidance for incorporating hazard mitigation information into the plans (HSEMD, UI FRT) as particularly valuable in their work.

When board members were asked about the benefits of being involved in the IWA, they frequently cited the UI IFC, whose contributions have included providing technical modeling to develop plans and set goals, being "instrumental in education," providing robust analysis and guidance, and generally, "getting the ball rolling." Members of the UI IFC produced hydrologic reports for all WMAs and watershed planners for review and presented highlights from these reports during WMA meetings. Furthermore, UI IFC, in collaboration with a team of interagency partners and local emergency management

¹ IDALS declined to take part in the interview process

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coordinators, has identified priority locations across the state to expand the UI IFC stream sensor network, thereby improving their flood monitoring and forecasting efforts. Due in part to the discussions between these entities, new UI IFC stream sensors will be deployed through the Upper Wapsipinicon River watershed by the end of 2019.

IWA Leverage Partners

During early 2019, the CEA collaborated with HSEMD to design and administer a survey of IWA stakeholders to learn about their current and future interests in the IWA, and in watershed management issues in Iowa. Approximately half of the respondents described their current role within the IWA using general terms like “support”, “co-sponsor,” and “regular interaction.” Other more specific ways that respondents described their organization’s role included: providing WMAs with information for watershed planning; assisting WMAs in applications for grants or other funding; providing technical advice; serving on WMA boards or attending meetings; promoting and supporting project implementation (including providing funding); providing feedback about communications; and helping with conservation planning.

Leverage partners also identified ways they would like to be involved with the IWA in the future. Some said they would like to continue with the activities they were doing at the time; meanwhile, others offered descriptions of additional ways their organization could support the work of the IWA, such as providing educational resources and conducting training programs, protecting source water, and advocating and promoting the watershed approach. Regarding ways in which leverage partners saw for their organization to collaborate with Iowa WMAs, responses included: collaborate in planning, provide “technical knowledge for upstream communities,” support the WMA boards, and help with engaging the agricultural community and with identifying and addressing natural resources issues. Additionally, respondents described ways in which they or their organization is available to engage with WMAs by providing resources to support WMA work, connecting WMAs to each other, and promoting their own WMAs.

When asked about their current role in water management in Iowa, half of the respondents’ comments were related to water quality or conservation, and a few were related to flood control and mitigation or both water quality and quantity issues.

University of Iowa Flood Resilience Team

Flood resilience is a construct without an agreed upon definition or process, and the development of the University of Iowa Flood Resilience Team (UI FRT) activities and its ongoing program evaluation continue to be developmental.

This year, the University of Iowa Flood Resilience Team (UI FRT) employed a new strategy to collaborate with contractors and partners to develop the project deliverables. In Year 3, the UI FRT conducted three team meetings and two meetings with the Dubuque Bee Branch Healthy Homes team. These meetings typically included updates on the status of different projects, some discussion about next steps, and opportunities for collaboration and support. Additionally, the UI FRT facilitated or attended meetings with external stakeholders for specific projects. The UI FRT’s activities in Year 3 are detailed in this section.

FEMA Multijurisdictional Plans

During Year 3, the UI FRT collaborated with HSEMD and the UI IFC to support the development of FEMA multijurisdictional flood hazard mitigation plans. Specifically, they began developing a methodology to determine if acceptable economic benefit-cost ratios could be achieved using proposed IWA flood mitigation practices to produce an analysis that is “credible and actionable from FEMA’s perspective.” The UI FRT, UI IFC, and HSEMD met with representatives from FEMA and FEMA’s technical assistance contractor to discuss the modeling being proposed for a multijurisdictional plan to qualify for hazard mitigation assistance. A representative from Stantec planned to connect with the UI IFC team and move forward with the modeling discussion.

Flood Mitigation Elements for Watershed Plans

Building on the work from Year 2, the UI FRT collaborated with HSEMD to integrate flood mitigation elements into the IWA watershed plans. In August 2019, the UI FRT reported that the watershed plans were finished or nearly finished for seven of the IWA watersheds. They provided hazard mitigation information for each of these plans that were integrated at the planners’ discretion. In a survey of IWA watershed planners in summer 2019, the respondents generally agreed that integrating and organizing information related to hazard mitigation plans went smoothly. The only challenge reported by planners in this process was providing the report in a format acceptable to HUD or FEMA.

Community Care Coordination System

Building on discussions with Hawkeye Area Community Action Program (HACAP) from the previous years, and now also in collaboration with the United Way of Linn County, in Year 3, the UI FRT continued to seek ways to concretely support vulnerable populations in Linn County during and after flood events. The group explored the use of My Care Community and United Way 2-1-1 referral helpline and website to develop and implement a community care coordination system for vulnerable populations in the county.

Flood Resilience Action Plans

The UI FRT’s Flood Resilience Action Plans (FRAPs) continued to shift in focus and scale over the course of Year 3. The UI FRT has been working with different sub-contractors that have a local connection and a strong familiarity with the region and the people that live in each of the communities in which this work is being carried out. The final product anticipated from these sub-contractors will be community-scale plans that enable community leaders to engage in mitigation efforts, develop more comprehensive plans for responding in times of flooding and disaster, and to help communities be more prepared for disaster and decision making. At the time of this report, there were seven FRAP projects underway. In the Upper Iowa WMA, the UI FRT subcontracted with the Center for Sustainable Communities at Luther College (Luther CSC) to develop The Freeport FRAP, which was disseminated to local stakeholders. In the Middle Cedar WMA, the UI FRT was working with Iowa Valley Resource Conservation and Development (IV RC&D) to develop the Vinton Flood Resilience Action Plan: Flood Resilient Vinton. As of the summer 2019, the final report was being drafted by the IV RC&D. In the Upper Wapsipinicon WMA and Clear Creek WC, the UI FRT was working on executing contracts with Northeast Iowa RC&D and Astig Planning LLC (respectively) for work to be done in Year 4. In the East/West Nishnabotna WMC, the UI FRT was working with Golden Hills RC&D. Given recent flooding in southwestern Iowa, this project was on hold to allow the community time to recover. In the North Racoon WMC and English River WMA, the UI FRT has been engaged in preliminary discussions with stakeholders about potential sites for the FRAP.

Social Vulnerability Information and Visualization

Informed by work in IWA Years 1 and 2 to visualize flood resilience and social vulnerability information (SVI) onto maps, the CEA collaborated with the UI FRT to develop a usability interview for potential users of the SVI available on the IWA information system (IWAIS). The purpose of the interviews was to provide information about the purposes for accessing the system; their ability to find the information they were seeking; whether and how they would use that information; how trustworthy they thought the information was; and any problems they encountered when using the system. The four people interviewed for this study indicated that they found the site's information about socially vulnerable populations interesting, and they were positive about its ultimate utility. However, they indicated the need for additional information to make the site more useful in their work. Based on the interview data, the CEA recommended that they provide more information about the indicators and provide training on how to use the information effectively. The UI FRT reported making changes to the SVI maps on IWAIS based on this feedback.

Informed by the visualization interviews and the first round of watershed planners' integration of social resilience information into watershed plans, the UI FRT planned to develop a How-to Guide for planners on ways to incorporate social resilience information into watershed plans in a useful and accurate way. The UI FRT was working on a contract with Astig Planning LLC, a watershed planning organization in Coralville, IA, to bring a planner's perspective to this work.

Outreach and Education

In addition to the targeted activities of the UI FRT, the team regularly interacted with local and national stakeholders who were also engaged in community resilience work. In Year 3, the UI FRT team attended local meetings to see how different project stakeholders were working together and to learn of the culture of disaster response in the state. At two meetings of the Benton County Community Organizations Active in Disaster (COAD) group, the UI FRT presented the social vulnerability information available on IWAIS and provided updates about their work with IV RC&D to learn how to increase resilience among vulnerable populations in Vinton. Feedback from members of the COAD was positive overall. They were appreciative of the attention being given to their area and what residents have endured: "Vinton is not being forgotten!" Additionally, the UI FRT self-reported having participated in the following outreach activities: Iowa Homeland Security Conference: Disaster Lessons Learned (October 2018), FEMA meeting (Fall 2018), and National Conference of State Legislators Public Private Partnership on Disaster Mitigation and Recovery Summer Convening (August 2019).

Bee Branch Healthy Homes Resiliency Program

During Year 3, the three main elements of the IWA evaluation related to BBHH project included: 1) interviews with BBHH clients, 2) interviews with BBHH team members, and 3) a BBHH program contractor survey. Based on the collection and synthesis of these data sources, the BBHH project appeared to be in full swing and achieving all benchmarks with limited setbacks.

The feedback from a majority of BBHH clients about their involvement in the program was overwhelmingly positive. Major themes throughout the interviews were an appreciation for the financial assistance to complete the various flood resilience projects on their homes, as well as increasing the safety and security they experienced as a result. Many of the clients interviewed described how impressed they were by the coordination efforts of the BBHH staff. They reported that BBHH program

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staff were helpful throughout all stages of the process, ensuring that everything ran smoothly from start to finish.

Although clients consistently praised the BBHH staff, their experiences working with contractors was reportedly much more diverse. Some expressed varying levels of frustration with the overall quality of the contractors' workmanship and effectiveness of their communication, as well as the time of the project from start to finish. Issues with contractors ranged from simple lack of attention to detail and miscommunications, to more alarming safety violations. Some clients were able to have their problems remedied through intervention from the BBHH home advocates; however, others felt reluctant to reach out to their advocate or were unaware of the scope of the advocate's role in the program. Despite any setbacks, BBHH clients were grateful for the work that was done on their homes.

BBHH staff reported that their roles were largely unchanged from prior years. They described ways the following ways that BBHH clients were benefitting from the program: physical improvements in keeping water from their homes; less stress among the families resulting from financial difficulties; improvement in the health of the residents; and up-to-date information about services available to residents that they did not previously know existed. The BBHH team members were asked to identify gaps in available programming to meet Dubuque residents' needs. They generally reported that Dubuque does a great job; however, a couple staff mentioned some areas that could be improved, including assistance with pest control, public transportation gaps, and access to mental health services. Challenges experienced by the BBHH team members included contractor shortages, weaknesses in internal communication for the home advocates, and staffing issues.

The BBHH program contractors who responded to the survey indicated that they did not feel deterred by the complexity of the process from bidding on BBHH projects and planned to continue bidding on future projects, despite some differences of opinion in the bidding process. Much of the challenges they reported related to their experiences as sub-contractors working with general contractors. They recommended that the BBHH team should act as the general contractor or that there should be no general contractor at all.

In support of the BBHH work, UI FRT has been collaborating with the BBHH team to develop and administer social resilience surveys to participants in the BBHH program. The BBHH team reported that the response rate has been low. Accordingly, the UI FRT and BBHH made changes to the survey, including moving it to an online format. Other changes that were cited as helpful in increasing response rates by the BBHH home advocates were customizing sections, offering fewer response options, and improving item wording.

Conclusion

In summary, the IWA was steadily making progress toward achieving its goals during Year 3 of the grant. The extent of the progress and the milestones achieved by individual watersheds naturally varied according to a host of contextual factors. However, many WMAs began to pivot toward applying the lessons learned and seeking avenues by which to ensure the future sustainability of their entities. In the words of Larry Weber, this grant continues to be "a voyage of discovery," the benefits of which are beginning to be manifested.