

# Iowa Watershed Approach: Mid-Program Review

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As submitted to:

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### Introduction

The Iowa Watershed Approach (IWA) is one of 13 projects funded in January 2016 under the National Disaster Resilience Competition (NDRC)<sup>1</sup>. According to the IWA grant proposal<sup>2</sup>, the IWA will accomplish six specific goals in the eight selected rural watersheds and Dubuque, IA:

1. Reduce flood risk
2. Improve water quality
3. Increase resilience
4. Engage stakeholders through collaboration and outreach/education
5. Improve quality of life and health, especially for vulnerable populations
6. Develop a program that is scalable and replicable throughout the Midwest and the United States.

The IWA is a complex project supported by many IWA partners whose goals are both discrete and collaborative. Despite the somewhat specific goals of each of the IWA partner groups, the IWA is also, to a great extent, a project that is developmental in nature and as a result the evaluation employs an iterative process. The course and progress of the IWA is dependent on factors both physical (hydrologic factors, weather, geology) and human (project coordinators, planning staff, consultants, and landowners) and the ways in which these physical and human factors combine to affect progress toward the project goals will be different in each of the eight different watersheds.

The IWA calls for the Watershed Management Authorities (WMA), with the support of the HUD NDRC funds and the IWA partners, to be the agent of change in eight designated watersheds across the state of Iowa.

The IWA involves the following three main categories of stakeholders:

- IWA partners: These groups received IWA funding and are directly involved in supporting the project across the state.
- Leverage partners: Leverage partners are a diverse collection of entities from across the state of Iowa who wrote letters of support for the IWA grant proposal and indicated their willingness to provide assistance to the IWA in a way consistent with their unique expertise and mission.
- Watershed stakeholders: This final stakeholder group encompasses any and all residents within each of the designated watersheds. According to Iowa Legislation regarding 28e, agreements required to form Watershed Management Authorities, all eligible political subdivisions must be invited to be part of the WMA. Eligible political subdivisions include municipalities, counties, and Soil and Water Conservation Districts (SWCDs). In order to carry out the work, each WMA employed a project coordinator (PC) and entered into a contract with a planning entity to formulate a watershed plan. WMAs engaged with various other local and/or regional organizations to support their work including RC&Ds, USDA/NRCS offices, conservation non-profits, etc. The WMAs will also interact in some cases with elected officials at the local, state,

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<sup>1</sup> U.S. Department of Housing and Urban Development. (2016, January 21). National disaster resilience competition grantee profiles. Retrieved from

<http://portal.hud.gov/hudportal/documents/huddoc?id=NDRCGrantProf.pdf>

<sup>2</sup> The Iowa Watershed Approach for Urban and Rural Resilience. (2015, October). *HUD National Disaster Resilience Competition*. State of Iowa.

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and federal level. Finally, in order to install best management practices (BMPs) as part of the IWA, WMAs sought and continue to seek the involvement of landowners and any other interested community members in each watershed. Project implementation will in turn involve engineers, contractors, administrators, and archaeologists.

Finally, by extension, the IWA will potentially have an impact on all Iowa residents, and the country at large, both through the physical impacts of the work being done and the dissemination of information related to the watershed approach model as a framework for others to follow in carrying out similar work in the future.

This review, developed and informed by the work of the University of Iowa Center for Evaluation and Assessment (CEA), is intended to provide a stand-alone summary of the accomplishments of the IWA during the first three years of grant activity. CEA team members synthesized multiple data sources including interviews and surveys with stakeholders, meeting notes, and direct observations to produce a review that balances accuracy and brevity.

Below is a brief description of some state-context highlights which could have implications for the work of IWA in the next two years. Following that, there will be a narrative of the progress of IWA focused around important categories of stakeholders: WMAs, IWA partners, leverage partners, project coordinators, and watershed planners. This review ends with a short description of high-level considerations for IWA and water resources management in the state from the perspective of WMA board members and IWA partners.

### Context

There were several contextual factors that affected the state of Iowa which may have implications for the overall success of IWA. First, catastrophic flooding in both 2018 and 2019 have affected communities along both the Missouri and Mississippi Rivers. Additionally, the news media, as well as program stakeholders, have described challenges to project implementation as a result of a weak farm economy. Lastly, Iowa's lack of progress in improving water quality has been a rather contentious subject of discussion as reported in local, state, and national media outlets.

At the halfway point in IWA, conversations among IWA partners and among the WMA boards have begun to turn to long-term sustainability of water resources management in the state. In Year 3 of the grant, Iowans were beginning to see state-level changes in how water resources management is approached (i.e., Conservation Districts of Iowa approving a proposal to lobby for a 30-foot grass buffer along streams, Governor Reynolds broadening eligibility for WMA membership), but also at least one missed opportunity to fund this work in a sustainable way (i.e., failure to approve a state sales tax increase of 3/8<sup>th</sup> of a cent to provide funding for Iowa's Water and Land Legacy).

### Activities and Outcomes

To guide the discussion through the major components and outcomes of the IWA, the CEA has identified the following broad categories: WMA milestones, IWA partner contributions and support, leverage partners, Flood Resilience Team (UI FRT), and Bee Branch Healthy Homes (BBHH). Within each category, which are utilized as subheaders within this section, the narrative describes the progress made through Year 3 of the grant.

### WMA Milestones

Each watershed is a unique entity, forging somewhat unique paths to accomplish the goals of 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.

IWA partners conducted IWA Kickoff Meetings in each of the IWA watersheds during May and June of 2016. After the meetings, each of the WMAs (and or WMA formation groups for those who had not yet filed their official 28e agreements) began conducting regular quarterly meetings. The content of the meetings evolved during the first two years. Initially, they primarily consisted of partner presentations about the IWA and about the ways in which partners could assist the WMAs. As time progressed, there were more technical presentations and contributions. Finally, more recently, there have been discussions about water resources, IWA practice implementation, or WMA procedural requirements.

Evaluation surveys conducted early in Year 1 found that WMA meeting attendees had a strong interest in being involved in the IWA and believed it would improve flood mitigation; have a positive impact on water quality in their area; foster new collaborations and increase communication among entities in their area to address watershed problems; and carry out the process of installing new BMPs in the watershed. In Year 2, as attendees were more immersed in the work of the IWA, WMA meeting attendees said they wanted to know more about how each of the partners contributed to the project including how they work with other stakeholder groups (e.g., NRCS, farmers, cities), what resources they bring to the WMAs (including possible additional funding), and whether the partners would stay engaged after IWA was complete. In Year 3, WMA board members were invited to share their evolving perceptions of the IWA and the work of their WMA in surveys and interviews. In a survey administered by the CEA in Year 3, WMA board members expressed overall 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 about the effectiveness of the work of their WMAs, as well as the individuals that were involved in leadership roles within the WMA. During interviews, selected board members from various watersheds acknowledged the vital role of the financial assistance they received through the IWA, which enabled them to more successfully implement practices in their watersheds.

By the end of Year 3 all eight watersheds had:

- Established and/or revitalized WMAs that were ready to begin the work of the IWA in particular with the support of the Iowa Department of Natural Resources (IDNR), three new western Iowa WMAs were established by recruiting eligible entities and filing Iowa 28E agreements.
- Hired grant administrators, project coordinators, watershed planners, and engineering firms
- Identified all priority Hydrologic Unit Code 12 watersheds (HUC 12s) for IWA best management practices (BMPs)
- 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.)
- Begun the watershed planning process

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- Begun marketing the new level of cost share from 75%/25% to 90%/10% with an opportunity for a waiver for projects constructed on public land

In Year 3, all WMAs were operating and making progress toward the goals of IWA; however, there was a range of progress for the WMAs in their process. The first IWA bid package to go out for bid was in the Middle Cedar Watershed Management Authority (Middle Cedar WMA) in spring 2019. 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 environmental review, hiring contractors, and construction. However, in a couple of the watersheds where they did not anticipate spending the money currently allotted to them, Iowa Economic Development Authority (IEDA) announced that they may need to reallocate funds to other watersheds with additional projects.

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.

In Year 3, nearly all IWA WMAs had begun to focus on their sustainability after IWA ends 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 embedding a section on WMA sustainability into their watershed plans.

### **IWA Partner Contributions and Support**

A major component of the IWA is the collaboration of many partner groups, each of whom was selected because of their unique expertise and ability to contribute to the overall mission of the program. They have been integral in supporting the development and functioning of the WMAs and the implementation of the IWA. 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)

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During the first three years of the IWA grant, the partners pursued their goals by developing and maintaining relationships with the IWA WMAs, with stakeholders concerned about water quantity and quality across the state of Iowa, and with each other. While the IWA partners' self-reported contributions to the work of IWA were unique to the specific roles and functions of their organizations with respect to the IWA, many of their activities could be more broadly described as providing key resources and support to the project coordinators (PCs), as well as the members of the WMA boards.

In the first half of the grant, the IWA partners provided technical support to the WMAs in areas of hydrology, geology, and soil science. They also provided advice and guidance on WMA formation and regulation compliance, searching for and hiring personnel, and providing support for WMA personnel and planning teams. During Year 3, in a series of evaluation interviews and surveys conducted by the CEA, PCs, watershed board members, and watershed planners have all described ways that they have been supported by IWA partners and the impact that this support had on 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 coordinators, has identified priority locations across the state to expand the UI IFC stream sensor network, thereby improving their flood monitoring and forecasting efforts.

### Leverage Partners

HSEMD was charged with encouraging leverage partner engagement and matching their specific interests and expertise with the needs of the WMAs. Leverage partners have been active in different IWA watersheds and certain leverage partners have been invited to present during IWA project management meetings. During early 2019, the CEA collaborated with HSEMD to design and administer a survey to leverage partners in order to learn about this group's current and future interests in the IWA and in watershed management issues in Iowa. Respondents described their current role in IWA both generally (e.g., "support," "co-sponsor") and more specifically. Specific contributions 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; providing feedback on communications; and helping with conservation planning.

All leverage partners identified ways they would like to be involved with the IWA in the future. Some indicated 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 collaborating in planning, providing "technical knowledge for upstream communities," supporting the WMA boards, and helping with engaging the agricultural community and with identifying and addressing natural resources issues.

### Project Coordinators

An important aspect of the IWA is the presence in each of the IWA watersheds of a dedicated project coordinator (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.

### *Hiring and training of PCs*

Another important element of the IWA is the funding to employ a dedicated PC in each of the IWA WMAs who is responsible for coordinating the IWA work in the watershed. The WMAs conducted their own hiring process for the PC positions with input and support from IWA partners. During Year 1, with support from the IDNR and the IDALS, the five previously existing WMAs had all successfully conducted searches and hired PCs, and East/West Nishnabotna WMC had hired a coordinator. Then, at the beginning of Year 2, the final PC was hired to work in the North Raccoon WMC.

The PCs hired by the WMAs had common educational backgrounds focused on the land and how it is used. They brought varied agency experience to their work (e.g., NRCS, US Fish and Wildlife Services, state and county conservation departments, AmeriCorps, and Pheasants Forever), but shared common interests related to working with people and having a positive impact on the land. WMA PCs have received consultation about how to get started on the IWA work from partner organizations (IDALS, IDNR, and UI IFC). Additionally, ISU EO organized multiple events with training sessions for the PCs including bi-annual Watershed Academies. During training, the UI IFC provided coordinators with extensive materials about the IWA, and IDALS created materials about HUD requirements and procedures, and a list of questions commonly raised by landowners who express interest in the project.

### *PC job responsibilities and work*

In an evaluation survey conducted early in 2018, PCs indicated that the work with their WMAs was going well and said they had a clear vision for their work in the watershed. They reported similar priorities (figuring out the logistics of selling practices; getting projects on the ground; planning; and outreach) and challenges (tight program timeline and slow progress on certain aspects of the project logistics). When asked about their confidence about spending the money allocated to their WMA, most PCs were quite optimistic. PCs also reported working with the IWA partners at varied levels and receiving different types of support. Generally, PCs said they benefitted from strong communication with the partners but had some ongoing confusion over partners' roles. Despite any confusion, PCs reported receiving support from partners in the form of training, technical data, guidance, and communication and outreach materials. During their interviews in fall 2019, PCs described receiving support from the partners in the following ways (partners listed in alphabetical order):

- HSEMD: Varied interactions with the HSEMD team members including facilitating communication with project partners, providing information about flood damages, and reviewing materials to be submitted for environmental review
- IDALS: General guidance in addition to specific support from IDALS related to requirements for implementation processes and projects
- IDNR: Answering questions, providing general support, and initiating an informal PC group
- IEDA: Answering questions and general support, verifying that processes are being done correctly, and supporting PCs throughout the necessary review processes (cost share change to 90%/10% and environmental review)
- ISU EO: Hosting the Watershed Academies, developing materials about practices for outreach, providing support for outreach (contacts, planning), and reviewing materials.
- ISU IWC: Facilitating the WMAs of Iowa, hosting the Iowa Water Conference, and providing Daily Erosion Project data

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- UI FRT: Providing social resilience information, answering questions and recommending valuable training events
- UI IFC: Online tools, Agricultural Conservation Planning Framework (ACPF) analyses, answering questions and general support, social media and outreach
- UNI TPC: Receiving seed mixes, sharing contractor lists, and answering questions

In addition to support from the 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 group meetings or conference calls as valuable opportunities to share critical information and support each other through challenges.

Transitioning to the start of Year 3, PCs described how their work priorities centered primarily on project implementation. PCs cited 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 the conduit between interested landowners and project resources; identifying potential projects; and implementing the vision of the IWA on the ground. Additionally, during WMA meetings PCs in many of the WMAs 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 in Year 3 included reviewing and finalizing watershed plans and supporting efforts for water quality monitoring.

### **Watershed Planners**

Another important element of the IWA is the explicit designation of funds for IWA WMAs to secure watershed and flood resilience planning services to produce a FEMA-aligned, comprehensive watershed plans that addresses factors contributing to flooding and water quality within the watershed. These efforts have proceeded at different rates in each of the watersheds over the course of the first three years of the grant.

During Year 1, with guidance from the IDNR, the five eastern Iowa WMAs engaged planning contractors to create watershed plans. Contractors met with WMAs to share the start of their planning process, met with community members, and conducted and analyzed surveys of landowners and other watershed residents. By the end of Year 1, one additional WMA was soliciting bids for planning services (East/West Nishnabotna WMC) and one had formed a committee to publish a request for proposals to engage their planning services (North Raccoon WMC). As of August 2018, all IWA watersheds had engaged watershed planners.

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 their original 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.

In Year 3, two watershed planners presented final versions of their plans, three 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

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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.

When asked about the future utility of the watershed plan, 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 to the plans**

During the first three years, IWA partners worked to support the WMAs in the planning process and in providing in-depth analysis of the HUC 8 watersheds.

- In Year 2, UI IFC worked with WMAs to recruit landowners to allow the placement of hydrologic monitoring stations and water quality sensors in each watershed. The UI IFC also produced hydrologic assessment reports for each of the IWA watersheds. Including UI IFC engineers attended many WMA meetings to provide updates on their progress on the assessment work and on other relevant flood-related information. Phase I hydrologic assessment reports were delivered in late summer 2018 and early 2019.
- UI IFC staff worked to compare maps of existing BMPs created by the IDNR, IGS, and ISU, with output from the Agricultural Conservation Planning Framework (ACPF), a planning tool that recommends placement for potential BMPs. This comparison of needs vs resources, along with input from project coordinators on landowner interest in the selected HUC 12s is part of the process of understanding where effective BMPs to hold water on the land could be installed.

In support of the hydrologic assessments for the IWA watersheds, the UI IFC developed the Generic Hydrologic Overland Sub-surface Toolkit (GHOST) to model simulated flood conditions. UI IFC engineers built GHOST by modifying and enhancing PIHM, an earlier simulation model from Penn State University. The UI IFC hydrologic assessments reports used GHOST in the eastern Iowa watersheds and US Army Corps of Engineers modeling tool (HEC-HMS) in the western Iowa watersheds for the Phase I reports and will use GHOST for all IWA watershed modeling in the Phase II reports.

In two surveys conducted at the end of Year 2 and at the midpoint of Year 3, watershed planners all agreed that working with the IWA partners was going well. In Year 3, planners were asked to share their opinions about integrating hazard mitigation information into plans, and all indicated that integrating and organizing information related to hazard mitigation plans went smoothly.

### **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. The UI FRT has made strides toward defining and operationalizing flood resilience and integrating it into the forefront of hazard mitigation planning.

The goals defined by the UI FRT members during the first year of the project<sup>3</sup> were:

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<sup>3</sup> A description of the process of goal definition for UI FRT is included in the *IWA Year 1 Evaluation Activities Report*.

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1. Measure, visualize, and communicate flood resilience resources
2. Enhance flood resilience content in formal watershed plans
3. Improve social resources for flood resilience

In writing the IWA proposal, the UI FRT described exploring innovative approach to flood resilience, and IWA leadership decided that intensive evaluation efforts would focus on resilience in the project. As the work of the UI FRT is more open-ended and is an evolving process, the evaluation to document the activities and outcomes is also different than the overall evaluation of the IWA. Progress is described below year by year.

### *Year 1*

During Year 1, the UI FRT experienced a year of intense definition and development. UI FRT members engaged in research and discussion related to the best ways to define and measure flood resilience, presented their program during two rounds of WMA meetings, and fostered connections with other people and groups in the state interested in flood resilience work.

A noteworthy development during Year 1 was that UI FRT established a partnership with the Iowa Department of Homeland Security and Emergency Management (HSEMD). Driven by both teams' interest in the human aspects of flood resilience, the teams created a partnership to work with watersheds to develop watershed plans to complement county Hazard Mitigation Plans.

### *Year 2*

In Year 2, the UI FRT worked with collaborators from HSEMD and the UI IFC to develop Flood Resilience Action Plans (FRAPs), documents to be used locally to help communities be more prepared for disaster and decision making. In July 2018, the UI FRT indicated that, given the input received from the first rounds of feedback, they were going to make significant changes to the organization and purposes of the FRAP, and the schedule for completing the FRAPs was also going to be altered.

In August-October 2017, WMA meeting attendees across project watersheds reported varied levels of understanding of the role of UI FRT. During May-August 2018, the UI FRT either presented WMAs with an introduction to flood resilience or a discussion of resilience as it applies to flood mitigation and hazard planning work. In all cases, when asked in a survey to identify which aspects of the flood resilience work were most important to their watersheds, responses were varied and included things such as providing them with links to emergency management agencies, the "social side" of resilience, the potential to plan and mitigate flooding based on models and simulation, and the need for more communication and awareness about flood risks and mitigation potential.

In Year 2, the UI FRT led and participated in meetings with parties both internal and external to the IWA. The purpose of some of the meetings was to explore potential connections, and then build on these connections. These connections included groups from private industry related to water issues, RC&Ds, and existing disaster recovery coalitions.

Over the course of Year 2, the PCs indicated that they increasingly understood the role of the UI FRT and reported benefitting from the UI FRT through clarification of the UI FRT's role within IWA, gaining a better understanding of the concept of community resilience, and getting UI FRT support in creating presentations for local residents. One watershed planner said they planned to use UI FRT support for "connecting the resiliency plans with hazard mitigation plans so they are recognized by FEMA and emergency management."

### Year 3

In Year 3, the UI FRT employed a new strategy to collaborate with contractors and partners to develop the project deliverables. The UI FRT and their collaborators or sub-contractors have been working on the following activities:

- FEMA Multijurisdictional Plans: The UI FRT is collaborating with the HSEMD and the UI IFC to support the development of FEMA multijurisdictional flood hazard mitigation plans.
- 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 IWA watershed plans.
- 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 team continued to seek ways to concretely support vulnerable populations in Linn County during and after flood events.
- Flood Resilience Action Plans: The UI FRT's Flood Resilience Action Plans (FRAPs) have continued to shift in focus and scale over the course of Year 3, with the focus now on contractor-based, community-scale plans.
- How-to Guide: In response to feedback about the presentation of social vulnerability information, the UI FRT developed a How-to Guide for planners on ways to incorporate social resilience information into watershed plans in a useful and accurate way.
- Dubuque Survey: The UI FRT has been collaborating with the Bee Branch Healthy Homes (BBHH) team since Year 1 to develop and administer social resilience surveys to participants in the BBHH program.
- 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.

### Bee Branch Healthy Homes Resiliency Program

Bee Branch Healthy Homes Resiliency Program (BBHH) in Dubuque, IA is a program helping low- or moderate-income home or property owners through forgivable loans to increase the flood resilience and safety of their homes. Additionally, home advocates, social workers from the Visiting Nurses Association, conduct assessments with all participants to match them with community resources from which they could benefit. Based on the collection and synthesis of the data sources, the BBHH Project appeared to be in full swing and achieving all their benchmarks with limited setbacks.

During Year 1, the City of Dubuque BBHH accepted and reviewed applications for participants and conducted home inspections, as well as Home Advocate-conducted intake assessments. Though team members noted that administrative setbacks had delayed the onset of construction, they had already witnessed benefits related to participants' relationships with home advocates and remained confident that the BBHH would have a positive impact on participants' lives.

During Year 2, BBHH team members described that they were getting both busier and more comfortable with their work in serving the needs of eligible residents. They continued to cite the following ways that participants were benefitting from the BBHH program: less water in properties, families could use their basements again, families were experiencing less stress and worry, were receiving referrals for needed resources, and there was a "human touch." A major theme throughout the interviews was that there is

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no “one size fits all” approach to this kind of work. Accordingly, it is important to be responsive to the needs of each individual.

Also in Year 2, during evaluation interviews, a majority of BBHH clients believed that participating in the program would have a positive impact on their lives financially, personally, and through increased pride in their neighborhood. One participant said, “I think it’s a wonderful project. I think that the work they did, outside of just helping the homes and the sustainability of the homes in this area that they did for Bee Branch, the landscaping and the securing of all that...is beautiful.” The group described the “best parts” of the program to be the work done on their home to prevent further water damage, working with the City of Dubuque team members and contractors, and that low- or moderate-income residents have access to this type of program.

During Year 3, 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, increasing the safety and security they experienced as a result, and how impressed they were by the coordination efforts of the BBHH team members.

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 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 that BBHH clients are 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 know existed. The BBHH team members were asked to identify gaps in available programming to meet Dubuque residents’ needs. They reported that Dubuque does a great job in general, but a couple 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 were contractor shortages, weaknesses in internal communication for the home advocates, and staffing issues.

The BBHH program contractors who responded to a survey indicated that they did not feel deterred 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.

## Reflections from Key Stakeholders

At the midpoint of the IWA grant, key personnel from the partner organizations and WMA boards were invited to reflect on the progress made thus far, as well as the future outlook during the final two years

of the grant and beyond. Note that, while project coordinators (PCs) also participated in similar interviews, their responses were more focused on the implementation aspects of the grant and have been incorporated in the section above. This section will be organized according to the following topic areas: the benefits of participating in the IWA, the strengths and weaknesses of the overall watershed approach and the WMAs as the coordinating entities, and the challenges that lie ahead and the sustainability of the current activity.

### **Benefits of Involvement in IWA**

Looking back at the accomplishments and outcomes of the IWA project through the halfway point in the grant, stakeholders identified a range of benefits, which largely centered on the physical and quantifiable impact of the work being carried out or the level of engagement and collaboration in the WMAs.

#### ***Physical impact***

Even though most WMAs had yet to begin construction on their projects at this point, there was an overwhelming consensus that a primary benefit of the IWA has been the potential for measurable improvements in the areas of water quantity and quality. Board members focused on the vital role of the financial assistance they received, which enabled them to successfully fund the implementation of practices in their watersheds. They also mentioned how these practices have the capacity for “reducing instances of flooding” and decreasing the nutrient content not only where they are being installed, but also for other downstream communities. The partners were slightly more cautious about the extent of the physical benefits that will be experienced as a result of these practices. The predicted scale of the benefits, as well as the degree of certainty of their outcomes, varied among the partners. Some projected significant and lasting positive impacts; meanwhile, others discussed the potential for more localized impacts of the practices and pointed toward the larger sums of money that would be needed to affect the desired changes across the entire state. Regardless, several partners were optimistic about the potential avoidance of future losses and damages to property through the work of this grant.

#### ***Engagement in the WMAs***

One of the major themes that consistently emerged in some form across nearly all stakeholder groups was the notion of engagement. For some, this was in reference to the increased levels of interest, activity, and collaboration occurring in and through the WMAs; for others, engagement was exemplified by the support and guidance of key partners in carrying out the work of the WMA. Still others viewed engagement as coming from landowners or public individuals and groups beyond those directly implicated in the IWA.

Although some WMAs existed prior to the IWA, the formation of several new WMAs through this grant has served as an important early outcome of the project that may continue to pay dividends down the road. Within these organizing entities, board members and partners alike have cited the importance of being able to make connections and network with individuals from many disparate organizations that all have common objectives. Board members repeatedly emphasized the value of being supported by partners that have vast technical knowledge and expertise. In particular, they described benefiting from the leadership and guidance of the planning partners and becoming properly equipped through ongoing education to successfully establish and achieve their goals as a board. Likewise, partners also shared evidence of individual or organizational capacity-building that they experienced through collaboration with other individuals and organizations in the WMAs. For example, several partners described expanding the scale or scope of their work or developing a better understanding of the roles of other

partner organizations, which in turn has enabled them to be more effective in their own work. According to key stakeholders, this level of collaboration and networking has also strengthened the current work of the IWA.

Looking to other outcomes of this collaboration, board members and partners each discussed how this increased engagement has facilitated a greater awareness of the watershed approach (explicit acknowledgement of the hydrology of a watershed and the interaction of upstream and downstream communities) among stakeholders within and outside of the WMAs. First and foremost, has been the development of knowledge and awareness of the board members themselves. For example, board members from both Middle Cedar and English River WMAs offered personal anecdotes of their level of awareness regarding the causal relationship between farming practices and water quality. A small handful of partners also recognized increased agency and awareness among the board members, suggesting that they have a more fundamental understanding of why they gather and how they function within their geographic (rather than political) boundaries. Another critical manifestation of the watershed approach would be the bridging of rural and urban perspectives, which was evident in both the Clear Creek WC and English River WMA. Ultimately, the collaboration and increased awareness of the watershed approach has begun to build momentum that may lead to greater sustainability of the WMAs beyond the life of the IWA.

### **Strengths and Weaknesses of the WMAs**

While there were inherently unique strengths and weaknesses when considering each individual WMA, there were also several consistent themes that emerged when discussing the collection of WMAs more broadly. Many of the strengths appeared to parallel the benefits as outlined above; meanwhile, the weaknesses provided an indication of opportunities for growth as the WMAs look toward the future sustainability of their entities and the watershed approach more broadly.

#### **Strengths**

Themes of local engagement and support from partners were complemented by praise for the quality of the staff that play key roles in the WMA, as well as the diversity of perspectives that have been represented on their respective boards. Based on their survey responses, board members reportedly 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 optimism about the operational effectiveness of their WMAs, as well as the individuals that have been involved in leadership roles within the WMA. In their interviews, multiple board members specifically praised the work of their project coordinators, describing how confident they have been in their capacity to successfully carry out the work of the WMA. Several of the partners echoed the positive statements about the overall quality of the participants involved and their ability to effectively “move things forward on a local level.” Board members in particular highlighted the diversity of individuals and partner groups engaged in their WMA, which for some was novel and directly attributable to the IWA at large.

#### **Weaknesses**

The main area of weakness appeared to be the ability of the WMAs to sustain the initially high levels of interest and engagement. Additionally, the range of experience and knowledge of board members, as well as their feelings of insecurity surrounding funding, have clouded some of their ability for their WMAs to, in the words of one partner, be “utilized to the extent possible for the impact they could be

having.” This endeavor was described as a “voyage of discovery” in which individual WMAs are learning lessons that hopefully will lead to greater resiliency and effectiveness over time.

Board members and partners consistently agreed that the interest and excitement related to the awarding of the grant has begun to wear off. Especially toward the midpoint of the grant, it has become increasingly difficult for them to sustain that initial level of interest, with several WMAs experiencing more frequent attendance and quorum issues at their quarterly meetings. Although the reasons for the decline may be numerous, including a lack of grassroots formation, the board members and partners have begun to view this as a weakness that must be swiftly addressed to ensure their ability to continue carrying out the work of the IWA in the final two years of the grant.

While the diversity of WMA board members was initially viewed as a strength by some, it has also been considered a weakness by others. For example, some partners pointed to a “struggle to connect,” or the inability for all members to access and understand the technical information. This in turn has produced to a lack of clarity regarding the appropriate actions to take in response the information being shared. Thus, while the multiplicity of perspectives of the many WMA members may enable a greater level of collaboration (see strengths above), it may also negatively affect their ability to connect to and effectively carry out the goals and activities of the IWA.

Looking ahead toward opportunities for improvement based on their current weaknesses, board members expressed a desire to see the actual impacts on the watershed, to secure additional funding, to increase the number of practices on the ground, and to expand the implementation areas for IWA-funded conservation. This notion of being in a perpetual state of learning and continually striving for greater outcomes was reinforced by multiple key informants, one of which stated, “We’re still learning. I know that we can do better.”

### **Future Challenges and Sustainability**

The most obvious challenge currently facing the WMAs is the implementation of practices within the timeline remaining. Although some WMAs were further along in the process than others, board members and partners almost unanimously expressed some degree of apprehension about their ability to get projects completed and the money spent within the allotted grant funding period. In some cases, stakeholders reported feeling pressure from outside observers to move the process along more quickly and to demonstrate the positive outcomes of their efforts. This sense of urgency to implement practices has been further accentuated by the perceived need to leverage completed practices to solicit interest and engagement from a wider base of stakeholders. This imperative has been especially challenging in more rural watersheds where public outreach has remained critical to getting projects through the pipeline. Perhaps because of their role in the grant, partners tended to focus less on the issue of landowner engagement and more so on the likelihood of the practices to produce measurable impacts on water quantity and quality. Regardless of the varied nature of the challenges being faced by the WMAs, there was a collective assumption of responsibility and a shared willingness on the part of all those involved to do everything within their power to overcome these challenges and build momentum, thereby laying the foundation for continued success beyond the IWA. In fact, many of the partners and board members viewed the implementation of practices as critically necessary in their pursuit of securing supplemental or renewable sources of funding to continue this work moving forward.

Turning toward the replicability of the project and the outlook for others to continue utilizing the watershed approach in Iowa beyond the IWA funding period, there was a healthy combination of

apprehension and cautious optimism. Regarding the overall construct of the IWA, most expected that the desire to maintain the approach would endure. Building on the benefits of the IWA, several board members and partners alike spoke highly of the potential for the lessons learned through this project to inform the future directions and decisions of others that wish to pursue a similar model. For example, one board member described how the lessons they have been learning from the other IWA watersheds that were ahead of them in the process have been helpful for their own WMA in knowing how to make their “communities within the watershed more resilient and sustainable.” Similarly, a partner described how the breadth of lessons that IWA participants have learned may lead to a more strategic and efficient execution of this approach moving forward, essentially creating the muscle memory necessary to increase their overall efficiency in carrying out the same tasks in the future. However, this general optimism about the value of the replicability of the watershed approach was met with varying degrees of hesitancy regarding the myriad factors that influence their ability to sustain the effort over the long term.

As the central entity in continuing the watershed approach in Iowa, the outlook for the WMAs to maintain their current level of activity was met with much apprehension, primarily owing to the uncertainty of funding. To that effect, Weber (UI IFC) stated, “We’re at ground zero of the most critical time in the state of the WMAs in Iowa.” Several board members and partners spoke with a sense of hopeful anticipation about how the current tools and resources might be leveraged by the WMAs to apply for and be awarded additional streams of funding in the future. Recognizing the primacy of funding to the continuation of their efforts, WMAs have already begun to turn their efforts toward discussing options for funding their continued activity and researching potential grants for which they can apply.

### Looking Forward

Years 4 and 5 will provide an opportunity to directly observe progress in the WMAs and other key areas of IWA in accomplishing the tangible goals of the program. CEA will work with IWA leadership to define key questions for the evaluation in the last two years of the project which will likely shift in focus toward volunteer landowner interest and engagement; completion of community infrastructure projects in Storm Lake, Dubuque, and Coralville; sustainability of water resources work in the state of Iowa; and dissemination of IWA at state, regional, and national levels.