

ATTACHMENT A

Program Description
University of Iowa Program Description

The following "Program Description" is incorporated into the recipient's IowaGrants.gov account. Cost projections and tasks per quarter considered a starting point. Future modifications to be requested through IowaGrants.gov.

The scope of work consists of six activities: **Iowa Flood Center: Advisory Board Meetings, Watershed Coordinator Training; Iowa Flood Center: Hydrologic Assessment; Iowa Flood Center: Hydrologic Network; University of Iowa: Resilience Programming; Evaluation and Program Model; and Pre-Agreement Expenses.**

ACTIVITY 172-03
Iowa Flood Center: Advisory Board Meetings, Watershed Coordinator Training

A statewide *WMA Advisory Board* will be formed with at least one advisor from each WMA and representative(s) from Dubuque Bee Branch Creek. Collaborators will represent a wide range of expertise. The board will: review progress; strategize common challenges; make implementation recommendations; discuss long-term solutions for statewide flood peak reduction and water-quality improvements; and share resilience programming strategies and successes. The board will initially convene quarterly, with the spring meeting including an annual public symposium to share information and build support. The fall meeting will also bring everyone together in one location. The six watershed coordinators will be brought together at least two additional times each year for specialized training.

Bringing together key agency staff, stakeholders from the target watersheds, and landowners who are building structures or implementing conservation practices in the MID-URN areas allows opportunities for sharing information and talking through common challenges. The advisory board meetings will be used to monitor progress across the watersheds and resolve issues.

Disaster Tie-back: The watershed coordinator training events will improve their ability to support the activities directly impacting the MID-URN areas.

The tasks below retroactive to January 21, 2106.

Iowa Flood Center: Advisory Board Meetings, Watershed Coordinator Deliverables

Deliverable	Expected Quantity
Prepare and conduct advisory board meeting	10
Conduct watershed coordinator training activity	10
Submit quarterly contract-wide progress reports	20

Year 1 (\$65,149)

Q-1 \$17,443

- Organize fall 2016 advisory board meeting, attend event, prepare minutes and report, purchase supplies and rent space, etc. (\$13,162)
- Purchase laptop computer for dedicated use on this project for meetings, workshops, and other events. (cost \$1,281)
- Participant support costs for event (about 12-13 attendees from across the state at an average of \$227 each for mileage, lodging, meals) (\$3,000, no indirect)

Q-2 \$5,962

- Begin organization of spring 2017 meeting, prepare content for watershed coordinator training. (\$3,880)
- Training activity for the six watershed coordinators. Likely theme: IWA programmatic overview, including lessons learned from the Iowa Watersheds Project, and information about WMA formation. (\$2,082, no indirect, no indirect)

Q-3 \$35,782

- Organize and host spring 2017 advisory board meeting/public symposium, attend event, rent space, purchase supplies, host guest speaker (stipend and travel), prepare minutes and report, etc. Likely Theme for Public Component: The Iowa Watershed Approach: A New Vision for Iowa's Future. (\$27,782)

- Participant support costs for event (cover costs for about 35-36 attendees from across the state at an average of \$227 each for mileage, 1 night lodging, meals). This includes funds for interested landowners to attend from the participating watersheds. (\$8,000, no indirect)

Q-4 \$5,962

- Work toward organization of fall 2017 meeting, prepare content for watershed coordinator training (\$3880)
- Training activity for the six watershed coordinators. Likely theme: IWA programmatic overview of the community resilience program and training on community resilience. (\$2,082, no indirect)
- Prepare and submit annual progress report

Year 2 (\$63,289)

Q-1 \$16,214

- Organize fall 2017 advisory board meeting, attend event, prepare minutes and report, purchase supplies and rent space, etc. (\$13,214)
- Participant support costs for event (about 12-13 attendees from across the state at an average of \$227 each for mileage, lodging, meals) (\$3,000, no indirect)

Q-2 \$5,980

- Begin organization of spring 2018 meeting, prepare content for watershed coordinator training (\$3898)
- Training activity for the six watershed coordinators. Likely Theme: Progress on WMA formation, tutorial on the Iowa Flood Information System and the Iowa Water Quality Information System. (\$2082)

Q-3 \$35,115

- Organize spring 2018 advisory board meeting/public symposium, attend event, prepare minutes and report, rent space, purchase supplies, host guest speaker (stipend and travel), etc. Likely Theme for Public Component: Resilience! Considerations in Improving Resilience on the Landscape and in Your Community. (\$27,115)
- Participant support costs for event (cover costs for about 35-36 attendees from across the state at an average of \$227 each for mileage, lodging, meals). This includes funds for interested landowners to attend from the participating watersheds. (\$8,000, no indirect)

Q-4 \$5,980

- Work toward organization of fall 2018 meeting, prepare content for watershed coordinator training (\$3,898)
- Training activity for the six watershed coordinators. Likely Theme: Interpretation of hydrologic assessments and review of hydrologic modeling platforms. Training on working through the details related to built structures with landowners (environmental & cultural review, contracting, etc.) (\$2,082, no indirect)
- Prepare and submit annual progress report

Year 3 (\$64,448):

Q-1 \$16,568

- Organize fall 2018 advisory board meeting, attend event, prepare minutes and report, purchase supplies and rent space, etc. (\$13,568)
- Participant support costs for event (about 12-13 attendees from across the state at an average of \$227 each for mileage, lodging, meals) (\$3,000, no indirect)

Q-2 \$6,094

- Work toward organization of spring 2019 meeting, prepare content for watershed coordinator training (\$4,012)
- Training activity for the six watershed coordinators. Likely Theme: Core training on built projects and conservation practices and their impacts on water quantity and quality, including field site visits. (\$2,082, no indirect)

Q-3 \$35,692

- Organize spring 2019 advisory board meeting/public symposium, attend event, prepare minutes and report, rent space, purchase supplies, host guest speaker (stipend and travel), etc. Likely Theme for Public Component: Best Practices in Iowa Agriculture for Decreased Flooding and Improved Water Quality: (\$27,692)
- Participant support costs for event (cover costs for about 35-36 attendees from across the state at an average of \$227 each for mileage, lodging, meals). This includes funds for interested landowners to attend from the participating watersheds. (\$8,000, no indirect)

Q-4 \$6,094

- Work toward organization of fall 2019 meeting, prepare content for watershed coordinator training (\$4,012)
- Training activity for the six watershed coordinators. Likely Theme: Continued core training on built projects and conservation practices and their impacts on water quantity and quality, including field site visits. (\$2,082, no indirect)
- Prepare and submit annual progress report

Year 4 (\$65,512):

Q-1 \$16,885

- Organize fall 2019 advisory board meeting, attend event, prepare minutes and report, purchase supplies and rent space (\$13,885)
- Participant support costs for event (about 12-13 attendees from across the state at an average of \$227 each for mileage, lodging, meals) (\$3,000, no indirect)

Q-2 \$6,201

- Work toward organization of spring 2020 meeting, prepare content for watershed coordinator training (\$4,119)
- Training activity for the six watershed coordinators. Likely Theme: Review of progress to date in all watersheds, and review of first three communities finished with community resilience programming. (\$2,082, no indirect)

Q-3 \$36,225

- Organize spring 2020 advisory board meeting/public symposium, attend event, prepare minutes and report, rent space, purchase supplies, host guest speaker (stipend and travel). Likely Theme for Public Component: The Benefits and Impact of Iowa Watershed Management Authorities Across Iowa (\$28,225)
- Participant support costs for event (cover costs for about 35-36 attendees from across the state at an average of \$227 each for mileage, lodging, meals). This includes funds for interested landowners to attend from the participating watersheds. (\$8,000, no indirect)

Q-4 \$6,201

- Work toward organization of fall 2020 meeting, prepare content for watershed coordinator training (\$4,119)
- Training activity for the six watershed coordinators. Likely Theme: Understanding and interpretation of field monitoring data. (\$2,082, no indirect)
- Prepare and submit annual progress report

Year 5 (\$66,602):

Q-1 \$17,210

- Organize fall 2020 advisory board meeting, attend event, prepare minutes and report, purchase supplies and rent space (\$14,210)
- Participant support costs for event (about 12-13 attendees from across the state at an average of \$227 each for mileage, lodging, meals) (\$3,000, no indirect)

Q-2 \$6,311

- Work toward organization of spring 2021 meeting, prepare content for watershed coordinator training (\$4,229)
- Training activity for the six watershed coordinators. Likely Theme: Measured success for stream flow reduction and water quality improvements post project construction. (\$2,082, no indirect)

Q-3 \$36,771

- Organize spring 2021 advisory board meeting/public symposium, attend event, prepare minutes and report, rent space, purchase supplies, host guest speaker (stipend and travel). Likely Theme for Public Component: Resiliency of Urban and Rural Watersheds in a Changing Climate. (\$28,771)
- Participant support costs for event (cover costs for about 35-36 attendees from across the state at an average of \$227 each for mileage, lodging, meals). This includes funds for interested landowners to attend from the participating watersheds. (\$8,000, no indirect)

Q-4 \$6,310

- Finalize documentation of all past advisory board meetings and public events and potential final meeting for final recommendations and updates for project final reports. (\$4,228)

- Training activity for the six watershed coordinators. Likely Theme: Past, present and future of the Iowa Watershed Approach. (\$2,082, no indirect)
- Prepare and submit annual progress report

**ACTIVITY 172-01
Iowa Flood Center: Hydrologic Assessment**

A hydrologic assessment of each watershed is necessary to understand the hydrology, assess flood and water-quality risks, and evaluate scenarios to maximize results. This step will take place at the full watershed scale in the target watersheds (Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, English River, North Raccoon River, East Nishnabotna, and West Nishnabotna).

Disaster Tie-back: It is a necessary first step in this project as it establishes existing conditions and hydrologic context to support the selection of the type and location of constructed projects in the MID-URN areas.

The tasks below retroactive to January 21, 2106.

Iowa Flood Center: Hydrologic Assessment Deliverables

Deliverable	Expected Quantity
Watershed hydrologic model	8
Watershed meetings (3 per watershed)	24
Watershed hydrologic assessment	8

Year 1 (\$771,521):

Q-1 \$190,334

- Initial watershed meetings with WMAs in: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River (\$10,000). Likely to also include sub-meetings with key agency and NGO partners in the area for initial discussion regarding available data.
- Begin collection of Data for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. This step includes collection of data related to rainfall, stream flow, topography, soil, and land use. Data to be collected from partner agencies, publications, and other available resources. (\$180,334)

Q-2 \$148,759

- Continue collection of Data for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. This step includes continued collection of data related to topography, soil, and land use. Data to be collected from partner agencies, publications, and other available resources. Data collection also to now include data related to local structures in the watersheds (bridges, culverts, levees) and the state’s high-resolution LiDAR data. (\$148,759)

Q-3 \$219,115

- Finalize collection of Data for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. By now, data should also start to become available from the new hydrologic network. (\$52,457)
- Begin development of HEC-HMS hydrologic models for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$52,458)
- Initial watershed meetings with WMAs in: North Raccoon River, East Nishnabotna, and West Nishnabotna. Likely to also include sub-meetings with key agency and NGO partners in the area for initial discussion regarding available data. (\$6,000)
- Begin collection of Data for: North Raccoon River, East Nishnabotna, and West Nishnabotna. This step includes collection of data related to rainfall, stream flow, topography, soil, and land use. Data to be collected from partner agencies, publications, and other available resources. (\$108,200)

Q-4 \$213,313

- Continue development of HEC-HMS hydrologic models for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$62,035)

- Continue integration of data from hydrologic network, IFC stream stage sensors, water quality sensors, and other sensors into HEC-HMS hydrologic models for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$62,034)
- Continue collection of Data for: North Raccoon River, East Nishnabotna, and West Nishnabotna. This step includes continued collection of data related to topography, soil, and land use. Data to be collected from partner agencies, publications, and other available resources. Data collection also to now include data related to local structures in the watersheds (bridges, culverts, levees) and the state's high-resolution LIDAR data. (\$89,244)
- Prepare and submit annual progress report

Year 2 (\$753,479):

Q-1 \$232,437

- Continue development of HEC-HMS hydrologic models for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$139,608)
- Finalize first draft of hydrologic assessments for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$20,000)
- Share first draft of hydrologic assessments with WMAs in: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$10,000)
- Finalize collection of Data for North Raccoon River, East Nishnabotna, and West Nishnabotna. Also includes data from the new hydrologic network. (\$31,474)
- Begin development of HEC-HMS hydrologic models for: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$31,355)

Q-2 \$212,824

- Finalize HEC-HMS hydrologic models for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$118,383)
- Finalize hydrologic assessments for: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$10,000)
- Share hydrologic assessments with WMAs in: Upper Iowa River, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River. (\$10,000)
- Continue development of HEC-HMS hydrologic models for: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$37,221)
- Continue integration of data from hydrologic network, IFC stream stage sensors, water quality sensors, and other sensors into HEC-HMS hydrologic models for: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$37,220)

Q-3 \$159,370

- Continue development of HEC-HMS hydrologic models for: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$141,370)
- Finalize first draft of hydrologic assessments for: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$12,000)
- Share first draft of hydrologic assessment with WMAs in: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$6,000)

Q-4 \$148,848

- Finalize HEC-HMS hydrologic models for: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$136,848)
- Finalize hydrologic assessments for: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$6,000)
- Share hydrologic assessments with WMAs in: North Raccoon River, East Nishnabotna, and West Nishnabotna. (\$6,000)
- Prepare and submit annual progress report

ACTIVITY 172-04
Iowa Flood Center: Hydrologic Network

The IFC will deploy a hydrologic network of monitoring stations with rain gauges, soil moisture and temperature probes, and shallow monitoring wells in each target watershed. These sensors support the stream stage sensors and water quality sensors, and will transmit data to the IFC at set intervals (generally every 10–15 minutes). This data will directly support the development of the hydrologic models used to inform the distribution of built projects and to evaluate the success of these practices. The shallow wells and soil moisture probes will, for example, provide data to understand saturation rates under varying hydrologic conditions, which impact whether precipitation infiltrates the substrate or flows as surface runoff. The rain gauges provide research-quality data on local precipitation, which is also used in the models.

The hydrologic network, consisting of about 20 stations, will be primarily developed and deployed in the first year of the project, with modest funds allocated in years 2-5 for sensor maintenance and dataplans (wireless modem to convey data from the sensors to the IFC).

Disaster Tie-back: Deployment of the hydrologic network is a necessary early step in this project as it establishes existing conditions and hydrologic context, provides data to inform and validate models used to help select best locations for built structures, and provides data to monitor the success of constructed projects and conservation practices in the MID-URN areas.

The tasks below retroactive to January 21, 2106.

Iowa Flood Center: Hydrologic Network Deliverables

Deliverable	Expected Quantity
Complete monitoring stations	20
Establish sensor data base	1

Year 1 (\$434,140):

Q-1 \$116,428

- Begin construction of dual tipping-bucket rain gauges and soil moisture and temperature probes for the Upper Iowa River (2), Upper Wapsipinicon River (3), Middle Cedar River (4), Clear Creek (2), and English River (2) Watersheds. (Numbers in parentheses represents likely number of units in each watershed.) (\$76,250)
- Select locations and begin deployment of dual-tipping bucket precipitation gauges and soil moisture and temperature probes in the Upper Iowa River, Upper Wapsipinicon River, and Middle Cedar River Watersheds. (\$36,778)
- Select contractors for installation of shallow wells in the Upper Iowa River and Upper Wapsipinicon River Watersheds. (\$200)
- Purchase all dedicated electronics/computers necessary to support the network and retain network data. (\$3,200)

Q-2 \$152,466

- Finish construction of dual tipping-bucket rain gauges and soil moisture and temperature probes for the Upper Iowa, Upper Wapsipinicon, Middle Cedar River, Clear Creek, and English River Watersheds. (\$99,125)
- Finish deployment of dual tipping-bucket rain gauges and soil moisture and temperature probes in the Upper Iowa River, Upper Wapsipinicon River, and Middle Cedar River Watersheds. (\$10,000)
- Select locations and begin deployment of dual tipping-bucket rain gauges and soil moisture and temperature probes in the Clear Creek, and English River Watersheds. (\$22,560)
- Install shallow wells in the Upper Iowa River and Upper Wapsipinicon River Watersheds. (\$15,250)
- Establish sensor database and link to visualization platform (\$4,509)
- Maintain sensor dataplans for deployed systems.(\$1,022)

Q-3 \$52,677

- Construct dual tipping-bucket rain gauges and soil moisture and temperature probes for the North Raccoon River (4), East Nishnabotna River (1), and West Nishnabotna River (2) Watersheds. (\$38,132)
- Select contractors for installation of shallow wells in the Middle Cedar River, Clear Creek, English River, North Raccoon River, East Nishnabotna River, and West Nishnabotna River Watersheds. (\$600)

- Select locations and begin deployment of dual tipping-bucket rain gauges and soil moisture and temperature probes in the North Raccoon River, East Nishnabotna River, and West Nishnabotna River Watersheds (as weather permits). (\$12,923)
- Maintain sensor dataplans for deployed systems. (\$1,022)

Q-4 \$112,569

- Install shallow wells in the Middle Cedar River, Clear Creek, English River, North Raccoon River, East Nishnabotna River, and West Nishnabotna River Watersheds. (\$45,750)
- Finish deployment of remaining of dual tipping-bucket rain gauges and soil moisture and temperature probes in the Middle Cedar River, Clear Creek, and English River Watersheds. (\$29,018)
- Deploy all dual tipping-bucket rain gauges and soil moisture and temperature probes in the North Raccoon River, East Nishnabotna River, and West Nishnabotna River Watersheds. (\$36,779)
- Maintain sensor dataplans for deployed systems. (\$1,022)
- Prepare and submit annual progress report

Year 2 (\$24,653):

Q-1 \$11,305

- Monitor performance of hydrologic network and make adjustments as necessary. (\$5,141)
- Train landowners hosting the sensors on maintenance. (\$5,142)
- Maintain sensor dataplans. (\$1,022)

Q-2 \$6,164

- Monitor performance of hydrologic network and make final adjustments as necessary. (\$2,571)
- Finish training landowners hosting the sensors on maintenance. (\$2,571)
- Maintain sensor dataplans. (\$1,022)

Q-3 \$3,594

- Follow-up on any necessary sensor or well maintenance issues. (\$2,572)
- Maintain sensor dataplans. (1,022)

Q-4 \$3,590

- Follow-up on any necessary sensor or well maintenance issues. (\$2,568)
- Maintain sensor dataplans. (\$1,022)
- Prepare and submit annual progress report

Year 3 (\$9,556):

Q-1 \$2,390

- Follow-up on any necessary sensor or well maintenance issues. (\$1,368)
- Maintain sensor dataplans. (\$1,022)

Q-2 \$2,390

- Follow-up on any necessary sensor or well maintenance issues. (\$1,368)
- Maintain sensor dataplans. (\$1,022)

Q-3 \$2,390

- Follow-up on any necessary sensor or well maintenance issues. (\$1,368)
- Maintain sensor dataplans. (1,022)

Q-4 \$2,386

- Follow-up on any necessary sensor or well maintenance issues. (\$1,364)
- Maintain sensor dataplans. (\$1,022)
- Prepare and submit annual progress report

Year 4 (\$9,685):

Q-1 \$2,422

- Follow-up on any necessary sensor or well maintenance issues. (\$1,400)
- Maintain sensor dataplans. (\$1,022)

Q-2 \$2,422

- Follow-up on any necessary sensor or well maintenance issues. (\$1,400)
- Maintain sensor dataplans. (\$1,022)

Q-3 \$2,422

- Follow-up on any necessary sensor or well maintenance issues. (\$1,400)
- Maintain sensor dataplans. (1,022)

Q-4 \$2,419

- Follow-up on any necessary sensor or well maintenance issues. (\$1,397)
- Maintain sensor dataplans. (\$1,022)
- Prepare and submit annual progress report

Year 5 (\$9,466):

Q-1 \$2,367

- Follow-up on any necessary sensor or well maintenance issues. (\$1,345)
- Maintain sensor dataplans. (\$1,022)

Q-2 \$2,367

- Follow-up on any necessary sensor or well maintenance issues. (\$1,345)
- Maintain sensor dataplans. (\$1,022)

Q-3 \$2,367

- Follow-up on any necessary sensor or well maintenance issues. (\$1,345)
- Maintain sensor dataplans. (1,022)

Q-4 \$2,365

- Follow-up on any necessary sensor or well maintenance issues. (\$1,343)
- Maintain sensor dataplans. (\$1,022)
- Prepare and submit annual progress report

ACTIVITY 172-06
University of Iowa: Resilience Programming

Community Resilience Programming will be implemented in tangent with the built projects in the watersheds to help increase resilience to floods. The IWA will partner with communities in the target watersheds to increase resilience by facilitating activities that help them prepare for, respond to, recover from, and adapt to floods. The initial investigation will include individual or group interviews and surveys of selected constituents across the watersheds and especially the most vulnerable populations. The baseline data will guide WMAs as they select initial programming and interventions in the communities. Tailored programming for each watershed/community, may include workshops, focus groups, symposia, or other engagement activities as developed in partnership with the communities.

Key to this program is the involvement of the UI Center for Evaluation and Assessment (CEA). CEA staff will guide the development of tools to collect baseline resilience data, help to interpret data, and closely monitor and assess the outcomes/impacts of programming and interventions. The IWA team, including CEA, will refine the process annually to better understand changes in community resilience and provide actionable information. The IWA will also work with local groups like the Iowa Community Action Association and several regional Community Action Programs to leverage existing capacity-building platforms and networks for flood resiliency programming. The final deliverable for each target watershed is a Flood Resilience Action Plan.

Resilience Programming activities are scheduled for three years in each target watershed, with activities starting in three target watersheds in project year one (cohort 1), three additional watersheds starting in year 2 (cohort 2), and the last three starting in year 3 (cohort 3).

Disaster Tie-back: The community resilience programming will directly benefit the MID-URN areas through the development of tailored activities that measure and subsequently improve resilience to flooding in those areas and the completion of a flood resilience action plan to help guide future priorities to increase flood resilience.

I. Table of Proposed Cohorts of Watersheds for IWA Resilience Programming

Cohort 1 (Years 1-3)	Cohort 2 (Years 2-4)	Cohort 3 (Years 3-5)
Clear Creek	Middle Cedar	North Raccoon
Upper Iowa	Upper Wapsipinicon	East Nishnabotna
English River	Dubuque	West Nishnabotna

[IFC is the Iowa Flood Center. CEA is the Center for Evaluation and Assessment.]

University of Iowa: Resilience Programming Deliverables

Deliverable	Expected Quantity
Attend kick-off meeting	8 (minimum)
Prepare best practices guide	1
Complete and present draft flood resilience plans	8
Complete and present final flood resilience plans	8
Develop visualization system	1
Develop cyber-learning system	1
Develop decision support system	1
Develop crowd-sourcing mobile app	1

Attend advisory board meeting	10
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Year 1 (\$644,370):

- Q-1 \$161,092 [CEA: \$43,125]
 - Cohort 1
 - Plan and complete resilience programming “kick-off” meetings in 3 watersheds [IFC: \$65,000; CEA: \$3,000]
 - Build and/or adapt tools for resilience data collection for each watershed [CEA: \$30,000]
 - Engage CAP and/or local groups to understand their existing programs and consider how to modify those programs to provide flood resilience knowledge/training/assistance based on the current working definition of resilience. (IFC: \$30,000)
 - Observe partner meetings about existing programming [CEA: \$3,125]
 - Other evaluation planning and implementation activities [IFC: \$17967; CEA: \$7,000]
 - Computers dedicated to this project (IFC: \$5,000)
- Q-2 \$161,092 [CEA: \$43,125]
 - Cohort 1
 - Refine the resilience framework, as needed, for each watershed [IFC: \$27,967; CEA: \$17,000]
 - Collect and analyze resilience data [IFC: \$70,000; CEA: \$16,000]
 - Further develop partnerships with promising CAP groups and other local groups. (IFC: \$20,000)
 - Monitor ongoing partner meetings and collaborations [CEA: \$3,125]
 - Other evaluation planning and implementation activities [CEA: \$7,000]
- Q-3 \$161,093 [CEA: \$43,125]
 - Cohort 1
 - Develop and report preliminary resilience findings to program team and watershed stakeholders [IFC: \$20,000; CEA: \$5,000]
 - Develop and discuss the emerging “resilience gaps” with resilience stakeholders, propose appropriate programming, discuss programming modifications, develop final programming. Discuss resilience strengths, document strengths between watersheds, and prepare a draft “best practices” guide. [IFC: \$20,000; CEA: \$10,000]
 - Expand resilience programming, based on stakeholder feedback and data. (IFC: \$25,000)
 - Evaluate data collection tools developed to measure the effectiveness of the resilience program (short-term measures). Formative evaluation activities aligned with training and programming [IFC: \$14,595; CEA: \$20,000]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$35,373)
 - Advisory board meeting [IFC: \$3,000; CEA: \$1,000]
 - Other evaluation planning and implementation activities [CEA: \$7,125]
- Q-4 \$161,093 [CEA: \$43,125]
 - Cohort 1
 - Further develop and report preliminary resilience findings to WMA team and watershed stakeholders [IFC: \$20,000; CEA: \$1,000]
 - Further develop and discuss the emerging “resilience gaps” with resilience stakeholders, propose appropriate programming, discuss programming modifications, develop final programming. Discuss resilience strengths, document strengths between watersheds, and prepare a draft “best practices” guide. [IFC: \$20,000; CEA: \$10,000]
 - Evaluate and assess data collection tools developed to measure the effectiveness of the resilience program (short-term measures)./ Formative evaluation activities aligned with training and programming [IFC: \$5,000; CEA: \$20,000]
 - Integrate data, models (e.g. flooding, water quality or quantity) and resources specific for selected watersheds. (IFC: \$20,000)
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$35,373)
 - Make initial contacts with Watershed Cohort #2 [IFC: \$6,000; CEA: \$1,000]
 - Compile, edit, complete and submit end of grant-year report to IEDA and IFC summarizing activities and formative evaluation data to date along with resilience findings. [IFC: \$11,595; CEA: \$5,000]
 - Other evaluation planning and implementation activities [CEA: \$6,125]

Year 2 (\$732,924):

Q-1: \$183,231 [CEA: \$43,526]

- Cohort 1
 - Expand resilience programming, based on stakeholder feedback and data. (IFC: \$20,000)
 - Develop the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$22,500; CEA: \$10,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$5,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$21,005)
- Cohort 2
 - Plan and complete resilience programming “kick-off” meetings in 3 watersheds [IFC: \$25,000; CEA: \$3,000]
 - Build and/or adapt tools for resilience data collection for each watershed [IFC: \$16,469; CEA: \$15,000]
 - Engage CAP and/or local groups to understand their existing programs and consider how to modify those programs to provide flood resilience knowledge/training/assistance based on the current working definition of resilience. (IFC: \$5,000)
 - Observe partner meetings about existing programming [CEA: \$3,000]
- Design and develop interactive visualization systems to share and communicate resilience data and results from modeling and assessment IFC: \$19,731)
- Develop interactive cyber-learning systems to support resilience awareness and communication (IFC: \$10,000)
- Other evaluation planning and implementation activities [CEA: \$7,026]

Q-2: \$183,231 [CEA: \$43,527]

- Cohort 1
 - Complete the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$25,000; CEA: \$5,000]
 - Testing and refinement of informatics systems with community feedback (WMA, general public, etc.) (IFC: \$10,000)
 - Formative evaluation activities aligned with training and programming [CEA: \$4,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$21,006)
- Cohort 2
 - Refine the resilience framework, as needed, for each watershed [IFC: \$16,467; CEA: \$10,000]
 - Collect and analyze resilience data [IFC: \$37,500; CEA: \$16,000]
 - Further develop partnerships with promising CAP groups and other local groups. (IFC: \$10,000)
 - Monitor ongoing partner meetings and collaborations [CEA: \$3,000]
- Design and develop interactive visualization systems to share and communicate resilience data and results from modeling and assessment (IFC: \$10,000)
- Develop interactive cyber-learning systems to support resilience awareness and communication (IFC: \$9,731)
- Other evaluation planning and implementation activities [CEA: \$5,027]

Q-3: \$183,231 [CEA: \$43,527]

- Cohort 1
 - Present and obtain stakeholder feedback on the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$20,000; CEA: \$5,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$3,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$21,005)
- Cohort 2
 - Develop and report preliminary resilience findings to program team and watershed stakeholders [IFC: \$20,692; CEA: \$5,000]
 - Develop and discuss the emerging “resilience gaps” with resilience stakeholders, propose appropriate programming, discuss programming modifications, develop final programming. Discuss resilience strengths, document strengths between watersheds, and prepare a draft “best practices” guide. [IFC: \$15,000; CEA: \$7,000]
 - Expand resilience programming, based on stakeholder feedback and data. (IFC: \$10,000)
 - Evaluation and assessment of data collection tools developed to measure the effectiveness of the resilience program (short-term measures)./ Formative evaluation activities aligned with training and programming [IFC: \$5,000; CEA: \$15,000]
 - Integrate data, models (e.g. flooding, water quality or quantity) and resources specific for selected watersheds. (IFC: \$10,000)
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$28,007)

- Design and develop interactive visualization systems to share and communicate resilience data and results from modeling and assessment (IFC: \$5,000)
- Develop interactive cyber-learning systems to support resilience awareness and communication (IFC: \$5,000)
- Advisory board meeting [CEA: \$1000]
- Other evaluation planning and implementation activities [CEA: \$7,027]
- Q-4: \$183,231[CEA: \$43,527]
- Cohort 1
 - Refine the IWA Flood Resilience Plan for each watershed [IFC: \$15,000; CEA: \$5,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$1,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$21,006)
- Cohort 2
 - Develop and report preliminary resilience findings to program team and watershed stakeholders [IFC: \$15,000; CEA: \$1,000]
 - Develop and discuss the emerging “resilience gaps” with resilience stakeholders, propose appropriate programming, discuss programming modifications, develop final programming. Discuss resilience strengths, document strengths between watersheds, and prepare a draft “best practices” guide. [IFC: \$15,000; CEA: \$7,000]
 - Evaluate and assess collection tools developed to measure the effectiveness of the resilience program (short-term measures)./ Formative evaluation activities aligned with training and programming [IFC: \$10,000; CEA: \$15,000]
 - Integrate data, models (e.g. flooding, water quality or quantity) and resources specific for selected watersheds. (IFC: \$5,000)
 - Formative evaluation activities aligned with training and programming [CEA: \$1000]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$28,008)
- Make initial contacts with Watershed Cohort #3 [IFC: \$5,000; CEA: \$1,000]
- Design and develop interactive visualization systems to share and communicate resilience data and results from modeling and assessment (IFC: \$5,000)
- Develop interactive cyber-learning systems to support resilience awareness and communication (IFC: \$5,000)
- Compile, edit, complete and submit end of grant-year report to IEDA and IFC summarizing activities and formative evaluation data to date along with resilience findings. [IFC: \$15,690; CEA: \$5,000]
- Other evaluation planning and implementation activities [CEA: \$7,027]

Year 3 (\$812,300):

- Q-1: \$203,075 [CEA: \$45,824]
- Cohort 1
 - Deliver the IWA Flood Resilience Plan for each watershed [IFC: \$30,000; CEA: \$3,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$1,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$35,407)
- Cohort 2
 - Expand resilience programming, based on stakeholder feedback and data. (IFC: \$20,000)
 - Develop the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$20,000; CEA: \$7,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$5,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$11,802)
- Cohort 3
 - Plan and complete resilience programming “kick-off” meetings in 3 watersheds [IFC: \$10,000; CEA: \$3,000]
 - Build and/or adapt tools for resilience data collection for each watershed [IFC: \$10,000; CEA: \$14,824]
 - Engage CAP and/or local groups to understand their existing programs and consider how to modify those programs to provide flood resilience knowledge/training/assistance based on the current working definition of resilience. (IFC: \$7,967)
 - Observe partner meetings about existing programming [CEA: \$3,000]
- Develop decision support systems with scenario analysis and evaluation of resilience components and index (criteria, state) features for decision makers and general public (IFC: \$12,075)
- Other evaluation planning and implementation activities [CEA: \$8,000]
- Q-2: \$203,075 [CEA: \$45,825]
- Cohort 1

- Provide support/promotion to watersheds regarding the resilience plan (IFC: \$20,000)
- Formative evaluation activities aligned with training and programming [CEA: \$5,500]
- CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$35,407)
- Cohort 2
 - Complete the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$20,000; CEA: \$5,000]
 - Testing and refinement of cyber systems with community feedback (WMA, general public, etc.) (IFC: \$10,000)
 - Formative evaluation activities aligned with training and programming [CEA: \$4,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$11,803)
- Cohort 3
 - Refine the resilience framework, as needed, for each watershed [IFC: \$12,965; CEA: \$7,000]
 - Collect and analyze resilience data [IFC: \$30,000; CEA: \$15,825]
 - Further develop partnerships with promising CAP groups and other local groups. (IFC: \$10,000)
 - Monitor ongoing partner meetings and collaborations [CEA: \$3,000]
- Develop decision support systems with scenario analysis and evaluation of resilience components and index (criteria, state) features for decision makers and general public (IFC: \$7,075)
- Other evaluation planning and implementation activities [CEA: \$5,000]
- Q-3: \$203,075[CEA: \$45,825]
- Cohort 1
 - Collect impact data aligned to resilience data collection procedures and programming [CEA: \$8,500]
- Cohort 2
 - Present and obtain stakeholder feedback on the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$20,000; CEA: \$3,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$3,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$11,802)
- Cohort 3
 - Develop and report preliminary resilience findings to program team and watershed stakeholders [IFC: \$15,000; CEA: \$5,000]
 - Develop and discuss the emerging “resilience gaps” with resilience stakeholders, propose appropriate programming, discuss programming modifications, develop final programming. Discuss resilience strengths, document strengths between watersheds, and prepare a draft “best practices” guide. [IFC: \$15,000; CEA: \$7,000]
 - Expand resilience programming, based on stakeholder feedback and data. (IFC: \$18,313)
 - Evaluate and assess collection tools developed to measure the effectiveness of the resilience program (short-term measures)./ Formative evaluation activities aligned with training and programming [IFC: \$10,000; CEA: \$15,000]
 - Integrate data, models (e.g. flooding, water quality or quantity) and resources specific for selected watersheds. (IFC: \$10,000)
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$47,210)
- Develop decision support systems with scenario analysis and evaluation of resilience components and index (criteria, state) features for decision makers and general public (IFC: \$5,000)
- Advisory board meeting [IFC: 4,750; CEA: \$1000]
- Other evaluation planning and implementation activities [CEA: \$3,000]
- Q-4: \$203,075[CEA: \$45,825]
- Cohort 1
 - Reports of programs and findings in each community [IFC: \$19,000; CEA: \$3,000]
- Cohort 2
 - Refine the IWA Flood Resilience Plan for each watershed [IFC: \$12,331; CEA: \$5,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$3,000]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$11,803)
- Cohort 3
 - Develop and report preliminary resilience findings to program team and watershed stakeholders [IFC: \$15,000; CEA: \$2,000]
 - Develop and discuss the emerging “resilience gaps” with resilience stakeholders, propose appropriate programming, discuss programming modifications, develop final programming. Discuss resilience strengths, document strengths between watersheds, and prepare a draft “best practices” guide. [IFC: \$15,000; CEA: \$7,000]

- Evaluate and assess collection tools developed to measure the effectiveness of the resilience program (short-term measures)./ Formative evaluation activities aligned with training and programming [IFC: \$8,330; CEA: \$15,000]
- Integrate data, models (e.g. flooding, water quality or quantity) and resources specific for selected watersheds. (IFC: \$10,000)
- CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$47,210)
- Develop decision support systems with scenario analysis and evaluation of resilience components and index (criteria, state) features for decision makers and general public (IFC: \$10,000)
- Compile, edit, complete and submit end of grant-year report to IEDA and IFC summarizing activities and formative evaluation data to date along with resilience findings. [IFC: \$8,576; CEA: \$5,825]
- Other evaluation planning and implementation activities [CEA: \$5,000]

Year 4 (\$705,756):

- Q-1: \$176,439 [CEA: \$45,449]
- Cohort 1
 - Resilience progress and plan follow-up [IFC: \$10,990; CEA: \$10,000]
- Cohort 2
 - Deliver the IWA Flood Resilience Plan for each watershed [IFC: \$15,000; CEA: \$3,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$3,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$23,844)
- Cohort 3
 - Expand resilience programming, based on stakeholder feedback and data. (IFC: \$17,311)
 - Develop the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$25,000; CEA: \$10,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$5,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$23,845)
- Develop crowd-sourcing mobile application to collect water-related data, photos, and stories that will be invaluable to the community and to IWA partners (IFC: \$15,000)
- Other evaluation planning and implementation activities [CEA: \$13,449]
- Q-2: \$176,439 [CEA: \$45,449]
- Cohort 1
 - Resilience progress and plan follow-up [IFC: \$13,301; CEA: \$15,000]
- Cohort 2
 - Provide support/promotion to watersheds regarding the resilience plan (IFC: \$25,000)
 - Formative evaluation activities aligned with training and programming [CEA: \$5,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$23,844)
- Cohort 3
 - Complete the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$25,000; CEA: \$5,000]
 - Testing and refinement of cyber systems with community feedback (WMA, general public, etc.) (IFC: \$10,000)
 - Formative evaluation activities aligned with training and programming [CEA: \$5,000]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$23,845)
- Develop crowd-sourcing mobile application to collect water-related data, photos, and stories that will be invaluable to the community and to IWA partners (IFC: \$10,000)
- Other evaluation planning and implementation activities [CEA: \$14,949]
- Q-3: \$176,439 [CEA: \$45,449]
- Cohort 1
 - Resilience progress and plan follow-up [IFC: \$12,146; CEA: \$15,000]
- Cohort 2
 - Collect impact data aligned to resilience data collection procedures and programming [IFC: \$20,000; CEA: \$14,000]
- Cohort 3
 - Present and obtain stakeholder feedback on the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$35,000; CEA: \$5,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$3,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$23,844)

- Develop crowd-sourcing mobile application to collect water-related data, photos, and stories that will be invaluable to the community and to IWA partners (IFC: \$10,000)
- Advisory board meeting [IFC: \$5,000; CEA: \$1000]
- Other evaluation planning and implementation activities [CEA: \$6,949]
- Development of a transferrable “best practices” guide (IFC: \$25,000)
Q-4: \$176,439 [CEA: \$45,450]
- Cohort 1
 - Resilience progress and plan follow-up [IFC: \$16,155; CEA: \$15,000]
- Cohort 2
 - Reports of programs and findings in each community [IFC: \$20,000; CEA: \$10,000]
- Cohort 3
 - Present and obtain stakeholder feedback on the first draft of the IWA Flood Resilience Plan for each watershed [IFC: \$20,000; CEA: \$5,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$3,500]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$23,845)
- Develop crowd-sourcing mobile application to collect water-related data, photos, and stories that will be invaluable to the community and to IWA partners (IFC: \$10,000)
- Compile, edit, complete and submit end of grant-year report to IEDA and IFC summarizing activities and formative evaluation data to date along with resilience findings. [IFC: \$15,000; CEA: \$5,000]
- Other evaluation planning and implementation activities [CEA: \$6950]
- Development of a transferrable “best practices” guide (IFC: \$25,989)

Year 5 (\$694,163):

- Q-1: \$162,792 [CEA: \$46,684]
- Cohort 1
 - Resilience progress and plan follow-up [IFC: \$8,000; CEA: \$10,000]
- Cohort 2
 - Resilience progress and plan follow-up [IFC \$8,000; CEA: \$10,000]
- Cohort 3
 - Deliver the IWA Flood Resilience Plan for each watershed [IFC: \$30,000; CEA: \$3,000]
 - Formative evaluation activities aligned with training and programming [CEA: \$5,000]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$36,754)
- Begin creating end of grant deliverables [IFC: \$15,000; CEA: \$5,000]
- Other evaluation planning and implementation activities [CEA: \$13,684]
- Development of a transferrable “best practices” guide (IFC: \$18,354)
Q-2: \$162,792 [CEA: \$46,684]
- Cohort 1
 - Resilience progress and plan follow-up [IFC: \$8,000; CEA: \$10,000]
- Cohort 2
 - Resilience progress and plan follow-up [IFC: \$8,000; CEA: \$10,000]
- Cohort 3
 - Provide support/promotion to watersheds regarding the resilience plan (IFC: \$30,000)
 - Formative evaluation activities aligned with training and programming [CEA: \$5,000]
 - CAP and/or local group(s) subcontracts for resilience programming assistance (IFC: \$36,755)
- Continue developing end of grant deliverables [IFC: \$15,000; CEA: \$8,500]
- Other evaluation planning and implementation activities [CEA: \$13,184]
- Development of a transferrable “best practices” guide (IFC: \$18,353)
Q-3: \$162,791 [CEA: \$46,684]
- Cohort 1
 - Resilience progress and plan follow-up [IFC: \$8,000; CEA: \$10,000]
- Cohort 2
 - Resilience progress and plan follow-up [IFC: \$8,000; CEA: \$10,000]
- Cohort 3

- Collect impact data aligned to resilience data collection procedures and programming (IFC: \$25,000; CEA: \$10,000)
- Advisory board meeting [IFC: 7,500; CEA: \$1000]
- Continue developing end of grant deliverables [IFC: \$20,000; CEA: \$8,500]
- Other evaluation planning and implementation activities [CEA: \$7,184]
- Development of a transferrable “best practices” guide (IFC: \$47,607)

Q-4: \$205,788 [CEA: \$132,685]

- Cohort 1
 - Resilience progress and plan follow-up [IFC: \$8,000; CEA: \$10,000]
- Cohort 2
 - Resilience progress and plan follow-up [IFC: \$8,000; CEA: \$10,000]
- Cohort 3
 - Reports of programs and findings in each community [IFC: \$20,000; CEA: \$5,000]
- Continue developing end of grant deliverables [IFC: \$20,000; CEA: \$11,500]
- Other evaluation planning and implementation activities [CEA: \$10,185]
- Development of a transferrable “best practices” guide (IFC: \$60,103)
- Provide a guide to resilience evaluation based on experiences in all nine communities. [CEA: \$30,000]
- Compile, edit, complete and submit end of grant report to IEDA and IFC summarizing activities and findings. [CEA: \$13,000]
- Provide a guide to resilience evaluation based on experiences in all nine communities. [CEA: \$30,000]
- Compile, edit, complete and submit end of grant report to IEDA, IFC and HUD summarizing activities and findings. [CEA: \$13,000]

ACTIVITY 172-02
CEA: Evaluation and Assessment

The University of Iowa Center for Evaluation and Assessment (CEA) will conduct a comprehensive formative and summative evaluation of the IWA for programmatic improvement and to document outcomes. CEA provides third-party evaluation, assessment, and other services. (Since 1992, CEA has successfully completed more than 150 evaluations for many clients and sponsors, including FIPSE, NSF, NIH, NIMH, the U.S. Department of Education, and others.)

The CEA is an integral partner in the implementation of the Iowa Watershed Approach. CEA staff will attend many of the IWA programs, meetings, workshops, and other events to monitor stakeholder involvement in project planning and execution and to assess partnerships and interactions, programmatic effectiveness, and outcomes. Their evaluation will include observations by professional staff and graduate students and the development and use of a variety of assessment tools/surveys.

Disaster Tie-back: The CEA will provide feedback and survey results to the team and to IEDA on a regular basis. Their activities tie back to the MID-URN areas as their feedback will directly inform programmatic improvements to help maximize programmatic impact in those areas.

CEA: Evaluation and Assessment Deliverables

Deliverable	Expected Quantity
Prepare program wide evaluation plan	1
Report needs assessment findings	1
Submit Formative Report to Dubuque Healthy Homes	4
Submit Final Report to Dubuque Healthy Homes	1
Complete final evaluation guide	1

Year 1 (\$88,000)

Year 1 Q1 [Approximately \$24,000]

- Attend, monitor, document watershed kick-off events at all eight watersheds and Dubuque; engage stakeholders in evaluation work [\$6000]
- Conduct surveys of all kick-off event participants (part of needs assessment) [\$5700]
- Monitor and document: [\$6000]
 - formation of Watershed Management Authorities (WMAs) for three watersheds that have not yet established WMAs (N. Raccoon, E. and W. Nishnabotna) [see IWA project timetable for WMA formation, creation of watershed, implementation, and project design]
 - other events and communication including: stakeholder involvement and collaboration (sample of watersheds); information concerning construction and conservation projects shared by WMAs
- Collaborate with Dubuque Healthy Homes to design evaluation plan for Healthy Homes Advocate and other evaluation work as designated [\$2000]
- Begin interviews with watershed leadership (part of needs assessment) [\$2000]
- Other formative evaluation activities as necessary [\$1000]
- [Purchase of laptop for offsite work] [\$1300]

Year 1 Q2 [Approximately \$22,000]

- Support WMAs in logic model development [\$2000]
- Continue to monitor and document: [\$6000]

- formation of WMA for three watersheds that have not yet established WMAs (N. Raccoon, E. and W. Nishnabotna)
 - other events and communication including: stakeholder involvement and collaboration (sample of watersheds); information concerning construction and conservation projects shared by WMAs
 - Develop Dubuque Healthy Homes evaluation plan with input from IIHR and Dubuque stakeholders [\$2000]
 - Develop program-wide evaluation plan with input from IIHR and other stakeholders [\$3000]
 - Continue interviews with watershed leadership (including but not limited to watershed coordinator) (part of needs assessment) [\$3000]
 - Analyze kick-off surveys and interviews [\$5000]
 - Other formative evaluation activities as necessary [\$1000]
 - Year 1 Q3 [Approximately \$21,000]**
 - Support WMAs in logic model development [\$2000]
 - Continue to monitor and document: [\$4000]
 - formation of WMA for three watersheds that have not yet established WMAs (N. Raccoon, E. and W. Nishnabotna)
 - Other events and communication including: stakeholder involvement and collaboration (sample of watersheds); information concerning construction and conservation projects shared by WMAs
 - Monitor, document, and evaluate annual public symposium/outreach event, advisory board meeting, and other related events. [\$2000]
 - Conduct initial assessment of watershed visualization platform, including ease-of-use and relevance and usability of data. [\$2000]
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - Analyze kick-off surveys and interviews [\$5000]
 - Other formative evaluation activities as necessary [\$1000]
 - **Finalize program wide evaluation plan with input from IIHR and other stakeholders [\$3000]**
 - Year 1 Q4 [Approximately \$21,000]**
 - Continue to monitor and document: [\$6000]
 - formation of WMA for three watersheds that have not yet established WMAs (N. Raccoon, E. and W. Nishnabotna)
 - data collection and ongoing development of hydrologic assessment in new watersheds (North Raccoon, East Nishnabotna, and West Nishnabotna River watersheds)
 - other events and communication including: stakeholder involvement and collaboration (sample of watersheds); information concerning construction and conservation projects shared by WMAs
 - Monitor and document initial process for implementation of site selection in Upper Iowa, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River watersheds [\$2000]
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - Other formative evaluation activities as necessary [\$1000]
 - **Formative report to Dubuque Healthy Homes [\$1000]**
 - **Report needs assessment findings to WMAs and other stakeholders [\$4000]**
 - **Prepare annual written report for IEDA and other stakeholder groups. Report will include descriptions of programming and evaluation findings to date [\$5000]**
-

Year 2 (\$88,000)

- Year 2 Q1 [Approximately \$22,000]**
- Continue to monitor and document: [\$7000]
 - implementation site selection in Upper Iowa, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River watersheds
- Monitor project design in Upper Iowa, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River watersheds [\$7000]
- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
- [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$6000]
- Year 2 Q2 [Approximately \$22,000]**
- Continue to monitor and document: [\$13000]
 - formation of watershed plans in all watersheds
 - implementation site selection in all watersheds
 - project design in Upper Iowa, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River watersheds

- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$7000]
 - **Year 2 Q3** [Approximately \$22,000]
 - Continue to monitor and document: [\$14000]
 - formation of watershed plans in all watersheds
 - implementation site selection in all watersheds
 - project design in Upper Iowa, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River watersheds
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - Monitor, document, and evaluate annual public symposium/outreach event, advisory board meeting, and other related events. (\$1,500)
 - [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$4,5000]
 - **Year 2 Q4** [Approximately \$22,000]
 - Continue to monitor and document: [\$5000]
 - formation of watershed plans in N. Raccoon, E. and W. Nishnabotna watersheds
 - implementation site selection in all watersheds
 - project design in all watersheds
 - Monitor project construction and implementation in Upper Iowa, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River watersheds [\$5000]
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$6000]
 - **Formative report to Dubuque Healthy Homes [\$1000]**
 - **Prepare annual written report for IEDA and other stakeholder groups. Report will include descriptions of programming and evaluation findings to date [\$3000]**
-

Year 3 (\$90,000)

- **Year 3 Q1** [Approximately \$22,500]
- Continue to monitor and document [\$13500]
 - formation of watershed plans in N. Raccoon, E. and W. Nishnabotna watersheds
 - implementation site selection in all watersheds
 - project design in all watersheds
 - project construction and implementation in Upper Iowa, Upper Wapsipinicon, Middle Cedar, Clear Creek, and English River watersheds
- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
- [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$7000]
- **Year 3 Q2** [Approximately \$22,500]
- Continue to monitor and document: [\$12500]
 - implementation site selection N. Raccoon, E. and W. Nishnabotna watersheds
 - project design in all watersheds
 - project construction and implementation in all sites
- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
- [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$8000]
- **Year 3 Q3** [Approximately \$22,500]
- Continue to monitor and document: [\$12500]
 - implementation site selection in N. Raccoon, E., and W. Nishnabotna watersheds
 - project design in all watersheds
 - project construction and implementation in all sites
- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
- Monitor, document, and evaluate annual public symposium/outreach event, advisory board meeting, and other related events. (\$1,500)
- [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$6500]
- **Year 3 Q4** [Approximately \$22,500]
- Continue to monitor and document: [\$8500]

- project design in all watersheds
 - project construction and implementation in all sites
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$6000]
 - **Formative report to Dubuque Healthy Homes [\$1000]**
 - **Prepare annual written report for IEDA and other stakeholder groups. Report will include descriptions of programming and evaluation findings to date [\$5000]**
-

Year 4 (\$93,000)

- Year 4 Q1** [Approximately \$23,000]
 - Continue to monitor and document: [\$13000]
 - project design in N. Raccoon, E., and W. Nishnabotna watersheds
 - project construction and implementation in all sites
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$8000]
 - Year 4 Q2** [Approximately \$23,000]
 - Continue to monitor and document: [\$13000]
 - project design in N. Raccoon, E., and W. Nishnabotna watersheds
 - project construction and implementation in all sites
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$8000]
 - Year 4 Q3** [Approximately \$23,000]
 - Continue to monitor and document: [\$13000]
 - project design in N. Raccoon, E., and W. Nishnabotna watersheds
 - project construction and implementation in all sites
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - Monitor, document, and evaluate annual public symposium/outreach event, advisory board meeting, and other related events. (\$1,500)
 - [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$6500]
 - Year 4 Q4** [Approximately \$24,000]
 - Continue to monitor and document: [\$8000]
 - project construction and implementation in N. Raccoon, E., and W. Nishnabotna watersheds
 - Conduct Dubuque Healthy Homes evaluation activities [\$2000]
 - [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$8000]
 - **Formative report to Dubuque Healthy Homes [\$1000]**
 - **Prepare annual written report for IEDA and other stakeholder groups. Report will include descriptions of programming and evaluation findings to date [\$5000]**
-

Year 5 (\$123,863.20)

- Year 5 Q1** [Approximately \$23,500]
- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
- [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$21500]
- Year 5 Q2** [Approximately \$23,500]
- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
- [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$21500]
- Year 5 Q3** [Approximately \$23,500]
- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
- Monitor, document, and evaluate annual public symposium/outreach event, advisory board meeting, and other related events. (\$1,500)

- [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$20000]
Year 5 Q4 [Approximately \$53,363]
- Conduct Dubuque Healthy Homes evaluation activities [\$2000]
- Design final survey [\$3000]
- [Ongoing monitoring as above and other formative evaluation activities aligned with watershed activity and planning processes] [\$13500]
- **Formative report to Dubuque Healthy Homes [\$1000]**
- **Prepare annual written report for IEDA and other stakeholder groups. Report will include descriptions of programming and evaluation findings to date [\$5000]**
- **Final report to Dubuque Healthy Homes [\$2500]**
- **Analyze data and write final evaluation report [\$15000]**
- **Produce final evaluation guide [\$11,363]**

**ACTIVITY 172-05
 Pre-Agreement Expenses**

Pre-Agreement expenses related to project development are eligible for reimbursement at the onset of the project.

Year 1 (\$62,000):

**ACTIVITY 311
 Outcome Value (OV)/Performance Metric Reporting**

The IFC will report on Outcome Values associated with the economic, environmental, social, and resiliency goals of the project.

Iowa Flood Center: Outcome Value Deliverables	
Deliverable	Projection
% reduction in flow rate (cubic feet of water per second)	17
% reduction in watershed nitrate loading	15
% reduction in watershed phosphorous loading	12
# of water management/flood plans completed (flood resiliency action plans)	8
Annual reporting on Outcome Value accomplishments through iowagrants.gov	5

