

**ATTACHMENT A  
PROGRAM DESCRIPTION  
Iowa State University 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 Program Description consists of three activities: Iowa Nutrient Research Center; Extension and Outreach; and Iowa Water Center.

**ACTIVITY 172-03 Watershed Planning  
Iowa Nutrient Research Center nutrient practices**

Funds distributed to the Iowa Nutrient Research Center will support at least three specific projects in support of the Iowa Watersheds Approach as follows:

Project 1: Develop a framework to monetize the benefits of nutrient-load reducing conservation practices, both as individual practices (e.g. wetlands, ponds) and as "stacked practices." The framework should consider primary on-site and off-site economic benefits of reducing nutrient loads and concentrations in surface water as well as secondary and tertiary benefits such as providing wildlife habitat, ecosystem services, scenic beauty, and other public benefit. Project will include analysis of policy barriers and incentives and alternatives to encourage implementation.

Project 2: Develop alternative scenarios for combinations of practices to achieve the Iowa Nutrient Reduction Strategy goals. These scenarios should account for different landform regions in Iowa, providing alternatives for practice adoption based on the latest monitoring data in Iowa to better understand linkages from field-scale, micro-watershed-scale, to HUC 12 scale.

Project 3: Determine the best approach to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality. Do hydrologic changes from weather, land management, or tile drainage impact nutrient processing and E/ET sufficiently to also impact water quantity and quality.

*Disaster Tie-back: These projects directly tie to the MID-URN areas as the results will be used to refine hydrologic modeling in the target watersheds, to finesse the best selection of built projects and conservation practices and locations, and to monetize the cost benefit of practices implemented in the MID-URN areas.*

**Outcome Values**

Economic      Soil loss rates will decrease on average 30% across the watersheds as a result of measures installed

Iowa Nutrient Reduction Center Deliverables	
Deliverable	Expected Quantity
Prepare report of scenarios for projects to achieve Iowa Nutrient Reduction strategy goals	1
Provide recommendations to incorporate changing hydrologic patterns into hydrologic monitoring	1
Prepare report on strategies to monetize the benefits of nutrient-load reducing conservation practices	1
Submit quarterly report	20

**Year 1 (\$130,000)**

Q-1      \$0  
Q-2      \$0

## Q-3

Project 1: \$16,250

- Assemble project team and create an outline of the framework to monetize the benefits of nutrient-load reducing conservation practices.

Project 2: \$16,250

- Assemble project team and create an outline of scenarios for practices to achieve the Iowa Nutrient Reduction Strategy goals.

Project 3: \$32,500

- Assemble project team and create an outline of approaches to incorporate changing hydrologic patterns.

## Q-4

Project 1: \$16,250

- Research primary on-site and off-site economic benefits of reducing nutrient loads and concentrations in surface water as well as secondary and tertiary benefits such as providing wildlife habitat, ecosystem services, scenic beauty, and other public benefit.

- Project 2: \$16,250

- Develop scenarios to account for different landform regions in Iowa, providing alternatives for practice adoption based on the latest monitoring data in Iowa to better understand linkages from field-scale, micro-watershed-scale, to HUC 12 scale.

Project 3: \$32,500

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

- Prepare and submit annual report.

## Year 2 (\$195,000)

## Q-1

Project 1: \$16,250

- Research primary on-site and off-site economic benefits of reducing nutrient loads and concentrations in surface water as well as secondary and tertiary benefits such as providing wildlife habitat, ecosystem services, scenic beauty, and other public benefit.

Project 2: \$16,250

- Develop scenarios to account for different landform regions in Iowa, providing alternatives for practice adoption based on the latest monitoring data in Iowa to better understand linkages from field-scale, micro-watershed-scale, to HUC 12 scale.

Project 3: \$16,250

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

## Q-2

Project 1: \$16,250

- Research primary on-site and off-site economic benefits of reducing nutrient loads and concentrations in surface water as well as secondary and tertiary benefits such as providing wildlife habitat, ecosystem services, scenic beauty, and other public benefit.

Project 2: \$16,250

- Develop scenarios to account for different landform regions in Iowa, providing alternatives for practice adoption based on the latest monitoring data in Iowa to better understand linkages from field-scale, micro-watershed-scale, to HUC 12 scale.

Project 3: \$16,250

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

## Q-3

Project 1: \$16,250

- Research primary on-site and off-site economic benefits of reducing nutrient loads and concentrations in surface water as well as secondary and tertiary benefits such as providing wildlife habitat, ecosystem services, scenic beauty, and other public benefit.

Project 2: \$16,250

- Develop scenarios to account for different landform regions in Iowa, providing alternatives for practice adoption based on the latest monitoring data in Iowa to better understand linkages from field-scale, micro-watershed-scale, to HUC 12 scale.

Project 3: \$16,250

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

## Q-4

Project 1: \$16,250

- Research primary on-site and off-site economic benefits of reducing nutrient loads and concentrations in surface water as well as secondary and tertiary benefits such as providing wildlife habitat, ecosystem services, scenic beauty, and other public benefit.

Project 2: \$16,250

- Develop scenarios to account for different landform regions in Iowa, providing alternatives for practice adoption based on the latest monitoring data in Iowa to better understand linkages from field-scale, micro-watershed-scale, to HUC 12 scale.

Project 3: \$16,250

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.
- Prepare and submit annual report.

## Year 3 (\$162,500)

## Q-1

Project 1: \$16,250

- Analyze policy barriers and incentives and alternatives to encourage implementation of nutrient-load reducing conservation practices.

Project 2: \$16,250

- Finalize scenarios for combinations of practices to achieve the Iowa Nutrient Reduction Strategy goals.

Project 3: \$16,250

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

## Q-2

Project 1: \$16,250

- Analyze policy barriers and incentives and alternatives to encourage implementation of nutrient-load reducing conservation practices.

Project 2: \$16,250

- Finalize scenarios for combinations of practices to achieve the Iowa Nutrient Reduction Strategy goals.

Project 3: \$16,250

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

## Q-3

Project 1: \$16,250

- Analyze policy barriers and incentives and alternatives to encourage implementation of nutrient-load reducing conservation practices.

Project 3: \$16,250

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

## Q-4

Project 1: \$16,250

- Finalize strategies to monetize the benefits of nutrient-load reducing conservation practices, both as individual practices (e.g. wetlands, ponds) and as “stacked practices.”

Project 3: \$16,250

- Research approaches to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.
- Prepare and submit annual report.

## Year 4 (\$97,500)

## Q-1

Project 1: \$16,250

- Finalize strategies to monetize the benefits of nutrient-load reducing conservation practices, both as individual practices (e.g. wetlands, ponds) and as “stacked practices.”

Project 3: \$16,250

- Evaluate hydrologic changes from weather, land management, or tile drainage and the impact on nutrient processing and E/ET and the correlated impacts to water quantity and quality.

## Q-2

Project 1: \$16,250

- Finalize strategies to monetize the benefits of nutrient-load reducing conservation practices, both as individual practices (e.g. wetlands, ponds) and as “stacked practices.”

Project 3: \$16,250

- Evaluate hydrologic changes from weather, land management, or tile drainage and the impact on nutrient processing and E/ET and the correlated impacts to water quantity and quality.

Q-3

Project 3: \$16,250

- Evaluate hydrologic changes from weather, land management, or tile drainage and the impact on nutrient processing and E/ET and the correlated impacts to water quantity and quality.

Q-4

Project 3: \$16,250

- Evaluate hydrologic changes from weather, land management, or tile drainage and the impact on nutrient processing and E/ET and the correlated impacts to water quantity and quality.
- Prepare and submit annual report.

Year 5 (\$65,000)
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Q-1

Project 3: \$16,250

- Finalize recommendations for the best approach to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

Q-2

Project 3: \$16,250

- Finalize recommendations for the best approach to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

Q-3

Project 3: \$16,250

- Finalize recommendations for the best approach to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.

Q-4

Project 3: \$16,250

- Finalize recommendations for the best approach to incorporate changing hydrologic patterns, driven by changing temperature and precipitation trends, into hydrologic modeling in Iowa for water quantity and quality.
- Prepare and submit annual report.

**ACTIVITY 172-01 Watershed Planning  
ISU Extension and Outreach**

The Iowa State University (ISU) Extension and Outreach program plays a pivotal role in the Iowa Watershed Approach (IWA) through technical assistance activities consisting primarily of the development of educational and outreach materials and programs for the targeted watersheds as related to one of their core programmatic competencies—agriculture and natural resources. Iowa State University Extension and Outreach’s overarching goal in this project is to serve as a resource for decision-makers at all levels, from the WMAs down to individual landowners. Their resources will help participants and partners make informed decisions based on sound science as related to Iowa’s various landforms, changing hydrologic conditions, ecosystem services, impact on water quantity and quality, and general land management practices. Activities they will develop and lead include:

- theme-based curriculum;
- workshops and training events;
- field days; and
- social media packages, printed media, web content, and other communications content.

Materials and programs will be developed, in part, based on annual programmatic themes that loosely follow the progression of the IWA program (from formation of WMAs to completion of constructed projects). Potential themes are noted at the beginning of each project year.

ISU Extension and Outreach’s programmatic content will also have very close ties to each specific target watershed based on their different landforms, hydrologic conditions, and current stage in the IWA program. For example, year one programs in the North Raccoon River Watershed on the Des Moines Lobe, which needs to start the IWA program with formation of a Watershed Management Authority (WMA), will be different from year one programs in the Upper Iowa River Watershed, which is in the Driftless Region and has already formed a WMA.

Finally, ISU Extension and Outreach activities will be developed and delivered in coordination with other IWA partners to maximize impact. For example, a field day demonstration may be coordinated with the University of Northern Iowa to demonstrate the benefits of both cover crops and prairie strips. Communication messaging strategies will be developed and launched in coordination with several other partners, including the Iowa Department of Natural Resources, the Iowa Department of Agriculture and Land Stewardship, and the Iowa Flood Center. Programs for the general public, organized each year with one of the advisory board meetings, will require assistance from ISU Extension and Outreach and many other partners.

*Disaster Tie-back: ISU Extension and Outreach activities will directly impact the MID-URN areas through the development and delivery of science-based content to inform stakeholders and decision makers at all levels. These activities will especially help landowners in the MID-URN area who are participating in the program to select the most appropriate projects/practices to maximize the potential impact on downstream water quantity and quality.*

**Extension and Outreach Deliverables**

Deliverable	Expected Quantity
Develop water quality curriculum	1 per watershed
Prepare social media plan	1 per watershed
Attend advisory board meeting	10
Submit quarterly report	20

**Year 1 (\$93,226)**

Year 1: (Programmatic Theme: The Iowa Watershed Approach: A Visions for Iowa’s Future Under Changing Hydrologic Conditions)

Q-1 \$24,704

- Purchase computer for Extension Program Specialist [\$2,000]
- Develop priorities for water quality curriculum for field days and on-farm education [\$6,900]
- Coordination of field days, workshops and other events with project partners [\$6,900]
- Work with IWA partners in the development of a communication plan to enhance communication between watershed coordinators, NGO and governmental agency staff and ISU staff in the Upper Iowa, Upper Wapsi, Middle Cedar, English, and Clear Creek project watersheds [\$6,900]
- Participate in the IWA Advisory Board Meeting. [\$2,000]

- Q-2 \$21,718
- Continue development of water quality curriculum for field days and on-farm education [\$5,017]
  - Coordination of field days, workshops and other events with project partners [\$5,017]
  - Continue working with IWA partners in the development of a communication plan between watershed coordinators, NGO and governmental agency staff and ISU staff in the East and West Nishnabotna, Middle Cedar, North Raccoon, and Upper Iowa project watersheds [\$6,667]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$5,017]
- Q-3 \$21,719
- Continue development of water quality curriculum for field days and on-farm education [\$ 4,345]
  - Coordination of field days, workshops and other events with project partners [\$4,345]
  - Continue enhancement plan for communication between watershed coordinators, NGO and governmental agency staff and ISU staff in the project watersheds [\$4,843]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,343]
  - Participate in the IWA Advisory Board Meeting and help IWA partners in the organization and implementation of accompanying public event(s), workshops, and other activities [\$3,843] .
- Q-4 \$25,085
- Continue development of water quality curriculum for field days and on-farm education [\$5,017]
  - Coordination of field days, workshops and other events with project partners [\$5,017]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,017]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,017]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$5,017]
  - Submit end-of-year report to IEDA and IFC summarizing activities to date. Report to include participant lists, copies of (or links to) curricula, outreach materials, brochures, social media, and other products delivered by ISU Extension and Outreach over the past year [\$2,000].

Year 2 (\$95,311)
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Year 2: (Potential Programmatic Theme: Resilience! Considerations in Improving Resilience Across the Landscape and Within your Community)

- Q-1 \$23,828
- Continue development of water quality curriculum for field days and on-farm education [\$4,765]
  - Coordination of field days, workshops and other events with project partners [\$4,765]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,766]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$3,766]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$3,766]
  - Participate in the IWA Advisory Board Meeting. [\$2,000]
- Q-2 \$23,828
- Continue development of water quality curriculum for field days and on-farm education [\$4,765]
  - Coordination of field days, workshops and other events with project partners [\$4,765]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,766]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,766]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,766]
- Q-3 \$23,828
- Continue development of water quality curriculum for field days and on-farm education [\$4,765]
  - Coordination of field days, workshops and other events with project partners [\$4,765]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,766]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$3,766]

- Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$3,766]
- Participate in the IWA Advisory Board Meeting and help IWA partners in the organization and implementation of accompanying public event(s), workshops, and other activities [\$2,000] .

Q-4 \$23,827

- Continue development of water quality curriculum for field days and on-farm education [\$4,365]
- Coordination of field days, workshops and other events with project partners [\$4,365]
- Assist with the development of print, web, and multi-media outreach materials [\$4,365]
- Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,366]
- Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,366]
- Submit end-of-year report to IEDA and IFC summarizing activities to date. [\$2,000]

Year 3 (\$97,447)

Year 3: (Potential Programmatic Theme: Best Practices in Iowa Agriculture for Decreased Flooding and Improved Water Quality)

Q-1 \$24,362

- Continue development of water quality curriculum for field days and on-farm education [\$4,873]
- Coordination of field days, workshops and other events with project partners [\$4,873]
- Assist with the development of print, web, and multi-media outreach materials [\$4,872]
- Develop a social media plan and deliver and promote key project messages through social media platforms [\$3,872]
- Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$3,872]
- Participate in the IWA Advisory Board Meeting. [\$2,000]

Q-2 \$24,362

- Continue development of water quality curriculum for field days and on-farm education [\$4,873]
- Coordination of field days, workshops and other events with project partners [\$4,873]
- Assist with the development of print, web, and multi-media outreach materials [\$4,872]
- Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,872]
- Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,872]

Q-3 \$24,362

- Continue development of water quality curriculum for field days and on-farm education [\$4,873]
- Coordination of field days, workshops and other events with project partners [\$4,873]
- Assist with the development of print, web, and multi-media outreach materials [\$4,872]
- Develop a social media plan and deliver and promote key project messages through social media platforms [\$3,872]
- Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$3,872]
- Participate in the IWA Advisory Board Meeting and help IWA partners in the organization and implementation of accompanying public event(s), workshops, and other activities [\$2,000].

Q-4 \$24,361

- Continue development of water quality curriculum for field days and on-farm education [\$4,472]
- Coordination of field days, workshops and other events with project partners [\$4,473]
- Assist with the development of print, web, and multi-media outreach materials [\$4,472]
- Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,472]
- Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,472]
- Submit end-of-year report to IEDA and IFC summarizing activities to date. [\$2,000]

Year 4 (\$99,636)

Year 4: (Potential Programmatic Theme: The Benefits and Impacts of a Watershed Approach to Planning Across Iowa)

- Q-1 \$24,909
- Continue development of water quality curriculum for field days and on-farm education [\$4,982]
  - Coordination of field days, workshops and other events with project partners [\$4,981]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,982]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$3,982]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$3,982]
  - Participate in the IWA Advisory Board Meeting. [\$2,000]
- Q-2 \$24,909
- Continue development of water quality curriculum for field days and on-farm education [\$4,982]
  - Coordination of field days, workshops and other events with project partners [\$4,981]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,982]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,982]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,982]
- Q-3 \$24,909
- Continue development of water quality curriculum for field days and on-farm education [\$4,151]
  - Coordination of field days, workshops and other events with project partners [\$4,152]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,151]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,152]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,151]
  - Participate in the IWA Advisory Board Meeting and help IWA partners in the organization and implementation of accompanying public event(s), workshops, and other activities [\$4152].
- Q-4 \$24,909
- Continue development of water quality curriculum for field days and on-farm education [\$4,582]
  - Coordination of field days, workshops and other events with project partners [\$4,581]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,582]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,582]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,582]
  - Submit end-of-year report to IEDA and IFC summarizing activities to date. [\$2,000]

Year 5 (\$101,880)
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Year 5 (Potential Programmatic Theme: Resiliency of Urban and Rural Watersheds Under Changing Hydrologic Conditions)

- Q-1 \$25,470
- Continue development of water quality curriculum for field days and on-farm education [\$4,694]
  - Coordination of field days, workshops and other events with project partners [\$4,694]
  - Assist with the development of print, web, and multi-media outreach materials [\$4,694]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,694]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,694]
  - Participate in the IWA Advisory Board Meeting. [\$2,000]
- Q-2 \$25,470
- Continue development of water quality curriculum for field days and on-farm education [\$5,094]
  - Coordination of field days, workshops and other events with project partners [\$5,094]
  - Assist with the development of print, web, and multi-media outreach materials [\$5,094]
  - Develop a social media plan and deliver and promote key project messages through social media platforms [\$5,094]
  - Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$5,094]



## Q-3 \$25,470

- Continue development of water quality curriculum for field days and on-farm education [\$4,694]
- Coordination of field days, workshops and other events with project partners [\$4,694]
- Assist with the development of print, web, and multi-media outreach materials [\$4,694]
- Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,694]
- Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,694]
- Participate in the IWA Advisory Board Meeting and help IWA partners in the organization and implementation of accompanying public event(s), workshops, and other activities [\$2,000]

## Q-4 \$25,470

- Continue development of water quality curriculum for field days and on-farm education [\$4,245]
- Coordination of field days, workshops and other events with project partners [\$4,245]
- Assist with the development of print, web, and multi-media outreach materials [\$4,245]
- Develop a social media plan and deliver and promote key project messages through social media platforms [\$4,245]
- Work with ISU Research Farm Associates and Extension Field Specialists to assist with facilitation of on-farm demonstrations and data collection related to water quality [\$4,245]
- Submit final report [\$4,245]

**ACTIVITY 172-02**  
**Iowa Water Center Soil Loss**

The Iowa Water Center at Iowa State University (ISU) will play a key role in the IWA program through the monitoring and evaluation of soil loss in the target watersheds, changes in hydrologic conditions across the state, and sharing their results through participation in outreach and educational activities.

Specific Iowa Water Center at ISU activities in the target watersheds will include:

- Using the Agriculture Conservation Planning Framework to identify sensitive areas for water runoff and soil erosion;
- Estimating recent erosion under existing climatic and soil management conditions;
- Estimating historical loss of soil from targeted HUC 12s and its impact on water retention on the uplands;
- Developing texture maps for HUC 12s and delineate effects on water retention;
- Developing future precipitation profiles based on changing precipitation patterns and accepted climate models;
- Estimating soil erosion and water runoff; and
- Comparing remotely sensed inputs for the Daily Erosion Project model to field-observed data – verification and field control of input data.

Their data will be used in development of the hydrologic models and to help validate the models. They will disseminate their findings to stakeholders through programs, websites, social media, etc. in coordination with other partners.

*Disaster Tie-Back: Activities by the Iowa Water Center at ISU will directly impact the MID-URNS areas in the target watersheds through the contribution of their data to the hydrologic models (leading to selection of the most appropriate projects and project sites), evaluation of the impacts of projects on water runoff and erosion, and contribution of content to public programming, especially to stakeholders in the MID-URN areas.*

**Iowa Water Center Deliverables**

Deliverable	Expected Quantity
Develop texture map	1
Prepare future precipitation profiles	1
Develop printed and web communications	7+
Present findings at Iowa Water Conference	3
Submit quarterly report	20

**Year 1 (\$212,962)**

- Q-1     \$40,954
- Use the Agriculture Conservation Planning Framework to identify sensitive areas of water runoff and soil erosion. Train project staff in ACPF and inventory which watersheds have been evaluated with ACPF by additional partners. [\$8,191]
  - Estimate recent erosion under existing climatic and soil management conditions [\$8,191]
  - Estimate historical loss of soil from targeted HUC 12s and its impact on water retention on the uplands [\$8,191]
  - Coordinate grant activities and information dissemination to watersheds and grant partners in collaboration with other IWA partners [\$8,191]
- Q-2     \$57,336
- Use the Agriculture Conservation Planning Framework to identify sensitive areas of water runoff and soil erosion [\$8,191]
  - Estimate recent erosion under existing climatic and soil management conditions [\$8,191]
  - Estimate historical loss of soil from targeted HUC 12s and its impact on water retention on the uplands [\$8,191]
  - Develop texture map of the HUC12s and delineate effects on water retention [\$8,191]
  - Develop future precipitation profiles based on changing precipitation patterns and accepted climate models. [\$8,191]
  - Estimate soil erosion and water runoff [\$8,191]
  - Coordinate grant activities and information dissemination to watersheds and grant partners in collaboration with other IWA partners [\$8,191]
- Q-3     \$57,336

- Use the Agriculture Conservation Planning Framework to identify sensitive areas of water runoff and soil erosion [\$8,191]
- Estimate historical loss of soil from targeted HUC 12s and its impact on water retention on the uplands [\$8,191]
- Develop texture map of the HUC12s and delineate effects on water retention [\$8,191]
- Develop future precipitation profiles based on changing precipitation patterns and accepted climate models. [\$8,191]
- Estimate soil erosion and water runoff [\$8,191]
- Develop printed and web communications in collaboration with other IWA partners [\$8,191]
- Coordinate grant activities and information dissemination to watersheds and grant partners in collaboration with other IWA partners [\$8,191]

Q-4 \$57,336

- Estimate historical loss of soil from targeted HUC 12s and its impact on water retention on the uplands [\$8,191]
- Develop texture map of the HUC12s and delineate effects on water retention [\$8,191]
- Develop future precipitation profiles based on changing precipitation patterns and accepted climate models. [\$8,191]
- Estimate soil erosion and water runoff [\$8,191]
- Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$8,191]
- Develop printed and web communications in collaboration with other IWA partners [\$8,191]
- Coordinate grant activities and information dissemination to watersheds and grant partners in collaboration with other IWA partners [\$8,191]
- Prepare and submit annual report.

Year 2 (\$219,251)
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Q-1 \$62,643

- Develop texture map of the HUC12s and delineate effects on water retention [\$10,440]
- Develop future precipitation profiles based on changing precipitation patterns and accepted climate models. [\$10,440]
- Estimate soil erosion and water runoff [\$10,440]
- Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$10,441]
- Develop printed and web communications [\$10,441]
- Coordinate grant activities and information dissemination to watersheds and grant partners [\$10,441]

Q-2 \$52,203

- Develop texture map of the HUC12s and delineate effects on water retention [\$10,441]
- Estimate soil erosion and water runoff [\$10,441]
- Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$10,441]
- Develop printed and web communications [\$10,440]
- Coordinate grant activities and information dissemination to watersheds and grant partners [\$10,440]

Q-3 \$52,203

- Develop texture map of the HUC12s and delineate effects on water retention [\$10,441]
- Estimate soil erosion and water runoff [\$10,441]
- Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$10,441]
- Develop printed and web communications [\$10,440]
- Coordinate grant activities and information dissemination to watersheds and grant partners [\$10,440]

Q-4 \$52,202

- Develop texture map of the HUC12s and delineate effects on water retention [\$10,441]
- Estimate soil erosion and water runoff [\$10,440]
- Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$10,441]
- Develop printed and web communications [\$10,440]
- Coordinate grant activities and information dissemination to watersheds and grant partners [\$10,440]
- Prepare and submit annual report.

**Year 3 (\$225,735)**

- Q-1 \$71,285
- Develop texture map of the HUC12s and delineate effects on water retention [\$11,881]
  - Estimate soil erosion and water runoff [\$11,881]
  - Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$11,881]
  - Develop printed and web communications [\$11,881]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$11,881]
  - Prepare presentations and present findings at the Iowa Water Conference [\$11,881]
- Q-2 \$59,404
- Estimate soil erosion and water runoff [\$11,881]
  - Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$11,881]
  - Develop printed and web communications [\$11,881]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$11,881]
  - Prepare presentations and present findings at the Iowa Water Conference [\$11,881]
- Q-3 \$47,523
- Estimate soil erosion and water runoff [\$11,881]
  - Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$11,881]
  - Develop printed and web communications [\$11,881]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$11,881]
- Q-4 \$47,523
- Estimate soil erosion and water runoff [\$11,881]
  - Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$11,881]
  - Develop printed and web communications [\$11,881]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$11,881]
  - Prepare and submit annual report.

**Year 4 (\$179,134)**

- Q-1 \$59,711
- Estimate soil erosion and water runoff [\$11,942]
  - Compare remotely sensed inputs for the Daily Erosion Project model to field observed data – verification and field control of input data [\$11,942]
  - Develop printed and web communications [\$11,942]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$11,942]
  - Prepare presentations and present findings at the Iowa Water Conference [\$11,942]
- Q-2 \$47,769
- Estimate soil erosion and water runoff [\$11,942]
  - Develop printed and web communications [\$11,942]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$11,942]
  - Prepare presentations and present findings at the Iowa Water Conference [\$11,942]
- Q-3 \$35,827
- Estimate soil erosion and water runoff [\$11,942]
  - Develop printed and web communications [\$11,942]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$11,942]

- Q-4 \$35,827
  - Estimate soil erosion and water runoff [\$11,942]
  - Develop printed and web communications [\$11,942]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$11,942]
  - Prepare and submit annual report.

**Year 5 (\$137,918)**

- Q-1 \$39,405
  - Estimate soil erosion and water runoff [\$9,851]
  - Develop printed and web communications [\$9,851]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$9,851]
  - Prepare presentations and present findings at the Iowa Water Conference [\$9,851]
  
- Q-2 \$39,405
  - Estimate soil erosion and water runoff [\$9,851]
  - Develop printed and web communications [\$9,851]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$9,851]
  - Prepare presentations and present findings at the Iowa Water Conference [\$9,851]
  
- Q-3 \$29,554
  - Estimate soil erosion and water runoff [\$9,851]
  - Develop printed and web communications [\$9,851]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$9,851]
  
- Q-4 \$29,554
  - Estimate soil erosion and water runoff [\$9,851]
  - Develop printed and web communications [\$9,851]
  - Coordinate grant activities and information dissemination to watersheds and grant partners [\$9,851]
  - Prepare and submit annual report.

**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 State University: Outcome Value Deliverables**

Deliverable	Projection
# Tons of soil lost per acre	To be determined through a model developed in the beginning of the project
Annual reporting on Outcome Value accomplishments through iowagrants.gov	5

