

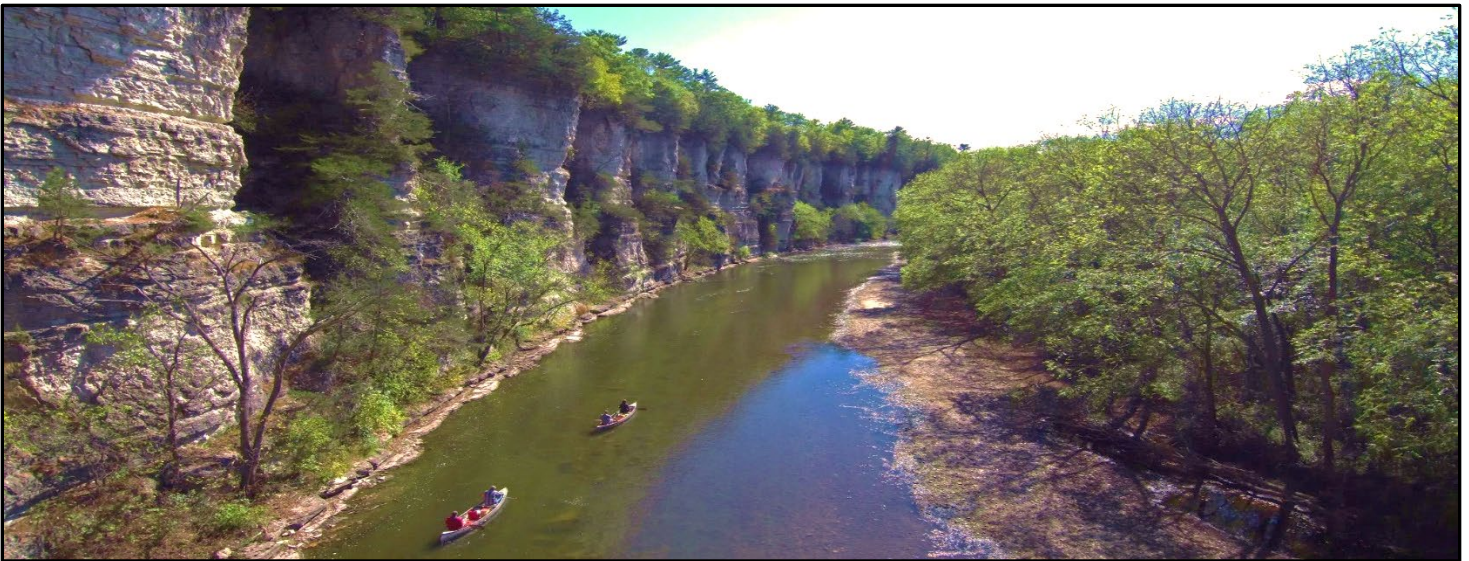
# Upper Iowa Watershed Project (2016-2022) Final Report

By: Matt Frana *Upper Iowa Watershed Project Coordinator*



## Upper Iowa Watershed Background:

"Upper Iowa River originates in Minnesota, but 78% of its watershed is in Northeast Iowa and with a total watershed size of approximately 1,000-square-miles (640,900 acres). The Upper Iowa River Watershed (UIRW) is part of the Driftless Region of Iowa. Its karst topography features limestone bluffs that rise 250 to 450 feet above the valley floor, dozens of coldwater trout streams, nearly 3,000 sinkholes and waterfalls, and hundreds of springs. Cropland accounts for more than 40% of the watershed, which also includes grassland (35%) and hardwood forests (19%). The EPA and Iowa recognize the UIRW as a Priority Watershed. Iowa designates 244 miles of the Upper Iowa River as High-quality Resource Waters or High-quality Waters, and the Upper Iowa was among the initial rivers included in the National Wild and Scenic River System". (Upper Iowa Watershed Management Plans at [upperiowariver.org](http://upperiowariver.org))



*Photo by Jordan Kjome*

"The UIRW is a popular tourist destination canoeing/kayaking and fishing. It has excellent walleye and bass fishing but is best known for its 152 miles of coldwater trout streams, which lure anglers from around the world. More than 150 protected species of animals and plants live in the watershed, which also harbors endangered ecosystems. Weather patterns are trending towards more frequent occurrences of heavy rain events causing expensive flood damage to county roads, bridges, and community property, while degrading water quality". (Upper Iowa Watershed Management Plan at [upperiowariver.org](http://upperiowariver.org))



### **2016-2022 Upper Iowa Watershed Project:**

In 2016 the State of Iowa secured a \$96.7M federal FEMA Disaster Resilience Grant issued through Housing and Urban Development (HUD) to address flooding issues throughout the state. The grant proposal entitled, The Iowa Watershed Approach (IWA), is a vision for Iowa's future that voluntarily engages stakeholders throughout the watershed to achieve common goals, while moving toward a more resilient state. It is a replicable model for other communities where the landscape has lost its natural resilience to floods. This program is not only about lowans helping lowans, but also about demonstrating lowans' commitment to agricultural stewardship, to the environment, to their neighbors, and to the future. The goals of the IWA include the following:

- *Reduction of flood risk*
- *Improvement in water quality*
- *Increased resilience*
- *Engagement of stakeholders through collaboration, outreach, and education*
- *Improved quality of life and health for lowans*
- *Development of a replicable program*



The IWA program is a collaboration of numerous agencies, universities, non-profits, and municipalities. Partners include: Iowa Economic Development Authority, Iowa Homeland Security & Emergency Management, University of Iowa/Iowa Flood Center, Iowa State University, University of Northern Iowa, Iowa Department of Agriculture & Land Stewardship, Iowa Department of Natural Resources, National Resources Conservation Service, County Soil & Water Conservation Districts, The Nature Conservancy, Iowa Natural Heritage Foundation, Iowa Soybean Association, Iowa Corn Growers Association, Iowa Farm Bureau, Iowa Agricultural Water Alliance, local Resource Conservation & Development offices, Iowa Department of Transportation, Iowa Association of Counties, Silver Jackets Flood Risk Management Team, and many more.

Of the ~\$97M grant awarded to Iowa, Upper Iowa Watershed Management Authority (UIR-WMA) was 1 of 9 WMA's in the state to receive a portion of the grant to put towards flood resiliency projects, education, and developing a watershed management plan. The UIR-WMA received ~\$5.7M for these efforts. Approximately \$4.2 was allotted and used for planning and construction of flood mitigation projects.

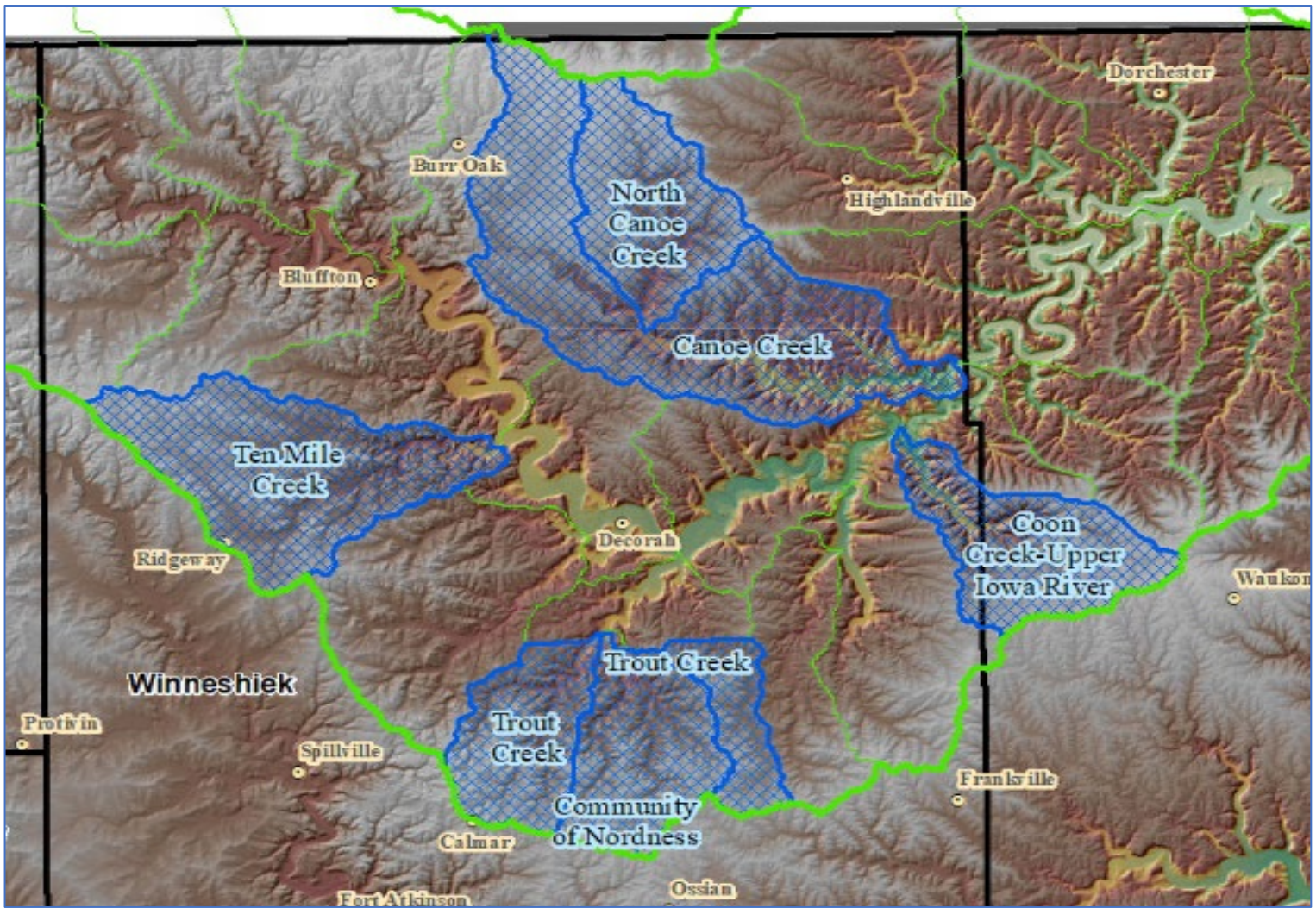
The formation of the UIR-WMA is what made obtaining this grant possible. In 2010 legislation was passed in Iowa allowing the formation of Watershed Management Authorities by local leaders. A WMA is a voluntary board of directors made up by members of cities, counties, and Soil and Water Conservation Districts (SWCD) within a specified watershed. They act as a facilitator in a collaborative effort for local water quality and quantity improvement.

The UIR-WMA was formed in 2015. Membership includes 1) Allamakee County, 2) Allamakee County SWCD, 3) City of Lime Springs, 4) Howard County, 5) Howard County SWCD, 6) Winneshiek County, and the 7) Winneshiek County SWCD.

Duties of a Watershed Management include 1) assess and reduce the flood risks and improve water quality; 2) monitor the federal flood risk planning and activities; 3) educate residents; and 4) allocate monies for purposes of water quality and flood mitigation.

The Upper Iowa Watershed Management Plan can be found online at: <https://upperiowariver.org/plan/>





Upper Iowa Watershed Project Priority Sub-watersheds

Efforts were focused within 6 Upper Iowa sub-watersheds.

Those included:

- Canoe Creek
- North Canoe Creek
- Ten-Mile Creek
- Coon Creek
- Community of Nordness
- Trout Creek

Selected UI sub-watersheds were voted on by a group of technical professionals. Criteria for selection included:

- *High runoff and localized flooding observed during rainstorms*
- *Property Damage, washed out/impassable roadways*
- *Iowa Flood Center modeling. Showed which watersheds had most potential for projects.*
- *Landowner/Producer willingness to participate*
- *Watershed projects – past and proposed*
- *Headwater regions of the watershed*
- *Professional input from technical professionals*



UIR Technical Committee Meeting – NEI RC&D



After targeted sub-watersheds were determined, public outreach was developed to inform landowners within the selected sub-watersheds about the opportunity they had. This was primarily done through newsletters, postcards, and public outreach events.

Targeted practices included:

- Grade Stabilization Structures
- Ponds
- Wetlands
- Sediment Basins
- Terraces
- Waterways
- Native Prairie Establishment
- County Road Projects

Priority was placed on projects that would provide significant water detention after heavy rain events along with additional benefits of nutrient reduction, sediment storage, erosion control, and improved wildlife habitat. Private landowners were eligible to receive 90% cost-share for projects, while non-profit organizations and county road projects received 100% cost-share.



*County road project for water detention.*

County Road Projects are sites on gravel roads where we were able to modify or replace culverts & bridges and reinforce the road to handle the temporary detention of water behind it, rather than trying to get the water under it as soon as possible. In this way we could improve county infrastructure while better protecting downstream areas against flood damage. With these projects, we did have to have landowners agree to signing perpetual easements that allowed for the occasional temporary storage of water behind them.

Easements were paid along with payment for dirt used for construction material. Land evaluations completed by a certified land appraiser determined land value. Easements were paid at 100% of the land value for structure footprints and 75% for the temporary water storage area (determined by the top of road elevation). If projects had a permanent pool, acres within the permanent pool elevation didn't receive a payment since the pool was considered an advantage to the landowner. Dirt for construction was paid at \$1 per cubic yard.

#### **Project Details:**

In total 39 flood reduction practices were completed through the Upper Iowa Watershed Project. Projects typically took between 1.5-2yrs to be completed. This included preliminary investigations, surveys, soil investigations, archeological investigations, preliminary designs, threatened and endangered species evaluation, tier II evaluation & approval, final designs, bid-letting & contracting, and final construction check-out.

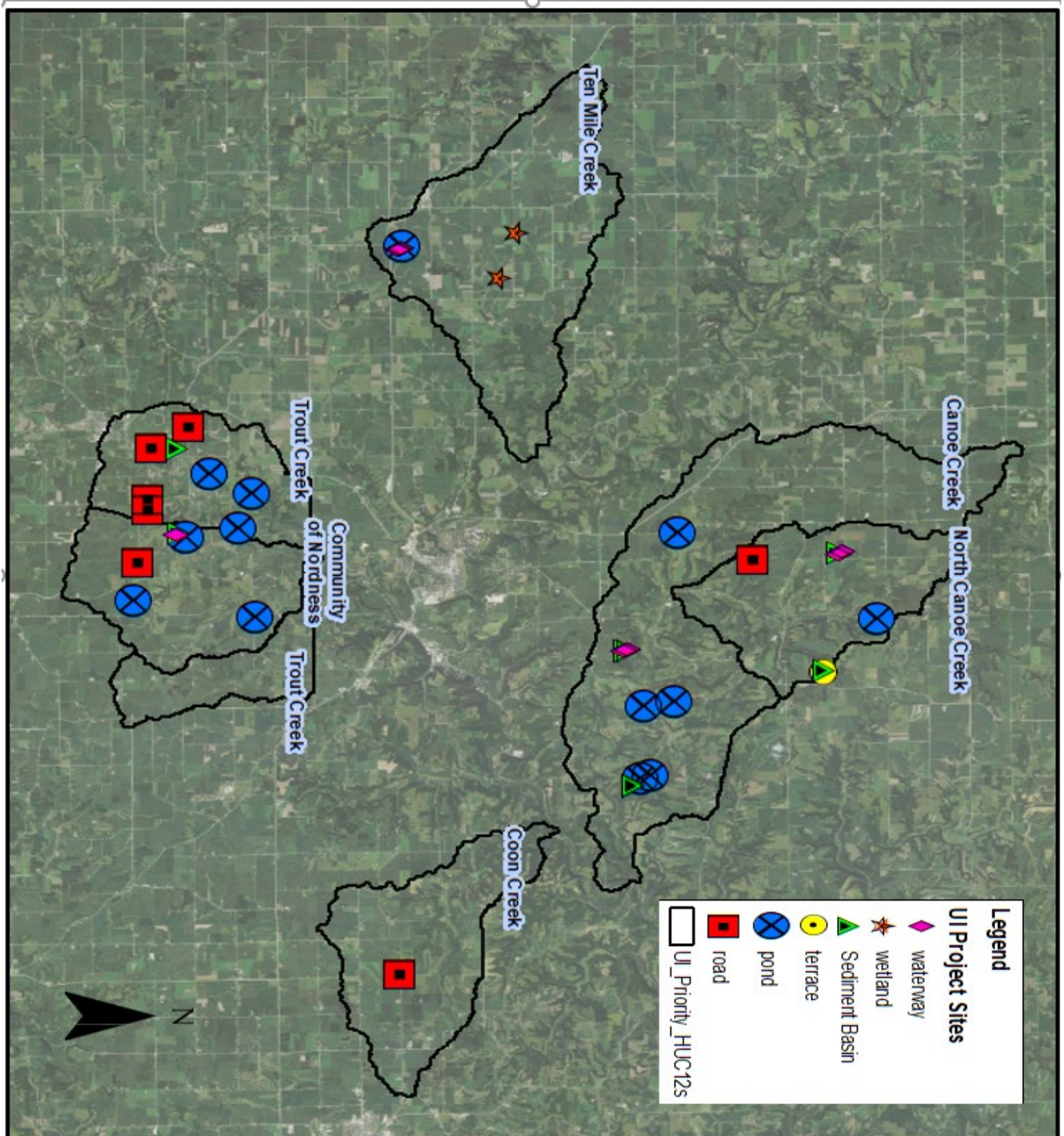
Breakdown of projects by type:

- Grade Stabilization Structures or Ponds: 15
- Water and Sediment Control Basins: 6
- County Road Projects: 7
- Waterways: 8
- Wetlands: 2
- Terraces: 1
- 16 projects sites incorporated native prairie into the project.



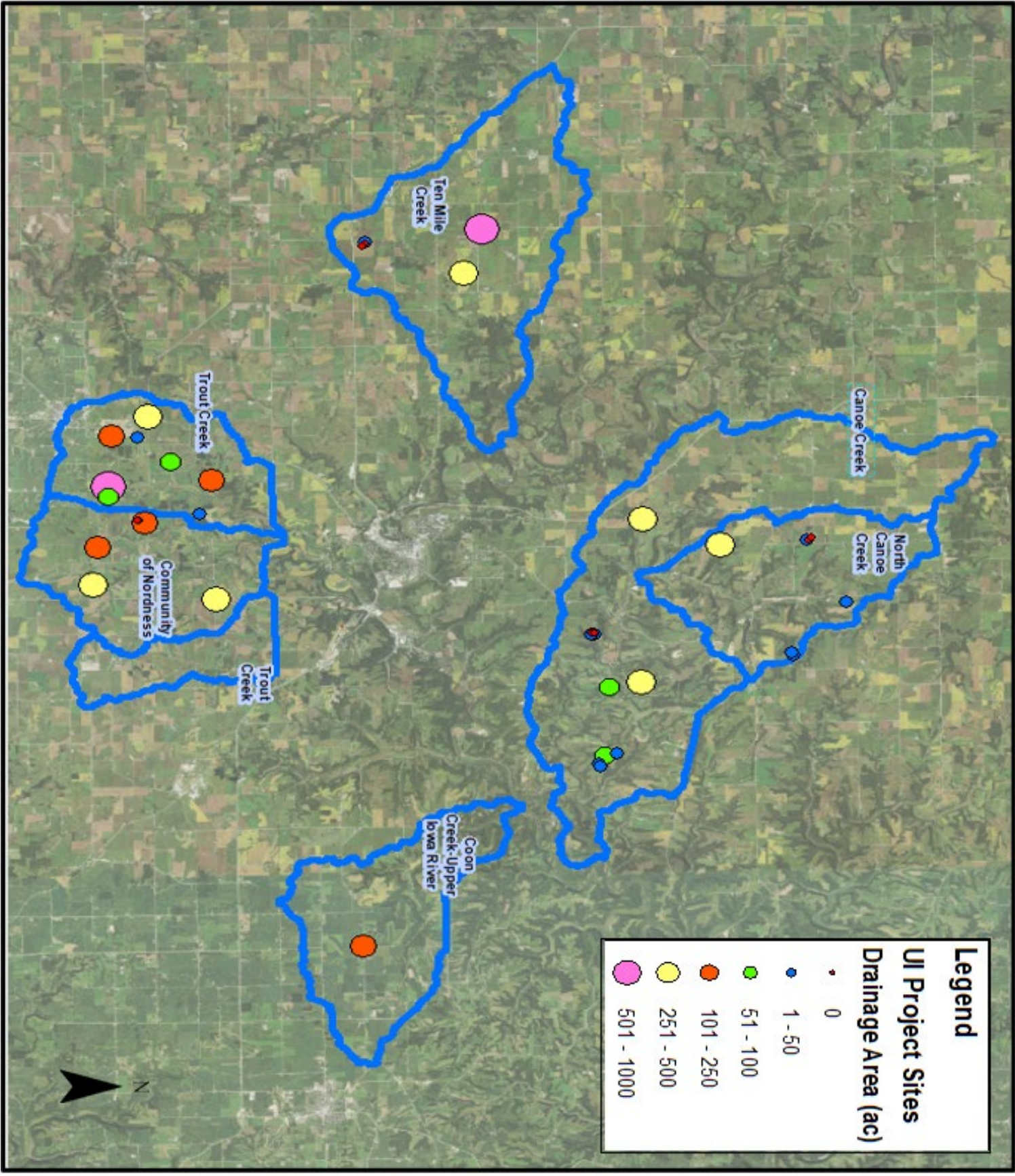
Approximately 5,200 acres were intercepted by water detention structures. Stream flow reductions varied considerably based upon drainage area size, drainage area runoff potential, designed storage ability, and designed rain fall event. Projects were designed to treat maximum storm events anywhere from a 10-year rain event (4.5 in/24hr) up to 100-year rain event (7.5 in/24hrs). Project streamflow reductions ranged anywhere from 3% - 97%. but could typically expect around a 52% reduction in streamflow based on the weighted average reduction of acres treated. Specific details by project can be found later in the report under Project Information and Stats.

### Project locations by type:





Project locations by drainage area treated:





## Project Summaries by Sub-watersheds

### *Canoe and North Canoe Watershed Projects:*



#### ***Sub-watershed overview***

The Canoe Creek and North Canoe Creek watersheds have a combined drainage area of 42,675 acres. Landowner interest in the project was high and is where the majority of our efforts started. At first appearance the terrain looks to be ideal for implementing water detentions structures. However, bedrock concerns in this watershed were much greater than the other watersheds we worked in.

The shallow depth to bedrock, fractured bedrock with a high occurrence of sinkholes, sandstone bedrock, and limited quantities of suitable soils for construction meant that we had to be a little more cautious/selective when looking into project sites to ensure we weren't building projects with a high risk of failure.

We avoided all sites that had sandstone bedrock under the soil surface, were more selective on sites that had highly fractured bedrock or multiple sinkholes within the project vicinity, and had to take into consideration depth to bedrock to ensure we could dig deep enough to get an adequate core trench for the structure. This meant although interest was high, many requested projects had to be abandoned due to the potential risk of failure.

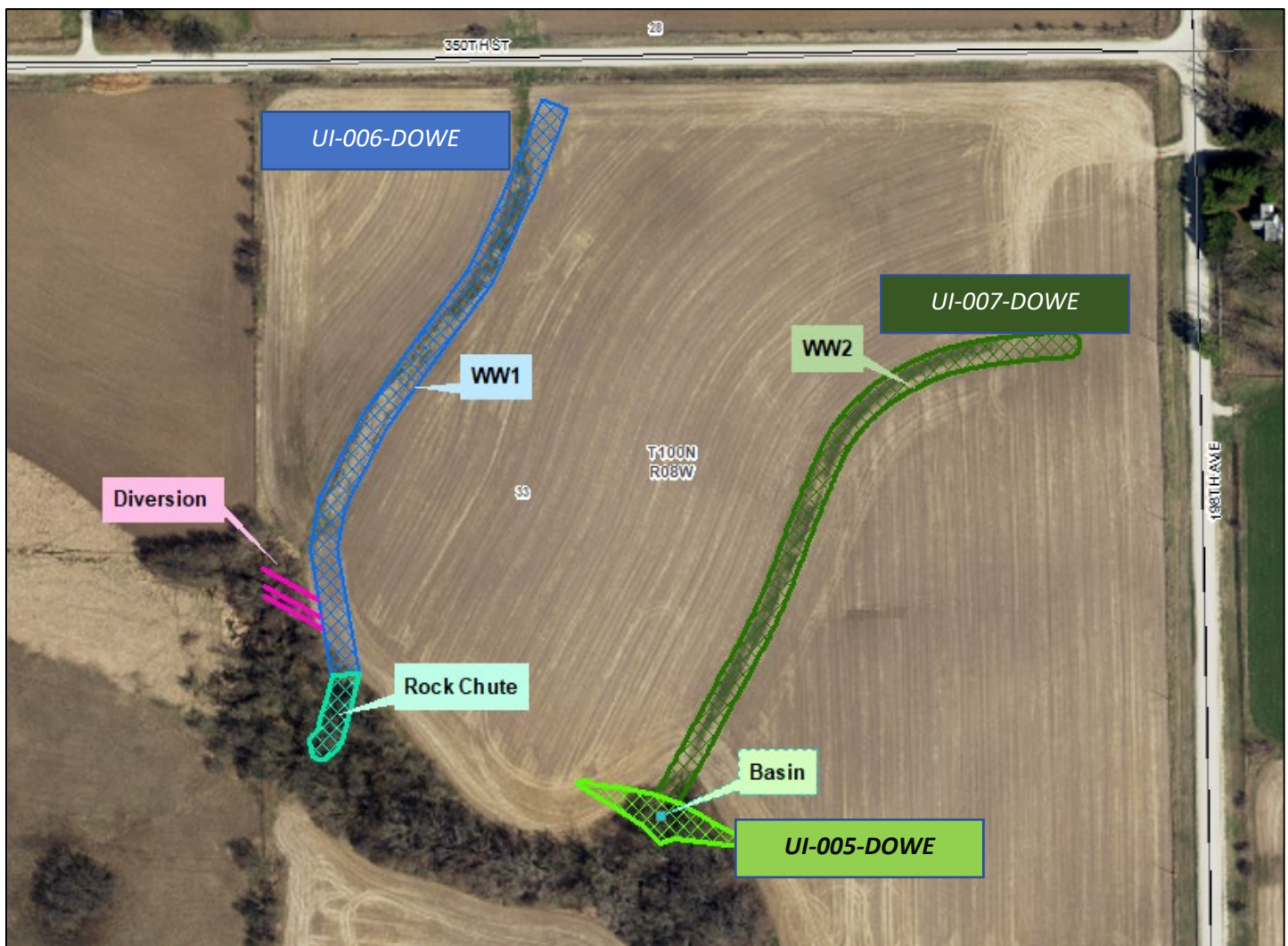


Another notable characteristic of the Canoe watersheds is they hold high quality trout streams. The South Pine tributary contains the only know source of a strain of native Iowa brook trout in the state, which are now being used for breeding to stock other streams. The Webber and Baumler projects were constructed within the south pine sub-watershed and will help contribute to protecting water quality of this special stream.

### ***Project Summaries:***

#### **UI-005-DOWE (grade stabilization structure); UI-006-DOWE (waterway 1); UI-007-DOWE (waterway 2)**

- Landowner: Carol Dowe
- Location: Winneshiek County, Sec 33, T100N, R08W
- Sub-watershed: North Canoe Creek
- **Project Objectives:** To address erosion concerns on the farm while providing temporary water storage.
- **Project Info:**
  - Project cost: \$25,018.00
  - Grade stabilization structure drainage area: 45 acres
  - Designed to provide ~70% streamflow reduction at a 10yr rain event (4.5 inches/24hr).
  - Designed by Marc Oyloe, Upper Iowa Project Technician
  - Completed: Fall 2019



*Dowe project plan.*





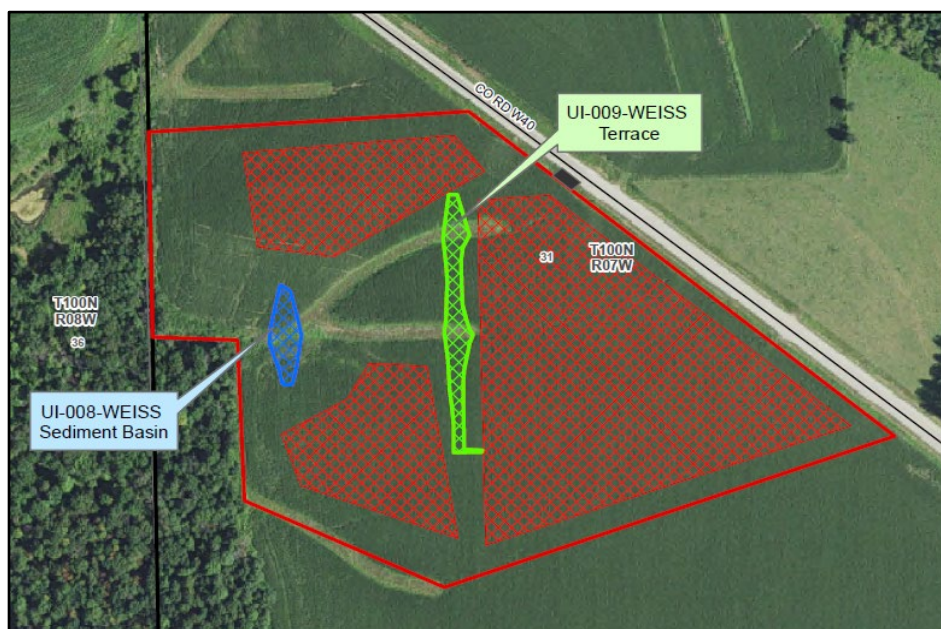
*Erosion concerns.*



*Completed basin.*

### UI-008-WEISS (WASCOB) & UI-009-WEISS (terrace)

- Landowner: Arnie Wiess
- Location: Winneshiek County, Section 31, T100N, R07W
- Sub-watershed: North Canoe
- **Project Objectives:** To address edge of field gully progression and additional erosion concerns while provided temporary water storage after heavy rain events.
- **Weiss Project info:**
  - Project Cost: \$15,027.55
  - Drainage Area: 12 acres
  - Designed to provide ~94% streamflow reduction at a 10yr rain event (4.5 inches/24hr).
  - Designed by Marc Oylo, Upper Iowa Project Technician
  - Completed: Fall 2020



*Weiss project plan.*

### UI-011-BEARD (grade stabilization structure/pond)

- Landowner: Tom and Maren Beard
- Location: Winneshiek County, Sec 30, T99N, R07W
- Sub-watershed: Canoe Creek
- **Project Objectives:** To slow water running through their farm causing erosion issues while providing enhanced wildlife habitat.





*Beard project plan.*



*Completed dirt work.*

- **Project info:**

- Project Cost: \$48354.00
- Drainage Area: 82 acres
- Designed to provide ~93% streamflow reduction at a 50yr rain event (6.5 inches/24hr).
- Seeded area around structure to native vegetation (2 acres)
- Designed by Marc Oyloe, Upper Iowa Project Technician
- Completed: Fall 2020

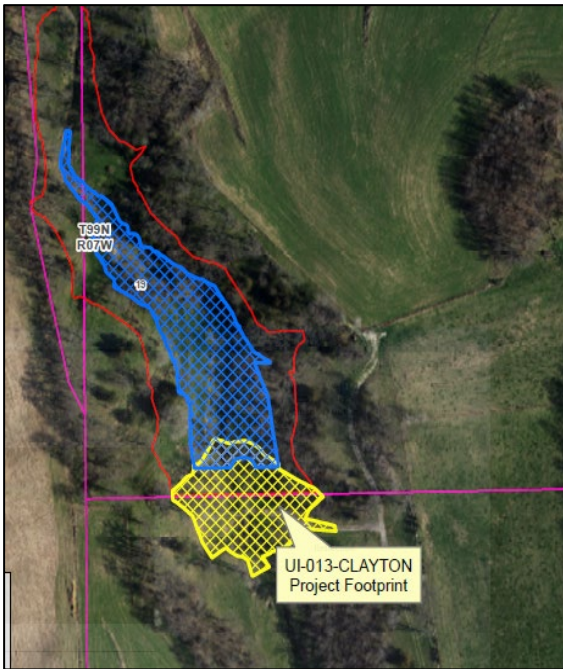


*Beard project drone image.*

### **UI- 013-CLAYTON (grade stabilization structure/pond)**

- Landowner: Jesse Clayton
- Location: Winneshiek County, Sec 19, T99N, R07W
- Sub-watershed: Canoe Creek
- **Project Objectives:** To address the landowner's concern with their driveway washing out after heavy rain events, while providing a recreational pond.
- **Project info:**
  - Project Cost: \$ 120598.25
  - Drainage Area: 253 acres
  - Permanent Pool Area: 1.4 acres
  - Designed to provide ~74% streamflow reduction at a 100yr rain event (7.5 inches/24hr).
  - Seeded 6.6 acres of borrow area to native vegetation.
  - Designed by Shive-Hattery Engineering
  - Completed: Summer 2020





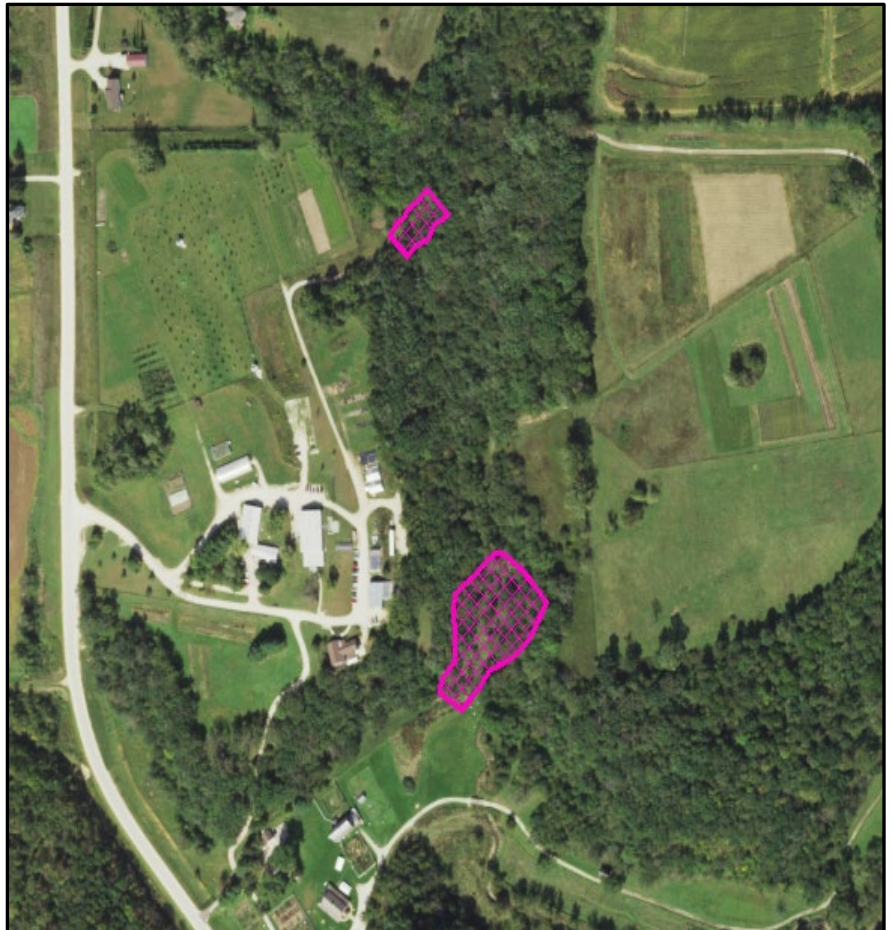
Clayton project plan.



Clayton completed project.

### UI-019-SEED SAVERS (grade stabilization structure/pond)

- Landowner: Seed Savers Exchange
- Location: Winneshiek County, Sec 21, T99N, R08W
- Sub-watershed: Canoe Creek
- **Project Objectives:** To protect downstream trout stream and Seed Saver grounds from flood damage after heavy rain events.
- **Project info:**
  - Project Cost: \$283,058
  - Drainage Area: 326 acres
  - Designed to provide ~52% streamflow reduction at a 100yr rain event (7.5 inches/24hr).
  - Seeded borrow area to native pasture (6 acres)
  - Reenforced back access road to prevent washout during heavy rain events.
  - Designed by Shive-Hattery Engineering
  - Completed: Summer 2021



Seed Savers project plan.



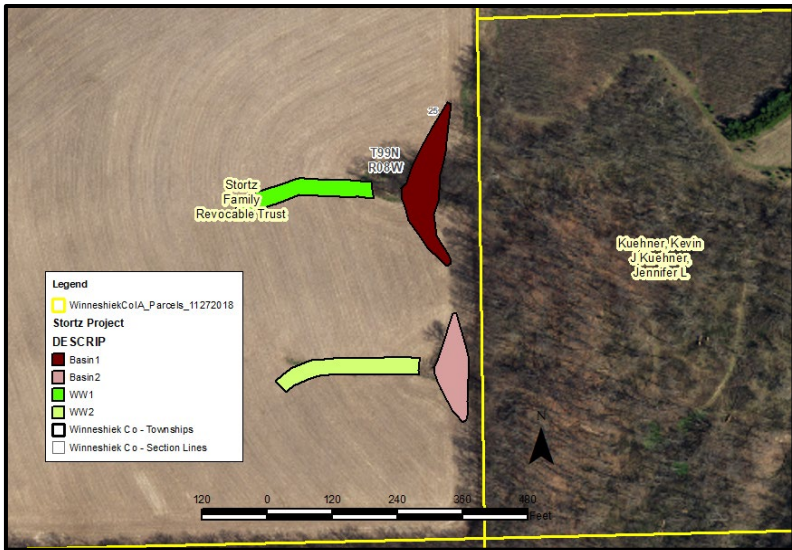


*Seed Savers completed project.*

### UI-026-STORTZ (WASCOB); UI-027-STORTZ (Waterway); UI-028-STORTZ (WASCOB); UI-029-STORTZ (Waterway)

- Landowner: Ruth Stortz
- Location: Winneshiek County, Sec 25, T99N, R08W
- Sub-watershed: Canoe Creek
- **Project Objectives:** To address gully concerns and temporarily store water after heavy rain events.
- **Project info:**
  - Project Cost: \$ 21,024.50
  - Drainage Area: 14.6 acres (2 combined WASCOBs)
  - Designed to provide ~90% streamflow reduction at a 10yr rain event (4.5 inches/24hr). (both WASCOBs)
  - Designed by Marc Oylo, Upper Iowa Project Technician
  - Completed: Summer 2020





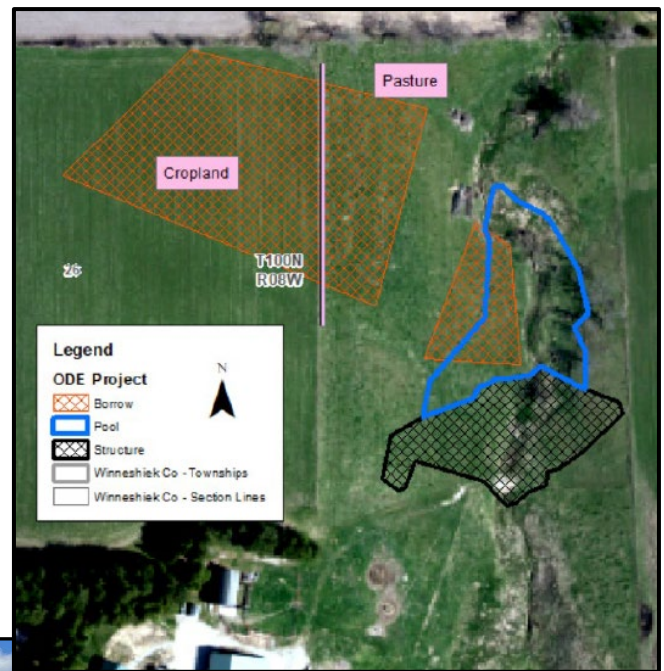
Stortz project plan.



Stortz completed project.

### UI-041-ODE (grade stabilization structure/pond)

- Landowner: Jeff Ode
- Location: Winneshiek County, Sec 26, T100N, R08W
- Sub-watershed: North Canoe Creek
- **Project Objectives:** To create a pond that will slow and store water after heavy rain events while protecting field access driveway from washing out.
- **Project info:**
  - Project Cost: \$55,021.45
  - Drainage Area: 48 acres
  - Permanent Pool Area: .9 acres
  - Designed to provide ~92% streamflow reduction at a 25yr rain event (5.6 inches/24hr).
  - Included ~2 acres seeded to native vegetation around pool to provide buffer.
  - Designed by Marc Oylo, Upper Iowa Project Technician
  - Completed: Fall 2020



Ode project plan.

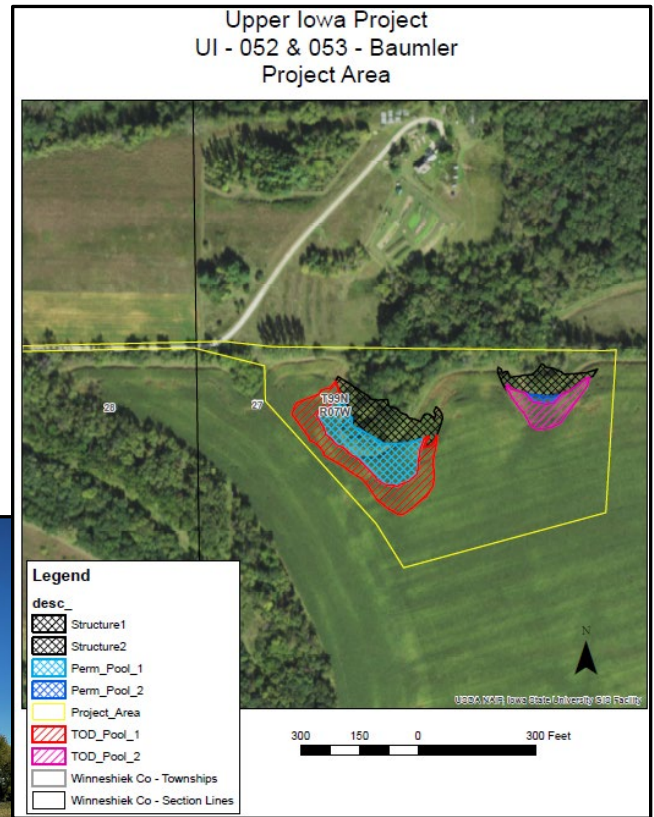


Ode completed project.



### UI-052-BAUMLER (WASCOB) & UI-053-BAUMLER (WASCOB)

- Landowner: Duane Baumler
- Location: Winneshiek County, Sec 27, T99N, R07W
- Sub-watershed: Canoe Creek
- **Project Objectives:** To address gully concerns and while slowing and storing water after heavy rain events.
- **Project info:**
  - Project Cost: \$40,092 (both projects)
  - Drainage Area: 21 acres (both projects combined)
  - Designed to provide ~81% streamflow reduction at a 10yr rain event (4.5 inches/24hr).
  - Designed by Marc Oyløe, Upper Iowa Project Technician
  - Completed: Fall 2021



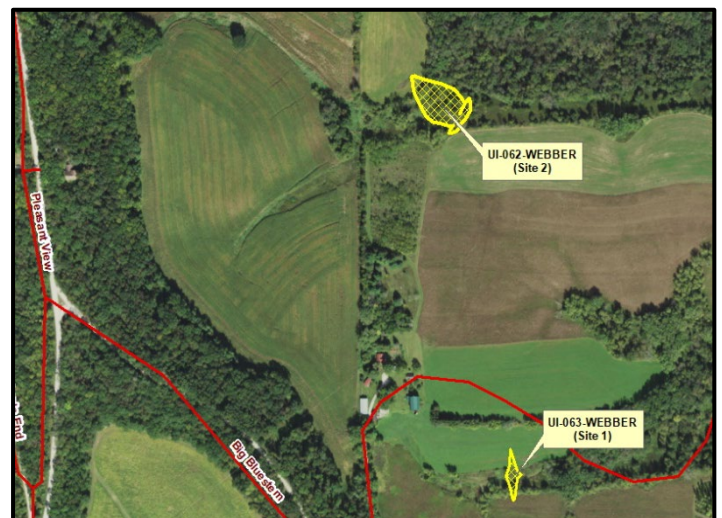
Baumler project plan.



Baumler project plan and completed project.

### UI-062-WEBBER (grade stabilization structure/pond) & UI-063-WEBBER (grade stabilization structure)

- Landowner: Mark Webber
- Location: Winneshiek County, Sec 21, T99N, R07W
- Sub-watershed: Canoe Creek
- **Project Objectives:** To create a structure that will store water after heavy rain events, while providing nutrient reduction, sediment storage, and enhanced wildlife habitat.
- **Project info:**
  - Project Cost: \$66,949.5 (total for both projects)
  - Drainage Area:
    - UI-062-WEBBER - 68 acres
    - UI-063-WEBBER - 25 acres



Webber project plan.



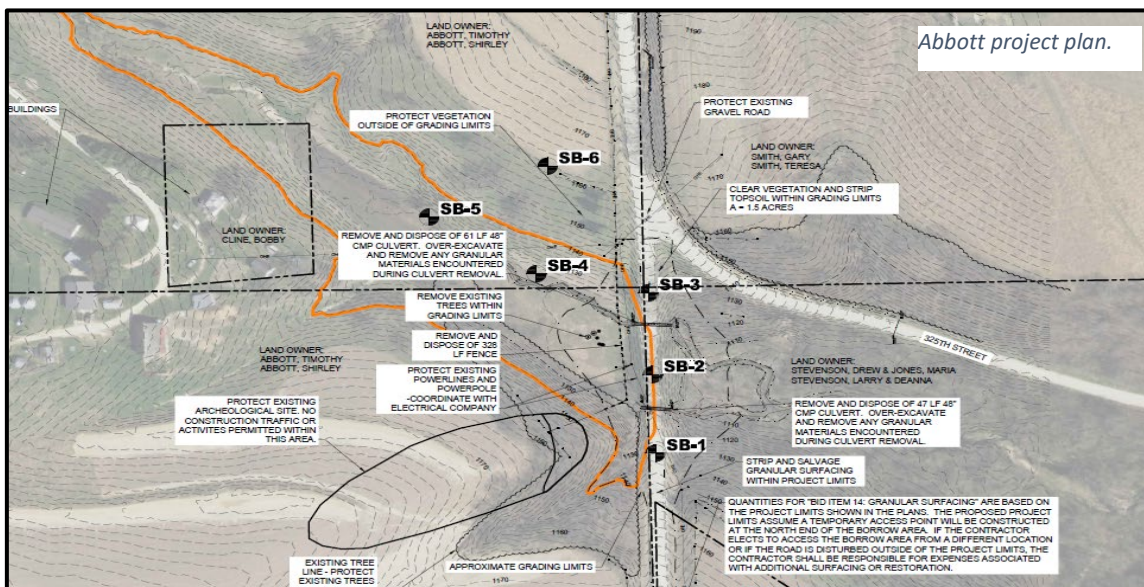
- Permanent Pool Area:
  - UI-062-WEBBER - 1 acre
  - UI-063-WEBBER – .4 acres
- Designed to provide
  - UI-062-WEBBER - ~94% streamflow reduction at a 25yr rain event (5.6 inches/24hr).
  - UI-063-WEBBER - ~75% streamflow reduction at a 25yr rain event (5.6 inches/24hr).
- Designed by Marc Oyloe, Upper Iowa Project Technician
- Completed: Fall 2021



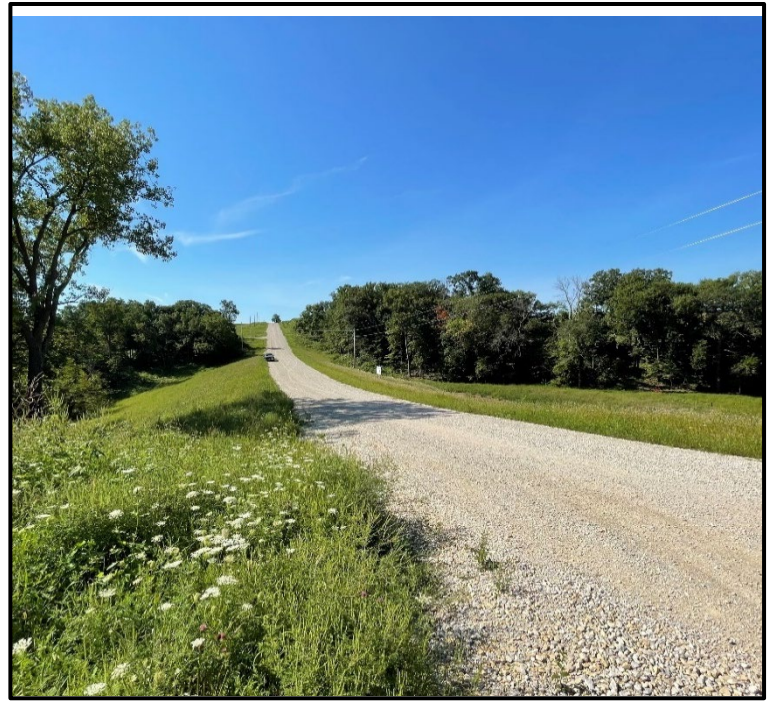
*Webber completed project.*

### UI-017-ABBOT/STEVENSON

- Participating landowners: Tim Abbott, Drew Stevenson, Daniel Tollefsrud
- Location: Winneshiek County, Sec 9, T99N, R08W. Near the intersection of Fox Hollow Rd and 325<sup>th</sup> St.
- Sub-watershed: North Canoe Creek
- **Project Objectives:** To utilize road dam to store water after heavy rain events, while improving county infrastructure and road safety.
- **Project info:**
  - Project Cost: \$434,673.66
  - Drainage Area: 455 acres
  - Designed to provide ~44% streamflow reduction at a 100yr rain event (7.5 inches/24hr).
  - Structure slopes were seeded with native vegetation.
  - Designed by Shive Hattery Engineering
  - Completed: Fall 2021

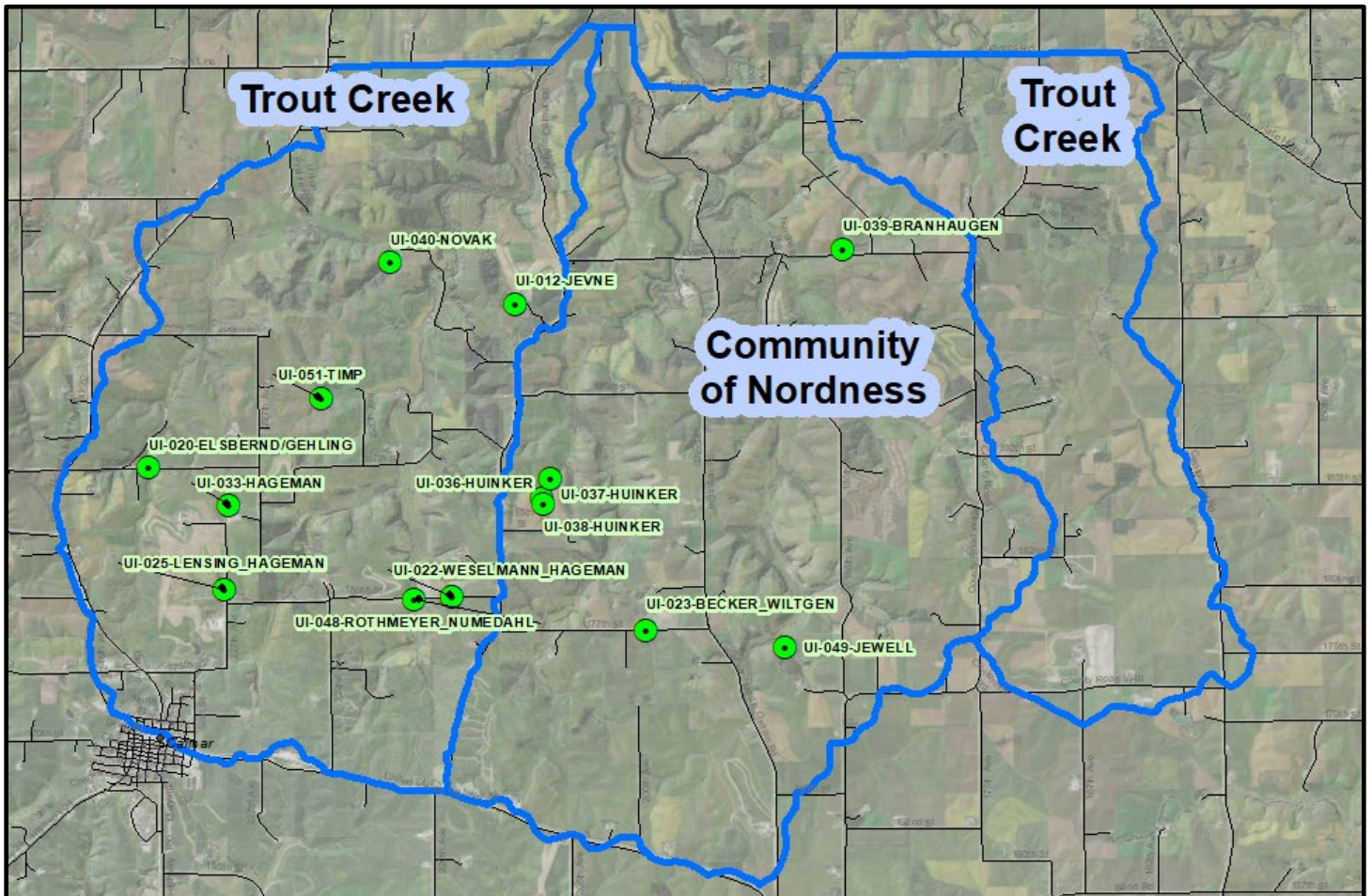






*Abbott completed project.*

**Trout Creek and Community of Nordness (aka Trout Run) Watershed Projects:**





### ***Sub-watershed overview***

The Trout Creek and Community of Nordness sub-watersheds (aka Trout Run) have a combined drainage area of 31,922 acres. Of all the sub-watersheds we targeted, this seemed the most well suited for installing water detention projects and is where the majority of our funding was spent. Projects in this watershed also treated the highest number of acres, with around 8.6% of the watershed having flow reductions as a result of these projects. Karst concerns are still present, but not to the extent of the Canoe & Coon watersheds, with the higher risk areas in the part of the watershed. Quality and quantity of building material was easier to find as well. This watershed has a high occurrence of sites suitable for road projects. Of the 7 road projects completed, 5 were in these watersheds. Several other road structure sites were identified, but lack of time and funding prevented us from perusing more.

In 2016 a flood that devastated Freeport was largely due to the amount of rain that fell in the Trout Run watershed. Amounts of over 8 inches in less than 24 hours were reported. The watershed empties just above Freeport, near the Gunderson Lutheran Hospital in Decorah. The flood caught residents and county employee's off-guard because rainfall amounts that high weren't predicted, and stream gauges above the mouth of Trout Run didn't indicate the Upper Iowa was going to rise as much as it did. Continued efforts to install water detention structures is especially beneficial in this watershed to further protect this community.

### ***Project Summaries:***

#### **UI-012-JEVNE (grade stabilization structure/pond)**

- Landowner: Julie Jevne
- Location: Winneshiek County, Sec 08, T97N, R08W
- Sub-watershed: Trout Creek
- **Project Objectives:** To address landowner's erosion concerns and issues with access roads and fences washing out after heavy rain events. Wanted to slow water through farm to address concerns.
- **Project info:**
  - Project Cost: \$ 37497.43
  - Drainage Area: 39 acres
  - Permanent Pool Area: .6 acres
  - Designed to provide ~70% streamflow reduction at a 25yr rain event (5.6 inches/24hr).
  - Designed by Dan Mohn, NRCS technician.
  - Completed: Fall 2019



*Jevne project plan.*



*Jevne completed project.*



### UI-033-HAGEMAN (WASCOB)

- Landowner: Lynn Hageman
- Location: Winneshiek County, Sec 24, T97N, R09W
- Sub-watershed: Canoe Creek
- **Project Objectives:** To address gully concerns and temporarily store water after heavy rain events.
- **Project info:**
  - Project Cost: \$ 12,515
  - Drainage Area: 20.2 acres
  - Designed to provide ~70% streamflow reduction at a 10yr rain event (4.5 inches/24hr).
  - Designed by Marc Oyloe, Upper Iowa Project Technician
  - Completed: Summer 2020



*Hageman project plan.*



*Hageman completed project.*

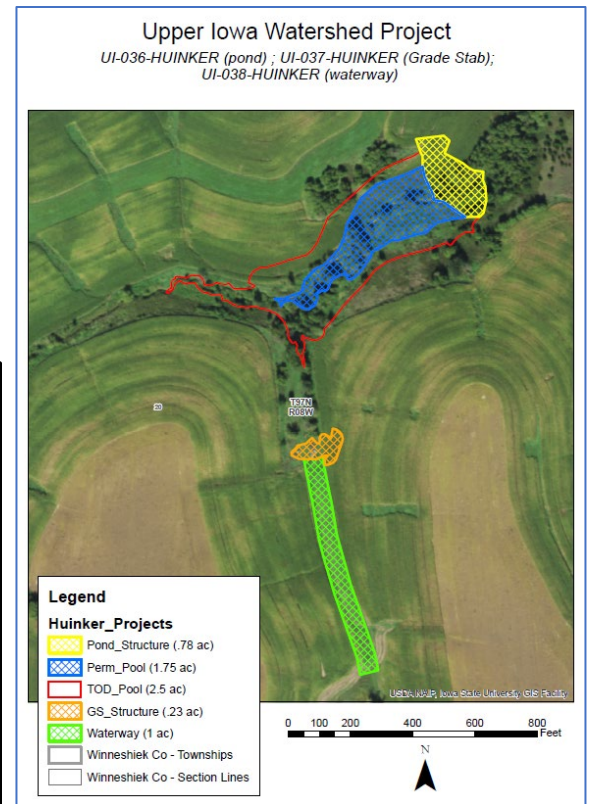
### UI-036-HUINKER (grade stabilization structure/pond); UI-037-HUINKER (grade stabilization structure); & UI-038 -HUINKER (wetland)

- Landowner: John Huinker
- Location: Winneshiek County, Sec 20, T97N, R08W
- Sub-watershed: Community of Nordness
- **Project Objectives:** To address gully concerns and create a recreational pond that will slow and store water after heavy rain events.



- **Project info:**

- Project Cost: \$ 95,171.30
- Drainage Area: 175 acres
- Permanent Pool Area (UI-036-HUINKER): 1.75 acres
- Designed to provide ~93% streamflow reduction at a 50yr rain event (6.5 inches/24hr).
- Designed by Marc Oyloe, Upper Iowa Project Technician
- Completed: Fall 2020



*Huinker project plan.*

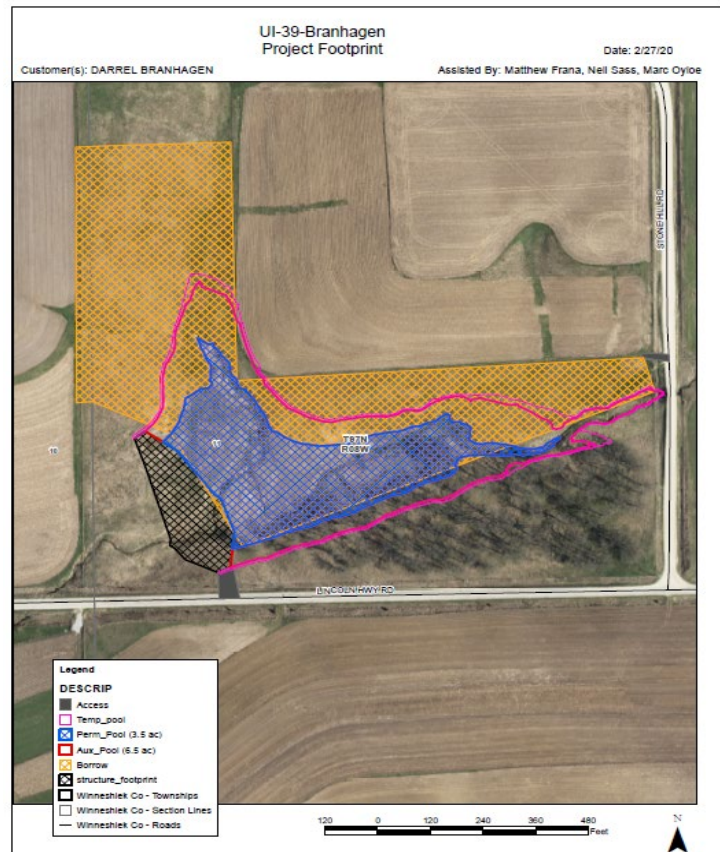


*Huinker completed project.*



### UI-039-BRANHAUGEN (grade stabilization structure/pond)

- Landowner: Darrel Branhagen
- Location: Winneshiek County, Sec 11, T97N, R08W
- Sub-watershed: Community of Nordness
- **Project Objectives:** To create a recreational pond that will slow and store water after heavy rain events.
- **Project info:**
  - Project Cost: \$ 114,588.45
  - Drainage Area: 282 acres
  - Permanent Pool Area: 3.6 acres
  - Designed to provide ~93% streamflow reduction at a 50yr rain event (6.5 inches/24hr).
  - Approximately 13 acres of native prairie seeded around project site.
  - Designed by Marc Oylo, Upper Iowa Project Technician & Nick Klingenberg, NRCS engineer
  - Completed: Summer 2021



*Branhagen project plan.*



*Branhagen completed project.*

### UI-040-NOVAK (grade stabilization structure/pond)

- Landowner: Russel Novak
- Location: Winneshiek County, Sec 7, T97N, R08W
- Sub-watershed: Trout Creek
- **Project Objectives:** To create a recreational pond that will slow and store water after heavy rain events.

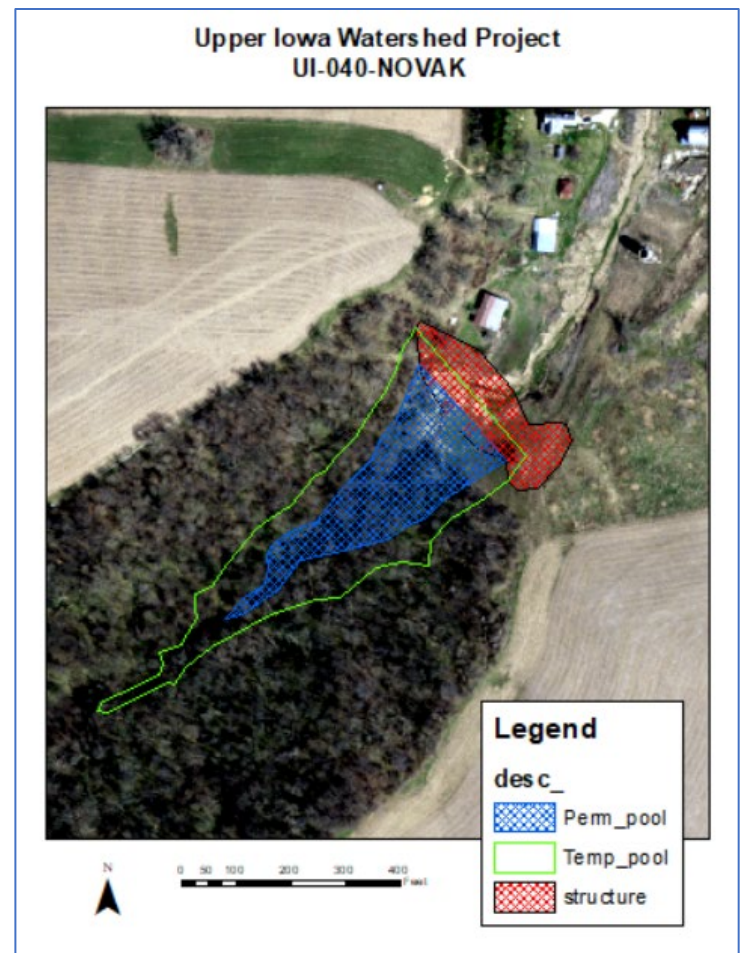


- **Project info:**

- Project Cost: \$ 49,058.95
- Drainage Area: 102 acres
- Permanent Pool Area: .9 acres
- Designed to provide ~92% streamflow reduction at a 25yr rain event (5.6 inches/24hr).
- Designed by Dan Mohn, NRCS technician.
- Completed: Fall 2020



*Novak completed project.*



*Novak project plan.*

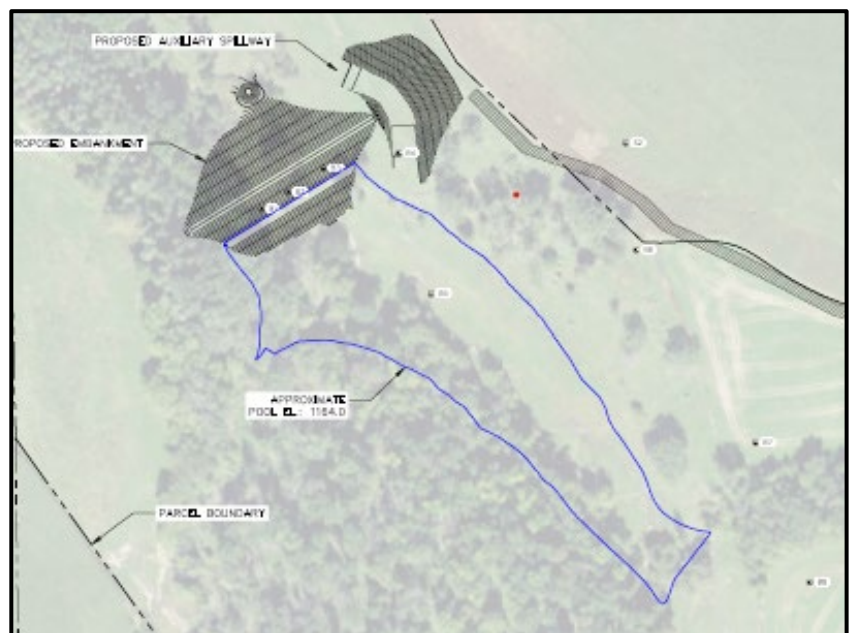
### UI-049-JEWELL (grade stabilization structure/pond)

- Landowner: Josey Jewell
- Location: Winneshiek County, Sec 27, T97N, R08W
- Sub-watershed: Community of Nordness

- **Project Objectives:** To create a pond that will slow and store water after heavy rain events while providing enhanced wildlife habitat and recreational opportunities.

- **Project info:**

- Project Cost: \$ 255,480.94
- Drainage Area: 250 acres
- Permanent Pool Area: 3.9 acres
- Designed to provide ~94% streamflow reduction at a 25yr rain event (5.1 inches/24hr).
- Designed by Shive-Hattery Engineering



*Jewell project plan.*



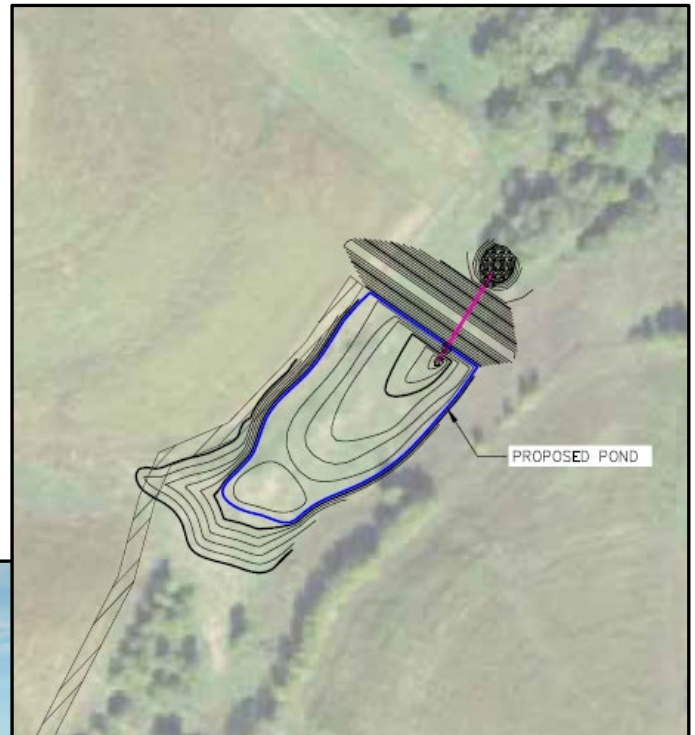
- Completed: Summer 2022



*Jewell completed project.*

#### UI-051-TIMP (grade stabilization structure/wetland)

- Landowner: Gary Timp
- Location: Winneshiek County, Sec 18, T97N, R08W
- Sub-watershed: Trout Creek
- **Project Objectives:** To create a structure that will slow and store water after heavy rain events while providing enhanced wildlife habitat.
- **Project info:**
  - Project Cost: \$70,675.52
  - Drainage Area: 68 acres
  - Permanent Pool Area: .9 acres
  - Designed to provide ~85% streamflow reduction at a 50yr rain event (6.5 inches/24hr).
  - Designed by WHKS Engineering
  - Completed: Spring 2022



*Timp project plan.*



*Timp completed project.*

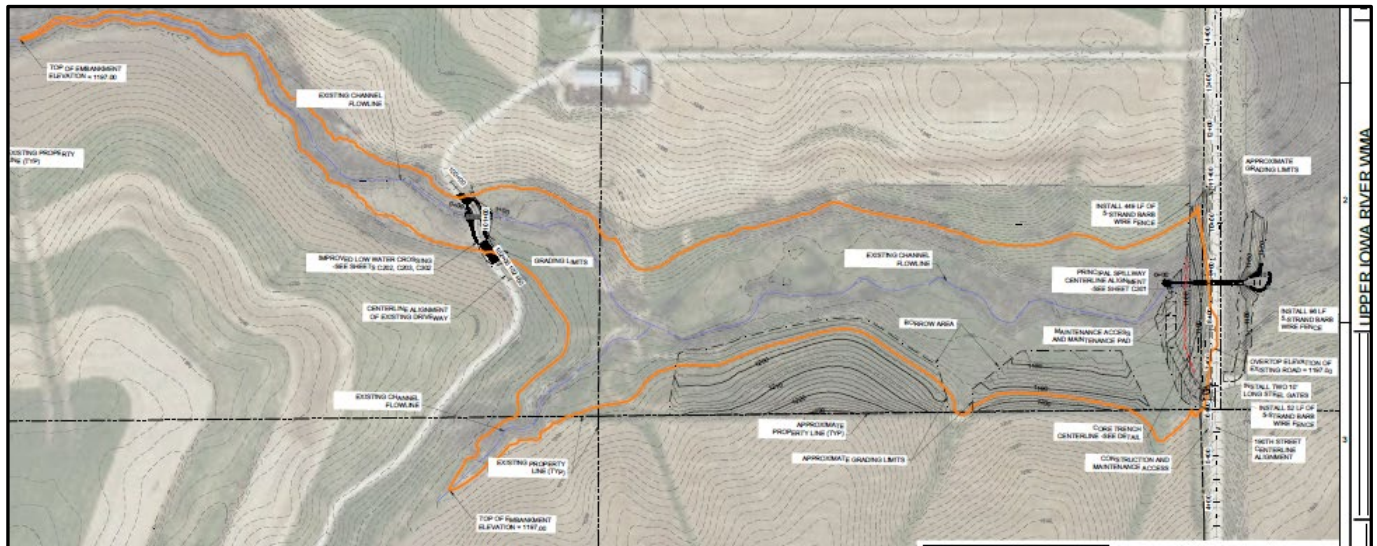


## UI-020-ELSBERND/GEHLING (ROAD PROJECT)

- Participating landowners: Duane Elsbernd and Larry Gehling
- Location: Winneshiek County, Sec 24, T97N, R09W. Near 2339 190th St, Calmar, IA
- Sub-watershed: Trout Creek
- **Project Objectives:** To utilize road dam to store water after heavy rain events, while improving county infrastructure and road safety.
- **Project info:**
  - Project Cost: \$314,649.35
  - Drainage Area: 492 acres
  - Designed to provide ~56% streamflow reduction at a 100yr rain event (7.5 inches/24hr).
  - Designed by Shive Hattery Engineering
  - Completed: Fall 2021



*Elsbernd/Gehling completed project.*



*Elsbernd/Gehling project plan.*

## UI-022-WESELMANN/HAGEMAN (ROAD PROJECT)

- Participating landowners: Bob Weselmann and Frank Hageman
- Location: Winneshiek County, Sec 29, T97N, R08W. West of Middle Calmar Rd on 180<sup>th</sup> St
- Sub-watershed: Trout Creek
- **Project Objectives:** To utilize road dam to store water after heavy rain events, while improving county infrastructure and road safety. Project also created a permanent pool that will provide nutrient reduction and enhanced wildlife habitat.
- **Project info:**
  - Project Cost: \$21,0625.89
  - Drainage Area: 79 acres
  - Permanent Pool Area: 2.3 acres
  - Designed to provide ~58% streamflow reduction at a 100yr rain event (7.5 inches/24hr).
  - Designed by Shive Hattery Engineering





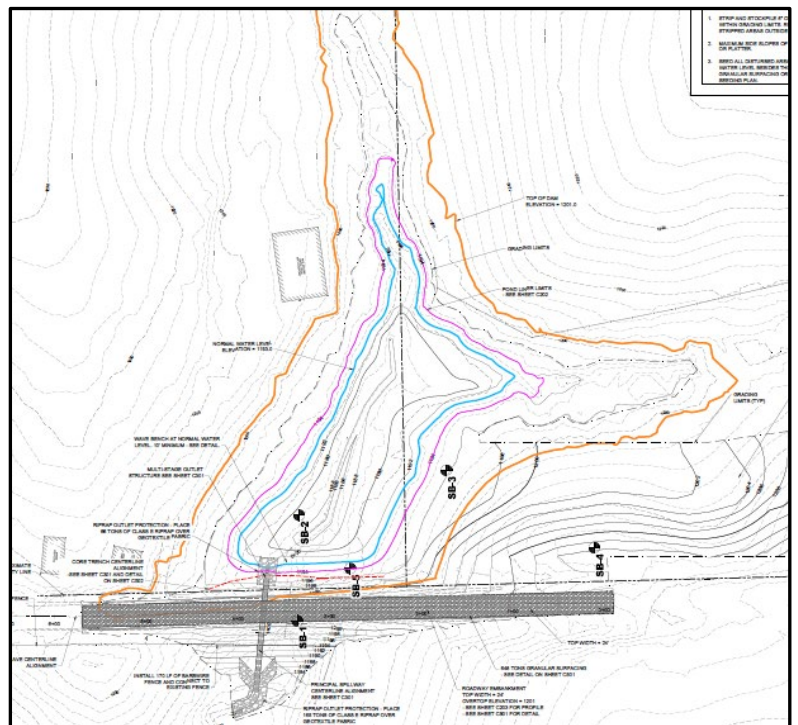




*Becker/Wiltgen completed project.*

### UI-025-LENSING/HAGEMAN (ROAD PROJECT)

- Participating landowners: Rod Lensing, Lynn Hageman, and Gary Timp
- Location: Winneshiek County, Sec 24, T97N, R09W, Near 1803 227th Ave, Calmar, IA
- Sub-watershed: Trout Creek
- **Project Objectives:** To utilize road dam to store water after heavy rain events, while improving county infrastructure and road safety. Project also created a permanent pool that will provide nutrient reduction and enhanced wildlife habitat.
- **Project info:**
  - Project Cost: \$218,844.21
  - Drainage Area: 144 acres
  - Permanent Pool Area: .9 acres
  - Designed to provide ~58% streamflow reduction at a 100yr rain event (7.5 inches/24hr).
  - Designed by Shive Hattery Engineering
  - Completed: Spring 2022



*Lensing/Hageman project plan.*

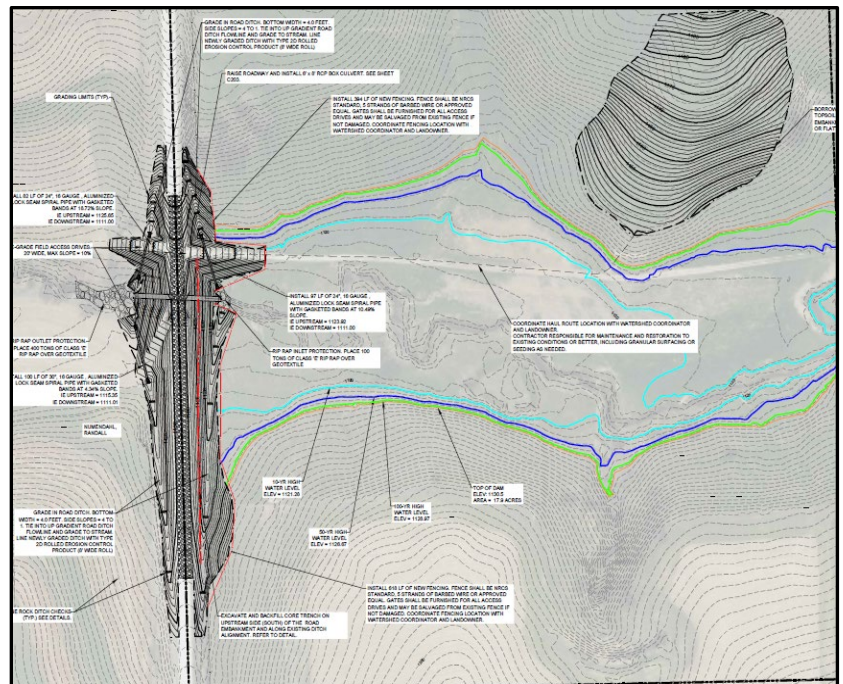




*Lensing/Hageman completed project.*

## UI-048-ROTHMEYER/NUMEDAHL (ROAD PROJECT)

- Participating landowners: Sue Rothmeyer, Randy Numedahl, and Loran Hageman
- Location: Winneshiek County, Sec 29, T97N, R08W. Near 2209 180th St, Calmar, IA.
- Sub-watershed: Trout Creek
- **Project Objectives:** To utilize road dam to store water after heavy rain events, while improving county infrastructure and road safety.
- **Project info:**
  - Project Cost: \$402,955.04
  - Drainage Area: 952 acres
  - Designed to provide ~41% streamflow reduction at a 100yr rain event (7.5 inches/24hr).
  - Designed by Shive Hattery Engineering
  - Completed: Summer 2021



*Rothmeyer/Numedahl Project plan.*





*Rothmeyer/Numedahl completed project.*

### **Ten-Mile Creek Watershed Projects:**





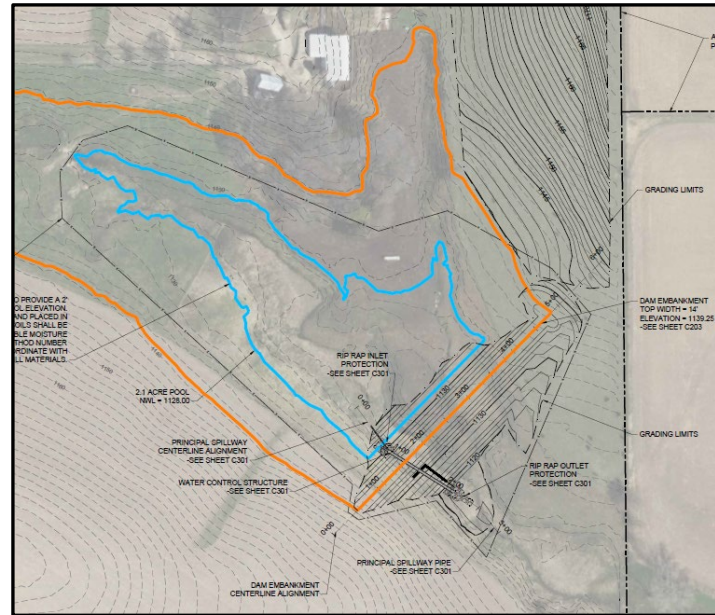
### **Sub-watershed overview:**

Ten-mile Creek watershed has a drainage area of 20,386 acres. The landscape wasn't as well-suited for pond-type water detention projects as the previously described watersheds. Landowner interest also wasn't as high in this target area. However, it does have a lot of favorable locations for wetland type projects. Historical data and imagery also indicate there were many wetlands legally drained in the watershed and would have a high potential for future wetland projects. This is the only watershed we had a "sheet piling style wetland installed (Lively project).

### **Project Summaries:**

#### **UI-032-BLEKEBERG (grade stabilization structure/wetland)**

- Landowner: Alan Blekeberg
- Location: Winneshiek County, Sec 7, T98N, R09W
- Sub-watershed: Ten Mile Creek
- **Project Objectives:** To temporarily store water after heavy rain events, while reducing nutrients and enhancing wildlife habitat.
- **Project info:**
  - Project Cost: \$238,775
  - Drainage Area: 317 acres
  - Permanent Pool Acres: 2.1
  - Designed to provide ~69% streamflow reduction at a 50yr rain event (6.5 inches/24hr).
  - Designed by: Shive-Hattery Engineering
  - Completed: Summer 2022



*Blekeberg project plan.*



*Blekeberg completed project.*

#### **UI-056-LIVELY (grade stabilization structure/wetland)**

- Landowner: Dan Lively
- Location: Winneshiek County, Sec 1, T98N, R10W
- Sub-watershed: Ten-Mile Creek
- **Project Objectives:** To construct a wetland that will enhance wildlife habitat, provide nutrient reduction, and temporarily store water after heavy rain events.



- **Project info:**

- Project Cost: \$249,375.50
- Drainage Area: 691 acres
- Permanent Pool: 1.5 acres
- Designed to provide ~3% streamflow reduction at a 25yr rain event (5.1 inches/24hr).
- Landowner contribution was provided by IDALS
- Designed by WHKS Engineering
- Completed: Spring 2022



*Lively project plan.*



*Lively completed project.*

### UI-059-KUHN (grade stabilization structure/pond) & UI-066-KUHN (3 Waterways)

- Landowner: Mark Kuhn
- Location: Winneshiek County, Sec 19, T98N, R09W
- Sub-watershed: Ten-Mile Creek
- **Project Objectives:** To address erosion concerns and create a structure that will store water after heavy rain events, while providing nutrient reduction, sediment storage, and enhanced wildlife habitat.
- **Project info:**
  - Project Cost: \$32,109.25
  - Drainage Area: 47 acres
  - Permanent Pool: 1 acre
  - Designed to provide ~94% streamflow reduction at a 25yr rain event (5.6 inches/24hr).
  - Designed by Marc Oylo, Upper Iowa Project Technician



- Completed: Spring 2022

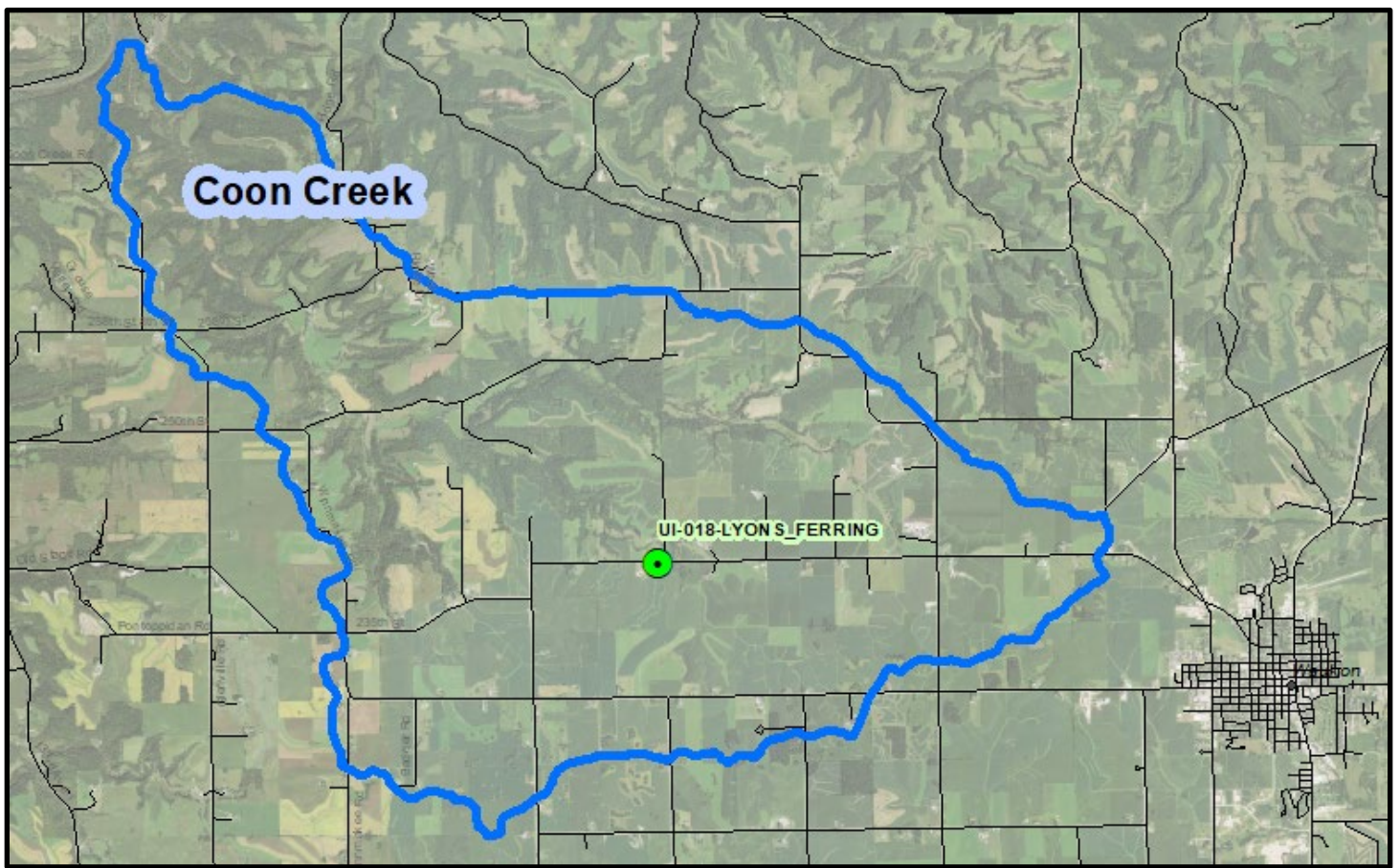


*Kuhn project plan.*



*Kuhn completed project.*

## Coon Creek Watershed Projects:



### ***Sub-watershed overview:***

Coon Creek watershed has a drainage area 12,563 acres. There was only one project completed in this targeted sub-watershed. Terrain features that went from flat uplands to very steep quickly made suitable locations difficult to find.

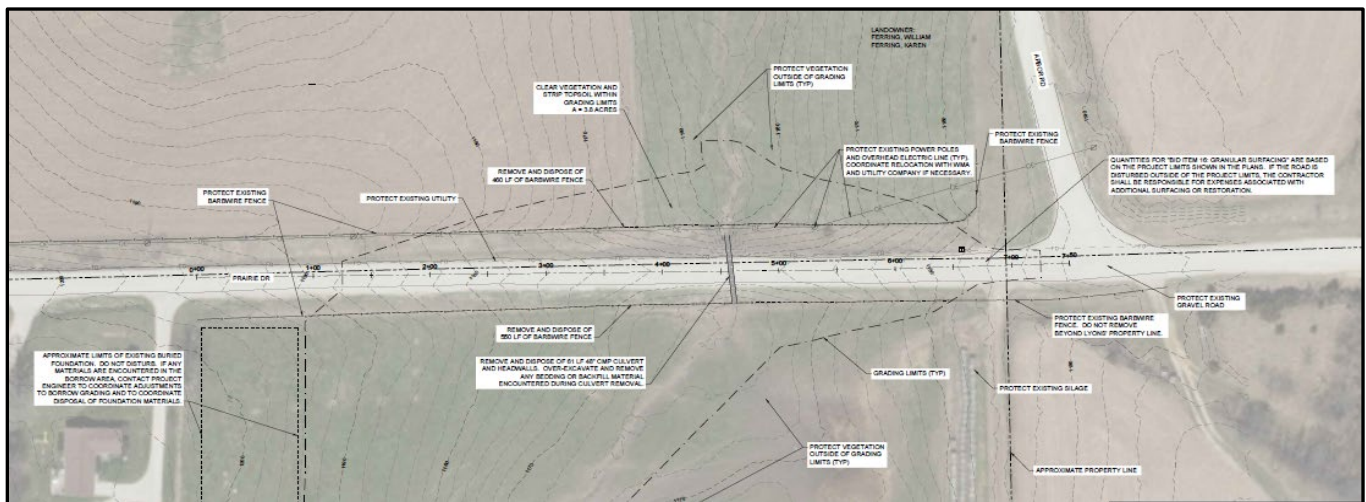


Upland areas were also mostly dedicated to re-crops and contained karst with a high occurrence of sinkholes. Landowner interest was also low in this watershed.

## Project Summary:

### UI-018-LYONS/FERRING (ROAD PROJECT)

- Participating landowners: Dan Lyons and Mike Ferring
- Location: Allamakee County, Sec 29, T98N, R06W
- Sub-watershed: Coon Creek
- **Project Objectives:** To utilize road dam to store water after heavy rain events, while improving county infrastructure and road safety.
- **Project info:**
  - Project Cost: \$317,065.64
  - Drainage Area: 129 acres
  - Designed to provide ~56% streamflow reduction at a 100yr rain event (7.5 inches/24hr).
  - Designed by Shive Hattery Engineering
  - Completed: Fall 2021



Lyons/Ferring project plan.



Lyons/Ferring completed project.



## Project Information and Stats

Project ID	Pond/Grade Stab Structure	WASCOB	Waterway	Terrace	Wetland	Road Structure	Native Vegetation	Watershed	Acres Treated	Approx Cost
UI-013-CLAYTON	1						1	Canoe	253	\$120,598
UI-008-WEISS & UI-009-WEISS		1		1				Canoe	12	\$15,028
UI-011-BEARD(Pond)	1						1	Canoe	82	\$48,354
UI-041-ODE	1						1	Canoe	48	\$55,021
UI-019-SEED_SAVERS	1						1	Canoe	326	\$283,687
UI-017-ABBOT_STEVENSON						1	1	Canoe	369	\$238,207
UI-005-DOWE, UI-006-DOWE, & UI-007-DOWE		1	2					Canoe	45	\$25,018
UI-026,027,028,029-STORTZ		2	2				1	Canoe	15	\$21,025
UI-052-BAUMLER & UI-053-BAUMLER		2					1	Canoe	21	\$40,092
UI-062-WEBBER & UI-063-WEBBER	2						1	Canoe	93	\$66,950
UI-018-LYONS/FERRING						1		Coon	129	\$173,131
UI-059-KUHN & UI-066-KUHN	1		3					Ten-Mile	47	\$32,109
UI-032-BLEKEBERG					1			Ten-Mile	320	\$238,775
UI-056-LIVELY					1			Ten-Mile	691	\$249,376
UI-012-JEVNE	1							Trout Run	39	\$37,497
UI-039-BRANHAUGEN	1						1	Trout Run	282	\$114,588
UI-033-HAGEMAN		1						Trout Run	20	\$12,515
UI-036,037,038 -HUINKER	1	1	1					Trout Run	175	\$95,171
UI-040-NOVAK	1							Trout Run	105	\$49,059
UI-048-ROTHMEYER_NUMEDAHL						1	1	Trout Run	952	\$402,955
UI-022-WESELMANN_HAGEMAN						1	1	Trout Run	79	\$210,626
UI-020-ELSBERND_GEHLING						1	1	Trout Run	492	\$181,648
UI-051-TIMP	1						1	Trout Run	68	\$70,676
UI-049-JEWELL	1						1	Trout Run	251	\$255,481
UI-023-BECKER_WILTGEN						1	1	Trout Run	128	\$120,083
UI-025-LENSING_HAGEMAN						1	1	Trout Run	144	\$213,852
<b>TOTAL</b>	<b>13</b>	<b>8</b>	<b>8</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>16</b>		<b>5186</b>	<b>\$3,371,520</b>

Projects by watershed	Canoe (North and Canoe)	Trout Run (Trout Creek and Nordness)	Ten-Mile	Coon	TOTAL
<b>Watershed Acres</b>	42,667	31,922	20,386	12,563	<b>107,538</b>
<b>Acres Treated</b>	1,350	2,735	1,058	129	<b>5272</b>
<b>% of Watershed Treated</b>	3.2%	8.6%	5.2%	1.0%	<b>5.2%</b>
<b>Total Projects</b>	18	14	6	1	<b>39</b>
<b>Spent</b>	<b>\$913,979</b>	<b>\$1,764,151</b>	<b>\$520,260</b>	<b>\$173,131</b>	<b>\$3,371,521</b>

Funding Source	Amount
HUD Funds	\$4,650,652.42
ARP Funds	\$55,000.00
Landowner Contribution	\$100,798.51
IDALS Contribution	\$48,815.06
<b>SUM</b>	<b>\$4,855,265.99</b>

\* Cost and funding calculations are approximant based on best information available at the time of the report. Actual figures may slightly change once the final budget is tabulated.

\* Additional funds from outside the HUD grant came from Winneshiek County's American Rescue Plan allotted funds and Iowa Department of Ag & Land Stewardship (IDALS). These contribution helped ensure that at least 4 additional projects could be constructed.

Where Money Spent	Amount
Construction	\$3,156,253
Road Project Easements	\$226,226
Engineering/Technician	\$999,562
Project Coordinator	\$355,654
Archeology	\$88,498
Administrative	\$23,218
Misc	\$5,855
<b>SUM</b>	<b>\$4,855,266</b>

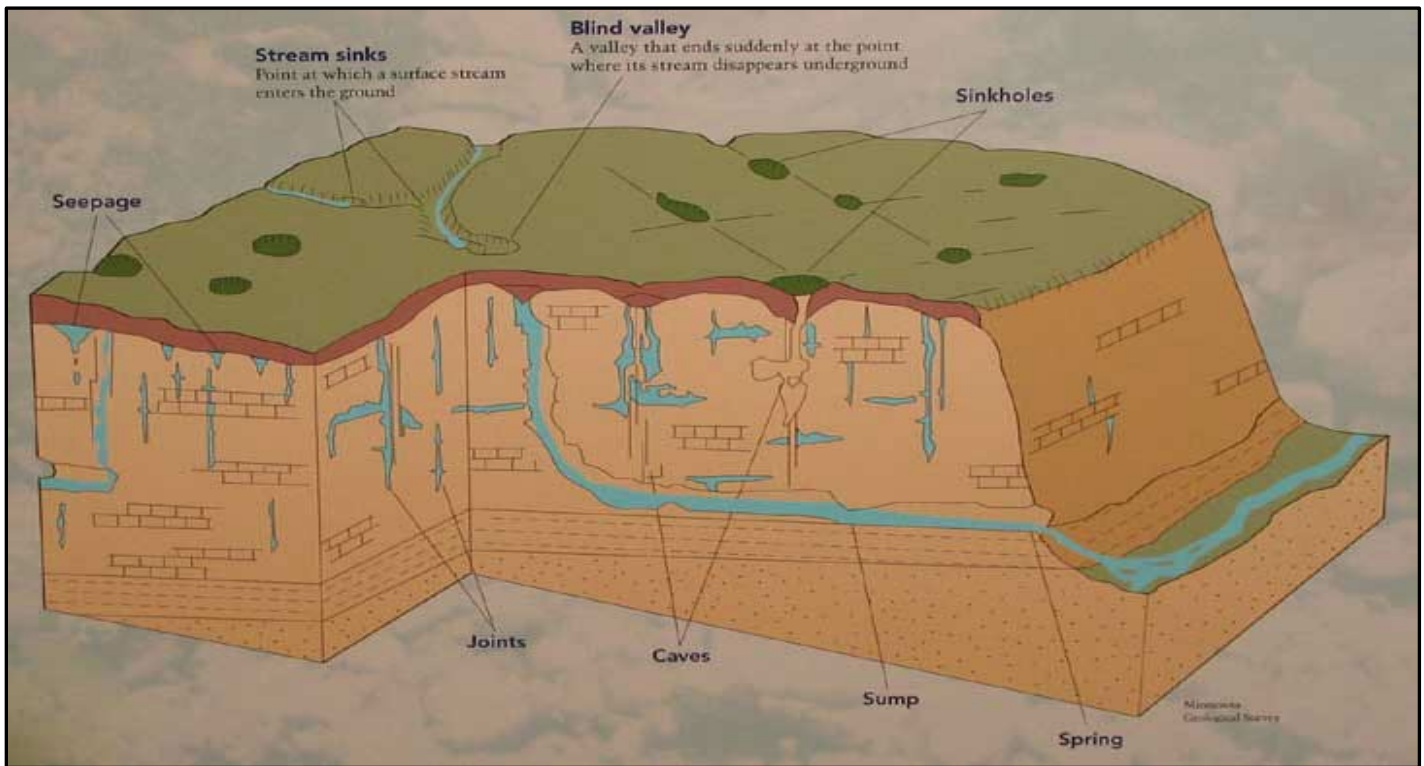


PROJECT INFORMATION												Percent Flow Reduction (%)				
Project code	Watershed	Project Type	Permit on Pool V/N	Native Vegetation on (ac)	Estimated Cost	Construction Cost (Bld)	Cost (billed)	Landowner/Partner Cost	Cropland set-aside deduction	Easement Payment	Final Project cost (includes easement payment or minus landowner payment)	Drainage Area (ac)	10Yr (4.5in/24hr)	25Yr (5.6inches/24hr)	50Yr (6.5inches/24hr)	100Yr (7.5in/24hr)
UI-005-DOWE (Grade Stab)																
UI-006-DOWE (Waterway)	N. Canoe	Grade Stabilization Structure (410)	N		\$22,299.00	\$24,964.00	\$25,018.00	\$2,130.00	\$2,093.00		\$24,981.00	45	75			
UI-007-DOWE (Waterway)		2 Waterways (412)														
UI-008-WEISS	N. Canoe	WASCOB (638)	N		\$21,924.00	\$14,907.15	\$15,027.55	\$1,892.40			\$13,135.15	5	97			
UI-009-WEISS	N. Canoe	Terrace (600)	N									7	93			
UI-011-BEARD	Canoe	Grade Stabilization Structure (410), pond	Y	2	\$58,568.00	\$47,466.11	\$48,353.99	\$5,397.00			\$42,957.00	82		94		93
UI-012-LEVNE	Trout Creek	Grade Stabilization Structure (410), pond	Y		\$29,472.00	\$36,228.73	\$37,497.43	\$2,777.28			\$34,720.15	39	82	70		
UI-013-CLAYTON	Canoe	Grade Stabilization Structure (410), pond	Y	6.6	\$132,910.25	\$99,912.85	\$120,598.25	\$10,982.75			\$109,615.50	253	53	62	67	74
UI-019-SEED_SAVERS	Canoe	Grade Stabilization Structure (410), dry	Y	6	\$262,200.00	\$265,000.00	\$283,058.10	\$0.00			\$283,058.10	326	24	33	40	52
UI-026-STORTZ (WASCOB)	Canoe	WASCOB (638)	N		\$27,082.00	\$20,114.50	\$21,024.50	\$1,416.20	\$912.00		\$20,520.30	9	93			
UI-027-STORTZ (Waterway)	Canoe	Waterway (412)	N													
UI-028-STORTZ (WASCOB)	Canoe	WASCOB (638)	N									6	90			
UI-029-STORTZ (Waterway)	Canoe	Waterway (412)	N													
UI-032-BLEKEBERG	Ten-Mile	Grade Stabilization Structure (410), wetland	Y		\$191,400.00	\$210,957.10	\$238,775.10	\$23,877.51			\$214,897.59	320	66	71	71	58
UI-033-HAGEMAN	Trout Creek	WASCOB (638)	N		\$15,170.00	\$9,870.00	\$12,515.00	\$1,317.00			\$11,198.00	20	70			
UI-036-HUINKER	Nordness	Grade Stabilization Structure (410), pond	Y		\$104,619.80	\$94,608.80	\$95,171.30	\$10,386.38	\$1,719.00		\$86,503.92	175	88		93	
UI-037-HUINKER	Nordness	Grade Stabilization Structure (410), dry	N													
UI-038-HUINKER		Waterway (412)														
UI-039-BRANHAUGEN	Nordness	Grade Stabilization Structure (410), pond	Y	13	\$109,965.00	\$110,466.70	\$114,588.45	\$10,597.00			\$103,991.45	282		92		93
UI-040-NOVAK	Trout Creek	Grade Stabilization Structure (410), pond	Y		\$52,528.50	\$43,616.95	\$49,058.95	\$4,702.85			\$44,356.10	105	93	92		
UI-041-ODE	N. Canoe	Grade Stabilization Structure (410), pond	Y	2	\$73,065.80	\$57,788.77	\$55,021.45	\$7,006.58			\$48,014.87	48	91		87	
UI-049-JEWELL	Nordness	Grade Stabilization Structure (410), pond	Y	4	\$296,021.00	\$255,027.50	\$235,480.94	\$25,411.00	\$1,910.40		\$231,980.34	251		95	95	
UI-051-TIMP	Trout Creek	Grade Stabilization Structure (410), Pond	Y		\$87,544.60	\$70,675.52	\$70,675.52	\$6,730.65			\$63,944.87	68			85	
UI-052-BAUMLER	Canoe	WASCOB (638)	Y	1	\$48,326.50	\$40,092.00	\$40,092.00	\$3,682.65			\$36,409.35	16		83		
UI-053-BAUMLER	Canoe	WASCOB (638)	Y									5	80			
UI-056-LEVELY	Ten-Mile	Grade Stabilization Structure (410), wetland	Y		\$229,020.00	\$255,755.00	\$249,375.50	\$24,937.55			\$224,437.95	691		3	3	
UI-059-KUHN (Grade Stab)	Ten-Mile	Grade Stabilization Structure (410), Pond	Y		\$39,282.00	\$32,109.25	\$32,109.25	\$3,578.20			\$28,531.05	47	97	94		
UI-066-KUHN (WW)		3x Waterway (412)														
UI-062-WEBBER(S2)	Canoe	Grade Stabilization Structure (410), pond	Y	4	\$80,990.00	\$63,699.50	\$66,949.50	\$6,794.00			\$60,155.50	68		93		
UI-063-WEBBER(S1)	Canoe	Grade Stabilization Structure (410)	Y									25		75		
cost figures above are for both Webber projects combined																
ROAD PROJECTS:																
UI-017-ABBOTT_STEVENSON	N. Canoe	Road	N	1	\$239,500.00	\$196,467.00	\$202,160.32			\$36,046.34	\$238,206.66	369	17	25	36	44
UI-018-IGONS_FERRING	Coon Creek	Road	N		\$160,647.00	\$143,334.45	\$153,314.78			\$20,416.41	\$173,731.19	129	49	60	65	70
UI-020-ESBRUND/GEHLING	Trout Creek	Road	N		\$165,800.00	\$133,001.25	\$136,260.99			\$45,387.21	\$181,648.10	492	45	48	52	56
UI-022-WESLWANN_HAGEMAN	Trout Creek	Road	Y	3	\$235,300.00	\$200,413.00	\$188,266.64			\$22,359.25	\$210,625.89	79	69	64	56	58
UI-023-BECKER_WILITGEN	Nordness	Road	N		\$90,600.00	\$107,823.50	\$107,823.50			\$12,259.71	\$120,083.21	128	59	64	57	58
UI-025-LENSING_HAGEMAN	Trout Creek	Road	Y	1	\$199,700.00	\$193,807.45	\$193,807.45			\$20,045.07	\$213,852.52	144	19	15	14	58
UI-048-ROTHMEYER_NUMEDAH	Trout Creek	Road	N		\$416,600.00	\$316,765.35	\$333,243.00			\$69,712.04	\$402,955.04	952	29	38	44	41



## Project Challenges...Karst Topography

One of the biggest challenges of installing water detention projects in the Upper Iowa Watershed is the presence of karst topography. Karst topography is made up of soluble layers of bedrock, usually carbonate rock such as limestone or dolomite. This is why there is a high occurrence of springs, caves, and sinkholes in NE Iowa.

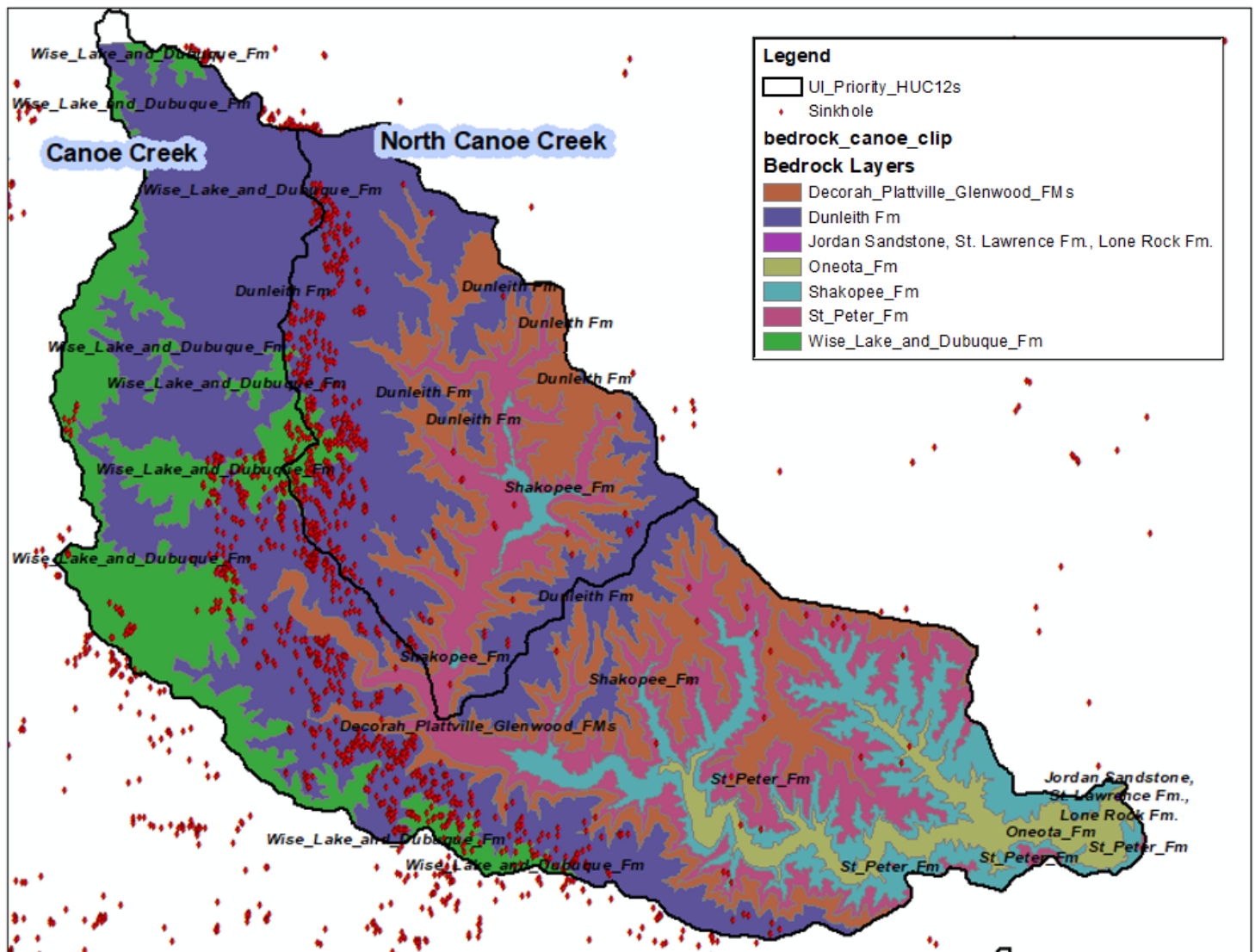


Some types of bedrock are more soluble, fractured, or have a higher occurrence of sinkholes than others. These characteristics are a concern when building water detention structures. Water pooling over a fracture or sinkhole can increase the rate of which water flows through it and the rate in which it grows. Likewise, a structure built into or on top of a highly soluble bedrock has a higher risk of project failure because the material the structure is tied into could dissolve over time and cause a breach in the structure. Areas may also have shallow depth to bedrock making it difficult to get an acceptable core trench for the structure or adequate amounts of construction material could be difficult to come by within a reasonable distance of the proposed project.

Fortunately, in 2011, the Iowa Geological and Water Survey completed a report entitled *“Geological Mapping for Water Quality Projects in the Upper Iowa River Watershed.”* In the report they went more in-depth on breaking down bedrock layers and describing their characteristics. They also created a GIS map layer that showed approximant boundaries of the different layers. This became highly useful for the initial review of projects sites and evaluating risk potential sinkhole layer could also be added to help in the evaluation.

Wise Lake/Dubuque and Dunleith bedrock formations have the highest occurrences of sinkholes in the county. The Canoe Creek and North Canoe Creek had the large amount of this type of bedrock nearest the soil surface. We were cautious of project locations over those layers because of their fracture potential, especially if there was a high occurrence of sinkholes near the project site. We also avoided all proposed projects over the St. Peter’s formations since it was mostly comprised of sandstone, which is highly dissolvable and unstable bedrock. So, although there was a high perceived potential for watershed projects in this area based on terrain characteristics, we didn’t move forward with many projects due to the bedrock characteristics and potential risk associated with them.





The map above shows the different bedrock layers closest to the soil surface along with sinkhole occurrences in the Canoe Creek and North Canoe Creek watersheds.

Soil & bedrock investigations with hand probes, probe trucks, drill rigs, and backhoes were also conducted to further examine potential project concerns.



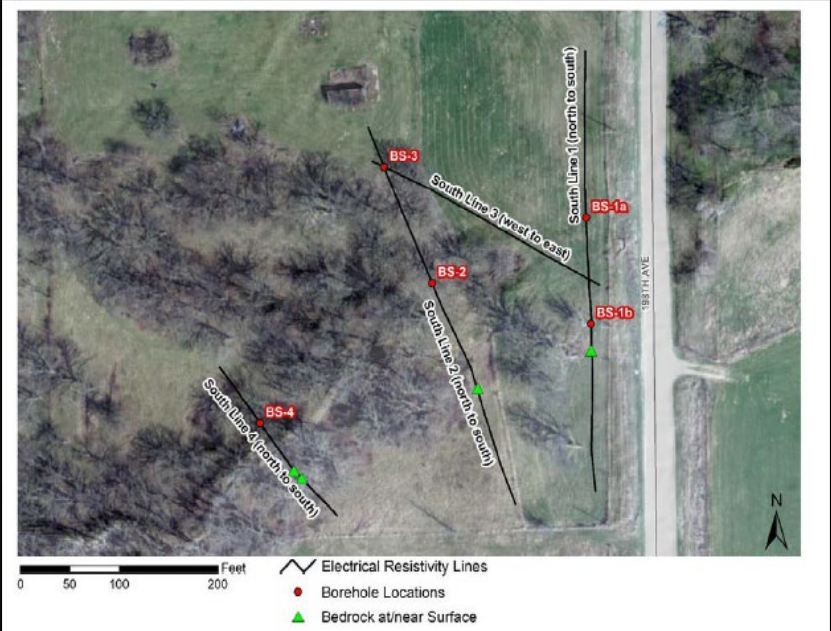


## Iowa Geological Survey – Electrical Resistivity Imagery (ERI) Investigations

For 3 questionable project sites, assistance from Iowa Geological Survey (IGS) was utilized to get expert advice on the potential risk of building a water detention road structures on the fringe of a high-risk areas. We wanted to ensure that pooling water over these locations didn't create a situation that would open a sinkhole or cause structure failure.

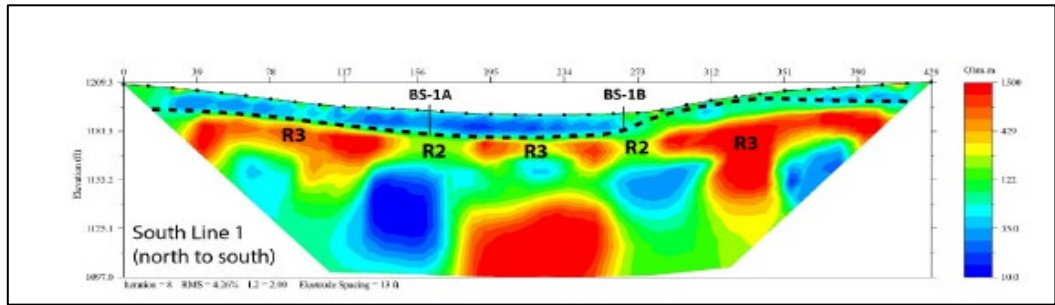


Electrical Resistivity Imagery (ERI) equipment.

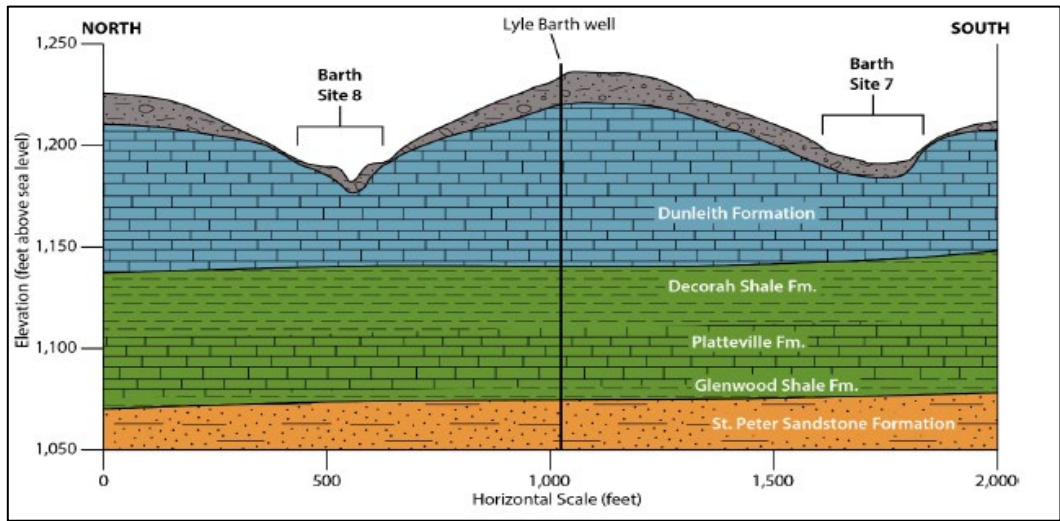


Transects ran with ERI lines.

IGS used Electrical Resistivity Imagery (ERI) to scan the soil surface through the bedrock to look for the presence of large fractures or sinkholes that could be problematic. Potential risk area's pinpointed were then investigated with a drill rig to get additional information. Analysis concluded that the 3 sites we investigated were suitable for water detention projects.



Imagery developed from ERI scans. Blue spots indicate potential voids that could be problematic. Those locations are then checked with a drill rig to get a better idea of what's below.



Bedrock layers around proposed project sites provided in IGS report.



## **Final Thoughts/Recommendations**

- ***Seeding Establishment.*** One most common issues we had with the completion of the projects was ensuring a successful seeding was established. Within our contracts, there wasn't a provision that required the contractor to be responsible for the seeding once it was planted. This created issues if a heavy rain event occurred before vegetation was established. Several times we had to have the contractor come back to the project to fix wash out areas and reseed sites. This created tension with the contractors and often required additional payment to have them come back and redo the work. It would be beneficial to have future contracts require contractors to be responsible for ensuring the establishment of a seeding for up to 1 year after it was planted. This would encourage contractors to put better erosion control methods in place and take additional measures to ensure successful seedings.
- ***NRCS versus Private Engineer.*** When comparing designs for similar projects done by NRCS, verses ones done by private engineers, NRCS designed projects tended to be more practical, economical, and less complicated, reducing project cost. Being local, NRCS was also more contractor friendly, and typically were able to go to a site on short notice to check on progress and answer any questions the contractor might have. Private engineers were a distance away and typically weren't as timely with addressing contractor questions/concerns. The benefit to having the private engineers was the ability to get a high volume of projects designed and to construction in a short amount of time. Private engineers can also be a little more flexible with designs in unique situations, where NRCS has to stick to their standards and specifications.

## **Technical Staff & Engineers that Assisted with the Project:**

- ***Natural Resource Conservation Service (NRCS):***
  - Provided technical assistance and recommendations throughout the Upper Iowa Project. They also designed several of the constructed projects. Being housed in an NRCS office and being able to bounce ideas and get assistance from the NRCS engineering staff was crucial to the success of this project. NRCS soils and geological investigation staff was also utilized to help determine site feasible for projects.
- ***Upper Iowa Watershed Project Technician:***
  - Marc Oyloe was hired by the Upper Iowa Watershed Project to be the go-to technician for initial site investigation for feasibility and to complete project designs. Marc was a retired NRCS technician who had previously worked on the Bear Creek Watershed Project in Winneshiek County, which had similar goals of stream flow reduction through structural practices to prevent flood damage. His knowledge and assistance were highly beneficial for the Upper Iowa Watershed Project.
- ***Shive-Hattery Engineering:***
  - In order to take on a high volume of projects in a short timeframe private engineers were precured to provide additional support. Shive-Hattery Engineering was utilized for larger projects typically with drainage areas greater than 250 acres (since these required a higher level of approval from the NRCS). They also designed all of the county road projects.
- ***WHKS Engineering:***
  - We also utilized WHKS engineering for a few of our final projects for concept designs of potential project sites and final designs to ensure we could get as many projects completed as possible within the allotted timeframe.



## **Contractors:**

The funding stipulations for the HUD grant required projects to be bid out. Typically, multiple projects were released together in one bid-letting. We had 9 bid-lettings in total. Contractors that received project contracts included:

1. **Rausch Construction**; 2678 118th Street, Fort Atkinson, IA 52144; Ph: 563-534-7356
2. **Bacon Concrete & Excavating**; 370 N Bancroft St, Postville, IA 52162; Ph: 563-864-7602
3. **Riehm Construction**; 2340 9th Street SW, Waukon, IA 52172; Ph: 563-568-3314
4. **Szabo Construction**; 152 S. West Street, P.O. Box 610, Postville, IA 52162; Ph: 563-864-7515
5. **Ethan Koehn Construction**; 19397 Fawn Hollow Rd, Farmersburg, IA 52047; Ph: 563.880.8350
6. **JB Holland Construction**; 2092 State Highway 9, Decorah, IA 52101; 563-382-2901

## **Additional Entities Contracted for Project Assistance:**

1. **Northeast Iowa Resource Conservation and Development**: Created the Upper Iowa River Watershed Management Plan (<https://upperiowariver.org/plan/>) and grant administration.
2. **Bear Creek Archeology**: Archeological investigations for projects.
3. **Iowa Geological Survey**: Advanced geological investigations/recommendations for 3 projects.
4. **Friest Appraisals**: Completed land appraisals for easements.
5. **JT Trucking and Excavating**: Provided back-hoe services for soil/bedrock investigations.

## **Partners:**

- Iowa Flood Center
- Northeast Iowa Resource Conservation and Development
- Iowa Economic Development
- Iowa Department of Ag and Land Stewardship
- Natural Resource Conservation Service
- Winneshiek Soil and Water Conservation District
- Winneshiek County
- Allamakee County
- Iowa Department of Natural Resources
- Iowa Homeland Security and Emergency Management
- University of Northern Iowa Tallgrass Prairie Center
- Luther College
- The University of Iowa
- IIHR Hydrosience and Engineering
- Iowa State University Extension and Outreach
- Iowa Learning Farms
- Iowa Agriculture Water Alliance
- Conservation Districts of Iowa