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United States Department of Agriculture

USDA's  
93rd  
Annual

# Agricultural Outlook Forum

## A New Horizon: The Future of Agriculture

February 23-24, 2017 • Crystal Gateway Marriott Hotel, Arlington, Virginia

Presentation from the USDA Agricultural Outlook Forum 2017

United States Department of Agriculture  
93<sup>rd</sup> Annual Agricultural Outlook Forum  
“A New Horizon: The Future of Agriculture”

February 23-24, 2017  
Arlington, Virginia



# 2017 Agricultural Outlook Forum “A New Model for Delivering Conservation: Success With RCPP” February 23, 2017 City of Cedar Rapids Middle Cedar Partnership Project



Steve Hershner, Utilities Director

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Barb Wagner, Utilities Water Quality Specialist

Mike Kuntz, Utilities Environmental Manager

- Cedar River Watershed
- RCPP Project Area

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This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number 68-6114-15-004. Any opinions, findings and other conclusions or recommendations expressed in this presentation are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture.

# MCPP

WHY RCPP?  
Historical Flood Crest in 2008

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MCPP - Middle Cedar Partnership Project



# MCPP

## WHY COLLABORATE?

Historical Flood Crest in 2008

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Over 1,000 blocks flooded. More than 7,000 homes,  
300 public buildings and 900 businesses damaged.  
18,700K citizens impacted  
More than \$5.4 billion in damages

# Water Treatment Facility, 2008

Mcloud's  
Run





Vertical Well, 2008

13 2:20PM

# MCPP

## WHY COLLABORATE? (SOURCE WATER - PUBLIC WATER SUPPLY)

- Raw water highly influenced by river water quality
- Public notification for nitrates at 10 mg/L
- Hach Nitratax

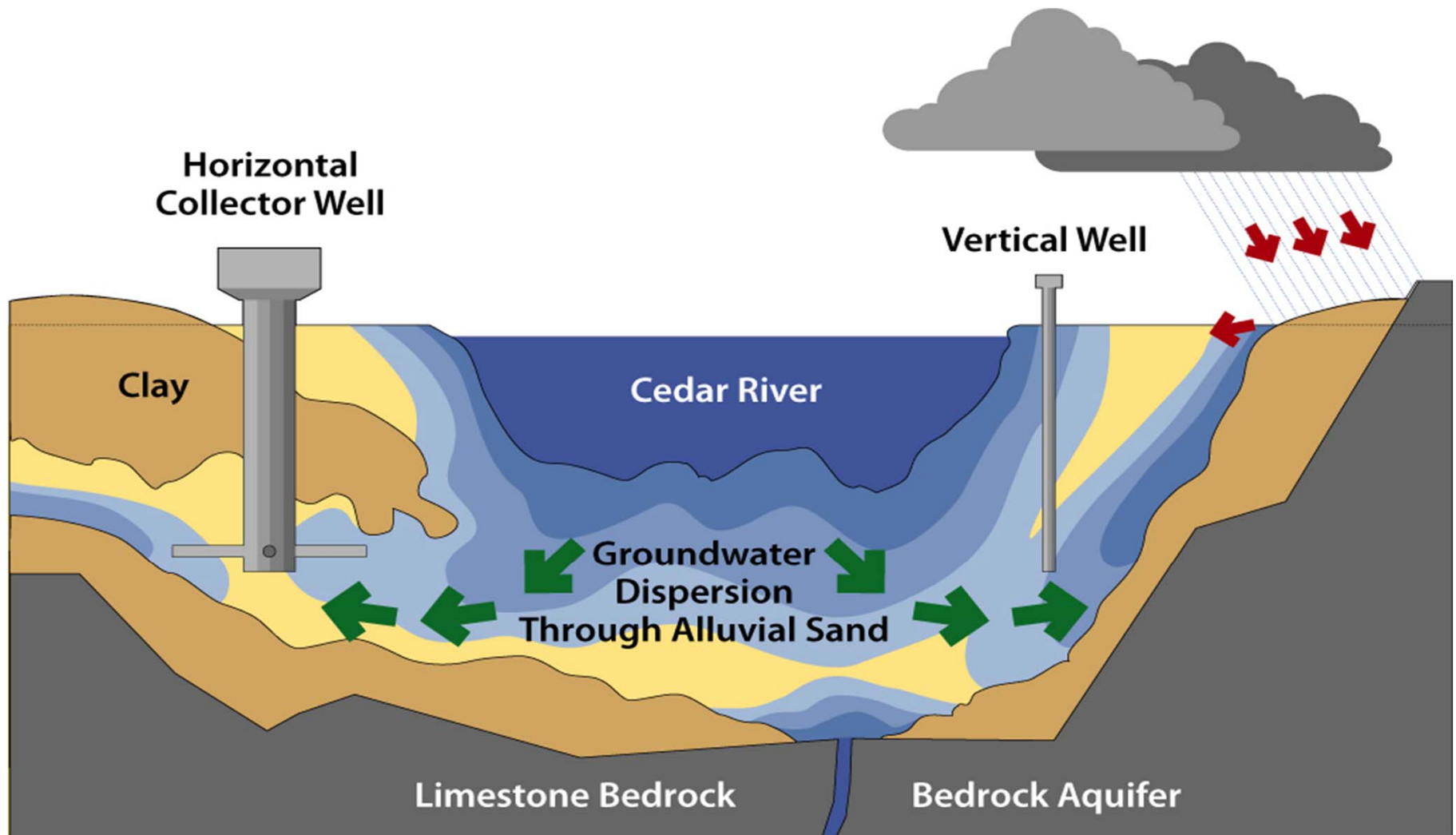


Vertical Well,  
2012  
After FEMA &  
City Supported  
Mitigation  
Project



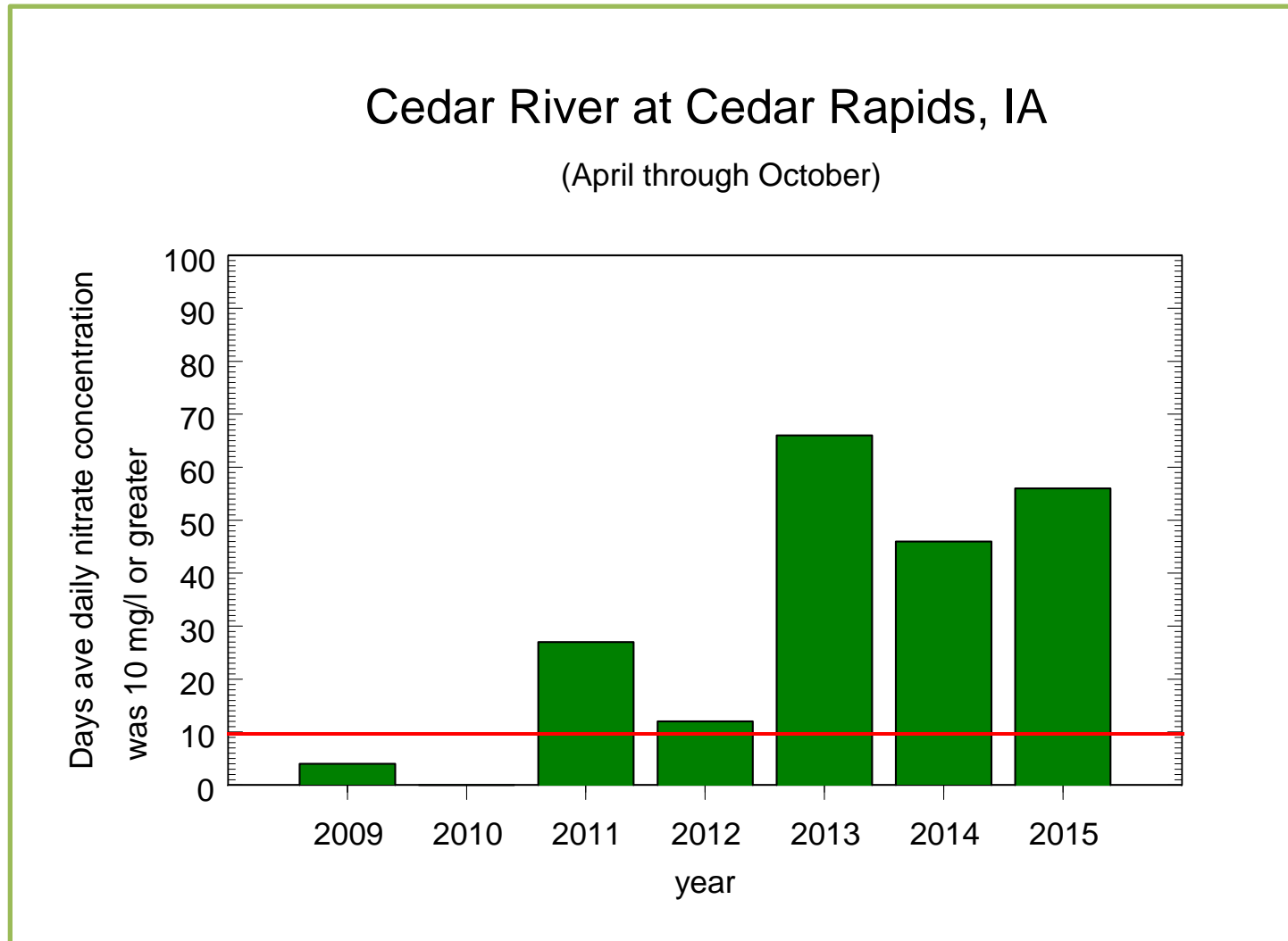
# MCPP

WHY COLLABORATE?  
(SOURCE WATER - PUBLIC WATER SUPPLY)





### Nitrate concentrations in the Cedar River 2009-2015



# MCPP

WHY PARTNER WITH  
UPSTREAM FARMERS &  
LANDOWNERS?

MCPP = Middle Cedar Partnership Project

**PUBLIC HEALTH &  
WELFARE/FLOODING**



**RCPP Benefits**

Leverage Natural Resources  
Conservation Service, U.S.  
Dept. of Agriculture  
program and technical  
support

**RCPP Benefits**

Leverage existing County  
Soil & Water Conservation  
District Network resources



**INDUSTRY  
& ECONOMY**

**SOURCE  
WATER/PUBLIC  
WATER SUPPLY**

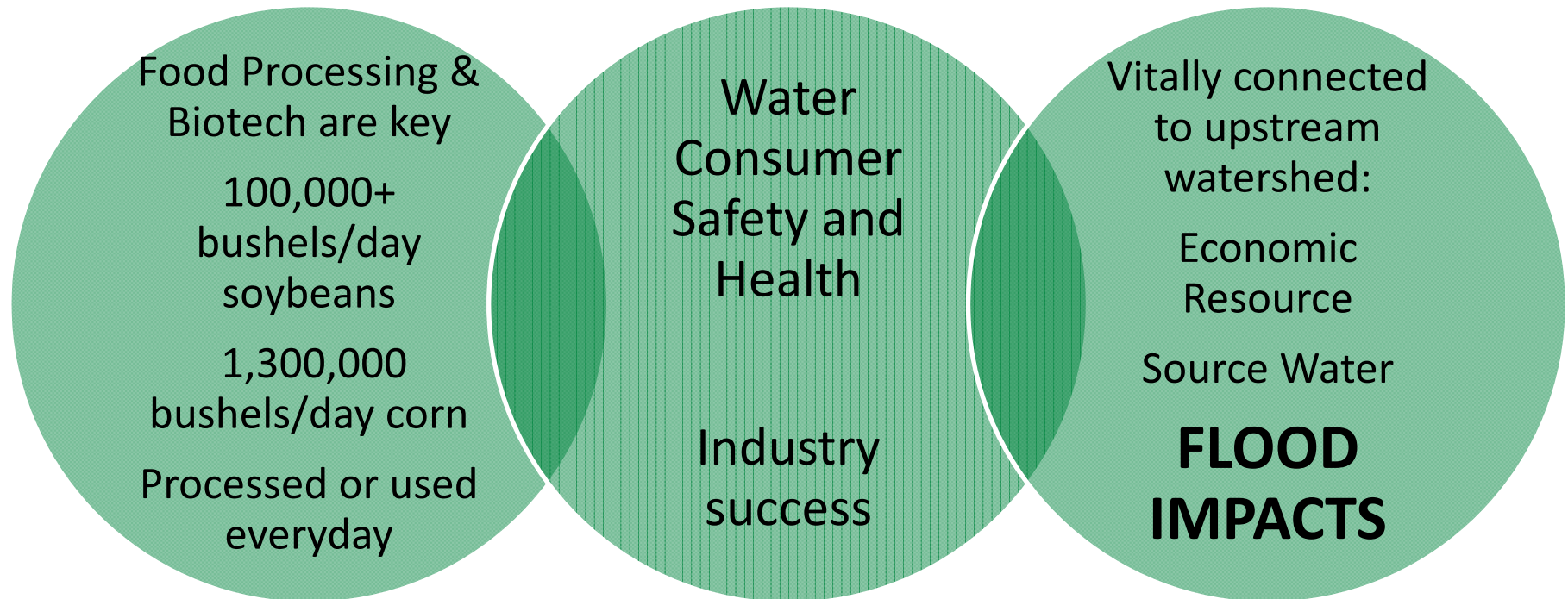


**RCPP Benefits**

Meeting critical needs of  
our community (water  
quality & flooding relief)

# MCPP

## WHY PARTNERSHIP? UTILITY/COMMUNITY VALUE



### Cedar Rapids Working with 15 Partners

- Improve Water Quality
- Enhance Flood Protection

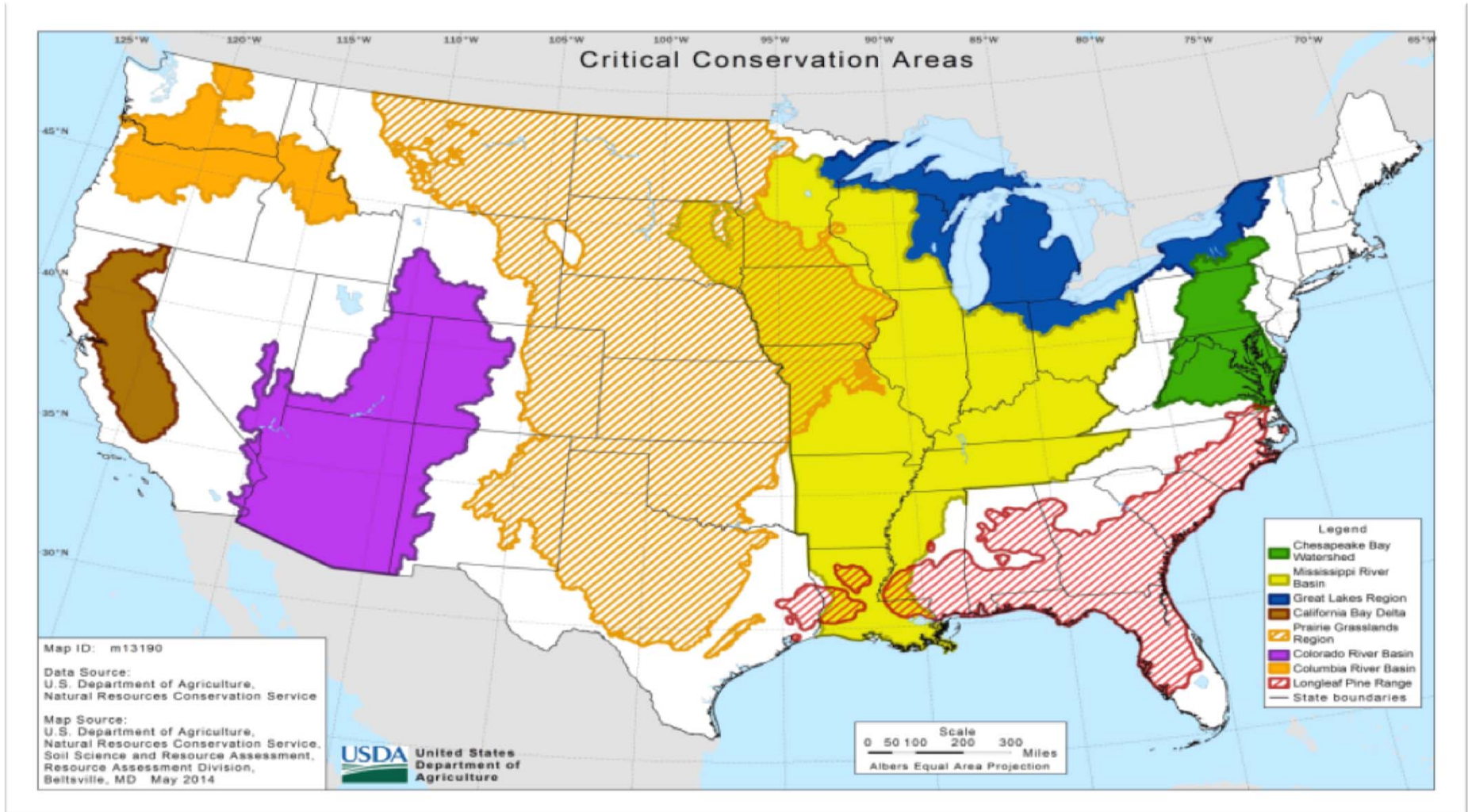
# WHY AGRICULTURE IS IMPORTANT TO CEDAR RAPIDS



# MCPP

## NATIONAL PERSPECTIVE

(Regional Conservation Partnership Program –  
Critical Conservation Areas)



# MCPP

## PARTNERING FOR SUCCESS MIDDLE CEDAR PARTNERSHIP PROJECT

NRCS through  
Regional  
Conservation  
Partnership  
Program (RCPP)  
contributing \$2.0M  
Primarily financial,  
some technical  
assistance



16 MCPP  
partners  
contributing  
\$2.3M  
Primarily  
technical, some  
financial  
assistance



\$4.3M available  
over the next  
five years



Clock started  
June 5, 2015

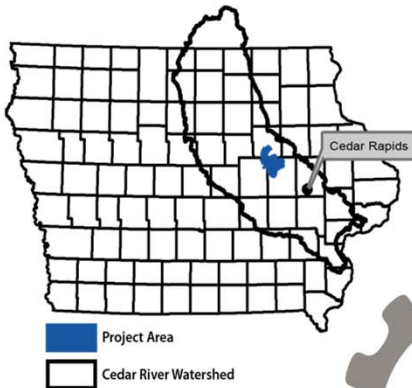


# MCPP

PARTNERING FOR SUCCESS  
MIDDLE CEDAR PARTNERSHIP PROJECT

## Middle Cedar Partnership Project (MCPP)

Collaborating for Soil & Water Quality



Project Area  
Cedar River Watershed



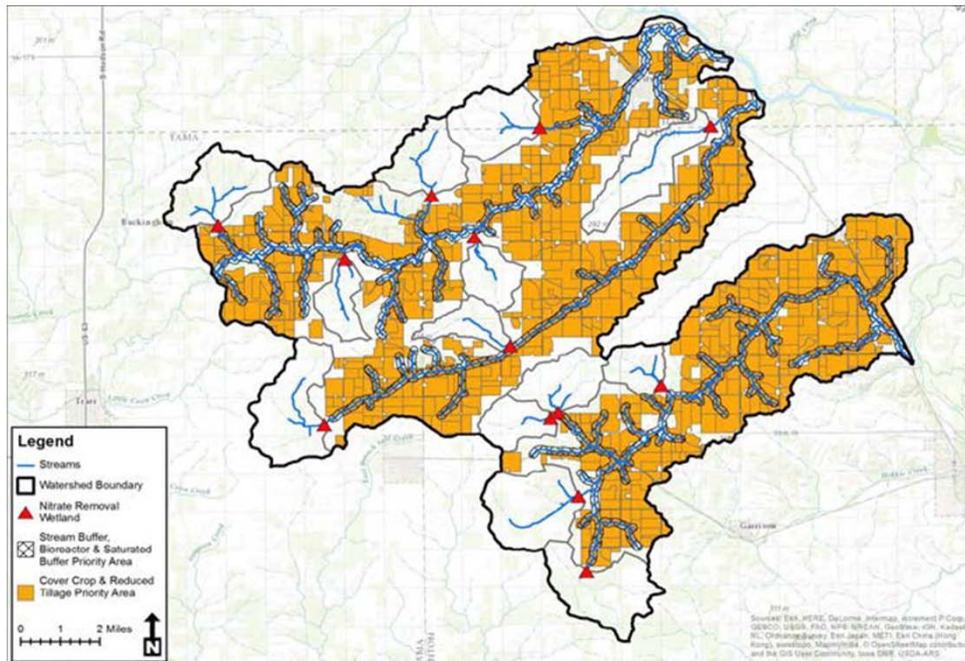
# MCPP

## PARTNERING FOR SUCCESS 1<sup>st</sup> Step - WATERSHED CONCEPT PLAN

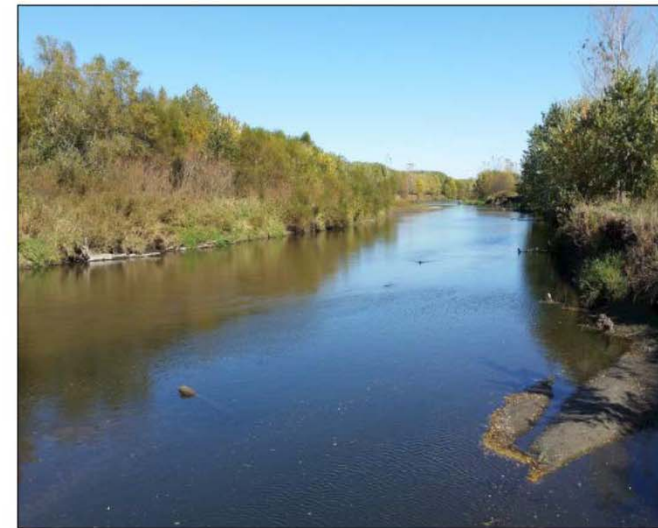
Support Iowa Nutrient Reduction Strategy by:  
Reducing in-stream nonpoint nitrogen by 41%  
Reducing in-stream nonpoint phosphorus 29%

Reduce flood risk within three watersheds &  
downstream

Maintaining or increasing agricultural productivity  
and profitability



### BENTON/TAMA WATERSHED IMPROVEMENT PLAN



A roadmap for improved water quality, sustained agricultural  
productivity & reduced flood risk

Prepared by:



# MCPP

PARTNERING FOR SUCCESS  
EXECUTING THE PLAN

## 16,539 acres of cover crops

- 134% increase in cover crops acres from 2015 to 2016.
- Approximately 15% of total crop acres in MCPP area are in cover crop program

6,522 acres of nutrient  
management plans or practices

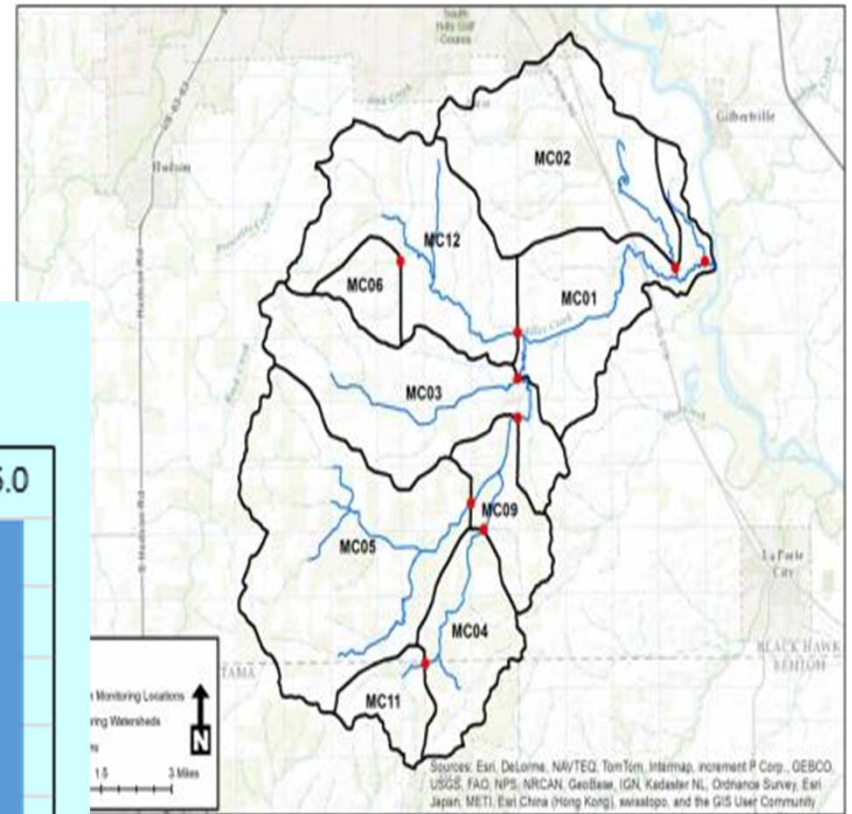
9,173 acres of no-till, strip-till  
or reduced tillage practices

2 saturated buffers and  
1 bioreactor

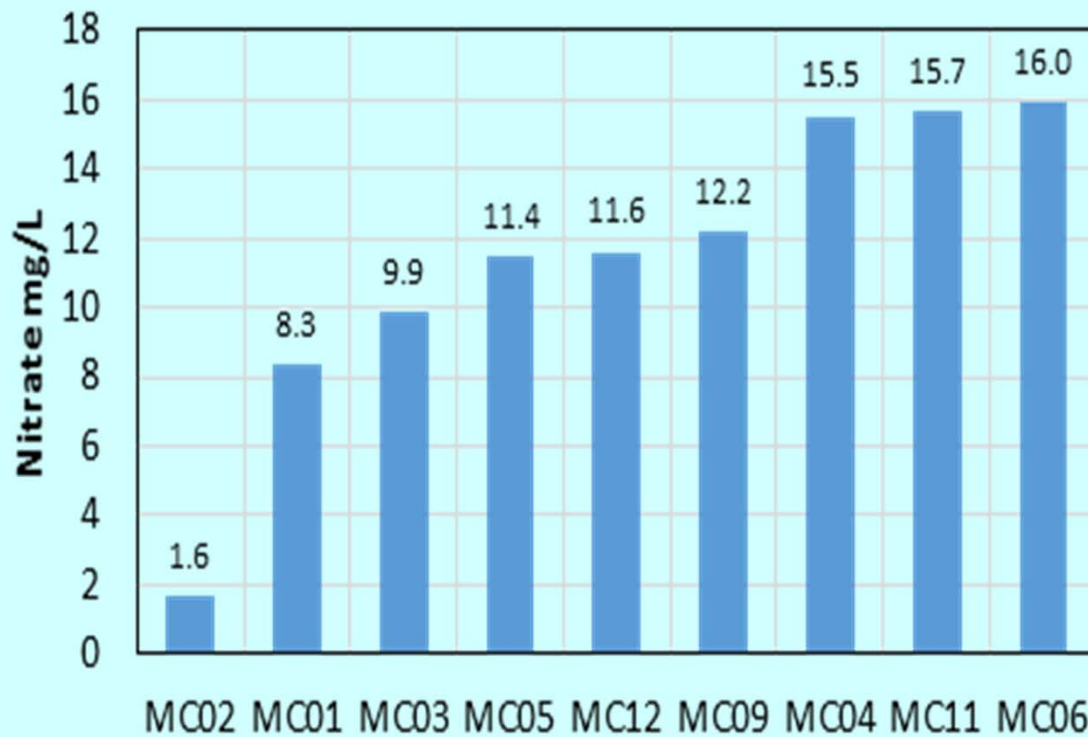


# MCPP

## EVALUATING RESULTS WATER QUALITY



Average Stream Nitrate 2014-2016



- Will watershed solutions happen fast enough to meet downstream needs?
  - This is start of long term effort, City is also working on a Flood Control System and exploring best treatment options to remove nitrates
- How do we connect with enough farmers & landowners to make a difference?
  - MCPP work plan includes outreach resources to contact producers and landowners directly, which helps target activities to watershed areas of potential greatest benefit
  - Cannot stress enough how important this outreach effort has been to increase farmer/land owner comfort level with new cropping techniques and installed practices

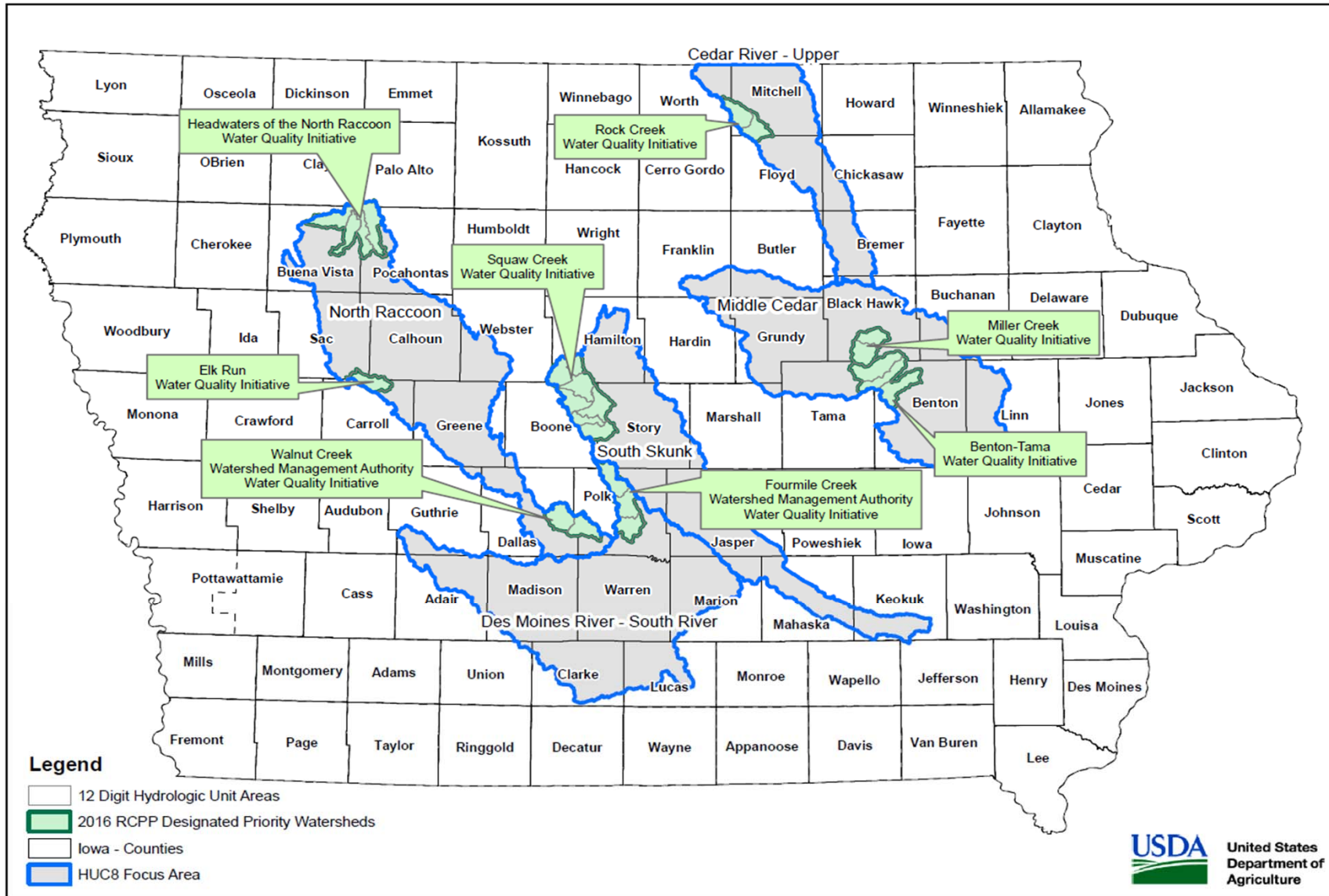
- How to meet NRCS - RCPP & other projects expanding technical resource needs for development of edge-of-field installations (bioreactors, saturated buffers, wetlands)?
  - Municipal or private partner water quality trading or nutrient registry opportunities represent a chance to expand technical resources through the use of consulting engineering resources that these entities use routinely
- City of Cedar Rapids actively encourages the concept of “One Water” supported the US Water Alliance
  - US Water Alliance’s One Water Summit will be held June 27 – 29, 2017 in New Orleans, we will be participating in a session titled “What are the critical success factors to effective agriculture-municipal partnerships to solve America’s nutrient challenge?”

### Expanding Partnership Opportunities

- Iowa Flood Center – HUD Disaster Resilience Grant (\$96.9M)
- Midwest Agriculture Water Quality Partnership (RCPP 2<sup>nd</sup> Round - \$9.5M, project leverages total of \$47M)
- Iowa Water Quality Initiative (Miller Creek) ~\$1+M
- Iowa Nutrient Reduction Demonstration Project (Benton & Tama Counties) ~\$1+M

# IOWA CONSERVATION AREAS

## Regional Conservation Partnership Program





**Quarterly  
Watershed Management  
Authority Meetings  
2016-17**

**Example:  
Middle Cedar River WMA  
Meeting**

Thursday, January 12, 2017  
Farmers Savings Bank &  
Trust, Vinton

**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.

**HUD Disaster Resilience Grant  
to Iowa: \$96.9 million**



More information at: <http://www.iihr.uiowa.edu/iwa>



# Urban Water Management

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## Community Opportunities (Changing Focus)

- Flood re-construction (LEED)
- Improve existing urban lake (Cedar Lake)
- Stormwater Utility Fees based on impervious surface (ordinance change) + BMP cost share
- Topsoil requirement post project development
- Sponsored projects



# Downtown library constructed to platinum LEED certification



**Keeps 90% of precipitation  
in place that falls on  
property**



Permeable pavers on  
3<sup>rd</sup> St SE



Bioswales






# Incentivizing Infiltration





# Sponsored Projects

- State supported alternate green infrastructure funding option using 1% of interest on SRF projects
- Noelridge Park 





# URBAN WATERSHED EFFORTS



## Watershed Involvement

- 2 Watershed Management Authorities

## Green Infrastructure

- Cost-Share Program
- DNR Funding for Pilot Projects

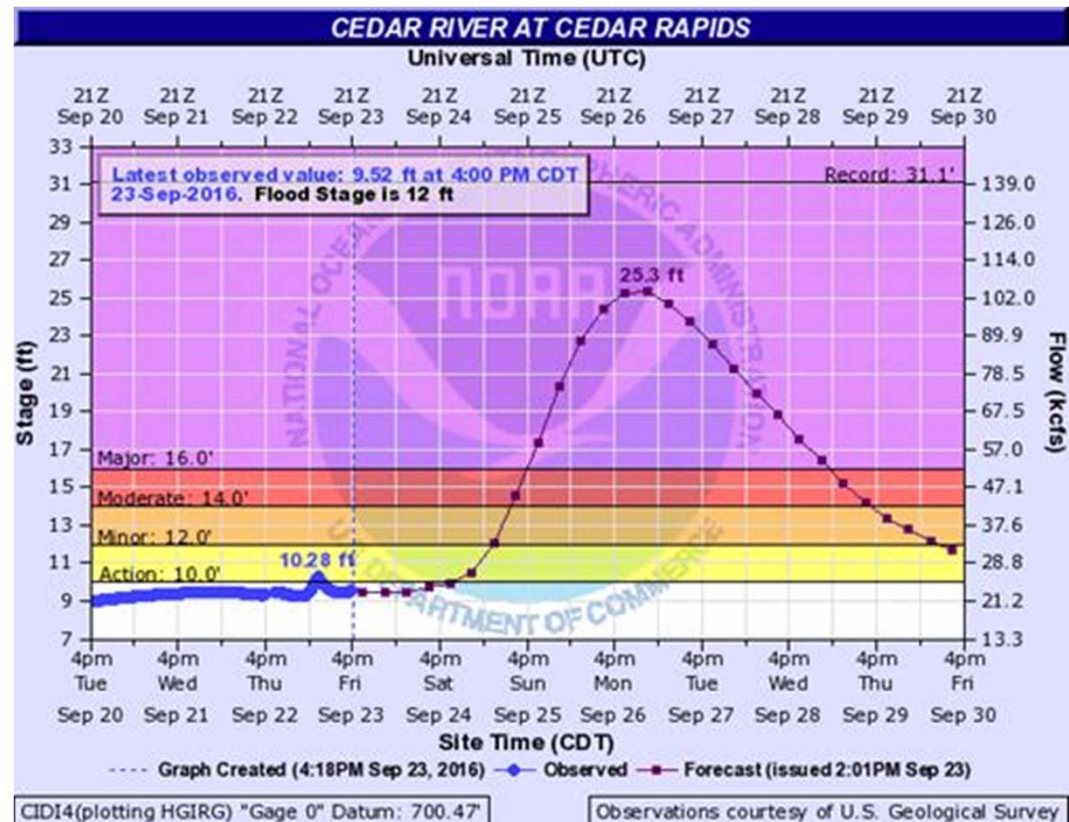
## Policy Changes

- Nutrient Management
- Stormwater Rate Change
- Possible Topsoil Rule

# September 22, 2016

- 2008 = 31.12 flood stage
- 19.5' predicted 9/22
- 25.3 predicted 9/24
- **4 days to prepare**

Crested at 21.97 feet 9/27,  
2<sup>nd</sup> highest flood on record

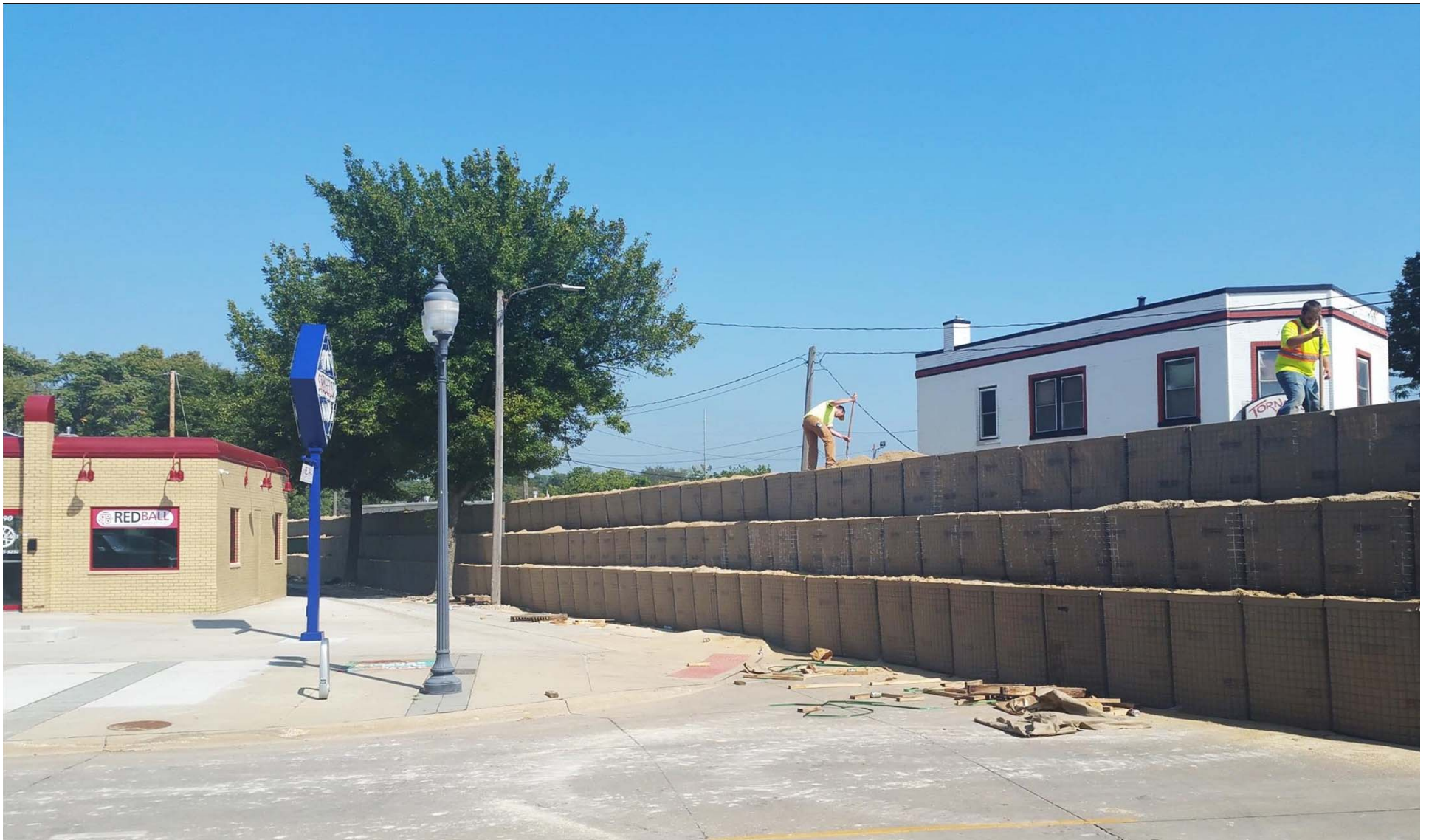


**FLOOD CONTROL SYSTEM**

STRENGTHENING OUR COMMUNITY



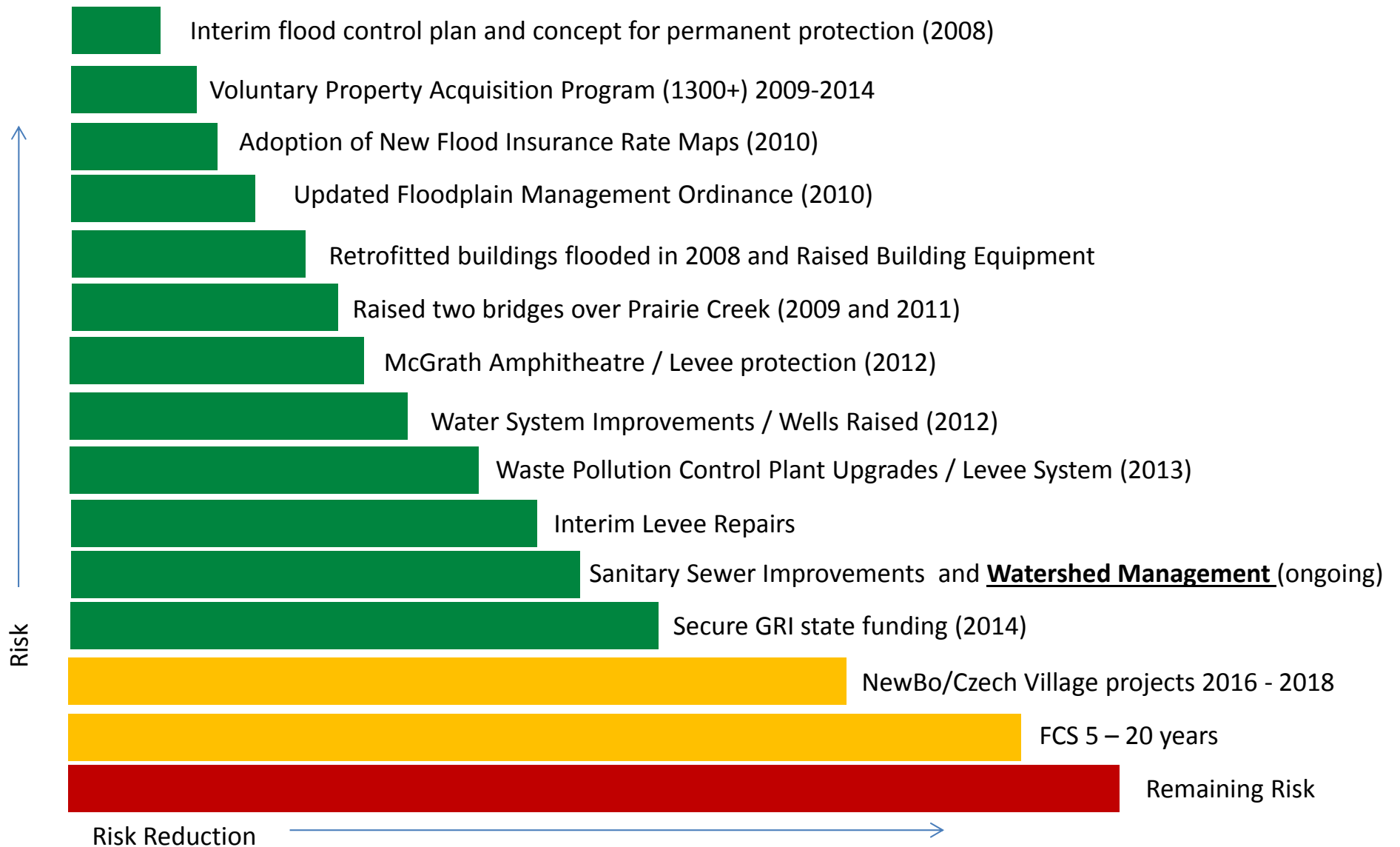
# Above Ground Barrier: A Difficult Decision



Wall required solid foundation and elevation



# Reducing Flood Risk – Flood Control System



# MCPP

## WHAT DOES FUTURE SUCCESS LOOK LIKE?

- **Improved soil health**, leading to increased productivity and a better bottom-line for upstream producers
- **Increased adoption of tested practices** because it makes financial sense and it's the right thing to do
- Demonstrated **water quality improvements** that benefit all downstream entities, including City of Cedar Rapids source water for our alluvial well system
- **Expansion of similar MCPP promoted activities** within Cedar River watershed and other watersheds across Iowa





# MIDDLE CEDAR PARTNERSHIP PROJECT



## QUESTIONS?

- Cedar River Watershed
- RCPP Project Area

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