



To: City Council Infrastructure Committee
 From: Public Works Department
 Subject: Presentation – Stormwater Master Plan
 Date: April 19, 2016

Background:

The Public Works department is in the process of updating the Stormwater Master Plan. The Stormwater Master Plan will be used to assess the function of the City’s stormwater management system, and will aid in the selection of capital improvement projects and policy recommendations. The following proposed milestones and schedule have been established for updating the Stormwater Master Plan:

Milestones	Status or Schedule
Assemble and review existing data and reports to identify where additional information is needed.	Complete
Identify known issues where capital improvement projects may be warranted.	Complete
Select an engineering consultant to complete the Stormwater Master Plan update.	Complete
Develop professional services agreement.	Complete
Engineering consultant will review and analyze information provided by the City. The engineering consultant will use this information to recommend capital improvement projects for the FY2017 budget.	Complete
Engineering consultant will complete a modeling update of the City’s stormwater management system.	Complete
Engineering consultant will submit a draft of the updated Stormwater Master Plan.	Complete
Adopt Stormwater Master Plan.	06/14

Project Description:

The City has contracted HDR Engineering and Anderson-Bogert Engineers and Surveyors to update the City’s Stormwater Master Plan. The update will include modeling the City’s stormwater management system, developing a capital improvements plan, developing a financial plan, and providing policy recommendations.

Update:

HDR Engineering has recently completed an initial draft of an update to the City’s Stormwater Master Plan. The updated Stormwater Master Plan will be used by the City to identify and move forward with capital improvements to address the highest priority stormwater needs while producing a “living” document that will be made more comprehensive through additional modeling and master planning efforts over the next several years.



The primary objectives of the initial update for the Stormwater Master Plan are as follows:

- Bring a fresh perspective and innovative thought to prioritize capital improvement projects based on objective criteria
- Develop the framework of a “living” Stormwater Master Plan that will become more comprehensive and expansive with time
- Develop a Capital Improvements Plan that clearly communicates the priorities, rationale, and timeline to address known stormwater issues
- Identify funding needs and develop a financial plan that provides recommendations to help close the gap between current revenues and identified capital needs
- Provide policy recommendations that focuses on the prevention of stormwater issues, thereby reducing the cost of capital improvements over time
- Understand and incorporate the City’s vision as reflected in EnvisionCR
- Incorporate the City’s protocol and standards for asset management
- Establish the framework for routine updates to expand and improvement the content of the plan

The Stormwater Master Plan update will include the following Sections:

- 1.0 – Existing System
- 2.0 – Asset Management
- 3.1 – Macro-Modeling
- 3.2 – Kenwood Watershed Basin Modeling
- 4.0 – Capital Improvements Plan
- 5.0 – Financial Needs
- 6.0 – Policy Considerations
- 7.0 – Future Considerations

In the next month, HDR Engineering will address the City comments and complete revisions to the Stormwater Master Plan update. The plan will be brought to the Infrastructure Committee at the May 2016 meeting with a recommendation request that the updated Stormwater Master Plan be presented for adoption by the full City Council in June 2016.

Stormwater Master Plan Update

April 19th, 2016

Objectives

- Develop the framework of a “living” Stormwater Master Plan
- Initiate modeling efforts to gain a better understand of the City’s stormwater management system
- Develop a Capital Improvements Plan that clearly communicates the priorities, rationale, and timeline to address known stormwater issues
- Identify funding needs and develop a financial plan that provides recommendations to help close the gap between current revenues and identified capital needs
- Provide policy recommendations that focuses on the prevention of stormwater issues, thereby reducing the cost of capital improvements over time
- Understand and incorporate the City’s vision as reflected in EnvisionCR

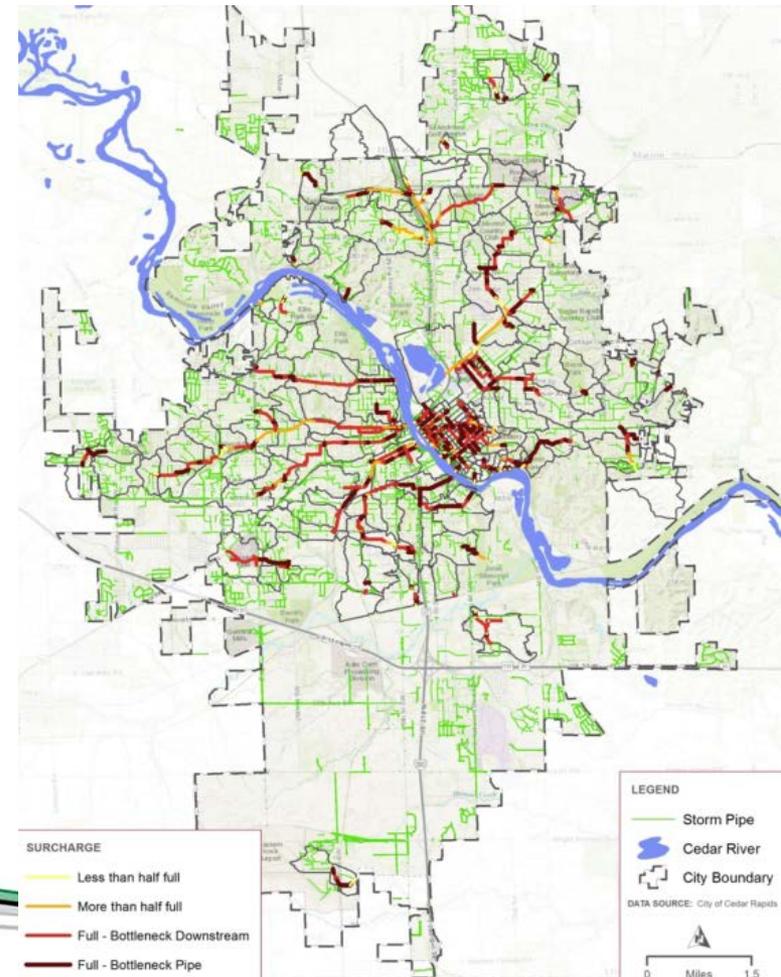
Stormwater Master Plan Sections

- Existing Conditions
- Asset Management
- Modeling Results
 - Macro-Modeling
 - Detailed Basin Level Modeling
- Capital Improvement Plan
- Financial Plan
- Policy Recommendations
- Future Considerations



Existing Conditions

- Summarizes existing stormwater management system
- Defines major watersheds within the City
 - 8 Watersheds
 - 20 Subwatersheds
- Summarizes the City's future growth plans (EnvisonCR)
- Defines the intended level of service of the City's stormwater management system



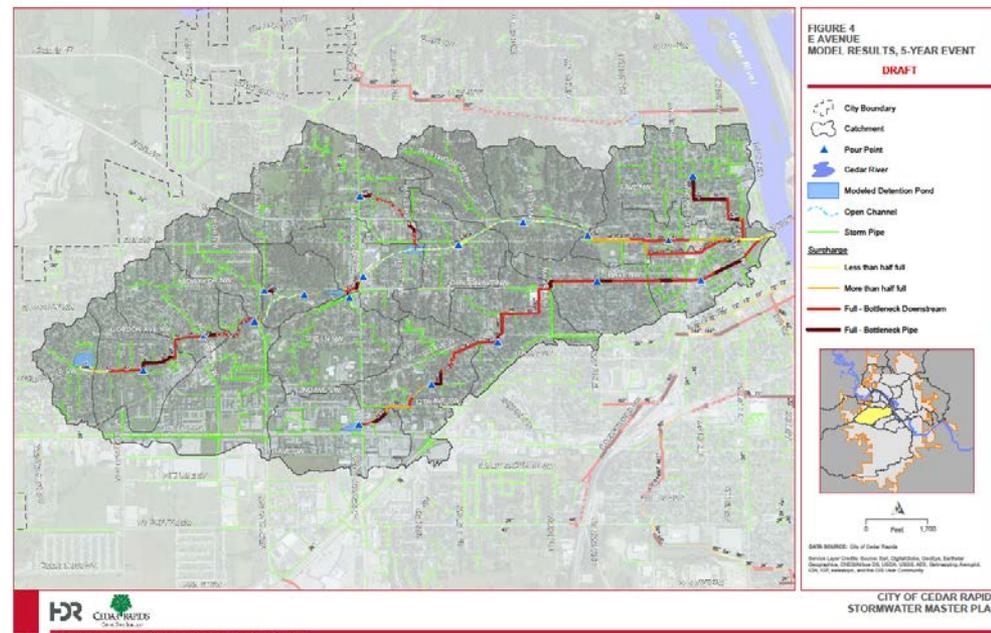
Asset Management

- Asset Inventory
 - How information is tracked
- Condition Assessments
 - How infrastructure is inspected
- Maintenance Protocols
- Defines the City's level of service regarding maintenance issues



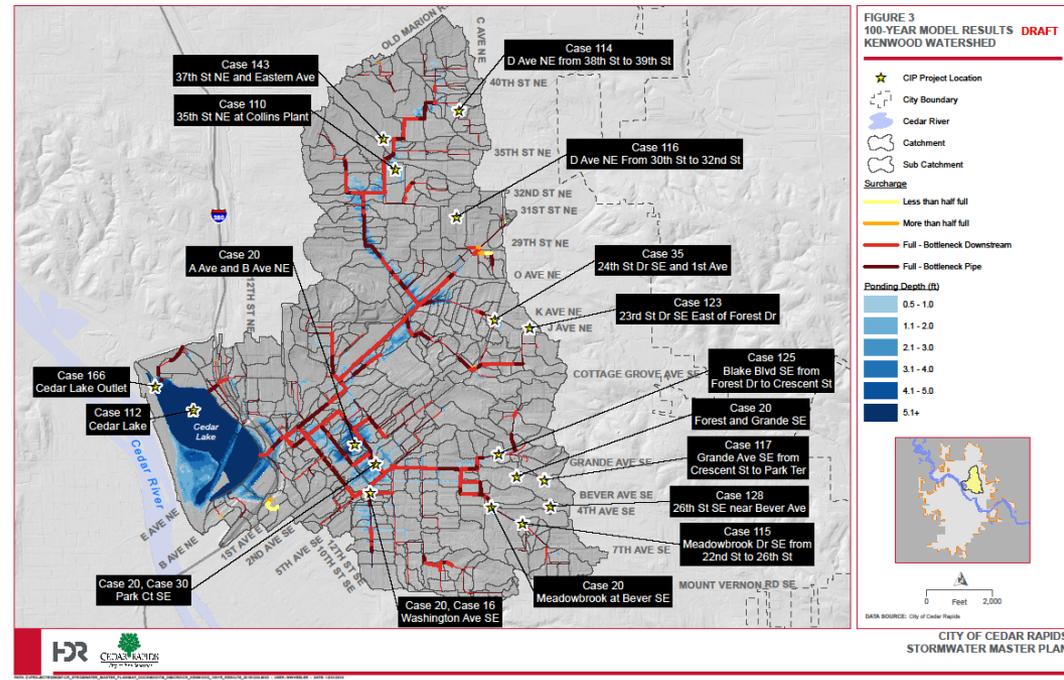
Macro-Modeling

- Completed citywide
- Accounts for large drainage ways and storm sewers
- Used to identify issues and deficiencies within the stormwater management system
- Used as the foundation for future basin level modeling efforts



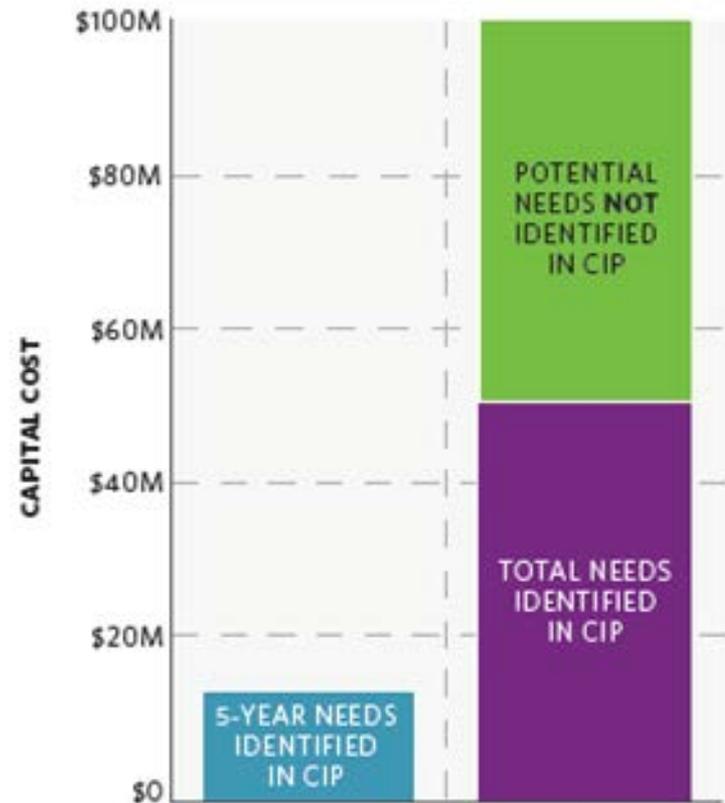
Detailed Basin Level Modeling

- Completed for the Kenwood Watershed
- Accounts for all conveyance structures 12-inches in diameter and greater as well as overland flow (2D Model)
- Used to identify issues and deficiencies within the stormwater management system
- Will be used to compare and contrast solutions to address identified issues



Capital Improvements Plan

- **Current CIP - June 2014 + Prior Studies**
 - 97 separate issues identified
 - Approximately \$50 million in project needs
- **Modeling Implications**
 - Potentially \$75 to \$100 million in project needs
- **New System to Prioritize Issues**
 - Ranks issues based on 8 weighted criteria
 - Focus on Health & Safety



Capital Improvements Plan

- Proposed FY2017 Projects
 - 3 Regional Detention Basin Projects
 - Rockhurst Detention Basin (Morgan Creek)
 - Harrison Detention Basin (O Avenue)
 - 18th Street SW Detention Basin (Rockford Road)
 - 2 Large Conveyance Improvement Projects
 - 27th Street SW Culvert Replacement (Prairie Creek)
 - 21st Street SW Storm Sewer Replacement (Czech Village)
 - 4 Green Infrastructure Projects
 - 3 Bio-retention Cell Projects
 - 1 Permeable Paver Project
- Five Year Plan
 - \$2.35 million will be allocated for the Kenwood Watershed
 - \$2.31 million will be allocated for the E Avenue Watershed

Financial Plan

- Provides snapshot of the City's existing stormwater utility budget
 - Significant needs vs limited resources
 - Approximately \$50 million in identified needs
 - Modeling indicates actual needs are likely between \$75 million to \$100 million
 - Current revenue sources provide for approximately \$2 million per year for capital improvements
 - Approximately \$0.5 million per year dedicated to ongoing maintenance
- Provides options and recommendations for increasing revenues
 - Rates, Grants, Permitting Fees, Special Tax Districts, and Cost Sharing

Financial Plan

- What are other communities doing?
(2014 Stormwater Utility Survey, Black & Veatch)
 - 85% indicate cash financing as the primary source of capital funding with the remainder indicating debt financing as the primary source
 - 62% report that they do not have adequate funding to meet most of their utility needs
 - 17% report that they do not have adequate funding to meet even their “most urgent” needs

Policy Considerations

- Summarizes existing codes, standards, and regulatory requirements
- Outlines recommendations for future policy
- Future policy focused on prevention to reduce CIP costs over time

Examples:

- Restructuring Stormwater Utility Rate (ERU System)
 - Promotes reductions in impervious surface
 - Incentivizes green infrastructure and stormwater education
 - Generates additional revenue for capital improvements
- Topsoil Rule
 - Promotes onsite stormwater retention

Future Considerations

- Provides protocol for making routine updates
 - Defines roles and responsibilities for plan implementation
- Topics that may effect the plan in the future
 - Manage growth to avoid CIP costs in developing areas
 - Regulatory changes (MS4 Permit)
 - Increasing focus on water quality
 - Flood Control System
 - How will this interact with the City's stormwater management system?





To: City Council Infrastructure Committee
From: Doug Wilson, PE, Paving for Progress Program Manager
Subject: Update – Paving for Progress/ McLoud Run Bridge
Date: April 19, 2016

Background:

Monthly update intended to provide status Paving for Progress construction projects for 2016. Update on McLoud Run Bridge Project

Project Description:

Presentation of List of Paving for Progress Projects for Construction Season 2016. Update on Paving for Progress Projects to be bid. Update on plan for the McLoud Run Bridge project

Update:

See Attached list for 2016 Paving for Progress Construction Projects.

Bid received for the McLoud Run Bridge project was reject at the April 12, 2016 Council Meeting. A summary updating plan for bridge replacement or rehabilitation will be presented at the committee meeting. Staff is currently evaluating options.

Requested time on agenda: 10 min



Paving for Progress 2016 Program

1st Avenue Bridge over Cedar River Repairs
3rd Street SW from 16th Avenue to 19th Avenue
6th Street SW from Linn County Line to Capital Drive SW
7th Street SE and 8th Street SE from A Avenue NE to 12th Avenue SE (Phase 2)
7th Street SE from 10th Avenue to 11th Avenue
8th Avenue SW from L Street SW to 7th Street SW
34th Street NE from 1st Avenue to West of F Avenue
42nd Street NE from Edgewood Road to Iowa Northern Railroad Tracks
42nd Street NE from I-380 to Wenig Road
74th Street NE from White Ivy Place to C Avenue
B Avenue NW from Highland Drive to 8th Street
Bayberry Drive SW from Cameo Lane to Edgewood Road
Bramble Road SW from 29th Avenue to 33rd Avenue
Burch Avenue NW from 24th Street to 19th Street
Cameo Lane SW from Pebble Drive to 33rd Avenue
Carriage Drive SW from Bramble Road to Chapel Drive
Chapel Drive SW from 29th Avenue to Bayberry Drive
Coral Lane SW from Cameo Lane to Eden Lane
Eden Lane SW from Bayberry Drive to 33rd Avenue
Edgewood Road SW Improvements from E Avenue to F Avenue Roadway
Improvements
F Avenue NE from Estroy Drive to Old Marion Road
F Avenue NW from 4th Street to Ellis Boulevard
Hazel Drive NE from Elmhurst to House #1247
Leroy Street SW from Johnson Avenue to 1st Avenue and Spencer Drive SW
Madison Street NE from Glass Road to 29th Street
McCarthy Road SE from 19th Street SE to Memorial Drive SE
Northwood Drive NE from South of Brookland Drive to 42nd Street
Oakland Road NE from H Avenue to J Avenue
Park Place NE from Council Street to North Park Place Lane
Pebble Drive SW from Chapel Drive to Bramble Road
Seminole Valley Road NE from Fords Crossing to 42nd Street NE (Phase 1)
West Post Road NW from Gordon Avenue to Plainview Drive (Phase 1)
West Post Road NW from Plainview Drive to E Avenue



To: City Council Infrastructure Committee
From: Michael Duffy
Subject: Update – Street Maintenance
Date: April 19, 2016

Background:

Update on projects within the Street Maintenance Division of Public Works.

Project Description:

Various locations detailed below

Update:

Paving for progress projects underway

- 3rd Street SW
- F Avenue NE
- Hazel Driver NE

Winter clean up

- Sod repairs
- Equipment change over/service
- Sweeping / Median clean up and spring maintenance. Contracts in place

Asphalt plant to open April 11th

Alley Maintenance

Point repairs

Grinding and Milling

ADA training

Requested time on agenda: 5 min



To: City Council Infrastructure Committee
 From: Sandy Pumphrey, PE
 Subject: Update – Sanitary Sewer Masterplan
 Date: April 19, 2015

Background:

The Public Works Department is in the process of updating the Sanitary Sewer Master Plan. The Sanitary Sewer Master Plan will be used to assess the function of the City’s sanitary sewer system, and will aid in the selection of capital improvement projects and policy recommendations. The following proposed milestones and schedule have been established for updating the Sanitary Sewer Master Plan:

Milestones	Status or Schedule
Identify known issues where capital improvement projects may be warranted.	Complete
Select an engineering consultant to complete the Sanitary Sewer Master Plan update.	Complete
Develop professional services agreement.	Complete
Engineering consultant will review and analyze information provided by the City.	Complete
Engineering consultant will complete a modeling update of the City’s sanitary sewer collection system.	Complete
Engineering consultant will submit a draft of the updated Sanitary Sewer Master Plan.	04/16
Final reviews, comments and edits made to Sanitary Sewer Masterplan	05/16
Adopt Sanitary Sewer Master Plan.	06/16

Workshop #5 will be held on April 18, 2016. The following items will be discussed:

- Staff’s review of “Technical Memorandum #4 – Capital Improvements Needs”
- Staff’s review of “Technical Memorandum #5 – Policy and Other Considerations”
- Staff’s review of “Technical Memorandum #6 – Financial Needs”
- Staff’s review of “Sanitary Sewer Masterplan - Executive Summary”

Project Description:

The Sanitary Sewer Master Plan will be used to assess the function of the City’s sanitary sewer system, and will aid in the selection of capital improvement projects and policy recommendations.

Update:

The project is generally still on schedule. Now that the modeling is complete and validated at a macro level, a long term Capital Improvement Plan (CIP) has been drafted and matched against available revenue streams. This balance of needs vs. available funds is being reviewed by staff to help optimize the long term plan for projects moving forward. Staff anticipates presenting a prioritized project list at a future Infrastructure Committee meeting.

Staff’s plan is to facilitate an annual update of the finalized Masterplan document in future years.



To: City Council Infrastructure Committee
From: Sandy Pumphrey, PE; Cara Matteson.
Subject: Update – Middle Cedar WMA Formation and Upper Cedar WMA Progress
Date: April 19, 2016

Background:

In 2010, Iowa lawmakers passed legislation authorizing the creation of Watershed Management Authorities. A Watershed Management Authority (WMA) is a mechanism for cities, counties, Soil and Water Conservation Districts (SWCDs) and stakeholders to cooperatively engage in watershed planning and management. The WMA is formed by a Chapter 28E Agreement by two or more eligible political subdivisions within a specific watershed.

WMAs have been formed across Iowa for a variety of reasons. While the driving motivation for WMA formation may be water quality improvement and/or flood risk reduction, there are multiple benefits to cooperating with other jurisdictions within a watershed:

- Conduct planning on a watershed scale, which has greater benefits for water quality improvement and flood risk reduction;
- Foster multi-jurisdictional partnership and cooperation;
- Leveraging resources such as funding, technical expertise;
- Facilitate stakeholder involvement in watershed management.

Project Description:

On March 1, 2016 the Infrastructure Committee recommended that the full City Council adopt the 28E Agreement for the formation of the Middle Cedar Watershed Management Authority. The City Council then followed through with this recommendation on March 8, 2016, adopting the 28E.

Further, a regular board meeting of the Upper Cedar WMA was held and attended by City Staff in Charles City, IA on March 16, 2015.

Update:

Middle Cedar WMA: The first board meeting of the newly formed WMA was held on March 30, 2016 in Vinton. The board was formed from representatives of the member entities present and officers were elected. Cara Matteson (our Stormwater Coordinator) was elected Vice-Chair. Term limits will be determined at the next meeting. An update on the HUD grant was also provided by Larry Weber from the Iowa Flood Center. The next two meetings are scheduled for June 30, 2016 and September 29, 2016.

Upper Cedar WMA (<http://www.floydcoia.org/395/Upper-Cedar-Watershed-Management>):

The Upper Cedar WMA has been formed since 2012, and currently has 25 member entities. The group



appears to be well attended and be consistently active in the watershed. Their Watershed Management Plan can be found at: <http://www.floydcoia.org/DocumentCenter/Home/View/574>) Updates discussed at the meeting included:

- Flood Economic Damages Mitigation Analysis – USACE.
- RCPP
- Beaver Creek Project
- Rock Creek Project
- February’s Statewide WMA Meeting
- Legislative Update
- Other miscellaneous projects.

Funding implementation of practices on the ground, which have been identified in the Watershed Management Plan appeared to be a significant and ongoing challenge.

Requested time on agenda: 5 min

Upper and Middle Cedar Watershed Management Authorities (WMA)

Infrastructure Committee Update

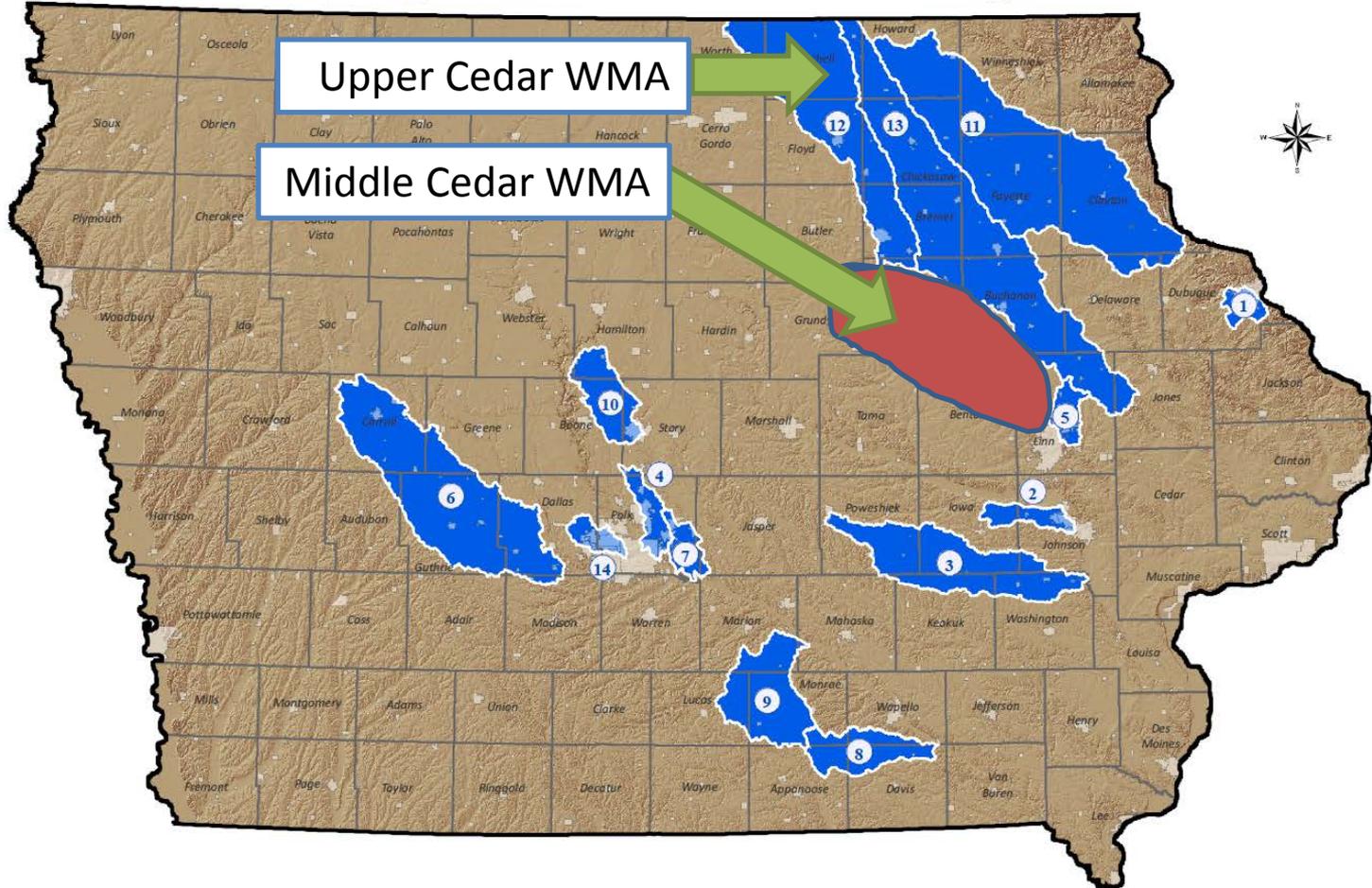
April 19, 2016

WMA Purposes

- Conduct planning on a watershed scale
 - Greater benefits for water quality and flood risk reduction
- Foster multi-jurisdictional partnership and cooperation
- Leveraging funding and technical expertise
- Facilitate stakeholder involvement in stormwater management

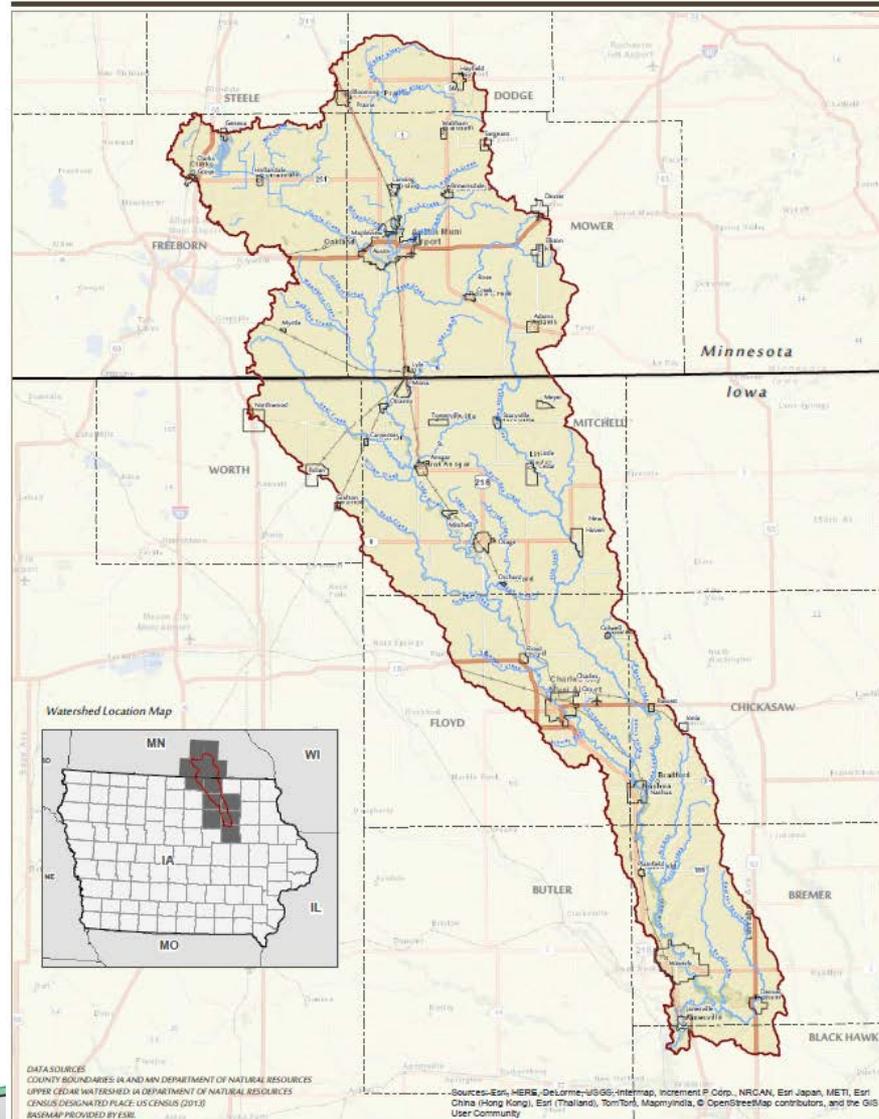
WMA's in Iowa

Watershed Management Authorities with 28E Agreements



- | | | | | |
|------------------------------------|-----------------------------|---|---------------------------|----------------------------------|
| 1. Catfish Creek WMA | 4. Fourmile Creek WMA | 7. Mud Creek, Spring Creek & Camp Creek WMA | 10. Squaw Creek WMA | 13. Upper Wapsipinicon River WMA |
| 2. Clear Creek Watershed Coalition | 5. Indian Creek WMA | 8. Soap Creek Watershed Board | 11. Turkey River WMA | 14. Walnut Creek WMA |
| 3. English River WMA | 6. Middle-South Raccoon WMA | 9. South Central Iowa Cedar Creek WMA | 12. Upper Cedar River WMA | |

The Upper Cedar Watershed



The Upper Cedar Watershed

- Formed in 2012
- 25 member entities
- Typical quarterly meetings
 - CR Staff attended meeting on March 16, 2016
 - Appeared to be well attended and active
- Watershed Plan Published and accepted by member entities.
- Supporting numerous small project.
- Funding appears to be the biggest challenge.

28E Member Entities

1. Benton County
2. Black Hawk County
3. Grundy County
4. Linn County
5. Grundy County
6. City of Cedar Falls
7. City of Cedar Rapids
8. City of Evansdale
9. City of Hudson
10. City of Jesup
11. City of La Porte City
12. City of Vinton
13. City of Waterloo
14. City of Gladbrook
15. City of Grundy Center
16. City of Raymond
17. Black Hawk SWCD
18. Tama SWCD
19. Benton SWCD
20. Butler SWCD
21. Franklin SWCD

The Middle Cedar Watershed

- 21 confirmed entities
- Quarterly meetings
 - CR staff attended first meeting March 30 in Vinton
 - 14 entities were present
 - City of Cedar Rapids is Vice Chair
- Iowa Watershed Approach (Flood mitigation + Nutrient reduction)
- Iowa Flood Center-Housing & Urban Development Grant
 - Money allocated for WMAs, including the Middle Cedar WMA
 - Kickoff meeting with more specifics on June 16

Upcoming Utilities Department Projects Anticipated To Have Plans
and Specifications Filed –May, June, July
Report to Council Infrastructure Committee on 4-19-2016

Filing Plans and Specifications

Water and WPC Plant Projects

Filing May 24 – WPCF Odor Control Upgrades (615233). The existing odor control elements at the WPCF are overloaded and require improvements or repairs. The project will include media replacement and repair of the existing bioscrubber units. Two new biotowers will be installed to increase the capacity of the odor control equipment. New duct work will be installed to remove a greater amount of odorous air from the sludge storage tank to improve hydrogen sulfide safety. Additional repairs will be made to other components of the odor control system in other areas of the plant. The Engineers opinion of probable cost is \$5,500,000 at 60% design.

Filing July 26 – Raw Water Main Relocation (6250044). The Low Lift Pump Station off J Avenue at one time served as the main source of water for the City of Cedar Rapids. Ground water well fields replaced surface water as the primary source of drinking water for the City, and the Low Lift Pump Station is no longer in use. Leaks in the piping have caused flooding in the basement of the Low Lift Pump Station, adding to the degradation of the building. The Low Lift Pump Station is slated for eventual demolition, but to minimize the risk of future leaks and flooding, the City desires to have the pipes connected to the 30-inch raw water intake main disconnected and plugged. The design is currently 60% complete, and the engineer's opinion of probable cost is currently \$425,000.

Water Main Projects

The following water main work has been planned in conjunction with Paving for Progress projects or other Public Works projects. Bid Dates:

March/April – 2015045/3012127 14th Ave SE from 36th to 42nd Streets SE, (PfP) Water Main Replacement Budget \$550,000.

April 13 – 2016041 / 3012155 3rd Ave from 6th St SW to 5th St SE (PfP) Replace Valves and Fire hydrants East of the River Budget \$100,000

April – 2014088/3012111 7th St SE from 5th Ave to 8th Ave SE, (PfP) Replace Valves & Fire Hydrants Budget \$200,000.

May 25 – 2016012/3012131 12th Ave SE Ph-1 from east of 19th St to McCarthy Rd SE, (PfP) Water Main Replacement Budget \$190,000.

May 25 – 2016028/3012126 29th & 30th St Dr SE from 1st Ave to Tama St SE, (PfP) Water Main Replacement Budget \$480,000.

Upcoming Public Hearings

June 14 – WPCF Odor Control Upgrades (615233).

August 9 – Raw Water Main Relocation (6250044)