## A River Runs Through It

A Look at the Flood Protection System for Cedar Rapids, Iowa

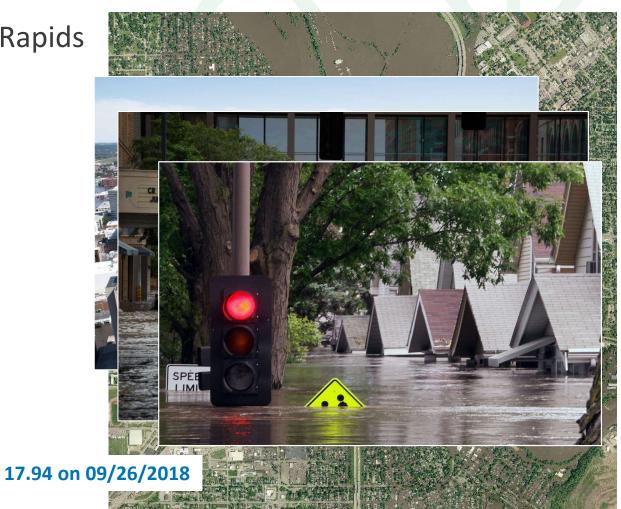




**Building Communities.** Improving Lives.

## A History of Flooding

- Major floods in Cedar Rapids
  - 1. 31.12 ft on 06/13/2008
  - 2. 21.95 ft on 09/27/2016
  - 3. 20.00 ft on 06/01/1851
  - 4. 20.00 ft on 03/18/1929
  - 5. 19.66 ft on 03/31/1961
  - 6. 19.27 ft on 04/04/1993
  - 7. 18.60 ft on 04/04/1933
  - 8. 18.51 ft on 04/10/1965
  - 9. 18.31 ft on 07/25/1999
  - 10. 18.30 ft on 05/27/2004
  - 11. 18.23 ft on 06/02/2013
  - 12. 18.23 ft on 06/16/1947
  - 13. 18.05 ft on 07/12/1993
  - 14. 17.85 ft on 07/18/1993
  - 15. 17.60 ft on 03/30/1906

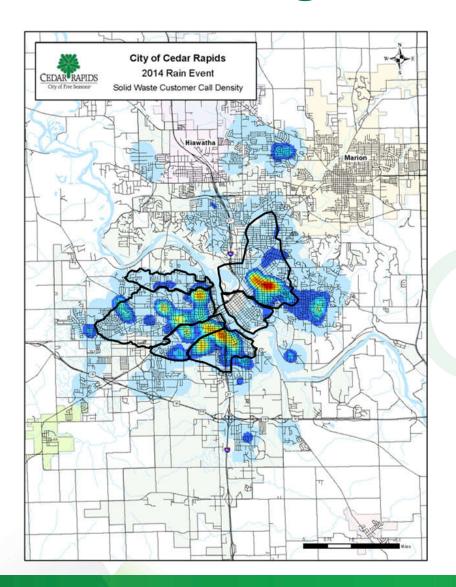


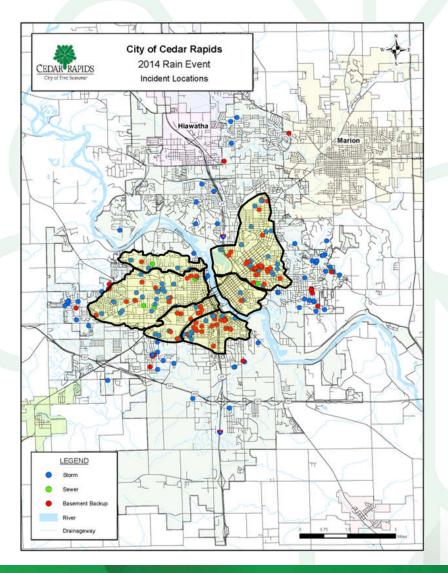
### 2016 Flood



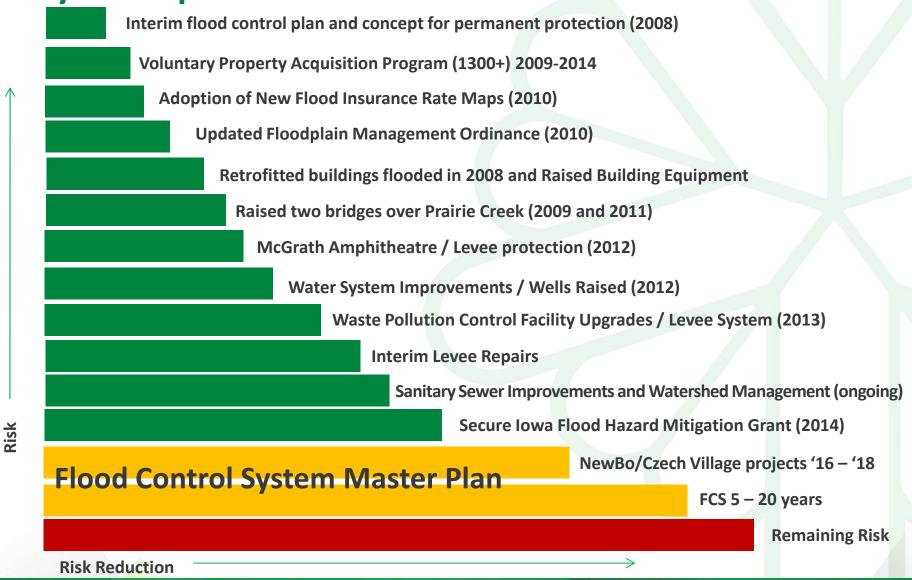
2019 IAFSM Annual Conference | A River Runs Through It: A Look at the Flood Protection System for Cedar Rapids, Iowa

## Flash Flooding





### City Response



## Public Engagement

Neighborhood Workshops, Open Houses, City Events, Website



#### Residents get fresh chance to weigh in

#### City Council approves flood control logo

By Rick Smith. The Gazette

CEDAR RAPIDS - The City Council this week approved a green-and-white logo that will appear on signs and correspondence as the city's \$570 million flood control system is implemented.

In addition, the council agreed to repaint a city water tower near C Street SW and Highway 30 and, as with no other water tower in the city, "CEDAR RAPIDS" will be added on the tower's east and west sides so the name is visible in both directions from Highway 30.

The flood control logo



Emily Muhlbach, communications coordinator for the city's Development Services Department, said engineering consultant HR Green, which is designing the city's west-side flood control system, came up with the logo design and

help identify those areas and using the branding to help communicate that long-term vision to the community.

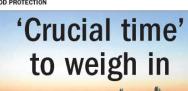
Megan Murphy, communications coordinator for the city's Utilities Department, said the C Street SW water tower will be

cedar rapids flood control



Flood Control System - East Side rendering as of March





More than 6 years of talk about flood control nears end

CEDAR RAPIDS - City CEDAR RAPIDS — City officials and their engineering consultants have been alking about the possible dignment and look of a coming flood-control system for ore than six years.

dar Rapids residents to

Cedar Rapids residents to pay attention.

City officials and consultants held their third open house in three mouths on Monday at the downtown tibrary once again to elicit public comments as the city finalizes plans for a flood-control system in the months abead. onths ahead.

nonins anead.

Sandy Pumphrey, the sity's project engineer for lood control, on Monday aid the city is getting a lot of quality comments from quanty comments from the public as it decides a mal alignment for the sys-m. It then has to decide that part of that alignment will be earthen levee, solid flood wall, removable flood vall or combination wall that is partially removable.



McGrath Amphitheatre in Cedar Rapids, The facility was designed a to be part of the flood-control system.

#### WHERE YOU CAN COMMENT

comment. Go to http://smgs.us/3ivf

play a role in what the city can build. Removable flood walls, for example, are more expensive than levees and permanent flood walls, and more gradually climbing

► FLOOD CONTROL, PAGE 1





Memories, ideas roll in for Wood





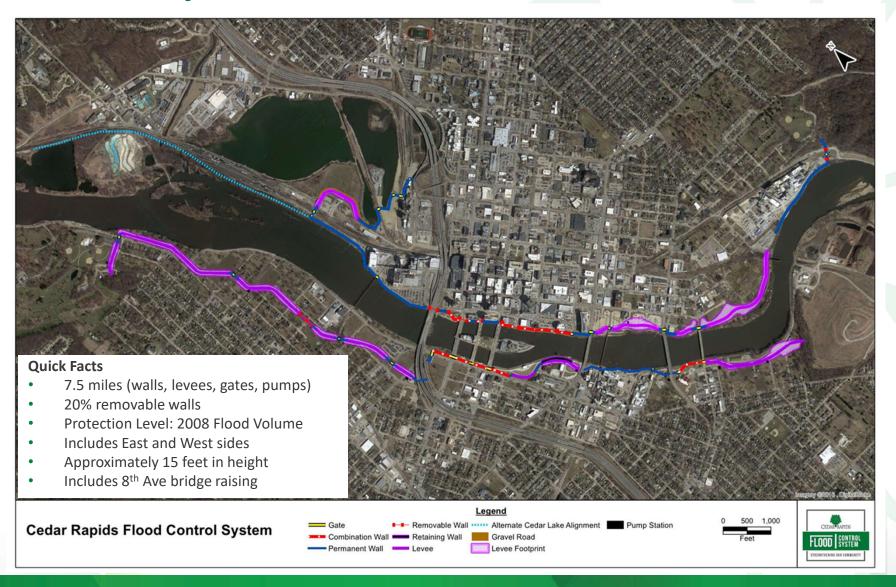
Thanks to @EconomicAllianc for letting us bring #floodcontrolsystem info to the

Farmer's Market!

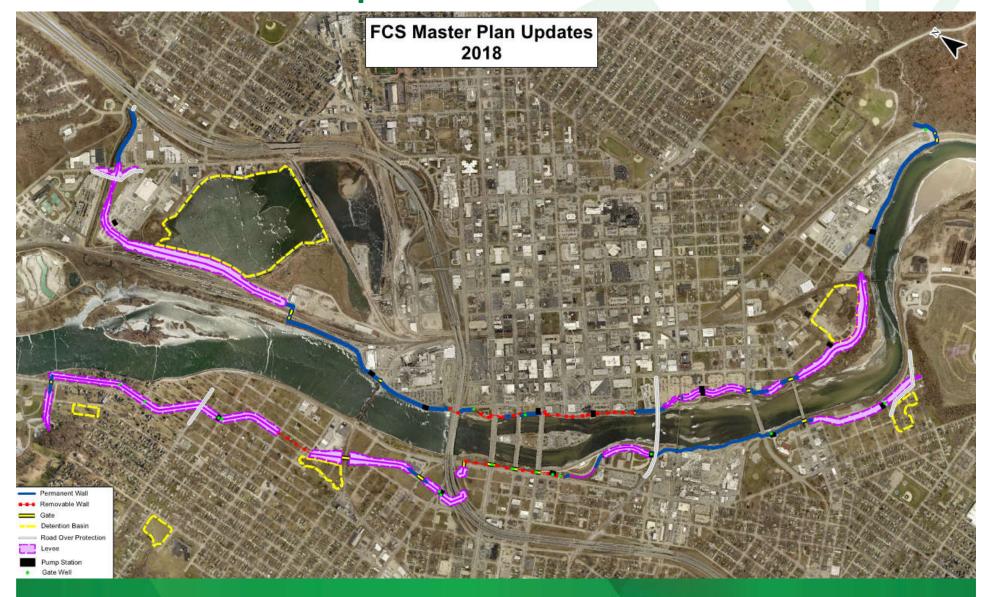


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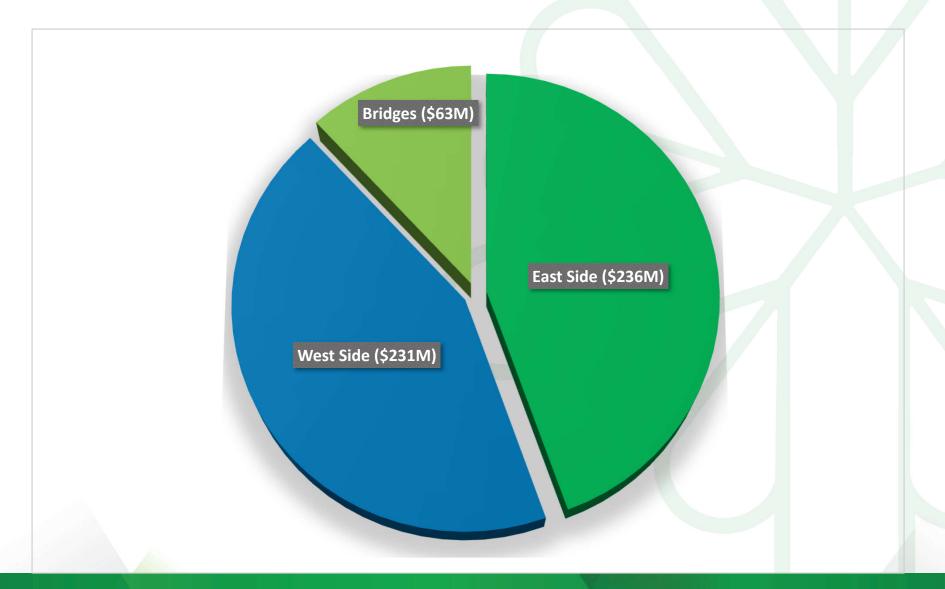
# **Overall System**



# Master Plan Updates



## **Budget Overview**



## **Funding**

- No authority or multi-jurisdictional entity to fund, design, construct, or manage the system
- Estimated cost = \$550 million
- 3.5% inflationary factor applied to design and construction
- Over 30 funding options investigated and vetted

## **Funding**

- Major funding sources include
  - Flood Mitigation Grant: \$267 million
    - lowa legislature authorized a program for communities to capture up to \$15 million for each of 20 years for flood control
  - USACE funding: \$117 million
  - Debt Service levy increase: \$200 million
    - \$0.20/year for each of 10 years will generate \$200 million
- Efforts underway to offset project costs through
  - Value Engineering
  - Competitive Grants (\$15 million secured to date)



### Partnering and Collaboration

- Flood Control System MP
  - Decrease 5-year peak flow rate = smaller stormwater pump station
  - Reduce pump station capital costs

Flood Control System Master Plan

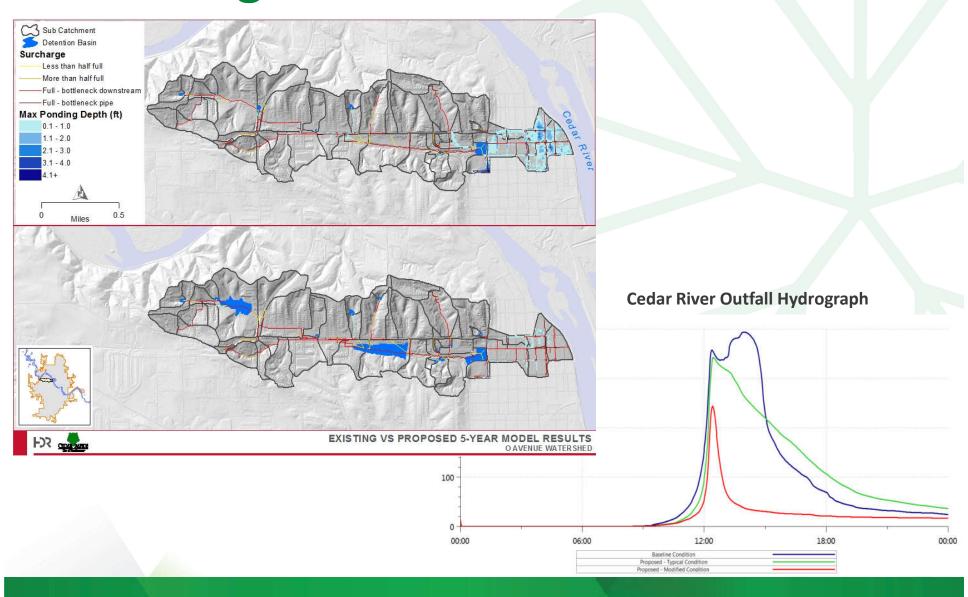
**Stormwater Master Plan** 

**City of Cedar Rapids** 

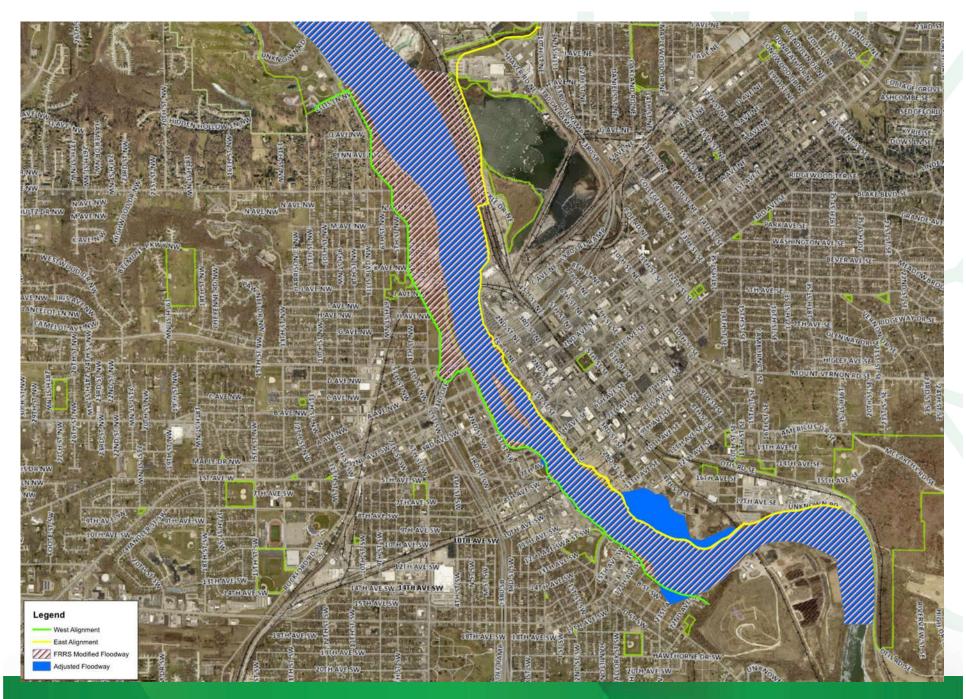
Maximize flood-resiliency for every dollar spent on capital improvements

- Stormwater MP
  - Reduce flood risk throughout the watershed
  - Utilize existing floodplain conveyance system
  - Increase value and utility of upstream capital investments

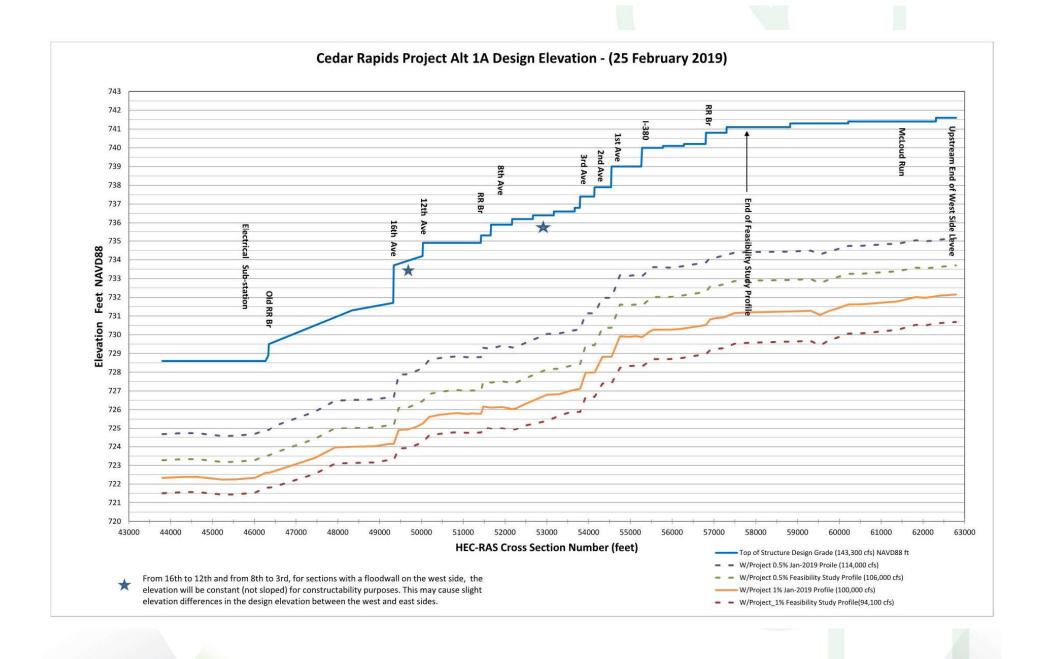
## Partnering and Collaboration

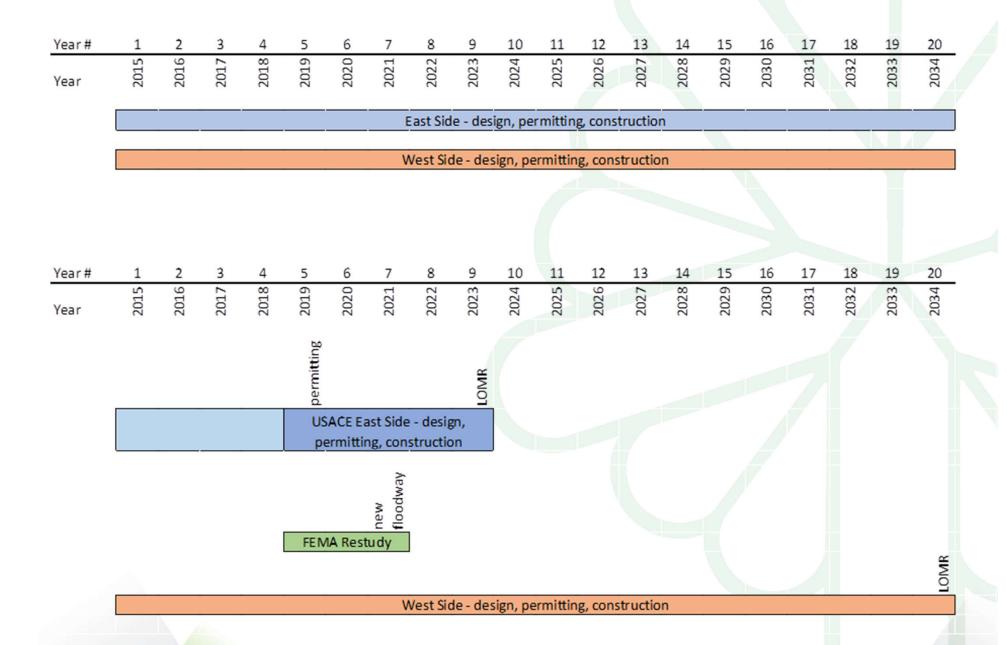


#### Discharge Comparison for Cedar River at the Cedar Rapids Gage Discharges (cfs) Feasibility Study **Exceedance Probability** (Approved by IDNR FIS Report 11/30/08) 10% (10-year) 53,000 54,500 1% (100-year) 87,000 94,100 0.5% (200-year) N/A 106,000 0.2% (500-year Design Flow) 112,000 122,000



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#### Lessons Learned

- Coordinate Early, Coordinate Often
  - Workflow and schedules
  - Technical aspects (models, methods, criteria...)
- Identify and support multi-benefit projects
  - Prioritize
  - Partnering/Collaboration
  - Transparency
  - Flexibility
- Focus on the shared goal:
   A flood-resilient Cedar Rapids







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