

# Cedar River, Cedar Rapids, Iowa

## Flood Risk Management Project Feasibility Study Report with Integrated Environmental Assessment

### *Civil Works Review Board*

#### PROJECT BRIEFING

COL. Shawn P. McGinley

District Commander, Rock Island District

18 November 2010

Headquarters, US Army Corps of Engineers

Washington, DC



US Army Corps of Engineers  
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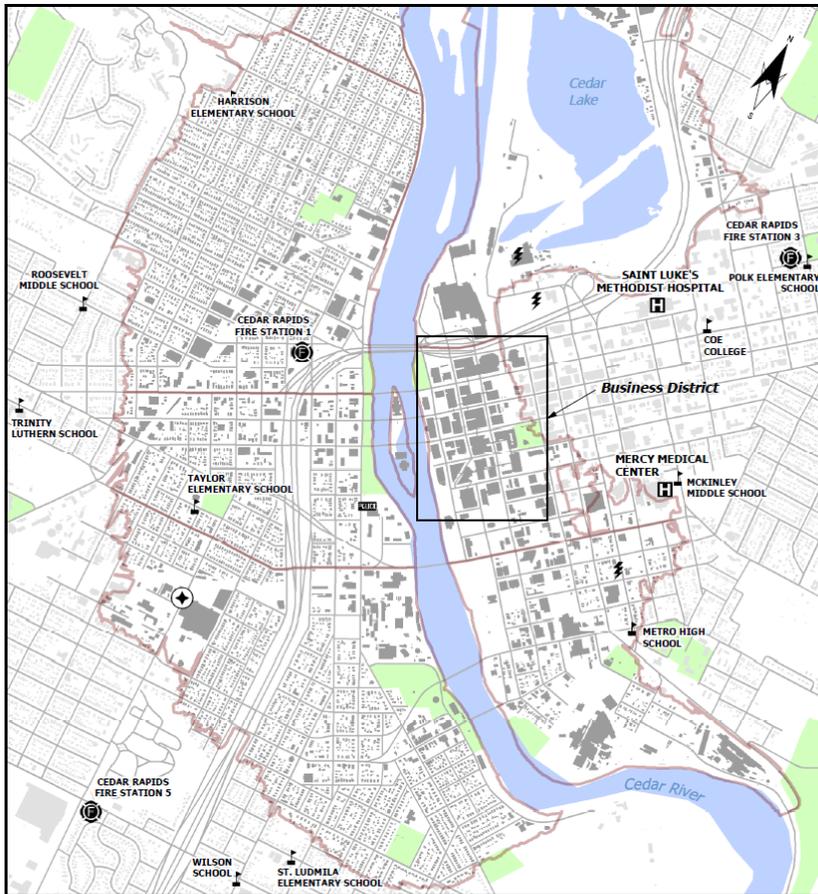


# June 2008 Flood Event

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# June 2008 Flood Event

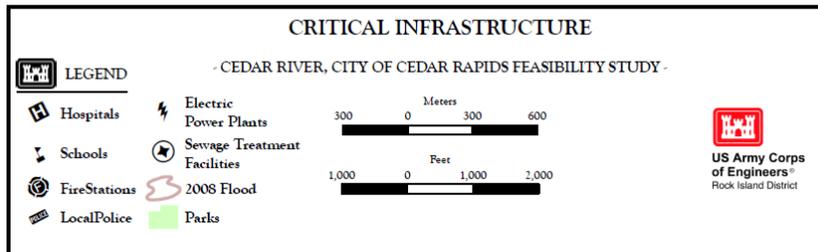


## Critical Infrastructure

- I-380 – only usable bridge, restricted to emergency vehicles
- 2 Hospitals – both on east side of Cedar River

## Other public facilities affected:

- Federal courthouse
- Linn County Courthouse and Jail
- City Hall
- County Administration Building
- Ground Transportation Center
- Science Museum
- Library
- Events Center



# June 2008 Flood Event

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# June 2008 Flood Event

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- Over 1300 City blocks flooded
- Depths of up to 16 feet and estimated velocities up to 10 feet per second
- No fatalities despite a population at risk of 30,000
- Exceeded flood stage for over a week
- City reported over \$2.4 billion in public and private flood damage
- \$330 million of damages to public buildings



# Presentation Outline

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- Purpose
- Background – 2008 Flood Event
- Project Delivery Process
- Overview of Study and Recommended Plan
- Agency Technical Review
- Independent External Peer Review
- OWPR Policy Compliance Review
- Environmental Operating Principles
- NEPA Compliance
- USACE Strategic Campaign Plan
- Public Involvement
- Assessment of the project delivery process
- Summary
- Recommendation



# Purpose of Briefing

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- Provide an overview of the Cedar Rapids Feasibility Study and the Recommended Plan
- Answer questions and address comments
- Obtain CWRB approval for State & Agency Review
- Discuss the next steps in the approval process toward a Chief's Report



# Project Delivery Team Members

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## Non-Federal Sponsor

- ▶ City of Cedar Rapids

## Project Management

## Planning

- ▶ Plan Formulation
- ▶ Economics
- ▶ Environmental Analysis

## Engineering

- ▶ Structural
- ▶ Hydrology & Hydraulics
- ▶ Geotechnical
- ▶ Cost
- ▶ Environmental

## Real Estate

## Office of Counsel

## Operations/Regulatory

## ATR & IEPR Teams

## Regional support / other Districts

- ▶ St. Paul, New Orleans, & Omaha
- ▶ CSRA, Walla Walla

## Contractors

- ▶ Stanley Consultants
- ▶ Terracon
- ▶ Bear Creek Archeology
- ▶ URS
- ▶ Foth



# Study Authority

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Resolution adopted April 5, 2006, by the Committee on Transportation and Infrastructure of the U.S. House of Representatives:

*“Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army is requested to review the report of the Chief of Engineers on the Iowa and Cedar Rivers, Iowa and Minnesota, published as House Document 166, 89<sup>th</sup> Congress, 1<sup>st</sup> Session, and other pertinent reports, to determine whether any modifications to the recommendations contained therein are advisable at the present time in the interest of flood damage reduction, ecosystem restoration, recreation, and related purposes along the Cedar River in Cedar Rapids, Iowa.”*

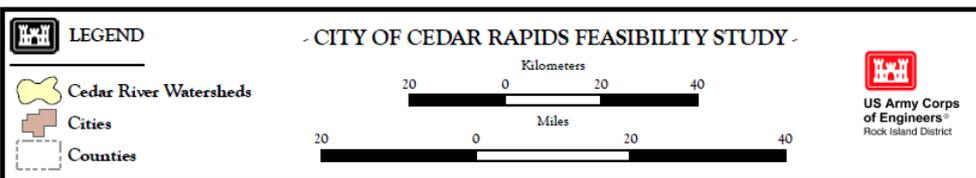
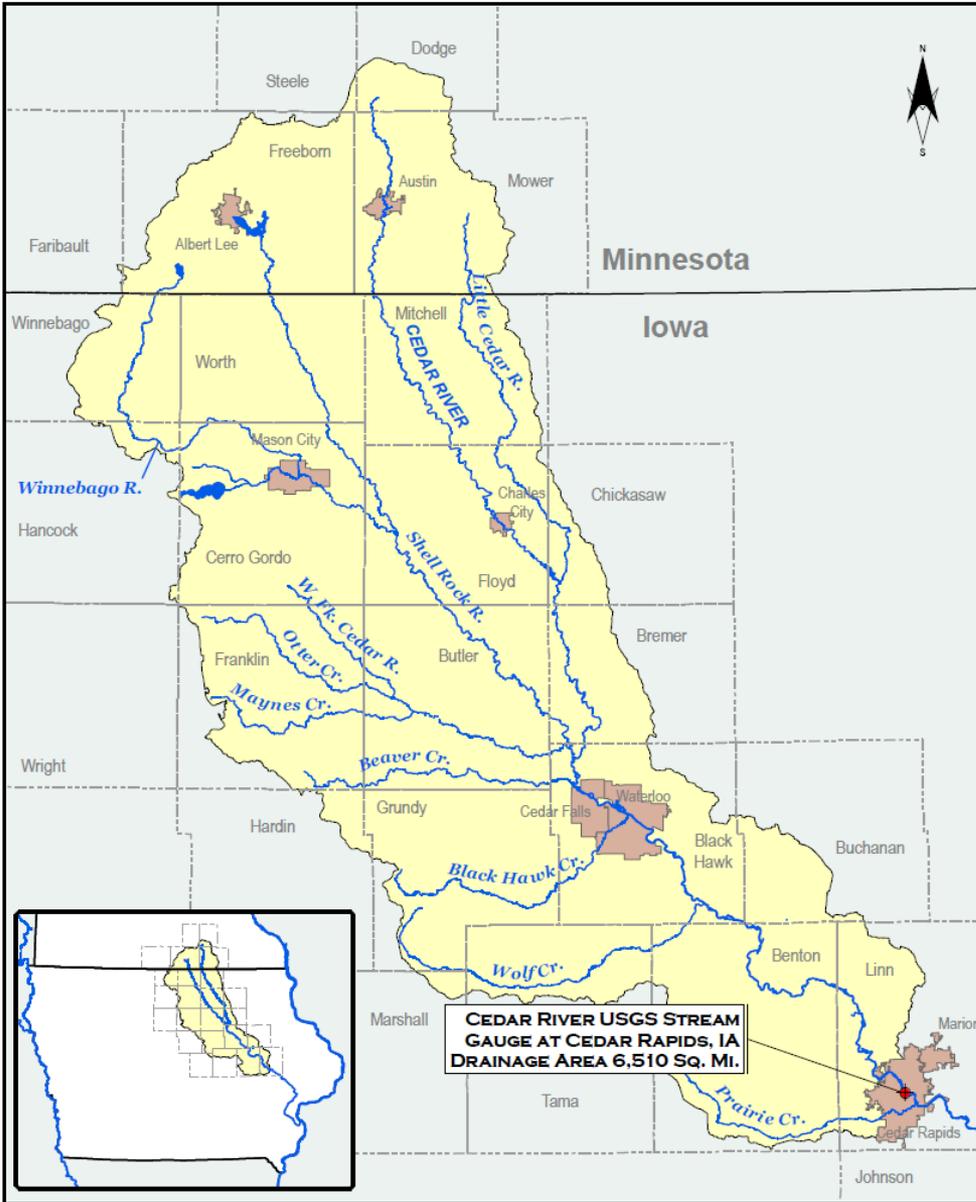
An identical resolution was adopted by the Senate on May 23, 2006 by the Committee on the Environment and Public Works



# Project Location

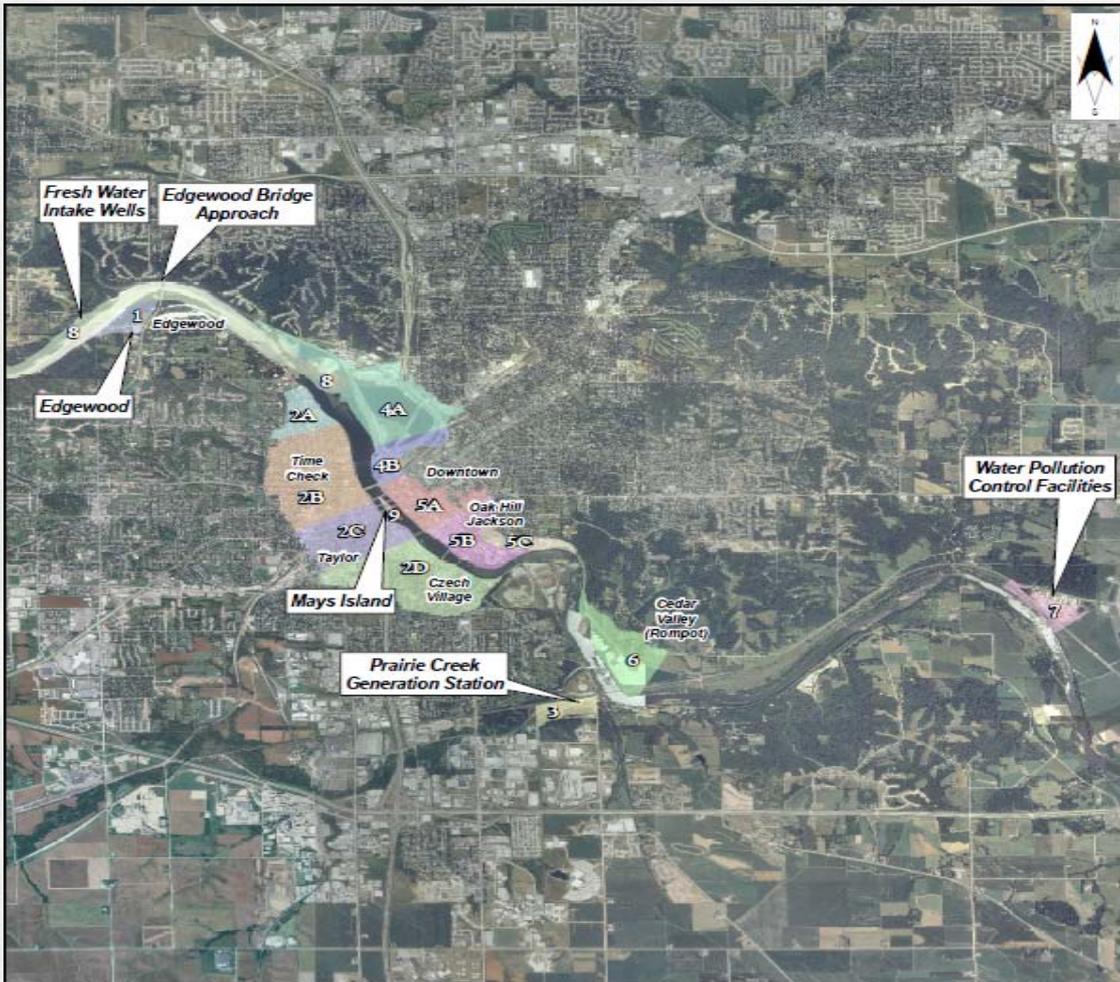
## Cedar River Watershed:

- Mostly northeast Iowa
- 6,510 sq. mi. watershed upstream of Cedar Rapids
- Mostly flat & gently rolling topography
- Primarily row-crop agricultural lands
- Small percentage of urban development



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# Scope



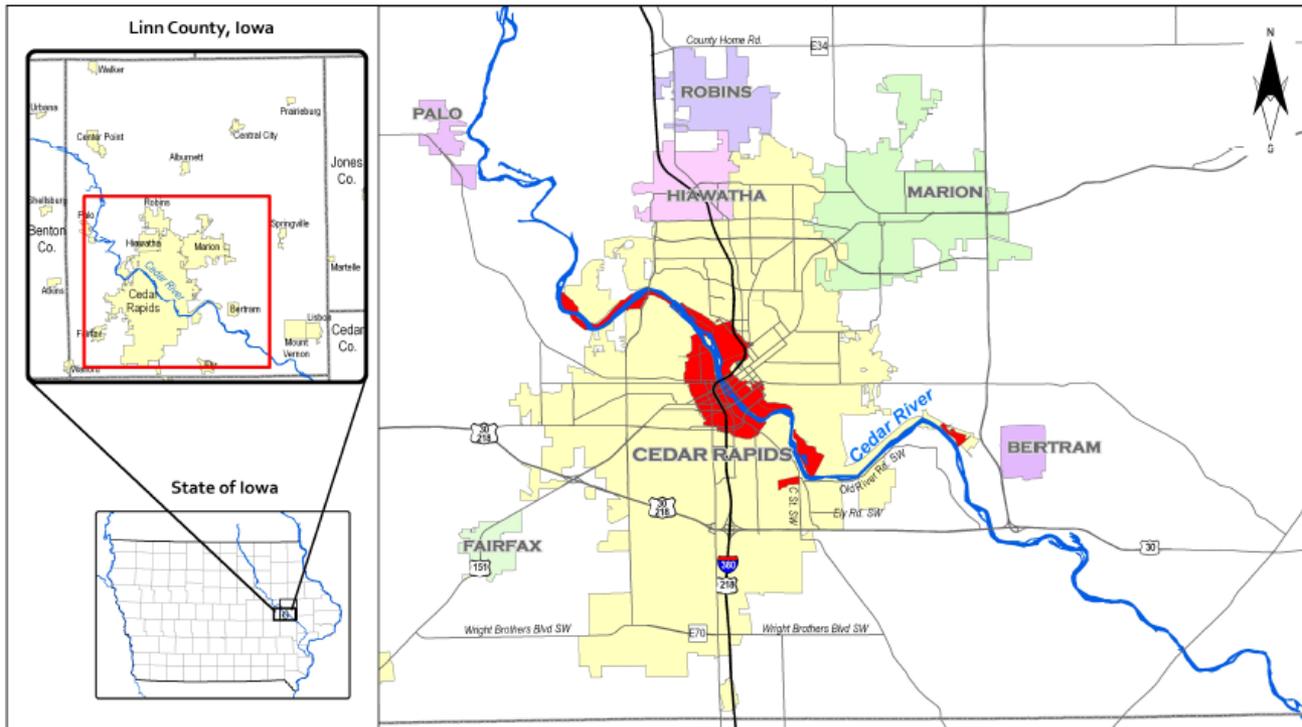
## Scope of Study:

Cedar River Floodplain  
within city limits of  
Cedar Rapids, IA



# Study Area

- Cedar Rapids is Iowa's second largest city
- 304,500 people in Cedar Rapids metro area, ~30,000 at risk
- Contributes \$12.5 billion to the economy of Iowa and the region
- Over 4,200 structures in the study area
- Average annual flood damages estimated over \$12 million



STUDY AREA AND VICINITY MAPS  
- CEDAR RIVER, CITY OF CEDAR RAPIDS FEASIBILITY STUDY -  
Edgewater



# Background

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- Existing floodwalls and levees have no impacts on risk reduction benefits
- Largest flood event prior to 2008 was less than a 2% (50 year) event
- 2008 flood was over 11 feet higher than the previous flood of record and considered more than a 0.2% (500 year) event
- City has since embarked toward a comprehensive strategy reducing flood risks



# Study Timeline

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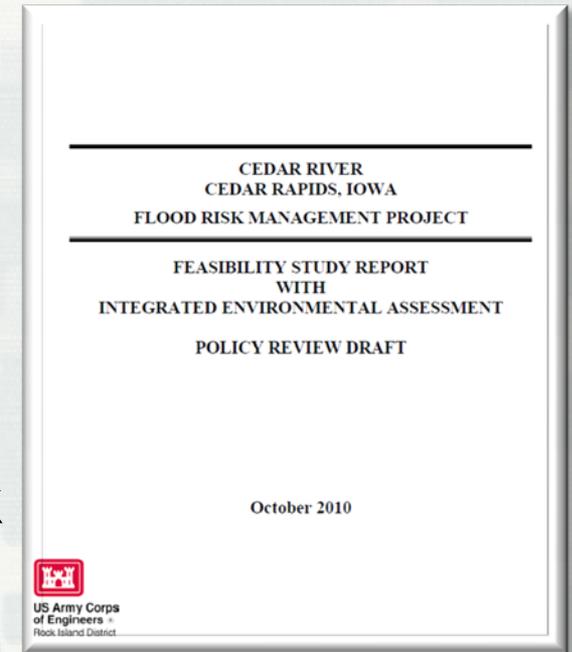
<u>Activity</u>	<u>Scheduled Completion Date</u>
Feasibility Cost Share Agreement signed	May 2008
Flood of Record	June 2008
Amended Feasibility Cost Share Agreement	May 2009
Completed Data Inventory	December 2009
Evaluated & Compared Alternatives	June 2010
Draft Report for Compliance Reviews	August 2010
Public Review	September 2010
Division Commander's Transmittal	October 2010
<b>Civil Works Review Board</b>	<b>November 2010</b>
State & Agency Review	December 2010
Final Report to Headquarters	January 2011
Chief's Report signed	January 2011



# Study Objectives

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- Primary: Reduce flood risks and damages to private property & public infrastructure
- Improve local, state, & Federal response to flood events
- Increase public awareness of flood risk
- Increase recreational opportunities compatible with an implementable, federally supportable FRM plan



# Future Without Project Condition

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- Uncertainty caused by City's ongoing recovery from the June 2008 flood event
- Constant changes within the floodplain since June 2008
- Structure inventories and damage surveys completed October 2009
- Residential and nonresidential structure damages based on repair to pre-flood values, excluding those subject to FEMA buyouts



# Future Without Project Condition

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- Several industrial properties with significant risk within the study area
- Owners support Federal project - No plans to construct floodwalls or levees except as could be incorporated into a Federal project
- The future without project conditions are reasonable and acceptable



# Future without Project Condition

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## Hydrology – Climate change

- No consistent, accepted methodology exists to incorporate climate change projections into flood frequency analysis
- Existing Corps guidance available only for sea level rise.
- Historical data (106 years) does not exhibit a clear trend or other signs of nonstationarity.
  
- Therefore, the study followed existing Corps guidance (EM 1110-2-1415) on Hydrologic Frequency Analysis



# Measures Considered

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- Non-Structural:
  - ▶ Flood Proofing
  - ▶ Buyouts
  - ▶ Land Use Rules & Zoning
  - ▶ Flood Warning Systems
  - ▶ Evacuation Plans
  - ▶ Building Codes
  - ▶ Elevate/Relocate Buildings
  - ▶ Single Structure Floodwall
  - ▶ Flood Insurance
  - ▶ Community Education
- Structural:
  - ▶ Reservoirs
  - ▶ Diversion Channels
  - ▶ Dredging/Enlargement
  - ▶ Levees
  - ▶ Floodwalls
  - ▶ Bridge & Dam Mods



# Evaluating & Screening Alternatives

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- Structural alternatives other than levees and floodwalls were not justified and were eliminated
- Non-structural alternatives were not justified and were eliminated as part of a Corps project.
- The city is actively implementing non-structural measures like buyouts through other Federal and State programs.



# Levee & Floodwall Alternatives

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- 1 - Both sides of river, including Cedar Lake
- 1A - Both sides of river, excluding Cedar Lake
- 4 - East side of river, excluding Cedar Lake
- 10 - East side of river, two ring levees



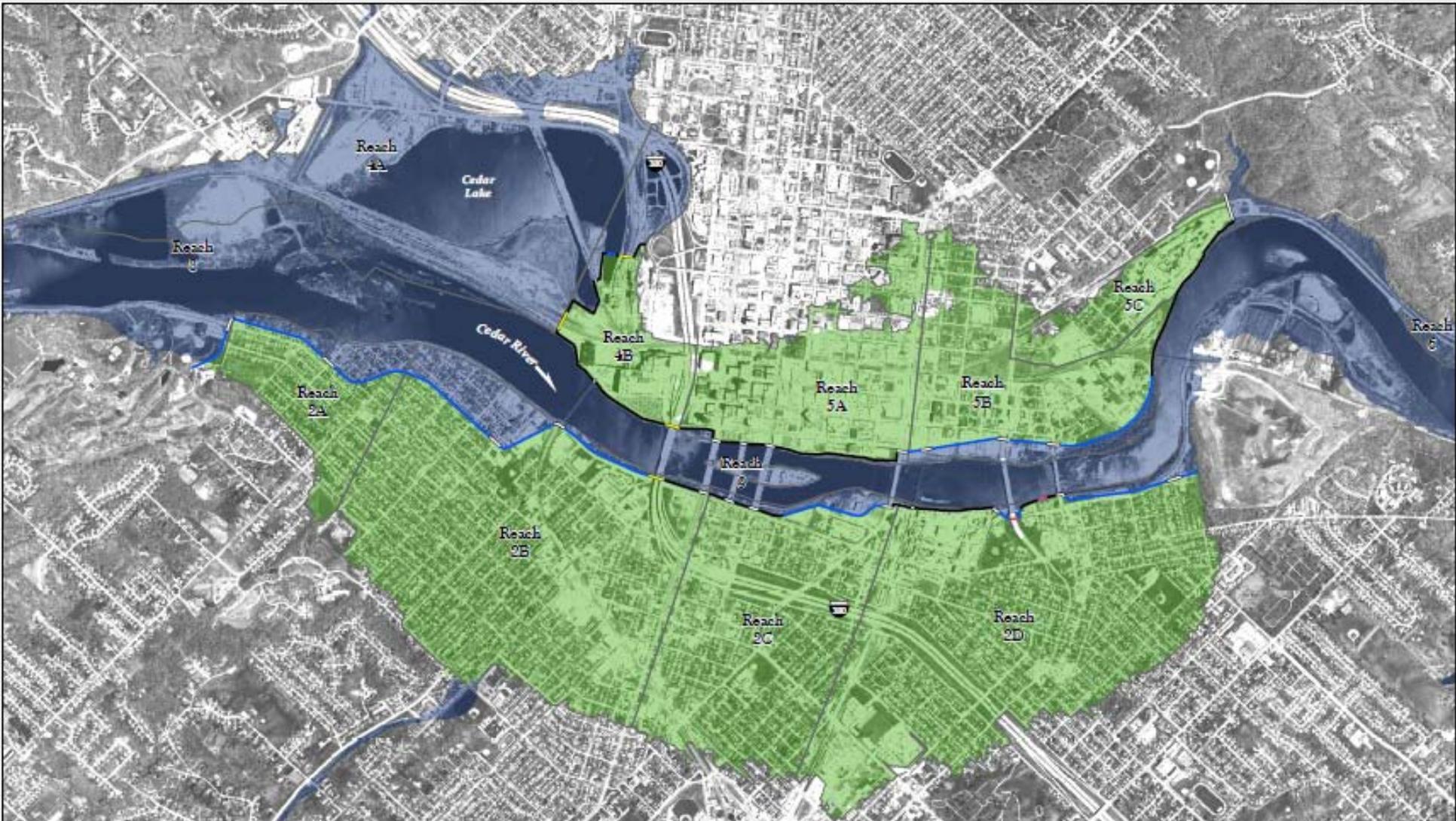
# Alternative 1



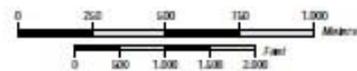
Protection Type		Protected Area
	Existing Embankment	
	Floodwall	
	Gate at Road Crossing	
	Levee	
	Removable Wall	
	Removable Wall at Road Crossing	



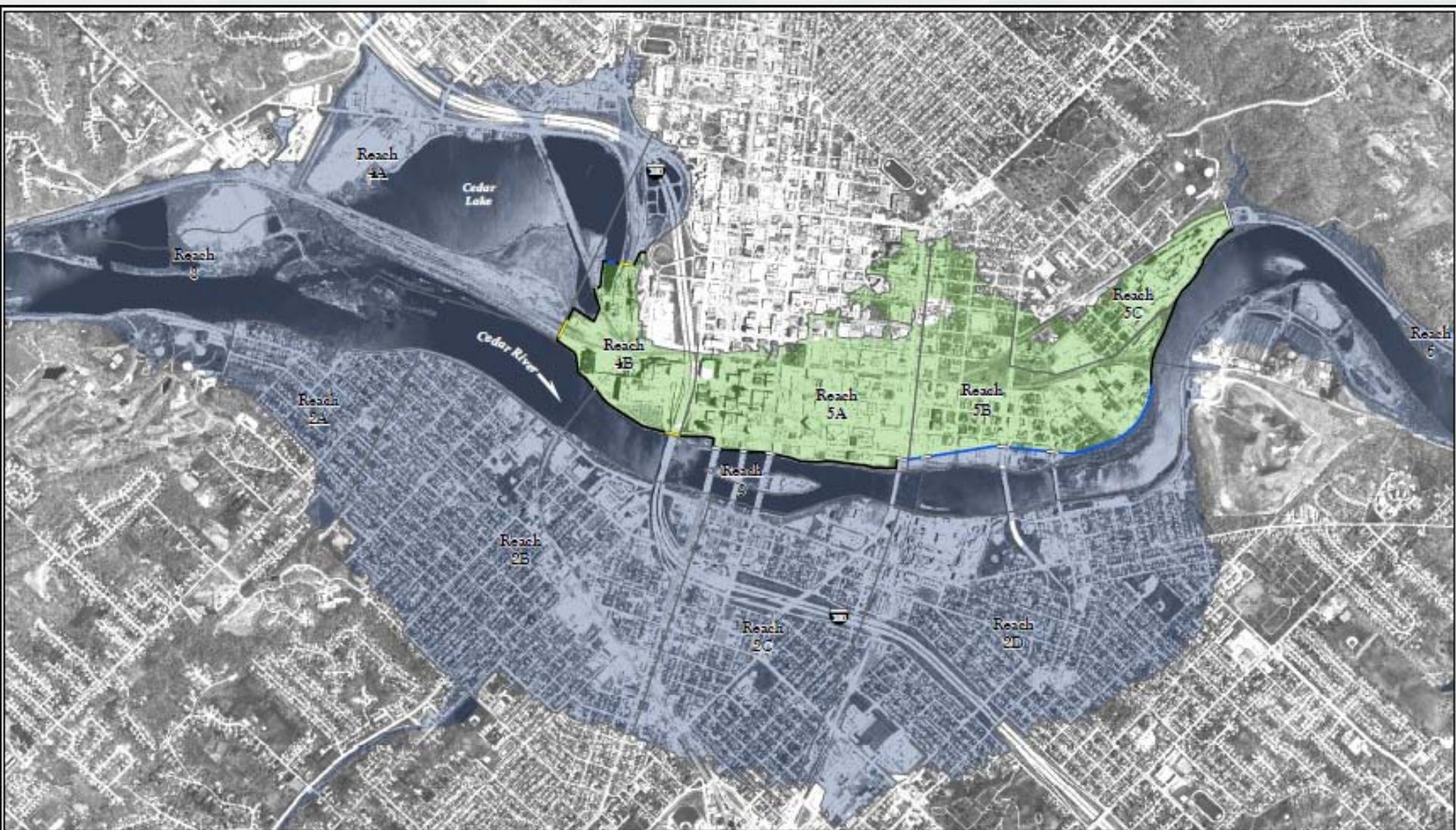
# Alternative 1A



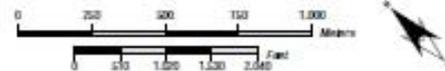
Protection Type		Areas of Protection	
	Levee		Unprotected
	Existing Embankment		Protected
	Floodwall		
	Removable Wall		
	Removable Wall at Road Crossing		
	Gate at Road Crossing		



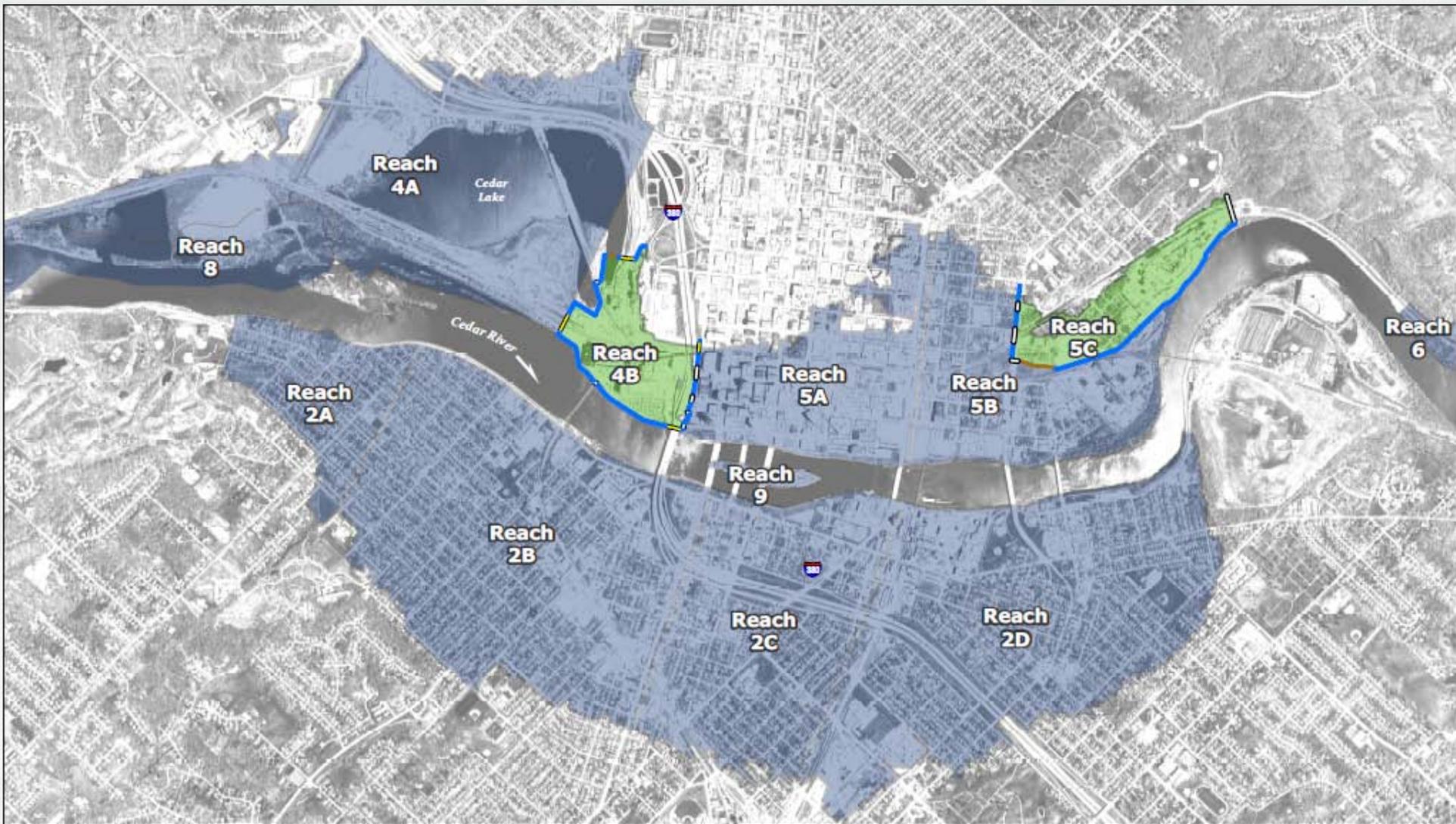
# Alternative 4



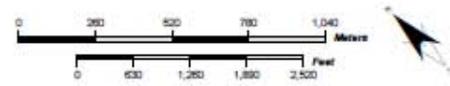
Protection Type		Unprotected	Protected
	Levee		
	Existing Embankment		
	Floodwall		
	Removable Wall		
	Removable Wall at Road Crossing		
	Gate at Road Crossing		



# Alternative 10



Protection Type		Unprotected



# Levee & Floodwall Alternatives

Alternatives were evaluated for 5 heights:

Model Elevation Alternative	Approximate Levee Height referenced to Gage near 8 <sup>th</sup> Avenue Bridge	Approximate Discharge at Indexed Crest Elevation
<u>Name</u>	<u>Feet</u>	<u>CFS</u>
Z	9	103,900
A	10	114,000
B	12	125,950
<b>C</b>	<b>15</b>	<b>143,300</b>
D	17	168,150
E	Combined two	levee heights

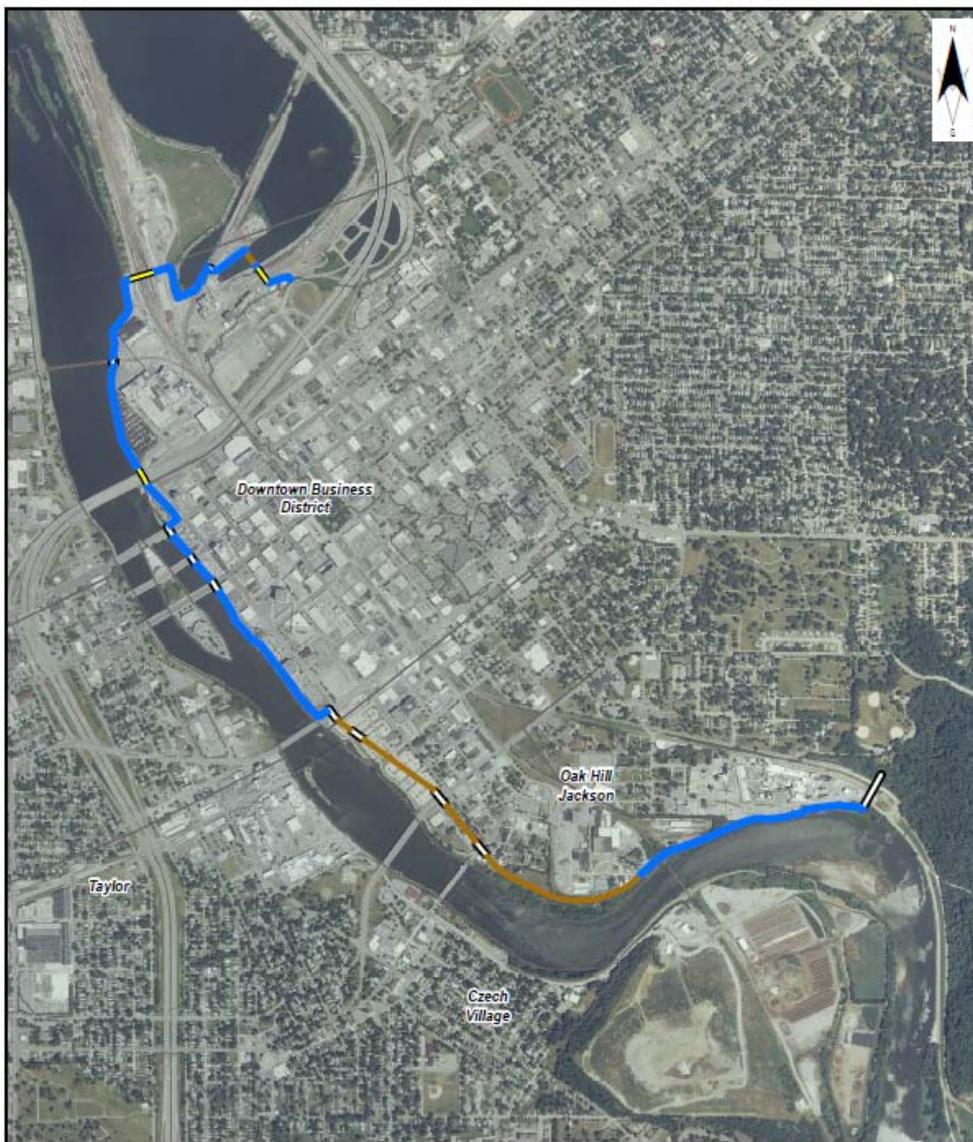


# Selecting the Recommended Plan

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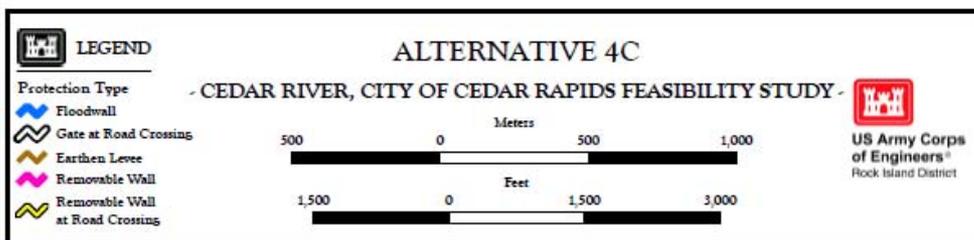
- City's comprehensive floodplain management strategy identifies levees on both sides of the river – Alternatives 1 and 1A are not economically justified
- Alternatives 4 and 10 reduce risk to portions of the city east of the river - both are economically justified
- Alternative 10E primarily reduces risk for two separate industrial areas with ring levees
- Alternative 4C was identified as the NED Plan with net annual benefits of \$1,019,000 and a BCR of 1.20 (Oct 2010 price level)
- The City's comprehensive floodplain management strategy strongly supports Alternative 4C as a primary component.





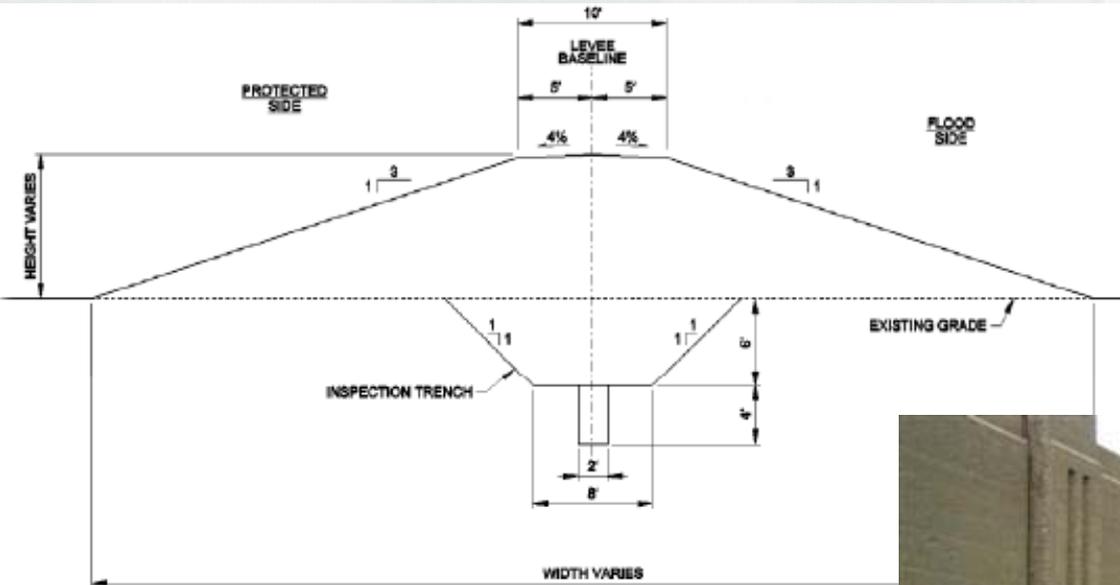
# Recommended Plan

- Plan Components
  - ▶ 2.2 miles concrete floodwall
  - ▶ 0.8 mile earthen levee
  - ▶ 15 road and railroad closures
  - ▶ 6 pump stations
- \$99.0 million estimated cost
- 1.20 Benefit/Cost Ratio (BCR)
- 99.99% chance of containing a 1% (100-year) flood event
- 91.24% chance of containing a 0.2% (500-year) flood event.

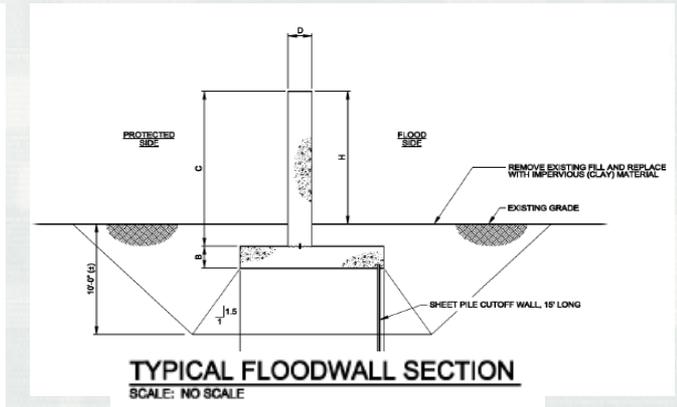


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# Levees & Floodwalls



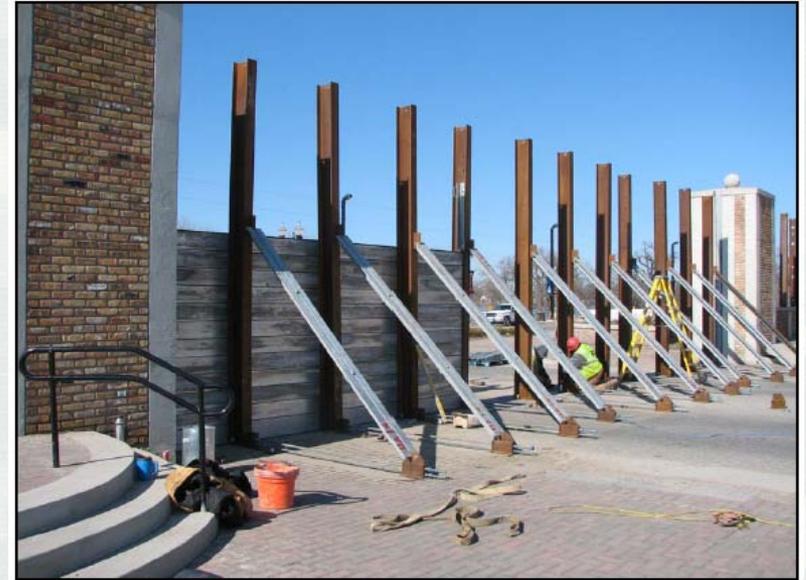
**LEVEE SECTION**  
SCALE: NO SCALE



# Typical Gates & Pump Station



Photograph 2. Steel Roller Gate



Photograph 4. Removable Floodwall



Photograph 3. Steel Swing Gate



Photograph 5. Pump Station





# Current Working Estimates

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	<u>Total Costs(\$)</u>
Relocations	12,080,000
Levees & Floodwalls	53,939,000
<u>Pumping Plant</u>	<u>2,722,000</u>
Construction Estimates	68,741,000
Lands and Damages	11,700,000
Cultural Resources Preservation	687,000
Pre-Construction Engineering & Design	12,375,000
<u>Construction Mgmt.</u>	<u>5,500,000</u>
Project Cost Totals:	99,004,000



# Project Construction Funding

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After authorized and funded, the Corps Plan would be eligible for Federal cost-share participation:

Estimated Federal share	(65%)	\$64,353,000
<u>Estimated Non-Federal/City share</u>	<u>(35%)</u>	<u>\$34,651,000</u>
Total Project Estimated Cost	(100%)	\$99,004,000

Estimated O&M annual costs: \$18,000



# Environmental Operating Principles

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## Environmentally sound plan formulation and design (EOP 1, 2 & 5)

- Airport property designated for borrow instead of wooded habitat areas
- Alternatives avoid work in the river to minimize aquatic resource impacts

## Environmental balance and sustainability (EOP 1, 2, 3 & 4)

- Project avoids or minimizes environmental impacts while maximizing future safety and economic benefits to the community
- Project complies with applicable Federal laws and Corps guidance

## Assess and mitigate cumulative impacts (EOP 2, 4 & 5)

- System approach ensures reliability of complete levee system
- Avoids cumulative impacts to the Iowa-Cedar River basin system

## Seeks public input and comment (EOP 7)

- Public meetings, public notice and comment period



# District Compliance Reviews

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## District Quality Control (DQC)

- 11 May – 4 Jun 2010 PDT Review
- 04 Jun 2010 – 134 PDT Review Comments: 2 Civil, 25 Cost Engineering, 4 Cultural Resources, 5 Economics, 7 Environmental, 14 Geotechnical, 26 Hydraulics, & 13 Other
- 31 Aug 2010 – All comments addressed in Public Review Draft
- 20 Oct 2010 – Cost Engineering updated cost estimate
- Real Estate cost estimate updated

## Legal Certification

- ▶ 08 Oct 2010 - signed by Chief, MVR-OC

Legal Review

The draft Cedar River, Cedar Rapids, Iowa, Flood Risk Management Project, Feasibility Study Report, with Integrated Environmental Assessment, has been fully reviewed by the Rock Island District Office of Counsel.

Reviewed By   
Assistant District Counsel

Approved By   
District Counsel

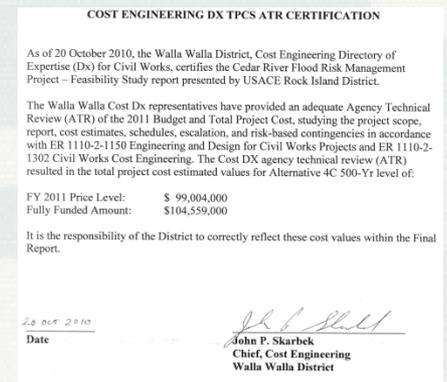
DATE: 10/8/10



# Agency Technical Review (ATR)

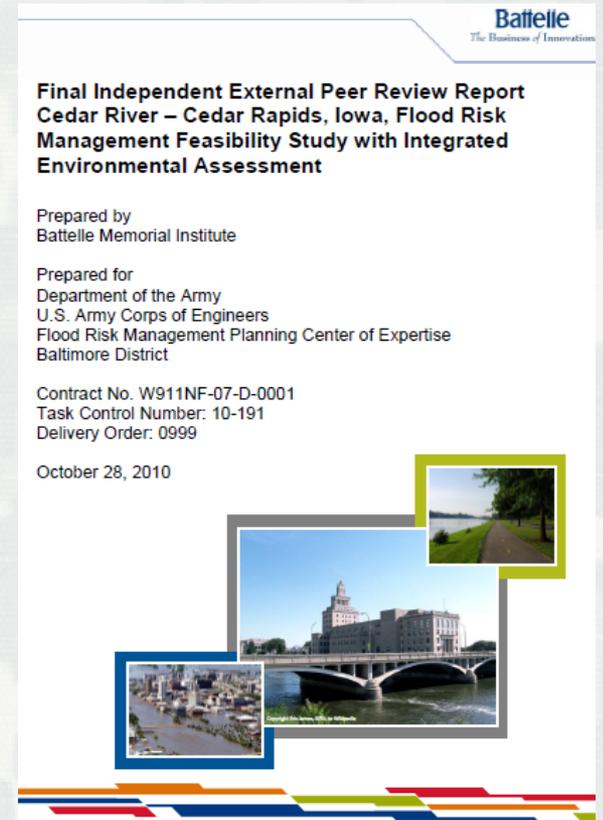
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- Project review led by Norfolk District with additional reviewers in Jacksonville, St. Paul, St. Louis, Chicago, Omaha, Walla Walla, Los Angeles, and Tulsa Districts.
- All 68 review comments have been resolved and closed.
- 07 Oct 2010 - ATR certified, subject to 21 outstanding Cost Engineering comments
- 20 Oct 2010 - Cost Estimating DX certified cost estimate.
  - The most significant comments considered general rates for overhead, equipment and labor costs.
  - Total construction cost increased \$200,000 from \$98.8M to \$99.0M



# Independent External Peer Review (IEPR)

- FRM-PCX led, with Army Research Office
- Battelle Memorial Institute subcontracted Panel of four experts in economics, plan formulation, hydraulic engineering, and environmental science/ecology
- 12 comments: 2 high, 6 medium, 4 low
  - Potential for additional costs for cultural resources mitigation
  - Economic justification of existing and future damage estimates
- All 12 comments resolved



# OWPR Policy Compliance Review

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## Alternatives Formulation Briefing (AFB)

- 08 Jul 2010 – AFB Teleconference
- 28 Jul 2010 – 42 HQUSACE Policy Review Comments:  
8 plan formulation, 7 plan evaluation, 2 plan selection, 3 real estate, 4 cost engineering, 10 environmental & 8 miscellaneous
- 06 Aug 2010 – PGM Compliance

## HQ Comments on Public Review Draft

- 31 Aug 2010 Public Review draft sent to MVD & HQ
- 08 Oct 2010 Received 21 draft HQ comments
- 05 Nov 2010 PGM Compliance
- 10 Nov 2010 Responses addressed



# Public Involvement

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Public Meetings to inform & gather input:

- 29 Jul, 11 Sep, and 16 Oct 2008 – City coordinated meetings in line with what the District would conduct for public scoping and workshops
- 29 Apr 2009 – District open house explained Study process
- 11 Mar 2010 – City-sponsored Town Hall meeting
- 23 Jun 2010 – District information meeting identified alternatives



# Public Involvement

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31 Aug 2010 – Public Notice Draft Feasibility Report with Integrated Environmental Assessment

- About 669 digital discs, with 212 paper copies as requested.
- Notice of Availability sent to local media, neighborhood and business organizations, local, state, and Federal agencies, environmental organizations and recognized Indian tribes.
- Posted on Rock Island District website.

21 Sep 2010 - Public Meeting in Cedar Rapids.

- Attended by about 150 people and organizations

30 Sep 2010 – 30-day Public Comment period ended

- 47 written submittals addressed 135 issues

**07 Oct 2010 - Comments and responses incorporated into report**

- Responses in Statement of Findings posted on the project website.



# Environmental Compliance

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15 Oct 2010 – District Engineer signed:

- Statement of Findings (SOF)
- Finding of Compliance with Clean Water Act
- Finding of No Significant Impact (FONSI)



# Project Delivery Process Overview

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## Regularly scheduled meetings

- Weekly meetings of the PDT
- Bi-weekly In-Progress Review meetings with the vertical team
- Monthly meetings with Non-Federal Sponsor, with more frequent phone calls and teleconferences.
- Additional meetings to discuss issues as they arose



# USACE Campaign Plan

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2. **Deliver enduring and essential water resource solutions through collaboration with partners and stakeholders**
  - ▶ 2a –Integrated, sustainable flood risk management
  - ▶ 2b –Implemented collaborative approaches with sponsor, stakeholders, and the public to build consensus and trust
3. **Deliver innovative, resilient, sustainable solutions to the Nation**
  - 3d – Develop and apply innovative approaches to delivering quality infrastructure via expedited planning processes
4. **Build and cultivate a competent, disciplined, and resilient team equipped to deliver high quality solutions**
  - ▶ 4a –Multidisciplinary PDT enhanced technical competencies to model hydraulics and conduct economic inventories & analyses
  - ▶ 4b -Communicating with teams, stakeholders, and the public strategically and transparently, including use of a project website
  - ▶ 4d –Used established tools and systems to model hydraulics and economics, developing highly skilled regional workforce



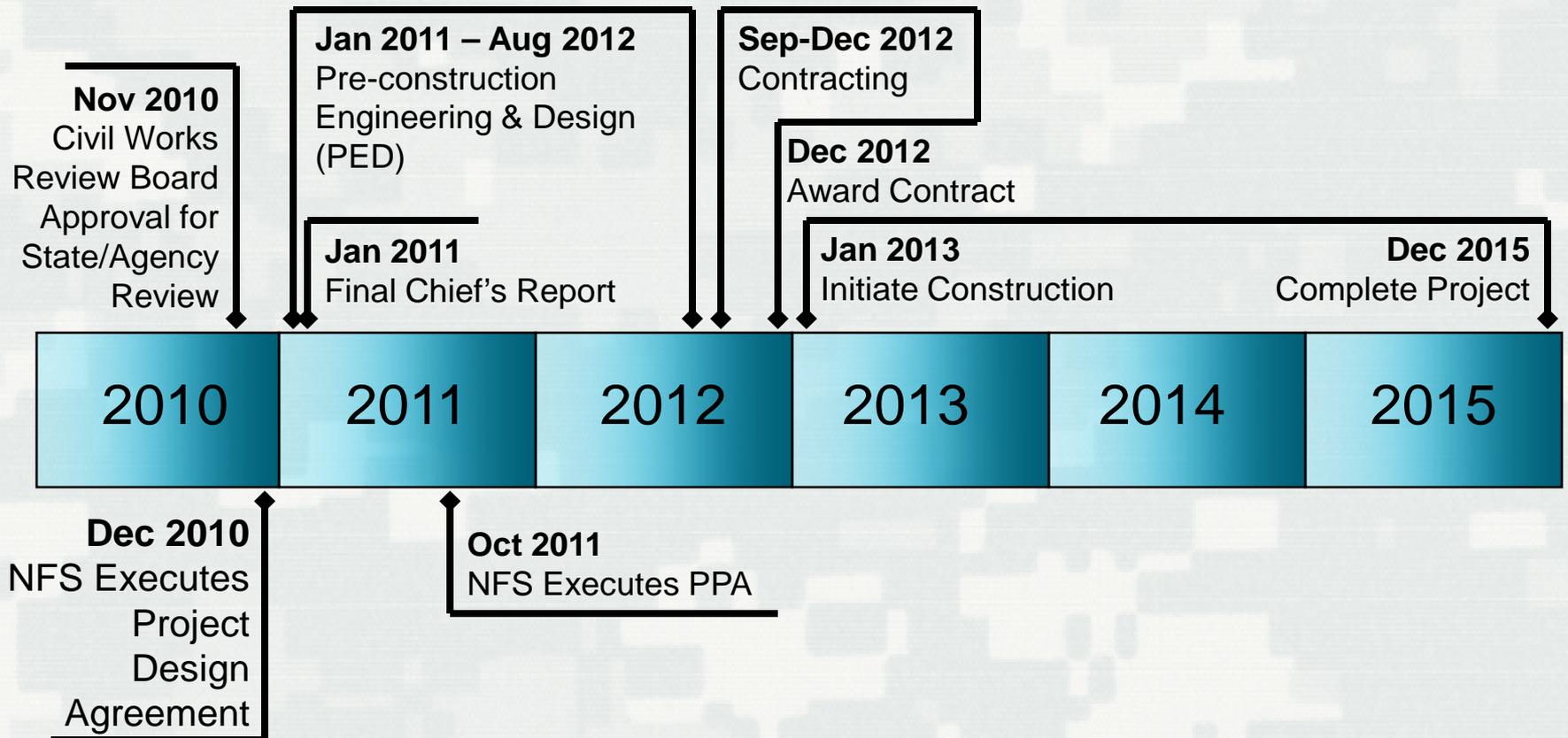
# Project Summary

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- Project has broad public, agency, private & legislative support
- BCR of 1.20
- Project formulation used a systems approach within the Cedar River Basin
- Provides reliable flood risk reduction for the City of Cedar Rapids, Iowa
- Reduces annual damages from \$12.2 M without project to \$6.1M with project
- Total project cost is \$99.0 M
- Cost Share is \$64.4 M Federal/ \$34.6 M City



# Future Project Schedule

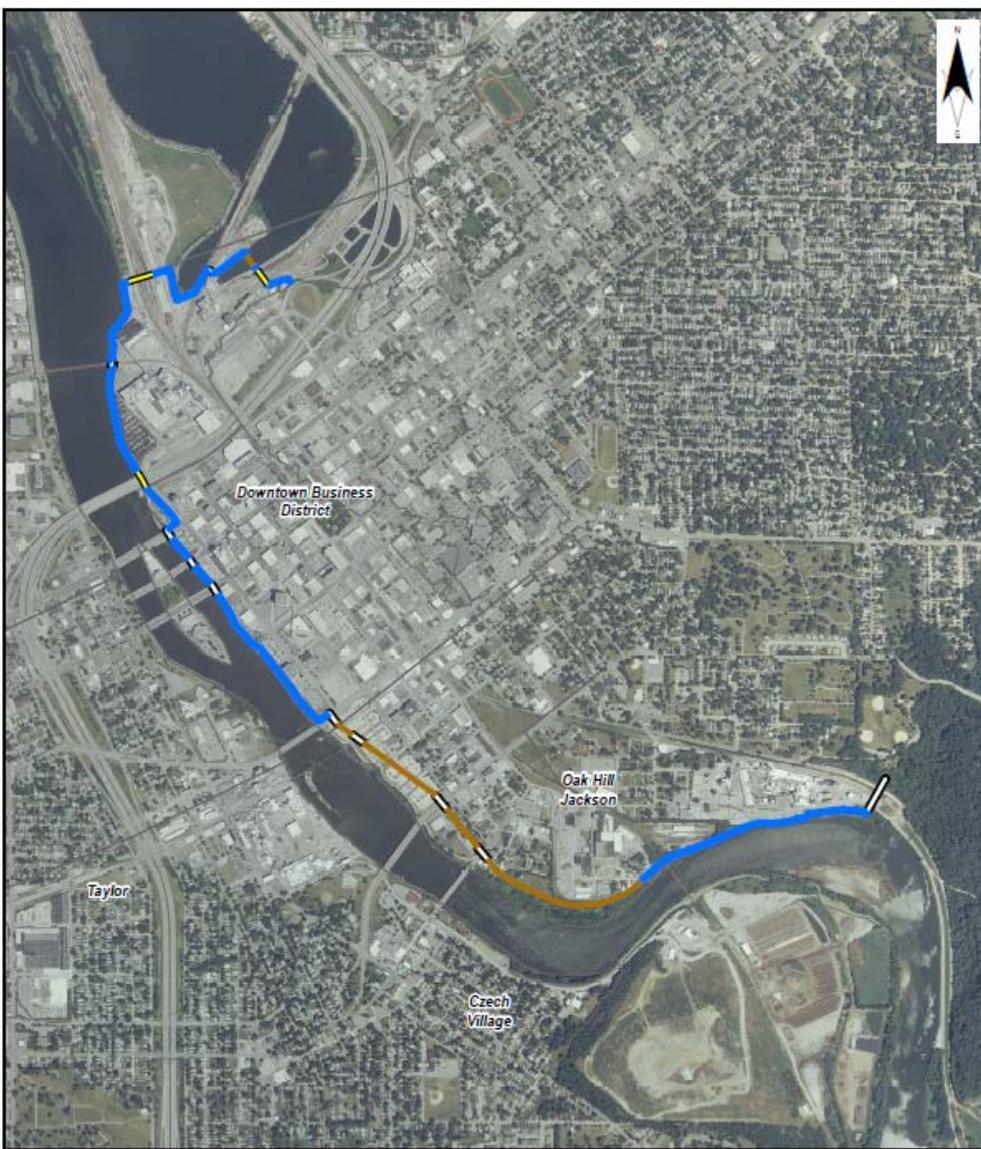


# Recommendation

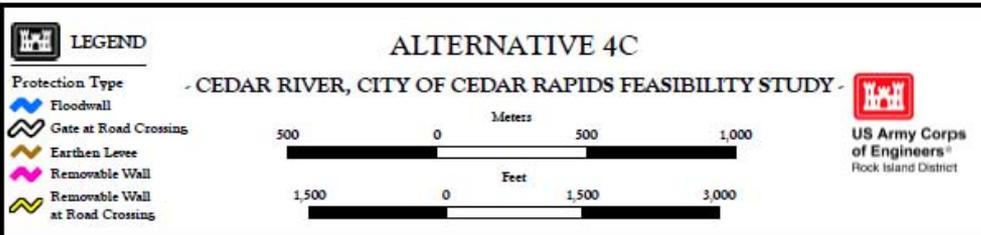
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Approval to initiate State and Agency Review for the *Cedar River, Cedar Rapids, Iowa, Flood Risk Management Project Feasibility Study Report with Integrated Environmental Assessment*, dated November, 2010





# Questions?



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**Cedar Rapids, Iowa**  
**Mayor Ron Corbett**  
**City Manager Jeff Pomeranz**  
USACE Civil Works Review Board  
November 18, 2010

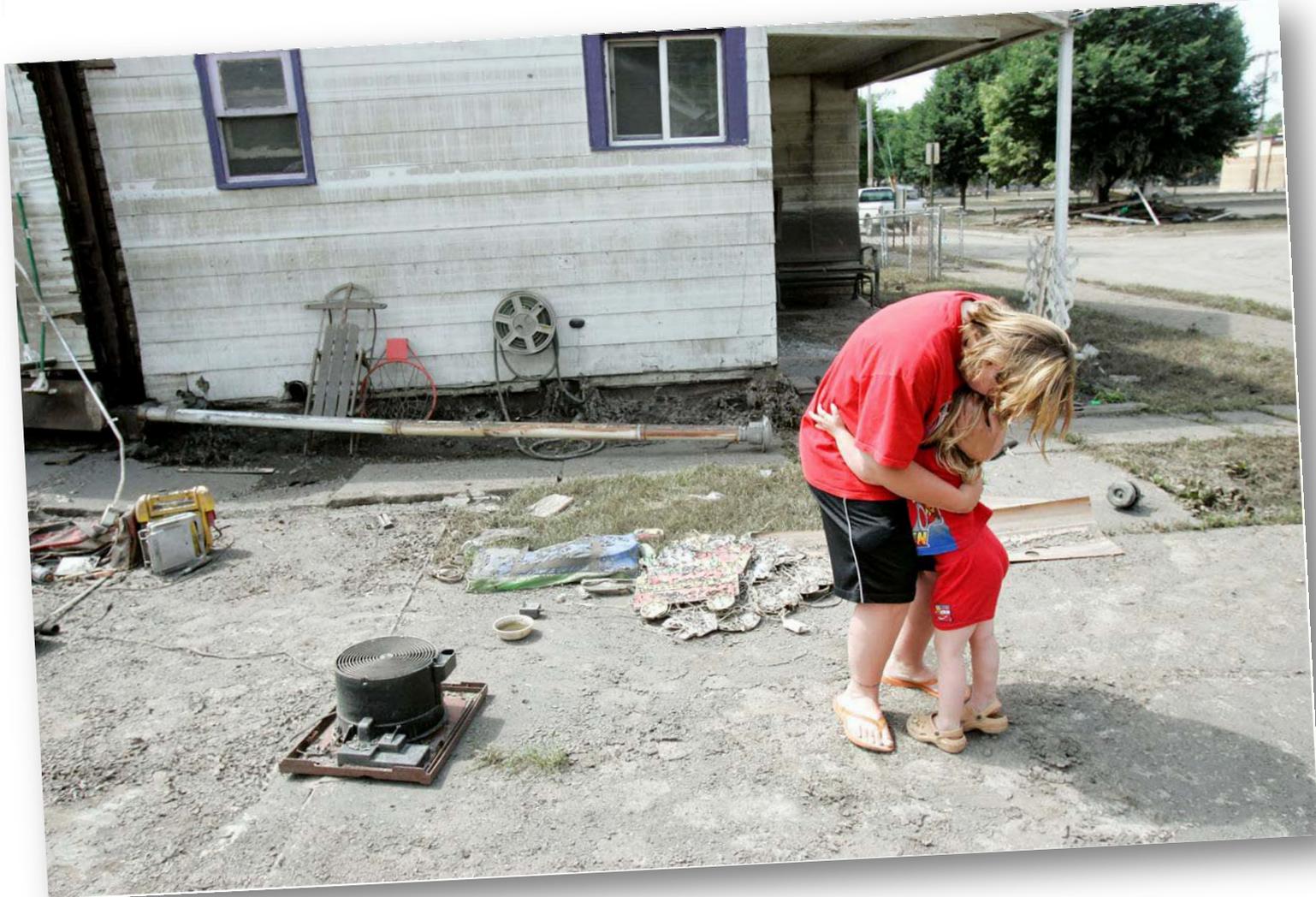






**Cedar Rapids, Iowa**  
**Mayor Ron Corbett**  
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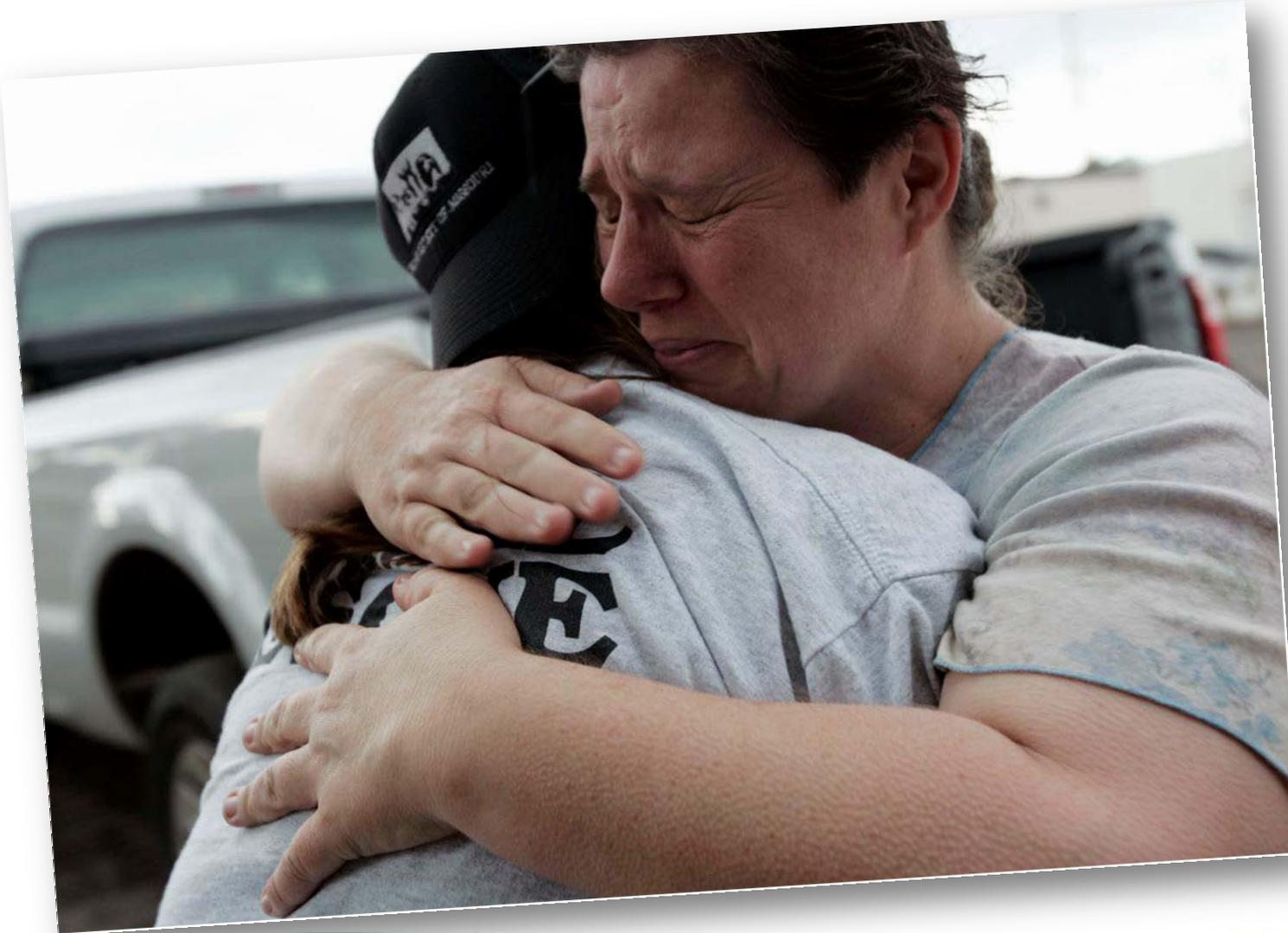












Only with your help



Never Again

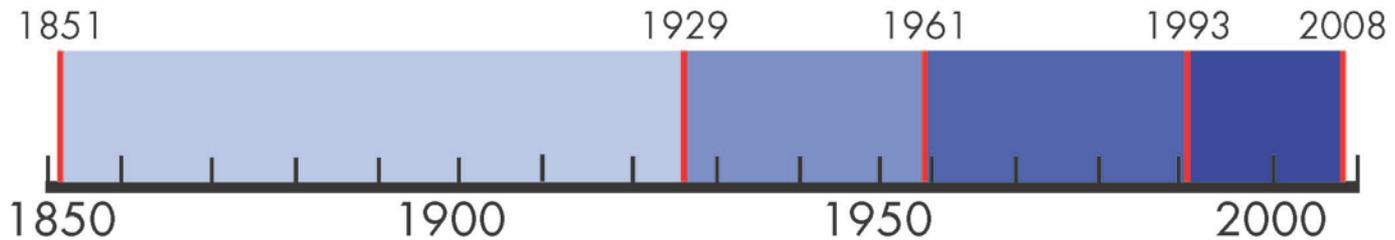


**NOAA** NATIONAL OCEANIC AND  
ATMOSPHERIC ADMINISTRATION  
UNITED STATES DEPARTMENT OF COMMERCE

*A flood of the same magnitude as 2008  
**will** happen again in Cedar Rapids.*

# Increased Cedar Rapids Flood Frequency

It is no longer a question of "if."  
It will happen again.



Cedar Rapids Milestone Flood Dates





**Only with your help**



**Never Again**

# Cedar Rapids Without Flood Risk Reduction

- Thousands of homes at risk
- \$3 billion in damages
- \$100 million in trauma costs
- Critical City facilities at risk



# Cedar Rapids Without Flood Risk Reduction



A loss of hope

# Cedar Rapids Without Flood Risk Reduction

- Existing businesses reluctant to invest in core of city



# Cedar Rapids Without Flood Risk Reduction

- Existing businesses reluctant to invest in core of city
- \$1 billion in downtown new business investment at risk



# Cedar Rapids Without Flood Risk Reduction

- Existing businesses reluctant to invest in core of city
- \$1 billion in downtown new business investment at risk
- Major employers might move out of town

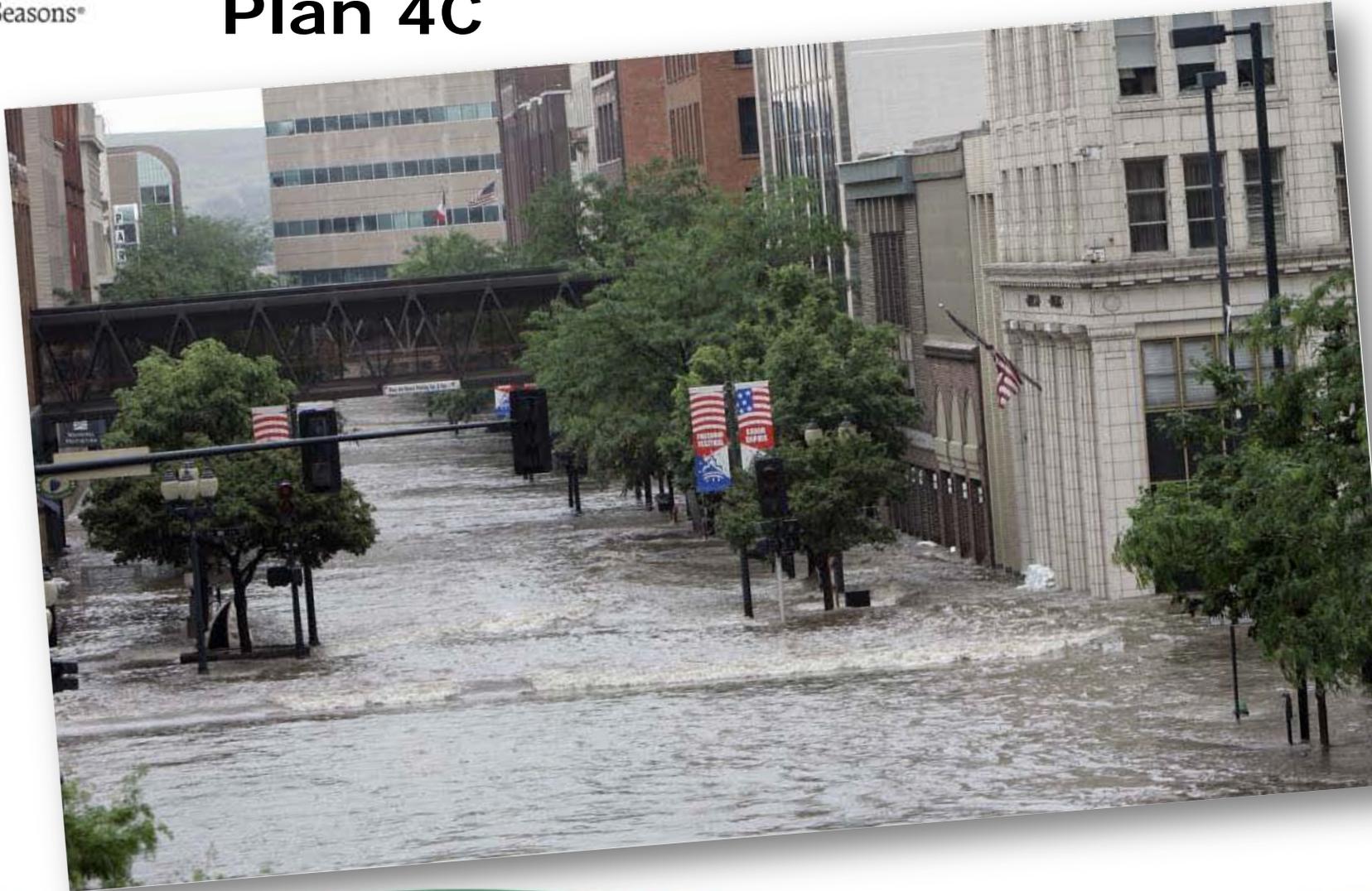


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**Never Again**

# Benefits of Recommended Plan 4C



# Benefits of Recommended Plan 4C

- Protects the core areas of our city that would be difficult to relocate out of harm's way
- Protects new affordable housing developments in the Oak Hill Jackson Neighborhood
- Protects the downtown business community and the thousands of jobs it provides



## Benefits of Recommended Plan 4C

- Assists the City in retaining major industrial companies that could relocate to avoid future flood recovery costs
- Protects our city from the risk of future devastating flood damage



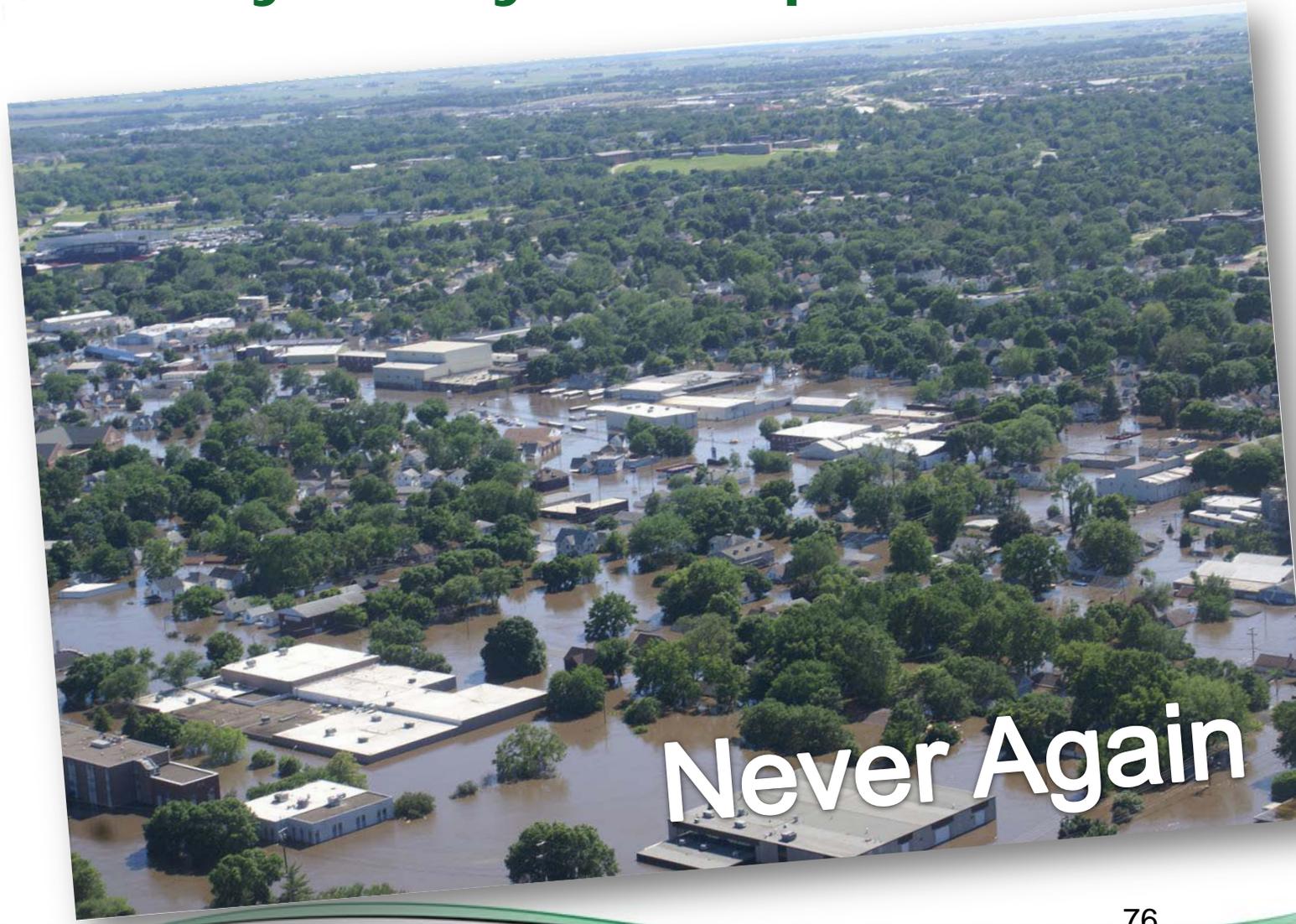
# Cedar Rapids Flood Management System



# Cedar Rapids Flood Management System



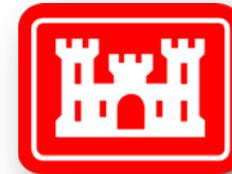
**Only with your help**



# Only with our partner

## Rock Island District

- Short- and long-term planning
- Forward determination



**US Army Corps  
of Engineers®**

# Community-Based Flood Recovery Planning

## River Corridor Reinvestment Plan

### *PHASE 1: Framework Plan for Reinvestment and Revitalization*

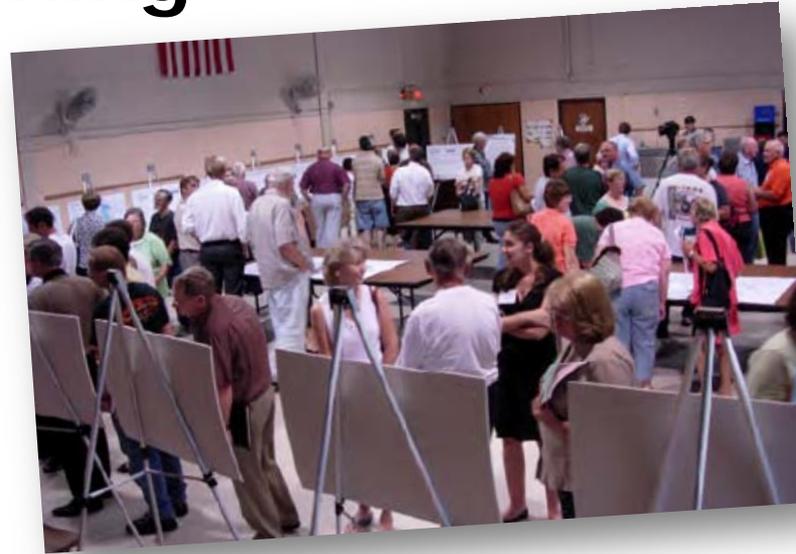
- Public open houses engaged 2,680 residents in process
- Result: City's Preferred Flood Management System
- Impact: Recommended Plan 4C includes a major portion of the system

# Community-Based Flood Recovery Planning

## River Corridor Reinvestment Plan

### *PHASE 2: Neighborhood Planning Process*

- Public workshops engaged 1,420 residents in process
- Result: City's Neighborhood Reinvestment Plan
- Impact: Recommended Plan 4C includes a major portion of the plan

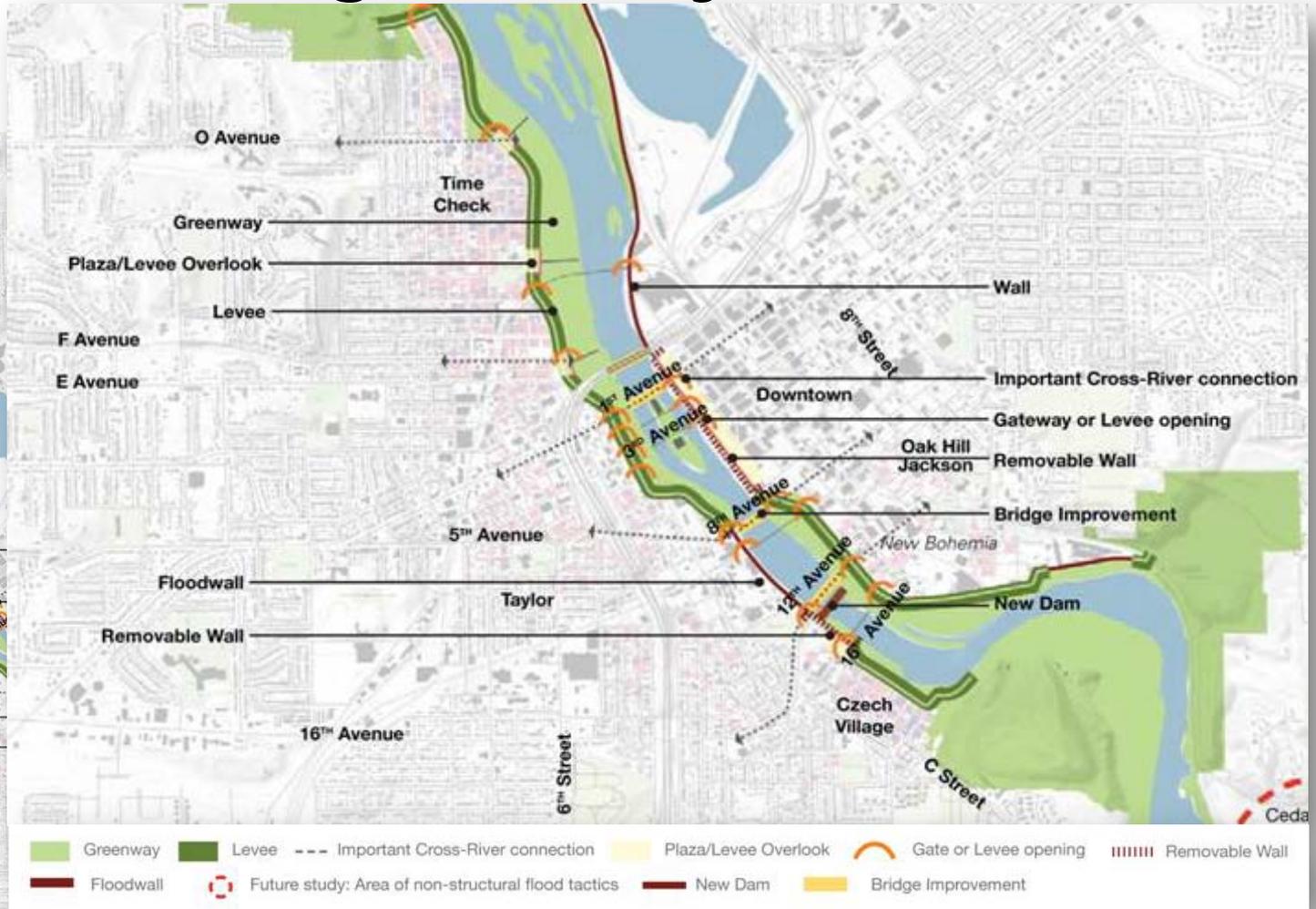


## Accelerated Process

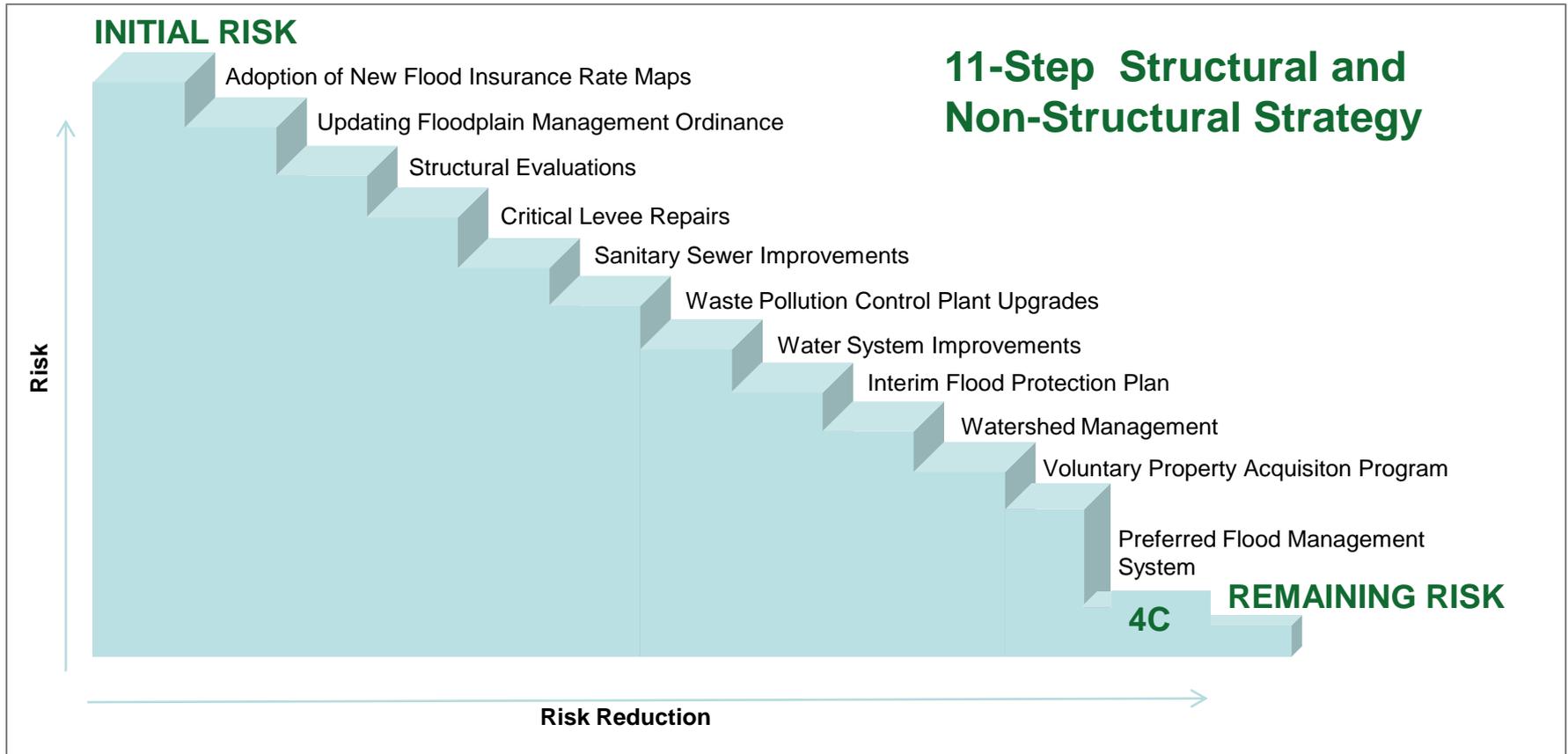
Cedar Rapids shaved **three years** off typical USACE study timelines by:

- Unprecedented 18 months vs. 3 to 5 years
- Completing community-based flood recovery plans *within 11 months*
- Advanced \$1.5 million to the USACE to keep the study moving without interruptions

# Cedar Rapids Flood Management System



# Cedar Rapids' Preparation for Flood Risk Reduction



# Cedar Rapids' Preparation for Flood Risk Reduction

## Infrastructure Improvements

- Structural evaluations of existing levees, floodwalls and bridges
- Critical levee repairs
- Sanitary sewer improvements
- Waste pollution control plant upgrades
- Water system improvements



# Cedar Rapids' Preparation for Flood Risk Reduction

## Interim Flood Protection Plan

- Purchased additional temporary flood protection barriers
- Reinforced storm sewer system
- Improved flood forecasting with new flood gauges
- Annually update the City's Flood Response Manual



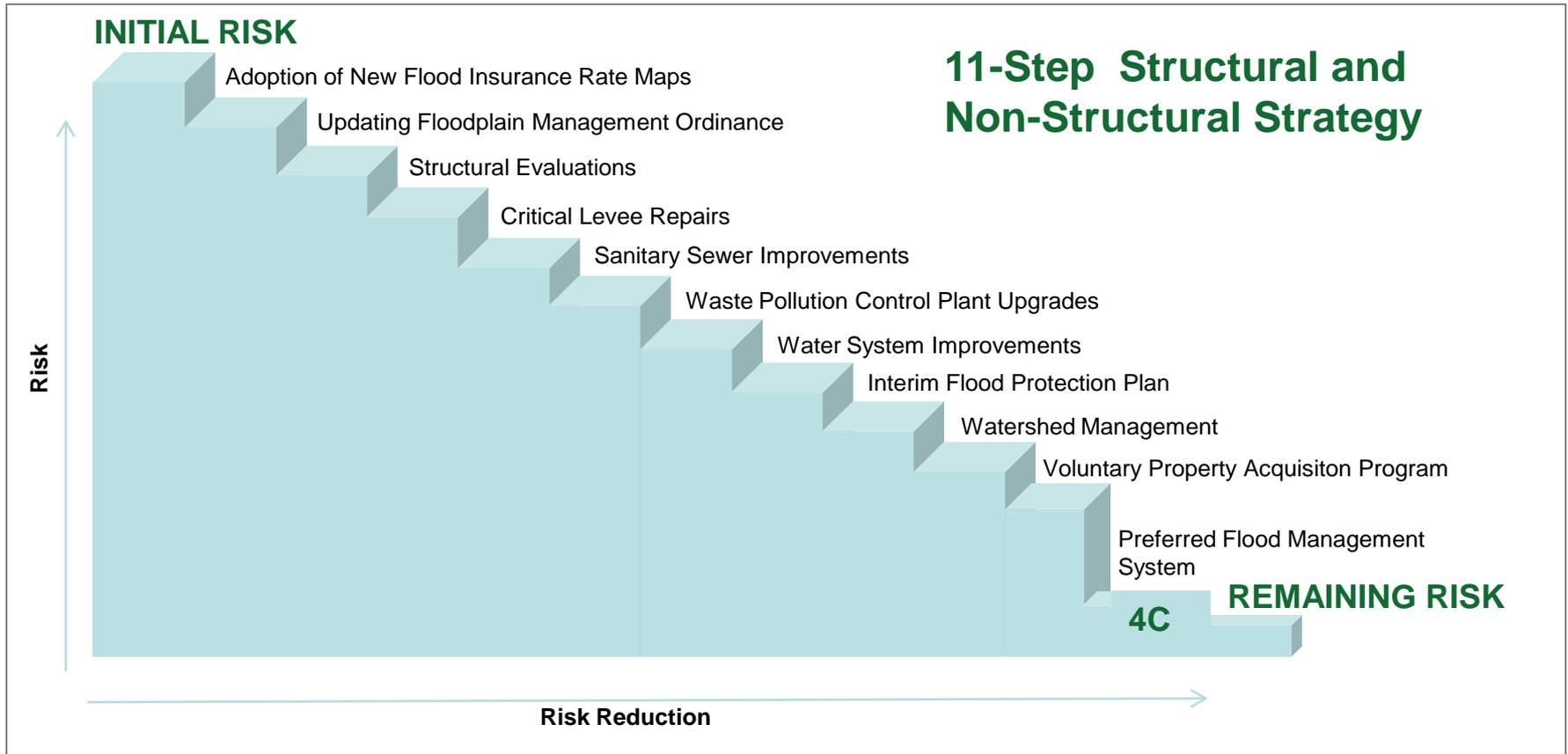
# Cedar Rapids' Preparation for Flood Risk Reduction

## Acquisition and Demolition Programs

- Acquiring 1,300 properties to remove them from future flood risk
- Demolishing 1,200 properties to remove them from future flood risk



# Cedar Rapids' Preparation for Flood Risk Reduction



# Cedar Rapids' Preparation for Flood Risk Reduction

## The Futility of Best Laid Plans

- Short preparation time and Cedar Rapids' topography do not allow temporary measures to be put in place to prevent devastation from happening again
- Above the 20-foot level, the only reliable option is to evacuate
- **We need permanent Flood Risk Reduction**



**Only with your help**



**Never Again**

# Cedar Rapids' Partners in Flood Risk Reduction

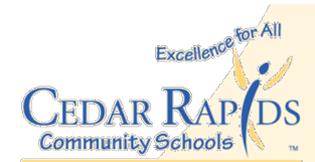
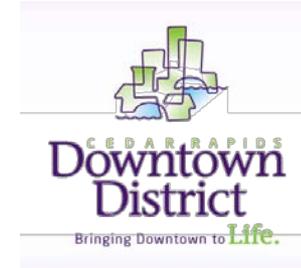


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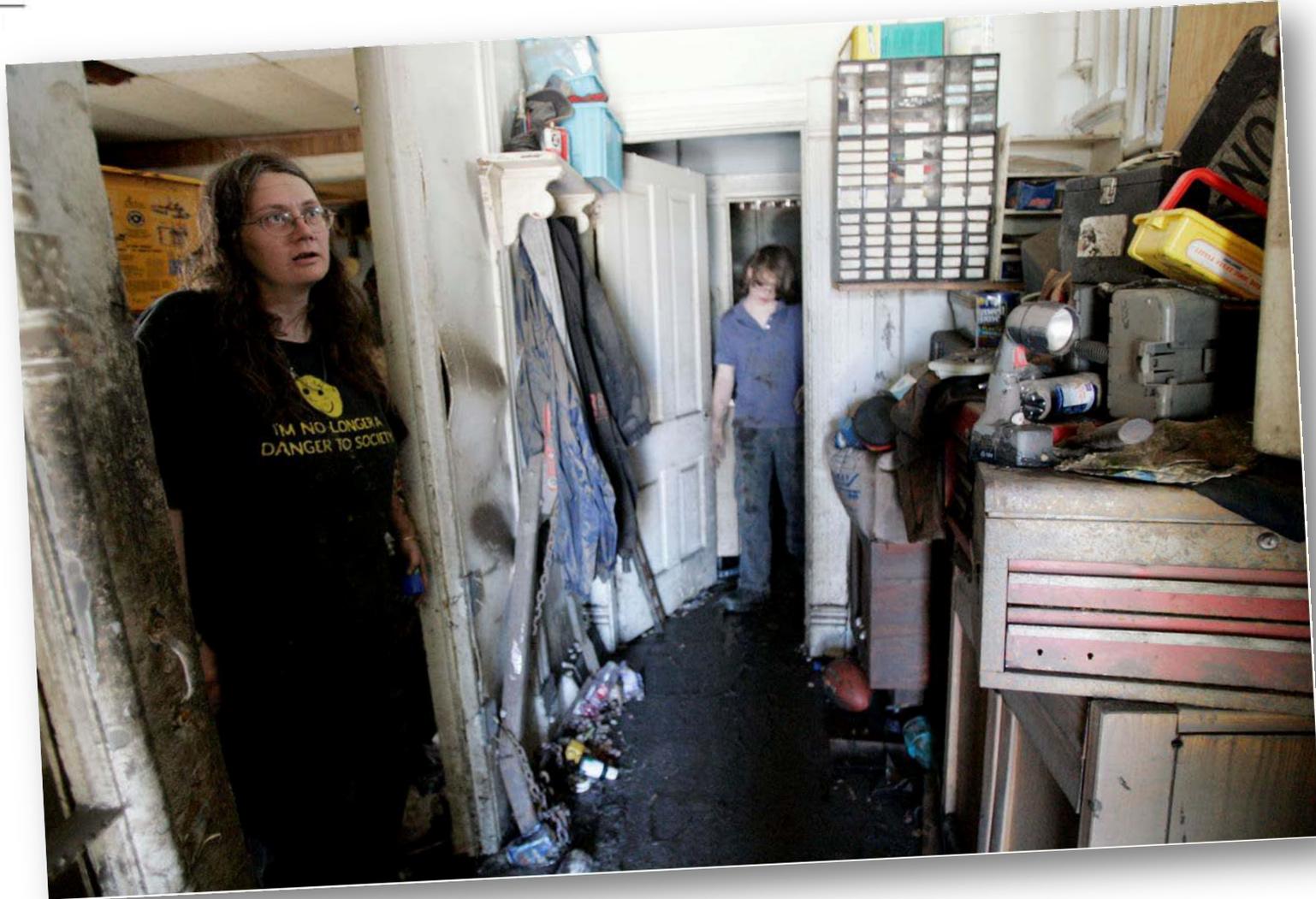
- The citizens of Cedar Rapids
- USACE, Rock Island District
- Linn County Board of Supervisors
- State of Iowa
- Rebuild Iowa Office
- Congressman Dave Loebsack
- Senator Tom Harkin
- Senator Chuck Grassley

# Cedar Rapids' Partners in Flood Risk Reduction



- Quaker Oats
- Cargill
- Cedar Rapids Area Chamber of Commerce
- Cedar Rapids Downtown District
- Cedar Rapids Community School District
- ...and dozens of other organizations throughout Cedar Rapids, Linn County and the State of Iowa









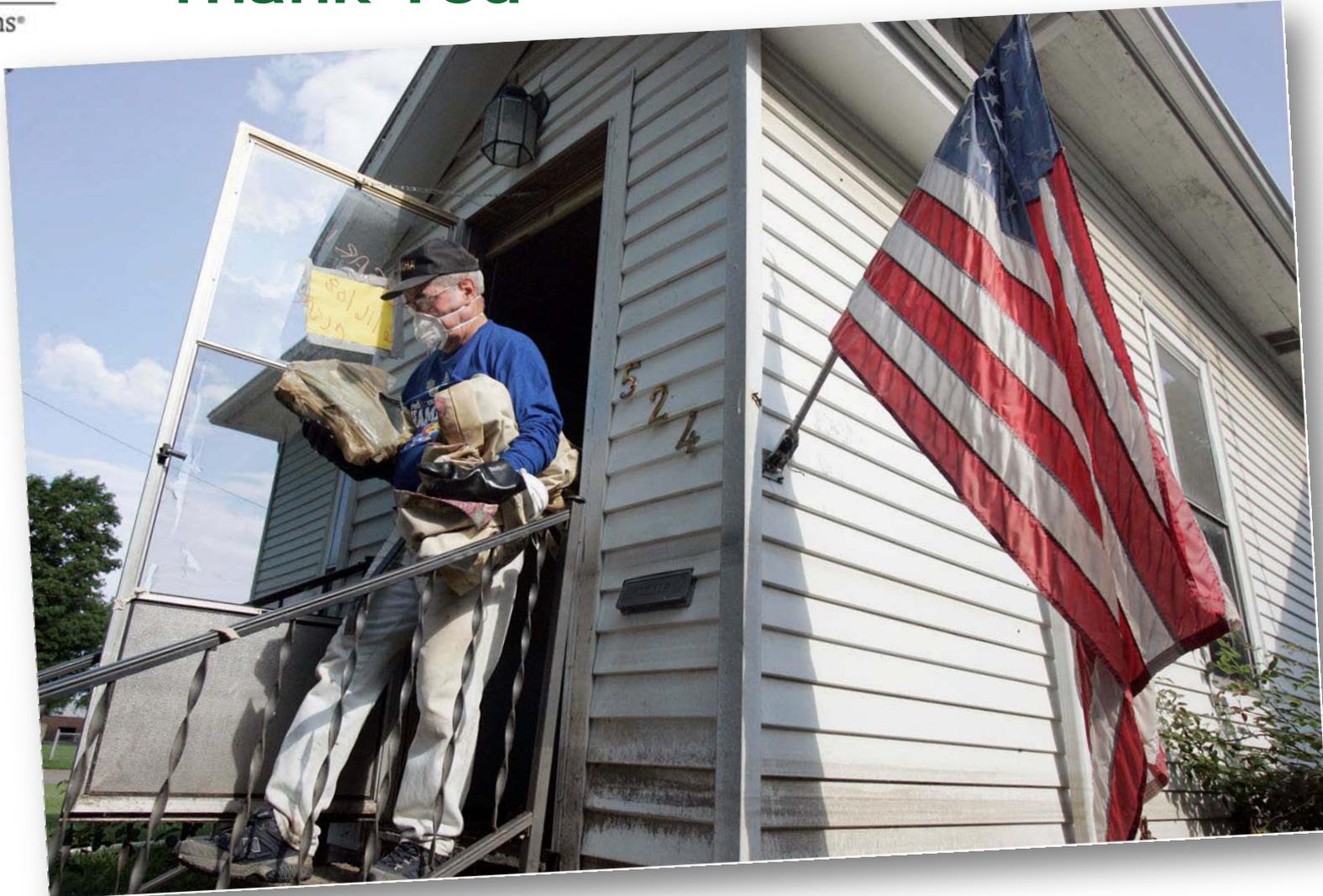


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# Thank You



# Cedar Rapids, Iowa

Linn County Supervisor Lu Barron  
USACE Civil Works Review Board  
November 18, 2010



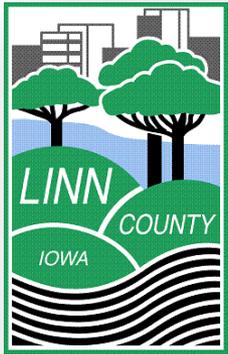






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**Only with your help**



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**Cedar Rapids, Iowa**  
**Rebuild Iowa Office (RIO)**  
**Executive Director General Ron Dardis**  
USACE Civil Works Review Board  
November 18, 2010



Presentation to the

# CIVIL WORKS REVIEW BOARD

*Cedar River, Cedar Rapids, Iowa  
Flood Risk Management Project  
Feasibility Study*

by

**MG Michael J. Walsh**

Commander

Mississippi Valley Division

November 18, 2010



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# MVD Command Endorsement

- Concur with MVR Commander's findings and recommendations for Cedar River, Cedar Rapids Flood Risk Management Project
- Report complies with all applicable policies and laws in place at this time
- Anticipate a favorable response to the draft Chief's Report
- Plan supported by sponsor and congressional delegation
- Consistent with the Environmental Operating Procedures



# Certification of Legal and Policy Compliance

- Legal certification completed on October 8, 2010
- Technical and policy compliance:
  - ▶ ATR performed through composition of staff from NAD, LRD, SAD, MVD, SPD, SWD and NWD
  - ▶ All ATR comments resolved and certification dated October 7, 2010



# MVD Quality Assurance Activities

- MVD reviewed ATR comments/responses to ensure appropriate resolution
- Active participation by vertical team
- Worked with MVR to successfully resolve HQ review comments
- MVD concurs that project is technically and policy compliant



# MVD Recommendation

- Approve Final Report
- Release report for State and Agency Review
- Complete Chief's Report NLT 31 Jan 11



# HQUSACE POLICY REVIEW CONCERNS

Civil Works Review Board

Cedar Rapids, Iowa

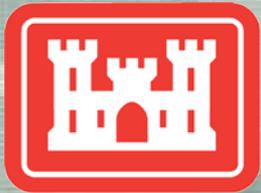
Flood Risk Management Project

Thomas Hughes

Office of Water Project Review

Planning and Policy Division

Washington, DC – 18 November 2010



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## HQUSACE Team Reviews:

- FSM was held in March 2009
- AFB was held in July 2010
- Review of Draft report concurrent with public review August 2010
- Final Feasibility Report /EIS: current review being completed by HQUSACE team



# Policy Questions from AFB and Draft Report Reviews

- ❑ Planning Objectives and Constraints
- ❑ **Existing and Future Without Project conditions**
- ❑ Value Engineering
- ❑ Existing Levees
- ❑ **NED and Locally Preferred Plans**
- ❑ **Levee Crest Elevation**
- ❑ Incremental Justification
- ❑ Residual Risk
- ❑ LERRDs
- ❑ HTRW
- ❑ Cultural Resources
- ❑ Air Quality and Noise
- ❑ Cumulative Effects



## Areas of Policy Concern:

- NED and Locally Preferred Plans
- Levee Crest Elevation
- Future Without Project (FWOP) Conditions



# NED Plan

- **CONCERN:** The AFB documentation screened out plans that had greater net benefits than the remaining plans which could result in the incorrectly identifying the NED plan.
- **REASON:** The NED plan is the plan the reasonably maximizes net benefits.
- **RESOLUTION:** The screened out plan was included in the final array of alternatives. Further analysis during the draft report preparation resulted in the difference in net benefits between two plans to be insignificant relative to the amount of risk reduction provided such that plan 4c was identified as the NED plan (reasonably maximizes NED benefits).
- **RESOLUTION IMPACT:** Concern Resolved.



# Levee Crest Elevation

**CONCERN:** The report documentation described five different design elevations based upon a flood event plus 3 feet.

**REASON:** This approach gives the appearance that the design is using freeboard instead of being based on a risk analysis.

**RESOLUTION:** Reference to a design level plus 3 feet has been removed from the document. The design is based on the ability of the project to pass a specific event within a certain degree of certainty.

**RESOLUTION IMPACT:** Concern Resolved.



# Future Without Project (FWOP) Conditions

**CONCERN:** Final report did not fully consider the likely FWOP condition. Late in the study process a business took actions which would indicate, that in the absence of a Federal project, it would likely build a project to reduce their risk of flooding

**REASON:** Per policy it is necessary to consider likely actions of others when developing the likely FWOP conditions. In this case benefits of our project would be reduced because of the risk reduction provided by the business's project.

**RESOLUTION:** An opportunity exists to collaboratively formulate an alternative that will meet the needs of the business, the city and Federal interests.

**RESOLUTION IMPACT:** Resolution Pending.



# HQUSACE POLICY COMPLIANCE REVIEW TEAM RECOMMENDATION

Contingent approval to release of the DRAFT CHIEF'S REPORT – Feasibility Report and EA for S&A Review. The report needs to be updated to reflect;

- 1) a collaborative strategy for implementation of an integral element of the recommended plan, including the authorities/requirements/timing needed for implementation of a portion of the Federal project through advanced design and/or construction by the sponsor or other non-Federal interests; and
- 2) any changes to documentation of the future with- or without-project conditions as a result of the collaborative plan.

Resubmit report documentation to the CWRB for approval to  
release.



# Cedar River, Cedar Rapids, Iowa

## Flood Risk Management Project Feasibility Study Report with Integrated Environmental Assessment

### *Civil Works Review Board*

#### AGENCY TECHNICAL REVIEW (ATR)

Mr. Greg Steele

ATR Lead, FRM Center of Expertise

18 November 2010

Headquarters, US Army Corps of Engineers

Washington, DC



US Army Corps of Engineers  
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# Independent External Peer Review (IEPR)

**Battelle Memorial Institute**

Karen Johnson-Young, Program Manager

Dick Uhler, Project Manager



# Independent External Peer Review (IEPR)

- Managed by Battelle
- IEPR is being completed in accordance with EC 1165-2-209
- Four Experts on IEPR Panel
  - Plan Formulator – *Barton Rogers*
  - Hydraulic Engineer – *Lyle Zevenbergen, Ph.D., P.E.*
  - Ecologist/Environmental – *Charles Newling*
  - Economist – *Lloyd Antle, Ph.D.*
- Outcome
  - 12 Final Panel Comments
    - 2 high significance, 6 medium significance, 4 low significance

# IEPR (continued)

- Important issues
  - The incomplete cultural investigations analysis created the potential for increased project costs
  - The 2008 flood event created additional economic uncertainties that could influence existing conditions damage estimates and thus overly discount future project conditions damage estimates
  - The rationale and justification behind the selection of the Federally Supported Plan (FSP) required further clarification
  - The lack of west-side protection and slightly increased west-side risk raised questions regarding Environmental Justice
- Comment/Response Process Results
  - USACE response to Final Panel Comments: 4 non-concurs; 8 concurs
  - Panel's response to USACE: all concurs (pending Final Evaluator Responses)