Purpose of Flood Control System Committee:
To enable the City Council to discuss and evaluate in greater detail these specific issues that directly impacts the flood control system for the City of Cedar Rapids.

City Council Committee Members:
Council member, Ralph Russell
Council member, Justin Shields
Council member, Kris Gulick
- Mayor Ron Corbett is an ex-officio member of all Council Committees per City Charter Section 2.06.

Agenda:
- Approval of Minutes – January 21, 2016 & May 2, 2016
- Informational Items:
  1. Financial Report update (5 mins)           Rob Davis
      Public Works
  - Presentations:
    1. Reconstruction and Raising of 8th Avenue Bridge (10 mins) Rob Davis
       Public Works
    2. Sinclair Pump Station – Aesthetics (5 mins)     Bill Bogert
       Anderson-Bogert
- Recommendation Items:
  1. Cedar River Flood Control System (FCS) Updates (15 mins)           Teresa Stadelmann
     HR Green
     a. Czech Village - 21st Avenue SW / A Street SW Re-alignment
     b. Updated Acquisition Maps
     c. Aesthetics Policy
     d. Pump Station Sizing
     e. 8th Avenue Bridge Replacement

Any discussion, feedback, or recommendation by Committee member(s) should not be construed or understood to be an action or decision by or for the Cedar Rapids City Council. Further, any recommendation(s) the Committee may make to the City Council is based on information possessed by the Committee at that point in time.

Anyone who requires an auxiliary aid or service for effective communication, or a modification of policies or procedures to participate in a City program, service, or activity, should contact the City Manager’s Office at (319) 286-5080 or email a.wing@cedar-rapids.org as soon as possible but no later than 48 hours before the event.
2. Removable FCS Implementation and Maintenance (15 mins)  
   Study / Contract with US Army Engineer and Research  
   Development Center (ERDC)  
   Rob Davis  
   Public Works

- Public Comment

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City of Cedar Rapids  
Flood Control System Committee Minutes  
City Hall – Training Room  
Thursday, January 21, 2016  
11:00 a.m. – 12:00 p.m.

Present:  Council members Ralph Russell (Chair), Justin Shields  
Sandi Fowler, Assistant City Manager; Rob Davis, Flood Control Program Manager;  
Teresa Stadelmann, HR Green; Jon Durst, Sewer Superintendent

Absent:   Kris Gulick, Mayor Ron Corbett

Meeting called to order at 11:00 a.m. by Council member Russell.

Council member Shields moved to approve the meeting minutes from the December 17, 2015  
Flood Control System Committee meeting.  Motion seconded by Council member Russell.  
Motion passed.

Rob Davis presented two documents included in the packet that had been requested by the committee:  
the Finance Update and the Grant Submission Log.  Rob Davis clarified that the column listed as  
‘Estimated Payments from the State’ in the Finance Update is the maximum amount of funds that the  
City can receive from the Iowa Flood Mitigation Board.  Councilman Shields indicated that the City is  
working closely with lobbyists to identify opportunities to pursue further legislative funding strategies.  
Councilman Russell requested that in the future the financial update format include summary  
information regarding the name and amount of money spent on projects.  Rob Davis further explained  
the bidding strategies that staff are using to manage the grant reimbursements for the Iowa Flood  
Mitigation Board, the CDBG grant, and the funding for 8th Avenue Bridge work.

Rob Davis presented the Sinclair Drainage Report. Councilman Russell asked if the Army Corps of  
Engineers has reviewed the revised evaluation of the drainage calculations and cost benefit analysis  
with the land value information.  Rob Davis stated that they have reviewed the results of the  
evaluation and have confirmed that the Army Corps will participate in the full cost of the increased  
pump sizes related to that evaluation.  Rob Davis clarified that a recommendation is not needed at this  
time from the committee.  Staff will review the evaluation with stakeholders and return to the  
committee at the April meeting.  Councilman Russell and Shields provided guidance that with the  
given information a dry bottomed detention basin seems more reasonable for that area, but would like  
staff to consider aesthetic treatments to all three pump stations.  Rob Davis stated that staff will bring  
back renderings when they become available.  Councilman Shields asked what residents can expect to  
see happen at this site in 2016.  Rob Davis responded that tree removals have already taken place.  
This summer a building on the site will be demolished and earthwork on the levee will begin.  The  
project will be finished by October 2017.

Teresa Stadelmann presented the Interior Drainage Update.  Councilman Shields asked if any work  
done on the east side flood protections would affect west side property and Ms. Stadelmann stated that  
recommendations from this update would not.  She further stated that the issue under discussion is a  
result of storm runoff and ponding due to system capacity rather than issues from river flooding, but  
that the information could have an effect on floodplain mapping on the dry side of flood protection.  
Ms. Stadelmann indicated that the consultants are recommending a combination of options to address
west side interior drainage including storm water runoff reduction and increasing the planned pump station sizes handle a storm larger than a 3 month storm, and potentially isolating the Vinton Drainage Area from other drainage systems. Councilman Russell asked the consultants to consider in their evaluations what capacity storm can be conveyed in the system to the pumps. Councilman Shields asked if staff has a maintenance plan for the drainage system and Jon Durst responded that staff periodically moved through the drainage system to remove debris.

There was no public comment.

The meeting was adjourned at 12:00 p.m.

Respectfully submitted,
Melissa Kopf
Flood Recovery Coordinator
Development Services
City of Cedar Rapids
Joint Flood Control System and
Finance & Administrative Services
Committee Minutes
City Hall – Council Chambers
Monday, May 2, 2016
4:00– 5:00 p.m.

Present: Council members Ralph Russell (Chair of Flood Control System Committee), Justin Shields, Kris Gulick (Chair of Finance & Administrative Services Committee), Susie Weinacht Sandi Fowler, Assistant City Manager; Rob Davis, Flood Control Program Manager; Bill Bogert, Anderson Bogert; Teresa Stadelmann, HR Green

Absent: Mayor Ron Corbett

Meeting called to order at 4:04 a.m. by Councilmember Russell.

Rob Davis presented two documents included in the packet that had been requested by the committee: the Finance Update and the Grant Submission Log. Rob Davis clarified that the city secured an additional $5 million in unused funds by other cities in 2015. He also reviewed the grants that have been received, denied, withdrawn and currently pending.

Bill Bogert reviewed design and bid activities for 2016 included in the packet. He informed the Committee the trail from 2nd to 3rd Avenue behind the new CRST building and Lot 44 at the 10th Avenue Pump Station have been bid this spring. The Sinclair Levee from the African American Museum to the Alliant Substation will be bid in August; the Czech Village utility relocation is projected to be bid in October along with the Sinclair Pump Station in November. He noted a total of $19.6 million in projects will be bid this year. Councilmember Russell inquired about the material used to build the levees and how they ensure it will prevent water from seeping through. Bill Bogert explained they use a non-permeable clay material and insert a wall into a cut-off trench. In addition, they test each levee structure to make sure water does not leak through to the other side.

Rob Davis presented the Czech Village re-alignment map included in the packet. He pointed out the map on the right reflects a more reliable, less expensive solution for the new roadway alignment for 21st Avenue. This design will bring the road over the top of the levee eliminating the need for a gate saving $2 million. Councilman Shields inquired about the prospect of raising the 8th Avenue Bridge. Rob Davis explained although it will be costly to raise, it would provide the city with a new, reliable bridge that would require less gates to maintain and install during a flood as well as provide another route for transportation during a flood.

Rob Davis presented the Flood Control System History and Recap report included in the packet. He pointed out the schedule can be accelerated once the balance of the funding is secured; in the later years of the flood control system installation, however at this time, the City would not gain anything by accelerating with additional funds. Councilmember Russell asked how staff and contractors are going to manage the interim flood control plan during construction of the system. Rob Davis stated they have included protocols in their contracts. They are limiting the amount of the system that could be worked on at a time and requiring protection to be in place within 48 hours. He added that these contractors must use their own Hesco barriers and are required to conduct a set up demonstration that meets the requirements.
Teresa Stadelmann with HR Green presented the Interior Drainage Pump Station Sizing Policy located in the packet. This policy relates to both the volume and intensity of rainfall behind the Flood Control System. HR Green has conducted urban modeling and updated the Army Corps of Engineers previous work to reflect how urban centers address more robust storms’ (i.e. thunderstorms/downpours) impact to properties and drainage systems. Existing system conditions show runoff exceeding the storm system causing interior ponding, independent of the flood control system or river flooding. It is recommended the City’s Stormwater Master Plan policies address these issues. Increased ponding where the levee will block overland flow is recommended to be addressed with increased pipe capacity and dry-side detention. Finally, the cost and risk associated with pumping flows from a 1% coincident probability rainfall event is $39-79 million, where all stations were budgeted at $7.4 million due to sizing for a 3-month storm of average intensity and without a pump station building. The recommendations are to build pump stations for current flows at additional cost as well as pursuing watershed reduction strategies.

Councilmember Gulick moved and Councilmember Weinacht seconded to recommend to the City Council approval of the following Interior Drainage policy:

- Stormwater pump stations for interior drainage runoff are recommended to have a pumping capacity equal or greater than the peak runoff from the 5-year storm event, and
- The City will pursue upland stormwater runoff detention and infiltration in each watershed.

Councilmembers Gulick, Weinacht, and Russell voted aye. Councilmember Shields voted no. Following additional discussion clarifying the estimated one percent chance of a 5-year storm occurring during a high-river event, Councilmember Shields changed his vote to aye. Motion passed.

There was no public comment.

The meeting was adjourned at 5:30 p.m.

Respectfully submitted,
April Wing
Project Coordinator
Development Services
Flood Control System

Below is a summary of projected vs actual GRI revenue received thru June 2016. This is a preliminary report prior to performing yearend entries for FY 2016.

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<th>Increment from</th>
<th>Estimated Payments from State</th>
<th>Actual Payments Received from State</th>
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<td>1st Qtr</td>
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<td>2014</td>
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<tr>
<td>2018</td>
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<td>2019 - 2033 per year</td>
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<td>$269,411,016</td>
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Preliminary totals thru June 2016 show $16M of flood control expenses have been incurred, of which $15M is funded from growth reinvestment revenue. The majority of the expenses in June relate to design/engineering.
Cedar River Flood Control System
Sinclair Pump Station
Sinclair Pump Station
Sinclair Pump Station
Control Building Example
Lot 44
Pump Station
Flood Control System
8th Avenue Bridge
Plan today: System of gates at 8th Ave Bridge
NEW BRIDGE
- Able to clear flood control fewer piers
- Improved river hydraulics
- Usable in flood events

EXISTING BRIDGE
- Bridge Structure submerged
- Poor hydraulics
- Useless in flood event
Summary of Benefits

- Preserve connection to two dry sides of the river during flood emergency
- Preserve access to hospitals, police department, and interstate connection
- Life expectancy of bridge coincides with FCS timeline (Bridge will need to be replaced shortly after completion of FCS)
- Save money by eliminating flood gate at 8th Avenue
- Dual use: flood protection + new bridge
Design Details

Integral Flood Wall/Bridge Abutments

Raised 10-14 feet
Improved piers
Upgraded railings and lighting
Aesthetic Opportunities

GRI participation: moderate level of aesthetics
City funding: above and beyond aesthetics
Project Timeline

- Concurrence by Flood Mitigation Board……………………………..June, 2016
- City Council Approval
  - Addition to Flood Control System Master Plan…………..August 9, 2016
  - Approve contract for Preliminary Design 8th Ave……..August 9, 2016
- Utility Relocations……………………………………………………………..2018-2019
- Bridge Construction……………………………………………………………..2020-2022
2016 Flood Control System Master Plan Update
Updates to Master Plan:

- Acquisition map clarification
- Alignment refinement
- Aesthetics policy (wall façade)
- 8th Avenue Bridge
- Add Chapter VIII – Stormwater Pump Station Policy (previously approved by the FCS Committee)
Acquisitions unchanged (except one parcel). Parties identified in the acquisition maps have been contacted via mail and invited to meet with City staff and consultants. Much of this occurred on or before 2015.
Alignment: Ingredion

Replace 8th Avenue Bridge above 2008 Flood Volume

Cedar Rapids Flood Control System
West Side Project Area

Legend:
- Gate
- Removable Wall
- Combination Wall
- Retaining Wall
- Permanent Wall
- Levee
- Levee Footprint
- Sanitary Pump Station
- Storm Pump Station
- Project Area
- Flood Wall Elevation

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Aesthetics Guidelines

All aesthetic enhancements to the functional elements of the Flood Control System (FCS) as described in this chapter, must allow for strict adherence with local, state and federal design guidelines and standards. One such recommendation outlined by the US Army Corp of Engineers (USACE) is that structural elements (e.g. floodwall superstructure) of the Flood Control System (FCS) are to be easily viewable for regular inspection for crack detection, not obscured by surface treatments, on both the wet and dry sides.
• Design Review Committee would be amended to include:
  – FCS Steering Committee
  – FCS Program Manager
  – Consultant representative from east or west side. Representation would be based on location of the proposed improvement
Cedar River Flood Control System –
Removable Floodwall Risk Assessment of
Operation and Deployment Time and Motion Study
Why Now?

- First Priority = Expiring Grants
  - CDBG
  - GRI
- Now = Time & Motion Study
Study Basis and Need

• This is an implementation and operations study
• The FCS Master Plan approved by the Cedar Rapids City Council in June of 2015 will be the basis for this study.
  – Cedar River Plan has a larger percentage of removable wall sections than other modern flood control projects (20% vs. <5%)
  – Validation needed of FCS adoption of the master plan’s removable sections, before design begins
• This study will accommodate the integration of the flood structure project into the entire city organization
Study Basis and Need

• Need to determine:
  – Most efficient and effective types of removable walls and gates
  – Schedule of external on-call contracts needed
  – Annual O&M costs to implement

• Previous study only looked at east side

• Previous study concluded City did not have internal staff to implement east side FCS removable walls and gates
What the Study will Tell Us

- Identify new technologies
- Determine sequence of installation
- Analyze risks to implementation
- Provide cost to deploy system
- Provide annual cost to test
- Provide annual maintenance cost
USACE Selected to Perform Study

- USACE previously worked on this project; specifically the time and motion aspect.
  - Preeminent expert on flood structures
  - A continuation of the previous study
    - Previous study was before the Flood Control Structure (FCS) Master Plan
  - Independent 3rd party study
  - Background information available
  - Integrating a current study on new technology
Proposed Study Timeline and Cost

- US Army Corps of Engineers Study
  - September 2016 – March 2017
  - City of Cedar Rapids input throughout the process
  - Presentation of options
  - Cost of study $156,400
  - Staff recommendation to proceed