



US Army Corps
of Engineers

Rock Island District

DES MOINES AND RACCOON RIVERS FEASIBILITY STUDY NEWSLETTER

December 2002

PUBLIC PARTICIPATION ENCOURAGED AT JANUARY OPEN HOUSE

The City of Des Moines and the U.S. Army Corps of Engineers invite all interested persons to attend an open house on January 14, 2003, at the Botanical Center in Des Moines. Please see page 4 for details.

STUDY BACKGROUND

The Des Moines and Raccoon Rivers Feasibility Study was initiated in September 1999 to identify opportunities for flood damage reduction within the City of Des Moines. The feasibility study is being conducted by a partnership of the City of Des Moines and the Rock Island District Corps of Engineers.

The study team is seeking to develop and evaluate the best combination of alternatives to provide a comprehensive flood damage reduction system for the community. Once identified, the team will evaluate the potential alternatives that may qualify for Federal cost-sharing. The feasibility study will result in the preparation of a feasibility report that will make recommendations to Congress regarding Federal participation in a flood damage reduction project. Provided the project is authorized by Congress and funds are made available, a Federal project or projects could be implemented with the Federal Government funding up to 65% of the project cost.

The purpose of this third study newsletter is to announce the January 2003 public open house and to provide an update on Phase 2 of the study.

STUDY PROGRESS

During the first phase of the study, most of the detailed hydrologic and hydraulic modeling was completed. Computer models are being used to calculate potential water surface (flood) levels along the rivers and creeks. Those levels will be used in evaluating system improvements. New water surface

profiles have been completed for the Des Moines River, Raccoon River, and Walnut Creek, and the water surface level estimates for Four Mile Creek and Leetown Creek (formerly known as 7th Ward Ditch) are expected to be completed in January 2003.

The study is now in the second phase. In this phase, the study team is gathering data and analyzing specific sites (reaches) within the study area. A map showing the location of each reach is shown on page 6 of this newsletter. The team is developing and evaluating flood damage reduction alternatives for each reach that meet Federal engineering, economic, environmental, cultural, and social feasibility criteria. In general, the alternative plan that results in the greatest net benefits (benefits minus costs) and is consistent with existing environmental laws and regulations will be selected.

The following paragraphs discuss the status of the specific reaches being evaluated as part of the comprehensive flood damage reduction plan.

Reach 1 – Birdland Park Levee – The Birdland Park area, in the north-central part of the City, contains 170 acres of residential and commercial property, including the North High School complex and Birdland City Park. The existing levee along the Des Moines River, built by the City of Des Moines in the 1950's, had a closure fail during the 1993 flood, causing extensive flood damages. (A closure is an intentional opening through levees and floodwalls for streets, railroads, utilities, and other facilities, that must be closed or sealed during floods.) In addition, study investigations have found a variety of structural deficiencies within the existing levee embankment.

Preliminary design work has been completed on alternatives to reconstruct the levee system in

accordance with Corps of Engineers standards. This design work also included studies on raising the levee to improve its performance. Feasibility level cost estimates have been completed for these alternatives. Project costs, including final design, construction, and real estate range from \$3.5 to \$5.1 million. The flood damage reduction benefits associated with these levee improvements are currently being computed.

If the benefits exceed the costs, a recommendation will likely be made to implement a cost-shared Federal project to improve the Birdland Park levee system. The Corps of Engineers would develop the construction plans and oversee the construction of the project. The City would continue to own, operate, and maintain the levee system.

Reach 2 – Central Place Levee – The Central Place Business District, on the near north side of the City, is home to a variety of businesses. The study has identified approximately 110 business properties within the floodplain of the Des Moines River in the Central Place area. The existing levee system, built by the City of Des Moines in the 1950's, was overtopped during the 1993 flood event, causing more than \$20 million of flood damages. In addition to the Des Moines River overtopping the levee in 1993, study investigations have found a variety of structural deficiencies within the existing levee embankment.

Preliminary design work has been completed on alternatives to reconstruct the levee system in accordance with Corps of Engineers standards. This design work also included studies on raising the levee to improve its performance. Feasibility level cost estimates have been completed for these alternatives. The estimated project cost, including final design, construction, and real estate, is in the range of \$3.3 million to \$5.6 million. The flood damage reduction benefits associated with these levee improvements are currently being computed.

If the benefits exceed the costs, a recommendation will likely be made to implement a cost-shared Federal project to improve the Central Place levee system. The Corps of Engineers would develop the construction plans and oversee the construction of the project. The City would continue to own, operate, and maintain the levee system.

Reaches 3, 4, and 5 – Downtown Levee System – The downtown levee system contains three major reaches of levees and floodwalls (east, west, and south)

along the banks of the Des Moines and Raccoon Rivers. The Corps of Engineers constructed these levees and floodwalls in the 1960's and early 1970's to protect over 1,800 acres of highly urbanized commercial, retail, industrial, residential, and public facilities at the City's central business core. Although the flooding in 1993 was not high enough to overtop these structures, much of the area was flooded due to the inability to complete all of the closures in advance of the rising floodwaters.

Study team members are evaluating the reliability of the existing levee and floodwall system and developing conceptual designs for providing increased protection for the affected areas. As raising the existing levee and floodwall system are cost-prohibitive, much of the team's focus has been on cost-effective levee and closure improvements. The estimated project costs are being computed at this time and coordinated with a proposed Principal Riverwalk Master Plan. The flood damage reduction benefits associated with these improvements also are currently being computed.

If the benefits exceed the costs, a recommendation will likely be made to implement a cost-shared Federal project to improve the downtown levee system. The Corps of Engineers would develop the construction plans and oversee the construction of the project. The City would continue to own, operate, and maintain the levee system.

As stated above, the Corps of Engineers and the City are coordinating any levee and floodwall improvements with the Riverwalk plan. More information on the Principal Riverwalk is available on the City's website at <http://www.dmgov.com> under "Hot Topics" on the right side of the page.

Reach 6 – Raccoon River – The Raccoon River Section 205 levee is located south of the Raccoon River west of Fleur Drive. It provides flood protection to 130 acres of urban land, including a mixture of commercial buildings, light industry, and homes located south of the Waterworks Park. The administrative building of the Des Moines Water Works is also included within the protected area. During the 1993 flood, the previous levee system was

overtopped and the area suffered extensive flood damages. A Federal Section 205 project upgraded the City-built levees after the 1993 flood. This system was completed in 2000 and meets or exceeds guidelines of the Federal Emergency Management Agency (FEMA)

so that residents do not have to purchase flood insurance. The upgraded levee system would have prevented flooding in 1993.

The study team is evaluating the existing levee to determine the current level of protection and if improvements are warranted. Although the evaluation is not complete, it appears that any further improvements to this recently completed levee system will not be economically justified.

Reach 7 – Des Moines Water Works Levee – The Des Moines Water Works water treatment plant is located on the south bank of the Raccoon River immediately west of Fleur Drive. A City-constructed ring levee embankment protects the plant. During the 1993 flood, the levee system was overtopped and water service to the Des Moines metropolitan area was interrupted for approximately two weeks. Immediately after the flood, the Des Moines Water Works undertook raising the levee approximately 5 to 6 feet. Additionally, a swing gate closure structure was constructed at the access road and railroad spur entering the plant. Previously, the Water Works had installed a temporary clay plug to make this levee closure. The raised levee height is approximately 1 foot higher than the adjacent Reach 4 levee system.

The study team is evaluating the performance of the existing levee to determine if improvements are warranted. Although the evaluation is not complete, it appears that any further improvements to this recently completed levee system will not be economically justified.

Reach 8 – Des Moines–West Des Moines Levee – The West Des Moines–Des Moines Local Flood Protection Project levee system provides protection to the west bank floodplain areas of Walnut Creek and north bank floodplain areas of the Raccoon River upstream of Walnut Creek. This system, which protects 900 acres of commercial, residential, and industrial properties in the Cities of Des Moines and West Des Moines, was completed in 1999 and meets or exceeds guidelines of FEMA so that flood insurance is not required. This area experienced extensive flooding in 1993. The recently completed levee system would have prevented these flood damages from occurring.

The study team is evaluating the performance of the existing levee system to determine if improvements are warranted. Although the evaluation is not complete, it appears that any further improvements to this recently

completed levee system will not be economically justified.

Reach 9 – Walnut Creek at Grand Avenue – Walnut Creek flows through an 85-square-mile watershed located in the western metropolitan suburbs and in Dallas County. The West Des Moines–Des Moines Local Flood Protection Project provides protection to the west bank floodplain areas near Walnut Creek's confluence with the Raccoon River. The area of concern is the unprotected developed floodplain area located on the east bank of the creek in the vicinity of Grand Avenue in Des Moines. This area experienced frequent low-level flooding in the past.

Preliminary design work has been completed on a plan to construct a levee along the east bank of Walnut Creek at the same height as the existing levee and floodwall system on the west bank. The estimated project cost, including final design and construction, is approximately \$3 million. Real estate costs are not included in this amount. The flood damage reduction benefits associated with these levee improvements have been determined to be less than the estimated cost. Thus, it appears that any structural protection in this area will not be economically justified.

Reach 10 – Four Mile Creek – Four Mile Creek is a 121-square-mile watershed that drains much of north-central Polk County. The stream flows southerly through the eastern part of the city, emptying into the Des Moines River. The Four Mile Creek 100-year floodplain contains approximately 200 structures including houses, mobile homes, and businesses that are dispersed at several locations along the stream. The City has undertaken an effort, in cooperation with FEMA, to relocate residents and remove some flood-prone structures.

Evaluation of several selected levee alignments does not appear to warrant Federal participation in a construction project. These preliminary results are compatible with a 1975 Corps of Engineers study of this area.

Reach 11 – Leetown Creek South of University Avenue – Leetown Creekway is a nine-square-mile drainage area on the near east side of Des Moines. Low-lying developed properties in the area west and south of the Iowa State Fairgrounds and downstream towards the confluence with Four Mile Creek frequently experience poor drainage and backwater flooding from Four Mile Creek.

The study team is developing and evaluating conceptual levee, detention basin, and pump station alternatives to reduce flood damage in the area south of University Avenue along the Leetown Creek. The study team also will develop and evaluate alternatives to reduce flooding in the area south of Leetown Creek currently protected by the Red Rock Remedial Works levee. Water levels have not yet been computed for this area.

AERIAL MAPPING COMPLETED

Aerial topography with 2-foot contours is completed and available for use. This information is being used to develop alternatives and to create floodplain maps to show areas that could be flooded in the future.

WETLAND EVALUATION

Wetland boundaries within the study reaches were identified in the spring of 2002. These boundaries will be shown on the study maps to be on display at the January 14th Open House. As the study alternatives are finalized, a functional analysis will be performed for any wetlands proposed to be impacted by the project. Compensatory mitigation alternatives will be developed to replace the lost habitat value of any unavoidable wetland impacts.

OPEN HOUSE PLANNED

You are invited to attend an open house on January 14, 2003. The open house will be held in the Oak Room at the Des Moines Botanical Center, 909 East River Drive, Des Moines, Iowa.

The purpose of the open house is to provide information on the study status and the alternatives being evaluated for flood damage reduction and to gather your input on these alternatives.

Two identical open house sessions will be held. Representatives from the City of Des Moines and from the Corps of Engineers will be available *at any time* from 1-3 p.m. and 5-8 p.m. to meet with you to discuss on a one-to-one basis information on the alternatives. You are encouraged to attend either open house session, visit the display areas, talk to City and Corps of Engineers representatives, and provide comments.

Open house displays will include a continuously running PowerPoint presentation that will provide study information; maps of selected study reaches that will show the 100-year floodplain, existing and potential levee alignments, and wetland locations; and flood photographs. A detailed map will be provided as a handout.

Your comments are important. You also will receive a comment sheet to complete at the open house. Comments received will be analyzed and provided to the study team. The next study newsletter will contain an open house summary, including a summary of the comments.

The open house will be a scoping meeting and will partially fulfill the National Environmental Policy Act's scoping requirements. Comments received from Federal, State, and Natural Resource agencies and the public will be considered in the Environmental Assessment.

STUDY SCHEDULE

The Draft Des Moines and Raccoon Rivers Feasibility Report is scheduled to be completed and available for public review in February 2004.

STUDY INFORMATION AVAILABLE ON THE INTERNET

The website for the Des Moines and Raccoon Rivers Feasibility Study has been updated to include additional study information, study documents, study team points of contact, and related websites.

Open house material, including the PowerPoint presentation, will be placed on the website after the open house. During the public review period in 2004, the draft report will be available for viewing on the website. Flood profiles will be available after they are finalized.

The website is located at the following address:
<http://www.mvr.usace.army.mil/DesMoinesFP/>.

PUBLIC INVOLVEMENT COMMENTS/QUESTIONS

We welcome your input. If you have comments and/or questions regarding this study, please contact Mr. Dennis Hamilton, Project Manager, by telephone at 309/794-5634, fax at 309/794-5710, or e-mail at dennis.w.hamilton@usace.army.mil.

If you prefer, you may write to Mr. Hamilton at the following address:

District Engineer
U.S. Army Engineer District, Rock Island
ATTN: CEMVR-PM-M (Hamilton)
Clock Tower Building - P.O. Box 2004
Rock Island, Illinois 61204-2004

If you are aware of someone who may wish be added to the study's mailing list to receive this newsletter, previous newsletters, and/or future study mailings, please ask him/her to contact Mr. Ralston or Ms. Sue Simmons, Rock Island District, Corps of Engineers. Ms. Simmons may be contacted at the Rock Island District address listed on this page, by telephone at 309/794-5573, or by e-mail at suzanne.r.simmons@usace.army.mil

The point of contact for the City of Des Moines is Mr. Scott Ralston, Storm Water Engineer. Mr. Ralston may be reached at:

City of Des Moines Engineering – Armory Building
602 East First Street
Des Moines, Iowa 50309
515/283-4954; fax: 515/237-1717
E-mail: RARalston@dmgov.org

HELP US SPREAD THE WORD

