

**U.S. Army Corps of Engineers, Kansas City District**



## **Final Feasibility Report**

# **APPENDIX G**

## **PUBLIC INVOLVEMENT AND COORDINATION**

*Kansas Citys, Missouri and Kansas  
Flood Risk Management Project  
Final Feasibility Report*



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**Kansas Citys, Missouri and Kansas  
Flood Risk Management Project  
Final Feasibility Report**

**APPENDIX G**

**PUBLIC INVOLVEMENT**

The Draft Final Feasibility Report was released on November 22, 2013, for a thirty (30) day public review and comment period via the Kansas City District website.

Notice of the report availability and public comment period was posted on the Kansas City District website and provided to local Kansas City area media outlets. Additionally, notice was mailed to Kansas and Missouri congressional offices; state and local elected officials; Federal, State, County, and City agencies; community and environmental interest groups; Indian tribes; and businesses and property owners within the project area.

Written comments were requested to be submitted by mail or through the project website. The mailing list, public notice, and press release are included in this appendix as Exhibits 1, 2, and 3 respectively. The notification list includes contacts obtained from the Environmental Protection Agency, Region VII, to ensure compliance with Environmental Justice requirements.

In response to the Public Notice and public comment period, comments were received from the following entities:

Kansas State Historic Preservation Office  
U.S. Fish & Wildlife Service  
Missouri Department of Conservation  
Missouri Department of Natural Resources  
U.S. Environmental Protection Agency

The comment letters received are included in this appendix as Exhibit 4. There was no response received from media outlets. Responses to comments received are included in Exhibit 5. Please note that the EPA provided thirteen separate comments which are each presented separately with a response in the attached exhibit.

Public meetings and workshops were previously held in the Kansas City area in conjunction with the Reconnaissance Study and first phase of the Feasibility Study. Information gathered at those meetings was included in the previously published Interim Feasibility Report. Comments previously received on the Interim Feasibility Report and Environmental Impact Statement are included and responded to within those documents. If a previous comment addressed an issue or aspect of the second phase of the study it was considered in the development of the alternatives discussed in this Final Feasibility Report.

Regular contact and coordination has been maintained throughout the Feasibility Study with the local sponsors to provide updates on the status and findings of the study. With the sponsor's assistance, project status information has been shared with multiple stakeholder groups representing businesses and industries in the project area. Continually throughout this process, the local sponsors have expressed their desire to see their levee system restored to acceptable reliability. The local sponsors have initiated and maintained contact with local governments and their Congressional representatives to share project status information and urge continued support for the project.

The views of several State and Federal resource agencies were considered in the study, including the following:

U.S. Fish & Wildlife Service  
Natural Resources Conservation Service  
U.S. Environmental Protection Agency  
Kansas Department of Wildlife and Parks  
Kansas State Historic Preservation Office  
Missouri Department of Conservation  
Missouri Department of Natural Resources

Exhibit 1 – Public Notice Mailing List

Congressional Offices

Senator Pat Roberts – KS  
Senator Jerry Moran – KS  
Senator Claire McCaskill – MO  
Senator Roy Blunt – MO  
Representative Kevin Yoder – KS  
Representative Emmanuel Cleaver II – MO  
Representative Sam Graves – MO

Local Elected Officials

Governor Sam Brownback – KS  
Governor Jay Nixon – MO  
Mayor Mark Holland, Kansas City, KS  
Mayor Sly James, Kansas City, MO  
Mike Sanders, Jackson County Executive

Federal Agencies

Environmental Protection Agency, Region 7  
Federal Aviation Administration  
Federal Highway Administration  
Federal Railroad Administration  
Federal Transit Authority  
FEMA, Region 7  
National Park Service  
Natural Resources Conservation Service  
U.S. Coast Guard  
U.S. Fish and Wildlife Service  
U.S. Geological Survey  
U.S. Department of the Interior

State Agencies

KS Biological Survey  
KS Department of Agriculture  
KS Department of Health and Environment  
KS Department of Transportation  
KS Department of Wildlife, Parks &  
Tourism  
KS Division of Emergency Management  
KS Geological Survey  
KS State Conservation Commission  
KS State Historical Society  
KS Water Office  
MO Dept of Natural Resources  
MO Dept. of Transportation  
MO Dept. of Conservation

MO Dept. of Public Safety

Local Government Agencies

City of Kansas City, Missouri:  
Water Services Department  
Planning and Development Dept.  
Parks and Recreation Department  
Public Works Department  
Unified Government of Wyandotte County  
and Kansas City, Kansas:  
Public Works Department  
Urban Planning and Land Use Dept.  
Parks and Recreation Department  
Board of Public Utilities, Kansas City, KS  
Wyandotte County Emergency Management  
Jackson County, Missouri:  
Public Works Department  
Stormwater Commission  
Planning and Zoning Dept., Clay County,  
MO

Business and Community Organizations

Port Authority of Kansas City, MO  
Mid-America Regional Council  
Missouri and Associated Rivers Coalition  
Kansas City Industrial Council  
CID Association  
FM Global  
Riverside-Quindaro Bend Levee District  
Birmingham Drainage District  
North Kansas City Levee District  
Fairfax Drainage District  
Kansas Corporation Commission  
Greater Kansas City Chamber of Commerce  
Kansas Chamber of Commerce  
Kansas City, KS, Chamber of Commerce  
Water District No. 1 of Johnson County, KS  
Greater Kansas City Federal Executive  
Board  
F.W. Dodge Company  
Kansas City Public Library  
Kansas City, KS, Public Library  
Armourdale Renewal Association  
Rosedale Development Association  
Guadalupe Centers, Inc.

Exhibit 1 – Public Notice Mailing List

NeighborWorks America Midwest Region  
Westside Community Action Network  
Greater KC LINC, Inc.  
Bridging the Gap  
Heartland Habitat For Humanity  
Kansas City Neighborhood Alliance

Environmental and Recreation Interest  
Groups

Audubon of Kansas  
Sierra Club – Kansas Chapter  
Friends of the Kaw  
Friends of Kaw Point Park  
Friends of KCMO Riverfront Park  
Conservation Federation of Missouri  
Missouri Coalition for the Environment  
Kansas Canoe & Kayak Association  
KC River Trails  
Kansas City Bicycle Club  
Earthriders Mountain Bike Club  
Missouri Bicycle Federation  
Riverfront Utilization and Development  
Foundation  
Johnson County Bicycle Club

Project Area Property Owners

See property owner listing in Real Estate  
Appendix

Indian Tribes

Cheyenne River Sioux Tribe  
Crow Creek Sioux Tribal Council  
Ho-Chunk Nation  
Iowa Tribe of Kansas and Nebraska  
Iowa Tribe of Oklahoma  
Kickapoo Traditional Tribe of Texas  
Kickapoo Tribe in Kansas  
Kickapoo Tribe of Oklahoma  
Miami Tribe  
Northern Cheyenne Tribal Council  
Ogallala Sioux Tribal Council  
Omaha Tribe of Nebraska  
Osage Tribe  
Pawnee Nation of Oklahoma  
Ponca Tribe of Nebraska  
Prairie Band Potawatomi Nation

Rosebud Sioux Tribe  
Sac and Fox Nation of Missouri  
Sac and Fox Nation of Oklahoma  
Sac and Fox Tribe of the Mississippi in Iowa  
Santee Sioux Tribe  
Shawnee Tribe  
Spirit Lake Tribe  
Three Affiliated Tribes  
Wichita and Affiliated Tribes  
Winnebago Tribe of Nebraska  
Wyandotte Tribe of Oklahoma  
Yankton Sioux Tribe

Media Outlets receiving Press Release

The Kansas City Star  
Reuters  
The Kansas City Globe  
The Examiner  
The Platte County Citizen  
The Kearney Courier  
Gladstone Dispatch  
Fort Leavenworth Lamp  
The Olathe News  
Atchison Daily Globe  
The Landmark  
Kansas City Business Journal  
The Pitch  
The Platte County Citizen  
Northeast News  
Gardner News  
The Call  
Wyandotte Daily News  
Lee's Summit Journal  
Smithville Herald  
Dos Mundos  
Liberty Tribune  
Leavenworth Times  
The Weston Chronicle  
KSMO-TV  
WFTX-TV [Fox 4]  
KCTV-TV [KCTV 5]  
KSHB-TV [41 Action News]  
WDAF-TV [Fox 4]  
KMBC-TV [KMBC Channel 9]  
KCWE-TV [KCWE Kansas City's CW]  
WBAP-AM [WBAP News/Talk 820 AM]

Exhibit 1 – Public Notice Mailing List

KMMO-FM; KMMO-AM  
KCUR-FM  
KBEQ-FM [Q-104]  
KFKF-FM [Country 94.1 KFKF]  
KQRC-FM [98.9 The Rock!]  
KMBZ-AM [98.1 FM, KMBZ]  
WFIU-FM [WFIU]  
KANU-FM  
KDKD-AM [Classic 1280]; KDKD-FM  
KXEA-FM [104.9 The Eagle]  
KAIR-FM  
KCHI-FM; KCHI-AM



Exhibit 2 – Public Notice Letter

**DEPARTMENT OF THE ARMY**  
KANSAS CITY DISTRICT, CORPS OF ENGINEERS  
635 FEDERAL BUILDING  
601 E 12<sup>TH</sup> STREET  
KANSAS CITY, MISSOURI 64106-2896

REPLY TO  
ATTENTION OF:

Planning, Programs and  
Project Management  
Planning Branch

NOTICE OF REPORT AVAILABILITY

Dear Interested Party:

The Draft Final Feasibility Report for the Kansas Citys, Missouri and Kansas, Flood Risk Management Study is available for public review at the website location below.

<http://www.nwk.usace.army.mil/Missions/CivilWorks/CivilWorksProgramsandProjects/KansasCitys,FloodRiskManagement.aspx>

This Final Feasibility Report is prepared as a complement to the Interim Feasibility Report published in 2006. This Final Report presents the evaluation of alternatives for improving the level of flood risk management for portions of the existing Kansas City metropolitan levee system not previously presented in the Interim Report. Specifically, the Final Report addresses the Armourdale and Central Industrial District Levee Units and examines projected future impacts and expected risks with and without the proposed alternatives.

Written comments on this Final Feasibility Report should be directed to the address below no later than December 21, 2013.

Corps of Engineers, Kansas City District  
Kansas Citys Levees Project Manager  
Room 529, PM-PF  
601 E. 12<sup>th</sup> Street  
Kansas City, Missouri 64106-2896

Written comments can also be submitted via electronic mail through the project website. Digital copies of the report on CD are available upon request at the address above or via the website e-mail address.

Army Corps of Engineers responses to written comments received in response to this notice will be published in the completed Final Feasibility Report.



# NEWS RELEASE

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

**For Immediate Release:**

Release #PA-2013-72  
November 22, 2013

**Contact:**

U.S. Army Corps of Engineers  
Public Affairs Office  
Kansas City, Mo. 64106-2896  
Phone: (816) 389-3486  
Fax: (816) 389-3434

## Corps seeks public comments for seven levees report

**KANSAS CITY, Mo.**— The U.S. Army Corps of Engineers Kansas City District has studied flood risk management and reliability improvements for the seven levee units in the Kansas City metropolitan area and is seeking review and public comment on the information presented within the Draft Final Feasibility Report (DFFR).

The study was conducted at the request and with cooperation of the sponsors of the seven levee units under the authority of Section 216 of the 1970 Flood Control Act. Any comments received will be considered by the Corps of Engineers to determine whether to modify the recommendations within the report.

The purpose of the overall study of the seven levee units was to determine whether one or more plans for improvements to the existing levee system to reduce flood risk and improve levee reliability is technically viable, economically feasible, and environmentally acceptable, or if no action is warranted. Failure of any part of the existing flood risk management system during a major flood would have significant adverse impacts on the human environment including property damage and potential loss of human life.

The recommendations for the reliability improvements in the Armourdale and Central Industrial District (CID) units are addressed and available for review in the DFFR, which presents the completed feasibility analysis of alternatives for the Armourdale and CID levee units.

Proposed alternatives identified to improve flood risk management system reliability include, but are not limited to earthen levee raise, pump station modifications, floodwall replacement, stoplog and sandbag closures, pressure relief wells, floodwall modification using buttresses, and the no action alternative. DFFR analysis concluded that the nominal 500-year+3ft projected water surface elevation levee raise and underseepage improvements is the preferred alternative for both the Armourdale and CID units. The DFFR identifies a combination of measures as the Corps' overall recommended plan for these two levee units and presents an analysis of the costs and impacts associated with the alternatives listed above.

**NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) OF 1969, as amended:** Considering potential significant impacts on the human environment, and in accordance with the National Environmental Policy Act, the Corps prepared and released the Interim Feasibility Report (IFR) and Draft Environmental Impact Statement (DEIS) in June 2006 for a 45-day public review (Public Notice 200601672). The IFR and DEIS presented the feasibility analysis, no action, action alternatives, preferred alternatives and associated environmental impacts for the Argentine, East Bottoms, Fairfax-Jersey Creek, Birmingham, and North Kansas City levee units. Preliminary feasibility analysis, the no

Exhibit 3 – Press Release

action alternative, action alternatives, tentatively preferred alternatives and associated environmental impacts for the Armourdale and CID units were also addressed in the IFR and DEIS. The tentatively preferred alternatives for Armourdale and CID were documented within the IFR and DEIS as the nominal 500-year+3 levee raise and underseepage improvements. A Section 404 of the Clean Water Act (33 USC 1344) compliance evaluation was included as Appendix H of the DEIS and Appendix J of the Final Environmental Impact Statement (FEIS) completed in August 2006.

**PUBLIC INTEREST REVIEW:** The Corps of Engineers is soliciting comments on the DFFR from the public, federal, state, and local agencies and officials, Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to modify the recommendations within the report.

**COMMENTS:** Any interested party is invited to submit written comments relative to the DFFR on or before the public notice expiration date. Comments both favorable and unfavorable will be accepted, included within the project record and will receive full consideration in determining whether to modify report recommendations. Comments should be mailed to:

Kansas City District, Corps of Engineers  
Kansas City Levees Project Manager  
Room 529, PM-PF  
601 E. 12<sup>th</sup> Street  
Kansas City, MO 64106-2896

ADDITIONAL INFORMATION: The DFFR, previous IFR and FEIS may be viewed at the following website:  
[www.nwk.usace.army.mil/Missions/CivilWorks/CivilWorksProgramsandProjects/KansasCitys,FloodRiskManagement](http://www.nwk.usace.army.mil/Missions/CivilWorks/CivilWorksProgramsandProjects/KansasCitys,FloodRiskManagement), or may be obtained by writing to the address above, or by contacting the project manager at [KC.LeveesComments@usace.army.mil](mailto:KC.LeveesComments@usace.army.mil).

A copy of this public notice may also be viewed at the following website:  
[www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx](http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx). For more information, please contact the Public Affairs Office at (816) 389-3486.

Exhibit 4 – Comments Received

Written Comments Received In Response to Public Notice

Written comments were received from the following organizations on the dates indicated:

KS State Historic Preservation Office: letter dated December 6, 2013

Missouri Department of Conservation: letter dated December 20, 2013

U.S. Fish and Wildlife Service: electronic mail dated December 24, 2013

Missouri Department of Natural Resources: letter dated December 27, 2013

U.S. Environmental Protection Agency: e-mail dated December 31, 2013

KSR&C No. 13-12-036

December 6, 2013

Levees Program Manager  
Kansas City District, Corps of Engineers  
Room 529, PM-PF  
601 E. 12<sup>th</sup> Street  
Kansas City, MO 64106

Via E-mail

RE: Kansas City Levee Improvements  
Armourdale and Central Industrial District (CID) Units  
Wyandotte County

Dear Levees Program Manager:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed your public notice dated November 22, 2013 regarding the above-referenced project. According to our records, we reviewed proposed improvements to both the Armourdale and Central Industrial District (CID) levee units in 2006. That review is noted in the Final Feasibility Report, dated November 2013. Since we see no significant changes in the current plans, our original clearance can stand. Our office continues to have no objection to the proposed levee improvement projects.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214) or Kim Gant at 785-272-8681 (ext. 225).

Sincerely,

Jennie Chinn, Executive Director and  
State Historic Preservation Officer



Timothy Weston  
for

Patrick Zollner  
Deputy SHPO



# MISSOURI DEPARTMENT OF CONSERVATION

## Headquarters

2901 West Truman Boulevard, P.O. Box 180, Jefferson City, Missouri 65102-0180

Telephone: 573-751-4115 ▲ [www.MissouriConservation.org](http://www.MissouriConservation.org)

ROBERT L. ZIEHMER, Director

December 20, 2013

Kansas City Levees Project Manager  
Kansas City District, Corps of Engineers  
Room 529, PM-PF  
601 E. 12<sup>th</sup> Street  
Kansas City, MO 64106-2896

**Re: Public Notice, Kansas City's, Missouri and Kansas Flood Risk Management Study Missouri and Kansas Rivers Draft Final Feasibility Report**

Dear Project Manager,

Thank you for the opportunity to comment on the Draft Final Feasibility Report for the Flood Risk Management Study. The existing Kansas City metropolitan flood risk management system includes seven levee units that provide benefits to the Cities of Kansas City, North Kansas City, Birmingham, Jackson, and Clay Counties, Missouri, and Wyandotte County, Kansas. The two levee units addressed by this public notice include the Armourdale and Central Industrial District (CID) levee units. The Armourdale levee unit is located within Wyandotte County, Kansas. The CID levee unit is located primarily within Wyandotte County Kansas (1.5 miles), with a relatively small portion of the levee (about 0.1 miles) located within Jackson County, Missouri.

The Missouri Department of Conservation (Department) is the agency responsible for forest, fish, and wildlife resources in Missouri. As such, we actively participate in project review when projects might affect those resources. Our comments and recommendations are for your consideration and are offered to reduce impacts to the forest, fish, and wildlife resources in the project area.

**ACTIVITY:** The purpose of the overall study of the seven levee units was to determine whether one or more plans for improvements to the existing levee system to reduce flood risk and improve levee reliability is technically viable, economically feasible, and environmentally acceptable, or if no action is warranted. Failure of any part of the existing flood risk management system during a major flood would have significant adverse impacts on the human environment including property damage and potential loss of human life.

The recommendations for the reliability improvements in the Armourdale and CID units are addressed and available for review in the Draft Final Feasibility Report (DFFR). The DFFR presents the completed feasibility analysis of alternatives for the Armourdale and CID levee units. Proposed alternatives identified to improve flood risk management system reliability include, but are not limited to earthen levee raise, pump station modifications, floodwall

COMMISSION

DON C. BEDELL  
Sikeston

JAMES T. BLAIR, IV  
St. Louis

MARILYNN J. BRADFORD  
Jefferson City

TIM E. DOLLAR  
Blue Springs

Project Manager  
Page 2  
December 20, 2013

replacement, stoplog and sandbag closures, pressure relief wells, floodwall modification using buttresses, and the no action alternative. DFFR analysis concluded that the nominal 500-year+3 ft projected water surface elevation levee raise and underseepage improvements is the preferred alternative for both the Armourdale and CID units. The DFFR identifies a combination of measures as the U.S. Army Corps of Engineers (USACE) overall Recommended Plan for these two levee units and presents an analysis of the costs and impacts associated with the alternatives listed above.

The Department is concerned with potential impacts of the preferred alternative to downstream interests. The Department realizes that this is an industrial area and a major flood could have significant adverse impacts, however, raising the levee an additional 3 feet in this area could increase flood issues downstream. The Department would like USACE to ensure that downstream interests have been adequately considered in the analysis.

Thank you for the opportunity to provide comments. If you have any questions about these comments, please contact me at (573) 522-4115, Extension 3346 or by email at [alan.leary@mdc.mo.gov](mailto:alan.leary@mdc.mo.gov)

Sincerely,



ALAN W. LEARY  
POLICY COORDINATOR

AWL/pb

cc: Jennifer Campbell-Allison, Pam Lanigan, Vince Travnichek

**From:** [Skinker, Richard A NWK](#)  
**To:** [Lynn, Eric S NWK](#)  
**Subject:** FW: [EXTERNAL] Re: Armourdale and CID Flood Risk Management (UNCLASSIFIED)  
**Date:** Tuesday, December 24, 2013 12:21:49 PM

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Classification: UNCLASSIFIED  
Caveats: NONE

FYI

-----Original Message-----

From: Blackford, Susan [[mailto:susan\\_blackford@fws.gov](mailto:susan_blackford@fws.gov)]  
Sent: Tuesday, December 24, 2013 11:45 AM  
To: Skinker, Richard A NWK  
Subject: [EXTERNAL] Re: Armourdale and CID Flood Risk Management (UNCLASSIFIED)

Hi Richard,

We didn't submit any comments. One thing I noticed but didn't seem big enough to submit a comment was that the Draft FR said that FWS had provided a Draft Coordination Act Report. We have provided a Final CAR.

Have a Merry Christmas and Best Wishes for the New Year.

Susan

On Tue, Dec 24, 2013 at 11:02 AM, Skinker, Richard A NWK <[Richard.A.Skinker@usace.army.mil](mailto:Richard.A.Skinker@usace.army.mil)> wrote:

Classification: UNCLASSIFIED  
Caveats: NONE

Hi Susan,

Please let me know if you have any questions or comments regarding the final feasibility report for these levee units that was previously on public notice.

Thanks,  
Rich

Richard A. Skinker  
Project Manager, PM-PF  
Kansas City District  
U.S. Army Corps of Engineers  
816-389-3134

Classification: UNCLASSIFIED  
Caveats: NONE

--

Susan Blackford  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
2609 Anderson Ave.  
Manhattan, KS 66502  
785-539-3474 ext. 102  
Susan\_Blackford@fws.gov

Classification: UNCLASSIFIED  
Caveats: NONE



STATE OF MISSOURI  
**DEPARTMENT OF NATURAL RESOURCES**

Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

---

www.dnr.mo.gov

DEC 27 2013

Corps of Engineers, Kansas City District  
Kansas City Levees Project Manager  
Room 529, PM-PF  
601 E. 12<sup>th</sup> St.  
Kansas City, MO 64106

**Re: Draft Final Feasibility Report - Flood Risk Management Study for Kansas City, Missouri and Kansas City, Kansas**

Dear Kansas City Levees Project Manager:

The Missouri Department of Natural Resources (department) appreciates the opportunity to review the information submitted and provide comments for the Draft Final Feasibility Report - Flood Risk Management Study for Kansas City, Missouri and Kansas City, Kansas. The department offers the following comments for consideration.

The Final Feasibility Report describes two of the seven units in the levee system that provides flood protection for metropolitan Kansas City, Missouri and Kansas City, Kansas along the Kansas and Missouri rivers. The two units are the Armourdale unit along the left bank of the Kansas River and the Central Industrial District along the right bank of the Missouri River in the state of Missouri. The other five units were evaluated in the Interim Feasibility Report published in 2006.

Consistent with the Interim Feasibility Report, the Final Feasibility Report recommends the seven unit flood protection system be modified to provide protection from the 0.2 percent chance (500-year) exceedance peak flow recurrence interval. The Final Report also indicates “none of the Missouri River Levee Units in this study physically overtop for the 0.2% (500-year), 0.133% (750-year), or even the 0.1% (1,000-year) chance of exceedance flood event.”

Staff reviewers did not find much detail about the hydraulic analysis of the two units - Armourdale and Central Industrial District. More detail was available in the Hydrology/Hydraulics Appendix of the 2006 Interim Feasibility Study, which did not include these latter two units. More detailed documentation about the these two units would be needed before the department could provide comments on the Draft Final Feasibility Report - Flood Risk Management Study for Kansas City, Missouri and Kansas City, Kansas.

Flood Risk Management Study - Kansas City, MO and Kansas City, KS  
Page Two

We appreciate the opportunity to provide comments for the Draft Final Feasibility Report - Flood Risk Management Study for Kansas City, Missouri and Kansas City, Kansas. If you have any questions or need clarification, please contact me, phone number (573) 751-3195. The address for correspondence is Department of Natural Resources, P.O. Box 176, Jefferson City, MO 65102. Thank you.

Sincerely,

DEPARTMENT OF NATURAL RESOURCES

A handwritten signature in black ink, appearing to read "Robert Stout". The signature is written in a cursive style with some stylized flourishes.

Robert Stout  
Chief of Policy

RS/jbk

**From:** [Skinker, Richard A NWK](#)  
**To:** [Lynn, Eric S NWK](#)  
**Subject:** FW: RE: Armourdale and CID Flood Risk Management (UNCLASSIFIED)  
**Date:** Tuesday, December 31, 2013 2:36:10 PM

---

Classification: UNCLASSIFIED  
Caveats: NONE

FYI

-----Original Message-----

From: Shepard, Larry [<mailto:Shepard.Larry@epa.gov>]  
Sent: Tuesday, December 31, 2013 2:35 PM  
To: Skinker, Richard A NWK  
Cc: Robichaud, Jeffery; Horchem, Brad  
Subject: [EXTERNAL] RE: Armourdale and CID Flood Risk Management

Thank you for the opportunity to review the draft Final Feasibility Report for the Kansas City, Missouri and Kansas, Flood Risk Management Study. The Final Feasibility Study was prepared by the Corps as a complement to the Interim Feasibility Report (2006) which evaluates alternatives for improving the level of flood risk management for portions of the existing Kansas City metropolitan levee system. This system includes seven levee units that provide flood risk management benefits to the Cities of Kansas City, North Kansas City, Birmingham, Jackson and Clay Counties in Missouri and Wyandotte County in Kansas. This Final Feasibility Report addresses the Armourdale and Central Industrial District Levee Units. The 2006 Interim Feasibility Report included recommendations for the Argentine, North Kansas City, East Bottoms, Birmingham and Fairfax-Jersey Creek levee units. Although hydrology and hydraulics modeling and analysis was complete for the entire seven-levee system, structural and geotechnical analysis and calculations were not complete for the Armourdale and CID units. This Final Feasibility Report documents the existing conditions, evaluation of alternatives and flood risk management improvement recommendations for these last two levee units. The Corps intends the Interim and Final Reports to be complementary efforts that view the Kansas City project as one complete system. Recommendations within the Interim Feasibility Report for five of the seven levee units were subsequently authorized by the Water Resources Development Act of 2007 and are being implemented. Recommendations within the Final Feasibility Report will be authorized and implemented separately following approval of this Report.

Please consider the following comments on the Final Feasibility Report.

## II. Existing Project Conditions and Flood History

A. Existing Project Conditions, B. Construction History and Design Discharge, D. Authorized Project Design Hydraulics and H. Final Assessments of Existing Levee Integrity

The document would be improved with a characterization of the relationship between unit structures' "design discharges" and flood "design frequency" as they affect structure height, i.e., design discharge of 390,000 cfs and levee flood profile at flood frequency of 0.2%.

## F. Overview of Existing Environmental and Cultural Resources

### 5.0 Hazardous, Toxic and Radioactive (HTRW) Sites

This section would be improved with more detail summarizing here what is provided in the 2006 EIS and the Final Feasibility Report appendices for the Armourdale and CID units. Appendix D is thorough, but the inclusion of a summary of this information in the body of the Report would improve its readability.

### III. Future Without Project Condition

#### B. Hydrologic and Hydraulic Considerations of the Without Condition Scenario

##### 2.0 Expected Future Condition Changes

This section does not address potential changes in precipitation patterns or intensity resulting from projected changes in regional climate. Recognizing that the basis for future hydrological predictions is the 2003 Upper Mississippi River System Flow Frequency Study, this report should at least address the possibility that climate changes are predicted and characterize the degree to which such changes would or would not affect the performance of the planned changes to the levee system, i.e., some form of sensitivity analysis.

### IV. Plan Formulation

#### C. Step 1 – Identifying Problems and Opportunities

##### 3.0 Planning Constraints

###### b. Systems Approach to Plan Formulation

The third paragraph on page 33 summarizes the measures recommended for the 3 Missouri River units and the Argentine unit of the three Kansas units. The Birmingham unit was addressed earlier as not requiring any modifications. Although I might have missed it, this document would be improved if there were a table which summarized the recommended actions for the five units addressed in the Interim Feasibility Report.

#### D. Step 3 – Formulating Alternative Plans

##### 1.0 No Federal Action

The last paragraph on page 35 describes, abstractly, the threat to the environment from the potential release of contaminants into the river associated with levee failure. This section would be improved if it referenced chemicals, chemical classes or types of contaminants found within the areas protected by the two levee units. I would not expect a complete inventory of materials or contaminants, but it would be appropriate for the public to know the kinds of contamination expected, how these contaminants

'behave' in the floodplain and river environment once flushed from behind the levees and the nature of the threat to the human and natural environment. A general characterization, rather than repeating what was included in the EIS, would suffice.

#### 4.0 Combining Management Measures into Alternative Plans

I recognize the limitations to using non-structural measures as part of alternatives design, particularly within these two levee units. However, the document would be strengthened if the rationale provided in this section, which supported not utilizing such measures, was more detailed and specific to the type and density of structures within these two units. Flood-proofing and structure removal are viable measures even within industrial and residential areas under certain circumstances. The current text suggests to the reader and the public that these non-structural measures are not suitable components of flood risk management in any area with "dense urban development" without qualification. Although these measures are not likely to be suitable in these specific areas, the Corps should be cautious about rejecting these measures without qualification or detailed explanation in specific instances.

#### E. Step 4 – Evaluating Alternative Plans

##### 1.0 Unit-Raise Structural Alternatives

###### b. Armourdale Unit

Since the measures evaluated for this unit are for specific reaches of this unit, the section would be improved if it included a figure with a map of the discreet stations. Additionally, a figure identifying those reaches with HTRW concerns, rail interaction and the location of the groundwater contamination between stations 45+00 and 75+00 is essential to understanding the evaluation of structural measures in alternatives design.

##### 3.0 Non-Structural Alternatives

###### c. Non-Structural Summary

See the above comments. Further, the explanation of this measure is vague and obtuse. In addition, the document states that these measures were eliminated from consideration "as potential stand-alone solutions." In my reading of alternative design, no structural measures were required to serve as "stand-alone solutions." If there are instances or locations where non-structural measures could be implemented in concert with structural measures to create the same protections as structural measures alone, these should receive appropriate consideration.

#### F. Step 5 - Comparing Alternative Plans ("Step 5" left out of header)

##### 1.0 Central Industrial District

Again, a figure mapping the locations of the tieback configurations and the railroad tracks would

improve the readability of the text.

## 2.0 Armourdale Unit

No HTRW sites were identified in the selection of alternatives for specific reaches within this unit with multiple alternatives. Does that mean that there were no HTRW-driven limitations to alternatives selection?

## G. Step 6 – Selecting a Plan

Again, references to HTRW-affected reaches and HTRW material disturbance as it might affect the evaluation of alternatives were not supported with any detail or meaningful description. If this component of site limitation was not germane to the evaluation, it should be so noted and left out of the process description.

## V. Description of the Recommended Plan

### I. Environmental and Cultural Considerations

#### 5.0 Wetlands

The statement in this section that “Wetlands within the proposed project are limited in number, size and quality” conflicts with the characterization in II.F., 2.0 which states that there are “no wetlands within the Armourdale or CID Units.” This should be corrected and, if there are any wetlands, a map showing their location should be provided.

#### 9.0 Contaminated Areas

I understand that a detailed assessment of this component of ‘existing environment’ exists within the 2006 FEIS and the HTRW appendix of this document; however, a summary of that information within the body of this document is appropriate. The two paragraphs within this section addressing each unit is inadequate and obtuse, e.g., “Potential HTRW concerns have been identified within the study area...”. These statements have no meaning and do not inform. Again, see my earlier comments on this topic. Particularly illustrative of this issue is the reference to the presence of a Superfund site within the Armourdale Unit without further description of site name and nature of contamination. Further, Table 26 includes unit reaches which were not listed as requiring further evaluation for multiple alternatives in Table 16. This aspect of ‘existing condition’ and alternatives analysis within the main body of this document is not adequately depicted, organized or explained.

If you have any questions regarding these comments, please contact me.

Sincerely,

Larry Shepard

NEPA Team

U.S. Environmental Protection Agency

Region 7

11201 Renner Blvd.

Lenexa, Kansas 66219

913-551-7441

shepard.larry@epa.gov

Classification: UNCLASSIFIED

Caveats: NONE

## Exhibit 5 - Comment/Response Summary

Agency	Nature of Contact/Date	Comment Summary
Kansas State Historic Preservation Office	Submitted via letter dated 12/6/2013	No significant changes since previous review in 2006. No objections to the proposed project.
<b>Response Summary</b>		
Comment noted.		

Agency	Nature of Contact/Date	Comment Summary
Missouri Department of Conservation	Submitted via letter dated 12/20/13	Lack of hydraulic information contained in report.
<b>Response Summary</b>		
<p>Hydrology and hydraulic information and evaluations for all units in the Kansas Citys levee system is documented in the Interim Feasibility Report, Engineering Appendix, Chapter A-2, published in 2006. Specifically, water surface profiles for the 0.2% chance flood versus top of levee at existing conditions for the CID and Armourdale Units are shown in Exhibits A-2.18 and A-2.19 of that Appendix. Water surface profiles for the 0.2% chance flood versus top of levee under the Future Without Project condition in the CID and Armourdale Units are shown in Exhibits A-2.96 and A-2.97. The H&amp;H Chapter of the Interim Report Engineering Appendix is available for download from the Kansas City District website at:</p> <p><a href="http://www.nwk.usace.army.mil/Missions/CivilWorks/CivilWorksProgramsandProjects/KansasCitys,FloodRiskManagement.aspx">http://www.nwk.usace.army.mil/Missions/CivilWorks/CivilWorksProgramsandProjects/KansasCitys,FloodRiskManagement.aspx</a></p>		

Agency	Nature of Contact/Date	Comment Summary
U.S. Department of the Interior, Fish and Wildlife Service	Submitted via e-mail 12/24/2013	No comments on the project. Noted that report references Draft Coordination Act Report that is actually a Final Coordination Act Report.
<b>Response Summary</b>		
Reference to Draft Coordination Act Report corrected.		

Agency	Nature of Contact/Date	Comment Summary
Missouri Department of Conservation	Submitted via letter dated 12/20/2013	Concerned with potential increase in downstream flood impacts due to levee raise.
<b>Response Summary</b>		
<p>At their existing heights the Armourdale and CID Kansas Levee units are currently able to pass the 0.5% (200 year) event. As noted in the Phase 2 report there is a proposed raise for the Armourdale and CID Levee units to an elevation equivalent to the 0.2% (500 year) event plus 3 feet (500 year +3).</p> <p>Under existing conditions the Armourdale and CID-Kansas levee units would be overtopped by an average of 0.6 feet and 1.1 feet respectively during the 500 year event (341,000 cfs) primarily along the upstream segments of each levee. However, levee weir flow calculations show that the CID-Kansas levee unit would have a maximum overflow into the protected area of 3,800 cfs, which is only 1.1% of the total 500 year flow. In addition, weir flow calculations for the Armourdale levee unit show that the protected area would be inundated and filled prior to the 500 year peak overtopping elevation of 1.1 feet. As such any water overtopping the upstream portion of the levee would be returned to the Kansas River on the downstream end of the levee as the maximum flow and depth is approached. This would cancel out any flow reduction due to overtopping at the upstream end of the levee.</p> <p>Based on this evaluation, raising the Armourdale and CID-Kansas Levee units would cause approximately 3,800 cfs in additional flow at the Kansas/Missouri River confluence for the 500 year event. This equates to a 0.7% increase in peak flow and a 1.3 inch increase in water surface elevation immediately downstream of the Kansas River / Missouri River confluence. These increases are considered to be negligible. The overtopping weir flow calculation depths and durations were based on the rate of rise observed during the 1993 flood event (1.7 feet/day)."</p>		

Agency	Nature of Contact/Date	Comment Summary
U.S. Environmental Protection Agency	Submitted via e-mail dated 12/31/13	1. Draft Report Section II.A. The document would be improved with a characterization of the relationship between unit structures' "design discharges" and flood "design frequency" as they affect structure height, i.e., design discharge of 390,000 cfs and levee flood profile at flood frequency of 0.2%
<b>Response Summary</b>		
<p>The Discharge-Frequency relationships summarized in Table 3-10 of the Final Feasibility Report indicate that the authorized design discharge of 390,000 cfs has an annual chance exceedance of less than 0.1%. Given the very low chance of occurrence of a flood of this magnitude it was determined to be neither practical nor desired to evaluate existing performance or develop alternatives to modify the existing project for the design discharge. For consistency with the desired benefits and uniformity of risk management within the levee system, evaluations of current and future project performance conducted for this study focused on the 0.2% chance flood. This response has been added to the report text after Table 3-10.</p>		

**Comment Summary**

2. Draft Report Section II.F.5.0. This section would be improved with more detail summarizing here what is provided in the 2006 EIS and the Final Feasibility Report appendices for the Armourdale and CID Units. Appendix D is thorough but the inclusion of a summary of this information in the body of the Report would improve its readability.

**Response Summary**

A summary of the HTRW findings from Appendix D can be found in the Final Feasibility Report Section 5.1.3.

**Comment Summary**

3. Draft Report Section III.B.2.0. This section does not address potential changes in precipitation patterns or intensity resulting from projected changes in regional climate change. Recognizing that the basis for future hydrological predictions is the 2003 Upper Mississippi River System Flow Frequency Study, this report should at least address the possibility that climate changes are predicted and characterize the degree to which such changes would or would not affect the performance of the planned changes to the levee system, i.e., some form of sensitivity analysis.

**Response Summary**

USACE guidance on climate change adaptation inputs for inland hydrology is at the draft final stage of production, and has not yet been officially released for use. As such, there was no guidance in place when the hydrologic analysis was conducted (finalized 2006) for the Kansas City Levees Feasibility Study. The proposed USACE guidance will initially recommend a qualitative approach. A summary of the qualitative approach as would be applied to the Kansas City Levees is provided below.

The climate of northeast Kansas trends toward a continental weather pattern of cold winters and hot, humid summers. The average temperature in 2013 at Topeka, KS (which represents the northeast portion of Kansas) was 60 degrees. The average high temperature was 73 and average low temperature was 47. The average yearly precipitation was about 37 inches of moisture.

A model of future conditions for the central plains of the United States was created by the NOAA National Environmental Satellite, Data and Information Service in a report issued in January 2013. This report is an assessment of Climate Trends and Scenarios into the next 50 to 100 years. The report cites that over the past period of record for the Kansas River basin, both temperature and precipitation has trended above normal, especially over the last 50 years. To account for climate change in the meteorological conditions, the future forecast of conditions in the region takes into consideration the past temperature and precipitation records, and then considers future modeled conditions in the area through 2070. According to the NESDIS report, a warming trend of about 3-5 degrees F and a precipitation trend very slightly toward wetter conditions can be expected through the next 50 years although significant uncertainty is expected with these estimates. Based on this slight trend toward wetter conditions frequency flows over the study basin may increase, but these increases are being treated in this evaluation to be retained within the bands of uncertainty in the Existing Condition Feasibility hydrologic analysis.

**Comment Summary**

4. Draft Report Section IV.C.3.0.b. The third paragraph on page 33 summarizes the measures recommended for the 3 Missouri River units and the Argentine unit of the three Kansas units. The Birmingham unit was addressed earlier as not requiring any modifications. Although I might have missed it, this document would be improved if there were a table which summarized the recommended actions for the five units addressed in the Interim Feasibility Report.

**Response Summary**

The recommendations of the Interim Feasibility Report are discussed in Section 7.0 of the Final Feasibility Report.

**Comment Summary**

5. Draft Report Section IV.D.1.0. The last paragraph on page 35 describes, abstractly, the threat to the environment from the potential release of contaminants into the river associated with levee failure. This section would be improved if it referenced chemicals, chemical classes or types of contaminants found within the areas protected by the two levee units. I would not expect a complete inventory of materials or contaminants, but it would be appropriate for the public to know the kinds of contamination expected, how these contaminants ‘behave’ in the floodplain and river environment once flushed from behind the levees and the nature of the threat to the human and natural environment. A general characterization, rather than repeating what was included in the EIS, would suffice.

**Response Summary**

The discussion of potential environmental impacts of the No Federal Action alternative, especially as relates to chemical releases, has been revised and expanded and is found in Section 4.3.1 of the Final Feasibility Report.

**Comment Summary**

6. Draft Report Section IV.D.4.0. I recognize the limitations to using non-structural measures as part of alternatives design, particularly within these two levee units. However, the document would be strengthened if the rationale provided in this section, which supported not utilizing such measures, was more detailed and specific to the type and density of structures within these two units. Flood-proofing and structure removal are viable measures even within industrial and residential areas under certain circumstances. The current text suggests to the reader and the public that these non-structural measures are not suitable components of flood risk management in any area with “dense urban development” without qualification. Although these measures are not likely to be suitable in these specific areas, the Corps should be cautious about rejecting these measures without qualification or detailed explanation in specific instances.

**Response Summary**

The discussion of Non-Structural measure evaluations has been expanded to provide additional details of the types of measures, expected performance, and typical costs. This discussion is found in Section 4.3.4.2 of the Final Feasibility Report.

**Comment Summary**

7. Draft Report Section IV.E.1.0.b. Since the measures evaluated for this unit are for specific reaches of this unit, the section would be improved if it included a figure with a map of the discreet stations. Additionally, a figure identifying those reaches with HTRW concerns, rail interaction and the location of the groundwater contamination between stations 45+00 and 75+00 is essential to understanding the evaluation of structural measures in alternatives design.

**Response Summary**

Maps are provided following the text of the report that show the locations and stationing of the recommended plan improvements relative to existing infrastructure, including railroads. Notations are provided on the maps indicating known HTRW locations. Since all measures evaluated were applied to the same existing levee locations, separate map sets were not created for each measure or alternative.

**Comment Summary**

8. Draft Report Section IV.E.3.0.c. See the above comments. Further, the explanation of this measure is vague and obtuse. In addition, the document states that these measures were eliminated from consideration “as potential stand-alone solutions.” In my reading of alternative design, no structural measures were required to serve as “stand-alone solutions.” If there are instances or locations where non-structural measures could be implemented in concert with structural measures to create the same protections as structural measures alone, these should receive appropriate consideration.

**Response Summary**

The term “stand-alone solutions” was meant to convey that non-structural alternatives would not provide the desired degree of system-wide flood risk management improvement without the addition of structural project components. The Non-Structural measures discussion has been revised. See response to previous comment on Non-Structural Alternatives.

**Comment Summary**

9. Draft Report Section IV.F.1.0. Again, a figure mapping the locations of the tieback configurations and the railroad tracks would improve the readability of the text.

**Response Summary**

Maps are provided following the text of the report that show the locations and stationing of the recommended levee improvements relative to existing infrastructure, including the multiple tieback configurations evaluated in the CID Unit.

**Comment Summary**

10. Draft Report Section IV.F.2.0. No HTRW sites were identified in the selection of alternatives for specific reaches within this unit with multiple alternatives. Does that mean that there were no HTRW-driven limitations to alternatives selection?

**Response Summary**

Avoidance of HTRW was one driver for alternative selection in reaches adjacent to known contaminated areas. Depending on the existing features, necessary improvements desired, and other adjacent infrastructure, it was often not the only driver. The reaches described in this section were not adjacent to HTRW areas and the selection of measures was driven by real estate relocation and access concerns as described.

**Comment Summary**

11. Draft Report Section IV.G. Again, references to HTRW-affected reaches and HTRW material disturbance as it might affect the evaluation of alternatives were not supported with any detail or meaningful description. If this component of site limitation was not germane to the evaluation, it should be so noted and left out of the process description.

**Response Summary**

Again, the primary use of HTRW in the evaluation of alternatives was only for identification and avoidance of measures that would require construction activity in those areas. The discussion in this section presented a summary of the concerns that drove alternative selection throughout the two units. This discussion is found in Section 4.6.3 of the Final Feasibility Report and has been edited to reflect the emphasis on avoidance of HTRW disturbances.

**Comment Summary**

12. Draft Report Section V.I.5.0. The statement in this section that “Wetlands within the proposed project are limited in number, size and quality” conflicts with the characterization in II.F., 2.0 which states that there are “no wetlands within the Armourdale or CID Units.” This should be corrected and, if there are any wetlands, a map showing their location should be provided.

**Response Summary**

The Final Feasibility Report has been edited to eliminate the inconsistencies of the wetlands discussion. There are NWI mapped wetland areas in the Armourdale and CID units as discussed in Section 5.1.4 of the Final Feasibility Report. Wetland impacts were discussed in the 2006 EIS. There are no anticipated wetland impacts associated with proposed work within the Armourdale and CID units.

**Comment Summary**

13. Draft Report Section V.I.9. I understand that a detailed assessment of this component of ‘existing environment’ exists within the 2006 FEIS and the HTRW appendix of this document; however, a summary of that information within the body of this document is appropriate. The two paragraphs within this section addressing each unit is inadequate and obtuse, e.g., “Potential HTRW concerns have been identified within the study area...”. These statements have no meaning and do not inform. Again, see my earlier comments on this topic. Particularly illustrative of this issue is the reference to the presence of a Superfund site within the Armourdale Unit without further description of site name and nature of contamination. Further, Table 26 includes unit reaches which were not listed as requiring further evaluation for multiple alternatives in Table 16. This aspect of ‘existing condition’ and alternatives analysis within the main body of this document is not adequately depicted, organized or explained.

**Response Summary**

A summary of the review of the 2006 EIS is included in Section 5.0 of the Final Feasibility Report, including a summary of the HTRW assessment from appendix D in Section 5.1.3. Tables 16 and 26 contain information intended for different purposes and decisions and are not meant to be compared. Table 16 lists those reaches of the Armourdale Unit where more than one technically feasible alternative was identified to implement the desired levee raise. As stated in a previous comment response, these reaches are not adjacent to HTRW sites and the selection of preferred measures was driven by other real estate concerns. Table 26 lists those reaches within the Armourdale that are adjacent to HTRW areas and the potential for impacts from the recommended plan. These tables are presented in the Final Feasibility Report as Tables 4-3 and 5-1, respectively.