US Army Corps
of Engineers
Kansas City District

U.S. ARMY CORPS OF ENGINEERS, KANSAS CITY DISTRICT

Programmatic Environmental Assessment
&
Finding of No Significant Impact

Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408

JUNE 2016

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DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
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KANSAS CITY, MISSOURI 64106-2896

Finding of No Significant Impact

Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408

SEPTEMBER 2016

Summary

The U.S. Army Corps of Engineers (USACE), Kansas City District has constructed numerous civil works projects within its area of responsibility consisting of portions of the states of Missouri, Kansas, Iowa, Nebraska, and Colorado. The Kansas City District receives numerous requests each year from private, public, tribal, or other federal entities to alter civil works projects. When requests are received, they are evaluated to determine if the alteration would be injurious to the public interest or impair the usefulness of the USACE project. Engineering Circular (EC) 1165-2-216, titled *Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408*, provides guidance to process requests. To simplify the review process, EC 1165-2-216 Section 6.s states that USACE districts can develop categorical permissions to cover potential alterations that are similar in nature and have similar impacts. Categorical permissions for alterations to federal levees, channel modification projects, and the Missouri River Bank Stabilization and Navigation Project (BSNP) are being considered. Alteration to lake projects within the Kansas City District are covered under other procedures such as project master plans or outgrants as described in Engineering Regulation (ER) 1130-2-550.

Alternatives

In addition to the No-Action alternative, six other alternative plans were considered for categorical permissions within the Kansas City District.

Alternative 1 – No Categorical Permission (No-Action)

The No-Action alternative would not result in the development of categorical permissions. All requests to alter USACE projects would be evaluated on a case-by-case basis to determine if the alteration would be injurious to the public interest or impair the usefulness of the USACE project. This alternative would not meet the purpose and need of developing categorical permissions to simplify the Section 408 review process.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells

This alternative would result in a categorical permission for alterations that include, or are similar in nature to, geotechnical investigations including geotechnical borings, cone penetration tests, and multi-electrode electrical resistivity tests within the scope of the Programmatic Environmental Assessment. It would also allow for the installing or removing/abandoning deep foundation structures (such as piles and piers), poles, posts, piezometers, and relief wells that would result in limited ground disturbance.

Any holes left as a result of geotechnical investigations, the removal of deep foundation structures, poles, posts, and piezometers would be required to be filled with earthen material or grout. Abandoned wells and pressure relief wells would be filled and grouted per applicable state requirements. These alterations typically have small permanent project footprints. Any spoil material from these activities would be graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. Following construction, land areas that have been disturbed as a result of work on USACE project lands would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

EC 1165-2-216 Section 7.c provides a nine step procedure for processing requests to alter USACE civil works projects. This procedure includes pre-coordination, written

request, required documentation (including environmental compliance, as applicable), district-led Agency Technical Review, Summary of Findings, USACE division review, USACE Headquarters review, notification, and post-permission oversight. Refer to the EC for detailed procedures for each of the steps. It should be noted that not all nine steps will be applicable to every Section 408 request. This will depend on the complexity of the request as noted in EC 1165-2-216 Section 7.c.

Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). Detailed engineering requirements for proposed alterations have been developed to assist in determining if the proposed alteration would impair the usefulness of the USACE project. These are provided on the US Army Corps of Engineers Kansas City District website at http://www.nwk.usace.army.mil/Missions/EngineeringDivision/GeotechnicalBranch/GeotechnicalDesignandDamSafety.aspx.

In addition, the following requirements must also be met:

1. Design and construction specifications must be signed and sealed by a Registered Professional Engineer and, if applicable, a Registered Geologist from the respective state where the work would be performed.
2. The proposed alteration must not negatively impact typical inspections, operations, and maintenance of the USACE project.
3. The proposed alteration must not impact any flood-fighting operations that may be conducted at the USACE project.
4. The proposed alteration must not result in any increase in operation and maintenance costs to the government.

The following environmental conditions have been developed to assist in determining if the proposed alteration would be injurious to the public interest:

1. Any proposed alteration must have a "no effect" or a "may affect, but not likely to adversely affect" determination for potential impacts to any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;
2. Any proposed alteration must not result in the take of any migratory birds as defined in the Migratory Bird Treaty Act;

3. Any proposed alteration must not result in the transfer of any invasive species to new locations;
4. Clean Water Act Section 404 compliance: Only proposed alterations that would not require a Section 404 permit or in which there is an applicable Nationwide Permit or Regional General Permit shall be considered.
5. Proposed alterations must incorporate best management practices to control stormwater runoff or any point source discharges in accordance with any required National Pollutant Discharge Elimination System (NPDES) permits.
6. Proposed alterations must not encourage additional development within the floodplain.
7. Any proposed alteration must not adversely affect any cultural resources and be in compliance with the National Historic Preservation Act (NHPA) Section 106; and
8. Proposed alterations must meet other conditions as described in Section 5, Environmental Consequences of the Programmatic Environmental Assessment.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. The requestor would be required to submit an Information for Planning and Conservation (IPaC) report generated from the USFWS website at https://ecos.fws.gov.ipac/ documenting any threatened or endangered species within the project area. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 36 percent of the requests received that are proposed as categorical permissions.

Alternative 3 – Categorical Permission for Horizontal Directional Drilling

This alternative would result in a categorical permission for installing conduits or pipes by horizontal directional drilling (HDD). The conduits or pipes would be used for the conveyance of non-hazardous material under federal levees, channel modification

projects, and the BSNP within the scope of the Programmatic Environmental Assessment to install pipelines, utilities, or other similar items. HDD that would be used to transport oil and gas are excluded from this categorical permission because of increased risks to the environment from these products should an accident occur. This alternative does not include hydrofracturing techniques, also known as "frac'ing." Any requests for HDD that would result in the transport of hazardous materials or hydrofracturing would be evaluated in a separate stand-alone environmental assessment or environmental impact statement.

Alterations would typically have small permanent project footprints. Any spoil material resulting from these activities would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. Any pits that were excavated would be filled in following the directional drilling. Following construction, land areas that have been disturbed as a result of work on USACE project lands would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The nine step procedure described in EC 1165-2-216 Section 7.c to process requests would also apply to this alternative. Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). The same requirements and conditions would be used as described for Alternative 2.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 16 percent of the requests received that are proposed as categorical permissions.

Alternative 4 – Categorical Permission for Piping Systems

This alternative would result in a categorical permission to install, abandon, or augment piping or utility systems over or within a federal levee, channel modification project, or the BSNP using excavation and cover construction methods. Between the years 2010 and 2014, 52 requests to alter projects fit the description of this alternative. Piping systems that would be used to transport oil and gas are excluded from this categorical permission because of increased risks to the environment from these products should an accident occur. Piping systems used to transport oil and gas or any other hazardous materials would be evaluated in separate stand-alone environmental assessments or environmental impact statements for Section 408 requests.

Open cuts would be made through levees when installing pipes through the critical area of levees (non-pervious portion of a levee). After the pipes have been installed, the levee would be reconstructed in the location of the cut with suitable compacted fill material. Usually, gate wells are constructed for either a gate valve or sluice gate. For pipes that cross the levee above the critical area, partial excavation is required and acceptable fill must be provided. When a piping system within the critical area of a federal levee is abandoned, it would be completely removed if feasible. This requires excavating a cut in the levee to remove the piping system and then reconstructing the levee at this location. If it would not be feasible to remove the piping system, then the pipes and any related structures would be completely grouted with a cement-bentonite or flowable fill material.

Pipes crossing channels or the BSNP could be covered or uncovered types. Covered pipes are typically overlaid with protective stone. Uncovered pipes are commonly supported by concrete blocks cast around the pipe. Other methods to support or protect pipes may be acceptable after review by appropriate USACE staff and a determination made that the usefulness of the project would not be impaired.

Any spoil material resulting from these activities on USACE project lands would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from USACE project lands would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. If borrow material is needed, it would be obtained in such a manner to avoid negatively impacting wetlands, avoid removing trees larger than three inches in diameter at breast height, or impacting any cultural resources. Following construction, land areas that have been disturbed as a result of work on USACE project lands would be planted with native

herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The nine step procedure described in EC 1165-2-216 Section 7.c to process requests would also apply to this alternative. Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). The same requirements and conditions would be used as described for Alternative 2.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 22 percent of the requests received that are proposed as categorical permissions.

Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas

This alternative would result in a categorical permission for the construction or demolition of small structures in undeveloped areas on federal levees, channel modification projects, and the BSNP within the lands and real property interests of these projects within the scope of this document. It would include but not be limited to such actions as modifying existing structures, installing fences, installing or modifying utility structures, and constructing small buildings. Between the years 2010 and 2014, 27 requests to alter projects fit the description of this alternative. Small structures in developed areas were not included as part of this alternative because they are categorically excluded in 33 CFR Part 230.9, therefore meeting the NEPA requirements to be included as a categorical permission if no extraordinary circumstances exist.

Any spoil material resulting from these activities on USACE project lands and real property interests would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from USACE project lands

and real property interests would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. If borrow material is needed, it would be obtained in such a manner to avoid negatively impacting wetlands, removal of trees larger than three inches diameter at breast height, and cultural resource locations. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The nine step procedure described in EC 1165-2-216 Section 7.c to process requests would also apply to this alternative. Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). The same requirements and conditions would be used as described for Alternative 2.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 12 percent of the requests received that are proposed as categorical permissions.

Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement Activities

This alternative would result in a categorical permission for ground surface alterations including the construction, improvement, or maintenance of recreation trails, roads in undeveloped areas, boat ramps, and constructing staging areas within USACE project areas within the scope of this document. It also includes use of existing borrow areas

and environmental enhancement activities, including but not limited to the construction of wetlands. Access roads in developed areas were not included as part of this alternative because they are categorically excluded in 33 CFR Part 230.9, therefore meeting the NEPA requirements to be included as a categorical permission if no extraordinary circumstances exist. Between the years 2010 and 2014, 33 requests to alter projects fit the description of this alternative.

Any spoil material resulting from these activities on USACE project lands would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from USACE project lands would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. Grading and obtaining borrow would occur in such a manner to avoid negatively impacting wetlands, the removal of trees larger than three inches diameter at breast height, and cultural resource locations. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The nine step procedure described in EC 1165-2-216 Section 7.c to process requests would also apply to this alternative. Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). The same requirements and conditions would be used as described for Alternative 2.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 14 percent of the requests received that are proposed as categorical permissions.

Alternative 7 – Categorical Permission for All Types of Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan)

The Recommended Plan would result in categorical permissions for 1) Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundation Structures, Poles, Posts, Piezometers, Wells, and Relief Wells, 2) Horizontal Directional Drilling, 3) Piping Systems, 4) Small Structures in Undeveloped Areas, and 5) Ground Surface Alterations Including Recreation Trails, Access Roads, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement Activities when it has been determined that the alterations would not impair the usefulness of the federal project or be injurious to the public interest. The proposed alterations may fit one or more of the activities described for these alternatives.

Any spoil material resulting from these activities on USACE project lands would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from USACE project lands would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. If borrow material is needed from USACE project lands or real property interests, it would be obtained in such a manner to avoid wetlands, removal of trees larger than three inches diameter at breast height, and cultural resource sites. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees. All temporary access roads and staging areas would be returned to preexisting contours, scarified, and planted with herbaceous vegetation.

EC 1165-2-216 Section 7.c provides a nine step procedure for processing requests to alter USACE civil works projects. This procedure includes pre-coordination, written request, required documentation (including environmental compliance, if applicable), district-led Agency Technical Review, Summary of Findings, USACE division review, USACE Headquarters review, notification, and post-permission oversight. Refer to the EC for detailed procedures for each of the steps. It should be noted that not all nine steps will be applicable to every Section 408 request. This will depend on the complexity of the request as noted in EC 1165-2-216 Section 7.c.

Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). Detailed engineering requirements for proposed alterations have been

developed to assist in determining if the proposed alternation would impair the usefulness of the USACE project. These are provided on the US Army Corps of Engineers Kansas City District website at http://www.nwk.usace.army.mil/Missions/EngineeringDivision/GeotechnicalBranch/GeotechnicalDesignandDamSafety.aspx.

In addition, the following requirements must also be met:

1. Design and construction specifications must be signed and sealed by a Registered Professional Engineer and, if applicable, a Registered Geologist from the respective state where the work would be performed.
2. The proposed alteration must not negatively impact typical inspections, operations, and maintenance of the USACE project.
3. The proposed alteration must not impact any flood-fighting operations that may be conducted at the USACE project.
4. The proposed alteration must not result in any increase in operation and maintenance costs to the government.

The following environmental conditions have been developed to assist in determining if the proposed alteration would be injurious to the public interest:

1. Any proposed alteration must have a "no effect" or a "may affect, but not likely to adversely affect" determination for potential impacts to any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;
2. Any proposed alteration must not result in the take of any migratory birds as defined in the Migratory Bird Treaty Act;
3. Any proposed alteration must not result in the transfer of any invasive species to new locations;
4. Clean Water Act Section 404 compliance: Only proposed alterations that would not require a Section 404 permit or in which there is an applicable Nationwide Permit or Regional General Permit shall be considered.
5. Proposed alterations must incorporate best management practices to control stormwater runoff or any point source discharges in accordance with any required NPDES permits.
6. Proposed alterations must not encourage additional development within the floodplain.

7. Any proposed alteration must not adversely affect any cultural resources and be in compliance with the NHPA Section 106; and
8. Proposed alterations must meet other conditions as described in Section 5, Environmental Consequences.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. This alternative would simplify the Section 408 review process in most situations because it would allow for categorical permissions for the most frequent types of requests and would not result in more than minor impacts to the human environment. Following an evaluation of potential environmental impacts in Section 5 of the Programmatic Environmental Assessment, this alternative was identified as the Recommended Plan.

Summary of Environmental Impacts

The Recommended Plan would not result in any significant adverse impacts, either directly, indirectly, or cumulatively to the human environment. Minor impacts may occur to water quality, wetlands, terrestrial vegetation, and fish and wildlife depending on project specific details of individual requests. These impacts would be short-term in duration. Potential impacts to threatened and endangered species and cultural resources on USACE project lands would be evaluated on a case-by-case basis.

Mitigation Measures

The Recommended Plan would not result in the need for any mitigation. If mitigation were required for a specific request, it would not meet the environmental conditions of the Recommend Plan and a separate stand-alone National Environmental Policy Act (NEPA) document would be prepared.

Public Availability

Prior to a decision on whether to prepare an Environmental Impact Statement, the USACE circulated a Notice of Availability (Notice) for the Draft Programmatic Environmental Assessment (PEA) and Finding of No Significant Impact (FONSI), dated April 22, 2016, with a thirty-day comment period that ended on May 22, 2016, to the public and resource agencies. Comments were received from Osage Nation, Kansas State Historic Preservation Officer, Missouri Department of Transportation, and the U.S. Fish and Wildlife Service Missouri Ecological Services Office. Minor modifications were made to the Final Programmatic Environmental Assessment based on comments as described in Section 7 of the Final Programmatic Environmental Assessment. Comment letters are included as Appendix D of the Final Programmatic Environmental Assessment.

This document was updated following approval of the original Finding of No Significant Impact (FONSI) to remove the requirement for tiered environmental assessments. This is a procedural change that does not result in any changes to the findings of the original FONSI. It also clarifies constraints with regard to threatened and endangered species. This clarification is not a substantive change from the original document. This FONSI is being made publically available for a minimum of 30 days, along with an errata sheet that documents similar modifications to the Final Programmatic Environmental Assessment, at http://www.nwk.usace.army.mil/Media/Public-Notices/Planning-Public-Notices/.

Conclusion

After evaluating the anticipated environmental, economic, and social effects of the Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408, it is my determination that this does not constitute a major Federal action that would significantly affect the quality of the human environment; therefore, preparation of an environmental impact statement is not required.

Date: SEP 19 2016

Douglass B. Guttormsen
Colonel, Corps of Engineers
District Commander

Errata Sheet

Corrections to the *Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408*

Programmatic Environmental Assessment

September 6, 2016

Page 12: In the third from the last sentence on the page that states "1. Any proposed alteration must not affect any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;" should state "1. Any proposed alteration must have a "no effect" or a "may affect, but not likely to adversely affect" determination for potential impacts to any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;"

Page 13: The sentence that starts the second paragraph should be removed. It states "Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28."

Page 15: The sentence that starts the first full paragraph should be removed. It states "Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28."

Page 16: The sentence that starts the last paragraph should be removed. It states "Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28."

Page 18: The sentence that starts the second paragraph should be removed. It states "Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28."

Page 19: The sentence that starts the third full paragraph should be removed. It states "Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28."

Page 21: The seventh sentence on the page that states "1. Any proposed alteration must not affect any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;" should state "1. Any proposed alteration must have a "no effect" or a "may affect, but not likely to adversely affect" determination for potential impacts to any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;"

Page 22: The sentence that starts the first full paragraph should be removed. It states "Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28."

Page 22: The last sentence in Section 4 Affected Environment should be removed. It states "A more detailed description of the affected environment would be included in individual tiered environmental assessments as appropriate for specific projects."

Page 29: The fifth from the last sentence that states "may adversely affect" should read "may affect, and is likely to adversely affect".

Page 30: In the last sentence on the page, the phrase that states "the preparation of a tiered environmental assessment," should read "the environmental review,".

Page 32: In the fourth full sentence on the page, the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 32: In the eighth sentence under the heading that starts "Alternative 7", the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 33: In the seventh sentence on under the heading that starts "Alternative 2", the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 34: In the fifth full sentence on the page, the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 35: In the last sentence under the heading that starts "Alternative 7", the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 37: In the third full sentence on the page, the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 38: In the eighth full sentence in the first full paragraph on the page, the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 41: In the last sentence under the heading that starts "Alternative 2", the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 41: In the last sentence under the heading that starts "Alternative 7", the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 42: In the last sentence under the heading that starts "Alternative 2", the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 43: In the last sentence in the first partial paragraph, the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 44: In the third full sentence in the first partial paragraph, the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 44: In the sixth sentence under the heading that starts "Alternative 7", the phrase that states "the preparation of any tiered environmental assessment," should read "any environmental review,".

Page 62: In the fifth full sentence on under the first partial paragraph, the phrase that states "during the preparation of tiered environmental assessments" should be removed.

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Appendices

Appendix A: Engineering Circular 1165-2-216 – Policy and Procedural Guidance for Processing requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408

Appendix B: Federal Levees and Channel Modification Projects within the Kansas City District

Appendix C: Notice of Availability

Appendix D: Public and Agency Comments

1 Introduction

The U.S. Army Corps of Engineers (USACE), Kansas City District has constructed numerous civil works projects within its area of responsibility in portions of the states of Missouri, Kansas, Iowa, Nebraska, and Colorado. The Kansas City District receives numerous requests each year from private, public, tribal, or other federal entities to alter civil works projects. When requests are received, they are evaluated to determine if the alteration would be injurious to the public interest or impair the usefulness of the USACE project. Engineering Circular (EC) 1165-2-216, titled *Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408*, provides guidance to process requests (Appendix A). To simplify the review process, EC 1165-2-216 Section 6.s states that USACE districts can develop categorical permissions to cover potential alterations that are similar in nature and have similar impacts. The Kansas City District Engineering Division has proposed several types of requests be included as categorical permissions if certain engineering requirements are met. The proposed categorical permissions would be applicable to alterations to federal levees, channel modification projects, and the Missouri River Bank Stabilization and Navigation Project (BSNP) within the Kansas City District civil works boundary. Alterations at lake projects within the Kansas City District are covered under other procedures such as project master plans or outgrants as described in Engineering Regulation (ER) 1130-2-550.

Preparation of this programmatic environmental assessment follows the President's Council on Environmental Quality (CEQ) guidelines for Effective Use of Programmatic National Environmental Policy Act (NEPA) Reviews (CEQ, 2014). It evaluates "a suite of ongoing, proposed, and reasonably foreseeable actions that share a common geography or timing, such as multiple activities within a defined boundary" as described in the CEQ guidelines. The purpose of this Programmatic Environmental Assessment is to develop categorical permissions as described in EC 1165-2-216 to cover potential alterations that are similar in nature and have similar impacts in order to simplify the review process. This document will be reviewed on a regular basis to ensure compliance with applicable laws and regulations, and that circumstances have not changed that would impact the analysis and conclusions reached in the document.

This document provides the necessary information to fully address the potential environmental impacts of implementing categorical permissions for Section 408 as required under NEPA of 1969, as amended (42 U.S. Code [USC] 4321 et seq.); CEQ Regulations (40 Code of Federal Regulations [CFR] 1500 – 1508) (CEQ, 1992); and the U.S. Army Corps of Engineers ER 200-2-2 (33 CFR 230) (USACE, 1988).

1.1 33 USC Section 408 Authority and Guidance

The authority to grant permission for temporary or permanent alterations to federally authorized civil works project is contained in Section 14 of the Rivers and Harbors Act of 1899, codified at 33 U.S. Code § 408, titled *Taking possession of, use of, or injury to harbor or river improvements*. It states:

> "*It shall not be lawful for any person or persons to take possession of or make use of for any purpose, or build upon, alter, deface, destroy, move, injure, obstruct by fastening vessels thereto or otherwise, or in any manner whatever impair the usefulness of any sea wall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States, or any piece of plant, floating or otherwise, used in the construction of such work under the control of the United States, in whole or in part, for the preservation and improvement of any of its navigable waters or to prevent floods, or as boundary marks, tide gauges, surveying stations, buoys, or other established marks, nor remove for ballast or other purposes any stone or other material composing such works: Provided, That the Secretary of the Army may, on the recommendation of the Chief of Engineers, grant permission for the temporary occupation or use of any of the aforementioned public works when in his judgment such occupation or use will not be injurious to the public interest: Provided further, That the Secretary may, on the recommendation of the Chief of Engineers, grant permission for the alteration or permanent occupation or use of any of the aforementioned public works when in the judgment of the Secretary such occupation or use will not be injurious to the public interest and will not impair the usefulness of such work.*"

Specific USACE guidance for implementation of 33 U.S. Code § 408 (Section 408) is provided in EC 1165-2-216. EC 1165-2-216 is only applicable to alterations proposed within the lands and real property interests of USACE projects. The EC expires 31 July 2016. However, it is expected that the expiration date of the EC will be extended agency wide until it is succeeded by new guidance. EC 1165-2-216 defines the use of the terms "alteration" and "alter" as any action that by an entity other than USACE that builds upon, alters, improves moves, occupies, or otherwise affects the usefulness or the structural or ecological integrity of a USACE project. This definition is also being used in this document as well. The entity or individual requesting permission to alter the USACE project, hereafter referred to as the requestor, is responsible for acquiring all other needed permissions, authorizations, and permits. This includes any permits needed from the USACE Regulatory Program, specifically Section 10 and 404 permits.

1.2 Scope of the Programmatic Environmental Assessment

The U.S. Army Corps of Engineers, Kansas City District area of responsibility for civil works projects includes portions of the states of Missouri, Kansas, Iowa, Nebraska, and Colorado (Figure 1).

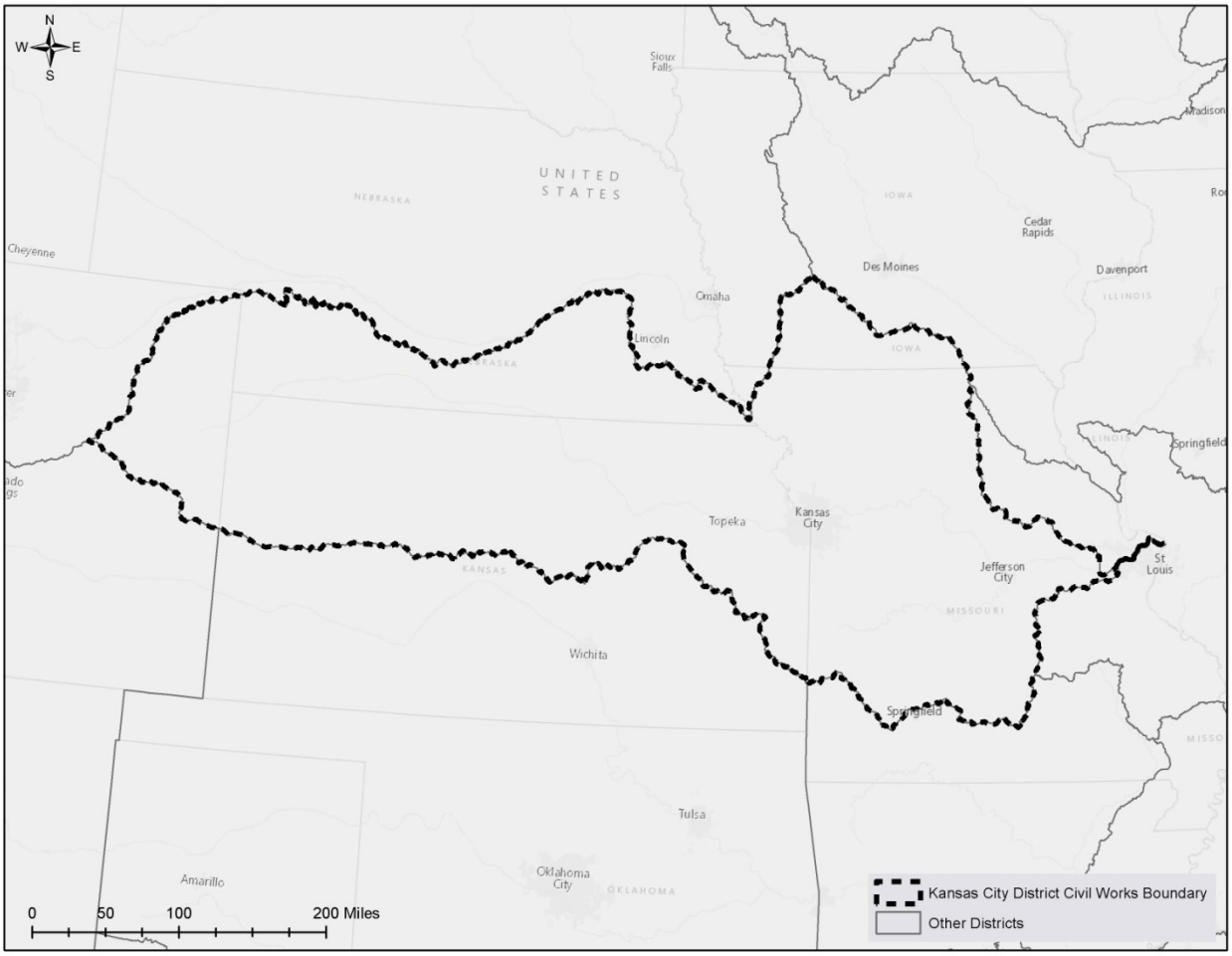

Figure 1: The Kansas City District civil works boundary.

The scope of the programmatic environmental assessment is limited to federal levees, channel modification projects, and the BSNP within the Kansas City District civil works boundary. Alterations at lake projects within the Kansas City District are covered under other procedures such as project master plans or outgrants as described in ER 1130-2-550. Per EC 1165-2-216, the scope of the analysis for Section 408 reviews is limited to the right-of-way for USACE projects and those adjacent areas that are directly or indirectly affected by the alteration. If a proposed alteration is part of a larger project that extends beyond the USACE project boundaries, the Kansas City District would determine what portions or features of the larger project USACE has control and responsibility over to warrant inclusion as part of the evaluation, as described in EC

1165-2-216. Requests to alter projects other than federal levees, federal channel projects, or the BSNP and alternation types not considered in this Programmatic Environmental Assessment will be evaluated separately. It should be noted that the BSNP project in St. Louis, St. Charles, and Franklin counties Missouri are within the jurisdiction of the Kansas City District because they are located in the Missouri River. Land based USACE projects within these counties, such as federal levees, are within the jurisdiction of the St. Louis District.

1.2.1 Federal Levee Projects

There are approximately 60 federal levee projects within the Kansas City District (Figure 2 and Appendix B). The levee right-of-way can vary considerably from project to project, but typically extends 15 feet from the toe of the levee. Federal levees within the Kansas City District, with the exception of one, have been designed to provide a minimum of a 1 percent annual chance exceedence level of flood risk management. The Missouri River Levee System (MRLS) L-246 in Chariton County, Missouri, only provides a 2 percent annual chance exceedence. Federal levees are maintained in accordance with project operations and maintenance manuals, the requirements of 33 CFR 208.10 Local Flood Protection Works; Maintenance and Operation of Structures and Facilities, and U.S. Army Corps of Engineers levee inspection standards. Maintenance procedures require that levees are mowed on a regular basis to prevent trees and other woody vegetation from becoming established on or immediately adjacent to the levee which can cause damage. Because of this, levees provide low quality habitat for most types of wildlife.

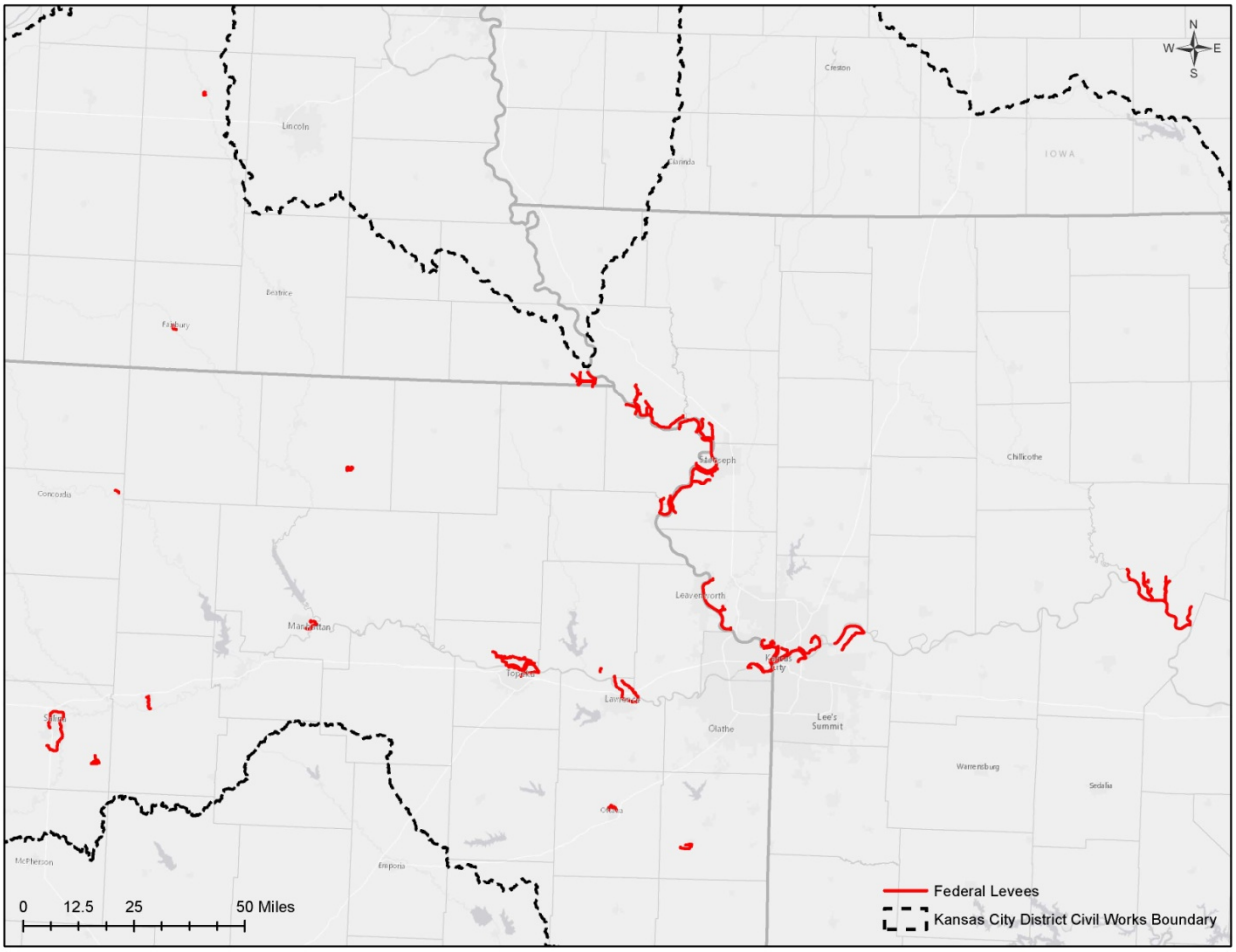

Figure 2: Federal levee projects within the Kansas City District.

1.2.2 Federal Channel Modification Projects

There are nine federal-channel modification projects within the Kansas City District that provide flood risk management that are included as part of this programmatic environmental assessment. A brief description of these projects is included in Table 1. More detailed project information is included in Appendix B. At the time most of these projects were constructed, few features to benefit the environmental were incorporated into their design. Exceptions include portions of the Blue River Channel that were constructed more recently, and some features of both the Turkey Creek Basin project and the Little Blue River project.

Table 1: Federal channel projects within the Kansas City District.

PROJECT	LOCATION	DESCRIPTION
Blue River Channel	Kansas City, Missouri	Flood risk management project that extends along the lower 12.5 miles of the Blue River. Approximately 0.75 miles of the channel has been paved.
Brush Creek Basin	Kansas City, Missouri	Flood risk management project that extends 7,200 feet along Brush Creek. Approximately 3,190 feet of the channel has been paved.
Little Blue River	Jackson County, Missouri	The project consists of a low flow channel and a high flow channel 5 feet above the low flow channel over a distance of nearly 15 miles.
Shoal Creek Channel Improvement	Putnam and Schuyler Counties, Missouri	Consists of 1.8 miles of channel modifications to provide flood risk management 1,200 acres of agricultural land.
Chariton River Flood Control Project Macon-Adair Counties Unit	Macon and Adair Counties, Missouri	Channel cut-offs and modifications along approximately 17 miles of the Chariton River, 1.5 miles of Goose Creek, and 1.7 miles of Spring Creek.
White Clay Creek Flood Protection Project	Atchison, Kansas	Flood risk management project to benefit 240 acres of the Atchison business and industrial district. Consists of 2,340 feet of channel improvements, 2,364 feet of conduit, and modifications to a railroad bridge.
Turkey Creek Basin	Kansas City, Kansas	Channel modification on the lower 10,000 feet of Turkey Creek, a levee, and strengthening of an existing 2000-foot tunnel that carries all Turkey Creek flow to the Kansas River. Project also includes multiple hillside interceptors and an environmental enhancement area.
Stranger Creek Flood Control Project	Leavenworth County, Kansas	Channel modifications to increase channel capacity including cutting of trees, brush, and obstructions along the lower 50 miles of the creek.
Bedford, Iowa Flood Protection Project	Bedford, Iowa	Consists of 3.3 miles of channel modifications to improve flood risk management to 100 acres of urban land and 300 acres of agricultural land.

1.2.3 Missouri River Bank Stabilization and Navigation Project

The Rivers and Harbors Acts of 1912, 1925, 1927, and 1945 directed the U.S. Army Corps of Engineers to construct a self-maintaining commercial navigation channel on the lower Missouri River, called the Bank Stabilization and Navigation Project (BSNP). Prior to the construction of the BSNP, many locations of the lower Missouri River consisted of a wide braided channel that would shift back and forth across the floodplain, transporting sediment downstream as the channel meandered over time. The BSNP consists of a system of dikes and revetments to constrict the river into a single, deep, channel. A nine-foot deep and 300-foot wide navigation channel is maintained from the mouth of the river near St. Louis, Missouri to near Sioux City, Iowa, a distance of approximately 735 miles (Figure 4). In addition to creating a navigation channel, the BSNP also protected communities, utilities, transportation networks, and landowners from the meandering of the river. Construction of the BSNP was completed in 1981.

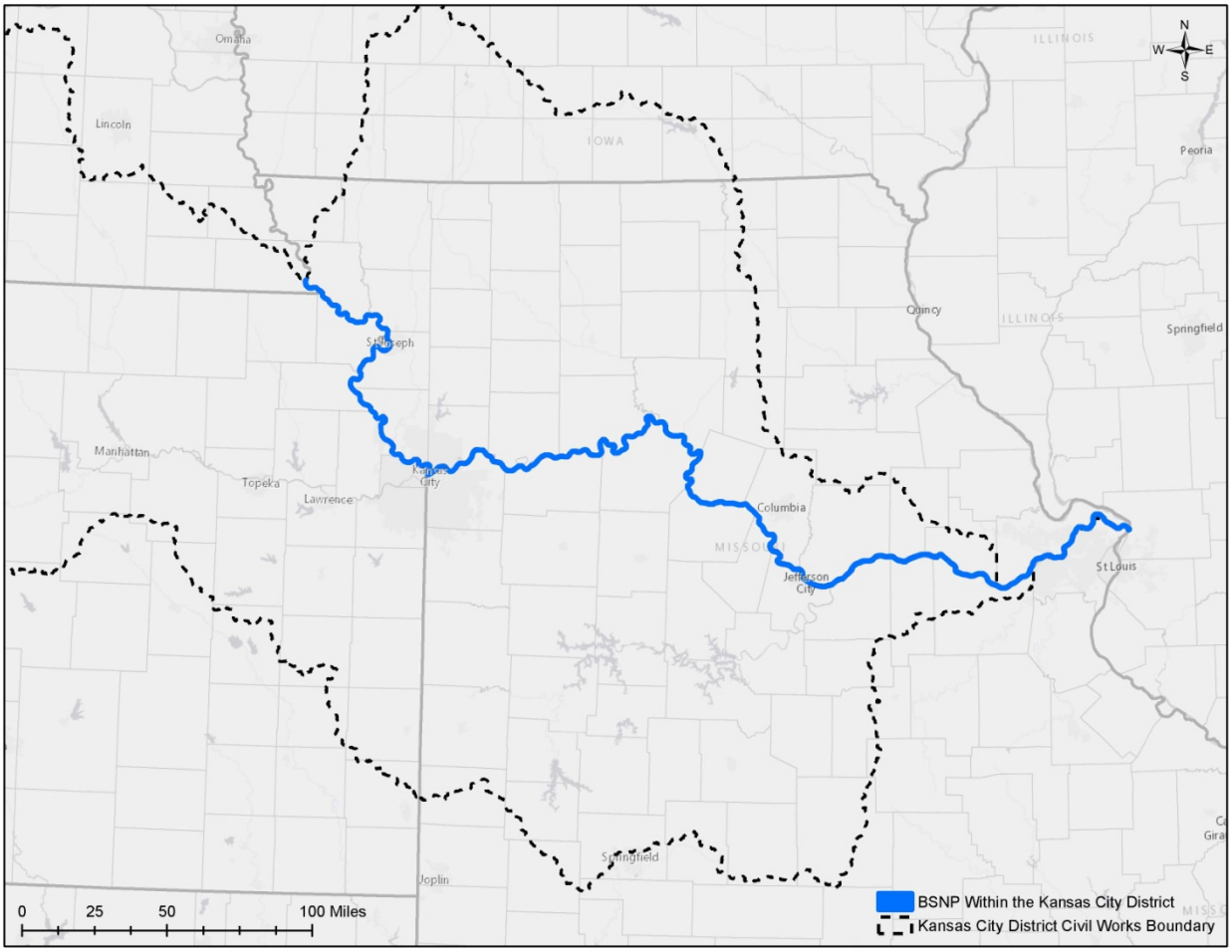

Figure 4: In the Kansas City District, the Missouri River Bank Stabilization and Navigation Project extends from the mouth of the Missouri River to river mile 497 near Rulo, Nebraska.

The BSNP consists of a nearly continuous arrangement of river training structures to create a self-scouring channelized river in order to maintain a navigation channel and prevent the channel from moving horizontally across the floodplain (Figure 5). Today, the river training structures typically consist of rock revetments along the outside of river bends, and rock dikes and sills along the inside of river bends. Approximately 200 million tons of rock was placed during original construction of the BSNP. In 2003, the U.S. Fish and Wildlife Service (USFWS) provided USACE with a Biological Opinion with a recommended and prudent alternative for the agency's operation of the Missouri River, including the operation and maintenance of the BSNP. In almost all locations, USACE does not maintain rights-of-way to these structures. At this time, USACE has determined that EC 1165-2-216 is only applicable to the actual BSNP structures and the limited number of locations where USACE maintains rights-of-way. If this determination changes, this document would remain applicable to the BSNP as defined.

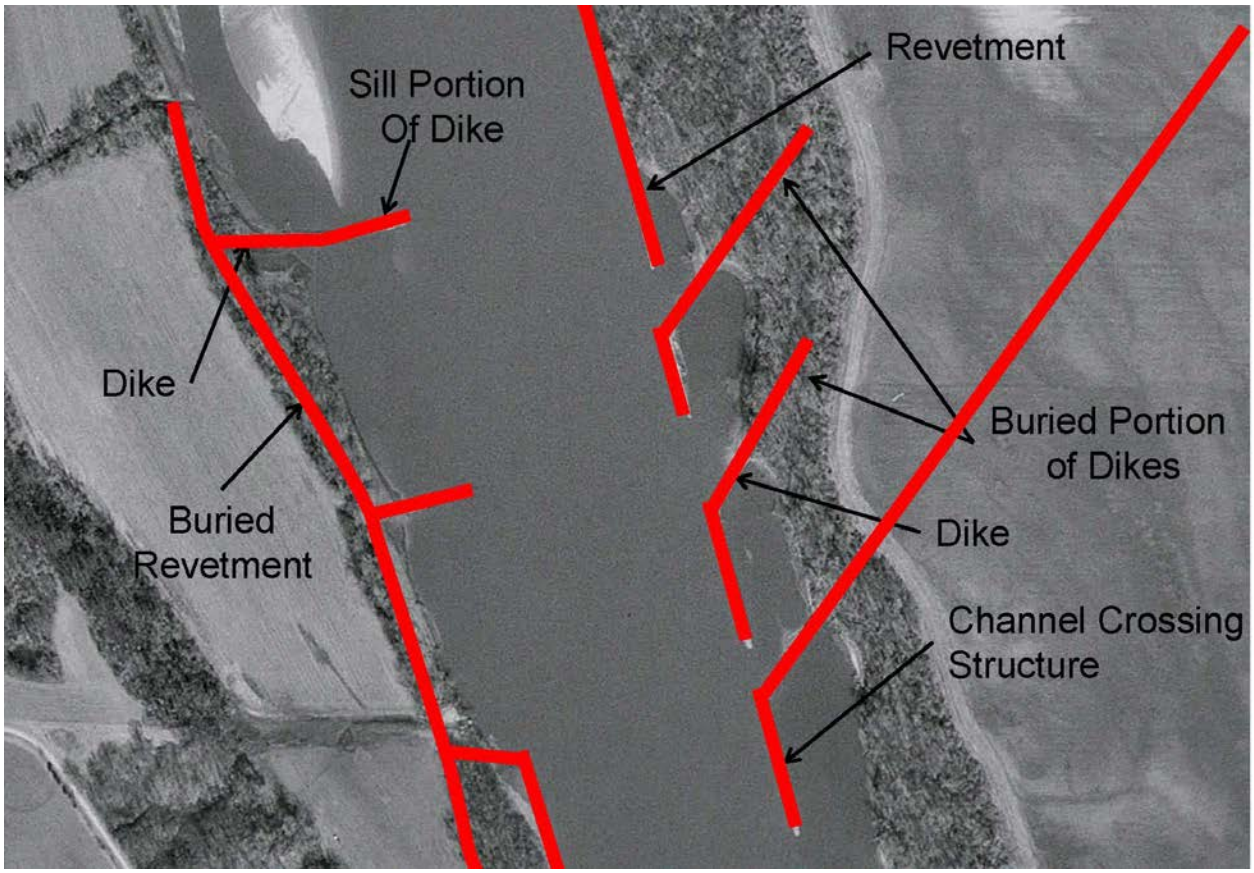

Figure 5: Typical plan view of the Missouri River showing the Bank Stabilization and Navigation Project features that create a 9-feet deep by 300-feet wide navigation channel.

2 Purpose and Need

Engineering Circular 1165-2-216 Section 6.s states that USACE districts have the ability to develop categorical permissions for compliance with Section 408 to cover potential alterations that are similar in nature and that have similar impacts simplify the review process. The Kansas City District receives approximately 47 requests each year to review proposed alterations to projects within the scope of this document as described in Section 1.2. These alterations have been grouped into six categories that are similar in nature and have similar impacts (Table 1). The District has estimated that it would take approximately 4 months to process each of these requests in accordance with EC 1165-2-216 if categorical permissions are not established. Although, this could vary depending on the nature of the request. Establishing categorical permissions would simplify the review process and allow the Kansas City District to expedite reviews for the majority of the requests that are received. While the exact amount of time to process an individual request would vary, it is believed that categorical permissions will reduce the review time by half. This would benefit both the government and the requestor by reducing the time and expense related to process the requests.

Table 1: Types of requests for alterations the USACE projects in the Kansas City District between the years 2010 and 2014 that meet the definition of a Section 408 alterations as described in EC 1165-2-216.

Type of Alteration	**2010**	**2011**	**2012**	**2013**	**2014**	**Total Number**
Geotechnical Investigations, and Installation or Removal of Deep Foundations, Poles, Posts, Piezometers, Wells, & Relief Wells	16	23	18	10	17	84
Directional Drilling	3	13	11	8	3	38
Piping Systems	10	13	9	16	4	52
Erosion Control	3	24	17	6	0	50
Small Structures	8	2	0	13	4	27
Ground Surface Alterations Including Recreational Trails, Access Roads, and Construction Staging Areas	4	11	8	7	3	33
Total per Year	41	62	46	54	31	

Based on the information in Table 1, the Kansas City District Engineering Division has proposed the following types of activities to be included as categorical permissions:

1. Geotechnical investigations, and installation or removal/abandonment of deep foundations, poles, posts, piezometers, wells, and relief wells
2. Horizontal Directional Drilling
3. Erosion Control
4. Piping Systems
5. Small Structures
6. Ground Surface Alterations including recreation trails, access roads, boat ramps, construction staging areas, borrow areas, and environmental enhancement activities

Title 33 CFR Part 230.9 provides a list of actions that "when considered individually and cumulatively do not have significant effects on the human environment and are categorically excluded from NEPA documentation". The proposed categorical permissions were reviewed to determine if any of them fit the description of the categorical exclusions in 33 CFR Part 230.9. It has been determined that erosion control at completed USACE projects that that carry out the authorized project purpose fit the description of categorical exclusions. It has also been determined that small structures and roads in developed areas are categorically excluded. Because of this, categorical permission for these types of activities is hereby granted in instances in which there are not any extraordinary circumstances and the request is in compliance with all other applicable laws and regulations.

The purpose of this document is to develop categorical permissions as described in EC 1165-2-216 to cover potential alterations that are similar in nature and have similar impacts in order to simplify the Section 408 review process. This aligns with guidance from CEQ concerning development of programmatic NEPA reviews for multiple actions that are similar in nature (CEQ, 2014). At the same time, a programmatic document allows for a more comprehensive evaluation of potential cumulative impacts that may result from numerous alterations within the Kansas City District.

3 Alternatives

Seven alternatives were evaluated in detail including a no-action alternative. Following an evaluation to determine which alternative best met the purpose and need and an evaluation of potential environmental impacts in Section 5, Alternative 7 – Categorical Permission for Alterations that Meet Engineering and Environmental Criteria was identified as the Recommended Plan.

3.1 Alternative 1 – No Categorical Permission (No-Action)

The No-Action alternative would not result in the development of categorical permissions. All requests to alter USACE projects would be evaluated on a case-by-case basis to determine if the alteration would impair the usefulness of the USACE project or be injurious to the public interest. This alternative would not meet the purpose and need of developing categorical permissions to simplify the Section 408 review process.

3.2 Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells

This alternative would result in a categorical permission for alterations that include, or are similar in nature to, geotechnical investigations including geotechnical borings, cone penetration tests, and multi-electrode electrical resistivity tests within the scope of the programmatic environmental assessment as described in Section 1.2. It would also allow for the installing or removing/abandoning deep foundation structures (such as piles and piers), poles, posts, piezometers, and relief wells that would result in limited ground disturbance. Between the years 2010 and 2014, there were 84 requests to alter projects that fit the description of this categorical permission.

Any holes left as a result of geotechnical investigations, the removal of deep foundation structures, poles, posts, and piezometers would be required to be filled with earthen material or grout. Abandoned wells and pressure relief wells would be filled in and grouted per applicable state requirements. These alterations typically have small permanent project footprints. Construction activities may involve the use of drill rigs and other equipment such as concrete trucks, large delivery trucks and earthmoving equipment. Any spoil material from these activities would be graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

EC 1165-2-216 Section 7.c provides a nine step procedure for processing requests to alter USACE civil works projects. This procedure includes pre-coordination, written request, required documentation (including environmental compliance, as applicable),

district-led Agency Technical Review, Summary of Findings, USACE division review, USACE Headquarters review, notification, and post-permission oversight. Refer to the EC for detailed procedures for each of the steps. It should be noted that not all nine steps will be applicable to every Section 408 request. This will depend on the complexity of the request as noted in EC 1165-2-216 Section 7.c.

Each Section 408 request would be reviewed to determine if it fits the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). Detailed engineering requirements for proposed alterations have been developed to assist in determining if the proposed alternation would impair the usefulness of the USACE project. These are provided on the U.S. Army Corps of Engineers Kansas City District website at http://www.nwk.usace.army.mil/Missions/EngineeringDivision/GeotechnicalBranch/GeotechnicalDesignandDamSafety.aspx.

In addition, the following requirements must also be met:

1. Design and construction specifications must be signed and sealed by a Registered Professional Engineer and, if applicable, a Registered Geologist from the respective state where the work would be performed.
2. The proposed alteration must not negatively impact typical inspections, operations, and maintenance of the USACE project.
3. The proposed alteration must not impact any flood-fighting operations that may be conducted at the USACE project.
4. The proposed alteration must not result in any increase in operation and maintenance costs to the government.

The following environmental conditions have been developed to assist in determining if the proposed alteration would be injurious to the public interest:

1. Any proposed alteration must not affect any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;
2. Any proposed alteration must not result in the take of any migratory birds as defined in the Migratory Bird Treaty Act;
3. Any proposed alteration must not result in the transfer of any invasive species to new locations;

4. Clean Water Act Section 404 compliance: Only proposed alterations that would not require a Section 404 permit or in which there is an applicable Nationwide Permit or Regional General Permit shall be considered.
5. Proposed alterations must incorporate best management practices to control stormwater runoff or any point source discharges in accordance with any required National Pollutant Discharge Elimination System (NPDES) permits.
6. Proposed alterations must not encourage additional development within the floodplain.
7. Any proposed alteration must not adversely affect any cultural resources and be in compliance with the National Historic Preservation Act (NHPA) Section 106; and
8. Proposed alterations must meet other conditions as described in Section 5, Environmental Consequences.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. The requestor would be required to submit an Information for Planning and Conservation (IPaC) report generated from the USFWS website at https://ecos.fws.gov.ipac/ documenting any threatened or endangered species within the project area. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28. A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 36 percent of the requests received that are proposed as categorical permissions and do not fit the description of a categorical exclusion in 33 CFR Part 230.9.

3.3 Alternative 3 – Categorical Permission for Horizontal Directional Drilling

This alternative would result in a categorical permission for installing conduits or pipes without large scale open excavation. This alternative applies the conveyance of non-hazardous material via horizontal directional drilling (HDD) under federal levees,

channel modification projects, and the BSNP within project lands and real property interests of the USACE projects within the scope of the Programmatic Environmental Assessment to install pipelines, utilities, or other similar items. HDD that would be used to transport oil and gas are excluded from this categorical permission because of increased risks to the environment from these products. HDD used to transport these and any other hazardous materials would be evaluated in separate stand-alone environmental assessments or environmental impact statements. This alternative does not include hydrofracturing techniques, also known as “frac’ing.” Between the years 2010 and 2014, there were 38 requests to alter projects fit the description of this alternative.

These alterations typically have small permanent project footprints. Construction activities typically involve the use of excavators or similar type equipment to dig pits and then horizontally drill under the project to place pipe or conduit. Construction may involve the use of earthmoving equipment, drill rigs, concrete trucks, large delivery trucks and other similar types of equipment. Spoil material resulting from these activities would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. Any pits that were excavated would be filled in following the directional drilling. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The nine step procedure described in EC 1165-2-216 Section 7.c to process requests would also apply to this alternative. Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). The same requirements and conditions would be used as described for Alternative 2.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. The requestor would be required to submit an Information for Planning and Conservation (IPaC) report generated from the USFWS website at https://ecos.fws.gov.ipac/ documenting any threatened or endangered species within the project area. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration

would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28. A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 16 percent of the requests that are proposed as categorical permissions and do not fit the description of a categorical exclusion in 33 CFR Part 230.9.

3.4 Alternative 4 – Categorical Permission for Piping Systems

This alternative would result in a categorical permission to install, abandon, or augment piping or utility systems over or within a federal levee, channel modification project, or the BSNP using excavation and cover construction methods. Between the years 2010 and 2014, 52 requests to alter projects fit the description of this alternative. Piping systems that would be used to transport oil and gas are excluded from this categorical permission because of increased risks to the environment from these products. Piping systems used to transport these and any other products that could be harmful to the environment should a spill occur would be evaluated in separate stand-alone environmental assessments or environmental impact statements for Section 408 requests.

Open cuts would be made through levees when installing pipes through the critical area of levees (non-pervious portion of a levee). After the pipes have been installed, the levee would be reconstructed in the location of the cut with suitable compacted fill material. Usually, gate wells are constructed for either a gate valve or sluice gate. For pipes that cross the levee above the critical area, partial excavation is required and acceptable fill must be provided. When a piping system within the critical area of a federal levee is abandoned, it would be completely removed if feasible. This requires excavating a cut in the levee to remove the piping system and then reconstructing the levee at this location. If it would not be feasible to remove the piping system, then the pipes and any related structures would be completely grouted with a cement-bentonite or flowable fill material.

Pipes crossing channels or the BSNP could be covered or uncovered types. Covered pipes are typically overlaid with protective stone. Uncovered pipes are commonly supported by concrete blocks cast around the pipe. Other methods to support or

protect pipes may be acceptable after review by appropriate USACE staff and a determination made that the usefulness of the project would not be impaired.

Construction activities typically involve the use of various types of earthmoving equipment. Total construction footprints would be limited to five acres or less within the USACE project right-of-way. Spoil material resulting from these activities on USACE project lands would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from USACE project lands would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. If borrow material is needed, it would be obtained in such a manner to avoid negatively impacting wetlands, avoid removing trees larger than three inches in diameter at breast height, or impacting any cultural resources. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The nine step procedure described in EC 1165-2-216 Section 7.c to process requests would also apply to this alternative. Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). The same requirements and conditions would be used as described for Alternative 2.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. The requestor would be required to submit an Information for Planning and Conservation (IPaC) report generated from the USFWS website at https://ecos.fws.gov.ipac/ documenting any threatened or endangered species within the project area. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28. A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests

received between 2010 and 2014, this alternative would meet the purpose and need for approximately 22 percent of the requests received that are proposed as categorical permissions and do not fit the description of a categorical exclusion in 33 CFR Part 230.9.

3.5 Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas

This alternative would result in a categorical permission for the construction or demolition of small structures in undeveloped areas on federal levees, channel modification projects, and the BSNP within the lands and real property interests of these projects as described in Section 1.2. It would include but not be limited to such actions as modifying existing structures, installing fences, installing or modifying utility structures, and constructing small buildings. Between the years 2010 and 2014, 27 requests to alter projects fit the description of this alternative. Small structures in developed areas were not included as part of this alternative because they are categorically excluded in 33 CFR Part 230.9, therefore meeting the NEPA requirements to be included as a categorical permission if no extraordinary circumstances exist.

Construction activities may involve the use of earthmoving equipment, concrete trucks, large delivery trucks and other similar types of equipment. Any spoil material resulting from these activities on USACE project lands and real property interests would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from USACE project lands and real property interests would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. If borrow material is needed, it would be obtained in such a manner to avoid negatively impacting wetlands, removal of trees larger than three inches diameter at breast height, and cultural resource locations. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The nine step procedure described in EC 1165-2-216 Section 7.c to process requests would also apply to this alternative. Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). The same requirements and conditions would be used as described for Alternative 2.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. The requestor would be required to submit an Information for Planning and Conservation (IPaC) report generated from the USFWS website at https://ecos.fws.gov.ipac/ documenting any threatened or endangered species within the project area. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28. A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 12 percent of the requests received that are proposed as categorical permissions and do not fit the description of a categorical exclusion in 33 CFR Part 230.9.

3.6 Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement

This alternative would result in a categorical permission for ground surface alterations including the construction, improvement, or maintenance of recreation trails, roads in undeveloped areas, boat ramps, and constructing staging areas within the project areas described in Section 1.2. It also includes use of existing borrow areas and environmental enhancement, including but not limited to development of wetlands. Access roads in developed areas were not included as part of this alternative because they are categorically excluded in 33 CFR Part 230.9, therefore meeting the NEPA requirements to be included as a categorical permission if no extraordinary circumstances exist. Between the years 2010 and 2014, 33 requests to alter projects fit the description of this alternative.

Any spoil material resulting from these activities on USACE project lands and real property interests would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from USACE project lands and real property interests would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or

locations that may affect cultural resource sites. Grading and obtaining borrow would occur in such a manner to avoid negatively impacting wetlands, the removal of trees larger than three inches diameter at breast height, and cultural resource locations. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The nine step procedure described in EC 1165-2-216 Section 7.c to process requests would also apply to this alternative. Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). The same requirements and conditions would be used as described for Alternative 2.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. The requestor would be required to submit an Information for Planning and Conservation (IPaC) report generated from the USFWS website at https://ecos.fws.gov.ipac/ documenting any threatened or endangered species within the project area. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28. A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. Based on requests received between 2010 and 2014, this alternative would meet the purpose and need for approximately 14 percent of the requests received that are proposed as categorical permissions and do not fit the description of a categorical exclusion in 33 CFR Part 230.9.

3.7 Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan)

The Recommended Plan would result in categorical permissions for 1) Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundation Structures, Poles, Posts, Piezometers, Wells, and Relief Wells, 2) Horizontal Directional

Drilling, 3) Piping Systems, 4) Small Structures, and 5) Ground Surface Alterations Including Recreation Trails, Access Roads, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement when it has been determined that the alterations would not impair the usefulness of the federal project of be injurious to the public interest. The proposed alterations may fit one or more of the activities described for these alternatives.

Any spoil material resulting from these activities on USACE project lands would be returned to its original location, graded onto nearby lands, used for other project purposes, or disposed of offsite. Spoil from USACE project lands would not be allowed to be disposed of in any wetlands, waters of the U.S., locations in which woody vegetation would need to be cleared, or locations that may affect cultural resource sites. If borrow material is needed from USACE project lands or real property interests, it would be obtained in such a manner to avoid wetlands, removal of trees larger than three inches diameter at breast height, and cultural resource sites. Following construction, land areas that have been disturbed as a result of work on USACE project lands and real property interests would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees. All temporary access roads and staging areas would be returned to preexisting contours, scarified, and planted with herbaceous vegetation.

EC 1165-2-216 Section 7.c provides a nine step procedure for processing requests to alter USACE civil works projects. This procedure includes pre-coordination, written request, required documentation (including environmental compliance, as applicable), district-led Agency Technical Review, Summary of Findings, USACE division review, USACE Headquarters review, notification, and post-permission oversight. Refer to the EC for detailed procedures for each of the steps. It should be noted that not all nine steps will be applicable to every Section 408 request. This will depend on the complexity of the request as noted in EC 1165-2-216 Section 7.c.

Each Section 408 request would be reviewed to determine if it fit the description of this alternative and to determine whether it would impair the usefulness of the USACE civil works project or be injurious to the public interest as defined in EC 1165-2-216 Section 7.c (4). Detailed engineering requirements for proposed alterations have been developed to assist in determining if the proposed alternation would impair the usefulness of the USACE project. These are provided on the U.S. Army Corps of Engineers Kansas City District website at http://www.nwk.usace.army.mil/Missions/EngineeringDivision/GeotechnicalBranch/GeotechnicalDesignandDamSafety.aspx.

In addition, the following requirements must also be met:

1. Design and construction specifications must be signed and sealed by a Registered Professional Engineer and, if applicable, a Registered Geologist from the respective state where the work would be performed.
2. The proposed alteration must not negatively impact typical inspections, operations, and maintenance of the USACE project.
3. The proposed alteration must not impact any flood-fighting operations that may be conducted at the USACE project.
4. The proposed alteration must not result in any increase in operation and maintenance costs to the government.

The following environmental conditions have been developed to assist in determining if the proposed alteration would be injurious to the public interest:

1. Any proposed alteration must not affect any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;
2. Any proposed alteration must not result in the take of any migratory birds as defined in the Migratory Bird Treaty Act;
3. Any proposed alteration must not result in the transfer of any invasive species to new locations;
4. Clean Water Act Section 404 compliance: Only proposed alterations that would not require a Section 404 permit or in which there is an applicable Nationwide Permit or Regional General Permit shall be considered.
5. Proposed alterations must incorporate best management practices to control stormwater runoff or any point source discharges in accordance with any required NPDES permits.
6. Proposed alterations must not encourage additional development within the floodplain.
7. Any proposed alteration must not adversely affect any cultural resources and be in compliance with the NHPA Section 106; and
8. Proposed alterations must meet other conditions as described in Section 5, Environmental Consequences.

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review. The requestor would be required to submit an Information for

Planning and Conservation (IPaC) report generated from the USFWS website at https://ecos.fws.gov.ipac/ documenting any threatened or endangered species within the project area. If the environmental conditions are met and the request would not result in more than minor impacts to the environment, then the proposed alteration would be determined to not be injurious to the public interest unless there were extraordinary circumstances.

Tiered environmental assessments would be prepared for individual Section 408 requests in accordance with 40 CFR Section 1508.28. A stand-alone environmental assessment, potentially including mitigation, or an environmental impact statement would be prepared for any Section 408 request that is at risk of impairing the usefulness of the federal project or may be injurious to the public interest. This alternative would meet the purpose and need of the project in most situations because it would allow for the types of proposed alterations that are frequently requested and typically only result in no more than minor environmental impacts. Following an evaluation of potential environmental impacts in Section 5, this alternative was identified as the Recommended Plan.

4 Affected Environment

This section describes the affected environment for the federal levee projects, channel modification projects, and the BSNP within the Kansas City District. Because of the broad geographical scope covered by this programmatic document, it is not practical to describe the affected environment for each USACE project. Instead, this section describes the existing conditions in a general sense and only provides detailed information in limited instances. A more detailed description of the affected environment would be included in individual tiered environmental assessments as appropriate for specific projects.

4.1 Air Quality

Federal air quality policies are regulated through the Clean Air Act. In accordance with this act, the U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) for criteria pollutants considered harmful to public health and the environment. The criteria pollutants include carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, or particle pollution. The USEPA is required to designate counties or air basins as in attainment or nonattainment for each criteria pollutant. If an area is in nonattainment, the state must develop an implementation plan to achieve compliance. Once in compliance with the NAAQS, the area becomes a maintenance area.

The USEPA has issued regulations addressing the applicability and procedures for ensuring that federal activities comply with the Clean Air Act. The USEPA Final Conformity Rule requires federal agencies to ensure that federal actions in designated nonattainment or maintenance areas conform to an approved or promulgated state implementation plan or federal implementation plan to ensure that a federal action would not cause a new violation of the NAAQS, contribute to any increase in the frequency or severity of violations of existing NAAQS, or delay the timely attainment of any NAAQS interim or other attainment milestones. If a project would result in a total net increase in pollutant emissions that is less than the applicable *de minimis* threshold established in 40 CFR 93.153(b), detailed conformity analyses are not required. All of the federal levee and federal channel modification projects covered by this programmatic environmental assessment are located in attainment areas. Portions of the BSNP that are located in St. Louis, St. Charles, and Franklin counties, Missouri are located in nonattainment areas.

4.2 Water Quality

Individual states have jurisdiction for managing water quality within their states. Section 303(d) of the Clean Water Act requires each state to identify waters for which existing required pollution controls are not stringent enough to meet state water quality standards. States are required to establish total maximum daily loads (TMDLs) for these waters (see 40 CFR 130.7). Within the State of Kansas, portions of the Kansas River are listed as impaired by total phosphorus, total suspended solids, biology, copper and lead for aquatic life, fecal coliform and *E. coli* for recreation, chloride and sulfate for water supply, and polychlorinated biphenyl's for food procurement. Beginning in the 1960s, large federal dams were constructed on Kansas River tributaries that dramatically altered the hydrologic and sediment transport process of the river. These dams have decreased annual suspended sediment load from approximately 44 million tons per year to approximately 13 million tons per year (National Research Council, 2011). The State of Missouri has placed the Missouri River on the 303(d) List of Impaired Water Bodies for bacteria from Atchison through Jackson counties, and from Gasconade through St. Louis counties. Also, the Missouri River along its entire length in Missouri has a Total Maximum Daily Load approved by the U.S. EPA for aquatic life impairments due to chlordane and polychlorinated biphenyls. Historically, the water quality of the Missouri River was much different than it is today. Prior to the 1930's, when major river modifications began, the Missouri River contained 70 to 80 times as much suspended sediment as it does currently (Blevins, 2006). Consequently, the Missouri River is no longer as turbid as it was previously (Blevins, 2006).

4.3 Wetlands

Wetlands are lands that transition between terrestrial and aquatic systems (Cowardin et al., 1979). Wetlands are characterized by three attributes: hydric soils, vegetation adapted to such soils, and soils that are saturated with water or covered by shallow water at some point during the growing season (Cowardin et al., 1979). Wetlands serve a variety of important functions, including wildlife habitat, fish breeding and foraging habitat, nutrient/sediment trapping, flood control, and recreation. Wetland losses between the 1780's to the 1980's included an 87 percent decrease in Missouri, a 48 percent decrease in Kansas, an 89 percent decrease in Iowa, and a 35 percent decrease in Nebraska (Dahl, 1990). Beginning in 1912, the Missouri River has been channelized through the construction of the BSNP which was completed in the early 1980s. The BSNP stabilized the river and allowed accreted land to form in the old active channel and created a narrow channel with few islands, backwaters, or side channels. As a result, the number of wetlands has been significantly reduced along the Missouri River. Hesse et al. (1988) estimated that there was a 39 percent decline in the amount of wetlands within the Missouri River floodplain between 1892 and 1982. In 1995, it was estimated using Landsat satellite images that nearly 75,000 acres of wetlands were present in Missouri River floodplain within the Kansas City District (USACE, 2003). The majority of the wetlands were classified as either forested or emergent.

4.4 Terrestrial Vegetation

The terrestrial vegetation along the major rivers within the Kansas City District has changed drastically during the last century. The historic terrestrial vegetation consisted of grasslands and bottomland forest ecosystems. In many instances, native floodplain habitats have been converted to crop land or developed for other uses. Much of the conversion of riparian habitat to agriculture lands occurred prior to construction of levees with nearly 50 percent of the Missouri River floodplain being in agricultural production by 1937 (Bragg and Tatschl, 1977). On the lower 100 miles of the Missouri River, nearly 70 percent of the existing floodplain was in agricultural production by 1826 (Bragg and Tatschl, 1977). Hesse et al. (1988) estimated that along the Missouri River between 1892 and 1982 deciduous vegetation declined by 41 percent, grasslands by 12 percent, wetlands by 39 percent, and sandbars by 97 percent. During the same time period, agriculture increased by 4,278 percent.

4.5 Fish and Wildlife

Roughly 200 native fish species are known to exist within the boundary of the Kansas City District. Impoundment, channelization, degradation, and unnatural hydrologic

conditions have changed the fish species composition in many rivers. Along the Missouri River, construction of dikes and revetments has narrowed and deepened the channel into a fixed location. The ecological impact of these river changes has negatively impacted native riverine fishes (National Research Council, 2002).

The increases in agriculture, along with the effects of bank stabilization and channelization, have also reduced the wildlife habitat in the floodplain. However, remnant riparian areas and agricultural fields provide habitat for mammals such as gray squirrel, fox squirrel, cottontail rabbit, red fox, gray fox, and coyote. Common furbearers along river banks include mink, muskrat, beaver, otter, and raccoon. White-tailed deer is a common species found in the floodplain.

Many reptile and amphibian species have also been negatively impacted as a result of the reduction of wetland habitat within the floodplain. Amphibian species such as eastern tiger salamander, smallmouth salamander, great plains toad, Woodhouse's toad, and plains spadefoot toad require ephemeral wetland habitats to successfully reproduce. Wetlands within the floodplain also support numerous reptilian species such as diamondback water snake, northern water snake, and the western hog-nosed snake and eastern hog-nosed snake in certain geographic reaches. The floodplain also provides important habitat for turtles, such as false map turtles, smooth soft-shell turtles, and spiny soft-shell turtles. Additionally, the Missouri River floodplain provides habitat for the western massasauga rattlesnake.

The Lower Missouri River is located within the Central and Mississippi North American migratory waterfowl flyway (USACE, 2001). Waterfowl use the Missouri River and its floodplain for resting, feeding, and nesting. Numbers of waterfowl are greatest during the spring and fall migration seasons. Common dabbling duck species include mallard, wood duck, northern shoveler, northern pintail, gadwall, blue-winged teal, green-winged teal, and American widgeon. Wood ducks are probably the most common nesting species in the study area (USFWS, 1999). Common species of diving ducks are ring-necked, lesser scaup, ruddy, redhead, common golden-eye, and bufflehead (USFWS, 1999). Other waterfowl in the study area include hooded merganser, common merganser, red-breasted mergansers, Canada geese, snow geese, and white-fronted geese. During migration stops, dabbling ducks and geese rest on islands and sandbars and forage in grain fields, whereas diving ducks use large open water areas for loafing and foraging. Other migratory birds that can be found in the study area include wading birds, shorebirds, passerines, and raptors. Wading birds such as the great blue heron, black-crowned and yellow-crowned night heron, and green heron use the river corridor to forage for fish, amphibians, and invertebrates (USFWS, 1999). Shorebirds that are regular breeders in the area include killdeer and American woodcock. Passerines are

the largest group of migratory bird species within the study area and include thrushes, warblers, flycatchers, vireos, hummingbirds, swallows, wrens, tanagers, orioles, sparrows, as well as others (USFWS, 1999). Floodplain forests and wetlands are important breeding and migratory habitats for passerines. Hawks, falcons, eagles, vultures, and owls are also found in floodplain habitats. Within the Kansas City District, most migratory bird nesting activities occur during the period of April 1 to July 15. Bald eagles have become increasingly common within much of the Kansas City District. They utilize riparian woodlands along rivers, lakes, and streams for nesting, perching, and roosting sites. Bald eagles are no longer listed as a federally threatened species. However, bald eagles are still protected by the Bald and Golden Eagle Protection Act.

4.6 Threatened and Endangered Species

Federally listed threatened or endangered species known to occur in and along rivers in the Kansas City District are the pallid sturgeon (*Scaphirhynchus albus*), Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*) interior least tern (*Sterna antillarum)*, and piping plover (*Charadrinus melodus*). The Federally endangered pallid sturgeon primarily found in the Missouri River and the Mississippi River downstream of the junction with the Missouri River. Habitat loss, fish migration blockage, pollution, hybridization, and overharvesting are some of the possible causes for pallid sturgeon decline (USFWS, 1993).

The Indiana bat is a federally listed endangered species. This species population has declined due to habitat loss and human disturbance. The Indiana bat is a temperate, insectivorous, migratory bat that occurs in 20 States in the eastern half of the United States, including portions of Missouri. The Indiana bat hibernates colonially in caves and mines during winter. In spring, reproductive females migrate and form maternity colonies where they bear and raise their young in wooded areas, specifically behind exfoliating bark of large, usually dead, trees. Both males and females return to the caves and mines in late summer or early fall to mate and enter hibernation.

The northern long-eared bat is listed as a threatened species under the Endangered Species Act. The primary threat to this species is white nose syndrome, a fungal pathogen (USFWS, 2015). In February 2016, the USFWS has issued a 4(d) rule under the Endangered Species Act. This rule establishes prohibitions that focus on protecting the bat’s sensitive life stages in areas affected by white-nose syndrome. For areas impacted by white-nose syndrome, which includes a large portion of the Kansas City District, the rule exempts take from the following activities:

1) For all areas within the range of the northern long-eared bat, all purposeful take is prohibited except:

   - Removal of northern long-eared bats from human structures.
   - Defense of human life (e.g., public health monitoring for rabies).
   - Removal of hazardous trees for the protection of human life and property.

2) For areas impacted by white nose syndrome, incidental take is prohibited under the following circumstances:

   - If it occurs within a hibernaculum.
   - If it results from tree removal activities and
     (1) The activity occurs within 0.25 mile of a known hibernaculum or,
     (2) The activity cuts or destroys a known, occupied maternity roost tree or other trees within a 150 foot radius from the maternity roost tree during the pup season from June 1 through July 31.

3) For areas not affected by white-nose syndrome, there are no prohibitions on incidental take.

Federal agencies are still required to consult with USFWS on actions that may affect the northern long-eared bat.

The interior least tern and piping plover were federally listed as endangered and threatened, respectively, in 1985 and 1986. These two migratory species rely heavily on sandbar and island habitat for nesting habitat. The interior population of the least tern has declined due to loss of habitat from dam construction and river channelization on major rivers throughout the Mississippi, Missouri, and Rio Grande River systems. Because of dams, river flows are often managed in a non-historic fashion, not conducive to the creation and maintenance of sandbars with sparse vegetation. Human disturbance is also a problem. The only locations within the Kansas City District where interior least terns and piping plovers are known to nest are along the Kansas River in Pottawatomie, Wabaunsee, and Shawnee counties in Kansas. These counties also have federal levees. However, these levees are not directly adjacent to any known nesting colonies.

4.7 Invasive Species

Invasive species have the potential to displace native plants and animals. According to Executive Order 13122, Federal agencies may not authorize, fund, or carry out actions that are likely to cause or promote the introduction or spread of invasive species. The primary invasive aquatic species that are a concern that have the potential to be introduced into new water bodies as a result of contaminated construction equipment include zebra mussels, quagga mussels, New Zealand mudsnails, purple loosestrife, and Eurasian watermilfoil, among others. Asian carp species, a group of invasive aquatic species of great concern across the state, are known to exist within the Missouri River.

Invasive terrestrial species often flourish on land that has recently been disturbed. They may also be transported to new locations on construction equipment. The primary invasive terrestrial species of concern in the Kansas City District include Johnson grass, reed canary grass, musk thistle, bromegrass, and Japanese honeysuckle.

4.8 Floodplain

Floodplains along the Missouri, Kansas, and other rivers within the Kansas City District have been significantly altered over the past century. In many areas, flood control, bank stabilization, and channelization of rivers have either completely or partially removed the connectivity of rivers with the floodplain. The majority of the floodplains are now used for either agriculture or urban development. It is expected that over time, more agricultural areas will be converted to urban/suburban uses, as urban populations continue to grow.

4.9 Socioeconomics

The federal levees, channel modification projects, and BSNP within the scope of this programmatic environmental assessment all provide major socioeconomic benefits for the nation. The portion of the Missouri River basin within the Kansas City District contains more urbanized areas than other portions of the basin and is at greater risk from catastrophic damage from flooding, or would be in the absence of the flood risk management projects. Federal and local protection projects protect the central industrial districts of Kansas City, Missouri, Kansas City, Kansas, St. Joseph, Missouri, and Topeka, Kansas. These USACE projects, as well as others in smaller communities within the Kansas City District, have prevented an estimated $27 billion in flood damages to homes, businesses, public facilities, utilities, infrastructure, and farms.

The BSNP serves the navigation industry. Most of the commodity traffic on the Missouri River is in the area from Kansas City to St. Louis, where an average of 8.6 million tons per year of cargo is moved. Most of this tonnage is construction material (sand and gravel), but large amounts petroleum products, farm products, food, fertilizer and other products are also moved.

4.10 Cultural Resources

Cultural resources include historic properties, archeological resources, and Native American resources including sacred sites and traditional cultural properties. They are a broad pattern of material and non-material sites or objects that represent contemporary, historic, and pre-historic human life ways or practices. The Kansas City District contains a variety of cultural resource types that span from the earliest Native American inhabitants of North America to the present. Common cultural resource sites include prehistoric Native American archeological sites, historic archeological sites, ship wrecks, and structures such as bridges and buildings. Projects involving federal land, funds, or permitting are subject to compliance with the NHPA Section 106. In general, the likelihood of encountering cultural resources on projects within the scope of this document are low because these areas have already been heavily disturbed as a result of the original construction of the project.

5 Environmental Consequences

The impact analyses in this Programmatic EA were developed based on past experience. If a proposed request to modify a USACE project within the scope of this document would result in impacts in excess of what is described in this section, a stand-alone EA or EIS would be prepared for that request. Conditions that would result in a stand-alone EA or EIS include:

1. Any proposed alteration that may adversely affect any threatened or endangered species, including their critical habitat in accordance with the Endangered Species Act;
2. Any proposed alteration would result in the take of migratory birds as defined in the Migratory Bird Treaty Act;
3. Any proposed alteration that would result in the transfer of any invasive species to new locations;
4. Any proposed alteration that would require an individual Clean Water Act Section 404 permit;
5. Proposed alterations that would exceed state water quality standards.

6. Proposed alterations that would encourage additional development within the floodplain.
7. Any proposed alteration that would adversely affect any cultural resources or not be in compliance with the NHPA Section 106; and
8. Proposed alterations that do not meet other conditions described in this section.

5.1 Air Quality

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis for potential impacts to air quality. With the exception of portions of the BSNP in St. Louis, St. Charles, and Franklin counties, Missouri, all of the projects that are within the scope of this programmatic environmental assessment are in locations in attainment with the NAAQS.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: These alternatives would not result in any impacts to air quality as a result of allowing alterations on the lands or real property interests of USACE projects. With the exception of portions of the BSNP in St. Louis, St. Charles, and Franklin counties, Missouri, all of the USACE projects that are within the scope of this programmatic environmental assessment are in locations in attainment with the NAAQS. It is highly unlikely that any future request would exceed any of the rates established in 40 CFR 93.153(b) for nonattainment areas and require a conformity determination. Typically, emissions would result from the use of construction equipment such as earthmoving equipment, drill rigs, concrete trucks, and delivery trucks during project construction. If there was reason to believe that an individual request would exceed the established rates during the preparation of a tiered environmental assessment, then a conformity determination would be conducted and a separate stand-alone environmental assessment would be prepared.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): The Recommend Plan would not result in any significant impacts to air quality as a result of allowing alterations on the lands or real property interests of USACE projects. With the exception of portions of the BSNP in St. Louis, St. Charles, and Franklin counties, Missouri, all of the projects that are within the scope of this programmatic environmental assessment are in locations in attainment with the NAAQS. It is highly unlikely that any future request would exceed any of the rates established in 40 CFR 93.153(b) for nonattainment areas that would require a conformity determination. Typically, emissions would result from the use of construction equipment such as earthmoving equipment, drill rigs, concrete trucks, and delivery trucks during project construction. If there was reason to believe that an individual request would exceed the established rates, than a conformity determination would be conducted and a separate stand-alone environmental assessment would be prepared.

5.2 Water Quality

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis for potential impacts to water quality. If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not result in impacts to water quality depending on specific details of the plan. The requestor would be responsible for obtaining all necessary Clean Water Act permits. This may include Section 404, 401, and NPDES permits depending on the nature of the project.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: These alternatives would not result in any significant impacts to water quality as a result of allowing alterations on the lands or real property interests of USACE projects. No state water quality standards would be exceeded. Only requests that met the requirements of a Clean Water Act Section 404 Nationwide Permit or a Regional General Permit would be allowed with these alternatives. These permits have Clean Water Act Section 401 water quality certifications associated with them, indicating that they would not result in more than minor impacts to water quality. Detailed

descriptions and conditions of the conditions of Nationwide Permits and Regional General Permits are located on the Kansas City District Regulatory Branch webpage at http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx. The requestor would be required to obtain a NPDES permit if more than one acre of ground would be disturbed as part of the overall project. The NPDES permit would require a stormwater pollution prevention plan be developed to minimize any impacts to water quality. The conditions described here ensure that no more than minor impacts would occur to water quality. If there was reason to believe that more than minor impacts would occur to water quality during the preparation of any tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared. The requestor would be required to obtain a Clean Water Act Section 401 from the appropriate state.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): This alternative would not result in any significant impacts to water quality as a result of allowing alterations on the lands or real property interests of USACE projects. It is not expected to result in any violations of state water quality standards. Only requests that meet the requirements of a Clean Water Act Section 404 Nationwide Permit or a Regional General Permit would be allowed with this alternative. These permits have Clean Water Act Section 401 water quality certifications associated with them, indicating that they would not result in more than minor impacts to water quality. Detailed descriptions and conditions of the conditions of Nationwide Permits and Regional General Permits are located on the Kansas City District Regulatory Branch webpage at http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx. The requestor would be required to obtain a NPDES permit if more than one acre of ground would be disturbed as part of the overall project. The NPDES permit would require a stormwater pollution prevention plan be developed to minimize any impacts to water quality. The conditions described here ensure that no more than minor impacts would occur to water quality. If there was reason to believe that more than minor impacts would occur to water quality during the preparation of any tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared. The requestor would be required to obtain a Clean Water Act Section 401 from the appropriate state.

5.3 Wetlands

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis for potential impacts to wetlands.

If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not result in significant impacts to wetlands depending on specific details of the plan. The requestor would be responsible for obtaining all necessary Clean Water Act permits. This may include Section 404, 401, and NPDES permits depending on the nature of the project.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: These alternatives would not result in any significant impacts to wetlands or waters of the U.S. as a result of allowing alterations on the lands or real property interests of USACE projects as described in Section 1.2. Only requests that met the requirements of a Clean Water Act Section 404 Nationwide Permit or a Regional General Permit would meet the conditions of this programmatic environmental assessment. Detailed descriptions of the conditions of Nationwide Permits and Regional General Permits are located on the Kansas City District Regulatory Branch webpage at http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx. Activities that meet the conditions included as part of these permits do not usually result in impacts to water quality. The requestor would be required to obtain a NPDES permit if more than one acre of ground would be disturbed. The NPDES permit would require a stormwater pollution prevention plan be developed to minimize any stormwater runoff that may have the potential to impact wetlands. If there was reason to believe that more than minor impacts would occur to wetlands during the preparation of any tiered environmental assessment, or an individual Section 404 permit would be needed, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared. The requestor would be responsible for obtaining all necessary Clean Water Act permits. This may include Section 404, 401, and NPDES permits.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): The Recommended Plan would not result in any significant impacts to wetlands or waters of the U.S. as a result of allowing alterations on the lands or real property interests of USACE projects within the scope of this document. Only requests that meet the requirements of a Clean Water Act Section 404 Nationwide Permit or a Regional

General Permit would meet the environmental conditions of this programmatic environmental assessment. Activities that meet the conditions included as part of these permits do not usually result in more than minor impacts to wetlands or waters of the U.S. Detailed descriptions of the conditions of Nationwide Permits and Regional General Permits are located on the Kansas City District Regulatory Branch webpage at http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx. The requestor would be required to obtain a NPDES permit if more than one acre of ground would be disturbed. The NPDES permit would require a stormwater pollution prevention plan be developed to minimize any stormwater runoff that may have the potential to impact wetlands. If there was reason to believe that more than minor impacts would occur to wetlands during the preparation of any tiered environmental assessment, or an individual Section 404 permit would be needed, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared. The requestor would be responsible for obtaining all necessary Clean Water Act permits. This may include Section 404, 401, and NPDES permits.

5.4 Terrestrial Vegetation

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis for potential impacts to terrestrial vegetation. If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not result in significant impacts to terrestrial vegetation depending on specific details of the plan.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: These alternatives would not result in any significant impacts to terrestrial vegetation as a result of allowing alterations on the lands or real property interests of USACE projects within the scope of this document. Removal of woody vegetation would be avoided to the extent practical. USACE project areas within the scope of this programmatic environmental assessment have been heavily disturbed in the past and typically contain herbaceous vegetation, such as on federal levees, and in some instances opportunistic woody vegetation. Disturbed land areas would be planted

with either native trees, native herbaceous vegetation, or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees, depending on what type of vegetation was preexisting. If more than minor impacts to terrestrial vegetation were identified during the preparation of any tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): The Recommended Plan would not result in any significant impacts to terrestrial vegetation as a result of allowing alterations on the lands or real property interests of USACE projects identified in Section 1.2. Removal of woody vegetation would be avoided to the extent practical. If it is not practical to avoid removal of woody vegetation. USACE project areas within the scope of this programmatic environmental assessment have been heavily disturbed in the past and typically contain herbaceous vegetation, such as on federal levees, and in some instances opportunistic woody vegetation. Disturbed land areas would be planted with either native trees, native herbaceous vegetation, or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees, depending on what type of vegetation was preexisting. If more than minor impacts to terrestrial vegetation were identified during the preparation of any tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared.

5.5 Fish and Wildlife

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis for potential impacts to fish and wildlife. If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not result in significant impacts to fish and wildlife depending on specific details of the plan.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas,

Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: These alternatives may result in minor short-term construction-related impacts to fish and wildlife resources related to noise, visual, and land disturbances as a result of allowing alterations on the lands or real property interests of USACE projects within the scope of this document. The potential impacts to fish and other types of aquatic species would primarily be related to changes in water quality that may occur during project construction, specifically the potential for localized increases in water turbidity. However, the Kansas City District is located in a region that consists of easily erodible soils and short-term increases in turbidity occur naturally during storm events. Because of this, most of the native fish and other aquatic species within the region are tolerant of short-term increases in turbidity that may result from construction activities. To insure that there would not be any significant impacts to fish and other types of aquatic species, only requests that met the requirements of a Clean Water Act Section 404 Nationwide Permit or a Regional General Permit would meet the conditions of this programmatic environmental assessment. Activities that meet the conditions included as part of these permits do not usually result in more than minor impacts to fish and other aquatic species. Detailed descriptions of the conditions of Nationwide Permits and Regional General Permits are located on the Kansas City District Regulatory Branch webpage at http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx.

There may be minor short-term related impacts to wildlife as a result of noise, visual, and land disturbances during project construction. It is expected that wildlife that would use the USACE project area would move to other nearby locations. Because USACE project areas have been heavily disturbed in the past, they are not known to contain any unique habitat for wildlife that is not available in other nearby locations. If any requested alteration would result in the generation of spoil material, it would not be allowed to be disposed of in any wetlands, waters of the U.S., or locations where woody vegetation would need to be cleared. If borrow material is needed, it would be obtained in such a manner to avoid negatively impacting wetlands and removing of trees larger than three inches diameter at breast height. Following construction, disturbed land areas would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The taking of migratory birds, their eggs, parts and nests would be avoided in accordance with the Migratory Bird Treaty Act. This would be accomplished by conducting field surveys if construction were to take place during the migratory bird nesting season from April 1 to July 15. If active nests are identified during the survey that could not be avoided, either temporally or spatially, the USFWS would be consulted. To avoid disturbing nesting bald eagles and their young, USFWS guidelines would be followed. This includes maintaining a buffer of at least 660 feet between the

project and any nest, or restricting construction to August through mid-January when bald eagles are not nesting. If these conditions could not be met, USFWS would be consulted for further guidance. Because of the conditions that would be required, these alternatives are not expected to result in any significant impacts to fish and wildlife by allowing alterations on the lands or real property interests of USACE projects. If more than minor impacts to fish and wildlife were identified during the preparation of any tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): The Recommended Plan may result in minor short-term construction related impacts to fish and wildlife resources related to noise, visual, and land disturbances as a result of allowing alterations on the lands or real property interests of USACE projects within the scope of this document. The potential impacts to fish and other types of aquatic species would primarily be related to changes in water quality that may occur during project construction, specifically the potential for localized increases in water turbidity. However, the Kansas City District is located in a region that consists of easily erodible soils and short-term increases in turbidity occur naturally during storm events. Because of this, most of the native fish and other aquatic species within the region are tolerant of short-term increases in turbidity that may result from construction activities. To insure that there would not be any significant impacts to fish and other types of aquatic species, only requests that met the requirements of a Clean Water Act Section 404 Nationwide Permit or a Regional General Permit would meet the conditions of this programmatic environmental assessment. Activities that meet the conditions included as part of these permits do not usually result in more than minor impacts to fish and other aquatic species. Detailed descriptions of the conditions of Nationwide Permits and Regional General Permits are located on the Kansas City District Regulatory Branch webpage at http://www.nwk.usace.army.mil/Missions/RegulatoryBranch.aspx.

There may be minor related short-term impacts to wildlife as a result of noise, visual, and land disturbances during project construction. It is expected that wildlife that would use the USACE project area would move to other nearby locations. Because USACE project areas have been heavily disturbed in the past, they are not known to contain any unique habitat for wildlife that is not available in other nearby locations. If any requested alteration would result in the generation of spoil material, it would not be allowed to be disposed of in any wetlands, waters of the U.S., or locations where woody vegetation would need to be cleared. If borrow material is needed, it would be obtained in such a manner to avoid negatively impacting wetlands and removing of trees larger than three

inches diameter at breast height. Following construction, disturbed land areas would be planted with native herbaceous vegetation or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees.

The taking of migratory birds, their eggs, parts and nests would be avoided in accordance with the Migratory Bird Treaty Act. This would be accomplished by conducting field surveys if construction were to take place during the migratory bird nesting season from April 1 to July 15. If active nests are identified during the survey that could not be avoided, either temporally or spatially, the USFWS would be consulted. To avoid disturbing nesting bald eagles and their young, USFWS guidelines would be followed. This includes maintaining a buffer of at least 660 feet between the project and any nest, or restricting construction to August through mid-January when bald eagles are not nesting. If these conditions could not be met, the USFWS would be consulted for further guidance. Because of the conditions that would be required, the Recommended Plan is not expected to result in any significant impacts to fish and wildlife by allowing alterations on the lands or real property interests of USACE projects. If greater than minor impacts to fish and wildlife were identified during the preparation of any tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared.

5.6 Threatened and Endangered Species

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis to identify potential impacts to threatened and endangered species. If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not adversely affect any threatened and endangered species depending on specific details of the plan.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: With these alternatives, each request to modify a USACE project within

the scope of this document would be evaluated on a case-by-case basis to determine if it had the potential to adversely affect any federally listed threatened and endangered species. These determinations would be coordinated with the appropriate USFWS Ecological Services Field Office.

Generally, it is not expected that these alternatives would impact any federally listed species. These alternatives may result in land disturbances, visual impacts, and noise from construction equipment. These impacts would not be expected to adversely affect pallid sturgeon or their habitat. Also, these impacts would not be expected to result in habitat loss or degradation, or disturb the nests of least terns or piping plovers. There are not any known locations where least terns or piping plovers nest within the civil works projects included within the scope of this document. To avoid adversely affecting Indiana bats, the removal of trees larger than nine inches diameter at breast height with the potential to provide habitat for roosting or maternity colonies would be avoided during the active season. The February 2016 4(d) rule under the Endangered Species Act described in Section 4.6 of this document would be followed to avoid adversely affecting northern long eared bats. For any request that may affect any threatened and endangered species, including designated habitat, the USFWS would be consulted.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): With the Recommended Plan, each request to modify a USACE project within the scope of this document would be evaluated on a case-by-case basis to determine if it had the potential to adversely affect any federally listed threatened and endangered species. These determinations would be coordinated with the appropriate USFWS Ecological Services Field Office.

Generally, it is not expected that these alternatives would adversely affect any federally listed species. The Recommended Plan may result in land disturbances, visual impacts, and noise from construction equipment. These impacts would not be expected to adversely affect pallid sturgeon or their habitat. Also, these impacts would not be expected to result in habitat loss or degradation, or disturb the nests of least terns or piping plovers. To avoid adversely affecting Indiana bats, the removal of trees larger than nine inches diameter at breast height with the potential to provide habitat for roosting or maternity colonies would be avoided during the active season. To avoid adversely affecting northern long-eared bats, the February 2016 4(d) rule described in Section 4.6 of this document would be followed. For any request that may affect any threatened and endangered species, including designated habitat, the USFWS would be consulted.

5.7 Invasive Species

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis to determine its potential to spread any invasive species. If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not result in the spread of any invasive species depending on specific details of the plan.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: These alternatives are not likely to transfer any invasive species to or from the USACE project as described in Section 1.2. All construction equipment would be required to be washed prior to entering and leaving the construction site to avoid the spread of both terrestrial and aquatic invasive species. Disturbed land areas would be replanted to minimize the establishment of invasive plants. All seeding materials would be free from any federal or state-listed noxious weeds. Any straw or mulch used for erosion control would also be certified weed free. This alternative would not result in any impacts to native species by introducing or spreading invasive species.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): The Recommended Plan not likely to transfer any invasive species to or from the USACE project as described in Section 1.2. All construction equipment would be required to be washed prior to entering and leaving the construction site to avoid the spread of both terrestrial and aquatic invasive species. Disturbed land areas would be replanted to minimize the establishment of invasive plants. All seeding materials would be free from any federal or state-listed noxious weeds. Any straw or mulch used for erosion control would also be certified weed free. This alternative would not result in any impacts to native species by introducing or spreading invasive species.

5.8 Floodplain Management

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis determine potential impacts to floodplain management. If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not result impacts to floodplain management depending on specific details of the plan.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: These alternatives would not result in additional development in the floodplain or encourage additional occupancy and/or modification of the floodplain on the lands or real property interests of USACE projects identified in Section 1.2. They would not result in any increases in water elevations during flood events. Requirements of Executive Order 11988 – Floodplain Management would be followed. If these requirements were not met, then the request to alter a USACE project would not be allowed under this programmatic environmental assessment. If greater than minor impacts floodplain management were identified during the preparation of any tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): The Recommended Plan would not result in additional development in the floodplain or encourage additional occupancy and/or modification of the floodplain on the lands or real property interests of USACE projects identified in Section 1.2. It would not result in any increases in water elevations during flood events. Requirements of Executive Order 11988 – Floodplain Management would be followed. If these requirements were not met, then the request to alter a USACE project would not be allowed under this programmatic environmental assessment. If greater than minor impacts floodplain management were identified during the preparation of any tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared.

5.9 Socioeconomics

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis determine potential socioeconomic impacts. If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not result in socioeconomic impacts depending on specific details of the plan.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: These alternatives would not result in any significant impacts to the existing socioeconomic condition on the lands or real property interests of USACE projects identified in Section 1.2. These alternatives would not result in any additional operation and maintenance costs of USACE projects to the Kansas City District. Any request that would result in any increase in operation and maintenance costs would not be categorically permitted. Based on similar types of projects that have occurred in the past, they are not expected to result in any significant changes in population or employment as a result of allowing alterations to USACE projects. Additionally, these alternatives would not be expected to result in a disproportionate share of negative consequences to people with regard to race, color, national origin, or income in accordance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Only requests that were determined to not impair the usefulness of the project not be injurious to the public interest would be allowed, in accordance with EC 1165-2-216. If greater than minor impacts to the existing socioeconomic conditions were identified during the preparation of any tiered environmental assessment, then a separate stand-alone environmental assessment that included mitigation measures or an environmental impact statement would be prepared.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): The Recommended Plan would not result in any significant impacts to the existing socioeconomic condition on the lands or real property interests of USACE projects

identified in Section 1.2. It would not result in any additional operation and maintenance costs of USACE projects to the Kansas City District. Any request that would result in any increase in operation and maintenance costs would not be categorically permitted. It would not be expected to result in any significant changes in population or employment as a result of allowing alterations to USACE projects. Additionally, this alternative would not be expected to result in a disproportionate share of negative consequences to people with regard to race, color, national origin, or income in accordance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Only requests that were determined to not impair the usefulness of the project and not be injurious to the public interest would be allowed, in accordance with EC 1165-2-216. If greater than minor impacts to the existing socioeconomic conditions were identified during the preparation of any tiered environmental assessment, then a separate stand-alone environmental assessment that included mitigation measures or an environmental impact statement would be prepared.

5.10 Cultural Resources

Alternative 1 – No Categorical Permission (No-Action): The No-Action alternative would not result in any categorical permissions to modify USACE projects. Individual requests would be evaluated on a case-by-case basis determine potential affects to cultural resources. If an alternative plan was developed by the requestor with a project footprint that avoided a USACE project, it may or may not result in affects to cultural resources depending on specific details of the plan. The requestor would not be required to comply with Section 106 of NHPA if no federal lands, permits, or funding was involved with the project.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: With these alternatives, each request to modify a USACE project within the scope of this document would be evaluated on a case-by-case basis to determine if it had the potential to affect any cultural resource. These findings would be coordinated with the appropriate State Historic Preservation Officer and affiliated federally recognized Nation American tribes. All requirements of the NHPA Section 106 would be

met. It is not expected that these alternatives would typically affect cultural resources because the requests to alter USACE projects would be located on lands that have already been heavily impacted as a result of constructing the USACE project. In many cases, cultural resource surveys have already been completed in these locations. If a specific request was identified as being likely to affect any cultural resources during the preparation of a tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared. If any cultural resources were inadvertently discovered during construction of an approved alternation, work would be stopped and the appropriate State Historic Preservation Officer and affiliated federal Native American tribes would be consulted.

Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): With the Recommended Plan, each request to modify a USACE project within the scope of this document would be evaluated on a case-by-case basis to determine if it had the potential to affect any cultural resource. These findings would be coordinated with the appropriate State Historic Preservation Officer and affiliated federally recognized Nation American tribes. All requirements of the NHPA Section 106 would be met. It is not expected that this alternative would typically affect cultural resources because the requests to alter USACE projects would be located on lands that have already been heavily impacted as a result of constructing the USACE project. In many cases, cultural resource surveys have already been completed in these locations. If a specific request was identified as being likely to affect any cultural resources during the preparation of a tiered environmental assessment, than a separate stand-alone environmental assessment that included mitigation measures, or an environmental impact statement would be prepared. If any cultural resources were inadvertently discovered during construction of an approved alternation, work would be stopped and the appropriate State Historic Preservation Officer and affiliated federal Native American tribes would be consulted.

5.11 Summary of Potential Direct and Indirect Impacts

A summary of potential direct and indirect impacts as a result of actions on USACE projects that would result from each of the alternatives is found in Table 2.

Table 2: Potential direct and indirect impacts of each alternative.

Resource Category	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7
Air Quality	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Water Quality	No Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts
Wetlands	No Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts
Terrestrial Vegetation	No Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts
Fish and Wildlife	No Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts	Minor Impacts
Threatened and Endangered Species	No Affect	Evaluated on case-by-case basis[1]	Evaluated on case-by-case basis[1]	Evaluated on case-by-case basis[1]	Evaluated on case-by-case basis[1]	Evaluated on case-by-case basis[1]	Evaluated on case-by-case basis[1]
Invasive Species	No Impacts	No Impacts[2]	No Impacts[2]	No Impacts[2]	No Impacts[2]	No Impacts[2]	No Impacts[2]
Floodplain Management	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Socioeconomics	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Cultural Resources	No Affect	Evaluated on case-by-case basis[3]	Evaluated on case-by-case basis[3]	Evaluated on case-by-case basis[3]	Evaluated on case-by-case basis[3]	Evaluated on case-by-case basis[3]	Evaluated on case-by-case basis[3]

1 – Any proposed alteration that may adversely affect any threatened or endangered species, including their critical habitat would result in consultation with the USFWS and an individual stand-alone NEPA document would be prepared.
2 – Assuming proper construction best management practices are implemented to prevent the spread of any invasive species.
3 – All requirements of NHPA Section 106 would be met.

6 Cumulative Impacts

The Council on Environmental Quality (CEQ) Regulations defines cumulative impacts as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (CEQ, 1997). The cumulative impacts addressed in this document consist of the impacts of multiple actions that result in similar effects on the natural resources. The geographical areas of consideration are actions located within/along the lower Missouri River, the Kansas River and other rivers where there are federal levees within the Kansas City District, and the nine rivers where federal protection projects have been constructed.

6.1 Past Actions

All of the project areas covered by this programmatic environmental assessment have been altered in the past as a result of constructing the USACE project. The degree of impact varies by project. Generally speaking, federal levees provide important socioeconomic benefits by providing flood risk management features as described in Section 4.9. However, levees disconnect river systems from their floodplains which can negatively impact the natural structure and functions of rivers. As shown in Figure 2, federal levees constrain large portions of the Missouri River. Smaller, non-federal levees constrain most of the remaining portions of the Missouri River within the Kansas City District. Other federal levees within the Kansas City District protect localized areas and do not extend along the entire length of any of the rivers.

The channel modification projects identified in Table 1 have all increased the channel capacity of the rivers within the project area. Again, these projects have provided important socioeconomic benefits to the nation as described in Section 4.9. However, like levees, channel modification projects can negatively impact the structure and function of river systems by disconnecting them from the floodplain, increasing water velocities, and removing riparian vegetation. Channel modification projects that have been conducted more recently, such as portions or the Blue River Channel and the Turkey Creek Basin both located in the metropolitan Kansas City area, have incorporated more features to benefit the environment when compared to channel modification projects that were constructed previously. These features include channel benching, establishment of native vegetation, and construction of riffles in some locations to benefit fish and wildlife.

The Missouri River BSNP has resulted in numerous impacts to the environment. It is estimated that 522,000 acres of aquatic and terrestrial habitat was lost in and along the Missouri River between 1912 and 2003 (USACE, 1981). Prior to the BSNP, the lower Missouri River was a braided channel system that meandered back and forth across the floodplain creating a highly diverse and dynamic environment through the processes of erosion, deposition, and accretion. In some locations, the river banks would erode by as much as 2000 feet in a single year as the river meandered across the floodplain. Common types of habitat created by these processes included backwaters, sloughs, oxbow lakes, side channels, sandbars, islands, cottonwood and willow forests, bottomland hardwood forests, a variety of wetlands and grasslands. Snags, created by trees that had fallen in the river, were also common.

The BSNP narrowed and deepened the lower Missouri River to create a self-scouring channel. The dikes and revetments prevent the river from migrating back and forth across the floodplain, resulting in a decrease in habitat diversity. Also, sediment accumulated behind the BSNP structures and formed new lands. In most locations, levees have been built on these accreted lands and they are now used for agriculture, or in some locations, urban development. The levees have further reduced the connectivity between the river and the floodplain. The BSNP also changed the shape of the channel from having diverse topographic features, to having a generally trapezoidal shape. This has resulted in a reduction in the diversity of aquatic habitat types and a lack of diversity in water velocity. The Missouri River Bank Stabilization and Navigation Mitigation Project was first authorized in 1986 to mitigate for a portion of the impacts caused to the Missouri River as a result of the BSNP. In order for the USACE to avoid jeopardy to threatened and endangered least tern, piping plover, and pallid sturgeon, the USFWS provided an amended biological opinion titled *U.S Fish and Wildlife Service 2003 Amendment to the 2000 Biological opinion on the operation and maintenance of the Missouri River Main Stem Reservoir System, operation and maintenance of the Missouri River Bank Stabilization and Navigation Project, and operation of the Kansas River Reservoir System.* (USFWS, 2003).

It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to the human environment in the past. Including requests that fit the description of categorical exclusions in 33 CFR Part 230.9, there have been 57 requests per year, on average, between the years 2010 and 2014 to alter USACE civil works projects. This has ranged from 86 requests per year in 2011 to 31 requests in 2014. It is expected that that the number of future requests will be similar to the number of requests that have occurred in the past.

6.2 Present and Future Actions

A number of present and future actions are occurring along the Missouri River in the vicinity of the federal levees and BSNP as described in Section 1.2. The Missouri River Mitigation Project maintains land that has been purchased by the federal government and is managed by the USACE and partner government agencies to benefit fish and wildlife. If funding becomes available, additional land may be purchased in the future for the Missouri River Mitigation Project. The USACE is also continuing actions to avoid jeopardy to the pallid sturgeon along the Missouri River within the Kansas City District. Other items that are being implemented include actions in localized areas to modify previously constructed side channels and BSNP dikes and revetments.

The Missouri River Recovery Management Plan and Environmental Impact Statement is an ongoing effort to evaluate the effectiveness of current habitat development and recommend any needed modifications to more effectively create habitat and avoid jeopardy to pallid sturgeon, least terns and piping plovers. It is being led by USACE and USFWS. Additional information is available online at http://moriverrecovery.usace.army.mil/mrrp/f?p=136:70:0::NO.

The Missouri River Bed Degradation Integrated Feasibility Study and Environmental Impact Statement is another ongoing study within the Lower Missouri River. The purpose of the study is to develop a complete, effective, efficient, and acceptable plan to avoid additional economic impacts to federal, state, and local infrastructure resulting from the degradation of the Missouri River. The geographic scope of the study extends along the Missouri River from approximately Waverly to St. Joseph Missouri. Additional information about the study is available online at http://www.marc.org/Environment/Water-Resources/Missouri-Riverbed-Degradation/About

The USACE will continue to provide repair assistance through the PL84-99 program to levee districts when levees become damaged during floods. Over the past five years, the Kansas City District has provided assistance on approximately 70 instances through the PL 84-99, of which roughly 30 were for repairs to federal levees. The majority of these were following the 2011 Missouri River flood event. There are not any other known ongoing or future projects in locations of the other federal levees or federal channel projects within the Kansas City District. If additional projects are identified during the public review period that could result in cumulative impacts, they will be evaluated in the Final Programmatic Environmental Assessment.

6.3 Cumulative Impact Assessment

Only the resource categories in which an alternative had the potential to result in minor direct or indirect impacts were considered for cumulative impacts. These consisted of water quality, wetlands, terrestrial vegetation, and fish and wildlife. None of the alternatives would result in more than minor direct or indirect impacts. This is a result, in part, for the environmental conditions that have been established in order to meet the conditions of this programmatic environmental assessment. Impacts to resource categories were evaluated with consideration of past, present, and reasonably foreseeable actions described in Sections 6.1 and 6.2.

6.3.1 Water Quality

Alternative 1 – No Categorical Permission (No-Action): Potential cumulative impacts to water quality would be evaluated on a case-by-case basis when stand-alone environmental assessments or environmental impact statements would be prepared.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells: This alternative would not result in any significant cumulative impacts to water quality when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 84 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City District, of which there are approximately 60. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to water quality in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. While individual actions may result in minor impacts to water quality during project construction, these impacts are expected to be local and short-term in duration. It is not expected that any of the other present or future actions would result in any cumulative impacts to water quality in combination to minor short-term impacts to water quality that may occur with this alternative. These actions would not result in persistent additions or result in compounding effects with other actions or projects previously identified. Additionally, they would not result in any exceedence of any water quality thresholds or state water quality standards. Individual actions resulting from the alternatives described in this document would occur in small localized areas over a large geographic area, as identified in Section 1.2.

Alternative 3 – Categorical Permission for Horizontal Directional Drilling: This alternative would not result in any significant cumulative impacts to water quality when considered with other past, present, and future actions. Between the years 2010 and

2014, there were 38 projects that fit the description of this alternative. Most of these projects were associated with federal levees. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to water quality in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. While individual actions may result in minor impacts to water quality during project construction, these impacts are expected to be local and short-term in duration. It is not expected that any of the other present or future actions would result in any cumulative impacts to water quality in combination to minor short-term impacts to water quality that may occur with this alternative. These actions would not result in persistent additions or result in compounding effects with other actions or projects previously identified. Additionally, they would not result in any exceedence of any water quality thresholds or state water quality standards. Individual actions resulting from the alternatives described in this document would occur in relatively small localized areas over a large geographic area, as identified in Section 1.2.

Alternative 4 – Categorical Permission for Piping Systems: This alternative would not result in any significant cumulative impacts to water quality when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 52 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City District. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to water quality in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. While individual actions may result in minor impacts to water quality during project construction, these impacts are expected to be local and short-term in duration. It is not expected that any of the other present or future actions would result in any cumulative impacts to water quality in combination to minor short-term impacts to water quality that may occur with this alternative. These actions would not result in persistent additions or result in compounding effects with other actions or projects previously identified. Additionally, they would not result in any exceedence of any water quality thresholds or state water quality standards. Individual actions resulting from the alternatives described in this document would occur in relatively small localized areas over a large geographic area, as identified in Section 1.2.

Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas: This alternative would not result in any significant cumulative impacts to water quality when considered with other past, present, and future actions. Between the years 2010 and 2014, there were only 27 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City

District, of which there are approximately 60. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to water quality in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. While individual actions may result in minor impacts to water quality during project construction, these impacts are expected to be local and short-term in duration. It is not expected that any of the other present or future actions would result in any cumulative impacts to water quality in combination to minor short-term impacts to water quality that may occur with this alternative. These actions would not result in persistent additions or result in compounding effects with other actions or projects previously identified. Additionally, they would not result in any exceedence of any water quality thresholds or state water quality standards. Individual actions resulting from the alternatives described in this document would occur in relatively small localized areas over a large geographic area, as identified in Section 1.2.

Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: This alternative would not result in any significant cumulative impacts to water quality when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 33 projects that fit the description of this alternative. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to water quality in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. While individual actions may result in minor impacts to water quality during project construction, these impacts are expected to be local and short-term in duration. It is not expected that any of the other present or future actions would result in any cumulative impacts to water quality in combination to minor short-term impacts to water quality that may occur with this alternative. These actions would not result in persistent additions or result in compounding effects with other actions or projects previously identified. Additionally, they would not result in any exceedence of any water quality thresholds or state water quality standards. Individual actions resulting from the alternatives described in this document would occur in relatively small localized areas over a large geographic area, as identified in Section 1.2.

Alternative 7 – Categorical Permission for All Types of Alterations That Meet Criteria (Recommended Plan): This alternative would not result in any significant cumulative impacts to water quality when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 234 projects that fit the

description of this alternative. This is less than 50 requests per year on average. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to water quality in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. While individual actions may result in minor impacts to water quality during project construction, these impacts are expected to be local and short-term in duration. It is not expected that any of the other present or future actions would result in any cumulative impacts to water quality in combination to minor short-term impacts to water quality that may occur with this alternative. These actions would not result in persistent additions or result in compounding effects with other actions or projects previously identified. Additionally, they would not result in any exceedence of any water quality thresholds or state water quality standards. Individual actions resulting from the alternatives described in this document would occur in relatively small localized areas over a large geographic area, as identified in Section 1.2.

6.3.2 Wetlands

Alternative 1 – No Categorical Permission (No-Action): Potential cumulative impacts to wetlands would be evaluated on a case-by-case basis when stand-alone environmental assessments or environmental impact statements would be prepared.

Alternative 2 – Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells; Alternative 3 – Categorical Permission for Horizontal Directional Drilling; Alternative 4 – Categorical Permission for Piping Systems; Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas; Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement; Alternative 7 – Categorical Permission for Alterations That Meet Engineering Requirements and Environmental Conditions (Recommended Plan): None of the alternatives considered in this programmatic environmental assessment would result in significant cumulative impacts to wetlands. Only projects that meet the requirements of Nationwide Permit system or Regional General Permits would be allowed under this programmatic document. These permits are reviewed every five years by the USACE Regulatory program and are evaluated for potential cumulative effects. It is assumed that if the requirements of these permits are followed, that there would not be any significant cumulative impacts to wetlands.

6.3.3 Terrestrial Vegetation

Alternative 1 – No Categorical Permission (No-Action): Potential cumulative impacts to terrestrial vegetation would be evaluated on a case-by-case basis when stand-alone environmental assessments or environmental impact statements would be prepared.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells: This alternative would not result in any significant cumulative impacts to terrestrial vegetation when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 84 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City District, of which there are approximately 60. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to terrestrial vegetation in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor impacts to terrestrial vegetation during project construction. However, these impacts are in locations that have been previously disturbed in order to construct the USACE project. Disturbed land areas would be planted with either native trees, native herbaceous vegetation, or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees, depending on what type of vegetation was preexisting. This would limit the duration of any minor impacts to terrestrial vegetation. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to terrestrial vegetation in combination to minor impacts to terrestrial vegetation that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for terrestrial vegetation. For these reasons, this alternative would not result in any significant cumulative impacts to terrestrial vegetation.

Alternative 3 – Categorical Permission for Horizontal Directional Drilling: This alternative would not result in any significant cumulative impacts to terrestrial vegetation when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 38 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City District, of which there are approximately 60. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to terrestrial vegetation in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor impacts to terrestrial vegetation during

project construction. However, these impacts are in locations that have been previously disturbed in order to construct the USACE project. Disturbed land areas would be planted with either native trees, native herbaceous vegetation, or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees, depending on what type of vegetation was preexisting. This would limit the duration of any minor impacts to terrestrial vegetation. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to terrestrial vegetation in combination to minor impacts to terrestrial vegetation that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for terrestrial vegetation. For these reasons, this alternative would not result in any significant cumulative impacts to terrestrial vegetation.

Alternative 4 – Categorical Permission for Piping Systems: This alternative would not result in any significant cumulative impacts to terrestrial vegetation when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 52 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City District, of which there are approximately 60. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to terrestrial vegetation in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor impacts to terrestrial vegetation during project construction. However, these impacts are in locations that have been previously disturbed in order to construct the USACE project. Disturbed land areas would be planted with either native trees, native herbaceous vegetation, or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees, depending on what type of vegetation was preexisting. This would limit the duration of any minor impacts to terrestrial vegetation. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to terrestrial vegetation in combination to minor impacts to terrestrial vegetation that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for terrestrial vegetation. For these reasons, this alternative would not result in any significant cumulative impacts to terrestrial vegetation.

Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas: This alternative would not result in any significant cumulative impacts to terrestrial vegetation when considered with other past, present, and future actions.

Between the years 2010 and 2014, there were 27 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City District, of which there are approximately 60. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to terrestrial vegetation in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor impacts to terrestrial vegetation during project construction. However, these impacts are in locations that have been previously disturbed in order to construct the USACE project. Disturbed land areas would be planted with either native trees, native herbaceous vegetation, or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees, depending on what type of vegetation was preexisting. This would limit the duration of any minor impacts to terrestrial vegetation. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to terrestrial vegetation in combination to minor impacts to terrestrial vegetation that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for terrestrial vegetation. For these reasons, this alternative would not result in any significant cumulative impacts to terrestrial vegetation.

Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: This alternative would not result in any significant cumulative impacts to terrestrial vegetation when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 33 projects that fit the description of this alternative. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to terrestrial vegetation in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor impacts to terrestrial vegetation during project construction. However, these impacts are in locations that have been previously disturbed in order to construct the USACE project. Disturbed land areas would be planted with either native trees, native herbaceous vegetation, or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees, depending on what type of vegetation was preexisting. This would limit the duration of any minor impacts to terrestrial vegetation. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative

impacts to terrestrial vegetation in combination to minor impacts to terrestrial vegetation that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for terrestrial vegetation. For these reasons, this alternative would not result in any significant cumulative impacts to terrestrial vegetation.

Alternative 7 – Categorical Permission for All Types of Alterations That Meet Criteria (Recommended Plan): This alternative would not result in any significant cumulative impacts to terrestrial vegetation when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 234 projects that fit the description of this alternative. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to terrestrial vegetation in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor impacts to terrestrial vegetation during project construction. However, these impacts are in locations that have been previously disturbed in order to construct the USACE project. Disturbed land areas would be planted with either native trees, native herbaceous vegetation, or with a fescue, brome, and rye mixture if required for engineering purposes, such as on federal levees, depending on what type of vegetation was preexisting. This would limit the duration of any minor impacts to terrestrial vegetation. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to terrestrial vegetation in combination to minor impacts to terrestrial vegetation that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for terrestrial vegetation. For these reasons, this alternative would not result in any significant cumulative impacts to terrestrial vegetation.

6.3.4 Fish and Wildlife

Alternative 1 – No Categorical Permission (No-Action): Potential cumulative impacts to water quality would be evaluated on a case-by-case basis when stand-alone environmental assessments or environmental impact statements would be prepared.

Alternative 2 – Categorical Permission for Geotechnical Investigations, and Installation or Removal/Abandonment of Deep Foundations, Poles, Posts, Piezometers, Wells, and Relief Wells: This alternative would not result in any significant cumulative impacts to fish and wildlife when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 84 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City District, of which there are approximately 60. It

is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to fish and wildlife in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor short-term impacts to fish and wildlife during project construction. These impacts are in locations that have been previously disturbed in order to construct the USACE project. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to fish and wildlife in combination to minor short-term impacts to fish and wildlife that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for fish and wildlife. For these reasons, this alternative would not result in any significant cumulative impacts to fish and wildlife.

Alternative 3 – Categorical Permission for Horizontal Directional Drilling: This alternative would not result in any significant cumulative impacts to fish and wildlife when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 38 projects that fit the description of this alternative. Most of these projects were associated with the federal levees within the Kansas City District, of which there are approximately 60. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to fish and wildlife in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor short-term impacts to fish and wildlife during project construction. These impacts are in locations that have been previously disturbed in order to construct the USACE project. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to fish and wildlife in combination to minor short-term impacts to fish and wildlife that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for fish and wildlife. For these reasons, this alternative would not result in any significant cumulative impacts to fish and wildlife.

Alternative 4 – Categorical Permission for Piping Systems: This alternative would not result in any significant cumulative impacts to fish and wildlife when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 52 projects that fit the description of this alternative. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to fish and wildlife in the past. It is expected that a similar number of requests will occur in the future as has

occurred in the past. Individual actions may result in minor short-term impacts to fish and wildlife during project construction. These impacts are in locations that have been previously disturbed in order to construct the USACE project. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to fish and wildlife in combination to minor short-term impacts to fish and wildlife that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for fish and wildlife. For these reasons, this alternative would not result in any significant cumulative impacts to fish and wildlife.

Alternative 5 – Categorical Permission for Small Structures in Undeveloped Areas: This alternative would not result in any significant cumulative impacts to fish and wildlife when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 27 projects that fit the description of this alternative. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to fish and wildlife in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor short-term impacts to fish and wildlife during project construction. These impacts are in locations that have been previously disturbed in order to construct the USACE project. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to fish and wildlife in combination to minor short-term impacts to fish and wildlife that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for fish and wildlife. For these reasons, this alternative would not result in any significant cumulative impacts to fish and wildlife.

Alternative 6 – Categorical Permission for Ground Surface Alterations Including Recreation Trails, Access Roads in Undeveloped Areas, Boat Ramps, Construction Staging Areas, Borrow Areas, and Environmental Enhancement: This alternative would not result in any significant cumulative impacts to fish and wildlife when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 33 projects that fit the description of this alternative. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to fish and wildlife in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor short-term impacts to fish and wildlife during project construction. These impacts are in

locations that have been previously disturbed in order to construct the USACE project. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to fish and wildlife in combination to minor short-term impacts to fish and wildlife that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for fish and wildlife. For these reasons, this alternative would not result in any significant cumulative impacts to fish and wildlife.

Alternative 7 – Categorical Permission for All Types of Alterations That Meet Criteria (Recommended Plan): This alternative would not result in any significant cumulative impacts to fish and wildlife when considered with other past, present, and future actions. Between the years 2010 and 2014, there were 234 projects that fit the description of this alternative. It is not believed that any modifications to USACE civil works within the scope of this programmatic environmental assessment has resulted in any significant cumulative impacts to fish and wildlife in the past. It is expected that a similar number of requests will occur in the future as has occurred in the past. Individual actions may result in minor short-term impacts to fish and wildlife during project construction. These impacts are in locations that have been previously disturbed in order to construct the USACE project. This alternative would not result in persistent additions or result in compounding effects with other actions or projects previously identified. It is not expected that any of the other present or future actions would result in any cumulative impacts to fish and wildlife in combination to minor short-term impacts to fish and wildlife that may occur with this alternative. Additionally, it would not result in any exceedence of any biological thresholds for fish and wildlife. For these reasons, this alternative would not result in any significant cumulative impacts to fish and wildlife.

7 Agency Coordination and Public Comments

On April 22, 2016, a Notice of Availability was issued by USACE announcing the availability of this draft programmatic environmental assessment for a 30-day public comment period. Information concerning the availability of the Public Notice was e-mailed to entities on the Kansas City District Regulatory Branch distribution list. During the public comment period, the draft documents were available on the Kansas City District Public Notice website at: http://www.nwk.usace.army.mil/Media/PublicNotices/PlanningPublicNotices.aspx. Hard copies are available on request. A copy of the Notice of Availability is included as Appendix C.

Comments were received from the Osage Nation, Kansas State Historic Preservation Officer, and the USFWS Missouri Ecological Services Office. The USFWS Kansas and

Iowa Ecological Services Offices stated that they would review projects on a case-by-case basis if Section 7 consultation is needed. Comment letters are included as Appendix D. A summary of the comments and USACE responses is located in Table 3.

Table 3: Summary of comments received during public comment period and Kansas City District's responses.

Agency/Individual	Comment Summary	USACE Response
Osage Nation (email dated April 22, 2016)	Osage Nation requested that they be provided hard copies for consultation on all District projects.	A hard copy of the Draft Programmatic Environmental Assessment and Finding of No Significant Impact were mailed to the Osage Nation. Hard copies will be provided for future projects as well.
Osage Nation (letter dated May 18, 2016)	Requested that both known and unknown cultural resources also be considered in description of alternatives. Requested that surveys be conducted in locations where unknown cultural resources may exist.	Reference to the word "known" has been removed from the alternative descriptions. Surveys for cultural resources will be conducted on a case-by-case basis if the area has not been surveyed in the past and there is reasonable potential that cultural resources may exist in the area.
Osage Nation (letter dated May 18, 2016)	Requested that the phrase "including sacred sites and traditional cultural properties" be added to description of Native American resources in Section 4.10 for clarification.	Concur. Additional language has been added to Section 4.10 as requested.
Osage Nation (letter dated May 18, 2016)	Would like the opportunity to review individual projects that may be carried out under the Programmatic Environmental Assessment.	Concur. Individual projects conducted under the Programmatic Environmental Assessment will each undergo NHPA Section 106 coordination.
Kansas State Historic Preservation Officer	Stated that the process for described in the Programmatic Environmental Assessment for conducting cultural resources assessments for individual projects is acceptable.	The USACE appreciates the response from the Kansas State Historic Preservation Officer.
Missouri Department of Transportation	Appreciated the effort to streamline Section 408 process but expressed dissatisfaction with the overall process to date.	The District understands. Efforts, such as this Programmatic Environmental Assessment, are aimed at improving the overall process.
Missouri Department of Transportation	Recommends that a geospatial database be developed that is available to the public to identify	While not incorporated into this document, the idea of a geospatial database will be further explored by the District.

Agency/Individual	Comment Summary	USACE Response
	projects under the Section 408 purview.	
Missouri Department of Transportation	Stated that the Programmatic Environmental Assessment does not offer any benefits when individual Section 404 permits are required.	Concur. Actions that would require individual Section 404 permits were not included in the Programmatic Environmental Assessment for two reasons. First, there is an increased risk of significant environmental impacts that may occur from these types of actions that should be evaluated in greater detail. Also, these actions will require the preparation of an environmental assessment for a Section 404 permit that is separate from the Section 408 permission. Internal coordination will occur in the District with regard to Section 404 permits and Section 408 permissions as described in EC 1165-2-216.
USFWS, Missouri ESO	Stated that they are unable to respond to requestor's with concern to Section 7 consultation, only USACE. Recommended that requestor provide USACE with a current list of federally listed species from the Services IPaC website at https://ecos.fws.gov/ipac/	The Programmatic Environmental Assessment has been updated to state that requestor's should submit an IPaC to the District. If it is determined that the project may affect any threatened or endangered species, USACE will coordinate with USFWS. In some cases, the requestor may have to reimburse the District for coordination efforts in accordance with procedures outlined in EC 1165-2-216.
USFWS, Iowa ESO	Stated that they will not be commenting on the Draft Programmatic Environmental Assessment.	The District will coordinate projects on a case-by-case basis in accordance with Section 7 of the Endangered Species Act as needed.
USFWS, Kansas ESO	Stated that they will consult on individual projects that need Section 7 as they arise.	The District will coordinate projects on a case-by-case basis in accordance with Section 7 of the Endangered Species Act as needed.

8 Conclusion

Following an evaluation of environmental consequences, Alternative 7 has been identified as the Recommended Plan. This alternative best meets the purpose and need for requests to modify USACE projects within the scope of this document. The Recommended Plan would not result in any significant adverse impacts, either directly, indirectly, or cumulatively to the human environment. Minor impacts may result. The Recommend Plan is not likely to adversely affect pallid sturgeon, Indiana bat, northern

long-eared bat, least tern, or piping plover which are federally listed as threatened and endangered species. To avoid adversely affecting Indiana bats, the removal of trees larger than nine inches diameter at breast height with the potential to provide habitat for roosting or maternity colonies would be avoided during the active season. To avoid adversely affecting northern long-eared bats, the 4(d) rule under the Endangered Species Act described in Section 4.6 of this document would be followed. Following these procedures would also minimize the likelihood of impacting any migratory birds. No wetlands would be significantly impacted. Compliance with Section 106 of the NHPA would take place on a case-by-case basis during the preparation of tiered environmental assessments. Any request that may affect any cultural resources would result in a stand-alone environmental assessment or environmental impact statement being prepared. The Recommended Plan would not result in conditions would exceed state water quality standards. In conclusion, the Recommended Plan would not result in any significant adverse impacts to the human environment.

9 Compliance with Environmental Quality Statutes

Compliance with environmental laws is listed in Table 4.

Table 4: Compliance with environmental quality statutes.

Federal Policy	**Compliance**
Archeological Resources Protection Act, 16 U.S.C. 470, et seq.	Pending
Clean Air Act, as amended, 42 U.S. C. 7401-7671g, et seq.	Full Compliance
Clean Water Act (Federal Water Pollution Control Act), 33 U.S.C. 1251, et seq.	Full Compliance
Coastal Zone Management Act, 16 U.S.C. 1451, et seq.	Not Applicable
Endangered Species Act, 16 U.S.C. 1531, et seq.	Pending
Environmental Justice (Executive Order 12898)	Full Compliance
Estuary Protection Act, 16 U.S.C. 1221, et seq.	Not Applicable
Farmland Protection Policy Act, 7 U.S.C. 4201, et. seq.	Full Compliance
Federal Water Project Recreation Act, 16 U.S.C. 4601-12, et seq.	Full Compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.	Pending
Floodplain Management (Executive Order 11988)	Full Compliance
Invasive Species (Executive Order 13122)	Full Compliance
Land and Water Conservation Fund Act, 16 U.S.C. 4601-4, et seq.	Not Applicable
Marine Protection Research and Sanctuary Act, 33 U.S.C. 1401, et seq.	Not Applicable
Migratory Bird Treaty Act, as amended, 16 U.S.C. 703-712	Full Compliance
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	Full Compliance

Federal Policy	Compliance
National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470a, et seq.	Pending
Protection & Enhancement of the Cultural Environment (Executive Order 11593)	Pending
Protection of Wetlands (Executive Order 11990)	Full Compliance
Rivers and Harbors Act, 33 U.S.C. 403, et seq.	Full Compliance
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, et seq.	Full Compliance
Wild and Scenic River Act, 16 U.S.C. 1271, et seq.	Not Applicable

NOTES: a. Full compliance. Having met all requirements of the statute for the current stage of planning (either preauthorization or post authorization).

b. Partial compliance. Not having met some of the requirements that normally are met in the current stage of planning.

c. Noncompliance. Violation of a requirement of the statute.

d. Not applicable. No requirements for the statute required; compliance for the current stage of planning.

10 Preparers

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APPENDEX A

Engineering Circular 1165-2-216 – Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408

DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Washington, DC 20314-1000

EC 1165-2-216

CECW-CP
Circular
No. 1165-2-216

31 July 2014

EXPIRES 31 July 2016

Water Resource Policies and Authorities

POLICY AND PROCEDURAL GUIDANCE FOR PROCESSING REQUESTS TO ALTER US ARMY CORPS OF ENGINEERS CIVIL WORKS PROJECTS PURSUANT TO 33 USC 408

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DEPARTMENT OF THE ARMY
US Army Corps of Engineers
Washington, DC 20314-1000

EC 1165-2-216

CECW-CP
Circular
No. 1165-2-216

31 July 2014

EXPIRES 31 July 2016
Water Resource Policies and Authorities

POLICY AND PROCEDURAL GUIDANCE FOR PROCESSING REQUESTS TO ALTER US ARMY CORPS OF ENGINEERS CIVIL WORKS PROJECTS PURSUANT TO 33 USC 408

1. Purpose.

a. The purpose of this Engineer Circular (EC) is to provide policy and procedural guidance for processing requests by private, public, tribal, or other federal entities, to make alterations to, or temporarily or permanently occupy or use, any US Army Corps of Engineers (USACE) federally authorized civil works project, referred to as "USACE project" within this document, pursuant to 33 USC 408 (Section 408). Proposed alterations must not be injurious to the public interest or affect the USACE project's ability to meet its authorized purpose.

b. The main body of this EC contains policy applicable to all types of Civil Works projects and an overall step-by-step procedural guide to be tailored at the district level to the appropriate level of detail for a specific Section 408 request. Supplemental guidance including additional procedural, decision-making and coordination detail related to specific infrastructure types (i.e. dams, hydropower, levee systems, channels, and navigation) can be found in Appendices B-E.

c. This EC supersedes the previous policy memoranda on this subject as identified in Appendix A.

2. Applicability. This circular is applicable to all headquarters USACE elements, divisions, districts, laboratories, and field operating activities having civil works planning, engineering, design, construction, and operations and maintenance (O&M) responsibilities. Note that for use in this EC, "district" refers to a USACE district office and "division" refers to a USACE division office. This EC applies to requests for alterations received by districts on or after the date of issuance.

3. Distribution Statement. Approved for public release; distribution is unlimited.

4. References. References for the main EC are in Appendix A.

5. Authority. The authority to grant permission for temporary or permanent alterations is contained in Section 14 of the Rivers and Harbors Act of 1899 and codified in 33 USC 408, titled *Taking possession of, use of, or injury to harbor or river improvements*, and states the following: "*It shall not be lawful for any person or persons to take possession of or make use of for any purpose, or build upon, alter, deface, destroy, move, injure, obstruct by fastening vessels*

thereto or otherwise, or in any manner whatever impair the usefulness of any sea wall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States, or any piece of plant, floating or otherwise, used in the construction of such work under the control of the United States, in whole or in part, for the preservation and improvement of any of its navigable waters or to prevent floods, or as boundary marks, tide gauges, surveying stations, buoys, or other established marks, nor remove for ballast or other purposes any stone or other material composing such works: Provided, That the Secretary of the Army may, on the recommendation of the Chief of Engineers, grant permission for the temporary occupation or use of any of the aforementioned public works when in his judgment such occupation or use will not be injurious to the public interest: Provided further, That the Secretary may, on the recommendation of the Chief of Engineers, grant permission for the alteration or permanent occupation or use of any of the aforementioned public works when in the judgment of the Secretary such occupation or use will not be injurious to the public interest and will not impair the usefulness of such work."

6. Policy.

a. Alteration. Section 408 authorizes the Secretary of the Army to grant permission for the alteration or occupation or use of the project if the Secretary determines that the activity will not be injurious to the public interest and will not impair the usefulness of the project. Unless otherwise stated, for ease of reference, the use of the term "alteration" in this document also includes "occupation" and "use." For purposes of this document, the words "alteration" or "alter" refers to any action by any entity other than USACE that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity, of a USACE project. Alterations also include actions approved as "encroachments" pursuant to 33 CFR 208.10.

b. Other Authorizations. A requester has the responsibility to acquire all other permissions or authorizations required by federal, state, and local laws or regulations, including any required permits from the USACE Regulatory Program (Section 10/404/103 permits). In addition, an approval under Section 408 does not grant any property rights or exclusive privileges.

c. Alterations within Project Boundaries. This EC only applies to alterations proposed within the lands and real property interests identified and acquired for the USACE project and to lands available for USACE projects under the navigation servitude.

d. Requesters. A request for Section 408 permission can originate from a non-federal sponsor or an independent requester. For USACE projects with a non-federal sponsor as described in paragraph 6.e., the requester must either be the non-federal sponsor or have the endorsement of the non-federal sponsor prior to a written request, reference paragraph 7.c.(2), being submitted to USACE.

e. Non-Federal Sponsors. The district will provide a hardcopy or electronic copy of this EC to each non-federal sponsor described below:

(1) A non-federal sponsor that has provided assurances pursuant to Section 3 of the Flood Control Act of 1936, as amended (33 USC 701c), or Section 221 of the Flood Control Act of 1970, as amended (42 USC 1962d-5b), is responsible for ensuring that a USACE project is operated and maintained in accordance with requirements prescribed by USACE. Any proposed alteration that would require permission from USACE under Section 408 must be requested by or come through the non-federal sponsor. Accordingly, for improvements, excavations, construction, or changes to local flood protection works referenced in 33 CFR 208.10(a)(4) and (5), approval from USACE under Section 408 (and in accordance to procedures in this EC) must be obtained by the non-federal sponsor. If a USACE project has multiple non-federal sponsors in this category, concurrence in writing must be obtained by all non-federal sponsors prior to USACE approval of a Section 408 request.

(2) For USACE projects that were constructed in whole or in part pursuant to a cost-share agreement with a non-federal sponsor, but are operated and maintained by USACE, the district will obtain written concurrence by each of the non-federal sponsors for the proposed alteration prior to USACE approval of a Section 408 request.

(3) For requested alterations located in inland and intracoastal waterways, the district will issue a public notice to notify users of the waterways, navigation stakeholders, and other interested parties as the district deems appropriate.

f. Routine Operations and Maintenance Activities. Routine operations and maintenance (O&M) activities specified in the O&M manual and performed by the non-federal sponsor or USACE do not require permission from USACE under Section 408.

g. USACE Shoreline Management and Master Planning Programs. Activities contained in 36 CFR 327 do not require review for purposes of Section 408. The processes in 36 CFR 327 ensure that the requested activity will not be injurious to the public interest and will not impair the usefulness of the project. Engineer Regulation (ER) and Engineer Pamphlet (EP) 1130-2-550, Chapter 3, provides the procedures for the USACE Master Plan Program. ER 1130-2-406 provides the procedures for the USACE Shoreline Management Program.

h. Real Estate Outgrants.

(1) Real Estate outgrants are defined in ER 405-1-12, Chapter 8, or subsequent regulation.

(2) Outgrants issued to implement an approved Project Master Plan, including the Shoreline Management Plan or Operational Management Plan, do not require review for purposes of Section 408. See ER/EP 1130-2-550, Chapter 3.

(3) Outgrants issued pursuant to the procedures in ER/EP 1130-2-550, Chapters 16 or 17 ensure the requested alteration in the outgrant request will not be injurious to the public interest and will not impair the usefulness of the project; thus, meeting the intent of Section 408. However, the USACE team evaluating the outgrant requests involving an alteration to project

structures and projects as discussed in Appendices B – E of this EC must consider the additional criteria and factors discussed in those appendices. In addition, the team evaluating outgrant requests will determine if HQUSACE review is required by following the process described in paragraph 6.t. of this EC. If the determination is that HQUSACE review is required, then the outgrant request will require a documented Section 408 decision in accordance with this EC. When a Section 408 decision is required, the Real Estate Contracting Officer will not issue such outgrant unless the appropriate USACE decision maker with delegated authority grants permission for the alteration pursuant to Section 408. Any special conditions included pursuant to Section 408 must be included in the outgrant. If HQUSACE review is not required, then districts may follow procedures in ER/EP 1130-2-550, Chapters 16 or 17 for issuing the outgrant decision.

(4) Outgrant requests not included in ER/EP 1130-2-550, Chapters 16 or 17 require a Section 408 determination in accordance with this EC. The Real Estate Contracting Officer will not issue such outgrant unless the appropriate USACE decision maker with delegated authority grants permission for the proposed alteration pursuant to Section 408. Any conditions included in the grant of permission pursuant to Section 408 must be included in the outgrant.

i. Previously Approved Alterations. All previous approvals granted for alterations, including "encroachments" approved pursuant to 33 CFR 208.10 prior to the date of this EC are not invalidated by this EC.

j. Unauthorized Alterations. The policy of USACE is to pursue enforcement and correction of unauthorized alterations of covered projects. If an unauthorized alteration is discovered, the district, after consulting with the Offices of Counsel and Real Estate, should take the appropriate steps to remedy the unauthorized alteration. The Chief of Regulatory should be notified of any unauthorized alterations so the appropriate course of action can be taken with respect to Section 10/404/103 permits. Specific enforcement steps the district takes will depend on the particular nature of the unauthorized alteration and whether the unauthorized alteration is located on project boundaries where a non-federal sponsor holds the land rights for operations and maintenance. Non-federal sponsors with operations and maintenance responsibilities for the USACE project, reference paragraph 6.e.(1), remain responsible for ensuring no unauthorized alterations are occurring within the project boundaries.

k. Authorized Project Purpose. No granting of permission is allowed under Section 408 for a proposed alteration that would have an effect of deauthorizing a project or eliminating an authorized project purpose.

l. Completeness. Requests must be for complete alterations. A proposed alteration is considered complete if it results in a fully functional element once construction is completed.

m. Design and Construction Standards. A proposed alteration pursuant to Section 408 must meet current USACE design and construction standards. However a requester is not required to

bring those portions or features of the existing USACE project that are not impacted by the alteration up to current USACE design standards.

n. Hydrologic and Hydraulics Impacts. As a general rule, proposed alterations that will result in substantial adverse changes in water surface profiles will not be approved.

o. Type I Independent External Peer Review (IEPR). Per EC 1165-2-214, because Section 408 requests are not planning studies, Type I IEPRs are not required.

p. Regulatory Program Coordination.

(1) The granting or denial of permission pursuant to Section 408 is not a permit action handled by the Regulatory Program.

(2) If a proposed alteration also requires authorization pursuant to Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and/or Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (Section 10/404/103), district Regulatory and Section 408 personnel must coordinate throughout their respective evaluations.

(3) The decision on a Department of the Army permit application pursuant to Section 10/404/103 cannot and will not be rendered prior to the decision on the Section 408 request.

(4) Regulatory funds can only be used for a Section 10/404/103 action, which may include those actions with an associated Section 408 request. Regulatory staff can use Regulatory funds to participate in joint meetings and internally coordinate portions of shared documents when a Section 408 request also requires a Section 10/404/103 action. Regulatory funds cannot be used to develop or coordinate any components of the Section 408 request independent of a Section 10/404/103 action.

(5) Processing Department of the Army permit applications pursuant to Sections 10/404/103 will be accomplished in accordance with current regulations and guidance.

(6) In cases when a Section 408 request requires division or HQUSACE coordination and/or review, no Section 10/404/103 permit decision documentation will be forwarded to the division or HQUSACE in order to preserve the independent decision-making authority of the District and Division Commanders. The district, however, should ensure that the Section 408 documentation clearly articulates if Section 10/404/103 authorization is required.

q. In-kind Contribution Credit under Section 221 of the Flood Control Act of 1970, as amended (Section 221).

(1) Alterations of a USACE Project with an Ongoing Feasibility Study. There may be cases where a non-federal sponsor wishes to undertake alterations to an existing USACE project for which there is an ongoing USACE feasibility study and seek credit eligibility for those

alterations toward its cost share for the not-yet authorized USACE project (under Section 221 of the Flood Control Act of 1970). In such cases, any proposed alteration for which the non-federal sponsor is seeking credit cannot be initiated until the draft feasibility report is released for public review, an in-kind memorandum of understanding (MOU) for the work is executed, and Section 408 permission is issued. Additional authorizations, such as those required pursuant to Section 10/404/103 under the USACE Regulatory Program, may also be required before the non-federal sponsor can initiate any work.

(2) In Kind Contributions for an Authorized USACE Project. In those cases where a non-federal sponsor is undertaking work as an in-kind contribution on an authorized USACE project pursuant to an executed project partnership agreement that provides credit for such work, Section 408 permission is not required.

(3) Detailed guidance on crediting can be found in ER 1165-2-208.

r. Sharing of Sensitive Information. Requesters seeking sensitive information about an existing USACE project to develop a proposed alteration will submit requests for that information in writing. Sensitive information includes information that could pose a security risk or aid those intending to do harm to a USACE project. Examples include but are not limited to design analyses, as-builts or other drawings, specifications, location of deficiencies, operational information, and contingency plans. The office that generated or is responsible for the information requested will review the request in coordination with the district operational security officer, to determine whether it is sensitive. Districts should limit the distribution of sensitive information to only the information that is necessary for the proposed alteration. Districts will advise requesters that the information to be provided is sensitive and direct requesters to provide a list of individuals with whom the information will be shared. Districts will advise requesters that the sensitive information will not be shared with individuals not on the list. Reviewers should work with their District Office of Counsel to determine if a non-disclosure statement is needed. Districts may in some cases have to withhold sensitive information regardless of its necessity for the development of a proposed alteration. Requests for data submitted to USACE by other agencies will not be provided and will be referred to the other agency for a release determination.

s. Categorical Permission. The district, division, and/or HQUSACE have the ability to create a categorical permission for Section 408 that would cover potential alterations that are similar in nature and that have similar impacts. Categorical permissions should be established by providing public notice of the activities covered by the categorical permission. There should be appropriate documentation and analysis developed to determine that the impacts of activities covered by the categorical permission are permissible and that environmental compliance for those activities has been met. Once established, a simplified process to validate application of the categorical permission and specify any special conditions that may apply on a site-specific basis may be used.

t. Section 408 Decision Level. Certain proposed alterations, once recommended by the district and division, will require a final decision by the Director of Civil Works at HQUSACE. All other decisions on proposed alterations may be rendered by the District Commander unless a Division Commander establishes a regional process that requires that the decision be made by the Division Commander. If the answer to any of the following questions is "yes" and the district and division recommend approval, then the Section 408 request requires HQUSACE level review and decision, reference paragraph 7.c.(7):

(1) Does the proposed alteration require a Type II IEPR, reference EC 1165-2-214?

(2) Does the proposed alteration require an Environmental Impact Statement (EIS) in which USACE is the lead agency?

(3) Does the proposed alteration change how the USACE project will meet its authorized purpose? An example would be a proposed alteration to permanently breach a levee system for ecosystem restoration purposes but raise all structures behind the levee to achieve the same flood risk management benefits. This project still meets the authorized flood risk management purpose, but in a different manner.

(4) Does the proposed alteration preclude or negatively impact alternatives for a current General Investigation (GI) or other study?

(5) Is the non-federal sponsor for a USACE project proposing to undertake the alteration as in-kind contributions eligible for credit under Section 221 of Flood Control Act of 1970, as amended?

(6) Is the proposed alteration for installation of hydropower facilities?

(7) Is there a desire for USACE to assume operations and maintenance responsibilities of the proposed navigation alternation pursuant to Section 204(f) of Water Resources Development Act (WRDA) of 1986?

If the district is unsure, the district should engage the division and HQUSACE, reference Paragraph 9 of this EC, Vertical Teaming.

7. Procedures.

a. District Section 408 Coordinator. The District Commander will designate a Section 408 Coordinator responsible for ensuring processes in this EC are met and to ensure the proper coordination occurs among all the necessary district elements, including but not limited to, regulatory, real estate, counsel, planning, engineering, programs and project management, and/or operations. The Section 408 Coordinator will also ensure proper coordination among other districts if the USACE project crosses more than one district's area of responsibility. In addition the Section 408 Coordinator will track district expenditures, including funding provided by any

non-federal interests, for processing Section 408 requests on a fiscal year basis by funding source.

b. Description. In order to grant permission under Section 408, USACE must determine that the proposed alteration does not impair the usefulness of the USACE project, which includes retaining the project's authorized purpose, and is not injurious to the public interest. Because proposed alterations vary in size, level of complexity, and potential impacts, the procedures and required information to make such a determination are intended to be scalable. Based on the proposed alteration, districts will determine data, analyses and documentation necessary in order to make a determination regarding whether or not the proposed alteration does not impair the usefulness of the project and is not injurious to the public interest. Requirements for data, analyses and documentation may be subject to change as additional information about the Section 408 proposal is developed and reviewed.

c. Step-by-Step Procedures. The procedures have been grouped into nine steps: pre-coordination, written request, required documentation (including environmental compliance, if applicable), district-led Agency Technical Review (ATR), Summary of Findings, division review, HQUSACE review, notification, and post-permission oversight. Not all the steps will be applicable to every Section 408 request. In simple cases, steps may be combined or occur simultaneously. For more complex cases, there may be the need for extensive coordination between the district and requester throughout the process. Supplemental information for these steps specific to dams and reservoirs, hydropower, levees and floodwalls, flood risk management channels, and navigation can be found in the appendix appropriate to the type of infrastructure (Appendices B-E). At any time in the process if the district determines that the requirements will not or cannot be met, the district may deny the request prior to completing all the required steps. If a request is denied, the requester will be advised in writing as to the reasons for denial.

(1) Step 1: Pre-Coordination. Early coordination between USACE, the requester and/or non-federal sponsor, if applicable, is strongly recommended because it will aid in identifying potential issues, focusing efforts, minimizing costs, and protecting sensitive information. Districts shall ensure requesters are provided a hardcopy or electronic copy of this EC.

(2) Step 2: Written Request. The purpose of this step is to document the initiation of the Section 408 process. Information from this step will be used by the district to determine documentation and approval requirements.

(a) All requests for Section 408 permission must be submitted in writing to the District Commander of the appropriate USACE district office having jurisdiction over the USACE project that would be impacted by the alteration. Each district has the flexibility to determine the format in which this written request is submitted; however,

(b) The written request must include:

i. a complete description of the proposed alteration including necessary drawings, sketches, maps, and plans that are sufficient for the district to make a preliminary determination as to the location, purpose and need, anticipated construction schedule, and level of technical documentation needed to inform its evaluation. Detailed engineering plans and specifications are not required at Step 2, but could be submitted at the same time if available;

ii. a written statement regarding whether the requester is also pursuing authorization pursuant to Sections 10/404/103 and, if so, the date or anticipated date of application/pre-construction notification submittal;

iii. information regarding whether credit under Section 221of the Flood Control Act of 1970, as amended, or other law or whether approval under Section 204(f) of WRDA 1986 is being or will be sought;

iv. a written statement of whether the requester will require the use of federally-owned real property or property owned by the non-federal sponsor; and,

v. a written statement from the non-federal sponsor endorsing the proposed alternation, if applicable.

(3) Step 3: Required Documentation. The purpose of this step is to outline the documentation necessary for the district to determine whether the proposed alteration would impair the usefulness of the project or be injurious to the public interest. The list below is meant to provide an overview of the general requirements, but requirements are scalable to the nature of the proposed alteration.

(a) Technical Analysis and Design. The district should work closely with the requester to determine the specific level of detail necessary to make a decision for a particular alteration request. The minimum level of detail will be 60% complete plans and specifications and supporting technical analysis.

(b) Hydrologic and Hydraulics System Performance Analysis. The purpose of a hydrologic and hydraulics system performance analysis is to determine the potential hydrologic and hydraulics impacts of proposed alterations. Districts will determine if such an analysis is needed and, if so, the appropriate scope of analysis based on the complexity of the proposed alteration. The requester will be responsible for the analysis. Hydrologic and hydraulic system performance analyses will be applied to alterations that alter the hydrologic and/or hydraulic conditions (e.g., reservoir operations, bridge constrictions, hydropower installation, etc.) See Appendix F for more details regarding the requirements of a hydrologic and hydraulics system performance analysis.

(c) Environmental Compliance.

i. A decision on a Section 408 request is a federal action, and therefore subject to the National Environmental Policy Act (NEPA) and other environmental compliance requirements. While ensuring compliance is the responsibility of USACE, the requester is responsible for providing all information that the district identifies as necessary to satisfy all applicable federal laws, executive orders, regulations, policies, and ordinances. NEPA and other analysis completed to comply with other environmental statutes (e.g. Endangered Species Act) should be commensurate with the scale and potential effects of the activity that would alter the USACE project. The district will work with the requester to determine the requirements, which will be scaled to the likely impacts of the proposed alteration and should convey the relevant considerations and impacts in a concise and effective manner.

ii. The NEPA compliance process should be completed in an efficient, effective and timely manner consistent with guidance issued by the Council on Environmental Quality on March 6, 2012 entitled *Improving the Process for Preparing Efficient and Timely Environmental Reviews under the National Environmental Policy Act.* NEPA compliance should follow the process set forth in 40 CFR Parts 1500-1508 and the USACE civil works NEPA implementing regulations found in 33 CFR Part 230. Documentation for Section 408 requests do not require the same level of analysis or documentation needed for planning studies and, therefore, Appendix A and other portions of Part 230 specific to planning studies do not apply. However, in some cases, documentation from studies may be used to inform a Section 408 decision, such as a report that would be required for Section 204(f) of the Water Resources Development Act of 1986.

iii. For any final Environmental Impact Statement (EIS) or Environmental Assessment (EA) or other environmental compliance document, the requester's proposal will be identified as the "requester's preferred alternative."

iv. USACE has jurisdiction under Section 408 only over the specific activities or portions of activities that have the potential to alter a USACE project. Therefore, if a proposed alteration is part of a larger project (and/or its associated features) that extends beyond the USACE project boundaries, the district should determine what portions or features of the larger project USACE has sufficient control and responsibility over to warrant their inclusion in the USACE environmental review. The scope of analysis for the NEPA and environmental compliance evaluations for the Section 408 review should be limited to the area of the alteration and those adjacent areas that are directly or indirectly affected by the alteration. For example, a pipeline can extend for many miles on either side of the USACE project boundary. In this example, the scope of analysis would likely be limited to the effects of the pipeline within the USACE project boundary, but would not address those portions of the pipeline beyond the USACE project boundary. In contrast, a proposal to alter a levee system might require USACE to examine that proposal's potential effects on the reliability of the levee system to provide flood risk reduction to the area behind the levee system itself. As a general rule, if there are features of a larger project occurring outside of the USACE project boundaries that are so intimately connected to the features of the larger project altering a USACE project that they cannot be meaningfully

distinguished (e.g., a setback levee that is located outside of the original project boundary of the levee being replaced), the USACE Section 408 NEPA document should be broad enough to address all those effects. Generally, elements of the larger project that are not intimately connected to the features that would alter the USACE project (e.g., concessions being constructed off USACE property by the same entity requesting permission to construct boat access to a USACE reservoir) should not be included in the USACE environmental review.

v. Only reasonable alternatives need to be considered in detail, as discussed in the CEQ NEPA regulations at 40 CFR Part 1502.14. Reasonable alternatives must be those that are feasible, and such feasibility must focus on the accomplishment of the underlying purpose and need (of the requester) that would be satisfied by the proposed federal action (granting of permission for the alteration). For Section 408 requests, reasonable alternatives should focus on two scenarios: 1) no action (i.e., no proposed alteration in place) and 2) action (i.e. proposed alteration in place). Thus, examination of alternative forms of a proposed alteration that the requester has not proposed should only be included to the extent necessary to allow a complete and objective evaluation of the public interest and informed decision regarding the alteration request.

vi. Districts must make diligent efforts to involve the public in the decision-making process, including soliciting appropriate information from the public to inform the environmental analysis and public interest determination. For the purposes of Section 408 requests that are expected to have less than a significant effect on the human or natural environment, a public notice soliciting input will serve as the method of advising all interested parties of the proposed alteration for which permission is sought and by which information necessary to inform USACE's evaluation and review is solicited. As such, this public notice must be circulated to the public as early in the evaluation of a proposed alteration as possible to generate meaningful public and agency input to inform the evaluation and decision-making processes. Generally, Section 408 EAs should not be circulated for public comment. In circumstances where a proposed alteration is associated with a current study or other uncommon circumstances, the decision to circulate the Section 408 component of that EA will be approved by the Division Commander or the Division Commander's designee. Any decision to circulate an EA/Finding of No Significant Impact (FONSI) for a Section 408 request that also requires a Section 10/404/103 permit decision must be coordinated with the Regulatory Program to ensure that only information pertinent to non-Regulatory Program matters is included in the documented to be circulated.

vii. A number of categorical exclusions that allow completion of the NEPA process in an efficient manner for those activities that individually and cumulatively would not result in significant effects on the environment are included in 33 CFR 230.9. For example, categorical exclusions in 33 CFR 230.9(b) and (i) may have applicability to some of the smaller scale activities that may be encountered under Section 408. Real estate grants for rights-of-way as referenced in 33 CFR 230.9(i) should be broadly interpreted to include grants of rights-of-way by either USACE or the non-federal sponsor. A categorical exclusion may be used for Section 408, provided that care is taken to ensure that the proposed alteration is within the intended scope of the specific categorical exclusion used and extraordinary circumstances that may

require the preparation of an EIS or EA have been taken into consideration. It is recommended that the applicability and use of the categorical exclusion be documented in accordance with recent CEQ guidance, *Establishing, Applying and Revising Categorical Exclusions under the National Environmental Policy Act.*

viii. The district should use, to the extent possible, any NEPA documentation that may already exist for the federal project. In some cases NEPA documentation has already been completed through an existing or ongoing civil works study. The districts should use the information to the extent feasible and supplement the existing information as needed.

ix. If the proposed alteration is covered by an EIS in which USACE is a cooperating agency, the district may adopt or supplement that EIS and develop a Record of Decision (ROD) that is specific to the proposed alteration. For hydropower alterations, USACE and FERC have entered into an MOU for meeting NEPA requirements (see Appendix C).

(d) Real Estate Requirements. A list of all real property interests required to support the proposed alteration must be provided, including those in federally managed lands and those owned by the requester. If a non-standard estate is proposed, the district must follow the normal approval requirements outlined in EC 405-1-11 and Chapter 12, ER 405-1-12 or subsequent regulation. Maps clearly depicting both existing real estate rights and the additional real estate required must also be provided. If the lands are under the control of the Army, the applicant will work with the district to determine lands impacted. Additional information may be needed. If it is determined that an outgrant of Army land is required, a *Report of Availability and Determination of Availability* must be completed by the district in accordance with AR 405-80 and Chapter 8, ER 405-1-12 or subsequent regulation.

(e) Discussion of Executive Order 11988 Considerations. The district may require the requester to submit sufficient data in order that the district may conduct its analysis in accordance with ER 1165-2-26 to ensure that the proposed alteration is compliant with EO 11988. The request should be assessed as to whether there would be induced development in the floodplain as a result of the proposed alteration and address the positive and negative impacts to the natural floodplain functions.

(f) Requester Review Plan Requirement. The district has the flexibility to decide whether or not the requester must prepare a review plan for the alteration for district approval. A review plan is required when a Type II Independent External Peer Review (IEPR) is required. If the district determines, by following procedures in EC 1165-2-214, a Type II IEPR is required, then at minimum the requester is required to submit a Type II IEPR review plan. The Risk Management Center (RMC) will be the Review Management Organization (RMO) and is required to endorse in writing all review plans for Type II IEPRs to ensure that the review plans reflect a level of review commensurate with the scope and scale of the proposed alterations. All requester-generated review plans for Type II IEPRs will be approved by the Division Commander.

(g) Operations and Maintenance. Requesters must identify any operations and maintenance requirements needed throughout the life of the proposed alteration and the responsible entity for the operations and maintenance into the future. For instances when there may be a desire for USACE to assume or incorporate operations and maintenance of the proposed alteration as part of its responsibilities for the USACE project being modified, a justification must be provided. See Appendix E for federal assumption of maintenance associated with navigation features. Any alteration to a project operated and maintained by a non-federal sponsor and for which an update to the operations and maintenance manual is required, the non-federal sponsor will provide USACE with sufficient information to update the O&M manual. The modified O&M manual will be subject to environmental compliance in the same manner as the requested alteration. The non-federal sponsor will acknowledge in writing their continued responsibility to operate, maintain, repair, rehabilitate and replace the USACE project at no cost to the government and will hold and save the government free from all damages arising from construction, operation, maintenance, repair, rehabilitation, and replacement of the project.

(h) Other Information. Based on the alteration request, the district may require the requester to provide additional information to complete its evaluation.

(4) Step 4: District-Led Agency Technical Review.

(a) District Review Plans. The purpose of the district review plans is to define the requirements, procedures, and specific details of how the district-led Agency Technical Review (ATR) will be conducted for Section 408 proposals. In addition, district decisions about required documentation, Type II IEPRs and approval level should be documented in the review plans. Districts have the option to develop an overarching review plan, called a Procedural Review Plan, that establishes the review procedures to be used for Section 408 requests similar in nature and that have similar impacts. Procedural Review Plans must be endorsed in writing by the Risk Management Center and approved by the Division Commander. Otherwise, the district will develop an alteration-specific review plan to be approved by the Division Commander.

(b) District-led Agency Technical Review. For the purposes of Section 408, the purpose of a district-led ATR is to determine if requirements set forth in this EC have been met. Reviewers can be from the home district. If lacking the appropriate expertise, the district should supplement their staff with outside subject matter experts through appropriate communities of practice, centers of expertise, or other offices. Review teams should be comprised of reviewers with the appropriate independence and expertise to conduct a comprehensive review in a manner commensurate with the complexity of the Section 408 proposal. It should be noted, DrChecks can be used for Section 408 ATRs, but it is not required. The ATR team will make the following determinations:

i. Impair the Usefulness of the Project Determination. The objective of this determination is to ensure that the proposed alteration will not limit the ability of the project to function as authorized and will not compromise or change any authorized project conditions, purposes or outputs. All appropriate technical analyses including geotechnical, structural, hydraulic and

hydrologic, real estate, and operations and maintenance requirements, must be conducted and the technical adequacy of the design must be reviewed. If at any time it is concluded that the usefulness of the authorized project will be negatively impacted, any further evaluation under 33 USC 408 should be terminated.

ii. Injurious to the Public Interest Determination. Proposed alterations will be reviewed to determine the probable impacts, including cumulative impacts, on the public interest. Evaluation of the probable impacts that the proposed alteration to the USACE project may have on the public interest requires a careful weighing of all those factors that are relevant in each particular case. The benefits that reasonably may be expected to accrue from the proposal must be compared against its reasonably foreseeable detriments. The decision whether to approve an alteration will be determined by the consideration of whether benefits are commensurate with risks. If the potential detriments are found to outweigh the potential benefits, then it may be determined that the proposed alteration is injurious to the public interest. This determination is not the same as the "contrary to the public interest determination" that is undertaken pursuant to Sections 10/404/103. Factors that may be relevant to the public interest depend upon the type of USACE project being altered and may include, but are not limited to, such things as conservation, economic development, historic properties, cultural resources, environmental impacts, water supply, water quality, flood hazards, floodplains, residual risk, induced damages, navigation, shore erosion or accretion, and recreation. This evaluation should consider information received from the interested parties, including tribes, agencies, and the public.

iii. Legal and Policy Compliance Determination. A determination will be made as to whether the proposal meets all legal and policy requirements. District Office of Counsel concurrence is required. The compliance determination for any Section 10/404/103 permit decision associated with the proposed alteration is separate from and will not be included in this compliance determination.

(5) Step 5: Summary of Findings. Upon completion of the district ATR and demonstration of environmental compliance, the district will develop a Summary of Findings (content and format scalable to the alteration) to summarize the district rationale and conclusions for recommending approval or denial. The Summary of Findings will serve as the basis for the final decision on the proposed alteration. If the district determines that HQUSACE approval is required, the district will submit the Summary of Findings to the division for review. The Summary of Findings will be signed by the District Commander (or designee) and contain the following, if applicable:

(a) Summary of rationale and conclusions for recommending approval or denial;

(b) Written request;

(c) A physical and functional description of the existing project, including a map;

(d) Project history and authorization;

(e) Impact to the usefulness of the USACE project determination;

(f) Injurious to the public interest determination;

(g) Policy Compliance certification;

(h) Certification of Legal Sufficiency from District Office of Counsel;

(i) Certification by the Chief of the District Real Estate Division that the real estate documentation is adequate;

(j) A description of any related, ongoing USACE studies (if applicable), including how the proposed alteration may impact those studies;

(k) Summary of any changes to the O&M manual. If the district has determined that USACE would assume O&M responsibilities as part of its responsibilities for the USACE project, include the rationale and any anticipated increase in USACE O&M costs.

(l) Summary of any changes to a project partnership agreement (PPA) or local cooperation agreement (if applicable);

(m) Applicable environmental compliance documentation including but not limited to NEPA documentation, Endangered Species Act (ESA) documentation, and other necessary documentation;

(n) Finding of No Significant Impact (FONSI) or Record of Decision (ROD) (These will be signed concurrently with the Section 408 decision. If HQUSACE approval is required, these will be draft and will be signed by the Director of Civil Works);

(o) Summary of the acceptance and use of funds pursuant to Section 214 if applicable as outlined in Appendix G; and,

(p) Any additional final conclusions or information, including any associated controversial issues.

(6) Step 6: Division Review (if required).

(a) Upon receipt of the district prepared Summary of Findings for HQUSACE review and decision, the division will review the submittal and provide comments to the district within 30 days unless the division notifies the district that additional review time is needed. The division will review the Summary of Findings for policy compliance and legal sufficiency; quality assurance and completeness; identification of conflicts with ongoing studies; and confirmation of the need for HQUSACE review and decision. The district is responsible for addressing division comments prior to submission to HQUSACE. The timeline required to address comments may

vary depending on significance of the division comments. If the division decides the district may approve the Section 408, that rationale should be documented as part of the administrative record.

(b) The Division Commander will either deny the Section 408 request or recommend approval to HQUSACE. If the division denies the request, this decision will be transmitted to the district. If the division recommends approval, the division will forward an electronic copy of the Summary of Findings and the Division Commander's recommendation to the appropriate HQUSACE Regional Integration Team (RIT). This may be forwarded to HQUSACE during the publication period of the final EIS (if an EIS is required for the alteration).

(7) Step 7: HQUSACE Review (if required).

(a) Upon receipt of the Section 408 submittal from the division, the RIT will forward the Summary of Findings and division recommendation to the HQUSACE Office of Water Project Review (CECW-PC) for a policy compliance review. The RIT will ensure that the appropriate reviewers include engineering and other appropriate subject matter experts such as navigation, levee safety, dam safety, real estate and environmental. HQUSACE will review and provide comments within 30 days, unless HQUSACE notifies the division that additional review time is needed. The timeline required to address comments will vary depending on significance of the HQUSACE comments. The RIT will coordinate the results, as needed, to correct or improve the package as necessary to address concerns. The district is responsible for addressing HQUSACE comments or coordinating with the requester for comment resolution.

(b) The RIT will draft the final HQUSACE decision memorandum for the Director of Civil Work's signature.

(c) If the Summary of Findings contains a draft FONSI, the Director of Civil Works will sign the FONSI concurrently with the Section 408 decision, if permission is granted.

(d) If the Summary of Findings contains a draft ROD, HQUSACE will not finalize the Section 408 decision sooner than 30 days after the publication of the final EIS and the district has transmitted an updated draft ROD. HQUSACE will finalize the ROD concurrently with the Section 408 decision.

(e) The RIT will provide the final HQUSACE decision memorandum and signed FONSI or ROD, if applicable, to the division that will in turn provide the decision to the district.

(8) Step 8: Notification. The District Commander is responsible for providing a written notification to the requester for all Section 408 requests, regardless of the decision level. Appendix H contains an example letter.

(a) If the final decision is to deny the request, the requester will be advised in writing as to the reason(s) for denial.

(b) If the final decision is to approve the request, the District Commander will provide a written approval document. In situations where the district also is evaluating a Section 10/404/103 permit application, the district may forward the Section 408 decision letter with the Section 10/404/103 permit decision, once it is made. For cases involving a categorical permission, the written approval will be validation that the categorical permission is applicable.

(c) Special Conditions. For approved alterations, the District Engineer may include special conditions. Examples of special conditions may include:

i. The requester must obtain approval by the district of 100% plans and specifications prior to construction.

ii. The requester must have both the Section 408 permission and appropriate real estate document prior to construction.

iii. The requester must obtain the appropriate Section 10/404/103 permits prior to construction.

iv. The requester must be responsible for implementing any requirements for mitigation, reasonable and prudent alternatives, or other conditions or requirements imposed as a result of environmental compliance.

v. Note, in the event of any deficiency in the design or construction of the requested activity, the requestor is solely responsible for the remedial corrective action, and any permission granted under Section 408 should explicitly state this responsibility.

(9) Step 9: Post-Permission Oversight.

(a) Construction oversight. The district should develop procedures for monitoring construction activities. The purpose is to ensure the Section 408 permittee is constructing the alteration in accordance with the permission conditions. Any concerns regarding construction should be directed to the Section 408 permittee (and the non-federal sponsor if the Section 408 permittee is not the non-federal sponsor) for resolution. Oversight should be commensurate with the level of complexity of the alteration.

(b) As-builts. Drawings showing alterations as finally constructed will be furnished by the Section 408 permittee to the district after completion of the work. As-builts must be provided within 180 days of construction completion.

(c) Operations and Maintenance (O&M) Manual Updates. The Section 408 permittee and/or non-federal sponsor is required to provide the district with sufficient information to update the O&M manual, as required. O&M manual updates may range from simple removal and replacement of paragraphs or entirely new manuals depending on the scope and complexity of the alteration. The district is responsible for reviewing and approving or developing any updates

needed to the O&M manual as a result of the alteration. At a minimum, the update should include a description of the new features, reference to the Section 408 approvals, as-builts, and instructions regarding O&M of any new features not included in the existing manual. Reference ER 1110-2-401 or ER 1130-2-500 for information on O&M manuals.

(d) Post Construction Closeout. Post construction closeout requires an on-site inspection of the completed alteration. The district may coordinate post construction closeout with the other federal, state or local agency. Where projects require an update to the O&M manual or PPA, the USACE district must conduct the post construction inspection and provide notification to the applicant and non-federal sponsor regarding acceptance or any corrective actions that are required. Notification that the alteration was constructed in accordance with the permit conditions must include a copy of the updated O&M manual.

(e) Administrative Record. The district will keep an administrative record for each Section 408 proposal. The administrative record should include all documents and materials directly or indirectly considered by the decision maker and should be ordered chronologically. It should include documents, materials, and a record of the offices and staff that are pertinent to the merits of the decision, as well as those that are relevant to the decision-making process.

8. Funding. Potential available sources of funds for review activities include:

a. Applicable project-specific appropriated funds in investigations, construction, operations and maintenance, or flood control - Mississippi River and Tributaries may be used for Section 408 reviews that are specific to the applicable project. Vertical team concurrence through division and HQUSACE RIT must be obtained prior to use of investigations or construction funds.

b. For federally authorized levee systems, channels, and dams operated and maintained by a non-federal sponsor, district Inspection of Completed Works funds may be used. In addition, on a case by case basis, for Section 408 requests critical to the functioning of these levee systems, channels, and dams and for reducing risk to life safety, requests for funding may be submitted to the HQUSACE Levee Safety Program Manager;

c. For federally authorized navigation projects, district project condition surveys funds may be used if the navigation projects do not have funding within their operations and maintenance account;

d. Funding for district coordination on Federal Energy Regulatory Commission (FERC) Activities. The funding for district coordination regarding FERC activities related to non-federal hydropower development will be provided by HQUSACE. Districts should request funding from HQUSACE through their respective division in coordination with their designated FERC Hydropower Coordinators. The request will be processed at HQUSACE through their respective regional integration team and forwarded to the HQUSACE Hydropower Business Line Manager, CECW-CO-H, for final approval and processing;

e. Funding to Process Section 408 Requests under Section 214. Funds may also be accepted under the authority of Section 214 of WRDA 2000, as amended, to expedite the review and evaluation of a Section 408 request. Funds may only be accepted from non-federal public entities. Examples of acceptable uses include, but are not limited to Agency Technical Review, real estate evaluation, copying or other clerical/support tasks, site visits, travel, coordination activities, additional personnel (including support/clerical staff), contracting support for technical services and environmental review and filing the environmental compliance documents. The processes applicable to accepting funds under the authority of Section 214 or WRDA 2000, as amended, are contained in Appendix G.

f. Federal Transportation Projects. In certain circumstances for alterations necessary for federal transportation projects, USACE may accept and expend funds provided by a state DOT agency pursuant to section 6002(j) of Public Law 109-59 (codified at 23 USC 139(j)) provided the Secretary of Transportation finds such review activities directly and meaningfully contribute to an underlying transportation project. In such cases, USACE only may accept funds in amounts necessary for USACE to meet the time limits for environmental review established for the project and may only accept funds for activities beyond the normal and ordinary capabilities permitted by USACE's general appropriations; and,

g. Funding to Process Section 408 Requests under Section 204(b). Water Resources Development Act of 1986, as amended, Section 204(b) allows non-federal interests to contract with USACE to provide technical assistance in obtaining all necessary permits, which includes Section 408 permission, associated with non-federal improvements to navigation features pursuant to Section 204(a) of WRDA 86.

9. Vertical Teaming. Vertical teaming between the district, division, and HQUSACE is encouraged when there is doubt as to the appropriate course of action related to the application of this guidance. Vertical teaming is also recommended to promote early coordination of potential alterations that may have Congressional interest or policy implications. Please coordinate through the appropriate HQUSACE's RIT.

FOR THE COMMANDER:

9 Appendices
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STEVEN L. STOCKTON, P.E.
Director of Civil Works

APPENDEX B

Federal Levee and Channel Modification Projects Within the Kansas City District

USACE KANSAS CITY DISTRICT FEDERAL LEVEE SYSTEMS:

FRANKFORT LEVEE

Description: The Frankfort, KS Flood Protection Project (FKFPP) contains approximately 17,862 linear feet of main stem levees, tieback levees and sub-levees. The main stem levee is 14,952 feet in length and has a height of 10-12 feet. The levee segment from Station 104+30 to Station 113+65 also serves as an oxidation pond dike and was in place prior to the start of levee construction. The tieback levee embankment is 2,060 feet in length and is roughly 5 feet in height. The average side slope is 1V on 3H. The population at risk if the levee were to fail is 342 and the value of urban and agricultural structures protected by the levee is $60,198,000, 105 acres of which is agricultural, 90 is residential, 30 is commercial, and 10 acres of nontaxable land, for a total of 235 protected acres. The levee was designed for a flood discharge of 43,000 cfs, a 100 year flood event.

Location: The Frankfort, KS Flood Protection Project is located on the right bank of both the Black Vermillion River and the Little Timber Creek, in Marshall County, Kansas. The Black Vermillion River flows into the Big Blue River about 11 miles downstream from Frankfort. The confluence of these two streams is roughly 28 miles upstream from Tuttle Creek Dam.

Authority: The Frankfort, KS Flood Protection Project (FKFPP) was authorized by the Flood Control Act approved on 3 July 1958 (Title II Public Law 85-500 85th Congress).

Construction Date of Original Project: Construction of the System was initiated 10 December 1959 with completion of the project occurring 23 August 1963. The final Operations and Maintenance Manual for the FKFPP was provided to the Sponsor in September 1963 and the project was placed in operation on 24 October 1963.

Sponsor:
City of Frankfort
Frankfort, Kansas 66427

GYPSUM LEVEE

Description: The Gypsum, Kansas Flood Protection Project contains approximately 3.72 miles of main stem levee and a short trail levee. The main stem levee provides flood protection for the City of Gypsum. The basic levee section was constructed with a crown width of 10 feet and 1V on 3H landside and riverside slopes. Flood protection facilities consist of the levee around the City of Gypsum, the high flow diversion channel for Spring Creek, diversion channel for Bull Run Creek, channel improvement of Gypsum Creek, one stop log gap, and two drainage structures. The main stem levee has a crown width of 10 feet and 1V on 3H side slopes. There is also a dike fill section on the left

bank upstream of Station 11+30. This section has a crown width of 10 feet and 1V on 6H side slopes. The protected area consists of 480 acres of residences and businesses in Gypsum and nearby farmland. At the time of construction, approximately 150 acres of the protected area was developed, including residential, public, and commercial buildings, waterworks facilities, and a sewage treatment plant. According to data contained in the National Levee Database the population at risk if the levee were to fail is 412 and the value of structures protected by the levee is $38,813,000. The design flood discharge from Gypsum Creek is 48,000 cfs, a 100 year flood event.

Location: The levee begins along the north side of the natural Spring Creek channel at Station 11+30, approximately ¼ mile west of Kipp Road and the start of the diversion channel, ending at high ground at Station 26+85. It begins again at station 45+50 and continues around the city ending approximately 500 feet north of E. McReynolds Road at station 226+60.

Authority: The Gypsum, KS Flood Protection Project was authorized by the Flood Control Act of 1948 (as amended by Public Law 685, 84th Congress).

Construction Date of Original Project: The Corps of Engineers awarded a contract for construction of flood protection works to Ed Miller and Sons, Inc. on 6 October 1978. Work was started 18 October 1978 and completed 7 May 1980. In addition, a contract for alteration of railroad facilities was awarded to Missouri Pacific Railroad on 3 November 1978. Work was started on 12 March 1979 and completed on 4 May 1981. A contract for reseeding was awarded to the Kansas State Extension Forester on 7 October 1980. The reseeding was completed on 7 November 1980.

Sponsor:
City of Gypsum
Gypsum, Kansas 67448

MANHATTAN LEVEE

Description: The Manhattan Kansas Flood Protection Project contains approximately 5.5-miles of main stem levee and a ponding levee. The main stem levee provides flood protection for the City of Manhattan and is divided into three sections; the Wildcat Creek levee segment from Station 8+50 to 83+00; the Kansas River levee segment from 83+00 to 170+00; and the Blue River levee segment from Station 170+00 to the end of the levee at Station 272+85. The main levee is composed primarily of random fill with an impervious fill cap on the top and riverside face of the levee. This levee generally has slopes of 1V on 3H. The population at risk if the levee were to fail is 4716 and the value of structures protected by the levee is $445,103,000. The design flood discharge is 220,000 cfs from the Kansas River and 110,000 cfs from Tuttle Creek Reservoir into Big Blue River, or a 100 year flood event. Maintenance cost of the unit averages $20,000 annually (1993 dollars)

Location: The Manhattan, KS Flood Protection Project is located in Kansas Counties of Riley and Pottowatomie and lies on the left bank of both the Kansas River and Wildcat Creek and on the right bank the Big Blue River. Both Wildcat Creek and the Big Blue River are tributaries to the Kansas River and more than half the project lies on these tributaries.

Authority: This project is a federally authorized and non-federally operated and maintained system that was authorized by the Flood Control Act approved in 1954 (Title II Public Law 780 83rd Congress).

Construction Date of Original Project: Section I runs from Station 8+50 to Station 140+40, roughly midway along the Kansas River Section of the project. The contract for Section I construction was awarded to Clarkson Construction on 13 April 1961 and was completed on 31 December 1962. Section II of the project ran from Station 140+40 to the end of the project at Station 272+85. The contract for Section II construction was awarded to D &M Enterprises, Inc. on 18 June 1962 and was completed on 14 May 1963. Additionally a third contract was awarded to Chicago, Rock Island & Pacific Railroad (C.R.I. & P. R.R.) to design and construct a track raise around Station 83+24. This third contract was awarded on 5 August 1960 and completed on 6 October 1964.

Sponsor:
City of Manhattan
Manhattan, Kansas 66502

WATER WORKS UNIT

Description: The Waterworks Unit is part of the Topeka Flood Protection Project and is located in Topeka, Shawnee County, Kansas on the right bank of the Kansas River between River Miles (RM) 87.7 and 86.4. The Unit is on the right bank of the Kansas River and forms a “U” shape with Interstate 70 serving as the southern boundary. This Unit protects the City of Topeka’s municipal water treatment plant, which serves a large portion of Shawnee County. The system is overall approximately 0.7 miles in length. The unit has approximately 1,998 feet of levee with a 10-ft crown and height from 10 to 14 feet, 4 gated drainage structures, 9 individually pumped relief wells, 9 piezometers, 4 stoplog gaps, 1 sandbag gap, 18 different floodwall sections (34 monoliths with a total length of 1,662 feet), and conveyance lines from two Kansas River intakes for the water treatment plant. The earthen levees include riprap and toe protection on riverward slopes, seeded landside slopes, surfaced crowns, and ramps. The Waterworks Unit protects the municipal water treatment plant, which supplies drinking water to the majority of the residents in the City of Topeka. Flooding of this water treatment facility could threaten the drinking water supply if flood water was to infiltrate the treated water storage reservoir or disable pumping and treatment equipment. The Topeka flood protection units were designed for Kansas River discharges of 314,000 cfs above the mouth of Soldier Creek and 364,000 cfs below the mouth of Soldier Creek or a 300 year flood event.

Location: The west levee begins near levee Station -3+00 and runs north to Station 0+00 where it ends at the floodwall. The east levee picks up on the other side of the floodwall at Station 16+62.17 and runs east and then south to meets up with the Interstate 70 embankment. Riprap protection extends along the riverside slopes of the east levee from Station 16+62.14 to 28+90.

Authority: The Topeka, Kansas Flood Protection Project, of which Waterworks Unit is a part, was originally authorized as outlined by the Flood Control Act approved June 22, 1936 (H. Doc. 195, 73rd Cong., 2nd Sess.). Additional studies undertaken in the Kansas River basin resulted in the development of the project which was recommended in 1941 and included in House Document No. 64 (published in 1950). Subsequent to the July 1951 flood, and prior to authorization, modifications were again made in the proposed plan for the Topeka project. These proposed modifications were outlined during Committee Hearings in May 1954 and the plan, as modified, was authorized by the Flood Control Act approved September 2, 1954 (H. Doc. 642, 8lst Cong., 2nd Sess.).

Construction Date of Original Project: The construction of the earth levee, floodwall, and other appurtenances to protect City of Topeka's Waterworks was completed on March 4, 1939. On September 5, 1958, work began to raise the existing levee, construct an underseepage control system for the existing floodwall, and construct a new levee. These modifications were completed on June 15, 1959.

Sponsor:
City of Topeka
Topkea, Kansas 66616

AUBURNDALE LEVEE

Description: The Auburndale Unit connects the Waterworks and South Topeka Units and is primarily the Interstate 70 highway embankment. The unit consists of approximately 1.3 miles of zoned interstate highway fill, separate levee embankment fill, underseepage control facilities, two pumping stations, nine drainage structures, the Waite Street Tieback Levee and large ponding area. The unit consists of two levees: The main stem levee which utilizes Interstate Highway 70 over 50 percent of its length and the Waite Street Sub-Levee which runs perpendicular to the main stem levee. Densely populated urban neighborhoods characterize the Auburndale area. The unit protects an estimated investment of $119.2 million, including 616 residences, 18 businesses, Capital City Public School, and the office of the State of Kansas Division of Printing. The Topeka flood protection units were designed for Kansas River discharges of 314,000 cfs above the mouth of Soldier Creek and 364,000 cfs below the mouth of Soldier Creek or a 300 year flood event.

Location: The Auburndale unit is located on the right bank of the Kansas River beginning at river mile 86.7 and extending to mile 87.8. The upstream end of the main stem levee (Station 0+00) begins where the Interstate Highway 70 crosses the

Waterworks Unit at Interstate 70 Station 79+50. The levee extends eastward as part of the highway fill for several hundred feet where it gradually pulls away (the highway curves slightly southeasterly into an interchange and the levee ties through the north end of the Storey Street interchange (also known as Macvicar Avenue). The main stem levee then extends southeasterly to intersect the access road to the Ward-Martin Creeks Pumping Plant. The levee is incorporated into the access road from there to approximate levee Station 30+00 where it transitions into the highway embankment again. It continues as a zoned portion of the highway fill to the tie at the South Topeka Unit (Interstate 70 Station 137+10 and levee baseline Station 58+80, approximately).

Authority: The Topeka, Kansas, Flood Protection Project was authorized by the Flood Control Act which was approved September 3, 1954.

Construction Date of Original Project: Initial construction of the Auburndale Unit began on July 7, 1961 and was completed on October 18, 1962.

Sponsor:
City of Topeka
Topkea, Kansas 66616

NORTH TOPEKA LEVEE

Description: Together with the Soldier Creek Diversion Unit, the North Topeka Unit protects 6,040 acres comprised mainly of industrial, light industrial, commercial, and residential areas, with some land used for farming purposes. The unit includes approximately 9.3 miles of levees with 3 pumping stations (Quincy Street, Fairchild, and Soldier Creek), 25 drainage structures, 1 sandbag gap, 1 stoplog gap, 3 relief wells, and 2 piezometers. The basic levee section was constructed with a crown width of 10 feet, 1V on 3H landside and riverside slopes, and varies from three feet to seventeen feet in height above the ground surface. The embankment is primarily zoned, rolled fill with minor amounts of rock fill. Riprap protection was applied to portions of the riverside slopes of the levee. Stability of the levee is assured by a stability berm landside and/or riverside of the levee slope in certain areas. The left bank area of the Kansas River protected by the North Topeka unit contains significant heavy industry, including a Goodyear Tire plant, as well as residences and farm acreage on the east and west ends of the area. Properties in the North Topeka area include 2,752 residences and 539 businesses and public facilities which, together with highways, roads, and rail, have a total estimated investment of $1.47 billion. The Topeka flood protection units were designed for Kansas River discharges of 314,000 cfs above the mouth of Soldier Creek and 364,000 cfs below the mouth of Soldier Creek or a 300 year flood event.

Location: North Topeka Unit protects the area that lies north of the Kansas River. On the west, the levee begins at the Soldier Creek Diversion Unit as Menoken Road and crosses to the south side of the Union Pacific Railroad tracks. The levee parallels the Union Pacific tracks to the embankment of Kansas State Highway No.4, which is utilized

as a levee up to the left bank of the Kansas River. The levee continues along the left bank of the Kansas River to the Union Pacific Tracks at Levee Station 492+15 where it ties into the right bank Soldier Creek Levee.

Authority: The Topeka, Kansas, Flood Protection Project was authorized by the Flood Control Act, which was approved September 3, 1954.

Estimated Original Cost of Project: The estimated cost for the North Topeka Unit only in the Topeka, Kansas, Flood Protection Project Design Memorandum No. 15, based on 1961 price levels, was $4,410,000 federal and $1,030,000 non-federal.

Construction Date of Original Project: The North Topeka levee unit was constructed in two segments. The first (Section I) segment began upstream at Menoken Road and extended downstream to Station 298+15 at the Union Pacific Railroad (UPRR) Bridge. Construction on Section I was completed at the end of 1964 and turned over to the North Topeka Drainage District on 1 February 1965. Section II, which extends downstream to the Soldier Creek – Kansas River confluence was turned over to the drainage district on January 30, 1967.

Sponsor:
City of Topeka
Topkea, Kansas 66616

SOUTH TOPEKA OAKLAND LEVEE

Description: The South Topeka Unit is located in the central portion of Topeka, Kansas on the right bank of the Kansas River beginning at river mile 84.8 and extending to mile 86.5 and provides flood protection by tying together the Auburndale and Oakland Units. The unit has approximately 1.4 miles of earthen levee with a 10-foot crest that ranges from three to 16 feet above the natural ground line. In addition the system also has 0.39 miles of floodwall, 27 relief wells, 14 piezometers, 1 stoplog gaps, 1 sandbag gap, and 15 drainage structures. The earthen levees include riprap and toe protection on riverward slopes, seeded landside slopes, surfaced crowns, and ramps. The South Topeka Unit protects approximately 275 acres of a highly developed business and industrial area which includes a city park, railroad yards, and various industries and businesses. The protected area is adjacent to the main business district of Topeka.

Location: The South Topeka Unit is located between Kansas River Miles 84.8 and 86.5 at Topeka, Shawnee County, Kansas. The South Topeka Unit ties into the Auburndale Unit on the west and Oakland Unit on the east.

Authority: The Topeka, Kansas, Flood Protection Project, of which the South Topeka Unit is a part, was authorized by the Flood Control Act approved June 22, 1936 (House Document No. 195, 73rd Congress, 2nd Session). The modification was authorized by the

Flood Control Act approved September 2, 1954 (House Document No. 642, 81st Congress, 2nd Session).

Estimated Original Cost of Project: The estimated cost for the South Topeka Unit as provided in the South Topeka Unit, Topeka, Kansas, Flood Protection Project Design Memorandum No. 13 (based on 1966 price levels) was $2,430,000 Federal and $ 280,000 non-Federal.

Construction Date of Original Project: The initial construction of the South Topeka Unit began in 1938 and was completed after several modifications on August 30, 1971.

Sponsor:
City of Topeka
Topkea, Kansas 66616

SOLDIER CREEK DIVERSION UNIT

Description: The name of the flood protection project is Soldier Creek Diversion Unit. The flood protection project consists of eight systems, six on the left bank (LB1, LB2, LB3, LB4, LB5, LB6) and 2 on the right bank (RB1, RB2).

LB1: Soldier Creek Unit LB1 protects agricultural land on the left bank of the Soldier Creek Diversion and has a total length of approximately 0.85 miles. The levee ties into high ground near NW 33rd Street.

LB2: Soldier Creek Unit LB2 protects agricultural land and businesses on the left bank of the Soldier Creek Diversion and has a total length of approximately 1.45 miles. The levee ties into high ground near NW 33rd Street. The NW Menoken Road Bridge crosses the levee and channel near the midpoint of the levee segment.

LB3: Soldier Creek Unit LB3 protects agricultural land on the left bank of the Soldier Creek Diversion and has a total length of approximately 1.82 miles. The levee ties into high ground approximately 2,000 feet north of the Soldier Creek Diversion Channel on the west end and near the intersection of NW Hickory Ridge Lane and NW 32nd Street on the east end. NW Brickyard Road and US-75 cross over the levee and diversion channel on the east half of the system. No documentation was found for the US-75 bridge construction and associated levee modifications.

LB4: Soldier Creek Unit LB4 protects a small residential and agricultural area on the left bank of the Soldier Creek Diversion and has a total length of approximately 0.62 miles, which consists primarily of tie-back levee. NW Rochester Road crosses the levee at approximately its mid-point.

LB5: Soldier Creek Unit LB5 protects primarily residential properties on the left bank of the Soldier Creek Diversion and has a total length of approximately 1.23 miles. The west

side of the levee terminates approximately 500 feet west of the NW Topeka Boulevard channel crossing, then the levee wraps up Indian Creek where it ties into NE Walnut Grove Road on the east end. N Kansas Avenue crosses over the levee and diversion channel approximately 1,300 feet east of the NW Topeka Boulevard crossing.

LB6: Soldier Creek Unit LB6 protects agricultural land on the left bank of the Soldier Creek Diversion and has a total length of approximately 1.82 miles. The levee ties into NE Kaw Valley Road on the west end and into an existing non-federal agricultural levee on the east end. US-24 and the Union Pacific Bridge cross the levee and diversion channel.

RB1: Soldier Creek Unit RB1 protects agricultural land on the right bank of the Soldier Creek Diversion and has a total length of approximately 2.87 miles. On the northwest end, the levee ties into high ground approximately 500 feet north of the crossing of NW 39th Street and the Union Pacific Railroad. On the southeast end, the levee ties back into the Silver Lake Ditch (left bank) and ends at the Union Pacific Railroad crossing of that ditch. NW Landon Road crosses over the levee and diversion channel.

RB2: As part of the North Topeka Unit, Soldier Creek RB2 protects residential properties, commercial/industrial properties, and agricultural land on the right bank of the Soldier Creek Diversion and has a total length of approximately 7.56 miles. On the west end, the levee ties back into the Silver Lake Ditch (right bank) and ends at the Union Pacific Railroad crossing of that ditch. Soldier Creek RB2 is part of the North Topeka Unit levee system that serves to protect the City of Topeka, Kansas north of the Kansas River. The protection area is bound by the Soldier Creek Diversion on the north, the Kansas River on the south, the confluence of the Soldier Creek Diversion and the Kansas River on the east, and Menoken Road on the west.

Levee embankments are constructed with a crown width of 10 feet and 1V on 3H slopes. The entire Soldier Creek Diversion Unit and North Topeka Unit serve to protect highly developed business, industrial, agricultural, and residential areas subject to flooding from the Kansas River, Soldier, Creek, Halfday Creek, and Indian Creek. They provide protection to approximately 6,890 acres and a population of approximately 6,800, and a structure value of approximately $1,360,000,000. The design flood discharge for the Soldier Creek channel is 50,000 cfs (0.2% excedance, 500-yr frequency). The annual cost of operation and maintenance of the levee unit is unknown.

Location: The project is located near the north side of the Kansas River valley. The realigned Soldier Creek channel begins at its confluence with the Kansas River in Topeka, Kansas near River Mile 80.6 and extends westerly to a point approximately 2 miles upstream of the confluence with the Silver Lake Ditch channel and levees.

Authority: The Soldier Creek Diversion Unit, which is a part of the Topeka, Kansas Flood Protection Project, was authorized by the Flood Control Act approved 2 September, 1954 (House Document 642, 81st Congress, 2nd session).

Construction Date of Original Project: Construction was initiated 7 March, 1957 and completed on 1 November, 1961.

Sponsor:
North Topeka Drainage District
Topeka, Kansas 66617

BARTLEY LEVEE

Description: The Bartley, Nebraska, Flood Protection Project consists of a levee embankment, drainage facilities, a new channel for Dry Creek (2007), riprap slope protection, an extension of the Chicago, Burlington, and Quincy Railroad bridge over Dry Creek, channel blocks and road ramps. The Bartley levee protects an area of 343 acres. The levee was constructed with a 10 foot crown and 1V on 2.5H side slopes. Waste fill was placed on the land of the levee at creek crossings for a berm. The level of protection this project provides is for a 100 year flood, or a discharge of 20,000 cfs.

Location: The levee embankment is located just west of the city of Bartley, Nebraska, and along the left bank of Dry Creek, beginning at levee station 0+00 at the CB&Q Railroad and continuing upstream for a distance of 7,015 feet to the high ground north of the city. The improved channel extends upstream for a distance of 7,228 feet.

Authority: The Bartley, Nebraska, Flood Protection Project was authorized by the Flood Control Act approved 29 September 1947

Estimated Original Cost of Project: The estimated costs of the original project was $200,800 (1948 dollars)

Construction Date of Original Project: Construction for the Bartley Levee began on 22 June 1950 and was completed on 7 May 1951.

Sponsor:
Village of Bartley, Nebraska
Bartley, Nebraska 69020

INDIANOLA LEVEE

Description: The Indianola Flood Protection Project protects the area north of the Chicago, Burlington, and Quincy Railroad. According to *Indianola, Nebraska, Flood Protection Project 1950 Operation and Maintenance Manual*, the system protects a total of twenty-eight blocks, including two schools, four churches, and business and industrial establishments.

Location: Indianola Nebraska is approximately 12 miles east of McCook, Nebraska. It is situated on the left bank of the Republican River and the left bank of Coon Creek near its

junction with Republican River. The Indianola, Nebraska, Flood Protection Project is located along the new channel of Coon Creek from its junction with the Republican River and upstream approximately one mile.

Authority: The Indianola, Nebraska, Flood Protection Project was authorized by the Flood Control Act Section 3 approved August 18, 1941 (Public Law 228, 77th Congress, 1st Session) and was modified by the Flood Control Act approved December 22, 1944 (Public Law 534, 78th Congress, 2nd Session).

Construction Date of Original Project: The Indianola, Nebraska, Flood Protection Project was initially constructed on June 14, 1948 and work was completed, except for riprap at the state highway bridge (US Highway No. 6 and 34) on March 22, 1949. The entire project was completed on July 29, 1949.

Sponsor:
City of Indianola
Indianola, NE 69034

SEWARD LEVEE

Description: There is approximately 8,558 feet of levee with a 10-foot crown width which does not exceed 15 feet in height. The levee has 1V on 2.5H slopes that protect 126 acres of urban area and 89 acres of rural area. Features include 4 drainage structures, 2 stability berms, 1 seepage berm, 2 stoplog gaps, 1 sandbag gap, a channel cutoff for Big Blue River, and a diversion channel for Bayou Creek. The two stability berms are located from station 37+00 to 45+00 (landside) and 78+40 to 80+50 (riverside), both with a width of 80 feet and slope of 1V on 25H. The resident total population of the City of Seward, Nebraska, in 2008 was estimated at 16,758 residents. The levee is designed to provide protection against a discharge of 31,000 cfs, a 100 year event. The top of the levee was found to vary between 2 and 5-ft above the 1% chance of exceedance.

Location: Seward, Nebraska is approximately 22 miles northwest of Lincoln, Nebraska. It is situated on the left bank of the Big Blue River at the confluence of Lincoln Creek and the Big Blue River.

Authority: The Seward, Nebraska Flood Protection Project, Big Blue River Basin, was authorized by section 9 of the Flood Control Act approved June 22, 1936 (Public Law 738, 74th Congress, 2nd Session) and was modified and extended by section 10 of the Flood Control Act approved December 22, 1944 (Public Law 534, 78th Congress, 2nd Session).

Construction Date of Original Project: Seward levee system construction was started by local interests in 1951 and was continued by the USACE on February 3, 1953. The project was completed on October 1, 1953.

Sponsor:
City of Seward
Seward, Nebraska

LAWRENCE LEVEE

Description: The North Lawrence Unit contains approximately 14.6-miles of levee on the Kansas River and 0.6-miles of levee on Mud Creek. The Mud Creek Unit contains 4.4-miles of levee on Mud Creek. The levee provides flood risk reduction for the City of Lawrence and is divided up in two segments; the Slough Creek and Kansas River segment from Station 3+90 to 608+25 and the Mud Creek Unit segment from levee station 0+00 to 240+00. The main levee is composed primarily of random fill (clays, silts, sands and gravels) with an impervious fill (silt and clay) 3-feet thick cap on the top and thicker impervious zone on the riverside face of the levee. This levee generally has 1V on 3H slopes and a 10-ft wide crown with an average height of 8-12 feet. The project has 26 active drainage structures, four sandbag gaps, 13 stability berms, and 9 underseepage berms. The levee protects an area of 8,920 acres both urban and agricultural. According to data contained in the National Levee Database the population at risk if the levee were to fail is 2297 and the value of structures protected by the levee is $336,300,000. The levee is designed to provide protection against a discharge of 295,000 cfs for the Kansas River portion, and 19,250 cfs from uplands north and east of Mud Creek, a 100 year event.

Location: The Lawrence, Kansas, KS Flood Protection Project is located in Kansas Counties of Jefferson, Douglas and Leavenworth and lies on the left bank of both the Kansas River, Slough Creek and on the right bank the Mud Creek. Both Slough Creek and Mud Creek are tributaries to the Kansas River and more than one third of the project lies on these tributaries.

Authority: The Lawrence, KS Flood Protection Project was authorized by the Flood Control Act approved in 1954 (Title II Public Law 780 83rd Congress, second session, House Document No. 642).

Construction Date of Original Project:
The contract for the original section was awarded to N.R. Hamm, Inc. on 30 June 1967.

Sponsor:
City of Lawrence, Kansas
Lawrence, Kansas 66502

ARGENTINE LEVEE

Description: The Argentine unit has 5.5 miles of earthen levee with a 10-foot crown at an average height of 16-20 feet and 1V on 2.5H side slopes, 18 drainage structures, 3 closure structures, and 6 pumping stations. The unit is located on the right bank of the

Kansas River and protects approximately 2,031 acres of railroad and highly industrialized land. The Argentine Unit protects the Argentine industrial district in Kansas City, Kansas. Major development types include large industrial, commercial, and residential development. The Argentine Unit protects 2,031 acres of mainly railroad and highly industrialized land. Approximately 3,500 persons lived in 1,380 housing units in the area adjacent to the Argentine Unit (2000 Census). A 0.2% chance of exceedance, or 500-year flood with a discharge of 341,000 cfs and flood stage of 778.24 feet at Kansas River Mile 9.65 would result in $1,962,620 in physical damages and other costs from flooding (October 2004 prices).

Location: The Argentine Unit is located in Wyandotte County, Kansas, on the right bank of the Kansas River between approximate Kansas River Miles 10.1 and 4.75. The unit begins at the Santa Fe Railroad embankment upstream from the Turner Bridge, and extends downstream to immediately upstream of the 12th Street Bridge.

Authority: Authority for the construction of the Kansas Citys Flood Control Project, of which the Argentine Unit is a part, is contained in Section 9 of the Flood Control Act approved 22 June 1936.

Construction Date of Original Project: Construction was completed in February of 1951, which was soon followed by the record flood event of 1951, during which the levee was overtopped. Modifications of the Argentine Unit to provide adequate protection against a Kansas River flow of 390,000 cfs were complete in 1978.

Sponsor:
Kaw Valley Drainage District
Kansas City, Kansas 66105

ARMOURDALE LEVEE

Description: The Armourdale Unit consists of three sections totaling about 6.7 miles in length, joined into one unit by stoplog gaps and floodwalls. The Unit consists of levee embankments with a 10-ft crown width, thirty-six currently used drainage structures, thirty-eight relief wells, seventeen active piezometers, two active stoplog gaps, two sandbag gaps, three different floodwall sections, six freeboard gages, and nine currently used pumping stations. The Armourdale Unit protects the Armourdale area of the City of Kansas City, Kansas, which includes mixed residential, commercial, industrial, and public development. Approximately 3,213 persons lived in 1,109 housing units in the area adjacent to Armourdale Unit. The Armourdale Unit protects several very large, complex manufacturing and commercial facilities such as Proctor and Gamble, Colgate Palmolive, a power plant facility (Kansas City, Kansas Board of Public Utilities Kaw Power Station/Municipal Plant), and Kansas City Southern and Union Pacific rail yards and main line tracks. Protected areas include many small retail and commercial businesses typically found in and around residential neighborhoods and more than 930 residential units. The protected investment is estimated to be nearly $2.2 billion. Flow

frequencies, found in the *2006 Flood Damage Reduction Feasibility Study*, show a 1% chance of exceedance (100-year) discharge of 241,000 cfs and a 0.2% chance of exceedance (500-year) discharge of 341,000 cfs at the mouth of the Kansas River. Both of these discharges are currently below the design discharge for the Kansas River.

Location: The Armourdale Unit is part of the Kansas Citys Flood Control Project located in Wyandotte County, Kansas City, Kansas on the left bank of the Kansas River between River Miles 0.3 and 7.2.

Authority:
Authority for the construction of the Kansas Citys Flood Control Project, of which the Armourdale Unit is a part, is contained in Section 9 of the Flood Control Act approved 22 June 1936.

Construction Date of Original Project:
Construction of floodwalls, levee, and appurtenances, which included the Kansas City Southern Railroad Pumping Plant, was completed in February 1951.

Sponsor:
Kaw Valley Drainage District
Kansas City, Kansas 66105

FAIRBURY LEVEE

Description: The Fairbury Flood Protection Project protects the area of the City of Fairbury. There are approximately 1.74 miles of levees averaging 13 feet in height with a 10-foot crown width and 1V on 3H side slopes that protect 26 city blocks and 77 acres of rural area. Features include 10 drainage structures, 1 stoplog gap, and 3 sandbag gaps. The system protects 26 city blocks of urban area and 77 acres of rural area; which consists of a municipal power plant, a municipal water treatment plant, a grade school, a city park with extensive outdoor recreational facilities, 11 business facilities, and approximately 170 residents. The protected rural area is in irrigated cropland with some improvements. The design discharge for the levee is 76,000 cfs.

Location: Fairbury, Nebraska, is located on the left bank of the Little Blue River, approximately 13 miles above the Kansas-Nebraska State line. The city is located at the intersection of U.S. Highway No. 136 and State Highways Nos. 8 and 15. The flood protection project encloses the low-lying areas of the southwest portions of the City of Fairbury. The left bank of the Little Blue River channel lies adjacent to the project from mile 64.66 to 66.72 upstream from the confluence at the Kansas River. The unit extends from the embankment of U.S. Highway No. 136 southward and southeastward to near the southerly limit of the city and thence eastward to the embankment of the Chicago, Rock Island, and Pacific Railroad.

Authority: The Fairbury, Nebraska, Flood Protection Project was authorized by the 1948 Flood Control Act Section 205 (Public Law 874, 87th Congress, adopted October 23, 1962).

Construction Date of Original Project:
The Fairbury levee system was initially constructed by property owners adjacent to the western city limits; however, during the major flood the levee was overtopped. In 1968, the USACE awarded a contract for construction of Fairbury, Nebraska, Flood Protection Project to Ebsen Construction Company, and the construction was completed on July 14, 1970.

Sponsor:
City of Fairbury, Nebraska
Fairbury, NE 68352

OTTAWA LEFT BANK

Description: The Ottawa, Kansas Flood Protection Project protects the city of Ottawa, KS. It contains 1.2 miles of earthen main stem levee in an urban setting, protecting 173 acres of land. In addition it contains 0.12 miles of floodwall and 2 floodwall gates. The levee generally has 1V on 3H side slopes and a 10-foot wide crown. According to data contained in the National Levee Database the population at risk is 144 and the value of structures protected by the levee is $20,387,000. The project plan provides for protection for a discharge of 80, 000 cfs, or a 100 year discharge with a minimum freeboard of 3 feet through the protection works.

Location: The Ottawa, KS Flood Protection Project is located in the Kansas County of Franklin and lies on the left bank of the Marais des Cygnes River. The project starts on the northwest side of the city in the vicinity of Forest Park; extends south and east to station 44+60 where it ties into floodwall; floodwall extends to the floodwall gate at the A.T. & S.F Railroad track, station 46+14; floodwall extends to the floodwall gate at Main Street, station 50+65 (river mile 399.8) and ends at station 52+11; the levee runs northeast to station 69+76 where it ties into high ground.

Authority: The Ottawa, KS Flood Protection Project was authorized by the Flood Control Act approved 22 December 1944.

Construction Date of Original Project: The project was constructed in two stages under two separate construction contracts. Additionally a construction contract was awarded for the railroad facilities. Stage I of the project extended from station 63+40 to the downstream end of the levee and channel improvements from station 28+80 to the downstream limits. The contract for Stage I construction was awarded to McCarthy Improvement Company on 16 August 1958 and was completed on 3 May 1961. Stage II of the project included the remainder of levee embankment and floodwall, channel improvements and the pumping plant. The contract for Stage II construction was awarded to List and Clark Construction Company on 2 May 1960 and was completed on 5

December 1962. A contract for alteration of Railroad Bridge was awarded to the Atchison, Topeka and Santa Fe Railroad Company on 10 September 1959 and completed 12 October 1962.

Sponsor:
City of Ottawa, Kansas
Ottawa, Kansas 66067

OTTAWA RIGHT BANK

Description: The Ottawa, Kansas Flood Protection Project protects the city of Ottawa, KS. It contains 2.7 miles of earthen main stem levee in an urban setting, protecting 433 acres of land. In addition it contains 0.13 miles of floodwall and 3 floodwall gates. The levee generally has 1V on 3H side slopes and a 10-foot wide crown. According to data contained in the National Levee Database the population at risk is 1845 and the value of structures protected by the levee is $128,430,000. The project plan provides for protection for a discharge of 80, 000 cfs, or a 100 year discharge with a minimum freeboard of 3 feet through the protection works.

Location: The Ottawa, KS Flood Protection Project is located in the Kansas County of Franklin and lies on the right bank of the Marais des Cygnes River. The project starts on the southwest side of the city in the vicinity of Beech Street and Sixth Street; proceeds north where it ties into the floodwall at the Missouri Pacific Railroad tracks at station 35+79; at station 36+79 the levee extends east to approximate station 62+93 where it ties into the floodwall at the A.T & S.F Railroad tracks; runs east from station 64+55 to approximate station 66+15 where it ties into the floodwall at Main Street, river mile 399.8; the levee extends from the Main Street floodwall at station 69+10 northeast to station 105+25 where it ties into the floodwall at the sewage-disposal plant; at station 107+60 it runs southeast to station 148+68.

Authority: The Ottawa, KS Flood Protection Project was authorized by the Flood Control Act approved 22 December 1944.

Construction Date of Original Project: The project was constructed in two stages under two separate construction contracts. Additionally a construction contract was awarded for the railroad facilities. Stage I of the project extended from station 63+40 to the downstream end of the levee and channel improvements from station 28+80 to the downstream limits. The contract for Stage I construction was awarded to McCarthy Improvement Company on 16 August 1958 and was completed on 3 May 1961. Stage II of the project included the remainder of levee embankment and floodwall, channel improvements and the pumping plant. The contract for Stage II construction was awarded to List and Clark Construction Company on 2 May 1960 and was completed on 5 December 1962. A contract for alteration of Railroad Bridge was awarded to the Atchison, Topeka and Santa Fe Railroad Company on 10 September 1959 and completed 12 October 1962.

Sponsor:
City of Ottawa, Kansas
Ottawa, Kansas 66067

NEW HAVEN LEVEE

Description: The levee system consists of an earth-fill levee with ramps, landside berms, 4 drainage structures, and a pump station. The total length of the levee is approximately 2,230 feet with an 8-foot crown and 1V on 3H slopes on the riverside and 1V on 2.5H slopes on the landside. The earthen levee includes riprap and toe protection on the riverside slope, seeded landside slopes, and an aggregate surfaced crown. Seven blocks of business and residential property between the river bank and the Missouri Pacific Railroad tracks along the base of a high bluff (13.66 acres leveed); 16 people, 49 buildings including 12 residential, and a total of $5,299,591 structure value. The levee was designed for a flood discharge of 529,000 cfs, or a 100-year recurrence interval.

Location: The levee is located on the right bank of the Missouri River between River Mile 81.4 and River Mile 81.7. The City of New Haven, Missouri is located in Franklin County, about midway between Jefferson City and St. Louis.

Authority: The New Haven, Missouri, Flood Protection Project was selected under provision of Section 205, of Public Law 858, Eightieth Congress, second session, as amended by section 212 of the Flood Control Act approved 17 May 1950. The Board of Alderman of the City of New Haven, Franklin County, Missouri, adopted a resolution providing the necessary assurances in a special meeting on 26 April 1954.

Construction Date of Original Project:
Construction began on 2 Sept 1954 and was completed on 6 April 1955.

Sponsor:
City of New Haven
New Haven, MO 63068

SALINA LEVEE

Description: The Salina Levee System consists of four sections totaling approximately 18.2 miles of levee with a 10 foot crown and 1V on 3H side slopes. Features along the earthen levee include 24 drainage structures, 8 sandbag gaps, and 2 pumping stations. It is located around the City of Salina, Kansas to protect the property within city limits and farmland surrounding the city. The project is intended to protect approximately 10,800 acres of property including agricultural land and urban land in the City of Salina. The most recent flood on record (1951) which impacted the city affected about 50 percent of the residential area. More than 3,000 residences, 122 commercial firms, 2 schools and 3

churches were inundated. The Smoky Hill River design discharge is 50,000 cfs and the Saline River design discharge is 80,000 cfs.

Location: The Flood Protection Project is located around the City of Salina, Kansas, in Saline County. This is upstream of the confluence of the Saline and Smoky Hill Rivers. Salina is situated in a relatively wide valley of well-developed agricultural lands used for general farming purposes. The levee system protects areas from Mulberry and Dry Creek as well.

Authority: The Salina, Kansas, Flood Protection Project was authorized by the Flood Control Act which was approved September 3, 1954.

Construction Date of Original Project: The Salina Levee System was completed in June 1961.

Sponsor:
City of Salina
Salina, Kansas 67401

STONEHOUSE CREEK LEVEE

Description: The Stonehouse Creek Levee Protection Project protects approximately 3,000 acres of agricultural land and the town of Williamstown, Kansas, 199.92 acres of which is leveed. The project consists of an improved main channel, five supplementary channels, drainage structures, levee embankment, and channel rock slope protection. Critical facilities included in the protected area are a fire station. The protected area also includes 87 people, 40 buildings, 38 of which are residential, and a total of $10,003,000 structure value. The total length of the levee is 4,667 feet with a 6-foot crown and 1V on 3H on the riverside and landside slopes. The original design was based on a discharge of 10,000 cfs (10-year recurrence interval), but the present channel is now capable of carrying a higher discharge due to degradation and widening of the original channel.

Location: The levee is located near Williamstown, Kansas, about 5 miles east of Perry, Kansas, on U.S. Highway No. 24

Authority: The Stonehouse Creek Flood Protection Project was selected under provision of Section 205, of Public Law 858, Eightieth Congress, second session, as amended by section 212 of the Flood Control Act approved 17 May 1950.

Construction Date of Original Project:
The construction process began on 18 September 1951 and was completed on 11 April 1952.

Sponsor:
Bruce Berns
Perry, Kansas 66073

TURKEY CREEK LEVEE

Description: The Turkey Creek Protection Project consists of both a tunnel and levee improvement. The tunnel is a concrete lined, 28-foot diameter horseshoe shaped tunnel that runs approximately 1,261 feet in length. The downstream end of the tunnel is directly connected to "the Subway", which is a box-shaped, concrete structure approximately 177 feet in length. A low levee was constructed along the right bank of the channel from the Frisco railway bridge downstream to the tunnel mouth. The district has an area of approximately 1,092 acres (1.7 square miles) of which 360 acres are in Kansas and 732 are in Missouri. The area is occupied by warehousing, administrative, and manufacturing facilities and the Kansas City Stockyards. Preliminary studies estimate damages in excess of $8,000,000 (1966 dollars). The estimated hydraulic capacity of the tunnel (as designed and in non-pressurized conditions) is approximately 20,000 cfs.

Location: Turkey Creek is a right bank tributary of the lower Kansas River with its headwaters in Lenexa, Kansas. It has a drainage area of 23 square miles before passing through a concrete-lined rock tunnel and discharging into the Kansas River. Turkey Creek is approximately 15 miles long and runs parallel to Interstate-35 (I-35) nearly its entire length. The tunnel is located near the intersection of I-35 and 7th street Trafficway in Kansas City, Kansas.

Authority: The project for flood control at the Kansas Cities, Kansas and Missouri, was originally authorized in the Flood Control Act of 1936 and later modified and extended by the Flood Control Acts of 1944, 1954, and 1962.

Construction Date of Original Project:
Construction of the tunnel and subway was completed circa 1920.

Sponsor: Unified Government of Wyandotte County

BIRMINGHAM UNIT – KANSAS CITIES LEVEES

Description: The Birmingham Unit consists of approximately 56,136 linear feet of earthen levee and protects approximately 5,260 acres, of which approximately 3,350 acres are agricultural. In addition it also protects the community of Birmingham, Missouri and Northland Park (a commercial park), businesses include the KC Mixing Center (intermodal facility), Ameristar Casino, portion of a rock quarry, and a sand plant, 1 ball field, 1 electric substation, approximately .25 mile of federal highway I-435, approximately 4.6 miles of State Highway 210, approximately 25 miles of asphalt surfaced roads, approximately 12 miles of railroad, and an undetermined number of utility lines servicing the community and businesses. Approximately 460 acres of the

area, located in the extreme western or upper portion of the unit lie within the city limits of Kansas City, Missouri. The levee protects up to a river stage of 38.5 feet on the Hannibal Bridge gauge (elevation zero 715.8 feet).The approximate level of protection equals the 100 year Flood Event plus 3 feet of freeboard. The average height of the levee varies from 6 to 15 Feet above natural ground level with an average crown width of 10 feet. Average landside sideslopes 1 on 3.5, average riverside sideslopes 1 on 3, and annual maintenance costs of approximately $25,000.

Location: The Birmingham Unit is located on the left bank of the Missouri River approximately between river miles 353 and 360.5 (1960 adjusted), Clay County, Missouri.

Authorization: The Birmingham Unit is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project:
Construction was started on 26 March 1951 and completed 25 September 1952. A contract for surfacing the levee crown and ramps of the upstream section of the unit was initiated on 17 December 1952 and completed 13 March 1953. A contract for strengthening of existing levee, construct of outlet structures, access ramps, turnouts, levee crown surfacing, channel improvements, freeboard gages on the downstream section, and construction of landside berms for stability and underseepage control on the upstream and downstream section began 19 November 1954 and was completed on 20 August 1955.

Sponsor:
Birmingham Drainage District
Kansas City, MO 64108

CENTRAL INDUSTRIAL DISTRICT (CID) MISSOURI – KANSAS CITIES LEVEES

Description: CID Missouri segment consists of approximately 634 linear feet of earthen levee and 7,674 linear feet of reinforced concrete floodwalls protect approximately 980 acres as part of the levee/floodwall system. In addition it also protects a highly industrialized area occupied by railroads, wholesale houses, and manufacturing plants. It also protects an undetermined amount of roads and utility lines servicing the area. Maintenance cost for the Kansas City Flood Control Project, which includes the East Bottom Unit, Central Industrial Unit, and the North Kansas City Airport Section, averages $530,000 annually.

Location: The Central Industrial Unit (CID) is located in Kansas City, Jackson County, Missouri. The unit extends along the right bank of the Missouri River upstream from the Grand Avenue Viaduct (river mile 365.7) to the Kansas-Missouri state line (river mile

367.2). The unit consists of a system of levees, floodwalls, drainage structures, a levee drainage system, sandbag and stoplog gaps, toe and bank protection, and slope protection on the riverward slope.

Authority: CID-Missouri is a Federal project authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project:
Construction was started on 21 March 1946 and completed 9 September 1947.

Sponsor:
City of Kansas City, Missouri
Kansas City, MO

CENTRAL INDUSTRIAL DISTRICT (CID) KANSAS – KANSAS CITIES LEVEES

Description: The Central Industrial District consists of two sections separated by a concrete floodwall. The levee was constructed with a crown width of 10 feet and side slopes that vary from 1V on 2H to 1V on 4H. The Central Industrial District contains 1.8 miles of levee and 7,732 feet of floodwalls, 22 drainage structures, 3 stoplog gaps, 1 sandbag gap, 8 pumping plants, 10 relief wells, 5 piezometers and 6 freeboard gages. The unit includes an area of 1,092 acres subject to flood hazards. The greater portion of the protected area is highly industrialized, being occupied largely by stockyards, railroads, wholesale houses, and manufacturing plants. The area for which interior drainage must be considered includes, in addition to the area to be protected, 352 acres along the bluffs to the south and east. The total drainage area to be considered is therefore 1,444 acres. The levees and floodwalls of the Central Industrial Unit have been modified so that they will safely pass a Kansas River design discharge of 390,000 cfs coincident with a flow of 220,000 cfs on the Missouri River.

Location: The first section of the Central Industrial District begins at station 83+01.29 L.E. on the Kansas state line, and extends upstream along the right bank of the Missouri River to the mouth of the Kansas River, then upstream along the right bank of the Kansas River to a junction with the floodwall at station 102+52. This floodwall extends to the end of the unit at station 168+49.

Authority: The Kansas Cities Flood Control Project, of which the Central Industrial Unit (Kansas Section) is a part, was authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session, as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, 2d Session. Modifications to the original plan were authorized in Public Law 87-874 on 23 October 1962.

Construction Date of Original Project:
Construction was started on 7 May 1948 and completed 30 May 1950.

Sponsor:
Kaw Valley Drainage District
Kansas City, Kansas 66105

Clyde, Kansas Flood Protection Project

Description: The flood protection project consists of approximately 6,100 feet of earthen levee, 8,900 feet of improved channel, 4 drainage structures, 3 channel drop structures, and 2 bridge alterations. The Elk Creek channel improvement consists of a series of cutoffs and alignment changes from channel station 4+00 to the confluence with the Republican River at channel station 93+10. The project provides protection for the city of Clyde, Kansas (approximately 240 acres of urban area). This includes a 13 acre business district and 227 acres of residential urban area (454 structures), two major railroad lines and depots, Clyde's water plant and several miles of state highway. Population at risk is 640. The levee is an urban unit, designed to provide protection against a discharge of 36,000 cfs, the flood of record (1958), a 100-year event, with 3 feet of freeboard. The unit has an average height of generally between 5 and 15 feet above landside natural ground surface, average crown width of 10 feet, average side slopes on landside of 1V on 3H and riverside – 1V on 3H.

Location: The Clyde levee runs along the right descending bank of the realigned Elk Creek channel from near North High Street to near its intersection with South Street, City of Clyde, and northeastern Cloud County, Kansas.

Authority: This is a Federal project authorized by the Flood Control Act of 1948, as amended by Public Law 685, 84th Congress.

Construction Date of Original Project:
Construction was started in 1962 and completed in 1963. The channel was rehabilitated in 1974.

Sponsor:
City of Clyde
Clyde, Kansas 66938

EAST BOTTOMS UNIT – KANSAS CITIES LEVEES

Description: The approximately 50,072 linear feet of earthen levee protects approximately 4,270 acres. In addition it also protects Union Pacific Neff Yard, Kansas City Power and Light Hawthorne Power Plant, 2 industrial parks (Columbus Park and Northeast Industrial District), numerous businesses including the Isle of Capri Casino,

motels, sewage treatment plants, transportation stations, and restaurants,. It also protects an undetermined amount of roads and utility lines servicing the area. The unit is an agricultural FCW with urban/developed areas. The level of protection equals the 500 year Flood Event plus 3-feet of freeboard, with an average height of which varies from 8 to 20 Feet above natural ground level, an average crown width of 10 feet and average side slopes of 1V on 4H landside and 1V on 3H on the riverside.

Location: The East Bottoms Unit is located in Kansas City, Jackson County, Missouri. The unit extends downstream along the right bank of the Missouri River from the A.S.B. Bridge, river mile 365.6 (adjusted 1960), to the mouth of the Big Blue River, river mile 357.7, thence upstream along the bank of the Big Blue River to the Missouri Pacific Railroad Embankment. The project is located in the City of Kansas City, Jackson County, Missouri.

Authority: This is a Federal project authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project:
Construction was started on 21 April 1948 and completed 27 September 1950.

Sponsor:
City of Kansas City, Missouri
Kansas City, MO 64130

FAIRFAX-JERSEY CREEK

Description: The Fairfax-Jersey Creek Unit protects the Fairfax Industrial District in the Kansas City, Kansas metropolitan area. Few or no persons currently live in the Fairfax industrial area; and no housing data was provided for census. The unit protects and area of about 3.8 square miles. Primary development in the area is comprised of large commercial, industrial and public facilities such as the General Motors plant, Owens-Corning plant, Weyerhaeuser plant, and CertainTeed plant. Protected investment is estimated to be nearly $2.2 billion.

Location: The levee runs along the left bank of the Kansas River from River Mile 0.3, to the confluence with the Missouri River, and then upstream along the right bank of the Missouri River to River Mile 373.9.

Authority: Authority for the construction of the Kansas Cities Flood Control Project, of which the Fairfax –Jersey Creek Unit is a part, is contained in Section 9 of the Flood Control Act approved 22 June 1936.

Construction Date of Original Project: Flood control works were originally constructed by local interests. The federal construction project started on April 1940 and was completed on 31 May 1941.

Sponsor:
Kaw Valley Drainage District
Kansas City, Kansas 66105

MRLS KIMSEY-HOLLY CREEK

Description: The approximately 24,000 linear feet of earthen levee along with the Canon Drainage District levee (non-Federal levee) work as a system protecting approximately 9,920 acres of which approximately 6,618 acres are agricultural. The other 3,302 acres make up the Missouri Department of Conservation's Bob Brown Wildlife refuge. It also protects 3 residences, 4 barns, 7 machine sheds, 10 outbuildings, 25 irrigation systems, 20 grain bins, and approximately 20 miles of gravel surface roads and 15 miles of unimproved farm to market roads, numerous miles of overhead power utility lines and buried utility lines (5 utility companies pay taxes to the District), approximately 1 mile of Burlington Northern Railroad embankment and the facilities within the Bob Brown Wildlife Area. The project is an agricultural FCW with urban/developed areas with flood protection equaling the 100 year Flood Event plus 2 feet of freeboard level, an average height of 10.7 feet above natural ground level, with an average crown width of 10 feet, with both landside and riverside slopes averaging 1H on 3V.

Location: The project is located on the right bank of Kimsey Creek and both banks of the Cannon Diversion for approximately 750 feet. Kimsey Creek's mouth is at Missouri River mile 482.8, Holt County, Missouri.

Authority: This is a Federal project authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started on June 11, 1948 and completed March 15, 1950.

Sponsor:
Canon Drainage District
Oregon, MO 64473

LOWER CHARITON LEVEE DISTRICT

Description: The Lower Chariton River Project contains 20.33 miles of levee, 9 drainage structures, 3 culverts, and 15 freeboard gauges. The basic levee section has a top width of 10 feet with 1 V on 3H lands side and riverside slopes. The levee top, turnouts, arid ramps

are surfaced with crushed rock. The protected area includes 19,000 acres of agricultural land. Design discharge for the Lower Chariton River is 32,000 cfs and 21,500 cfs for the Little Chariton River. These correspond to a discharge of 476,000 cfs for the Missouri River.

Location: The Lower Chariton River Project runs downstream along the left bank of the Lower Chariton River from river mile 5.3. to river mile 0.04; downstream along the left: bank of the Missouri River from river mile 238.7 to river mile 227.5, and upstream along the right bank of the Little Chariton River from river mile 0.36 to river mile 5.0. The general location of the project is approximately 1 mile northwest of Glasgow, Missouri.

Authority: The Lower Chariton River project is covered by a dual authorization contained in the Flood Control Act, approved 22 December 1944 substantially as recommended in:

a. House Document 475, 78th Congress, 2d Session, which included the Missouri River Agricultural Levees project.

b. House Document 628, 78th Congress, 2d Session, covering upstream channel improvements in the Chariton River, as well as levee construction along the Chariton, Little Chariton, and Missouri Rivers.

Construction Date of Original Project: A contract was awarded to Hardwick Brothers Construction Company on 13 July 1965 for the construction of the Lower Chariton River Tieback Levee. Work was completed on this contract on 22 February 1971.

Sponsor:
Lower Chariton River Drainage District
Glasgow, Missouri 65254

MRLS LEVEE UNIT 246 L

Description: The levee unit MRLS L-246 consists of 34.5 miles of an earthen levee along the Missouri River with tie back levees on the left bank of the Grand River on the upstream end and on the right bank of the Lower Chariton River on the downstream end. Palmer Creek channel, with earthen levees on left and right banks, discharges the water into the Missouri River through concrete drainage structures. The levee system protects 31,900 acres of agricultural land. Cutoff Lake, which occupies an old channel meander of the Missouri River located near the middle of the flood plain protected by Unit L-246, is partially contained by the Palmer Creek tie back section**.** The interior drainage is provided by 27 drainage structures equipped with flap gates and/or sluice gates. The levee crest is covered by 6 inches of crushed stone and the side slopes are covered by grass, except the area of the riverside slopes where there is riprap protection. The project is an agricultural FCW with the levee along the Missouri River and the tie back levee on the left bank of the Grand River designed for 25-year and the tie back levees along the

right bank of the Lower Chariton River and along Palmer Creek channel were designed for a 50-year protection level. Tieback elevations on the upper end (Grand River confluence) is 645.5 feet MSL and lower end (Chariton River) 639.5 feet MSL. The average crown width varies between 10 an 32 Feet with both landward and riverside average side slopes of 1V on 3H.

Location: The project includes the left bank of Grand River from Brunswick, Missouri to its confluence with the Missouri River (river mile 250), then along the left bank of the Missouri River to its confluence with the Chariton River (river mile 239), and along the right bank of the Chariton River from river mile 0.04 to river mile 5.3. It also includes the left and right banks of Palmer Creek from its confluence with the Missouri River to the Norfolk and Western Railroad, Chariton County, Missouri.

Authority: Levee Unit 246 L is part of the Missouri River Levee System (Sioux City, Iowa to the mouth)which forms a part of the comprehensive plan for the Missouri River Basin as authorized by the Flood Control Act of 1944 (Public Law 534, 78th Congress, 2d Session).

Construction Date of Original Project: Construction was completed 19 March 1981. Recent modifications include Levee realignment in 1993 and reconstruction with stability berms in 1998 and 2002. Repair of eroded foreshore and riverside levee toe along Palmer Creek Tie-Back section caused by wave action from Cut Off Lake in 2008. Excavation and replacement of slide areas and berm construction on the Chariton River Tie-Back section and the Little Chariton River Tie-Back section in 2008.

Sponsor:
Mr. Robert Littleton, Chairman
Dalton, MO 65246

MRLS 351-R, SECTION 1

Description: The MRLS 351-R Sections 1 and 2 levees work as a system and consist of approximately 77,673 linear feet (61,918 – Sect. 1 and 15,755 – Sect. 2) of earthen FCW and together protect approximately 8,030 acres of land of which approximately 7,700 acres is agricultural. It also protects the community of Atherton, 52 residences, 20 barns, 40 outbuildings, 32 grain bins,14 businesses, a large church, 4.8 miles of double line railroad (Amtrack), 2.8 miles of 66 Kv. Electrical transmission line 14.3 miles of local power distribution lines (KCP&L), approximately 3 miles of concrete surfaced county highways, approximately 28 miles of surfaced township roads and 2 municipal water treatment plants (one large and one smaller). The unit is an agricultural FCW with urban/developed areas. The unit provides approximately 100 year level of flood protection, with an average height of 8-14 feet above landside natural ground surface, with a 10-foot average crown width, and average sideslopes on both land and riverward side of 1H on 3V.

Location: The project is located right bank of the Missouri River between river miles 339.5 and 350 and extending approximately 3.75 miles up the left bank of the Little Blue River in Jackson County, Missouri.

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started on 23 September 1963 and was completed 15 June in 1965.

Sponsor:
MRLS 351 R, Section 1
Sibley, MO 64088

MRLS 351-R, SECTION 2

Description: The MRLS 351-R Sections 1 and 2 levees work as a system and consist of approximately 77,673 linear feet (61,918 – Sect. 1 and 15,755 – Sect. 2) of earthen FCW and together protect approximately 8,030 acres of land of which approximately 7,700 acres is agricultural. It also protects the community of Atherton, 52 residences, 20 barns, 40 outbuildings, 32 grain bins,14 businesses, a large church, 4.8 miles of double line railroad (Amtrack), 2.8 miles of 66 Kv. Electrical transmission line 14.3 miles of local power distribution lines (KCP&L), approximately 3 miles of concrete surfaced county highways, approximately 28 miles of surfaced township roads and 2 municipal water treatment plants (one large and one smaller). The unit is an agricultural FCW with urban/developed areas. The unit provides approximately 100 year level of flood protection, with an average height of 8-14 feet above landside natural ground surface, with a 10-foot average crown width, and average sideslopes on both land and riverward side of 1H on 3V.

Location: The project is located on the left bank of the improved Little Blue River channel about 4.5 miles from the confluence of the Missouri River and the Little Blue River at mile 339.5 and continuing to a point approximately 7.5 miles upstream on the old Little Blue River channel, Jackson County, Missouri.

Authority: This is a Federal project authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started 31 March 1965 and was completed 9 September in 1966.

Sponsor:
MRLS 351 R, Section 2
Independence, MO 64058

MRLS 385-L RIVERSIDE & QUINDARO

Description: Riverside - The Missouri River Levee System 385-L Riverside Protection Unit consists of 1.3 miles of levees, 4 main embankment drainage structures with gate wells or gate valves, 2 miles of channel improvements, 2 pumping pads, 3 closure gaps, and 0.2 miles of floodwall. The levee embankment generally has 1V on 3H slopes with a 10-ft wide crown and a 6-foot-deep inspection trench at the riverside toe. The 2010 census data indicates daytime/nighttime populations of 438/64. The unit protects businesses, industrial areas and residential areas that are located in this area. The drainage area above Line Creek is 14,573 acres. A total of 54 structures with total property value of about $74.6 million (2006 dollars) located within the leveed area. The project plan provides for protection using coincident discharges of 460,000 cfs on the Missouri River and 17,300 cfs on Line Creek and also for a discharge of 19,900 cfs on Line Creek with a low Missouri River.

Quindaro - The Missouri River Levee System 385-L Quindaro Protection Unit consists of 4.7 miles of levees, 5 main embankment drainage structures, 2 miles of channel improvements, 1 pumping plant, 800 feet of floodwall, 3 stoplog gaps, 2 rolling gate closures, and 1 sandbag closure. The average height of the levee is 23 feet with a crown width of 10 feet and average side slopes of 1V to 3H. The total estimated values for population at risk and property value. According to these sources, the Quindaro system includes 59 structures totaling just over $170.4 million in value (2006 price level). As indicated in section 4.2 the project was originally authorized for three feet of freeboard above a design discharge of 460,000 cfs on the Missouri River.

Location: Riverside - The Riverside system is located in the Missouri County of Platte and lies on the left bank of the Missouri River. Businesses, industrial areas and residential areas are located within the protected area.

Quindaro - The Quindaro system is located in the Missouri County of Platte and lies on the left bank of the Missouri River. Businesses, industrial areas and residential areas are located within the protected area.

Authority: The L-385 Unit, Riverside System was authorized by the Flood Control Act of 1944 (P.L. 534, 78th Congress, 2nd Session).

Construction Date of Original Project: The Riverside System was constructed under contract DACW41-02- C-0013 by Environmental Specialists, Inc (ESI). The construction contract was awarded in April 2002 and was completed in May 2005.

Sponsor:
Riverside-Quindaro Bend Levee District
Riverside, Missouri 64150

MRLS 400-L

Description: The unit consists of approximately 38,830 linear feet of earthen levee which protects approximately 3,820 acres, of which approximately 3,570 acres are agricultural. In addition it also protects a small portion of the town of Waldron, 15 houses, 6 barns, 12 outbuildings, 6 grain bins, a municipal airport with a 2900 foot runway and 6 hangers, 4 pivot irrigation systems as well as all associated utility lines and pipes. It also protects approximately 5 miles of paved roads, 4.3 miles of gravel roads, several miles of unsurfaced farm to market roads and approximately 4.4 miles of railroad right of way. The unit is an agricultural FCW with urban/developed areas and the level of protection equals the 100 year flood event plus 2 feet of freeboard. The average height varies from 12 to 20 feet above natural ground level, with an average crown width of 10 feet, and 1V on 3H river and landward side slopes.

Location: The unit begins at the bluff on the left bank of the Platte River (Missouri river mile 384.8) and extends along the left bank of the Missouri River to river mile 391.2 (1960 adjusted) , then up the right bank of Ellis branch, Platte County, Missouri.

Authority: This is a Federal project authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started on October 21, 1955 and completed April 10, 1957.

Sponsor:
Waldron Levee District (MRLS 400 L)
Parkville, MO 64152

MRLS 400-L RING

Description: The MRLS 400+L Ring Levee, which is part of the MRLS 400-L Unit, starts at Station 0+52± and continues approximately 0.2 miles to Station 8+05±. Crushed rock surfacing was placed on earthen ramps, turnouts, and levee crown throughout the length of the levee. This unit has a 10-foot crown with 1V on 3H landside and riverside slopes. The total leveed acreage is 3.1 and the structural value of all buildings protected is $46,000.

Location: The ring portion of the MRLS 400-L unit is located at the upper most portion of the System along the Platte River.

Authority: This is a Federal project authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started on October 21, 1955 and completed April 10, 1957.

Sponsor:
Waldron Levee District (MRLS 400 L)
Platte City, MO 64079

MRLS 408 L

Description: The approximately 54,433 linear feet of earthen levee protects approximately 9,825 acres, of which approximately 7,725 acres are agricultural. In addition to the agricultural land, it protects a small portion of the town of Farley, a minimum of 76 homes, 44 barns, 86 outbuildings, 39 grain bins, 9 irrigation systems, 1 grain elevator and 17 business buildings as well as the associated utility systems, lines and pipes. It also protects approximately 10.6 miles of paved roads, approximately 16 miles of gravel surfaced roads, several miles of unsurfaced farm to market roads and approximately 7.1 miles of railroad right of way. The unit is an agricultural FCW with urban/developed areas which provides a level of protection equaling the 100 year flood event plus 3 feet of freeboard. The levee averages 11.4 feet above the landside natural ground surface, with a 10-foot average crown width and 1V on 3H land and riverward side slopes.

Location: The project is located on the left bank of the Missouri River between river miles 391.2 and 401.35 (1960 adjusted), Platte County, Missouri.

Authority: This is a Federal project authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started on June 12, 1970 and completed in August of 1972.

Sponsor:
Fairley-Beverly Drainage District
Platte City, MO 64079

MRLS 440 R

Description:
The unit consists of approximately 55,651 linear feet of earthen levee which protects approximately 4,403 acres, most of which is agricultural. In addition it provides protection for 2 barns, 3 outbuildings, 1 irrigation system, approximately 1.6 miles of paved road, approximately 14.4 miles of gravel road and several miles of unsurfaced farm to market roads. The project is an agricultural FCW with urban/developed areas and provides a level of protection equal to the 100 Year Flood Event plus 3 feet of freeboard. The levee average height is 14-16 feet above the landside natural ground surface, with an average crown width of 10 feet, and both riverward and landward side slopes of 1V on 3H.

Location: Left bank of the Missouri River between river miles 391.2 and 401.35 (1960 adjusted), Atchison and Doniphan Counties, Kansas.

Authority: This is a Federal project authorized by Section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started June 12, 1970 and completed in August of 1972.

Sponsor:
Drainage District # 4 of
Atchison & Doniphan Counties
Nortonville, KS 66060

MRLS 448-443 L

Description: This 74,976 linear foot earthen levee system protects approximately 17,363 acres of land, most of which is agricultural. It also protects the town of Halls, 19 residences, 15 barns, 44 out-buildings, 27 graineries, approximately 11 miles of railroad, 11 miles of State Highway 59, 3 miles of county roads, several miles of gravel farm to market roads and several miles of utilities and pipelines. Population at risk is 309. This is an agricultural FCW with a level of protection that exceeds the 100 year flood event. The levee averages 12-16 feet above the natural ground surface, with an average crown width of 10 feet and 1V on 3H side slopes both riverward and landward.

Location: Left Descending Bank of the Missouri River, between river miles 428 and 438 (1960 adjusted) near St. Joseph, Buchanan County, Missouri.

Authority: Levee Unit 448-443 L is part of the Missouri River Levee System (Sioux City, Iowa to the mouth) which forms a part of the comprehensive plan for the Missouri River Basin as authorized by the Flood Control Act of 1944 (Public Law 534, 78th Congress, 2d Session).

Construction Date of Original Project: Construction was started 6 July 1948 and completed 2 June 1952.

Sponsor:
Halls Levee District
Rushville, MO 64484

MRLS 455 L

Description: The approximately 82,403 linear feet of earthen levee protects approximately 7,738 acres, of which approximately 5,850 acres are agricultural. The remainder is heavily developed and includes Lake Contrary and the many homes around and near it, the associated utilities, streets and paved roads and the heavily industrialized area protected by the eastern end of the levee system. The industrialized corridor includes the stockyards, the old central industrial district (home to several large companies and public facilities including the St. Joseph Water Treatment Plant). Overall, more than 1300 homes, 165 businesses and utility companies and 53 miles of roads, streets and railroad tracks are protected. Total investment protected by this levee, according to the Feasibility Study completed in 2006 by the Kansas City District Corps of Engineers is estimated to be more than 1.4 billion dollars. This is an agricultural FCW with urban/developed areas with a level of protection equaling the 100 year flood event plus 3 feet of freeboard. The levee average height is approximately 16 feet above the natural landside ground surface, with average crown width of 10 feet, and riverward/landward side slopes of 1H on 3 V with the exception of Brown's Branch which has 1V on 2.5V side slopes both riverward/landward.

Location: Left bank of the Missouri River in Buchanan County, MO between river miles 447.3 and 437.3 (1960 adjusted) then upstream along the right bank of Contrary Creek to the railroad right of way and U.S. Hwy. 59, Buchanan County, Missouri.

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction of Part I of the levee was awarded March 8, 1962 and completed in September 27, 1963. Construction of Part II was awarded September 27, 1963 and completed December 23, 1964. Construction of the Brown's Branch Pumping Plant was awarded January 27, 1966 and completed February 1967.

Sponsor:
South St. Joseph Drainage & Levee District, MRLS 455 L
St. Joseph, MO 64504

MRLS 471-460 R

Description: The approximately 72,800 linear feet of earthen levee protects approximately 13,000 acres, of which about 7,200 acres are planted in crops. In addition to agriculture, nearly one-fourth of the total area is given over to public/industrial land uses that include Rosecrans Airport as well as the base for the 139th Airlift Wing of the Missouri Air National Guard. Several large plants also are located within the protected area, including a grocery wholesaler, a home retail supplier, two manufacturers, a construction company, and a warehousing and storage operation. Also protected are the town of Elwood Kansas (2000 pop. 1,145), and a portion of the town of Wathena, Kansas. All together, approximately 667 homes and 124 businesses and public facilities are protected, along with about 27 miles of roads. This total includes several miles of U.S. Highway 36 as well as numerous county roads. The unit is an agricultural FCW with urban/developed areas with a protection level equaling the 75 year flood event. Average height of the levee varies between 10 to 14 feet above landside natural ground surface, except at the old channel crossing where the height varies between 18' to 24' above ground surface. Average crown width is 10 feet with both riverward/landward side slopes of 1H on 3V.

Location: Levee Unit 471-460 R is located on the right descending bank of the Missouri River, river mile 441.7 to 456.6 (1960 adjusted), Buchanan County.

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started in 1966 and completed in 1968.

Sponsor:
Elwood-Gladden Drainage District
Elwood, Kansas 66204

MRLS 476 L

Description:
This 56,383 linear foot earthen levee protects approximately 5,515 acres, all of which is agricultural. In addition it protects 29 homes, 15 barns, 22 out buildings, 32 grain bins, 2

miles of paved roads, 12.1 miles of gravel roads and several miles of unsurfaced farm to market roads. It also provides protection for the power, telephone and water lines serving the protected area. The unit is an agricultural FCW with urban/developed areas with a protection level equaling the 100 year flood event plus 3 feet of freeboard. Average height of the levee varies between 5 to 20 feet above landside natural ground surface. Average crown width is 10 feet with both riverward/landward side slopes of 1H on 3V.

Location: Levee Unit 476 L is located on the left bank of the Missouri River between river miles 455 and 461 (1960 adjusted) and extends approximately 3.8 miles up the right bank of Mace Creek to Amazonia, Andrew County, Missouri.

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started 17 August, 1949 and completed 11 October 1950.

Sponsor:
Amazonia Levee District
St. Joseph, MO 64506

MRLS 482 R

Description: MRLS 482 R is an approximately 43,600 linear foot impervious, semi-compacted fill earthen levee with continuous landside berms from stations 17+00 to 18+50, 61+00 to 107+00, 123+00 to 164+00 and 182+00 to 430+00 of sufficient width and thickness to insure stability of the levee slope and foundation. An impervious blanket was placed on the riverside slope of all levee sections. Underseepage berms were added in 1953 due to seepage problems during the 1953 flood. Interior runoff and ponding is controlled by six CMP drainage structures, five of which are equipped with manually operated sluice gates in reinforced concrete outlet structures & one with an automatic flapgate at the outlet structure. This levee protects approximately 4,730 acres of which 4,630 acres are cropland. It also protects 5 residences, 4 barns, 19 outbuildings, 8 silos and several miles of county and unimproved roadway. The unit is an agricultural FCW wih a protection level exceeding the 100 year flood event. Average height of the levee varies between 9 to 12 feet above landside natural ground surface. Average crown width is 10 feet with both riverward/landward side slopes of 1H on 3V.

Location: Levee Unit 482 R is located on the right descending bank of the Missouri River, between river mile 458 and 467 (1960 adjusted), approximately 8 miles northwest of Troy, Doniphan County, Kansas.

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project:
Construction was started 20 June 1950 and completed 1 December, 1951.

Sponsor:
Burr Oak Drainage District, Doniphan County, Kansas
Troy, Kansas 66087

MRLS 488 L

Description: This approximately 60,666 linear feet earthen levee protects approximately 8,877acres of cropland of which approximately 175 acres are in the Monkey Mountain mitigation site. There are 2 residences, 20 outbuildings and approximately 40 grain silos, the main line of the Chicago, Burlington, and Quincy Railroad, one state highway and a county road that extends along the entire eastern limits of the unit at the foot of the valley bluffs. The flood protection works in this unit consists of the earthen levee, an improved channel and drainage facilities. Population at risk is 10. The unit is an agricultural FCW with a protection level exceeding the 100 year flood event. Average height of the levee varies between 12 to 16 feet above the natural ground surface. Average crown width is 10 feet with both riverward/landward side slopes of 1H on 3V.

Location: The project is located on the left descending bank of Missouri River, between river miles 465 and 476. It is approximately 20 miles northwest of St. Joseph, Holt County, Missouri.

Authority: Levee Unit 488 L is part of the Missouri River Levee System (Sioux City, Iowa to the mouth)which forms a part of the comprehensive plan for the Missouri River Basin as authorized by the Flood Control Act of 1944 (Public Law 534, 78th Congress, 2d Session)

Construction Date of Original Project: Construction was started in June 1948 and completed on 15 March 1950.

Sponsor:
Holt County Drainage
District No. 7
Oregon, MO 64473

MRLS 497 L

Description: Missouri River Levee Unit 497 L is located near the town of Forest City in Holt County, Missouri. The approximately 68,561 linear feet of earthen FCW protects approximately 6,840 acres (of which approximately 6,820 acres are agricultural land), 7 residences, 1 agricultural business, 1 waste water treatment plant, 1 large commercial grain storage facility, 43 grain storage silos and approximately 33 outbuildings. The levee also protects the main line of the Chicago, Burlington and Quincy Railroad, State Highway 111 and several miles of county roads. The unit is an agricultural FCW with a protection level exceeding the 100 year flood event. Average height of the levee varies between 12 to 20 feet above the landside natural ground surface. Average crown width is 10 feet with both riverward/landward side slopes of 1H on 3V.

Location: The project is located on the left descending bank of the Missouri River, between river miles 476 to 483, right descending bank of Mill Creek and the left descending bank of Kimsey Creek, Holt County, Missouri.

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started in 1956 and completed in 1962.

Sponsor:
Forest City Levee District of Holt County, Missouri
Oregon, Missouri 64473-8132

MRLS 500 R

Description: The approximately 21,837 linear feet of earthen levee protects approximately 1,494 acres. All 1,494 acres are used for agricultural purposes. In addition to agriculture, it protects 6 grain bins, approximately 1.9 miles of gravel road, some low lying portions of Hwy. 7, and some unsurfaced farm to market roads. The unit is an agricultural levee based on the EM criteria. Areas and a protection level equal to the 100 year flood event with 3 feet of freeboard. Average height of the levee averages 9.6 feet above the landside natural ground surface. Average crown width is 10 feet with both riverward/landward side slopes of 1H on 3V.

Location: Right bank of the Missouri River between river miles 501.8 and 496.8 (1960 adjusted), Doniphan County, Kansas.

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and

extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started February 22, 1950 and completed April 12, 1953.

Sponsor:
Iowa Point Drainage District # 4
Highland, KS 66035

MRLS 512-513 R

Description: The approximately 102,600 linear feet of earthen levee protects approximately 7,686 acres of mainly agricultural land. In addition to the land it protects 1 house, 2 barns, 1 outbuilding, 14 grain bins associated utilities, approximately 2.7 miles of paved road, approximately 3.1 miles of graveled roads and several miles of unsurfaced farm to market roads. The unit is an agricultural FCW with urban/developed areas and a protection level equal to the 100 year flood event with 3 feet of freeboard. Average height of the levee varies from 10 to 14 feet above the landside natural ground surface except at the old channel crossing where the height varies between 18' to 24' above ground surface. Average crown width is 10 feet with both riverward/landward side slopes of 1H on 3V.

Location: Levee Unit 513-512 R is located on the right descending bank of the Missouri River, river mile 495 to 497.3 (1960 adjusted) and on both the right and left banks of the Big Nemaha River in Richardson County, Nebraska , extending into Brown County, Kansas.

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction of Section 1 was started in 19 July 1949 and was completed 13 September 1952. Construction of Section 2 was from 27 July 1949 to 22 January 1951. The Mooney drainage ditch was started 23 June 1950 and completed 18 December 1950. Various other construction contracts ran through 1 February 1955.

Sponsor:
Drainage District No. 7,
Richardson Co. Nebraska
Rulo, Nebraska 68431

NORTH KANSAS CITY LOWER SECTION – KANSAS CITY FCP

Description: (Note: Information below represents protected facilities within the complete flood control unit, which consists of the following multiple Sponsors/levee segments: North Kansas City Airport and North Kansas City Lower Unit)

The North Kansas City Lower Unit consists of approximately 29,450 linear feet of earthen levee and 4,420 linear feet of reinforced concrete floodwalls protect approximately 2,933 acres as part of the levee/floodwall system. It protects the city of North Kansas City including numerous residences and businesses, industrial parks, 2 railroad yards, NKC water works and waste water treatment facilities, NKC schools, large recreational park including tennis courts, hiking trails, picnic shelters, track, soccer fields, and baseball fields. It also protects an undetermined amount of roads and utility lines servicing the area and the Kansas City Downtown Airport.

This is an urban FCW with a level of protection equaling the 500 year event. The average height of the unit varies from 8 to 23 feet above natural ground level with average crown width of 10 feet, landside slopes from 1V on 2.5H to 1V on 4H, and riverward slopes of 1V on 3H.

Location: North Kansas City Lower Unit is located in Kansas City, Clay County, Missouri along the left bank of the Missouri River from the bluff north of the Kansas City, Missouri Waterworks Intake from station 0+00 to station 70+40; then begins again from station 210+40 at the Hannibal Bridge to station 359+60; and then along the hillside ditch to west of Cherry Street (station 395+60 to station 469+16.8).

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started on 6 July 1951 and completed 11 October 1954.

Sponsor:
Kansas City Levee District
Liberty, MO 64068

NORTH KANSAS CITY AIRPORT SECTION – KANSAS CITY FCP

Description: (Note: Information below represents protected facilities within the complete flood control unit, which consists of the following multiple Sponsors/levee segments: North Kansas City Airport and North Kansas City Lower Unit)

The North Kansas City Airport Unit consists of approximately 13676 linear feet of earthen levee and 730 linear feet of reinforced concrete floodwalls protect approximately 2,933 acres as part of the levee/floodwall system. It specifically protects the Kansas City Downtown Airport in addition to protecting the city of North Kansas City including numerous residences and businesses, industrial parks, 2 railroad yards, NKC water works and waste water treatment facilities, NKC schools, large recreational park including tennis courts, hiking trails, picnic shelters, track, soccer fields, and baseball fields. It also protects an undetermined amount of roads and utility lines servicing the area.

This is an urban FCW with a level of protection equaling the 500 year event. The average height of the unit varies from 8 to 20 feet above natural ground level with average crown width of 10 feet, landside slopes of 1V on 4H, and riverward slopes of 1V on 3H.

Location: North Kansas City Unit Airport Unit is located in Kansas City, Clay County, Missouri. The unit consists of a system of levees, floodwall, and appurtenances along the left bank of the Missouri River extending downstream from station 70+40 (river mile 369.3, 1960 adjusted) of the levee to the downstream floodwall at the Hannibal Bridge at station 208+43 (river mile 366.2,1960 adjusted).

Authority: This is a Federal project authorized by section 9 of the Flood Control Act approved 22 June 1936, Public Law 738, 74th Congress, 2d Session as modified and extended by Section 10 of the Flood Control Act approved 22 December 1944, Public Law 534, 78th Congress, Second Session.

Construction Date of Original Project: Construction was started on 27 May 1946 and completed 6 October 1947.

Sponsor:
City of Kansas City, Missouri
Kansas City, MO 64130

OSAWATOMIE LEVEE UNIT

Description: The Osawatomie Levee Unit is comprised of improved and new channel on the Pottawatomie Creek; drainage structures for removal of interior waters; levees along the north, east, and south sides; and stoplog gaps at Union Pacific Railroad, US Highway 169, 1st Street, and 8th Street. The levee unit surrounds approximately 450 acres of land protecting most of the town of Osawatomie, 2000 population 4,645. Within the protected area there is more than 300 homes, at least 8 businesses, about 3.75 miles of railroad, and about 6.5 miles of city streets. Property value in the protected areas is conservatively estimated at almost $92.6 million. The Osawatomie Levee Unit provides an approximately 200 year level of flood risk management.

Location: The Osawatomie Levee Unit is located in Miami County, Kansas, about 50 miles southwest of Kansas City, Missouri. The levee extends along the right bank of the Marais des Cygnes River and the left bank of Pottawatomie Creek (Osage River basin).

Authority: The Osawatomie, KS Flood Protection Project was authorized by the Flood Control Act approved 22 December 1944.

Construction Date of Original Project: With exception of existing levee in the vicinity of station 5+00 to 9+00, there were no existing flood protection works at Osawatomie. The existing levee was left in place, and incorporated into the proposed levee. A contract for construction of Flood Protection Works, Osawatomie, Kansas, was awarded to the List and Clark Construction Company on 14 May 1968. Work was completed 6 November 1970. A contract for alterations of facilities was awarded to the Missouri Pacific Railroad on 2 April 1968 and work was completed 10 August 1970. In August 1973 approval was given to the State Highway Commission of Kansas to incorporate new US Highway 169 between original levee station 81+30 and 102+00.

Sponsor:
City of Osawatomie, Kansas
Osawatomie, Kansas 66064

ABILENE LEFT BANK

Description: The Abilene Unit Left Bank consists of approximately 1.09 miles of levee with 10-foot crown width with 1V on 2.5H riverside and 1V on 3H landside slopes, 0.18 miles of floodwall, and 0.28 miles of spoil bank levee. Combined with the right bank of the system, the levees protect approximately 632 acres of residential area, 331 acres of commercial and industrial, and 220 acres of agricultural lands. Total population at risk is 1,841, and the total structure vale in the leveed area is $261,782,000. Features include 9 drainage structures, 2 miles of new channel, and 1.4 miles of improved channel along Mud Creek. The design discharge for the levee is 27,400 cfs with 3 feet of freeboard.

Location: The flood protection project is located near the center of Dickinson county near the mouth of Mud Creek (a left bank tributary to the Smoky Hill River), about 20 miles northeast of Salina, Kansas.

Authority: The Abilene, Kansas Flood Protection Project is included as part of the comprehensive plan for the Kansas River, authorized by the Flood Control Act approved September 3, 1954.

Construction Date of Original Project: Construction of Stage I of the original project was performed by Central Drainage and Construction Company and was initiated on 25 September 1957 and completed on 27 August 1958.

Sponsor:
City of Abilene, Kansas
Abilene, KS 67410

ABILENE RIGHT BANK

Description: The Abilene Unit Right Bank consists of approximately 1.31 miles of levee with a 10-foot crown width with 1V on 2.5H riverside and 1V on 3H landside slopes, 280 feet of floodwall, and 0.22 miles of spoil bank levee. Combined with the left bank of the system, the levees protect approximately 632 acres of residential area, 331 acres of commercial and industrial, and 220 acres of agricultural lands. Total population at risk is 789, and the total structure vale in the leveed area is $79,455,000. Features includes 12 drainage structures, 2 miles of new channel, and 1.4 miles of improves channel along Mud Creek. The design discharge for the levee is 27,400 cfs with 3 feet of freeboard.

Location: Abilene, Kansas is approximately 20 miles northeast of Salina, Kansas. The system is situated on the right bank of Mud Creek near the confluence of Mud Creek and Smoky Hill River.

Authority: The Abilene, Kansas Flood Protection Project is included as part of the comprehensive plan for the Kansas River, authorized by the Flood Control Act approved September 3, 1954.

Construction Date of Original Project: Construction of Stage I of the original project was performed by Central Drainage and Construction Company and was initiated on 25 September 1957 and completed on 27 August 1958.

Sponsor:
City of Abilene, Kansas
Abilene, KS 67410

BARNARD LEVEE

Description: The Barnard Levee Protection Project consists of 1.9 miles of levee, 2 sandbag gaps, 7 drainage structures, and 1.8 miles of cutoff channel improvements. The protected area consists of approximately 15 blocks of business and residential property (totaling 87 buildings) in addition to adjacent farmland. Levee embankments for the Barnard Unit consist of one continuous main levee from Station 0+00 to Station 103+20.85. The general levee section consists of a 10’ crown with 1V on 3H or 1 on 2.5 slopes. According to data contained in the National Levee Database the population at risk if the levee were to fail is 118 and the value of structures protected by the levee is $16,897,000. The design flood discharge is 39,000 cfs.

Location: The Barnard Levee Unit is located in Lincoln County, along the right bank at the junction of Rattlesnake Creek and Salt Creek and encircles all but the southeast quadrant of the City of Barnard. The levee begins along the east side of the natural Dry Creek, approximately 1/3 mile south of Hwy. 284 (Ballard Avenue) at high ground. It continues north parallel to the east bank of Dry Creek. The levee winds around the City of Barnard to the east, northeast and east again, roughly parallel to Rattlesnake Creek to Salt Creek, then turns southeast and south, roughly parallel to Salt Creek. The levee continues to the south past Salt Creek to 1st street, turns west on 1st street to the railroad tracks, turn south on Section Line Street and then northwest on Simmons Avenue to end at Main Street (Sta. 103+20.85).

Authority: The Barnard Levee Unit was authorized under provision of Section 205 of Public Law 858, 80th Congress, second session, as amended by Section 212 of the Flood Control Act approved 17 May 1950.

Construction Date of Original Project: A contract for construction of levee channels, and appurtenances was awarded to Amino Bros. Company on 28 December 1956. Construction started on 5 January 1957 and was completed on 20 July 1957.

Sponsor:
City of Barnard, Kansas
Barnard, KS 67418

FT. LEAVENWORTH LEVEE

Description: Three Mile Creek is a right-bank tributary of the Missouri River, drains a total area of 6.4 square miles. About 70 percent of this total area, or 4.5 square miles, is within the city limits of Leavenworth, Kansas. The tributary named South Branch drains an area of 1.7 square miles, and an unnamed tributary drains 0.8 square miles. The central business and industrial districts of Leavenworth are situated partly within the flood plain of Three Mile Creek. The channel varies from about 15 feet to 40 feet wide, and it is spanned by several bridges.

Location: The main-stem portion of Three Mile Creek, originating in the northwest portion of the basin, flows generally eastward through Leavenworth, joining the Missouri River at river mile 397 (1960 adjustment). The South Branch tributary joins the main-stem portion midway between 10th and 11th Streets, the unnamed tributary flows generally northward along the Santa Fe tracks through the center of Leavenworth.

Authority: "Resolved by the Committee on Public Works of the House of Representatives, United States, That the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review the reports on the Missouri River, submitted in House Document 238, 73rd Congress, second session, and subsequent reports, with a view to determining whether improvements for flood control on Three Mile Creek, a tributary of

the Missouri River, in the vicinity of Leavenworth, Kansas, are justifiable and feasible at this time."

FT. RILEY - FORSYTH

Location:
Fort Riley, Kansas

FT. RILEY - FUNSTON

Location:
Fort Riley, Kansas

FT. RILEY – MARSHALL FIELD

Location:
Fort Riley, Kansas

LAKE CITY AAP

Description: There are approximately 18,798 feet of levee at Lake City Army Ammunition Plant (LCAAP). The system has 4 levees. The highway No. 7 levee extends approximately 6,843 feet north from the Hillside Diversion Channel and runs along Highway 7 passing over the Plant entrance, Buckner Road, and past the Missouri Pacific Railroad line. The Hillside Diversion has 3 levees: the East Fork levee, near the Eastern end, is approximately 1,339 feet long, the Owens Schoolhouse levee, at Owens Schoolhouse Road, is approximately 926 feet long, and the channel levee, beginning near Residential Road and extending to the mouth, is approximately 9,690 feet long. The levees were constructed with a crown width of 10 feet and 1V on 3H landside and riverside slopes. Throughout the project the levee crown, turnouts, and ramps are protected with 6-inch crushed rock surfacing. Underseepage control was adequately accomplished with berms. Other features of the project consist of levee toe protection, seeding of all embankment not protected by riprap and drainage structures. The standard project flood has a design discharge of 32,000 cfs.

Location: The LCAAP Levee is located in the Little Blue River Basin, in northeastern Jackson County, Missouri, approximately 12 miles east of Kansas City. The Plant is situated in the right bank flood plain of the Little Blue River. West Fire Prairie Creek flows through the LCAAP Levee property which is east of Missouri Highway 7 and upstream of the confluence of West Fire Prairie Creek with the Little Blue River.

Authority: LCAAP is one unit of a system which forms a part of the comprehensive plan for the Missouri River Basin as authorized by the Flood Control Act of 1944 (Public Law 534. 78th Congress. 2nd Session).

Sponsor:
Lake City Army Ammunition Plant

BANNISTER FEDERAL COMPLEX

Description: The Bannister Federal Complex consists of three sections, stationing 13+70 to 31+24, station 59+70 to 66+58, and station 76+06 to 139+33, totaling 9,185 feet approximately including floodwall at access gaps. There are eight drainage structures and two ponding areas along the length of the levee. The concrete floodwall consists of 52 monoliths ranging from approximately 15 to 22 feet in height and 30 to 105 feet in length, with concrete foundation, foundation concrete piles underseepage cutoff sheetpile wall. The floodwall runs from station 31+11 to station 60+27, and contains 4 stoplog gaps, 5 rolling gates, 1 swinging gate, and 2 slope gauges. The total area protected by the levee project is 28,000 acres.

Location: The Project is located in the blue River Basin, at the confluence of the Blue River and Indian Creek. The Federal Complex is located in South Kansas City, Missouri at the intersection of Bannister Road and Troost Avenue.

Authority: Under the authorization of Memorandum of Understanding DE-GM04-84AL23521 between the Corps of Engineers and The Department of Energy, Interagency Agreement (IA) No. DE-AI33-89AL58832 was signed in September 1989, and provided funds for design and the preparation of plans and specifications. A modification to the IA, signed in September 1990, provided additional funds to design the selection alternative, 500-year plus 3 feet of freeboard.

Construction Date of Original Project: Construction was started in December 1994 and completed in January 1998.

Sponsor:
General Services Administration

TRUMAN OUTLET WORKS LB & RB

Description: The Truman Outlet Works Levee System is a part of the Truman Dam Project. It consists of both the right bank (RB) and left bank (LB) levees. Both were constructed to a top elevation of 666.0 feet, an average levee height of 6 feet (range from 5 to 8 feet) The levees have 10-foot wide crowns covered with crushed rock surfacing,

1V on 4H sideslopes, 12-inch thick layers of quarry-run stone protecting the riverside slopes, and 50-foot wide landside berms. The levees were constructed using traffic-compacted impervious fill, while the berms were built with traffic compacted fill consisting of topsoil and pervious materials. Overflow weirs, consisting of 200 and 300-foot long "notches" approximately 1-foot lower than the top of levee, were constructed at three locations in the levees. Inundating landside areas through the weirs at times of very high releases and equalizing the landward and riverward elevations before the entire levees are overtopped, minimizes damage to the tops and slopes of the embankments. The two right bank weirs are located at RB levee stations 5+00 and 52+00, with the single left bank weir located at LB station 54+00. The weirs are 200, 300, and 300 feet long respectively, centered on the above stations. The design discharge was calculated from the criteria for spillway design flood with a peak inflow of 1,060,000 cfs.

Location: The Truman Outlet Works Left Bank (LB) levee begins downstream of the relocated Warsaw City Harbor and ends approximately 6,300 feet downstream at the left abutment of the Highway 65 bridge. The right bank (RB) levee starts at higher ground immediately below the dam's outlet channel and extends approximately 13,500 feet downstream where it ties into higher ground. The RB levee travels under the highway 7 bridge and, with the use of channel blocks from Stations 61+00± to 62+50± and 127+80± to 129+60±, runs onto, around, and off the forested island opposite Warsaw. Both levees are set back approximately 100 feet from the river's edge.

Authority: This project was authorized under the Flood Control Act of 1954 (Public Law 83- 780) (House Document No. 549, 81st Congress) Flood Control Act of 1962 (House Document No. 578, 87th Congress)

Construction Date of Original Project: The initial construction period for the project began in September 1965 and was completed January 1967.

Sponsor:
US Army Corps of Engineers, Kansas City District

TUTTLE CREEK DAM BLUE RAPIDS

Description: The Blue Rapids, Kansas Flood Protection Project is a part of the Tuttle Creek Dam Project. It consists of a rolled earthfill levee measuring 4,500 feet in length with a maximum height of 50 feet. The levee was constructed with a crown width of 10 feet with 1V on 2.5H landside and riverside slopes with berms on the riverside. Also included are a pumping station and an additional drainage area, located east of station 20+50 draining into the main Park Creek drainage area (1,320 acres). Control and monitoring structures also include 19 relief wells and 10 piezometers. The Blue Rapids, Kansas Flood Protection Project protects a population of 259 and a property value of $18,161,000. The spillway and levee design capacity was designed for a 100-year flood, or 612,000 cfs.

Location: The levee is located on the west side of Blue Rapids, Kansas, starting at approximate station -0+60 near Fourth Street and extends east to approximate station 45+50 in the vicinity of Main and First Streets.

Authority: Tuttle Creek reservoir was proposed in Senate Document 1, 75th Congress, as a flood control project. Construction was authorized by Public Law 761, 75th Congress, 3rd Session, more commonly known as the 1938 Flood Control Act.

Estimated Original Cost of Project: The cost of the original project (dam and reservoir) was $80,274,770 (1972 dollars)

Construction Date of Original Project: Blue Rapids levee construction started in 1961 and was completed in 1963.

Sponsor:
US Army Corps of Engineers, Kansas City District

LIBERTY BEND LEVEE

Authority: The Flood Control Act approved 22 June 1936 authorized the existing project for Flood Control at the Kansas Citys on the Missouri River, Kansas and Missouri.

Construction Date of Original Project:
Construction for the Liberty Bend Cut-Off was completed in 1947

Sponsor:
City of Liberty, Missouri
Liberty, Missouri

USACE KANSAS CITY DISTRICT FEDERAL CHANNEL PROJECTS:

ATCHISON, KS FPP

Description: The Atchison, Kansas Flood Protection Project consists of 2,340 linear feet of channel improvements and 2,364 linear feet of horseshoe conduit around the town of Atchison. The main business and industrial district of the city of Atchison, Kansas, is concentrated in the flood plain area and includes approximately 240 acres. This project was designed to handle a discharge of 13,500 cfs from the White Clay Creek.

Location: The project is located at the mouth of White Clay Creek, which flows through the heart of the city of Atchison, Kansas. This creek is a right bank tributary of the Missouri River at river mile 422.5 (1960 mileage)

Authority: This project was authorized by the Flood Control Act of 23 October 1962 (Senate Document No. 151, 87th Congress)

BLUE RIVER CHANNEL (MO)

Description: The current project consists of 76,700 linear feet of channel designed to prevent a flow of 35,000 cfs from flooding the Blue Industrial Valley. Also included are 120 drainage structures, and 1,634 feet of floodwall. A full list of the reach segments are as follows:

Mouth to Brush Creek - The *Mouth to Brush Creek* reach includes approximately 57,400 linear feet of completed channel from the mouth of the Blue River upstream to the confluence with Brush Creek, including 3,480 feet of paved channel.

Brush Creek to 53rd Street - The *Brush Creek to 53rd Street* reach includes approximately 3,700 linear feet of completed channel from Brush Creek to 53rd Street, approximately 1,400 linear feet of riprap repairs in the Blue River channel upstream and downstream of Brush Creek confluence, and approximately 300 feet of combined energy dissipation basin construction and bank repair work below Langley Outfall Structure, a tributary to the Blue River located approximately 0.25 mile north of Stadium Drive.

53rd Street to 63rd Street - The *53rd Street to 63rd Street* reach is located from approximately 430 feet downstream from the grade control structure at 53rd Street at the downstream end to past 63rd Street to the Zoo Bridge in Swope Park at the upstream end. This reach includes 13,900 linear feet of completed channel from approximately 52nd Street to 63rd Street.

The average height of the channel is 32 feet and the average bottom width is 70 feet. The original project authorized in 1970 provided flood protection from a 100-year flow or a 1% probability of flooding in any single year.

Location: The authorized channel project is located in the Blue River Basin in eastern Kansas City, Missouri downstream of the Interstate 435 Bridge near the confluence with the Missouri River and extending upstream to near 63rd Street.

Authority: The Blue River Basin projects, Missouri and Kansas, were authorized by the Flood Control Act of 1970 (P.L. 91-611, 91st Congress, 2nd Session).

Construction Date of Original Project: Channel construction began in late 1983 with the award of the first two contracts and the first reach finished in 1993.

Sponsor:
City of Kansas City, Missouri

BRUSH CREEK CHANNEL (MO)

Description: The Brush Creek Channel Improvement Project consists of 7,200 feet of improved channel, 3,190 feet of which is paved channel. The Project includes two concrete dams located at stations 79+00 and 101+35, and a drop structure located at station 43+26. These structures create three different channel reaches. General channel reach dimensions are 1V on 2.5H slopes, a 10-foot wide bench, and a channel wall 1.5 feet above the pool. Due to limited right-of-way, some reaches required a second tier of walls to avoid excessively steep cut slopes. In these reaches the Corps' work includes developing the area between the channel wall and the second tier wall. The typical bank configuration is as follows: Channel wall 1.5 to 3.0 feet above pool, 10-foot wide bench for sidewalk and plantings, a second tier wall, and a 4-foot bench at top of second wall. In addition, about 60 percent of the channel bottom is paved; an area where the soil was judged to erode more than 18 inches during the life of the project. The Brush Creek Project also has five pump wells distributed between the upstream drop structure and just downstream of Dam No. 2. The channel improvement was designed for a discharge of 26,400 cfs, or a 500 year recurrence interval.

Location: The Project is located in the Blue River Basin, in western Kansas City, Missouri, west of Interstate 435 and upstream of the confluence of the Blue River with the Missouri River. The Project extends 7,200 feet from just upstream of Jefferson Street to just downstream of Troost Avenue, passing through the Plaza.

Authority: The Brush Creek Channel was authorized by the Flood Control Act approved 22 December 1944 (Public Law 534, 78th Congress, 2d Session) and The Water Resources Development Act of 1986 Public Law 99-662 (Section 401a) 17 Nov. 1986.

Sponsor:
City of Kansas City, Missouri

BEDFORD, IA FPP

Description: The Bedford, Iowa Flood Protection Project consists of 3.3 miles of improved channel. The bottom width of the channel is 45 feet and the side slopes are 1V on 3H. Along the length of the channel is one control structure at station 61+60. The structure is a sheetpile and rock channel grade control structure place across the channel to prevent degradation. The channel improvement protects 100 acres of urban land and 300 acres of agricultural land. The design capacity is 7,500 cfs.

Location: The Bedford, IA FPP is located at East Fork One Hundred and Two River in Bedford, Iowa.

Authority: Authority for construction of this project may be found in the Flood Control Act of 1962, approved 23 October 1962, Public Law 874, Eighty-seventh Congress, second session.

Construction Date of Original Project: Construction by the Corps of Engineers began August 1966 and finished October 1967.

Sponsor:
City of Bedford
Bedford, Iowa 50833

LITTLE BLUE RIVER CHANNEL (MO)

Description: The Little Blue River Channel Improvement Project consists of 14.81 miles of channel improvements along the length of the Little Blue River. The project consists of a low flow channel, which essentially follows the existing channel, and a high flow channel 5 feet above the low flow channel. Due to the alignment of the high flow channel, the project contains 14 flows through fisheries. Fishing impoundments made by constructing channel blocks in the upstream and downstream parts of the existing oxbow channel, were constructed at four locations. The low flow channel varies in width from 10 to 30 feed and has side slopes of 1V on 2H. The high flow channel, with a flowline approximately 5 feet higher than the low flow channel flowline, varies in width from 50 to 130 feet. Side slopes of the high flow channel are 1V on 3.5H from the high flow flowline. The improved channel has a design discharge capability of 18,000 cfs.

Location: The Little Blue River is a right bank tributary of the Missouri River. It rises in Cass County, in west-central Missouri, and flows generally northward through Jackson County to enter the Missouri River at mile 339.5 (1960 adjusted), about 20 miles downstream from Kansas City, Missouri. The channel improvement project begins upstream near the confluence of Wildwood Creek, station –(0+92), and proceeds

downstream of Blue Mills Road, station 788+96, where it terminates at the upstream limits of the channel improvement portion of MRLS Unit R-3S1.

Authority: The Little Blue River Channel Improvement project is a part of the comprehensive plan for the Missouri River basin and was authorized by the Flood Control Act, approved 13 August 1968, Public Law 90-483, 90th Congress (House Document 169/90/1).

Construction Date of Original Project: Stage 1 of the Little Blue River Channel Improvement Program's contract was awarded on 20 December 1975 and construction was completed on 23 August 1978.

Sponsor:
City of Kansas City, Missouri

SHOAL CREEK CHANNEL IMPROVEMENT

Description: The Shoal Creek Channel Improvement includes 1.8 miles of channel improvement that protects 1,200 acres of agricultural land. The existing Shoal Creek Channel was straightened and widened by alternating the excavation on the left and right banks to provide a minimum bottom width of 30 feet in the low flow channel. When the low flow channel ends the flow is diverted to a 7-foot 8-inch by 5-foot 5-inch structural plate arch pipe and a 10-foot bottom width diversion channel into the Old Chariton River Channel. The high flow channel has a minimum bottom width of 60 feet. The high flow channel takes flows not diverted to the low flow diversion channel and carries them directly to the Chariton River (approximate station 114+47). The high flow channel has a grade control structure at station 87+00 to help stabilize the high flow channel bottom. Along with the normal channel, approximately 2.5 miles of Shoal Creek Channel has been preserved as a wildlife corridor. The corridor is located along the existing natural Shoal Creek Channel (station 75+00). The corridor consists of the old channel and 50 feet back from the old channel's high bank on either side. High flow design flow is 3,120 cfs and low flow design flow is 2,550 cfs.

Location: The channel improvement is located in the Shoal Creek, Putnam and Schuyler Counties, Missouri. The low flow channel ends at station 75+40 and the high flow channel begins at station 76+00.

Authority: This project was authorized as a part of the 1965 Flood Control Act (Public Law 89-298, 89th Congress), approved 27 October 1965. The entire project is described in "Review Report on Chariton and Little Chariton Rivers and Tributaries, Iowa and Missouri," March 1963, which was published as House Document No. 89-238.

Construction Date of Original Project: The contract for construction of channel and appurtenances at Shoal Creek was awarded 12 April 1974 and completed 3 September 1975.

Sponsor:
Shoal Creek Drainage District
Livonia, Missouri 64551

MACON-ADAIR COUNTIES UNIT

Description: The Macon-Adair Counties Unit consists of an improved channel, channel cut-offs and channel blocks on the Chariton River. The project also includes channel cut-offs, channel blocks, and improved channels for Goose Creek and Spring Creek. The Chariton River improvement measures 92,338 feet in length, the Spring Creek improvement measures 7,665 feet in length and the Goose Creek improvement measures 8,928 feet in length. The channel improvement consisted of 75-foot bottom width and 1V on 1H side slopes to contain the design flood discharge of 20,000 cfs at Novinger, Missouri. This correlates to a 10-year frequency of occurrence.

Location: The Macon-Adair Counties Unit is located along the Chariton River, beginning at station 0+00 at the Chicago Burlington and Quincy Railroad Bridge near Novinger, Missouri, and extends downstream to station 923+38.99 south of South Gifford, Missouri.

Authority: Authority for the construction of the Chariton River Flood Control Project, of which the Macon-Adair Counties Unit is a part, is contained in the Flood Control Act approved 22 December 1944, Public Law 534, Seventy-eight Congress, second session.

Construction Date of Original Project:
Construction was started on the unit on 28 July 1950 and final completion accepted by the government on 25 September 1952.

STRANGER CREEK FPP (KS)

Description: The Stranger Creek Flood Protection Plan increased capacity of the channel from the mouth of the creek upstream to State Highway No. 192 near Easton, Kansas. This beneficial increase in channel capacity was accomplished by the cutting of the larger trees, brush, and obstructions, and treatment of stumps within the channel for a distance of 50 feet landward of each high bank. Will reduce flood severity on approximately 12,000 acres of highly productive agricultural land.

Location: Stranger Creek is a left bank tributary of the Kansas River at river mile 35.3.

Authority: The small flood control project for Stranger Creek, Kansas, is included as part of the Flood Control Act of 1948, as amended by Public Law 685, 84th Congress.

APPENDEX C

Notice of Availability

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, KANSAS CITY DISTRICT
635 FEDERAL BUILDING
601 E. 12TH STREET
KANSAS CITY, MISSOURI 64106-2824

REPLY TO ATTENTION OF

Project Management, Planning Branch,
Community and Risk Communication
and Planning Review Section

NOTICE OF AVAILABILITY

The U.S. Army Corps of Engineers, Kansas City District (Corps), has prepared a draft Programmatic Environmental Assessment and a Finding of No Significant Impact (FONSI) that are available for public review. These documents were prepared in accordance with the National Environmental Policy Act.

The draft Programmatic Environmental Assessment and FONSI were prepared for Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408. The Corps receives numerous requests each year from private, public, tribal, or other federal entities to alter civil works projects. When requests are received, they are evaluated to determine if the alteration would be injurious to the public interest or impair the usefulness of the Corps project. The purpose of the Programmatic Environmental Assessment is to develop categorical permissions to simplify the Section 408 review process for potential alterations that are similar in nature and have similar impacts. The proposed categorical permissions would be applicable to alterations to federal levees, channel modification projects, and the Missouri River Bank Stabilization and Navigation Project within the Corps civil works boundary.

The Corps is soliciting public comments on the draft Programmatic Environmental Assessment and FONSI during a 30-day review period that opens April 22, 2016, and will close May 22, 2016. These documents are available for review on the Corps' website at http://www.nwk.usace.army.mil/Media/PublicNotices/PlanningPublic Notices.aspx. The reports may also be obtained by contacting Mr. Jesse Granet, Environmental Specialist, by phone at (816) 389-3470 or by email at jesse.j.granet@usace.army.mil. All comments should be directed to Mr. Granet at the above address, phone, or email address.

Jason Farmer
Chief, Environmental Resources Section

APPENDEX D

Public and Agency Comments

From:	Dorsey, Trisha C NWK
To:	Meade, Timothy M NWK; Warren, Catherine J NWO
Cc:	Granet, Jesse J NWK
Subject:	FW: Public Notice for Categorical Permissions for Requests to Alter USACE Civil Works Projects (UNCLASSIFIED)
Date:	Friday, April 22, 2016 8:09:00 AM
Attachments:	Osage Ancestral Lands- State and Counties.pdf ONHPO S106 procedures 2016.pdf Osage Ancestral Territory 2016.pdf

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CLASSIFICATION: UNCLASSIFIED

Tim/Cathi,

I believe this is for your action. Please advise and let me know if I need to respond to Dr. Hunter or if you plan to do so. Thanks!

V/r

Trisha Dorsey
Public Affairs Specialist
U.S. Army Corps of Engineers
Kansas City District
Office: 816-389-3075
Cell: 816-289-4332

-----Original Message-----
From: Andrea Hunter [mailto:ahunter@osagenation-nsn.gov]
Sent: Friday, April 22, 2016 7:59 AM
To: Dorsey, Trisha C NWK <Trisha.C.Dorsey@usace.army.mil>
Cc: John Fox <jfox@osagenation-nsn.gov>
Subject: [EXTERNAL] RE: Public Notice for Categorical Permissions for Requests to Alter USACE Civil Works Projects (UNCLASSIFIED)

Ms. Dorsey,
The Osage Nation requests to receive notification of Kansas City District undertakings in Osage ancestral land (see attachments) in accordance with the USACE's Interim Guidance for Implementing Appendix C of 33 CFR Part 325 with the Revised Advisory Council on Historic Preservation Regulations at 36 CFR Part 800 (2005) Section 2 which states "Public notices alone are insufficient means to initiate government-to government consultation." The Osage Nation requests to receive the letter of notice and invitation to consult by hard copy along with all relevant project information listed in the attached consultation procedures document. Please share our request with all USACE personnel that need to be informed.

Thank you,

Dr. Andrea A. Hunter
Director/THPO
Osage Nation Historic Preservation Office
627 Grandview Avenue
Pawhuska, OK 74056

Office Phone: (918) 287-5328
Office Fax: (918) 287-5376

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

From: Dorsey, Trisha C NWK [mailto:Trisha.C.Dorsey@usace.army.mil]
Sent: Thursday, April 21, 2016 3:52 PM
Subject: Public Notice for Categorical Permissions for Requests to Alter USACE Civil Works Projects (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Notice of Availability for Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408

The U.S. Army Corps of Engineers, Kansas City District has prepared a Draft Programmatic Environmental Assessment and Finding of No Significant Impact (FONSI) for Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408. The Corps receives numerous requests each year from private, public, tribal or other federal entities to alter civil works projects. When requests are received, they are evaluated to determine if the alteration would be injurious to the public interest or impair the usefulness of the Corps project. The purpose of the Programmatic Environmental Assessment is to develop categorical permissions to simplify the Section 408 review process for potential alterations that are similar in nature and have similar impacts. The proposed categorical permissions would be applicable to alterations to federal levees, channel modification projects and the Missouri River Bank Stabilization and Navigation Project within the Corps Civil Works boundary.

The Corps is soliciting public comments on the draft Programmatic Environmental Assessment and FONSI during a 30-day review period that opens April 22, 2016, and closes May 22, 2016. The documents are available for review via the web links below.

Comments and questions should be directed to Mr. Jesse Granet by phone at 816-389-3470 or email at jesse.j.granet@usace.army.mil.

Civil Works Public Notices: http://www.nwk.usace.army.mil/Media/PublicNotices/PlanningPublicNotices.aspx
Notice of Availability Document: http://www.nwk.usace.army.mil/Portals/29/docs/civilworks/pn/Draft PEA Section 408 NOA.pdf
Programmatic Environmental Assessment & FONSI:
http://www.nwk.usace.army.mil/Portals/29/docs/civilworks/pn/Draft PEA Section 408.pdf

CLASSIFICATION: UNCLASSIFIED

CLASSIFICATION: UNCLASSIFIED

TRIBAL HISTORIC PRESERVATION OFFICE

Date: May 18, 2016 **File: 1516-1846MO-5**

RE: USACE, Kansas City District, Draft Programmatic Environmental Assessment and FONSI for Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects

USACE, Kansas City District
Jesse Granet
601 East 12th Street
Kansas City, Missouri 64106

Dear Mr. Granet,

The Osage Nation Historic Preservation Office has received and reviewed information for the project listed as USACE, Kansas City District, Draft Programmatic Environmental Assessment and FONSI for Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects. We had a few concerns that we would like to address.

First, the all of the alternatives refer to "known cultural resources." The Osage Nation also has concerns for unknown cultural resources. Though Civil Works projects usually take place on previously disturbed areas, it is important to consider effects of projects on unknown archaeological resources through archaeological surveys in areas where unknown archaeological resources may exist.

Second, under section 4.10 Cultural Resources on page 28, we would like the first sentence to read "Cultural resources include historic properties, archeological resources, and Native American resources including sacred sites and traditional cultural properties." This helps clarify what "Native American resources" are.

Finally, we would like to emphasize that the Osage Nation wishes to be contacted for these types of projects, even though they may have low potential to cause damage to intact cultural resources. The Kansas City District is entirely within the ancestral territory of the Osage people, and we would like to work with the District to prevent future loss of important cultural resources.

Should you have any questions or need any additional information, please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

John Fox
Archaeologist

627 Grandview, Pawhuska, OK 74056, (918) 287-5328, Fax (918) 287-5376

6425 SW 6th Avenue
Topeka, KS 66615

Kansas

phone: 785-272-8681
fax: 785-272-8682
cultural_resources@kshs.org

Kansas Historical Society

Sam Brownback, Governor
Jennie Chinn, Executive Director

KSR&C No. 16-05-037

May 5, 2016

Jesse Granet
Corps of Engineers, Kansas City District
635 Federal Building
601 E. 12th Street
Kansas City, MO 64106-2824

Via E-Mail

RE: Categorical Permissions to Alter COE Projects
Draft Environmental Assessment and FONSI
Statewide

Dear Mr. Granet:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed a Draft Programmatic Environmental Assessment and Finding of No Significant Impact (FONSI) for categorical permissions for requests to alter U.S. Army Corps of Engineers Civil Works Projects, dated April 2016. We find the process as described to be acceptable. We assume (as indicated in the document) that projects with potential to affect cultural resources will continue to be submitted for review individually as they have in the past. Our office has no objection to adoption of the draft EA.

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 Patrick Zollner at 785-272-8681 (ext. 217).

Sincerely,

Jennie Chinn, Executive Director and
State Historic Preservation Officer

Timothy Weston for

Patrick Zollner
Deputy SHPO

From:	Buck Brooks
To:	Granet, Jesse J NWK
Cc:	Gayle Unruh; Nicole Hood; Caleb J. Knerr; Christopher D. Shulse; Melissa Scheperle; Stephanie D. Graham; Valerie A. Hentges
Subject:	[EXTERNAL] Comments on P.N. for Draft EA & FONSI Relating to Section 408 Coordination
Date:	Friday, May 20, 2016 2:51:24 PM

Mr. Granet,

We offer the following comments pertinent to the subject referenced above:

We appreciate the NEPA streamlining that is proposed as a part of the public notice to aid in Section 408 processing. However, the majority of our Section 408 processing delays relate to impacts that have involved individual permits, so this EA process appears to offer no direct benefit to streamlining the 408 coordination in those instances. Based on our experiences, there needs to be some geospatial reference mechanism for the permittee to identify Corps civil works projects that would be regulated under Section 408 purview. To date, MoDOT has been involved in four projects that required 408 coordination. Two of these were individual permits that were processed in KC district. The lack of a defined process within KC district probably added about a month and a half to the processing time of each of these. We realize that the section 408 coordination process is evolving, but the customer service hasn't been good up to this point. For the sake of meeting our project letting dates and delivering projects to the public as promised, we hope that further 408 processing efficiences can be made across all Corps regulatory districts within Missouri.

We have experienced these same processing delays in other districts as well, including St. Louis and Memphis. The only project that we have had to date where a NWP was issued was from Memphis District. Again, the lack of a clearly defined process within the Corps probably added 4.5 months to the 404 permit processing time. While our main concerns are oriented toward reducing processing times for individual permits, based on the aforementioned experience, we are also very concerned about timely processing of those projects where NWPs will be authorized. We sincerely hope that the four other regulatory districts in Missouri are working hard to improve their process efficiencies in this area.

MoDOT's biggest anticipated use of any categorical permission as defined in your draft EA would likely be for geotechnical investigations that would be conducted at major river crossings. Based on a review of the environmental consequences as outlined in the public notice, we agree that Alternative 7 (recommended plan) best meets the purpose and need for requests to modify USACE projects within the scope of this document.

Thanks,

Buck Brooks

MoDOT, Wetland Coordinator

601 West Main Street

From:	Ledwin, Jane
To:	Granet, Jesse J NWK
Cc:	Amy Salveter (USFWS): amy_salveter@fws.gov
Subject:	[EXTERNAL] Re: Draft Section 408 Programmatic EA
Date:	Thursday, May 26, 2016 1:25:43 PM

Hi Jesse -

Thanks for the opportunity to comment on the EA. We have no substantive comments aside from the following regarding section 7 consultation under the Endangered Species Act of 1973 (as amended).

The document notes the USACE will conduct ESA consultation on a case-by-case basis relying on information provided by the requestor. Specifically:

The requestor would be responsible for conducting all necessary environmental and cultural resources coordination, obtaining necessary permits, and providing copies to USACE for review.

Given recent staffing and workloads, our office has been forced to limit section 7 consultations with the federal action agency, which in this case would be the USACE. Unfortunately, we were finding ourselves responding to multiple consultation requests from applicants, consultants, and project biologists for the same action. In the process we were tasking multiple Service staff with consultations that involved other staff, and may have been completed. This resulted in great frustration, confusion, extra work, and limited time to spend on actions that still required a response. Thus we have had to limit our consultation on actions with a federal nexus to the federal action agency.

Understanding the USACE's desire to have the requestor's assistance in providing information, we recommend they be required to provide the USACE a current list of federally listed species and designated critical habitat that may be affected by the proposed work via the Service's IPaC website:

Blockedhttps://ecos.fws.gov/ipac/

This will ensure that the USACE has the information they need to make an effect determination pursuant to ESA section 7 regulations. We are using this approach with the USACE's regulatory program and other federal agencies to most effectively staff numerous actions with very limited resources.

We appreciate your coordination and should you have questions regarding our comments, please contact me.

Best regards -

Jane

Jane Ledwin
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
101 Park DeVille Drive
Columbia, Missouri 65203
Phone 573/234-2132, extension 109
cell 573/356-1721
email jane_ledwin@fws.gov <mailto:jane_ledwin@fws.gov>

On Tue, May 24, 2016 at 10:07 AM, Granet, Jesse J NWK <Jesse.J.Granet@usace.army.mil

<mailto:Jesse.J.Granet@usace.army.mil> > wrote:

Amy,

The public comment period for the NEPA document described below recently closed.

Will your office be submitting any comments?

Thanks,
Jesse

Jesse Granet
Planning and Environmental Specialist
USACE, Kansas City District
(816) 389-3470

-----Original Message-----
From: Granet, Jesse J NWK
Sent: Wednesday, April 20, 2016 4:31 PM
To: 'Salveter, Amy' <amy_salveter@fws.gov <mailto:amy_salveter@fws.gov> >
Cc: 'Ledwin, Jane' <jane_ledwin@fws.gov <mailto:jane_ledwin@fws.gov> >
Subject: Draft Section 408 Programmatic EA

Amy,

We will be posting the attached Programmatic Environmental Assessment for public notice in the next couple days. Will you be able to provide comments concerning ESA and FWCA compliance while the document is on public review?

The Programmatic EA is for Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408. The Corps receives numerous requests each year from private, public, tribal, or other federal entities to alter civil works projects. When requests are received, they are evaluated to determine if the alteration would be injurious to the public interest or impair the usefulness of the Corps project. The purpose of the Programmatic Environmental Assessment is to develop categorical permissions to simplify the Section 408 review process for potential alterations that are similar in nature and have similar impacts. The proposed categorical permissions would be applicable to alterations to federal levees, channel modification projects, and the Missouri River Bank Stabilization and Navigation Project within the Kansas City District civil works boundary.

As noted in the EA, we will conduct site specific ESA compliance when we prepare tiered environmental assessments for individual projects.

Please let me know your questions.

Thanks,
Jesse

Jesse Granet
Environmental Specialist, PM-PC
USACE, Kansas City District
(816) 389-3470

From: McPeek, Kraig
To: Granet, Jesse J NWK
Cc: Amy Salveter (USFWS): amy_salveter@fws.gov; Jane Ledwin
Subject: [EXTERNAL] Re: USACE Kansas City District Section 408 PEA
Date: Tuesday, May 24, 2016 11:17:31 AM

Hi Jesse,

No we will not be commenting. Thanks

Kraig McPeek
US Fish and Wildlife Service

Rock Island Field Office
1511 47th Avenue
Moline, IL 61265
309-757-5800 x202
309-429-0362 (cell)
309-757-5807 (fax)

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On Tue, May 24, 2016 at 10:04 AM, Granet, Jesse J NWK <Jesse.J.Granet@usace.army.mil <mailto:Jesse.J.Granet@usace.army.mil> > wrote:

Kraig,

The public review period recently closed for the NEPA document described below.

Will your office be submitting any comments?

Thanks,
Jesse

Jesse Granet
Planning and Environmental Specialist
USACE, Kansas City District
(816) 389-3470

-----Original Message-----
From: Granet, Jesse J NWK
Sent: Thursday, April 21, 2016 9:34 AM
To: Kraig McPeek (Kraig_McPeek@fws.gov <mailto:Kraig_McPeek@fws.gov>) <Kraig_McPeek@fws.gov <mailto:Kraig_McPeek@fws.gov> >
Subject: USACE Kansas City District Section 408 PEA

Kraig,

We will be posting the attached Programmatic Environmental Assessment for a 30-day public notice in the next couple days. Will you be able to provide comments concerning ESA and FWCA compliance while the document is on public review?

While the fast majority of the study area included in the PEA is in the states of Kansas and Missouri, the Kansas City District does have one channel modification project, in that is located in Iowa that is within the scope of the document.

The Programmatic EA is for Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408. The Corps receives numerous requests each year from private, public, tribal, or other federal entities to alter civil works projects. When requests are received, they are evaluated to determine if the alteration would be injurious to the public interest or impair the usefulness of the Corps project. The purpose of the Programmatic Environmental Assessment is to develop categorical permissions to simplify the Section 408 review process for potential alterations that are similar in nature and have similar impacts. The proposed categorical permissions would be applicable to alterations to federal levees, channel modification projects, and the Missouri River Bank Stabilization and Navigation Project within the Kansas City District civil works boundary.

As noted in the EA, we will conduct site specific ESA compliance when we prepare tiered environmental assessments for individual projects.

Please let me know your questions.

Thanks,
Jesse

Jesse Granet
Environmental Specialist, PM-PC
USACE, Kansas City District
(816) 389-3470

From: Luginbill, Jason
To: Granet, Jesse J NWK
Subject: [EXTERNAL] Re: Draft Section 408 Programmatic EA
Date: Tuesday, May 24, 2016 4:30:54 PM

Hi Jesse,
We will not be submitting comments, things got busy, down two biologists and just had to prioritize. We will consult on those individual projects that need ESA compliance as those arise. My apologies for the delay on this. Thank you for your follow up and talk soon.

On Tue, May 24, 2016 at 10:06 AM, Granet, Jesse J NWK <Jesse.J.Granet@usace.army.mil <mailto:Jesse.J.Granet@usace.army.mil> > wrote:

Jason,

The public comment period for the NEPA document described below recently closed.

Will your office be submitting any comments?

Thanks,
Jesse

Jesse Granet
Planning and Environmental Specialist
USACE, Kansas City District
(816) 389-3470

-----Original Message-----
From: Granet, Jesse J NWK
Sent: Wednesday, April 20, 2016 4:34 PM
To: Jason Luginbill (jason_luginbill@fws.gov <mailto:jason_luginbill@fws.gov>) <jason_luginbill@fws.gov <mailto:jason_luginbill@fws.gov> >
Subject: Draft Section 408 Programmatic EA

Jason,

We will be posting the attached Programmatic Environmental Assessment for public notice in the next couple days. Will you be able to provide comments concerning ESA and FWCA compliance while the document is on public review?

The Programmatic EA is for Categorical Permissions for Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408. The Corps receives numerous requests each year from private, public, tribal, or other federal entities to alter civil works projects. When requests are received, they are evaluated to determine if the alteration would be injurious to the public interest or impair the usefulness of the Corps project. The purpose of the Programmatic Environmental Assessment is to develop categorical permissions to simplify the Section 408 review process for potential alterations that are similar in nature and have similar impacts. The proposed categorical permissions would be applicable to alterations to federal levees, channel modification projects, and the Missouri River Bank Stabilization and Navigation Project within the Kansas City District civil works boundary.

As noted in the EA, we will conduct site specific ESA compliance when we prepare tiered environmental

assessments for individual projects.

Please let me know your questions.

Thanks,
Jesse

Jesse Granet
Environmental Specialist, PM-PC
USACE, Kansas City District
(816) 389-3470

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Jason S. Luginbill - Field Office Supervisor
U.S. Fish and Wildlife Service - Region 6

Kansas Ecological Services Field Office

2609 Anderson Avenue

Manhattan, KS 66502
Office: (785) 539-3474 Ext. 105
Cell: (785) 313-0772
Fax: (785) 539-8567