



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7**

11201 Renner Boulevard
Lenexa, Kansas 66219

OFFICE OF THE
REGIONAL ADMINISTRATOR

JAN 06 2017

Col. Douglas B. Guttormsen
District Engineer
U.S. Army Corps of Engineers
601 East 12th Street
Kansas City, Missouri 64106-2896

Dear Colonel Guttormsen:

The U.S. Environmental Protection Agency Region 7 has reviewed the October 21, 2016, Public Notice for the Draft Environmental Impact Statement for Rivers and Harbors Act Section 10 permits for dredging on the Kansas River for Kaw Valley Companies, Inc., Holliday Sand & Gravel Company, Master's Dredging, Builders Choice Aggregates, and LBB Limited Liability Corporation. The recommendations herein have been prepared under the authority of, and in accordance with, Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Sections 402 and 404 of the Clean Water Act.

The EPA raised concerns about potential adverse impacts to the Kansas River from the proposed dredging permits in letters issued December 12, 2016. In the letters, the EPA provided ratings for the alternatives in the DEIS and advised the U.S. Army Corps of Engineers that the proposed dredging may result in substantial and unacceptable impacts to the Kansas River.

Further analysis of these proposed permits has resulted in the Agency's determination that the proposed dredging activities will result in substantial and unacceptable impacts to the Kansas River. Pursuant to Part IV paragraph 3(b) of the August 11, 1992 Memorandum of Agreement, between the EPA and the USACE regarding Section 404(q) of the CWA, the Agency hereby notifies the USACE of this determination.

The Kansas River is an Aquatic Resource of National Importance

In a December 9, 2011, letter, the EPA Region 7 determined that the proposed dredging operations may result in substantial and unacceptable adverse impacts to the Kansas River, an Aquatic Resources ARNI. On January 3, 2012, the EPA sent a letter to the USACE concluding that the proposed dredging operations will result in substantial and unacceptable adverse impacts to the ARNI.



The EPA maintains that the permits, as proposed, will result in substantial and unacceptable adverse impact to the Kansas River. The River's 170 miles drain approximately 53,000 square miles of Nebraska, Colorado and Kansas. Its prairie watershed encompasses Kansas' Flint Hills and other scarce and distinctive prairie systems. Its vital habitats support threatened and endangered species that utilize the River corridor, such as least tern, piping plover, and pallid sturgeon. The Kansas River is one of only three public rivers in Kansas that provides unique recreational opportunities attracting participants from across the nation. Vital infrastructure on the Kansas River includes dams, public water intakes, and bridges. The River supplies a primary source of drinking water for over one million people living in northeast Kansas. All these services are of a national importance. The reach of the River between Interstate-635 and the Delaware River confluence is on the National Park Service's Nationwide Rivers Inventory, a federal designation that the River possesses "one or more 'outstandingly remarkable'" natural or cultural values judged to be of more than local or regional significance (<http://www.nps.gov/ncrc/programs/rtca/nri/>). Under a 1979, Presidential Directive and related Council on Environmental Quality procedures, all federal agencies must seek to avoid or mitigate actions that would adversely affect one or more NRI segments. The Kansas River was listed in 1982, for five Outstandingly Remarkable Values, including scenery, recreation, fish, wildlife, and cultural. In addition to the justifications provided in the previous letters to support the Kansas River as an ARNI, the River was designated on July 14, 2012, as a National Waters Trail by the National Park Service's Rivers, Trails, and Conservation Assistance Program. The Park Service National Water Trails System website states: "The Kansas River offers outstanding scenic, recreational, historic and cultural opportunities, appropriate for novice boaters and families."

The EPA is concerned that the issuance of permits will cause substantial and unacceptable impacts to the Kansas River. The DEIS and regulatory plan should be updated to consider and address the following concerns and the permits should be modified, conditioned, or denied to prevent these impacts to the ARNI. The EPA is concerned with impacts to municipal water supplies, shellfish beds and fishery areas, wildlife, and recreational areas.

Commercial dredging in the Kansas River affects municipal water supplies

The River supplies a primary source of drinking water for over one million people living in northeast Kansas, including water coming directly from surface intakes for Water One serving Johnson County, Lawrence and Topeka. Seven other communities get their water from wells in the floodplain and alluvial aquifer of the River, including: Bonner Springs, Olathe, Eudora, Lecompton, St. Marys, Wamego, and Manhattan. The Fort Riley military base also receives its water from the Kansas River, which further emphasizes the national importance of protecting the River.

The 2016, CWA 303(d) impairments for the relevant segments of the River was notably absent in the DEIS. The River is listed for polychlorinated biphenyls, impairments to biology, total suspended solids and total phosphorus. Total Maximum Daily Loads have been approved by the EPA for the River for biology/sediment, Escherichia coli, nutrients/biological oxygen demand impact on aquatic life, chlordane, biology, and fecal coliform bacteria. Dredging significantly degrades waters by increasing turbidity, total suspended solids, and re-suspending metals, pesticides, nutrients and organic contaminants present in the sediments, thus exacerbating water quality problems. Aerial photos provided to the USACE, including those of a site immediately upstream of a surface intake, show that the discharge of return water to the River results in the addition of fill material, and the action of dredging itself causes a plume of disturbance that is visible for a considerable distance downstream of the dredge site. Both fill or suspension of material could cause immediate problems for a surface intake, including

impacts to service and increased treatment or maintenance costs. Bed degradation could also impact the reliability of alluvial wells and trigger the need for communities to make changes or put in new systems. The DEIS, Regulatory Plan, and permitting should consider all the TMDL endpoints, the state TMDL implementation process needed to meet state water quality standards, and the potential for significant degradation of waters. Protections should be put in place to assure that drinking water sources will not be impacted by the dredging process.

Commercial dredging in the Kansas River affects shellfish beds and fishery areas, and wildlife

The current DEIS also does not include recent, best available data documenting the USACE's consideration of the impacts of dredging on threatened or endangered species listed by the U.S. Fish and Wildlife Service and the Kansas Department of Wildlife Parks and Tourism. The FWS has concerns with the impacts of dredging to five listed species, the federally endangered least tern (*Sterna antillarum*), pallid sturgeon (*Scaphirhynchus albus*), and Topeka shiner (*Notropis topeka*), and the federally threatened piping plover (*Charadrius melodus*), and Northern longearedbat (*Myotis septentrionalis*), and the bald eagle (*Haliaeetus leucocephalus*), which is no longer a federally listed species but is still protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. In its December 8, 2016, comments, the FWS, also stated it "has very strong concerns regarding a suite of cyprinid fishes, many of them are listed threatened or endangered by the State of Kansas. Of most concern to the FWS are the following species: Sturgeon chub (*Macrhybopsis gelida*), shoal chub (*Macrhybopsis hyostoma*), plains minnow (*Hybognathus placitus*), flathead chub (*Platygobio gracilis*) and the silver chub (*Macrhybopsis storeriana*)." The River is designated as critical habitat for these species. KDWPT has also indicated that species in need of conservation have been recently documented in the River, including Lake Sturgeon (*Acipenser fulvescens*), Johnny Darter (*Etheostoma nigrum*), River Shiner (*Notropis blennioides*), Blue Sucker (*Cycleptus elongatus*).

The DEIS also lacks information on macroinvertebrates and freshwater mussels. The River has a rich assemblage of macroinvertebrates with 287 taxa represented. Many of these taxa are potentially vulnerable to dredging activities. Surveys have shown that the River supports at least nine mussel species and historically supported at least 17 mussel species. Mussels are comparatively long-lived organisms, undergo a complicated life cycle, are slow to mature, and are sensitive to changes in environmental condition. They cannot rapidly recolonize benthic habitats modified by dredging operations.

The EPA recommends the USACE update the next version of the DEIS with recent, best available monitoring data and consult with KDWPT and USFWS concerning impacts to shellfish beds and fishery areas, and wildlife and how the impacts can be avoided, minimized, or mitigated in pending and future permit decisions.

Commercial dredging affects recreation and public safety on the Kansas River

The DEIS should quantify the changes in economics surrounding recreation on the Kansas River due to increases in recreational and related business opportunities on the River, public safety concerns, and stability of public recreation infrastructure, aesthetics and noise. The potential effects of dredging on maintaining and increasing recreational uses of the River should be reevaluated under current and foreseeable future conditions. The December 12, 2016, letter from KDWPT documented the substantial state and community investment in recreation on the River. The EPA recommends that the USACE

consult with the NPS and that the NRI designated reaches be closed to dredging to protect the Outstandingly Remarkable Values that they provide.

Consideration of a reasonable range of alternatives

The EPA maintains that the DEIS did not adequately assess the full range of alternatives for current and foreseeable future conditions for the local and regional economies. The Agency recommends the USACE reexamine the range of alternatives, and reassess all alternatives utilizing current data, including the alternative of moving to suitable pit mines off the River, and/or restricting dredging to impounded areas. In their letter, the FWS recommended “that the USACE suspend all permits for in channel sand and gravel dredging and that mining operations be moved to off-channel pit dredging.” In its letter, KDWPT suggested an alternative “that allows reissuance of the permits for 5 years at the Reduced Limit Alternative, with the understanding that operators would use that time to convert to the Floodplain Pit Mining alternative and that in-channel dredging permits would not be re-issued. This represents an alternative that is less environmentally damaging in the long-term and is reasonable and practicable by allowing dredging operators to meet production demands in the interim.” Additionally, KDWPT stated that “some communities could benefit from off-channel pits if they are reclaimed to community fishing areas or used for recreational watersports. There is also potential that pits could be reclaimed to wetlands, which would benefit wildlife and water quality in the Kansas River valley.” The EPA concurs with FWS and KDWPT that moving dredging off the River is the Least Environmentally Damaging Practicable Alternative.

Another concern is that the proposed plan allows for extraction up to 3.15 million tons, which would be a 200% increase over what was extracted from 2007 to 2015, and more than what is currently being applied for. The DEIS does not clearly characterize the USACE intended use of the document as a programmatic Environmental Impact Statement to allow for such a dramatic increase. If this alternative continues into the next iteration of the DEIS, the EPA requests support for this change. The EPA also emphasizes that a decrease in extraction would be less environmentally damaging, therefore it may be appropriate to exclude the 3.15 million tons alternative and focus alternatives on the permit amounts applied for, reduced extraction amounts, and off River alternatives.

Need for updated Regulatory Plan and monitoring

The USACE October 20, 2014, memorandum on the monitoring program states that “a limitation to this analysis in three stretches of the River is the lack of baseline and monitoring data required to analyze all the five-mile average reaches that intersect the dredging reaches.” Additionally, the current monitoring program does not monitor portions of the River that do not have proposed or active dredging permits. Therefore, potential bed degradation effects up or downstream of at least two feet which meets the criteria for cessation of dredging occurred from miles 42.6 to 50.9, with some portions exceeding three feet within a five-mile reach. Table 4 in the DEIS does not list any elevation change in reach 3. While no dredging is being requested in this reach, it gives the appearance that there was no degradation. This table should be updated to show that the reach is closed. The data from this memorandum was not adequately described in the DEIS and the 2015/2016, data was absent. All applicable figures and data analysis should include the monitoring data from 2013/2014, and 2015/2016, and be updated in the next version of the DEIS. The current frequency, locations, and resolution of the monitoring are not sufficient to track impacts or degradation and should be improved upon. If the USACE moves forward with the permits, the USACE in consultation with the EPA, Kansas Department of Health and the Environment, KDWPT, and FWS should develop a monitoring and regulatory plan that also incorporates biological

and water quality monitoring, and improves the process for monitoring bed degradation on the entire River.

CWA § 402 Versus § 404 Permitting Authority

The EPA continues to maintain that the discharges from dredging operations in the Kansas River are covered by Section 404 of the CWA. The EPA maintains that the discharges associated with the dredged material piled onshore falls under the regulatory definitions of “discharge of dredged material” and “discharge of fill material.” Our position is supported by a 2009, Supreme Court Decision, *Coeur Alaska*, which makes clear that these discharges of fill material must be regulated under Section 404. The method in which water is used by these operations is unique and was specifically excluded from regulation under Section 402 by the EPA’s Effluent Limitation Guideline covering construction sand and gravel dredging. Comments to the USACE from KDHE in their December 9, 2016, letter also support the determination that §402 is not the proper permitting authority.

Summary

For the reasons cited in this letter, in our previous letters, and in consultation with the Department of the Interior and KDWPT, the EPA maintains that the proposed dredging projects will result in substantial and unacceptable adverse impacts to an aquatic resources of national importance. A literature review of the effects of dredging is provided as an enclosure and supports the Agency’s determination. Based on the information currently available, the EPA maintains that the DEIS and Regulatory Plan do not contain sufficient information and a current, robust environmental review is necessary on which to base permit decisions. The EPA appreciates the opportunity to comment on these proposed permits.

If you wish to discuss the EPA’s findings or if you have any questions, please contact Brad Horchem of my staff at (913) 551-7137.

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Hague", with a long horizontal flourish extending to the right.

Mark Hague

Enclosure

cc: Mark Frazier, Kansas City District, USACE
Jason Luginbill, USFWS
Jordan Hofmeier, KDWPT
Scott Satterthwaite, KDHE

Enclosure

Effects of Dredging on Rivers

Study: Effect of Instream Sand Dredging on Fish Communities in the Kansas River USA: Current and Historical Perspectives

Abstract: Relatively few studies have examined the ecological effects of instream sand and gravel mining which occurs in many streams and rivers worldwide. The objective of this study was to evaluate fish community composition at sand dredged and unmodified (control) sites in the Kansas River, Kansas. Fish and habitat sampling were conducted at two control sites and one dredged site in September 1979, and 1980. The same sites and one additional dredged site were sampled in September 2006. In 2006, dredged sites were deeper and had slower current velocities than control sites. Similarity indices determined that fish community at control sites in 2006, were 80% similar to the same sites in 1979, and 1980, despite 26 years between sampling. Dredged sites had more variable species composition, but one site still had large-river species (blue sucker shovelnose sturgeon), which were sampled above the actual dredge in fast shallow water. Native river fish species were similarly present in 1979–1980, and 2006, but lentic and non-native fishes (e.g., centrarchids), although still in low abundance, increased in 2006, particularly in dredged sites. These results suggest that sand dredging provided habitats that were suitable for lentic fishes, but other anthropogenic effects (reservoir construction urbanization) also likely contributed to fish assemblage changes in the Kansas River

Summary: Instream sand dredging creates large, deep holes which are prime habitat for non-native lentic fishes. This suitable habitat for non-native fish will have an impact on the overall fish assemblage. The non-native fishes will utilize habitat and resources that are needed by native species to survive, leading to reduced numbers of native species.

Study: Bacteriological water quality effects of hydraulically dredging contaminated upper Mississippi River bottom sediment

Abstract: Bacteriological effects of hydraulically dredging polluted bottom sediment in the navigation channel of the Upper Mississippi River (river mile 827.5 [about 1,332 km] to 828.1 [about 1,333 km]) were investigated. Bottom sediment in the dredging site contained high total coliform densities (about 6,800 most-probable-number total coliform index per g [dry weight] and 3,800 membrane filter total coliforms per g [dry weight]), and fecal coliforms comprised an average 32% of each total coliform count. Total coliform and fecal coliform densities in water samples taken immediately below the dredge discharge pipe were each approximately four times corresponding upstream values; fecal streptococcus densities were approximately 50 times corresponding upstream values. Correlation analysis indicated that mean turbidity values downstream to the dredging operation were directly and significantly (r greater than 0.94) related to corresponding total coliform, fecal coliform, and fecal streptococcus densities. Salmonellae and shigellae were not recovered from either upstream or downstream water samples. Turbidity and indicator bacteria levels had returned to predredge values within less than 2 km below the dredge spoil discharge area at the prevailing current velocity (about 0.15 m/s).

Summary: Dredging in certain areas of rivers where there are high coliform densities effects the water quality by mobilizing the bacteria that was previously stationary in the sediment on the riverbed. The total coliform and fecal coliform density is a direct indicator of water quality and has a direct effect on human health and the environment.

Study: Effects of a Small Suction Dredge on Fishes and Aquatic Invertebrates in Idaho Streams

Abstract: A typical dredge (intake diameter 7.6 cm) was operated on four small Idaho streams during July-September 1980, to evaluate some of the effects on aquatic organisms that may result from the use of small suction gold-dredges. Mortality of eggs, sac fry, and fingerlings of several species of trout was monitored, as was that of benthic invertebrates that were entrained through the dredge. The ability of invertebrates to recolonize a dredged area was assessed, and the performance of the dredge was evaluated.

Un-eyed cutthroat trout (*Salmo clarki*) eggs experienced 100% mortality within 1 hour after entrainment. Eyed cutthroat trout eggs showed means of 29% and 35% for 1-hour and 36-hour mortalities, respectively. The 19% mortality of eyed eggs of hatchery rainbow trout (*Salmo gairdneri*) after 10 days was similar to that of the control group. Hatchery rainbow trout sac fry experienced 83% mortality after 20 days as compared with 9% for the controls. Yolk sacs were detached from approximately 40% of the fry during entrainment. Fewer than 1% of the 3,623 invertebrates entrained showed injury or died within 24 hours. Most of the dead were *Centroptilum* mayflies that were undergoing emergence at the time of dredging.

Most of the recolonization of dredged plots by benthic invertebrates was completed after 38 days. The unmodified dredge moved the equivalent of 0.043-0.055 m³ of substrate per hour, about 2% of the manufacturer's maximum rating. In the study areas, approximately 0.76 m³ of sediment less than 0.5 mm in diameter could be moved in 100 hours of dredging operation.

Summary: Dredging has a direct effect on benthic organisms. Fish lay their eggs on the bottom the stream bed and when disturbed by dredging it causes a high mortality rate. When the amount of offspring of fish is reduced due to anthropogenic effects such as dredging, the overall number of fish that utilize that portion of the stream reduces dramatically. The reduced number of fish will have a trophic cascade effect and will have a more outreaching impact than just the portion of the river that is dredged.

Study: A review of factors affecting the release and bioavailability of contaminants during sediment disturbance events

Abstract: The factors affecting the release and bioavailability of contaminants present in sediments during natural and anthropogenic disturbance events are discussed and our current state of understanding of these processes reviewed. Published data are focused on the distribution of contaminants within undisturbed sediment, their affinities to the various solid-phase fractions

of sediment and the interaction of contaminants between sediment and pore water. Sediment disturbance can lead to changes in the chemical properties of sediment that stimulate the mobilization of contaminants. Research shows that changes in both redox potential (Eh) and pH can accelerate desorption, partitioning, bacterial degradation and the oxidation of organic contaminants. However, these processes are both sediment- and compound-specific. By affecting the affinity of contaminants to sediments, disturbance events in turn can have a significant effect on their bioavailability. Few studies have examined this phenomenon, and it is clear from the data available that there are gaps in our understanding in a number of key areas when assessing the release of contaminants from sediments: the fate of contaminants in undisturbed sediments and those that are not subjected to major disturbances, the kinetic processes that regulate metal release during changes in redox potential, the release of organometallic compounds from sediments during resuspension, the bioavailability of organic and organometallic compounds and the processes affecting contaminant release.

Summary: Changes in both redox potential (Eh) and pH can accelerate desorption, partitioning, bacterial degradation and the oxidation of organic contaminants. However, these processes are both sediment- and compound-specific. By affecting the affinity of contaminants to sediments, disturbance events in turn can have a significant effect on their bioavailability. If the bioavailability is limited it will have a negative impact on the aquatic biota.

Study: Urbanization in a great plains river: Effects on fishes and food webs

Abstract: Spatial variation of habitat and food web structure of the fish community was investigated at three reaches in the Kansas River, USA to determine if $\delta^{13}\text{C}$ variability and $\delta^{15}\text{N}$ values differ longitudinally and are related to urbanization and instream habitat. Fish and macroinvertebrates were collected at three river reaches in the Kansas River classified as the less urbanized reach (no urban in riparian zone; 40% grass islands and sand bars, braided channel), intermediate (14% riparian zone as urban; 22% grass islands and sand bars) and urbanized (59% of riparian zone as urban; 6% grass islands and sand bars, highly channelized) reaches in June 2006. The less urbanized reach had higher variability in $\delta^{13}\text{C}$ than the intermediate and urbanized reaches, suggesting fish from these reaches utilized a variety of carbon sources. The $\delta^{15}\text{N}$ also indicated that omnivorous and detritivorous fish species tended to consume prey at higher trophic levels in the less urbanized reach. Channelization and reduction of habitat related to urbanization may be linked to homogenization of instream habitat, which was related to river food webs. Published in 2009, by John Wiley & Sons, Ltd.

Summary: In less urbanized areas the reaches with less disturbances, $\delta^{13}\text{C}$ was higher in variability than the intermediate urbanized reaches. This suggests that fish in these reaches utilized a variety of carbon sources. Channelization and reduction of habitat may be linked to homogenization of instream habitat, which was related to river food webs. This has the potential to effect both species richness and abundance as well as overall water quality.

Study: A review of the potential effects of suspended sediment on fishes: potential dredging-related physiological, behavioral, and transgenerational implications

Abstract: The long-term effects of sediment exposure on aquatic organisms are poorly understood, yet it is critical for determining threshold effects and exposure limits to mitigate potential impacts with regard to population dynamics. In this paper, we present the current state of knowledge to help consolidate the breadth of information regarding total suspended solids thresholds for aquatic species, as well as identify areas where data are lacking. More specifically, we provide the state of the science related to TSS effects on freshwater and estuarine fish including short-term (i.e., physiology and behavior) and long-term effects. Our research indicated that little attention has been given to examining long-term effects, e.g., transgenerational effects, from suspended sediments on fish populations. Understanding transgenerational effects is paramount to developing and predicting the links between fish condition, survival, populations, and communities. Survival of a local fish population to high sediment loads often translates into short-term physiological and behavioral effects; however, the ramifications of such exposure events are rarely tracked across generations. The majority of studies involving SS effects on fish have focused on exposure and mortality rates of affected fish, deposited eggs, or larvae. We developed a conceptual model that highlighted the interactions between sediment dynamics and fish populations. The model can assist in the formulation of more quantitative-based approaches for modeling these interactions. Future research efforts should focus on developing an understanding of whether environmental disturbances, e.g., dredging, may lead to epigenetic changes that may lead to cascade population effects, and if so, under what circumstances.

Summary: In the results they found that suspended sediments affected the behavior and physiology over a short and long term scale. The consequences of these trend could be observed in a variety of contexts e.g. social disruption, migratory patterns, displacement of fish, intraspecific aggression, reproductive pairing-spawning success, predator-prey interactions, food web dynamic alterations, larvae disbursement and settlement.

Study: Effects of Turbidity on Prey Consumption by Prairie Stream Fishes

Abstract: Reduced suspended-sediment loads (i.e., turbidity) in many Midwestern prairie rivers have been hypothesized as contributing to the replacement of species that historically occupied highly turbid main-channel habitats by visually feeding species that are competitively superior in less-turbid waters. We examined the relationship between prey consumption and turbidity for six fish species from the Canadian River (New Mexico, Oklahoma, and Texas) and found experimental support for this hypothesis. Among species adapted to highly turbid main-channel habitats, we found that prey consumption by the peppered chub *Macrhybopsis tetranema* and flathead chub *Platygobio gracilis* was unaffected ($P > 0.12$) by elevated turbidity, whereas prey consumption by the Arkansas River shiner *Notropis girardi* was reduced ($P < 0.01$). Among species characteristic of less-turbid habitats, prey consumption by the emerald shiner *N. atherinoides*, red shiner *Cyprinella lutrensis*, and sand shiner *N. stramineus* was reduced ($P <$

0.01) by elevated turbidity. Compared with prey consumption at 0 nephelometric turbidity units, prey consumption at 4,000 NTU decreased 21% among peppered chub, 26% among flathead chub, and 59% among Arkansas River shiners, which was less than that observed among emerald (73%), red (84%), and sand shiners (89%). In general, elevated turbidity had less effect on the prey consumption of species that are adapted to highly turbid habitats than on those characteristic of less-turbid habitats. The high suspended-sediment loads that historically were characteristic of many prairie streams may have excluded emerald, red, and sand shiners from main-channel habitats.

Summary: Dredging in rivers increases the turbidity of the water. The increase in turbidity affects fish that are not adapted to more turbid waters. When the turbidity increases, the fish who are not adapted have trouble acquiring their prey. This is a problem because these fish who are adapted to a certain niche will be forced to acquire prey elsewhere and could reduce the overall number of fish in the affected area.

Works Cited

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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DEC 12 2016

OFFICE OF
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Colonel Douglas B. Guttormsen
U.S. Army Corps of Engineers
Kansas City Regulatory Office
Kansas City District
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Kansas City, Missouri 64106-2896

Dear Colonel Guttormsen:

The U.S. Environmental Protection Agency reviewed the U.S. Army Corps of Engineers' Draft Environmental Impact Statement pursuant to our authorities under the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), Section 309 of the Clean Air Act, and Section 404 of the Clean Water Act. The statement was assigned the Council on Environmental Quality number 20160253. A summary of our comments are discussed below, and detailed comments and a copy of the EPA's rating descriptions are included as an enclosure to this letter.

The Corps received applications from five companies for five permits under Section 10 of the Rivers and Harbors Act of 1899 for proposed commercial sand and gravel dredging on the Kansas River between river miles 9.4 and 91.0 in eight individual dredging areas. The Corps evaluated the environmental impacts of three alternatives within this draft environmental impact statement. The statement identifies a "no action" alternative, defined as the denial of all five permit applications. The proposed action is for the potential extraction of 3.15 million tons per year of sand and gravel. A second action alternative is for the extraction of 1.67 million tons per year of sand and gravel. Both action alternatives specify an amount of sand and gravel extraction annually, are further regulated by provisions in the Corps' revised 1991 Regulatory Plan, and are not as timely and effective as might be necessary to address the potential impacts on the environment.

The Corps does not identify a preferred alternative within its draft environmental impact statement, necessitating a rating from the EPA specific to each alternative. Although the immediate federal action being considered by the Corps is whether to issue these five permits under the Rivers and Harbors Act of 1899 for commercial sand and gravel dredging totaling 1.9 million tons annually, it is our understanding that the Corps intends to use this environmental impact statement for programmatic National Environmental Policy Act compliance coverage for these and any future permit awards totaling 3.15 million tons of dredged material annually. For purposes of its Clean Air Act, Section 309, review and comments, the EPA will consider the Corps' proposed alternative as being the eventual issuance of any and all permits allowing the extraction of up to 3.15 million tons of sand and gravel.



The proposed alternative includes the extraction of up to 3.15 million tons per year of sand and gravel. The EPA has rated this alternative **EO-2**, environmental objections/insufficient information. The environmental objections rating for the proposed alternative is based on the potential for a greater than 200% increase in dredging over the annual amounts actually extracted from 2007 to 2015 under the existing permits. Dredging at these levels may not be sustainable, and in the context of historical dredging levels and past bed loss documented by the Corps, could lead to significant biological and ecological impacts.

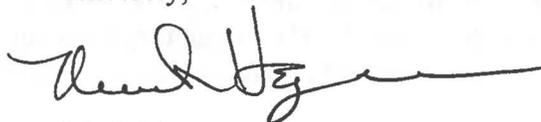
The second alternative is a “reduced dredging limits” alternative consisting of the extraction of 1.67 million tons per year of sand and gravel. The EPA has rated this alternative **EC-2**, environmental concerns/insufficient information, as it represents extraction over 60% greater than what was extracted from 2007 to 2015 under existing permits. The final alternative is a “no action” alternative with no permits approval. The EPA has rated this alternative as **LO-2**, lack of objections/insufficient information, based on the absence of further dredging contributions to continuing bed loss, damage to infrastructure, and the potential for resulting impacts on the environment.

The draft environmental impact statement does not clearly characterize the Corps’ intended use of this National Environmental Policy Act document as a programmatic environmental impact statement to provide compliance coverage for the future permitting of dredging up to a total extraction of 3.15 million tons. The statement also lacks a robust range of reasonable alternatives; specifically lacking an alternative that represents a status quo condition for sand and gravel extraction. The EPA believes that the public may not understand the potential environmental and economic consequences of the proposed project as they are currently portrayed in the draft environmental impact statement, and that a final decision cannot be supported without supplemental information and discussion within a revised or supplemental draft environmental impact statement related to the concerns outlined above.

The EPA is also separately providing recommendations to the Corps under the Memorandum of Agreement governing coordination between our agencies under Section 404(q) of the Clean Water Act regarding the issuance of these permits under Section 10 of the Rivers and Harbors Act of 1899 (33 USC §403).

If you have any questions regarding these comments, please contact Mr. Josh Tapp, Deputy Director, Environmental Sciences and Technology Division at (913) 551-7606 or tapp.joshua@epa.gov.

Sincerely,



Mark Hague

Enclosures

cc: Mark Frazier, Army Corps of Engineers
David Hibbs, Army Corps of Engineers
Brian Donahue, Army Corps of Engineers

Detailed Comments on the Draft Environmental Impact Statement Council on Environmental Quality #20160253

General Comments

Although the current applicants have requested authorization to dredge a total of 1.9 million tons of material annually, the U.S. Army Corps of Engineers' Regulatory Plan allows for up to 3.15 million tons per year of material to be removed from the river by any current and future permit applicants. The Corps utilizes both a maximum permitted amount and its Regulatory Plan to regulate the extraction of sand and gravel from the Kansas River. This dual regulatory approach, creating two dredging scenarios, within the 'proposed alternative' identified by the Corps is unclearly described in the document, and could affect the public's understanding of the scope and impact of this federal action.

In addition, the National Environmental Policy Act analysis is limited by a narrow range of alternatives and inadequate treatment of the second action alternative. The Council on Environmental Quality regulations at 40 CFR 1502.14 underscore the importance of analyzing the impacts of the proposal and alternatives in comparative form to support establishing a clear choice among options by the decisionmaker and the public. The rigor of the alternatives analysis is a direct function of the range of alternatives and the "substantial treatment" of each alternative required by the Council on Environmental Quality in that analysis.

The draft environmental impact statement does not provide a comprehensive assessment of economic impacts to the regional economy. Although recognizing that commercial dredging affects the safety and nature of recreational use of the river, the statement does not include an analysis of the economic benefits accruing from the recreational use of the river against which to compare the economic benefits of dredging.

Treatment of the Draft Environmental Impact Statement as a Programmatic National Environmental Policy Act Compliance Document

Although the immediate federal action being considered by the Corps is whether to issue the five permits applied for under the Rivers and Harbors Act for commercial sand and gravel dredging totaling 1.9 million tons annually, it is our understanding, based on previous discussions, that the Corps intends to use the proposed alternative within this draft environmental impact statement for programmatic National Environmental Policy Act compliance coverage for these and any future permit awards totaling 3.15 million tons of dredged material annually.

RECOMMENDATION: We recommend that the Corps more clearly describe the relationship between the dredgers' applied-for dredging amounts and the Corps' proposed action amount, and more thoroughly characterize the intent to use this statement as a programmatic approach to permitting dredging activities totaling up to 3.15 million tons annually. If it is the Corp's intent for this environmental impact statement to serve as a programmatic approach to evaluating the effects of this maximum threshold for potential dredging activities under the Rivers and Harbors Act Section 10 or Clean Water Act Section 404 permits, the Corps should provide additional explanation of how they will meet their National Environmental Policy Act compliance responsibilities should any application be received during the permit period supplemental to the 1.9 million tons under current application. The statement should discuss under what conditions or criteria supplemental and/or tiered National Environmental Policy Act compliance documentation would be required. Additionally, the temporal

scope of intended use for National Environmental Policy Act compliance under this programmatic National Environmental Policy Act compliance documentation should be identified.

Project Purpose and Need

We agree with the purpose statement for this federal action which is to “supply sand and gravel required to support the region’s construction and manufacturing needs.” This material could be extracted from the river, from floodplain sand deposits, from land-based sand deposits and as crushed limestone from quarries, also known as “manufactured sand.” Clearly, there are practicable alternative sources for sand and gravel other than the river and, therefore, sand and gravel extraction is not a water dependent action. We would caution that the dredgers’ purpose is not the project’s purpose. The dredgers’ purpose is based on “a competitive requirement to produce a unique, high quality product at the lowest possible cost, in order to compete with other product sources” to meet market demand for this material. The project purpose is to address the market’s need for sand and gravel while avoiding and minimizing impacts on the environment. The draft environmental impact statement, particularly by its alternatives and economic analysis, does not appear to make this distinction.

Range of Alternatives

The draft environmental impact statement identifies a “no action” alternative, defined as the denial of all five permit applications. The proposed action is for the potential extraction of 3.15 million tons per year, the maximum amount of extraction allowed under the existing regulatory plan. This amount is significantly higher than the 1.9 million tons per year applied for by the dredgers. The second action alternative, reduced limits, would allow for a maximum of 1.67 million tons per year of sand and gravel extraction based roughly on an approximation of the annual sand load of the river. The Corps does not identify a preferred alternative within its draft environmental impact statement, so the EPA has provided a rating specific to each alternative.

The draft environmental impact statement is unclear regarding the scope and nature of the proposed alternative, referring to both the “applied for” quantity of 1.9 million tons and the regulatory limit of 3.15 million tons as the “proposed” alternative. The difference in these quantities is extreme, and the comparative potential impacts to the river system are significant. Table 4 characterizes the quantities of material requested for extraction by the applicants within each of the four reaches used within the regulatory plan. Table 4 also includes the maximum amounts of material available under the regulatory plan for each of these four reaches. In discussions with the Corps, it was clarified that, although applications had requested only 1.9 million tons of material in their applications, the Corps could entertain other applications for more material in the future up to a maximum of 3.15 million tons allowed under the regulatory plan. The Corps staff explained that this National Environmental Policy Act compliance document would be relied upon should other applicants apply in the future for permits to dredge. As this document would be used for National Environmental Policy Act compliance for future permitting changes or additional permits, the EPA considers the higher value to constitute the ‘proposed action.’ The draft environmental impact statement does not clearly identify the proposed action as the regulatory plan maximum extraction limit of 3.15 million tons. The document does refer to the “applied for” amount. However, it does not adequately clarify that the ‘proposed alternative’ is not based on what has been applied, but what might be requested in the future beyond these applications up to a maximum amount possible under the existing regulatory plan. Given the large difference in quantities and the likely difference in expected impacts from these two amounts, the Corps should clarify the nature of

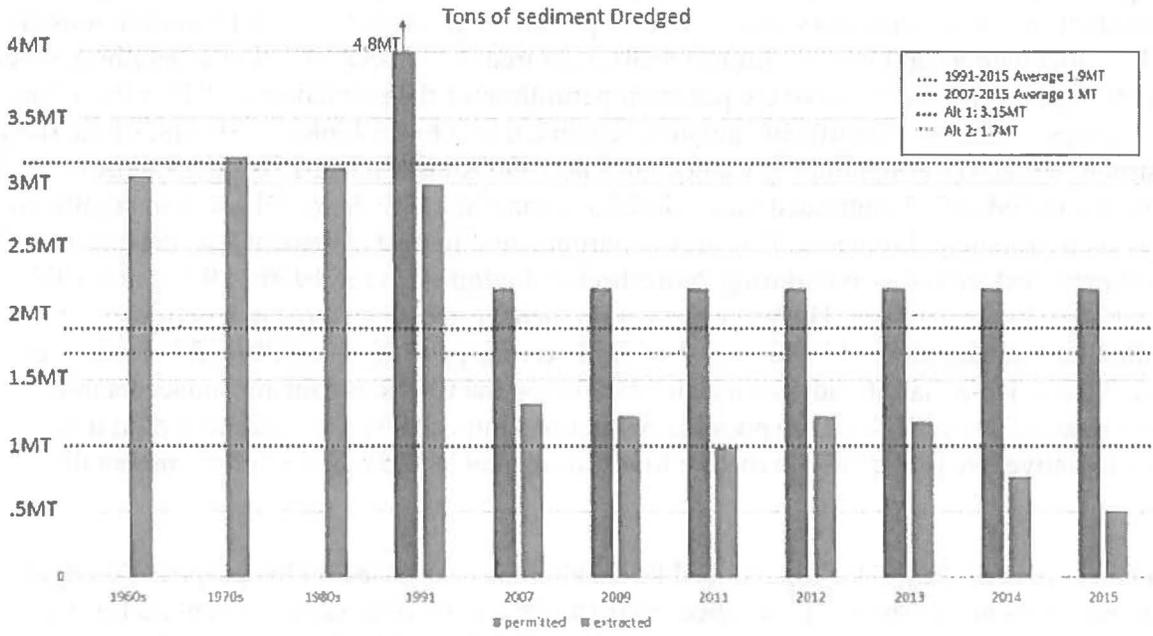
what it has labeled as the “proposed alternative.” This is a critical component of the overall National Environmental Policy Act analysis that is inadequately characterized in this draft.

The environmental objections rating for the proposed action is based on the potential for a greater than 200% increase in dredging over the annual amounts actually extracted from 2007 to 2015 under the existing permits. This amount would also constitute the greatest amount of material extracted since the 1960s. Historical bed loss has been shown by the Corps to be the result of past dredging quantities equal to the amount potentially permitted under this alternative. We do not believe the restrictions possibly implemented under the Corps’ regulatory plan to reduce permitted amounts below 3.15 million tons are certain enough or adequately supported by impact analysis to treat the proposed action as anything other than a total dredging quantity. We believe the potential permitting of the extraction of 3.15 million tons per year by the Corps would be a significant and unacceptable threat to the biological health of the river and the infrastructure placed throughout the watershed. The 1990 Kansas River Dredging Environmental Impact Statement concluded that continued unrestricted dredging in the river would result in significant and unacceptable environmental impacts. This draft environmental impact statement lists the amount of sand and gravel extracted from the river during “unrestricted dredging” in the 1960s, 1970s, and 1980s as averaging 3,124,103 tons per year. The proposed action identified by the Corps in this draft environmental impact statement would allow for 3.15 million tons per year. Permitting this amount of dredging in the Kansas River has already been characterized by the Corps as causing “unacceptable environmental impacts.” Regardless of the possible restrictions imposed by the regulatory plan that underlies this alternative, we judge this alternative to be unacceptable and rate it as environmentally objectionable.

The environmental concerns rating for the reduced limits alternative is based on the proposed dredging quantity being over 60% higher than what has been extracted from the river under current permitting. The draft environmental impact statement identifies the basis for the second action alternative as generally based on a renewable load of sand and gravel in the river system. This alternative would allow for the extraction of 1.67 million tons per year of material from the river based on an approximation of the river’s annual sand yields calculated in a 1984 report originally used in the 1990 Environmental Impact Statement. That report used flow duration and suspended sediment data collected at the U.S. Geological Survey and the Corps gauging stations. Although that approach is simple and based on data from 1935 through 1974, overlapping the period when the large reservoirs closed, it is an attempt to allow for the harvest of only the material load the river transports. We have rated this alternative as having environmental concerns because of the age of the data and its simplified approach.

In many aspects, the reduced limits alternative is not fully assessed. The draft environmental impact statement largely characterizes impacts associated with this alternative as being “somewhat less than the proposed alternative.” This alternative constitutes a more conservative permitting level than does the “proposed action” alternative, and is roughly based on an estimate of what the river transports through the system. The draft environmental impact statement frames this comparison of alternatives based only on greater and lesser dredged quantities rather than possibly as an estimate of a sustainably harvested quantity. The concept of identifying a “sustainable” amount of material harvest for comparison as part of this draft environmental impact statement is not addressed. This alternative, or one more solidly derived from current data and estimates, requires more analysis and detailed treatment than that which it receives in this draft environmental impact statement. With a range of action alternatives limited to the proposed action and a lightly treated reduced limits/mixed source alternative, a comparison of impacts supporting a decision whether to permit the full or reduced quantity of material extraction is insufficient.

The Corps' reliance on only two action alternatives is not robust, prevents a complete analysis of impacts, and is inconsistent with the Council on Environmental Quality regulations at 40 CFR 1502.14, which requires the lead agency to rigorously explore and objectively evaluate all reasonable alternatives. Specifically, we suggest that a "status quo" alternative, reflecting those quantities of sand and gravel actually extracted over the past nine years under the current Corps permits should be included, evaluated, and compared within the draft environmental impact statement.



In general, the Corps' most recent survey data suggests that bed degradation has slowed since 2007. Many of the eight geomorphological reaches identified in the Simons, Li and Associates 1984 report appear to have aggraded or at least stabilized or slowed their degradation. However, the draft environmental impact statement states that, "At individual locations, degradation and aggradation are more pronounced and sustained." We believe that the Corps' regulatory efforts require reasonable, but conservative, maximum limits to what can be dredged within each reach and the total river in conjunction with a regulatory plan that focuses on preventing bed loss in those individual locations that might threaten infrastructure. To rely completely on the regulatory plan and ignore the magnitude of the dredging quantities permitted, both individually and in total, is not prudent. In the face of incomplete information regarding the systemic impacts of dredging and what might constitute a sustainable quantity of harvest, we recommend that the Corps reduce the levels of extraction permitted to at least those which reflects current condition, and which could not be substituted for by sources off the river.

RECOMMENDATION: The Corps should revise its draft environmental impact statement to include at least one additional alternative reflecting a "status quo" quantity of dredging based on existing extraction amounts since 2007.

Affected Environment and Environmental Consequences

The Kansas River system is a sandy, prairie stream 170 miles in length with an average gradation of about 1.9 feet per mile. It's morphology and biology are defined by multiple modifications affecting hydrology, sediment transport and habitat structure. Eighteen federal reservoirs impound water on most

of the river's major tributaries, and many more dams exist on smaller tributaries in the upper portions of the watershed. In addition to trapping coarser sediment material, these reservoirs cause the river to carry a higher percentage of fine-grained material than would otherwise occur. The reservoirs have also reduced the extremes of the river's hydrograph, reducing both the frequency and magnitude of high and low flows. Sediment transport is naturally driven by high flow events. The river is also characterized by bank and channel protection structures, limiting channel movement and bank erosion. Many channel training structures, weirs and dams also strongly affect the movement of both sediment and water through the system. These river modifications provide context for the additional demands placed upon the river resource by commercial sand and gravel dredging. The draft environmental impact statement characterizes the river's morphology as stable upstream of Bowersock Dam (RM 51.8), with the exception of the Topeka area (RM 80), and less stable below the dam. The lower reaches of the river have experienced the most dredging in the past. The Missouri River creates a backwater area within the Kansas River up to approximately River Mile 9.3. The most degraded reach of the river, based on the Corps' survey data, is between River Miles 27 and 41. The most aggrading reach of the river is between River Miles 12 and 24. The draft environmental impact statement includes the Corps' survey data from 2011/12. It is not known whether more current data was available for analysis in this draft environmental impact statement.

The draft environmental impact statement asserts that any direct impacts from dredging on the river's geomorphology are limited to localized impacts in dredged locations. The Corps states that "localized holes created by dredging activities appear to refill rapidly in the river after cessation of dredging activities." The draft environmental impact statement includes no information or characterization of the physical nature of these backfill materials. The overall impact of the reservoirs and dredging is to increase the proportion of fine sediment material in the river as coarser material is either trapped behind the dams or extracted by dredging.

Contrary to statements in the draft environmental impact statement regarding the limited habitat supporting benthic organisms suggested by studies from the 1980s, other studies suggest that the invertebrate fauna of the Kansas River is richer and more diverse than previously characterized. During the past three decades, biological surveys of the Kansas River conducted by the Kansas Department of Health and Environment have documented some 287 macroinvertebrate taxa (KDHE Stream Biological Database). Many of these taxa attain their greatest population densities in shallow depositional habitats or in areas of swifter current and coarse (i.e., gravelly) substrate, regions of the river potentially vulnerable to dredging activities. Shifting sand habitats, which were highlighted in the draft environmental impact statement, tend to support sparse macroinvertebrate communities; however, some insect taxa are anatomically adapted to survive in these habitats (e.g., Spieth. 1938. Two interesting mayfly nymphs with a description of a new species. *American Museum Novitates* 970:1-7). The draft environmental impact statement does not consider the impacts of dredging on these varied habitats, macroinvertebrate populations, and the fish and wildlife species dependent upon them for food.

The draft environmental impact statement provides no information on mollusks within its sub-section on these organisms, which have a history of presence within the river system. However, freshwater mussel surveys conducted by the Kansas Department of Health and Environment have shown that the Kansas River supports at least nine mussel species, and historically supported at least 17 mussel species (KDHE Mussel Database; see also Angelo et al. 2009. Historical changes in the occurrence and distribution of freshwater mussels in Kansas. *Great Plains Research* 19:89-126). If earlier biological surveys are considered, at least one additional mussel species may be added to this historical total (Call. 1887. Sixth contribution to a knowledge of the fresh-water Mollusca of Kansas. *Bulletin of the Washburn College*

Laboratory of Natural History 2:11-25). Mussels are comparatively long-lived organisms. They undergo a complicated life cycle, are slow to mature, and are sensitive to changes in environmental condition. They cannot rapidly recolonize benthic habitats modified by dredging operations.

Additional information should include data documenting the Corps' consideration of the impacts of dredging on recovery of pallid sturgeon in the Missouri River basin and other threatened or endangered species listed by the Kansas Department of Wildlife, Parks, and Tourism or the U.S. Fish and Wildlife Service. Pallid Sturgeons (*Scaphirhynchus albus*) are protected by the Kansas Nongame and Endangered Species Conservation Act, the Federal Endangered Species Act, and state and federal regulations applicable to those acts. Recent scientific study has determined that pallid sturgeon embryos are negatively buoyant and sink, and they are sensitive to low oxygen environments. Other studies show that dredging can cause low oxygen environments. Current dredging practices in addition to an impaired oxygen demand environment may limit the ability for pallid sturgeon to recolonize the river. The EPA recommends the Corps consider new monitoring data and document additional consultation with the Kansas Department of Wildlife, Parks, and Tourism and the U.S. Fish and Wildlife Service. The document is lacking data on impacts to fish and wildlife. Recent sampling of the Kansas River not included in the draft environmental impact statement indicates that state listed species are found in the river.

Sandy bottom streams and rivers, like the Kansas, Platte and Missouri Rivers, are characterized by the appearance and disappearance of sand bars and point bars, which provide the "wetter edge environment" supporting many aquatic communities. These same habitats are provided along shoreline edges and by side channels, chutes and backwaters. The changes to the hydrology of the river resulting from dam placement have eliminated those peak flows, which transport habitat-building material and form off-channel habitat. That changed hydrology also reduces the magnitude of low flows, which expose habitat to colonization. Reductions in the actual sediment material itself, caused by construction of reservoirs, the placement of bank revetment and the dredging of the river has removed the material needed to form those "wetter edge" environments.

The EPA is concerned that there may be insufficient information to fully assess environmental impacts that should be avoided in order to fully protect the environment.

RECOMMENDATION: The Corps should consider conducting or funding the development of a sediment budget for the river and its major tributaries, which could support the Corps' determination of a sustainable level of sand and gravel extraction by dredgers. A sediment budget should account for sediment transport, erosion and deposition in the Kansas River. This budget would include the mainstem river and its tributaries, particularly the four major reservoirs that serve as sediment sinks within the system. These studies and a sediment budget should be completed and that information evaluated before the Corps considers any applications for dredging within the Kansas River from future applicants.

The Corps should also explore the possibility of conducting or funding studies that would provide information supporting a more direct measure of the biological and ecological health of the river and identifying the locations of particularly critical habitat types such as the natural rock structures present in the lower river.

The Corps should explore the possibility of conducting or funding studies documenting the location and density of sand bars and point bars along the entire 170-mile length of the river to support the development of a more appropriate measure of ecological and morphological health in the river. These

studies would also contribute to the documentation of impacts on these important river features resulting from continued sand and gravel dredging.

Recreation

The draft environmental impact statement notes the presence of 23 access ramps to the river, eighteen since the issuance of the 1990 EIS. Five of the 23 access points are located adjacent to dredging areas as requested by the applicants. The document also recognizes that the river was designated in 2012 as a National Waters Trail by the National Park Service. Yet the Corps claims that “dredging is a historical and ongoing activity” and impacts on recreation only occur if there were to be a change in dredging activities that would cause a change in the availability or quality of recreational access. The revised Regulatory Plan includes measures intended to avoid, minimize and reduce impacts on recreational use.

The draft environmental impact statement provides no information regarding the present or future economic contributions of the river’s recreational use to adjacent communities or to the state. With no information provided regarding economic value, the draft environmental impact statement cannot characterize the impacts of greater, lesser or no river dredging on recreational use and, therefore, the economic benefits of more or less recreational use of the river to the region.

The draft environmental impact statement does not evaluate impacts from dredging on boat ramps, particularly those adjacent to dredging areas. The document provides no information on the effectiveness of mitigation measures intended to prevent or mitigate impacts on recreational use or experience. There was no information included in the draft environmental impact statement regarding whether the Corps monitors dredger performance or compliance with these measures.

Nationwide there have been deaths attributed to boats striking dredge pipes. With increased recreation and more access there is a greater risk of boat / dredge interaction.

Economic Impacts

The draft environmental impact statement defines its “economic and demographic study area” as a 30-mile-wide radius from each producer’s land-based facility. This radius is based on the Kansas Aggregate Producers Association claim that the individual companies can only remain competitive, with each other, within a material haul radius of 30 miles, as other competing producers are situated closer to market. The draft environmental impact statement should not be evaluating the economic impacts of its permitting decision based on its compatibility with the business plans of individual producers or the preservation of their competitive position. Further, the analysis should focus not on product selling price or the profit margins of individual companies, but on the impacts of its decision on the regional economy.

According to KAPA, the producers’ association, the production cost for river dredging averages \$4.50 per ton of material west of Topeka and \$7.00 per ton east of Lawrence. The draft environmental impact statement states that selling price and the gross profit margin are not presented because those vary between companies and operations. The draft environmental impact statement provides that the overall comparative production cost of floodplain pit dredging is approximately 14% higher than river dredging operations. With regard to indirect impacts, there is no information within the draft environmental impact statement describing how material price might affect construction activity within the region.

The draft environmental impact statement couches its economic analysis in terms of contributions by individual companies, but provides no information on the impact of dredging or reduced dredging on the local and regional economy. The draft environmental impact statement states that the direct effect of the industry on the local economy is not significant and is largely limited to a small number of jobs provided by dredging itself. There is no analysis of the potential impact of either no dredging or reduced river dredging on these regional economies. The analysis is largely limited to statements regarding the competitiveness of the dredging companies themselves and the preference for lower cost transportation and extraction and the ease of extracting material from the river. Narratives based on applicant preferences and perpetual access to the lowest cost, highest quality material do not constitute an analysis of regional economic impacts resulting from the selection within a range of reasonable alternatives.

RECOMMENDATION: The draft environmental impact statement should be revised to address the indirect impacts of its permitting alternatives on the regional economy and characterize the economic contributions of recreational use of the river on the regional economy.

Climate Change

The draft environmental impact statement does not include consideration of future climate scenarios, and how they may impact the proposal and its potential impacts. Consistent with the CEQ guidance,^[1] we recommend that the FEIS describe potential changes to the affected environment that may result from climate change. Including future climate scenarios, such as those provided by the USGCRP's National Climate Assessment,^[2] in the FEIS provides context for the proposal and its impacts and whether those could be affected by the changing climate. The EPA recommends that the proposal's design incorporate measures to improve resiliency to climate change, where appropriate. These changes could be informed by the future climate scenarios addressed in the "Affected Environment" section. Additionally, we recommend the Corps apply information from these future climate scenarios to determine whether the environmental impacts of the alternatives would be exacerbated by climate change. If impacts may be exacerbated, additional mitigation measures may be warranted. For example, a drier or wetter regional climate would affect the basin's hydrology and, therefore, the movement of sediment through the river system.

[1] CEQ Guidance, p. 20.

[1] <http://nca2014.globalchange.gov/>

Cumulative Impact Analysis

Seven Corps reservoirs and eleven Bureau of Reclamation reservoirs on tributary streams control a major portion of the flow from this system. Six of the Corps and one of the BOR reservoirs are at the lowest end of their respective river systems and functionally control the sediment discharge to the Kansas River. These reservoirs are retaining sand and sediment which historically would have passed down river and, to varying degrees, are experiencing reduced water storage capacity and increased delta formation. The draft environmental impact statement states that 80% of the basin's total drainage area is controlled by reservoirs. It also states that 51% of the river's flow, as measured at DeSoto, Kansas, originates from discharges from the four largest reservoirs on major tributaries (Tuttle Creek, Perry, Milford and Clinton reservoirs). The cumulative impact of these federal and non-federal actions on river hydrology and ecology is immense. The draft environmental impact statement, however, states that this impact is not significant.

The EPA believes that the Corps' conclusion that "The cumulative impacts of the Proposed Action and other past, present, and reasonably foreseeable activities affecting the Kansas River are not significant" is inaccurate given modifications to the river system in the second half of the last century. Construction of 18 dams on major tributaries to the Kansas River, the construction of smaller dams in the headwaters of smaller tributaries and sporadic armoring of river banks has, in conjunction with commercial sand and gravel dredging, disrupted both the sediment transport and hydrology of the river leading to much reduced levels of sediment moving through the system and into the Missouri River. The cumulative impacts of these federal and non-federal actions has completely transformed the hydrology, ecology and morphology of the Kansas River. The impacts of a significant reduction in bed material in a sandy prairie river on habitat structure has been poorly studied, but is likely to have unsatisfactory impacts on aquatic life.

In 2011, the District finalized its EIS supporting the reissuance of dredging permits for the lower Missouri River in which the District stated that the entire lower Missouri River has been degrading since 1999 with accelerating bed loss in the reach near Kansas City. The river bed in the Kansas City reach has lost approximately four feet since 1995. The interplay between the Kansas River and the Missouri River in the vicinity of the Kansas City metropolitan area with regard to sediment transport should be more completely assessed since this was not done for the 2011 EIS for the Missouri River. In addition, the District completed a Reconnaissance Study in 2009 documenting the extent and significance of bed loss in the lower Missouri River. One conclusion from the study was that "the dredging quantities taken from the lower Kansas River should be evaluated in regard to their potential impact on degradation of the Missouri River channel." Since the issuance of the Reconnaissance Study, the District has been working with local sponsors on a Feasibility Study for addressing river bed degradation in the Missouri River and its tributaries from Rulo, Nebraska to St. Charles, Missouri, with particular interest in impacts to infrastructure in the Kansas City metropolitan area. It is our understanding that the Corps does not intend to proceed with a Feasibility Study as a result of new sediment transport modeling results. The Kansas River provides both flow and sediment load to the Kansas City reach of the Missouri River and needs for sand and gravel within the regional economy are met with commercial dredging on both rivers. Yet the draft environmental impact statement provides no analysis of the potential contribution of Kansas River dredging to either Missouri River bed degradation below the confluence or the relationship between dredging restrictions on both rivers to the regional economy.

RECOMMENDATION: We recommend that the Corps provide supplemental discussion on the potential cumulative effects of dredging associated with the proposed action and past modifications to the river system which have profoundly altered the hydrology and habitat characteristic of a sandy, prairie river. Similarly, it should be further explained how the Corps reached the determination that dredging limits exceeding 200% over the last decade of dredging operations will not pose significant direct, indirect and cumulative impacts to the biological health and integrity of the river system, particularly given that the Corps has used a simplified metric of bed loss within dredged reaches as an indicator of ecological health. Without actual biological information, this measure serves as a poor indicator of stream health. Further, even if we were to accept this metric, an amount of extracted material commensurate with the proposed alternative has historically been correlated with significant bed loss in the Kansas River.

Regulatory Plan and Revisions

Public review of the revised Regulatory Plan would be made easier if the draft environmental impact statement included a 'red-line/strikeout' format in Appendix A. Proposed Corps changes to the Plan,

discussed in Chapter 5 of the draft environmental impact statement, are somewhat confusing and would be better explained by providing a version of the Plan which highlighted actual changes to the current Plan.

The Plan should also be revised to remove language that was placed in the original document that no longer applies after 26 years of implementation. We are providing a list of comments, specific to each section, below.

Introduction

The 1990 Regulatory Plan was designed to rely on a benchmark for determining a “maximum acceptable level of impacts” having “minor effects.” The definitions provided in the Plan for both of these measures are nonspecific and meaningless. Other than surveying dredged reaches for changes in bed elevation, no information has been gathered regarding either ecological or hydrological change in the river system. Yet the document claims to “limit the magnitude of dredging-related impacts to the morphology and ecology of the river.” The Plan links measures and metrics to the prevention of environmental and ecological impacts, however, there is no information or data in the draft environmental impact statement which would indicate that these metrics and measures could serve as indicators of ecological or morphologic condition. The basis for the bed loss and recovery metrics and for prohibitions against dredging too close to structures or river features is completely best professional judgement. The Plan was developed in 1990 to prevent damage to important infrastructure resulting from over-allocating the amount of sand and gravel for harvest in each reach under Corps permit. There is no association between the Plan and its metrics for bed loss and recovery and the potential for damage to river ecology and hydrology. The Plan and its prohibitions are intended only to prevent damage to infrastructure and the Corps has acquired no information regarding sediment budget, habitat damage or alterations to river ecology. There is no basis for claiming, as the draft environmental impact statement does in many places, that implementation of the Plan serves as a protective check against over-allocating extraction under its permits such that environmental damage is prevented.

Dredging Restrictions

The amount of bed degradation from dredging in specific reaches is limited to bed loss equal to or greater than an average of 2 feet along a five-mile reach. The basis for not selecting an amount less than 2 feet as this degradation benchmark was identified as part of the 1990 EIS development process in the District’s Regulatory Report as being based on “the difficulty in monitoring such a small change in bed elevations.”

The Regulatory Plan’s criterion for closure is an average 2-foot limit on bed degradation over 5-miles. This approach could allow for areas well above or well below the limit within the 5-mile reach. Further, the Plan claims that “the maximum allowable reduction in the riverbed elevations is 2 feet for all reaches of the river.” The only reaches surveyed within the river are those with active dredging. Bed elevation change is not typically limited to the immediate area of dredging. Coarse and fine bed material moves downstream from other reaches to refill dredge cuts. Comprehensive changes to river morphology are not monitored under the Plan. The draft environmental impact statement misstates the comprehensiveness of the Plan’s monitoring component.

Reaches closed when the average elevation change is 2-feet or greater are not reopened until average bed elevation exceeds an “established minimum” and “sufficient materials” have accumulated to support

renewed dredging. These terms are not defined and it appears that neither the dredgers or the Corps have assessed the physical nature of the bed materials replacing those dredged nor the impacts of repeated closing and opening on river morphology. The draft environmental impact statement states that nine dredging areas have been closed to dredging between 1991 and 2007. It is unclear whether any of those areas have been reopened and the draft environmental impact statement lacks any information regarding how those recovered areas have responded to renewed dredging. The draft environmental impact statement also states that the Corps closed four dredging areas in 2013. Table 4 also lists two areas between River Miles 26.1 and 27.1 and between River Miles 89.7 and 91.0 as closed, although two applicants have applied to dredge 300,000 tons per area per year there. The draft environmental impact statement also states that none of the requested areas are located in degraded reaches although Table 4 lists these reaches at an elevation change from baseline of -2.34 and -1.42, respectively.

The Plan provides for immediate closure of a degraded reach when a previous survey indicated 1.5 feet or more degradation and a current survey indicates 2 or more feet of bed loss. Those actions are separated by 2 years between surveys and the additional months needed to process and communicate the data to the dredgers. Only when an “unforeseen event” has caused 2 or more feet of degradation without a previous survey showing 1.5 or more feet of loss will the Corps immediately close that reach, although that action will not be taken immediately as the dredgers have a year to exit that reach. The reach reopening process also allows for return dredging, either partially or completely, before the bed aggrades completely to its 1992 baseline elevation.

The scientific basis supporting the reach-specific and dredge-specific restrictions on dredged quantities and the structure-specific prohibitions on dredge distance is not provided either in the draft environmental impact statement or the Regulatory Plan. Many of the distance prohibitions are common to several structures while others are different, without explanation. For example, the upstream and downstream dredging prohibitions for Bowersock Dam are 75 feet and 2,250 feet. Those for the Water District Number 1 and the City of Topeka jetties and weirs are 500 feet and 2,500 feet and 1,000 feet and 2,000 feet, respectively. Dredge prohibition distances vary for other river structures, but the basis for assigning these is nowhere explained.

Similarly, two natural rock deposits, which the Plan acknowledges provide unique and important habitat for aquatic life, are assigned dredge distance prohibitions without explanation. The draft environmental impact statement does not provide any analysis on the impacts of past dredging on these important and unique habitat structures. Other areas providing critical aquatic habitat, such as shorelines, islands and tributary mouths are assigned distance prohibitions, but there is no analysis of the impacts of dredging on these areas or the appropriateness/effectiveness of the prohibition distances. The Plan provides no protection for sand bars or point bars, which provide critical ‘wetted edge’ habitat in a sandy-bottom, prairie river.

As discussed above, there have been reports of injuries associated with recreational boaters encountering dredging operations. The Plan provides no monitoring or reporting mechanism by which the Corps could confirm that permittees are in compliance with the Plan’s safety requirements. There are reports of unattended dredging operations not providing safe passage for watercraft.

RECOMMENDATION: Revise the Regulatory Plan to remove references to the prevention of morphological and ecological damage and explain the basis for all metrics and prohibitions. We also recommend that the draft environmental impact statement separately discuss the results of 25 years of

Plan implementation specific to the protection of man-made and natural river structures and their condition.

We recommend that a more comprehensive monitoring plan that encompasses additional metrics to address the biological health and integrity of the river should be considered. Additionally, monitoring of river bed degradation should be expanded to include reaches of the river outside of the direct dredging area. Monitoring only at the dredge sites does not give a clear and accurate picture of the effects of dredging.

We also suggest that the Corps include a monitoring and reporting component within the Plan's monitoring component addressing the issues listed under Section X of the Plan's restrictions component regarding recreational safety.

We recommend that the Corps evaluate the response of dredge cuts to reopening, including an analysis of bed material type and size which provides this backfilling and whether reopening previously closed dredge cuts results in changes to bed morphology and flow in the area or the cut. This information could be used to evaluate whether closed reaches should remain closed for longer periods than presently required or whether closed reaches should remain closed permanently.

The Corps should evaluate whether dredging restrictions pertaining to natural hard points in the river are adequately protecting aquatic life.

The Corps should consider prohibiting any further permitting within reaches where boat ramps are in-place or are planned based on safe recreational use of the river.

Revisions to the Regulatory Plan should be identified using redline and strikeout format to better explain those changes to the public.

Draft Environmental Impact Statement Rating Definitions

Environmental Impact of the Action

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. The EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative, including the no action alternative or a new alternative. The EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. The EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final Environmental Impact Statement stage, this proposal will be recommended for referral to the Council on Environmental Quality.

Adequacy of the Impact Statement

"Category 1" (Adequate)

The EPA believes the draft Environmental Impact Statement adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft Environmental Impact Statement does not contain sufficient information for the EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft Environmental Impact Statement which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final Environmental Impact Statement.

"Category 3" (Inadequate)

The EPA does not believe that the draft Environmental Impact Statement adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft Environmental Impact Statement that should be analyzed in order to reduce the potentially significant environmental impacts. The EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. The EPA does not believe that the draft Environmental Impact Statement is adequate for the purposes of the National Environmental Policy Act and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft Environmental Impact Statement. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the Council on Environmental Quality.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7

11201 Renner Boulevard
Lenexa, Kansas 66219

DEC 12 2016

Colonel Douglas B. Guttormsen
District Engineer
U.S. Army Corps of Engineers
601 East 12th Street,
Kansas City, Missouri 64106-2896

Dear Colonel Guttormsen:

The U.S. Environmental Protection Agency Region 7 has reviewed the October 21, 2016, Public Notice for the Draft Environmental Impact Statement for Rivers and Harbors Act Section 10 permits for dredging on the Kansas River for Kaw Valley Companies, Inc., Holliday Sand & Gravel Company, Master's Dredging, Builders Choice Aggregates, and LBB, L.L.C. The recommendations herein have been prepared under the authority of, and in accordance with, Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Sections 402 and 404 of the Clean Water Act.

The Kansas River is an Aquatic Resource of National Importance. The EPA Region 7 designated the Kansas River an ARNI in 2011, and determined that the proposed dredging operations may result in substantial and unacceptable adverse impacts to the ARNI. On January 3, 2012, the EPA sent a letter to the Corps concluding that the proposed dredging operations will result in substantial and unacceptable adverse impacts to the ARNI.

The EPA's continued designation of the Kansas River as an ARNI is heavily supported. The River's 170 miles drain approximately 53,000 square miles of Nebraska, Colorado and Kansas. Its prairie watershed encompasses Kansas' Flint Hills and other scarce and distinctive prairie systems. Its vital habitats support threatened and endangered species that utilize the River corridor, such as least tern, piping plover, and pallid sturgeon. The Kaw is one of only three public rivers in Kansas that provides unique recreational opportunities attracting participants from across the nation. Vital infrastructure on the Kansas River includes dams, public water intakes, and bridges. The River supplies a primary source of drinking water for over one million people living in northeast Kansas. All these services are of a national importance. In addition to the justifications provided in the letters to support the original designation as an ARNI, the Kansas River was designated on July 14, 2012 as a National Waters Trail by the National Park Service's Rivers, Trails, and Conservation Assistance Program. The Park Service National Water Trails System website states: "The Kansas River offers outstanding scenic, recreational, historic and cultural opportunities, appropriate for novice boaters and families."

Pursuant to Part IV, Paragraph 3(a) of the August 11, 1992, Memorandum of Agreement between our Agencies concerning Section 404(q) of the CWA, the EPA continues to believe that



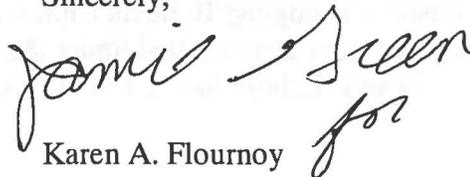
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the proposed dredging projects may result in substantial and unacceptable impacts on the Kansas River, an aquatic resource of national importance.

In addition to proposing dredging operations, the DEIS suggests that the proper permitting authority for the return water from onshore sand plants to the River falls under Section 402 of the CWA. However, the EPA continues to maintain that the discharges from dredging operations in the Kansas River are covered by Section 404 of the CWA. The EPA believes that the discharges associated with the dredged material piled onshore falls under the regulatory definitions of "discharge of dredged material" and "discharge of fill material." Our position is supported by a recent Supreme Court Decision, *Coeur Alaska*, which makes clear that these discharges of fill material must be regulated under Section 404. Finally, the method in which water is used by these operations is unique and was specifically excluded from regulation under Section 402 by the EPA's Effluent Limitation Guideline covering construction sand and gravel dredging.

The attached detailed comments are a summary of the EPA's preliminary findings with respect to the proposed permits and the DEIS. If you wish to discuss the EPA's findings or if you have any questions, please contact Jason Daniels of my staff at (913) 551-7443.

Sincerely,

A handwritten signature in black ink that reads "Karen A. Flournoy for". The signature is written in a cursive, flowing style.

Karen A. Flournoy
Director

Water, Wetlands and Pesticides Division

Enclosures

cc: Mark Frazier, Kansas City District, Corps
Jason Luginbill, USFWS
Jordan Hofmeier, KDW&P
Scott Satterthwaite, Kansas Department of Health and the Environment

Detailed Comments

Comments pursuant to EPA authorities under the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), Section 309 of the Clean Air Act

In separate EPA correspondence, comments were provided on the Draft Environmental Impact Statement and ratings for the alternatives. Under EPA's Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Sections 402 and 404 of the Clean Water Act authorities we concur with the comments provided pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), Section 309 of the Clean Air Act concerning inadequacies of the EIS in the following areas:

- the DEIS as a programmatic NEPA compliance document
- purpose and need
- range of alternatives
- affected environment and environmental consequences
- recreation
- economic impacts
- cumulative impact analysis
- regulatory plan and revisions

RECOMMENDATION: The DEIS, Regulatory Plan and permitting should be revised to address the issues identified.

Regulation of Return Water from Onshore Sand Plants

The Regulatory Plan requires the use of settling ponds on a case-by-case basis and the use of a sluice or pipe for dredged return water. The DEIS should provide a characterization of typical dredge return water and identify constituents commonly found in the return water and any potential risk to water quality. Further, the efficacy of the treatment and solids removal using this treatment system varies among the applicants and discharge locations. The DEIS should address whether these discharges result in increases in the elevation of the river bottom at each location and characterize the impacts of these shoreline changes. The DEIS does not address this impact at all.

CWA § 402 Versus § 404 Permitting Authority

The DEIS suggests that the proper permitting authority for the return water from onshore sand plants to the river falls under Section 402 of the Clean Water Act. However, EPA maintains that the discharges from dredging operations in the Kansas River are covered by Section 404 of the Clean Water Act. EPA believes that the discharges associated with the dredged material piled onshore falls under the regulatory definitions of "discharge of dredged material" and "discharge of fill material." Our position is supported by a recent Supreme Court Decision, *Coeur Alaska*, which makes clear that these discharges of fill material must be regulated under Section 404. Finally, the method in which water is used by these operations is unique and was specifically excluded from regulation under Section 402 by EPA's Effluent Limitation Guideline covering construction sand and gravel dredging.

The regulations at 40 C.F.R. § 232.2 exclude from the definition of “discharge of dredged material ... (1) Discharges of pollutants into waters of the United States resulting from the onshore subsequent processing of dredged material that is extracted for any commercial use (other than fill). These discharges are subject to section 402...”. EPA believes this exclusion from the definition of “discharge of dredged material” does not apply because the dredge suction water is not used in the processing of sand and gravel onshore. Despite the Corps’ assertion that the gravel is, in fact, “processed,” and should therefore be exempted from the definition of “discharge of dredged material,” the regulatory language “other than fill” makes clear that the exemption is lost if the discharge results in the addition of fill material.

Evidence from the discharge sites, including aerial photography, demonstrates clearly that the discharges are changing the bottom elevation of the Kansas River and, thus, meet the definition of “fill material” under 40 C.F.R. § 232.2. The discharges are more than incidental and more than a “de minimus” deposit of dredged material, as evidenced by an aerial photo of one operator raising the bottom elevation over 3 acres in area of the river and half way across the channel (Enclosure 1). The 2009 Supreme Court decision *Coeur Alaska, Inc. v. Southeast Alaska Conservation Council* (557 U.S. 261) is unambiguous in its finding that any deposit of dredged material that becomes “fill” in the receiving stream is covered by Section 404, and that EPA is prohibited from permitting the activity under Section 402 (Enclosure 3).

EPA’s conclusion that these activities should be permitted under Section 404 are also consistent with an effluent limitation guideline developed in the 1970s regarding discharges subject to the section 402 NPDES permit program (Enclosure 2). In the development of the ELG, 40 CFR Part 436, Mineral Mining and Processing Source Category, Subpart C, Construction Sand and Gravel Subcategory, EPA made the observation that some facilities used dredge suction water as a means of transporting sand and gravel to shoreline sorting facilities, but did not use the water in any aspect of sorting or cleaning the product. EPA decided in the rulemaking that this water was not “process” water, because the dredge suction water was not used in any processing step. The final rulemaking and preamble have a direct discussion and clarification of the rule based on these facts. EPA was clear in stating that these specific operations are covered by Part 404 of the CWA. In the preamble, EPA stated, “Dredge water discharges from land-based construction sand and gravel process plants are not regulated at this time. Dredging and on-board processing in navigable water are regulated by the Corps of Engineers pursuant to Section 404 of the Act and are not subject to these regulations.” Based on the regulatory definition and the facts at hand, EPA concludes the discharge is properly subject to section 404.

RECOMMENDATION: The DEIS, Regulatory Plan, and permitting should be revised to clarify this issue.

Water Quality Concerns in the Kansas River

The most recent information from the 2016 Clean Water Act Section 303(d) impairments for the relevant segments of the Kansas River was not included in the DEIS. The river is listed for polychlorinated biphenyls, impairments to biology, total suspended solids and total phosphorus. Total Maximum Daily Loads have been approved by the EPA for the river for biology/sediment,

Escherichia coli, nutrients/biological oxygen demand impact on aquatic life, chlordane, biology, and fecal coliform bacteria. Dredging significantly degrades waters by increasing turbidity, total suspended solids, and re-suspending metals, pesticides, nutrients and organic contaminants present in the sediments, thus exacerbating water quality problems.

RECOMMENDATION: The DEIS, Regulatory Plan, and permitting should consider all the TMDL endpoints, the state TMDL implementation process needed to meet state water quality standards and the potential for significant degradation of waters.

Climate Change

The DEIS addresses the potential for all alternatives to affect climate based on greenhouse gas emissions associated with sand and gravel production. The document characterizes these incremental impacts as not significant. However, the DEIS does not address how projected climate change might affect these alternatives and their impacts on the river. The National Climate Assessment for the Great Plain shows projections of more frequent and more intense droughts as well as severe rainfall events in this region. A drier or wetter regional climate would affect the basin's hydrology and, therefore, the movement of sediment through the river system. In this report, federal agencies are reaffirming the importance of continuing to improve the nation's resilience to extreme weather events and other impacts of a changing climate when managing our freshwater resources.

RECOMMENDATION: The DEIS, Regulatory Plan, and permitting should be revised to address climate change adaptation and how the Corps plans to avoid, minimize and mitigate potential changes to the river system affecting dredging which could occur as a result of regional precipitation changes. The federal Water Resources and Climate Change Workgroup has applicable resources, including a recently released an update to the National Action Plan, "Looking Forward: Priorities for Managing Freshwater Resources in a Changing Climate" which could be helpful in updating the information on climate.



United States Department of the Interior

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Denver Federal Center, Building 67, Room 118
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December 8, 2016

9043.1
ER 16/0618

Brian Donahue
U.S. Army Corps of Engineers, Regulatory Branch
601 E. 12th Street, Suite 402
Kansas City, Missouri 64106-2896

Dear Mr. Donahue:

The Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) for Kansas River Commercial Sand and Gravel Dredging, and offers the following comments and recommendations.

Fish, Wildlife, and Recreational Resources

The U.S. Fish and Wildlife Service (FWS) Kansas Field Office has reviewed the DEIS concerning the U.S. Army Corps of Engineers (USACE) proposed action to issue five permits under the authority of Section 10 to authorize the hydraulic dredging of sand and gravel from the bed of the Kansas River utilizing a suction head or cutter-head dredges mounted on barges. Dredgers have requested authorization to dredge a total of 1,900,000 tons of material annually from eight individual dredging areas. Under the Regulatory Plan, 3,150,000 tons would be the most that could be extracted because of restrictions concerning the rate of sand and gravel extraction from specified reaches of the Kansas River by any one dredge.

The following comments are being provided pursuant to FWS authorities under the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*); section 404(b) of the Clean Water Act (33 U.S.C. 1344); the Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. 703 *et seq.*); the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*); the Bald and Golden Eagle Protection Act; the Fish and Wildlife Act of 1956; Water Resources Development Act of 1986, '90, '92, '96, '13 (WRDA); Executive Orders 11990 (wetland protection) 13112 (invasive species) and 11988 (floodplain management); and are consistent with the intent of the National Environmental Policy Act of 1969.

Purpose and Need for the Action

As stated in the DEIS, the basic purpose of the Proposed Action is to supply sand and gravel required to support the region's construction and manufacturing needs. The Dredgers' purpose

for the Proposed Action is to economically dredge sand and gravel from the Kansas River for commercial sale to a wide variety of construction markets generally located in or near metropolitan areas along the river. The purpose is based on a competitive requirement to produce a unique, high quality product at the lowest possible cost, in order to compete with other product sources to satisfy the projected regional construction market demand for these materials.

Proposed Alternatives

Proposed alternatives include a no-action alternative which would result in the cessation of all dredging following denial of the current permit requests and expiration of the existing permits currently held by the Dredgers. The existing dredging permits were authorized by the USACE in 2007, with an expiration date of December 31, 2012. The USACE extended these existing permits to allow time to complete its public interest review and EIS.

A reduced limit alternative would establish a maximum cumulative annual dredging limit of 1,670,000 tons of material for all dredged reaches of the Kansas River. This restriction would limit the total annual amount of material dredged from the river to the average annual amount of sand load transported through the river system.

Other alternatives considered would be to establish a sediment budget for each individual dredging area on the Kansas River, getting sand from off-channel pit dredges, dredging in Kansas reservoirs and smaller rivers in Kansas and Missouri and the Arkansas River floodplain.

Endangered, Threatened, and Candidate Species, Species of Special Concern and Sensitive Communities

Endangered Species Comments

The FWS has concerns of impacts to five listed species, the federally endangered least tern (*Sterna antillarum*), pallid sturgeon (*Scaphirhynchus albus*), and Topeka shiner (*Notropis topeka*), and the federally threatened piping plover (*Charadrius melodus*), and Northern long-eared bat (*Myotis septentrionalis*), and the bald eagle (*Haliaeetus leucocephalus*), which is no longer a federally listed species.

Least Tern and Piping Plover

Least terns and piping plover have both been found to nest along sandbars on the Kansas River. In recent times, nesting success has been sporadic primarily due to high-water events and nest loss due to predation. During times of ongoing low water releases from impoundments sandbars become vegetated and unsuitable for nesting habitat. However, sandbar habitat along the Kansas River is considered to be important habitat for the recovery of the species and in-stream dredging has been implicated in sandbar reduction (Eitzmann and Paukert 2009, Wyzga et. al. 2009), thus limiting already decreasing habitat for the two species.

If the permits go forward, FWS recommends that the special conditions for least terns and piping plovers listed in the DEIS be implemented, i.e. “if at any time a pair nests within three river miles of a dredge site, we propose to contact the Service in order to determine the impacts, if

any, dredging has on the species. At that time appropriate measures will be taken to minimize foreseeable impacts.”

Pallid Sturgeon

Five pallid sturgeons have been caught in the lower Kansas River. Although the upper reaches have not been surveyed for pallid sturgeon, FWS is confident that pallid sturgeon are migrating upstream at least as far as the Bowersock Dam. If the dredging permits do go forward, we recommend that the USACE analyze the effect to the sturgeon under the requested proposals. An analysis should be conducted to determine what effect, if any, commercial sand and gravel dredging may have on the habitats of the pallid sturgeon and other aquatic organisms especially in light of the requested increase in tonnage of material removed and increase in the miles opened to dredging. This analysis should first consider the potential impacts to habitat which currently exists, e.g. removal of sandbars and islands, the deepening of the channel, migrating headcuts that eliminate potential spawning habitat, the effect on the riparian cottonwood forest resulting from changes in bed elevation and bank widening, and the effect of noise and disturbance from sand dredging operations. Secondly, the analysis should attempt to determine what role commercial dredging is playing in preventing habitat creation or maintenance in the actively dredged reaches of the Kansas River.

Topeka Shiner

Although the Topeka shiner is not known to utilize the mainstem of the Kansas River for extended periods of time, it is found in numerous tributaries that empty into the Kansas River. It is FWS's concern that as bed degradation occurs in the Kansas River, even at the proposed levels of under two feet of any five mile stretch, headcutting will occur in the tributaries that empty into the Kansas River. The Kansas River has 18 impoundments on its drainage which result in sediment hungry water upon discharge into the Kansas. The further removal of sediment from in channel dredging would exacerbate erosional processes, such as headcutting of contributing streams to the Kansas River. Fischer et al. (2012) reported that sediment that fills in abandoned dredge holes is most likely derived from headcutting and bank erosion upriver, causing degradation upriver to continue after dredging operations have ceased and the dredge reach has continues.

Northern long-eared bat

The northern long-eared bat would not likely be heavily impacted by instream dredging on the Kansas River. They do however utilize the riparian areas found along the river for roosting and maternity trees. In channel dredging has been shown to contribute to bank erosion and subsequently the loss of mature timber that grows along the river. The loss of trees could adversely affect the northern long-eared bat.

Bald Eagle

Although the bald eagle is no longer protected by the Endangered Species Act, it is still protected under the Bald and Golden Eagle Protection Act (Eagle Act) and the Migratory Bird Treaty Act

(MBTA). Active nests are located near many of the proposed dredging sites including one active nest near river mile 27.1, one nest near river mile 46.2, two active nests near river mile 51, and one active nest near river mile 90. Inactive nests are also protected and there are many of these in the vicinity of proposed dredging sites. The Eagle Act not only protects nesting and roosting trees but also protects the eagles from disturbance including noise and human activities. If the permits go forward, special conditions based on guidelines and conservation measures found the Act should be attached to the permit. FWS will work with USACE to draft specific conditions for dredging sites.

In addition to federally listed species, the FWS has very strong concerns regarding a suite of cyprinid fishes, many of them are listed threatened or endangered by the State of Kansas. Of most concern to the FWS are the following species: Sturgeon chub (*Macrhybopsis gelida*), shoal chub (*Macrhybopsis hyostoma*), plains minnow (*Hybognathus placitus*), flathead chub (*Platygobio gracilis*) and the silver chub (*Macrhybopsis storeriana*).

All five of the above listed species are pelagic spawners and are vulnerable to direct take from in channel dredging activities, primarily from entrainment from suction dredges, as well had physical changes to their respected habitats (Griffith & Andrews 1981). Although none of the five species are federally listed, the FWS greatly supports conservation of these species in order to avoid the need for future listing actions to take place.

Fish and Wildlife Coordination Act Comments

A 57 mile-long stretch of the Kansas River through Wyandotte, Johnson, Leavenworth, Douglas, and Jefferson Counties was listed in the National Rivers Inventory (NRI) in 1982. This nominated stretch of the Kansas River extends upstream from the I-635 bridge near Kansas City, Kansas to its confluence with the Delaware River near Perry, Kansas. The NRI is a register of rivers that may be eligible for inclusion in the National Wild and Scenic River System and is maintained by the National Park Service (NPS). These rivers were included on the NRI based on the degree to which they are free-flowing, the degree to which the rivers and their corridors are undeveloped, and the outstanding natural and cultural characteristics of the rivers and their immediate environments. Section 5(d) of the National Wild and Scenic Rivers Act requires, "In all planning for the use and development of water and related land resources, consideration shall be given by all Federal Agencies involved to potential national wild, scenic and recreational river areas." The intent of the NRI is to provide information to assist in making balanced decisions regarding the use of the nation's river resources. A Presidential directive and subsequent instructions issued by the Council on Environmental Quality required each Federal agency, as part of its normal planning and environmental review processes, take care to avoid or mitigate adverse effects on rivers identified in the NRI. Further, all Agencies are required to consult with NPS prior to taking actions that could effectively foreclose wild, scenic, or recreational status for rivers on the inventory.

The nomination was based on the River's scenic, recreational, fisheries, wildlife, and cultural values. The Kansas River is a relatively large plains river having good scenic values. The potential for recreational opportunities, including canoeing, is uncommonly good and represents a significant resource. The Kansas River is one of only three navigable rivers in the state of

Kansas and provides the principal river-based recreation opportunity in Kansas. This segment of the Kansas River is widely used for canoeing, bank fishing, and boat fishing as evidenced by the large number of public and private developed and undeveloped accesses to the river. Because of its accessibility, it is an important resource to the Kansas City-Lawrence-Topeka area, the highest density population corridor in the state. Dredging impairs the quality of the recreational experience by physically altering the scenic beauty of the river, the machinery presents a large in-stream obstacle, and the serenity is disturbed by machinery noise. In addition, the Department of the Interior designated the Kansas River as a National Water Trail. The effects of dredging on recreation on the Kansas River should be evaluated in the final EIS.

If in channel dredging operations are allowed to continue, we believe that each site should have a mitigation and restoration plan. Adverse impacts to the aquatic environment from dredging activities are well known. New information may document specific impacts to the Kansas River ecosystems. Mitigation and restoration should be an integral part of the management of sand and gravel extraction projects, should occur concurrently with extraction activities, and should be an ongoing process. FWS requests the opportunity to review and comment on the mitigation plans. A mitigation fund, with contributions paid by the operators, or royalties from gravel extraction could be used to fund the mitigation and restoration programs as well as for effectiveness monitoring.

FWS also recommends that the monitoring program be expanded to include biological and water quality monitoring, and an evaluation of sediment contamination. Many pollutants, including PCB, chlordane, agriculture chemicals, and heavy metals, attach to sediments. Sediments act as long-term sources of contamination as the result of the resuspension of sediment particles by disturbance. Dredging operations resuspend the sediments in the water column by churning the water and the subsequent discharge of return water. The Kansas Department of Health and Environment (KDHE) issued a 2011 fish consumption advisory for the Kansas River from below the Bowersock Dam at Lawrence to Eudora at the confluence of the Wakarusa River. Pollutants also affect wildlife that prey on fish and aquatic insects from the Kansas River including least terns, piping plovers, pallid sturgeon, and bald eagles. We would be happy to work with the USACE and other parties to design a biological monitoring plan.

Monitoring of river bed degradation should be expanded to the entire length of the river. Monitoring only at the dredge sites does not give a clear and accurate picture of the effects of dredging on the channel bed. Rivers usually readjust their profile during high flows, eradicating dredging pits and giving the illusion that extraction has had no impact on the channel. Surveys of bed elevations taken along the entire length of the channel will provide a more accurate assessment of the distribution of downcutting (erosion) along the length of the channel. The organization American Rivers has calculated that the bed of the Kansas River has been lowered an average of 4.6m (<http://www.amrivers.org/mostendangered/kansas1996.htm>). According to The Kansas Water Office report Kansas River Channel Degradation (2005) degradation is occurring in nearly every reach of the Kansas River. The Topeka Public Water Supply weir at River Mile 87 has experienced 2 feet of degradation since 1988.

Cumulative impacts analysis should be updated and kept current. Many changes in the watershed, both natural and manmade, can lead to cumulative impacts. For example, the

USACE acknowledges in the Plan that river bed degradation causes bank instability. One important component in assessing bank instability is the amount of bank stabilization occurring along the river. As of the 1990 Final EIS there were 34 areas of bank stabilization in the lower Kansas River between its mouth and Bowersock Dam (Lawrence) and in the Topeka area. Since it has been 21 years since that FEIS, updating the number of bank stabilization projects in these reaches would help in evaluating whether the Regulatory Plan has reduced or slowed bank erosion. Information concerning authorized bank stabilization projects should be available by querying the USACE's database. Alternatively, this information could also be ascertained by an evaluation of aerial photos of the Kansas River. The Plan requires that a complete set of aerial photographs be taken of the Kansas River every four years. If the aerial photography were digitized the photo sets could then be compared to determine the amount of channel widening, locations of new bank stabilization, total amounts of bank stabilization, bar formation activity, etc. We request that the photos and resulting data be available to the resource agencies for review

Synopsis

After a review of the DEIS, the FWS recommends that the USACE suspend all permits for in-channel sand and gravel dredging and that mining operations be moved to off-channel pit dredging. The FWS acknowledges that would result in overall higher costs for sand and gravel production as well as additional regulatory requirements for companies to operate. In addition, finding suitable land parcels near urbanized areas could be difficult.

The primary reasoning behind the recommendation is that the FWS does not believe that cumulative impacts resulting from the ongoing in-channel removal of bed material from the Kansas River have been properly addressed. We do not believe that the 2 foot bed degradation limit put in place provides adequate information to significant physical, chemical and biological changes within the Kansas River and affects to federal trust resources. These changes could have adverse impacts to federally listed species, in particular the least tern and piping plover and potentially the pallid sturgeon. Just as important, in-channel dredging likely is adversely affecting state listed fish species that very easily could become federally listed in the future as their habitats suffer from continued degradation. This would result in increased regulation for the numerous organizations when working within the Kansas River.

FWS recommends that a sediment budget be developed for the Kansas River as well as more extensive monitoring at a broad scale to fully address cumulative impacts of in-channel dredging, in addition to continued cross section monitoring throughout the entire reaches of the Kansas River if dredging continues. In developing the sediment budget particular emphasis should be placed in impacts to threatened and endangered species as well as to the tributaries that empty into the Kansas River.

We appreciate the opportunity to provide these comments and recommendations, and would be happy to clarify or provide additional information regarding them. If you have any questions regarding these comments, please contact Gibran Suleiman of the FWS Kansas Ecological Service Field Office at (785) 539-3474 x 114.

Literature Cited

Eitzmann, J.L & C.P. Paukert. 2009. Urbanization in a Great Plains River: Effects on Fishes and Food Webs. *River Research and Application*. 12 pages.

Fischer, J., C. Paukert & M. Daniels. 2012. Fish community Response to Habitat Alteration: Impacts of Sand Dredging in the Kansas River. *Transactions of the American Fisheries Society*. 141: 1532-1544.

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Wyzga, B., A. Amriowicz, A. Radecki-Pawlik, & J. Zawieska. 2009. Hydromorphological Conditions, Potential Fish Habitats and the Fish Community in a Mountain River Subjected to Variable Human Impacts, The Czarny Dunajec, Polish Carpathians. *River Research and Application*. 20 pg.

U.S. Geological Survey (USGS) Comments

USGS Streamgages on the Kansas River

The USGS operates streamgages along streams throughout the U.S. to collect water quantity and quality data for a variety of purposes. Continuous operation of USGS streamgages is essential for our stakeholders. These streamgages have permanent infrastructure and are vulnerable to disruption when nearby construction or dredging occurs in the vicinity of these stations. Two active USGS streamgages fall in or near Kansas River dredging areas shown on DEIS figures 4 and 5. These are Site Number 06892518 – Kansas River near Lake Quivira, Kansas and Site Number 390334095354300 – Kansas River near Tecumseh, Kansas.

The final EIS should list USGS structures as sites to be safeguarded. The USGS Kansas Water Science Center (WSC) should be contacted and given sufficient advance notice before dredging at areas near active USGS streamgages. Efforts should be made to both preserve the streamgages and minimize impacts to the data integrity collected at those sites.

Water quality considerations

Water quality and drinking water usage are addressed within the DEIS on pages 4-3 and 5-5. Given the importance of this resource as a drinking water supply for the stated 800,000 people in towns and cities along the river, additional consideration for water quality should be made within the final EIS.

The DEIS does not contain any references to water quality monitoring programs (past or present), or analyzing USGS data for potential dredging impacts to water quality. Significant dredging on the Kansas River is a long term and ongoing activity that is also intermittent and geographically variable. As a regional source of drinking water, some assessment to quantify the impacts of the dredging process on water quality in the Kansas River is prudent. This assessment should include (but not limit to) lead, zinc, copper, and mercury and hydrophobic organic compounds.

It is widely documented that river bottom sediments in the United States are potential reservoirs for hydrophobic compounds (Nowell and others, 2013; Wilson, 2016; Wilson and Bonin, 2007). It is also

widely documented that both natural and anthropogenic activities can remobilize contaminated sediments and release contaminants to the water column (Eggleton and Thomas, 2004). The USGS periodically collects water quality data on the Kansas River, and a thorough analysis of this data should be completed as part of this EIS.

We strongly encourage the documentation of the USGS streamgage infrastructure on the Kansas River in the project area and description of the protection and coordination to occur during dredging. Additionally, we recommend that more research be conducted on water quality impacts with expanded discussion within the final EIS.

If you have any questions concerning USGS comments, please contact J. Michael Norris, USGS Coordinator for Environmental Assessment Reviews, at (603) 226-7847 or at mnorris@usgs.gov

References

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Sincerely,



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