

# LOWER MISSOURI RIVER COMMERCIAL DREDGING PERMIT REEVALUATION

U.S. Army Corps of Engineers  
Kansas City District  
21 April 2020

-FOR AUDIO, PLEASE DIAL (844) 721-7241  
USE ACCESS CODE 8168679  
-TO INCREASE STREAMING RATE, PLEASE  
VIEW WITH CAMERA DISABLED



US Army Corps  
of Engineers®



# PRESENTERS

## REGULATORY BRANCH

Matt Shively  
Project Manager

## RIVER ENGINEERING

Michael Gossenauer  
Hydraulic Engineer



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## COMMANDER'S INTENT

I am committed to doing the right thing. We will strive to be open, honest, and straight-forward. We will respectfully listen and seek to understand the needs and concerns of the applicants and all stakeholders. We will make an honest assessment of potential impacts of the proposed and alternative actions. I will make a decision that balances the benefits and risks, strives to meet the purpose and needs of the project, is the least environmentally damaging practicable alternative which protects our nation's aquatic resources, and is compatible with the public interest.

Col. William Hannan, Jr.  
Commander and District Engineer  
USACE, Kansas City District



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# PUBLIC NOTICE



US Army Corps  
of Engineers  
Kansas City District

Permit No. Missouri River Commercial Dredgers  
Issue Date: March 18, 2020  
Expiration Date: May 1, 2020

45-Day Notice

This public notice concerns the proposed reissuance of commercial dredging permits on the Lower Missouri River. The proposed actions are described below. Informational webinar: the U.S. Army Corps of Engineers, Kansas City District will make additional information on the proposed action available to the public through an online presentation (webinar). The presentation will occur on April 21, 2020 at 3:00 p.m. CST. Instructions for accessing the webinar can be found on page 7 of this document.

This public notice is issued jointly with the Missouri Department of Natural Resources, Water Protection Program and the Kansas Department of Health and Environment. The State Departments will use the comments to this notice in deciding whether to grant Section 401 water quality certifications. The Corps of Engineers requests that commenters furnish a copy of their comments to the Missouri Department of Natural Resources, P.O. Box 176, Jefferson City, Missouri 65102 and the Kansas Department of Health and Environment, Bureau of Environmental Field Services - Watershed Management Section, 1000 SW Jackson Street, Suite 430, Topeka, Kansas 66612-1367.

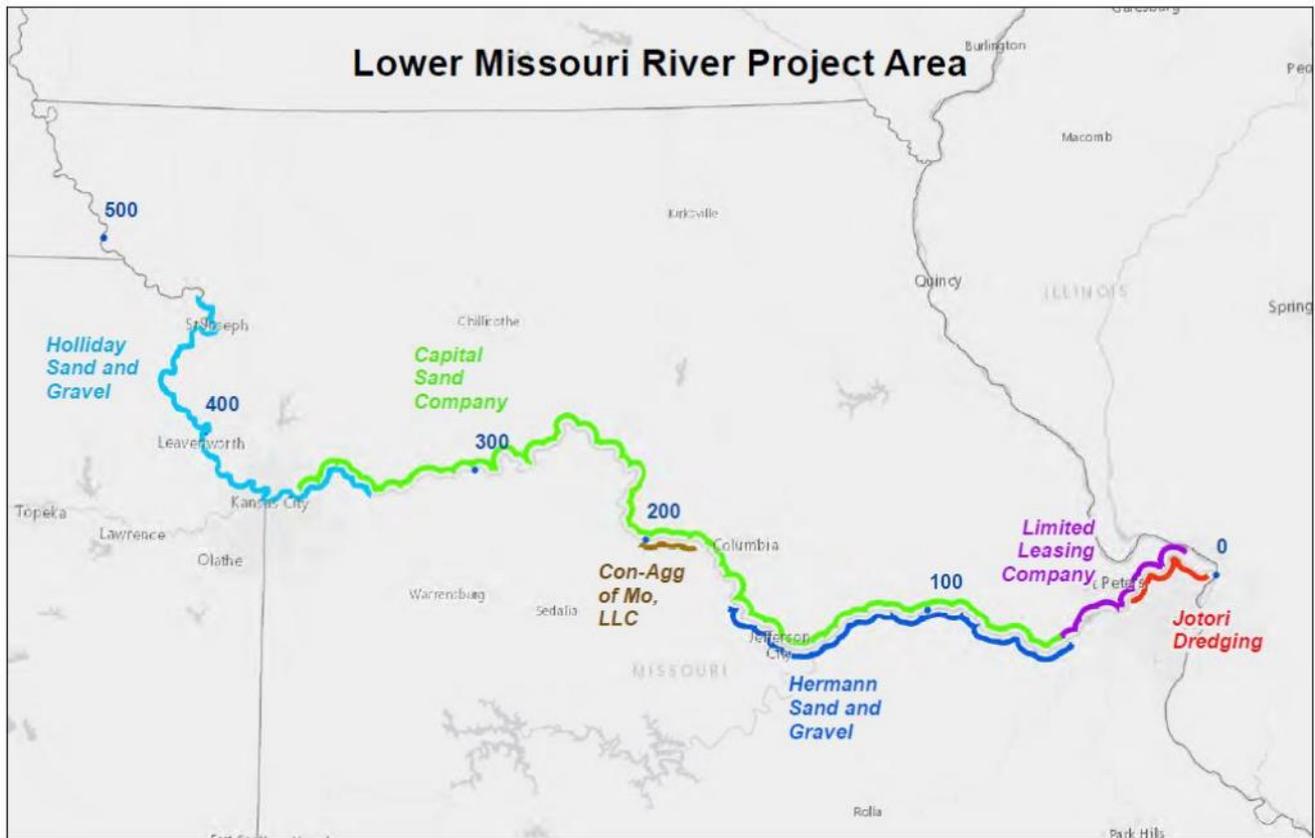
**APPLICANTS:** Capital Sand Company, Inc. (NWK-2011-00361), Hermann Sand & Gravel, Inc. (NWK-2011-00362), Holliday Sand & Gravel Company (NWK-2011-00363), Con-Agg of Missouri, LLC. (NWK-2011-00364), Limited Leasing Company (MVS-2011-00177), J.T.R., Inc. (MVS-2011-00178), hereafter "Dredgers".

**PROJECT LOCATION** (As shown on the attached map): The Dredgers have proposed renewing permits for commercial sand and gravel dredging within five predefined segments of the Lower Missouri River between St. Louis, Missouri and Rulo, Nebraska (approximate River Miles 0 to 498).

- Capital Sand Company, Inc.: Waverly, Jefferson City, and St. Charles Segments
- Hermann Sand & Gravel, Inc.: Jefferson City and St. Charles Segments
- Holliday Sand & Gravel Company: St. Joseph, Kansas City, and Waverly Segments
- Con-Agg of Missouri, LLC.: Jefferson City Segment
- Limited Leasing Company: St. Charles Segment
- J.T.R., Inc.: St. Charles Segment



# DREDGING AREAS BY PERMITTEE



Contractor	Downstream Rivermile	Upstream Rivermile
Capital Sand Company	57	355
Con-Agg of Mo, LLC	185	202
Hermann Sand and Gravel	57	164
Holiday Sand and Gravel	331	459
Jotori Dredging	4	35
Limited Leasing Company	12	57

## PERMITTEES:

- Holliday Sand & Gravel – RM 459 to RM 320
- Capital Sand Company – RM 255 to RM 50
- Con-Agg of Missouri – RM 202 to RM 178
- Hermann Sand & Gravel Company – RM 164 to 70
- Limited Leasing Company – RM 55 to RM 0
- JTR (Jotori) – RM 35 to RM 0



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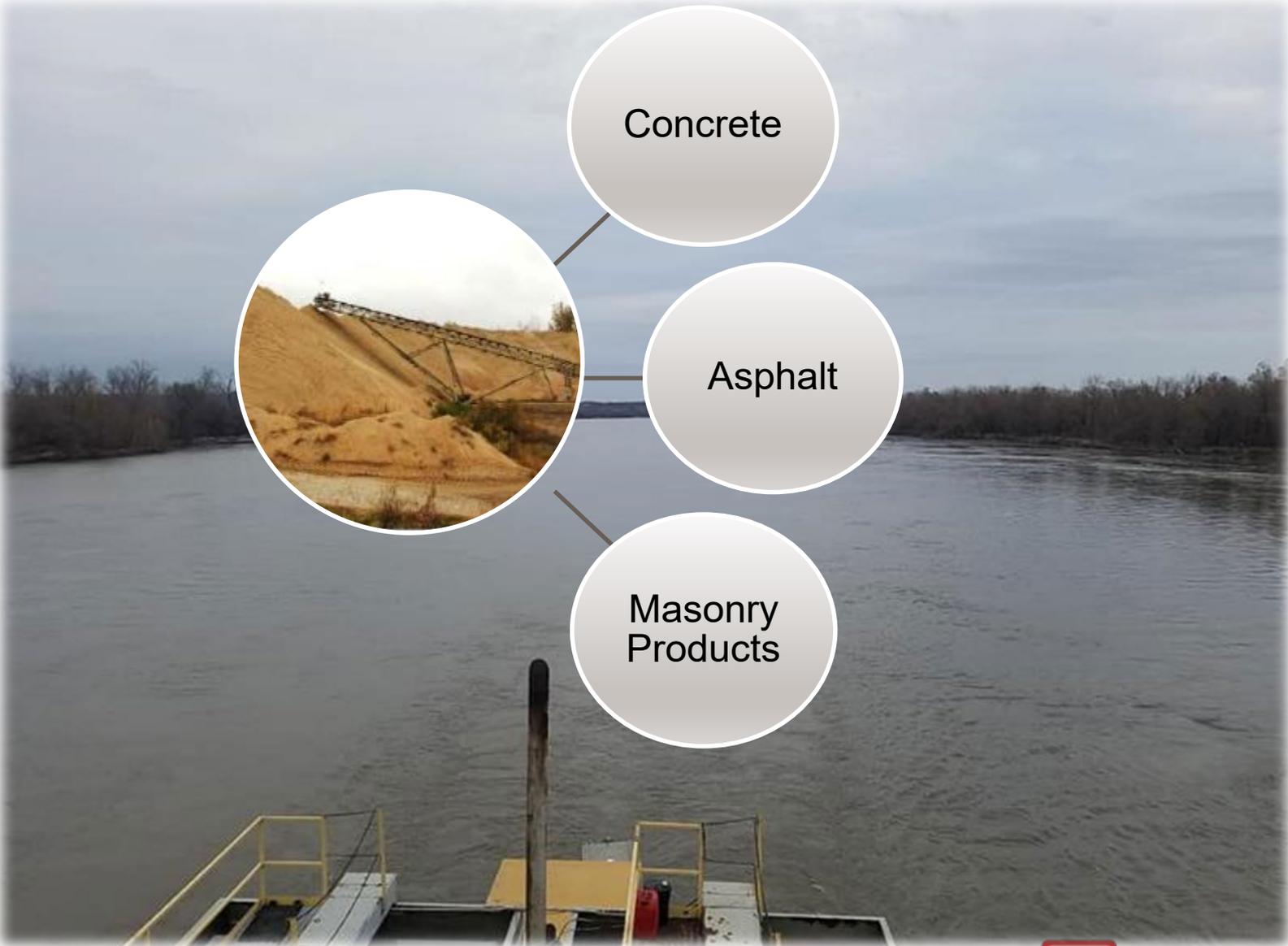
# DREDGING PROCESS

- Dredging is done using hydraulic suction dredges
- Some dredges have cutter-heads, some do not
- Processing – separation of unwanted material
- Usable sand is transported by barge to offloading facilities for sale
- The oversized/fine portions, and dredge water, is returned to the river at the dredging location



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Concrete

Asphalt

Masonry Products



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# REGULATORY AUTHORITIES

- Section 10, Rivers & Harbors Act (33 U.S.C. 403)
- Section 404, Clean Water Act (33 U.S.C. 1344)
- Section 14, Rivers & Harbors Act (33 U.S.C. 408)



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# KEY ISSUES

- **Altered River Condition**
  - Changes in sediment loads and river bed composition
  - Changes in river bed elevation
  - Changes in channel geometry and water surface elevations
  - Tributary degradation
- **Effects to Infrastructure**
  - Water intake facilities, wells
  - Levees
  - Bridges
  - Pipelines and cable crossings
  - Wharf and dock facilities
  - Navigational channel structures (BSNP)
- **Effects to the Environment**
  - Shallow water habitat
  - Endangered species



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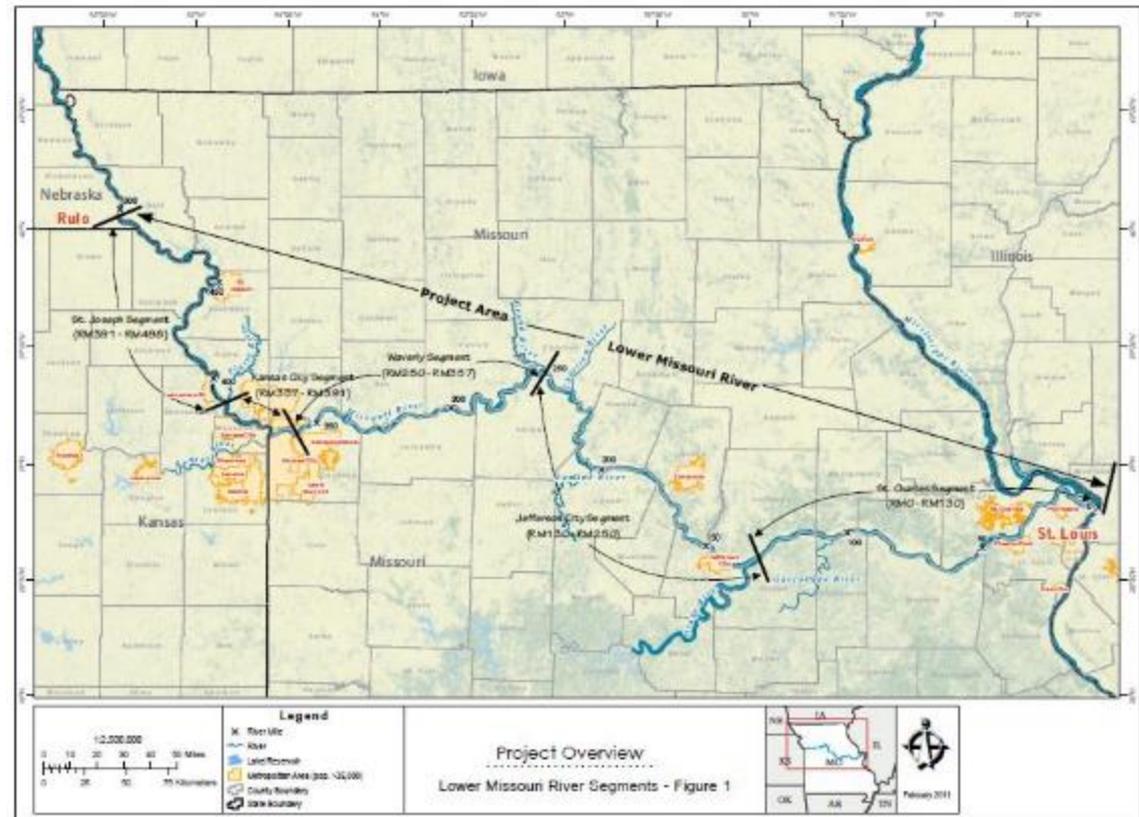
# 2011 FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS)



# FEIS – MAJOR POINTS

- Analyses performed on 5 separate segments

- St. Joseph
- Kansas City
- Waverly
- Jefferson City
- St. Charles



## FEIS – MAJOR POINTS

- Dredging can contribute to bed degradation in the LOMR
- Greater than 60,000 tons per mile, per year can result in local bed degradation
- Distributing dredging more evenly would reduce degradation



## 2011 FEIS ALTERNATIVES CONSIDERED BY RIVER SEGMENT (tons/year, preferred alternative is highlighted)

Segment	Annual Average (2004–2008)	Proposed Action	No Action Alternative	Alternative A	Alternative B	Alternative C
St. Joseph (RM 391 – RM 498)	326,928	1,150,000	0	350,000	860,000	330,000
Kansas City (RM 357 – RM 391)	2,658,831	4,060,000	0	540,000	1,230,000	2,660,000
Waverly (RM 250 – RM 357)	677,987	1,005,600	0	500,000	1,140,000	680,000
Jefferson City (RM 130 – RM 250)	1,578,858	2,750,000	0	430,000	980,000	1,580,000
St. Charles (RM 0 – RM 130)	1,649,326	4,384,400	0	370,000	840,000	1,650,000
<b>Total by Alternative</b>	<b>6,891,930</b>	<b>13,350,000</b>	<b>0</b>	<b>2,190,000</b>	<b>5,050,000</b>	<b>6,900,000</b>
<i>Alternate sources</i>		<i>N/A</i>	<i>6,900,000</i>	<i>4,710,000</i>	<i>1,850,000</i>	<i>0</i>
<b>Preferred Total</b>					<b>5,770,000</b>	



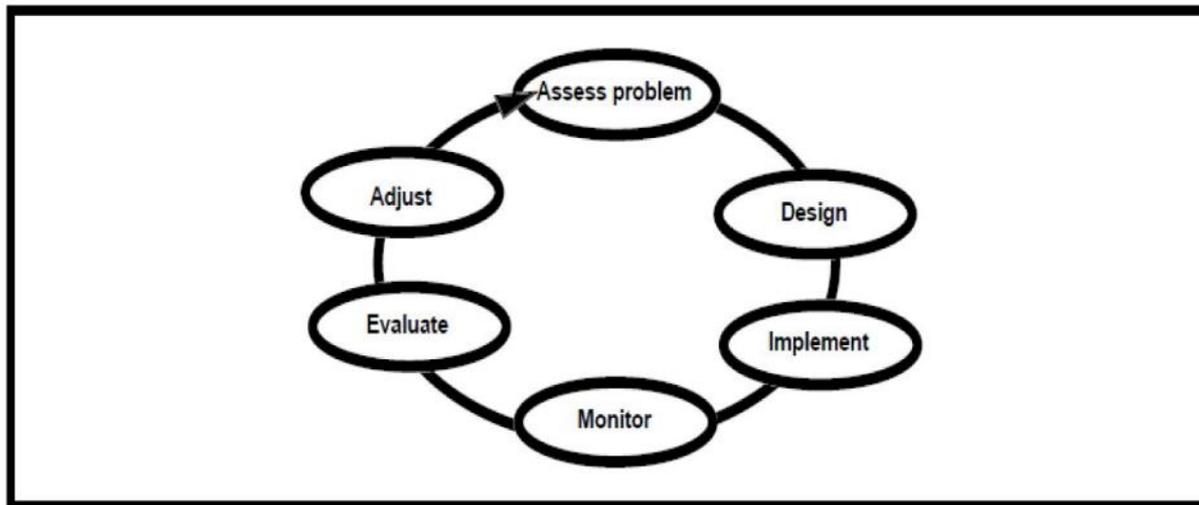
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# FEIS - ADAPTIVE MANAGEMENT FRAMEWORK

- The LOMR is dynamic
- Dredging is not the only factor affecting sediment loads
- Ongoing monitoring and data collection throughout permit cycle
- Adjustment of permitted extraction levels

FRAMEWORK FOR ADAPTIVE MANAGEMENT



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# 2011 RECORD OF DECISION



UNITED STATES ARMY CORPS OF ENGINEERS

**Record of Decision  
for  
Authorization of  
Commercial Sand and Gravel Dredging  
on the  
Lower Missouri River**

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MARCH 2011

Prepared by  
U.S. Army Corps of Engineers  
Kansas City and St. Louis Districts

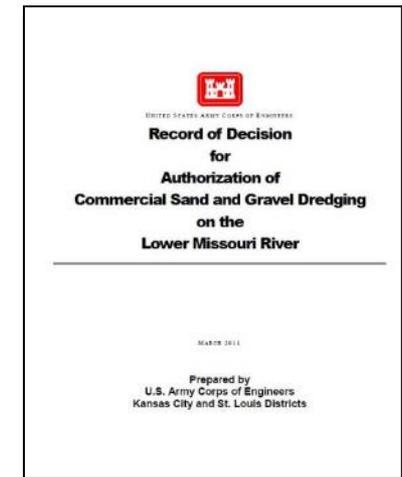


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# 2011 RECORD OF DECISION (ROD)

- Authorized the segment-based alternatives from FEIS
- Decreasing annual tonnage 6.5M to 5.9M
  - Kansas City segment reduced incrementally
- In compliance with:
  - Public Interest Criteria
  - Section 404(b)(1) Guidelines
  - Section 7 Endangered Species Act
  - Section 106 National Historic Preservation Act
- Based upon adherence to Special Conditions



# PERMIT SPECIAL CONDITIONS

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127.50
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180.15
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202.10
210.00
226.95
228.40
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## APPENDIX 1: PAST PERMIT SPECIAL CONDITIONS

- a. You understand and agree that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, you will be required, upon due notice from the U.S. Army Corps of Engineers (USACE), to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
- b. You must implement a Dredge Monitoring Plan (DMP) approved by the Regulatory Branch of the Kansas City District, USACE. If a DMP has not been previously approved by the Regulatory Branch, USACE, Kansas City District, you must provide within 30 days of execution of the permit a DMP for each individual dredge plant to the Regulatory Branch of the USACE, Kansas City District for approval. The DMP must show how you will monitor, record, and report the cutter-head position, cutter-head operating status, extraction tonnage, and the presence of any hard substrates, mussel shells, or unusual concentration of gravel in an impartial, unbiased, reliable, and accurate manner. The DMP must include the specifications of the process and the Dredge Monitoring System (DMS) including sensors, hardware, software, communications devices the permittee will use to: gather data, perform quality control on those data, calibrate, test, and repair sensors when they fail, and transfer the data to the Regulatory Branch of the Kansas City District, USACE. The DMS must include automated differential Global Positioning System (DGPS) equipment (or other comparable system) operating with a minimum accuracy level of 1-3 meters horizontal Circular Error Probable with horizontal positions tied into the UTM Zone 15 NAD 83 (feet) coordinate system recorded to the nearest foot. The DMS must record dredge intake positions every 5 minutes whenever the dredge is pumping. The data logged each month must be submitted by email to [matthew.s.shively@usace.army.mil](mailto:matthew.s.shively@usace.army.mil) at the Regulatory Branch of the Kansas City District, USACE by the 7th day of the following month. If you do not receive an email confirmation that the report was received, you must contact the Regulatory Branch of the Kansas City District, USACE at 816-389-3990 for revised instructions for filing the monthly report. The extracted material must be measured by one of the methods described in the attached Standard Operating Procedure for Hydrographic Surveying and Dredge Monitoring. If the tonnage is measured by scale at the off-loading facility, the DMP should also describe how the operation will record the date, time, river mile, coordinates, and approximate tonnage of each barge loaded in one location. If a barge is partially filled at one anchor setting then completed at a new anchor setting, the tonnage should be estimated separately for each location. This information must be provided monthly by email on the attached Missouri River Commercial Dredging Location/Volume Report spreadsheet to [matthew.s.shively@usace.army.mil](mailto:matthew.s.shively@usace.army.mil) at the Regulatory Branch of the Kansas City District, USACE by the 7th day of the following month. If you do not receive an email confirmation that the report was received, you must contact the Regulatory Branch of the Kansas City District, USACE at 816-389-3990 for revised instructions for filing the monthly report. Faulty sensors or other components identified in the DMP must be repaired within



# PERMIT SPECIAL CONDITIONS

(INCLUDING, BUT NOT LIMITED TO)

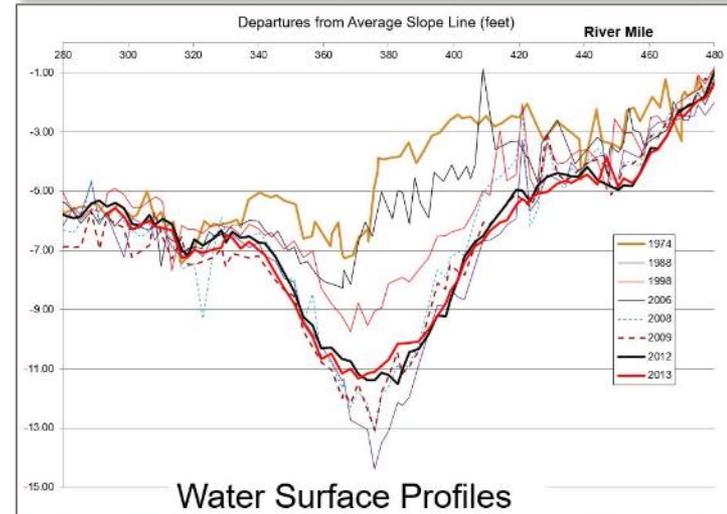
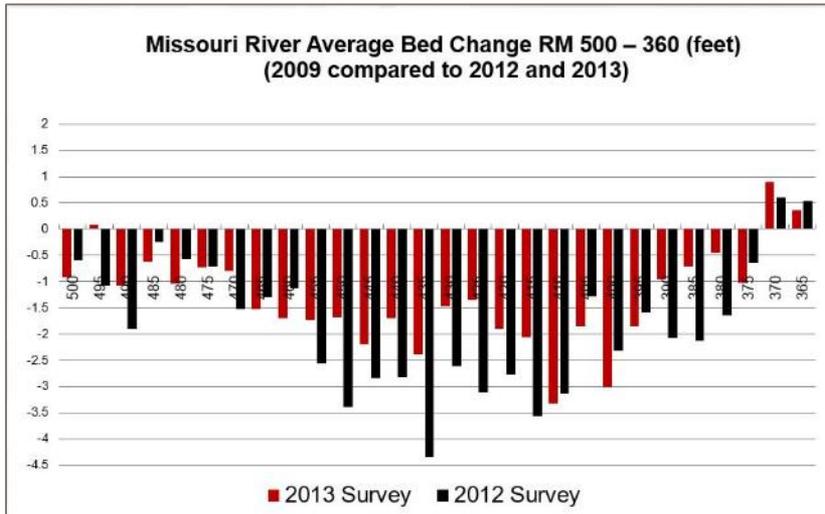
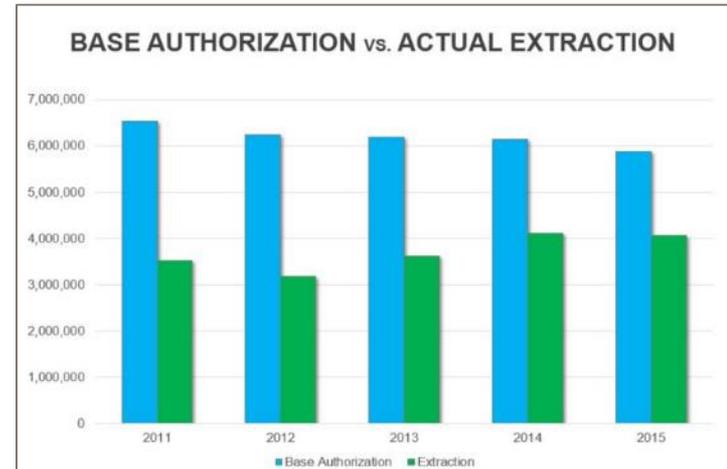
- Dredging exclusion zones
- Reduced dredging in most degraded areas
  - 18 “Hotspots”
  - Each five miles long
  - Limited to 300,000 tons annually
- Dredge location and extraction reporting
- Adaptive Management
  - River bed elevation and water surface elevation surveys.
  - Tonnage adjustments as necessary



# ADAPTIVE MANAGEMENT FRAMEWORK

## 2011-2015

- Dredging data collection
- River Surveys
- Trend analyses



# 2015 PERMIT APPLICATION REVIEW

- Analyses showed no more than slight (or no) degradation in:
  - Kansas City, Jefferson City, St. Charles
  - Authorized tonnage remained unchanged
- Analyses showed that the St. Joseph segment had greater than anticipated degradation. ADAPTIVE MANAGEMENT:
  - Authorized annual tonnage reduced from 860,000 to 330,000
  - Closure of 31 miles to dredging
- Analyses showed that in the Waverly segment, bed stability was unaffected by dredging. ADAPTIVE MANAGEMENT:
  - New Alternative D, phased increase
  - Authorized annual tonnage increased from 1.1 million to 1.9 million

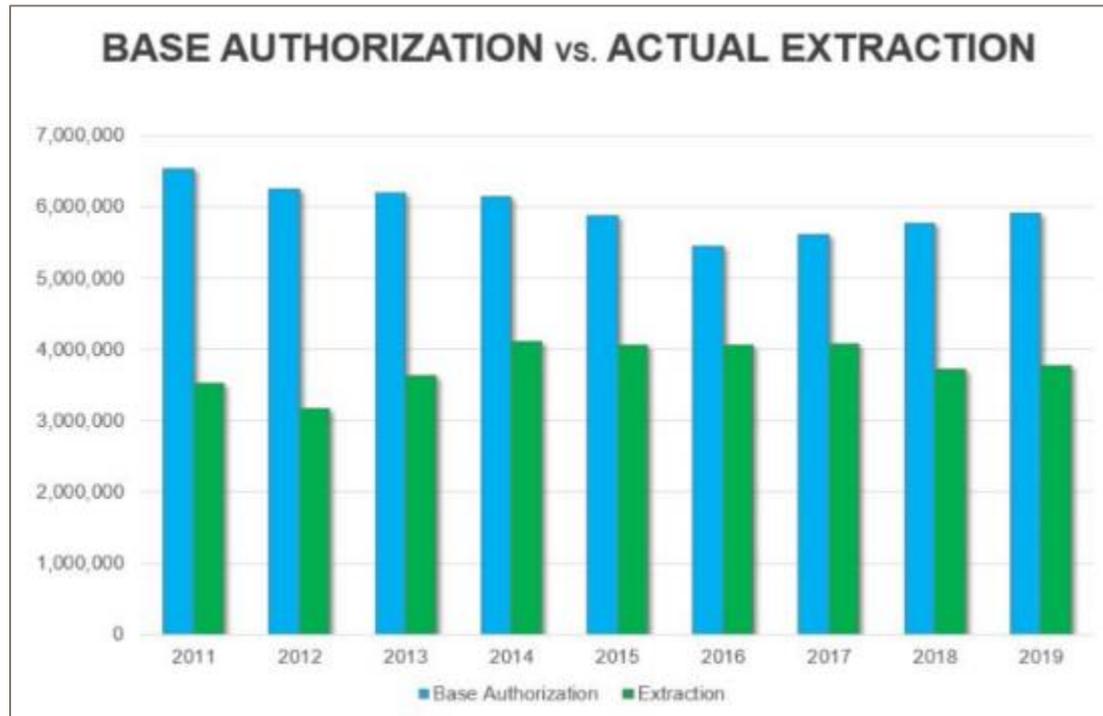


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## 2016-2020 PERMIT CYCLE

- Phased annual tonnage from 5,612,500 to 5,988,000
- Actual extraction about 64 percent of authorized
- 2019 river survey completed, under review



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# DREDGING TOTALS – PAST YEARS

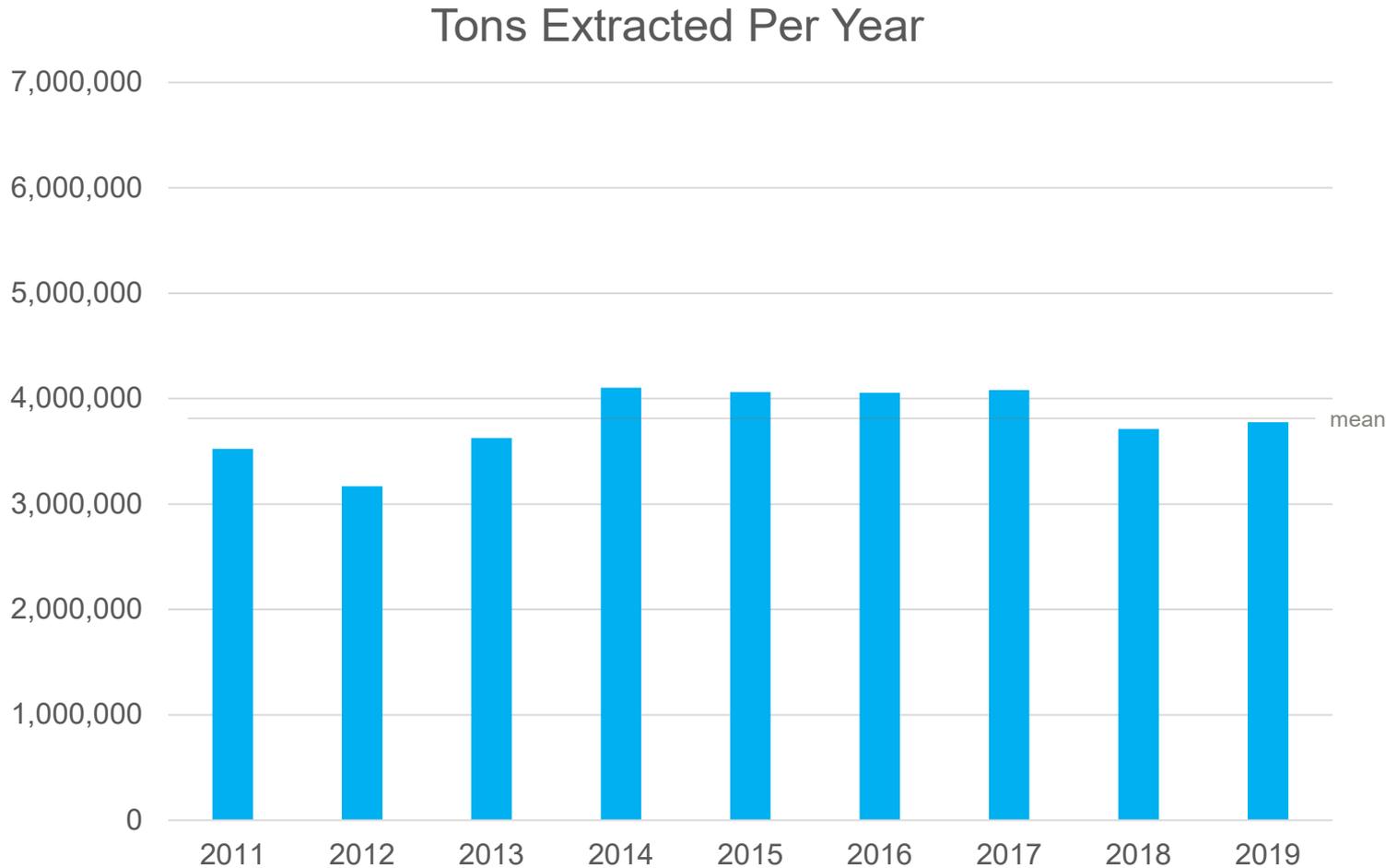
- 2011 – 3,523,022 tons dredged of 6,540,000 = 54%
- 2012 – 3,169,239 tons dredged of 6,240,000 = 51%
- 2013 – 3,627,531 tons dredged of 6,190,000 = 59%
- 2014 – 4,104,188 tons dredged of 6,140,000 = 67 %
- 2015 – 4,062,961 tons dredged of 5,880,000 = 69 %
- 2016 – 4,056,112 tons dredged of 5,450,000 = 74 %
- 2017 – 4,082,266 tons dredged of 5,612,500 = 72 %
- 2018 – 3,712,705 tons dredged of 5,765,000 = 64 %
- **2019 – 3,774,960 tons dredged of 5,905,500 = 64%**



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# DREDGING TONNAGE TOTALS – PAST YEARS

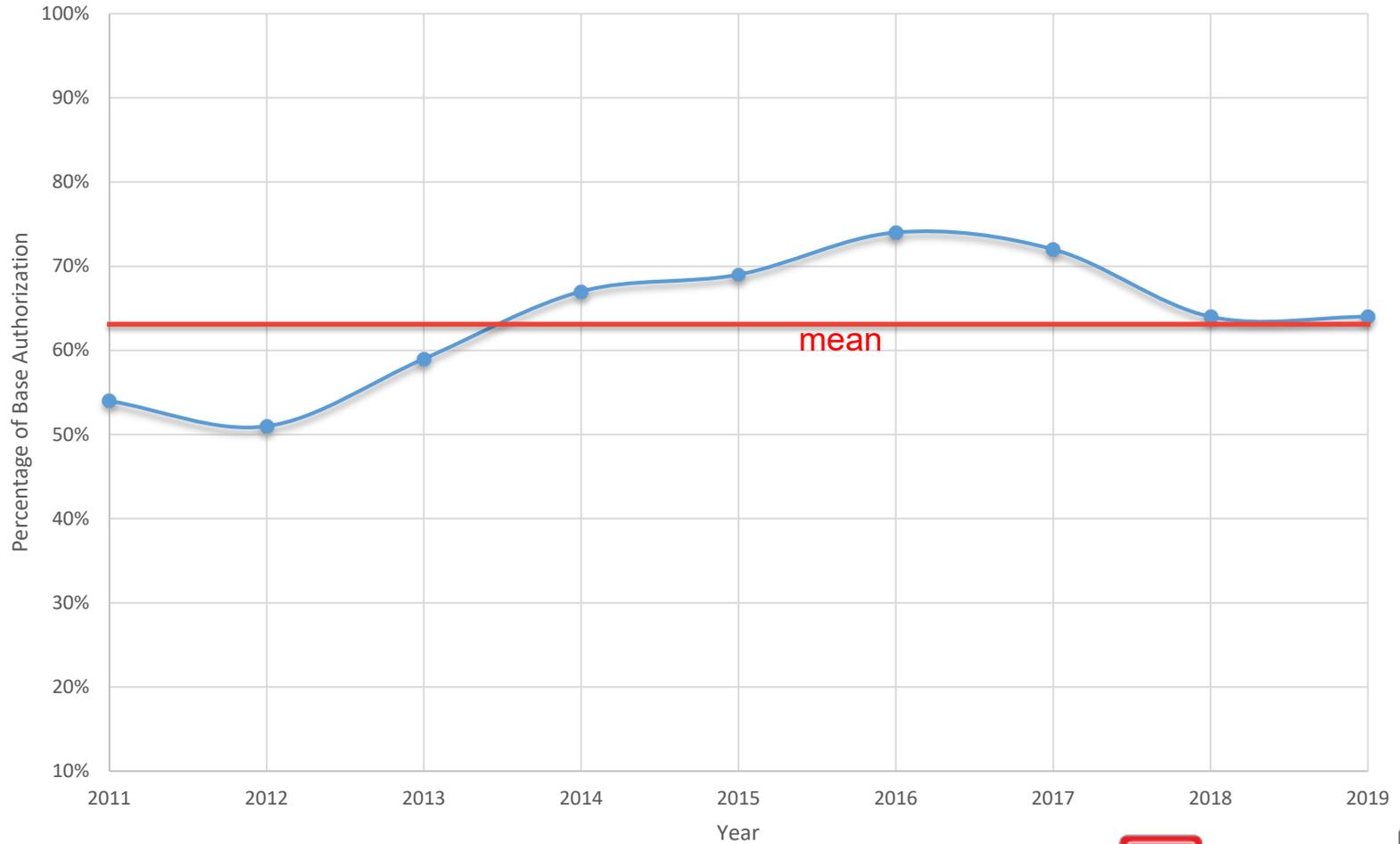


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# PERCENT EXTRACTION – PAST YEARS

## Dredging Percentage of Authorized Extraction



## 2020 AUTHORIZED TONNAGES

Segment	Upstream Boundary (river mile)	Downstream Boundary (river mile)	Length (miles)	Base Authorized Tonnage (*with Carryover)
St. Joseph	Rulo, Nebraska (498)	Platte River (391.1)	106.9	330,000 <b>*363,000</b>
Kansas City	Platte River (391.1)	Big Blue River (356.9)	34.2	507,316
Waverly	Big Blue River (356.9)	Grand River (249.9)	107	1,778,000 <b>*1,947,550</b>
Jefferson City	Grand River (249.9)	Osage River (129.9)	120	1,630,000 <b>*1,786,880</b>
St. Charles	Osage River (129.9)	Confluence with Mississippi River (0)	129.9	1,710,000 <b>*1,872,900</b>



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# PERMIT REQUEST (2021-2025)

Applicant	Segment	2016-2020 (Existing)	2021-2025 (Proposed)
Holliday Sand & Gravel	St. Joseph	330,000	330,000
	Kansas City	540,000	540,000
		2020 only: 507,316	
Waverly	870,000 to 1,078,000	1,078,000	
Capital Sand Co.	Waverly	370,000 to 700,000	782,500 to 1,112,000
	Jefferson City	1,350,000	1,450,000
	St. Charles	140,000	140,000
	Request includes addition of 5.15 miles in Waverly Seg.		
Con-Agg of Missouri	Jefferson City	160,000	160,000
Hermann Sand & Gravel Co.	Jefferson City	120,000	144,000
	St. Charles	120,000	144,000
Limited Leasing Co.	St. Charles	990,000	990,000
J.T.R.	St. Charles	460,000	460,000
	<b>Totals:</b>	5,450,000 (2016) to 5,955,316 (2020)	6,218,500 (2021) to 6,548,000 (2025)



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# 2020 PERMIT APPLICATION - CONSIDERATIONS FOR REVIEW

- River condition – how are river bed and water surface elevations trending compared to 2009 baseline?
  - 2019 hydrographic survey
  - Effects of 2019 flooding
- Will the proposed extraction contribute to bed degradation?
- Adaptive Management Framework:
  - Are changes to authorized limits necessary?
  - Modifications to exclusion and buffer zones?
- Are new studies, information, or analytical tools available?



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## 2020 PERMIT RENEWAL DETERMINATIONS

- Least Environmentally Damaging Practicable Alternatives
- Public Interest Review – effects on infrastructure, human use, aquatic environment, economics, etc.
- Section 404(b)(1) Guidelines
- Section 7 Endangered Species Act
- Section 106 National Historic Preservation Act
- Section 408 Review
- Other laws, Presidential Orders



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# SECTION 7 ENDANGERED SPECIES ACT: LISTED SPECIES

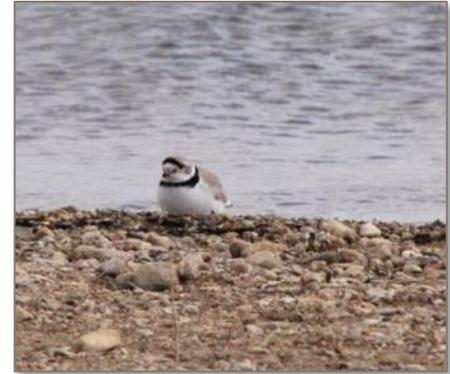


Least tern



Northern long-eared bat

Photo credit USFWS



Piping plover



Indiana bat



Pallid sturgeon



Decurrent false aster

Photo credit Jody Millar, USFWS



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# SECTION 7 ENDANGERED SPECIES ACT

## Past Determinations:

- Dredging has *no effect* on Indiana bat, decurrent false aster, northern long-eared bat
- Dredging *not likely to adversely affect* pallid sturgeon, least tern, piping plover
- Mandatory habitat dredging exclusion zones
- Biological Assessments for 2011, 2016 permits
- USFWS concurrence for determinations

## 2021 Permit Determinations:

- Review river conditions, proposed dredging
- Review any new species information
- Coordinate with USFWS regarding potential effects



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# SECTION 106

## NATIONAL HISTORIC PRESERVATION ACT

### Past Determinations:

- Identification of cultural resources / historic sites
- 91 shipwrecks
- Dredging exclusion zones around historic sites
- Concurrence from State Historic Preservation Offices

### 2021 Permit Determination

- Review river conditions, proposed dredging
- Review any new historic properties information
- Coordinate with SHPOs regarding potential effects



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# COORDINATION – NATIVE AMERICAN TRIBES

- Government-to-government
- Request feedback
- Respond



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# 33 USC 408 TECHNICAL ANALYSIS

- Looks at impacts on Federal Projects from a proposed activity that will make alterations to, or temporarily or permanently occupy or use any USACE federally authorized Civil Works project
- Separate action than Clean Water Act Section 404/Rivers and Harbors Act of 1899 Section 10



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# WHEN SECTION 408 IS REQUIRED

33 USC 408 (Section 408) approval is required for alteration, occupation, or use of any USACE Civil Works Project.

**Proposed alterations must not be injurious to the public interest nor impair the usefulness of the USACE project.**

*Impacts to the Usefulness of the USACE Project* - The objective of this determination is to ensure that the proposed alteration will not limit the ability of the USACE project to function as authorized and will not compromise or change any authorized project conditions, purposes, or outputs.



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# 33 USC 408 TECHNICAL ANALYSIS

## Federal Projects

- Bank Stabilization & Navigation Project (BSNP)
- Missouri River Recovery Program (MRRP)

## Proposed Activity

- Material mining by dredge

## Potential Impact Cause

- Bed Degradation



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## DEGRADATION AND DREDGING

Impacts to BSNP and MRRP are triggered by degradation – regardless of the cause

Specific causes of degradation do not need to be identified when assessing impacts

- If critical degradation levels are triggered by a flood, activities that could contribute/worsen the damage need to be considered



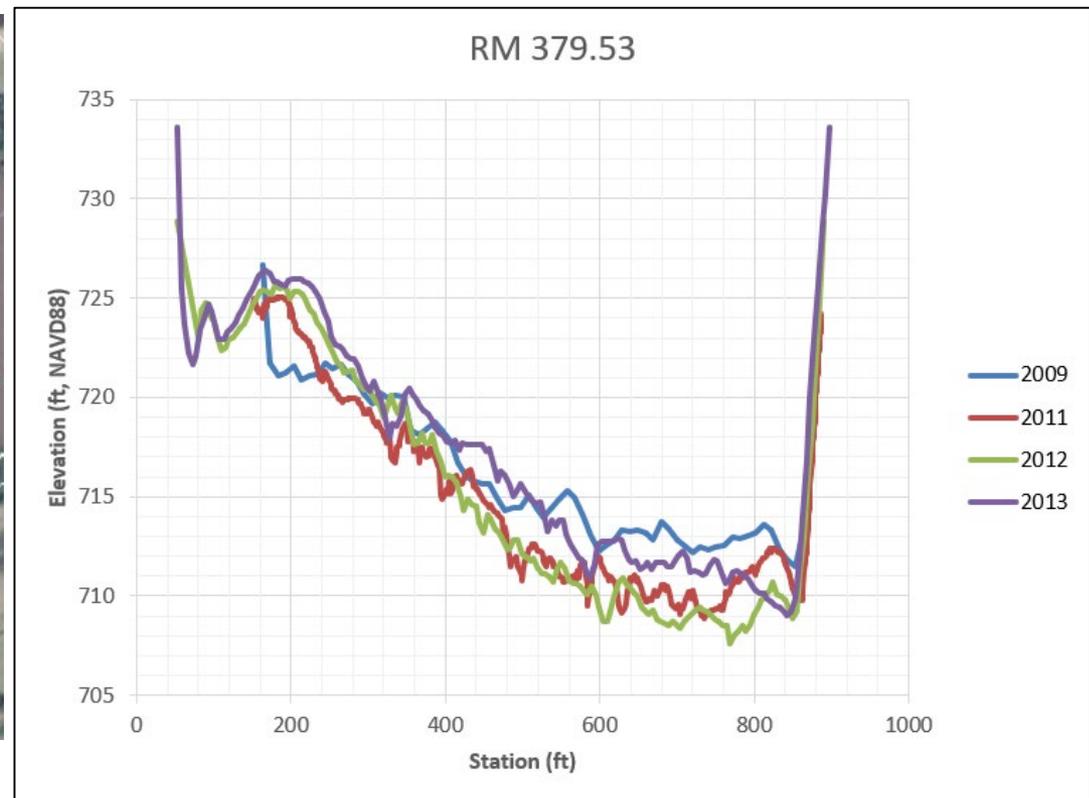
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# HOW DO WE MEASURE/MONITOR DEGRADATION

## Hydrographic surveys

- Soundings of the bed to record elevation
- Collected on consistent cross sections to allow comparison between survey years



# HYDROGRAPHIC SURVEY DATA

## Recent Hydrographic Surveys

Year	Data Type	# of Cross-sections (Spacing) / Water Surface Measurements
2008	Hydrographic survey	7326 (250 ft)
2009	Hydrographic survey	10550 (250 ft)
2012	Hydrographic survey	1302 (2000 ft)
2013	Hydrographic survey	10548 (250 ft)
2014	Hydrographic survey	5263 (500 ft)
2018	Hydrographic survey	5265 (500 ft)
2019	Hydrographic survey	5267 (500 ft)



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## POTENTIAL IMPACTS ASSESSED

Both localized and generalized impacts of dredging on  
BSNP and MRRP project features

- Proximity of dredging to project
- Effects of bed degradation on federal structures
- Effects of bed degradation on designed depth and depth diversity of the federal channel



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# DRAFT RESULTS

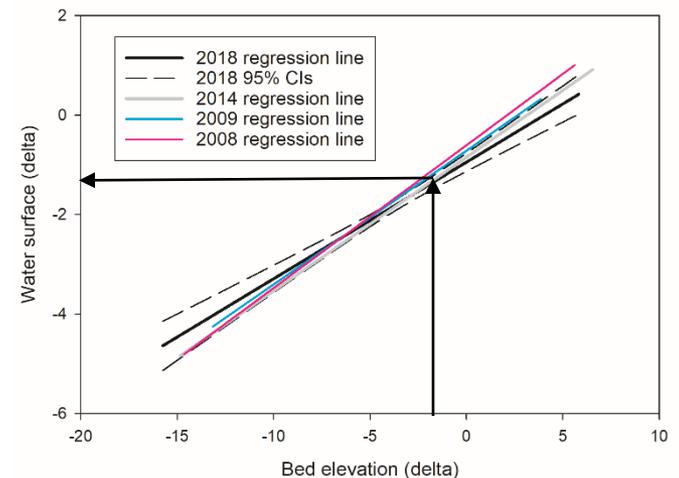
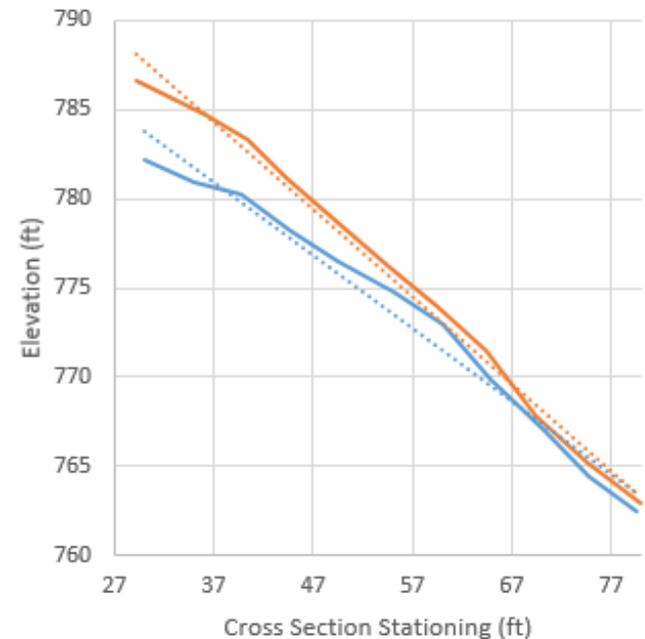
Two analyses showed impacts for degradation greater than 2-ft

## ► Revetment slope

- Revetment slopes are over-steepened in areas with degraded bed

## ► Structure height relative to water surface (WS)

- Water surface shows long-term correlation to bed elevation
- Changes in WS can leave structures out of compliance



# DEGRADATION THRESHOLDS

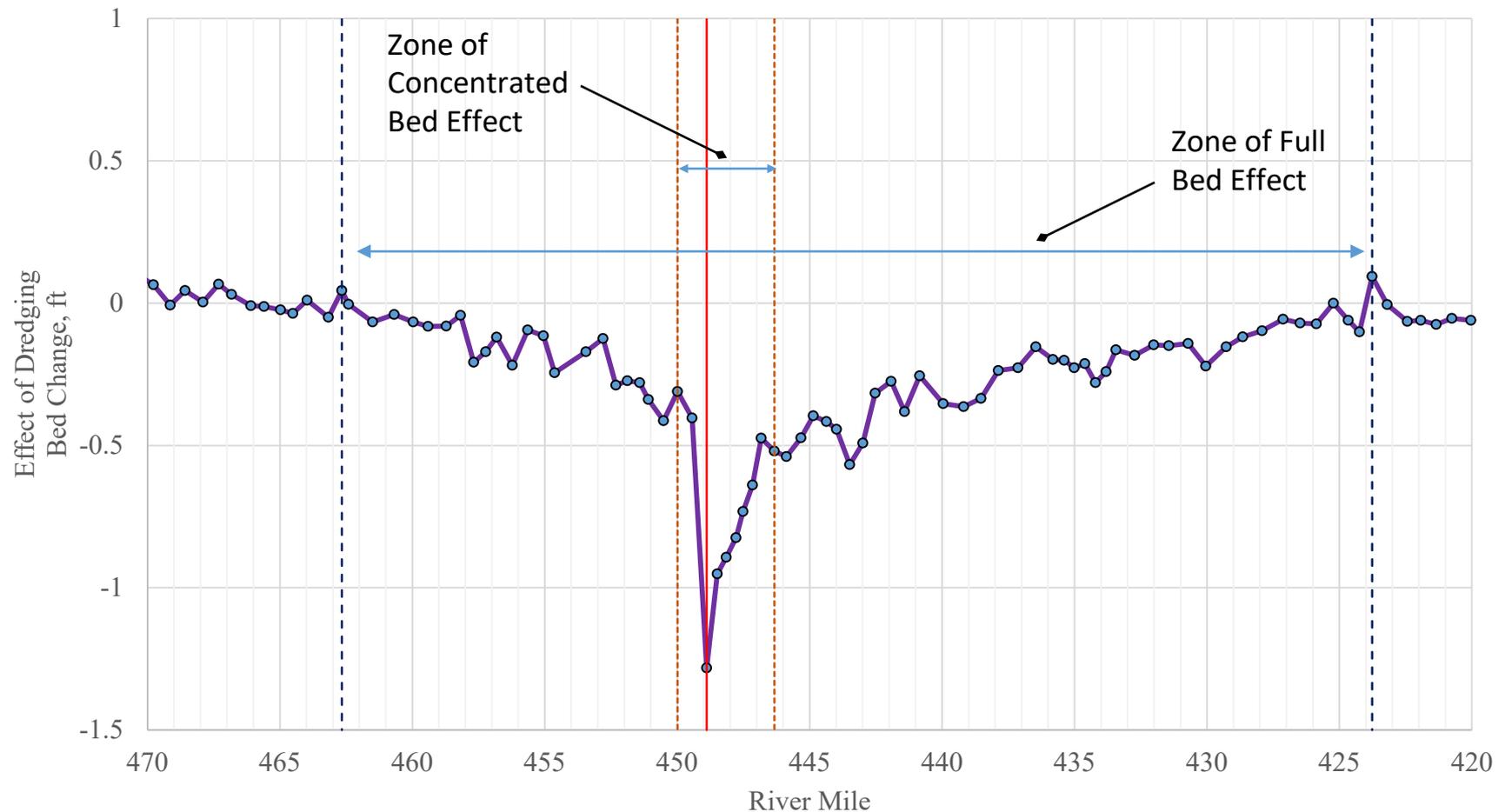
Results of analyses indicate that degradation thresholds similar to those identified in the EIS are needed to prevent impact to the federal projects

## – Identified Thresholds

- Any degradation in Kansas City Reach
  - 2 feet of degradation all other reaches
- 
- Relative to 2009 baseline
  - Mirrors current regulatory constraints
  - Accounts for currently degraded state of Kansas City Reach

# AREA OF IMPACT

Spatial extent of dredging impacts on the bed was assessed using measured data and modeling results



## PRELIMINARY RESULTS

- 408 technical analyses indicate likely impacts to federal projects if degradation exceeds identified thresholds
- 2019 Hydrographic survey data will be evaluated to determine areas that have degraded below thresholds since 2009
- Areas degraded below threshold will be considered when evaluating new dredge permit requests



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# FOR MORE INFORMATION:

USACE Kansas City District Website

<https://www.nwk.usace.army.mil/Missions/Regulatory-Branch/Missouri-River-Commercial-Dredging/>

## OFFICIAL PUBLIC NOTICE COMMENTS

**Must be received by May 2, 2020**

Please email:

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# QUESTIONS?



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