NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

UPPER MISSISSIPPI RIVER MOORING FACILITIES
POOL 10
NEPA ID: SEAX-202-00-B6P-1728400794

CLAYTON COUNTY, IOWA

XXXX 2024

US Army Corps
of Engineers®
St. Paul District

NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

UPPER MISSISSIPPI RIVER MOORING FACILITIES POOL 10

Figures

Tables

APPENDICES

NAVIGATION AND ECOSYSTEM SUSTAINABILITY PROGRAM
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

UPPER MISSISSIPPI RIVER MOORING FACILITIES
POOL 10

I. PURPOSE AND NEED FOR FEDERAL ACTION

A. Project Background.

This project is part of the Navigation and Ecosystem Sustainability Program (NESP), a long-term program of navigation improvements and ecological restoration for the Upper Mississippi River System (UMRS). The goal of NESP is to reduce commercial traffic delays while restoring, protecting, and enhancing the environment to ensure the economic and environmental sustainability of the UMRS. The U.S. Army Corps of Engineers (USACE) prepared the Final Integrated Feasibility Report and Programmatic Environmental Impact Statement for the UMR-IWW System Navigation Feasibility Study, 2004 (2004 System Study) and a Record of Decision was signed in June 2008.

As a part of NESP, efforts are underway to reduce commercial traffic delays at Locks and Dams (L&D) 7, 10, 11, 14, 15, 20, and 22. USACE, along with leaders in the Navigation Industry (Industry), identified seven locks and dams that would benefit from mooring facilities to reduce commercial traffic delays. These locations were provided to the U.S. Army Engineer Research and Development Center (ERDC) to evaluate vessel traffic and identify unofficial mooring areas currently in use near the locks and dams listed in Table 1 and Figure 1. Using GPS data collected from transceivers onboard vessels, the study identified areas 20 miles upstream or downstream from each lock being used as unofficial mooring locations. The results of this study guided the selection of eight proposed mooring facility locations.

Table 1. Approximate Locations of Proposed Mooring Facility Features. Lock 10 is the facility that is under review for this SEA

Lock & Dam	Mississippi River Pool County, State	Upstream or Downstream Side of L&D	Mooring Facility Feature	Miles From Lock Chamber	Approximate River Mile
7	Pool 7 Winona County, MN	Upstream	Cell Dolphin	1.5 1.42	704.35 704.25
10	**Pool 10 Clayton County, IA**	**Upstream**	**Cell**	**0.38**	**615.5**
11	Pool 11 Dubuque County, IA	Upstream	Cell	0.43	583.8
14	Pool 14 Scott County, IA	Upstream	Cell Dolphin	4.62 4.57	498 497.95
14	Pool 14 Rock Island County, IL	Upstream	Cell	1.45	495
15	Pool 16 Scott County, IA	Downstream	Cell	0.96	482
20	Pool 21 Adams County, IL	Downstream	Cell	0.40	342.8
22	Pool 22 Ralls County, MO	Upstream	Cell	0.68	301.9

Figure 1. Locations of Proposed Mooring Facilities

Under current conditions, towboats awaiting passage through these locks and dams must move in close to shore and tie to trees, ground their barges, and/or maintain engine power in areas within these pools to hold position. Mooring cells improve efficiency and safety for tows waiting to lock through, providing economic and safety benefits. They also keep barges from needing to push up on shorelines and reduces the need to maintain power to their engines, providing environmental benefits as well.

USACE is undertaking environmental reviews for implementation of mooring cells at these identified locations. USACE is preparing three Supplemental Environmental Assessments (SEAs). All SEAs tier off the 2004 NESP System Study to evaluate the site-specific impacts of construction of new mooring facilities. One SEA addressed the USACE mooring facilities decision making and analysis summarized above and evaluates the site-specific impacts of constructing mooring cells at all proposed locations except Locks 7 and 10. A separate SEA was prepared for the Lock 7 mooring cell. This SEA evaluates the site-specific effects of mooring facilities at Lock 10 (Table 1; Figure 2).

The three SEAs are being prepared due to concerns with logistics of implementation. Each mooring facility is separable from the other proposed facilities. Each facility can be implemented independently, provides site-specific benefits to navigation independently, and does not rely on the others to achieve these benefits. Second, as outlined below, the effects of this mooring facility are generally minimal, and these effects, in concert with the effects from the other facilities outlined above, are not anticipated to result in significant effects to any resource. Evaluating Lock 10 mooring independently does not segment any impacts of the mooring cells collectively that might otherwise be considered significant. Each SEA considers the effects of the mooring cells cumulatively. The other SEAs have been completed with Findings of No Significant Impact. The location for viewing all SEAs is provided below.

This SEA addresses site specific project features and characteristics (e.g., footprint area, topography, hydraulic conditions, associated biota, etc.) that were not addressed in the original report with its accompanying Systemic Study's Record of Decision in 2008. This document is in compliance with the National Environmental Policy Act and USACE regulations.

B. Purpose and Need for Action.

The proposed Project would construct mooring facilities, including a mooring cell, on the UMR at Lock 10 for tows to tie off to while awaiting passage through the downstream lock, for the purpose of improving locking efficiency and safety associated with towboats waiting to lock through. Under present conditions, towboats must move in close to shore and ground their barges and/or maintain engine power in the river to hold position. Wait times between lockages are currently estimated at around 90 minutes from an upbound tow leaving the lock chamber to a downbound tow entering the lock chamber because the downbound tow generally will not or cannot head toward the lock until the upbound tow passes it. With a mooring facility at the proposed location closer to the lock, towboats could tie off to the structures and improve navigation locking efficiency and safety, while reducing environmental disturbance to the bankline, or sediment re-suspension associated with barge engines idling to hold position. The proposed Project would help to improve navigation efficiency (including reducing wait times) and safety while reducing the environmental impacts caused by towboats waiting in unofficial mooring locations.

C. Authority.

On November 8, 2007, the United States Congress passed the Water Resources Development Act (WRDA) 2007, Title VIII - Upper Mississippi and Illinois Waterway System, Section 8003 – Authorization of Construction of Navigation Improvements, which authorized the first increment of navigation improvements in accordance with Chief of Engineers Report, dated 15 December 2004. This authorization is more commonly referred to as the Navigation and

Ecosystem Sustainability Program (NESP), which is a unique dual-purpose authorization for both navigation efficiency improvements and ecosystem restoration.

D. Related National Environmental Policy Act (NEPA) Documentation

- U.S. Army Corps of Engineers (USACE). 2004. Final Integrated Feasibility Report and Programmatic Environmental Impact Statement for the Upper Mississippi River-Illinois Waterway (UMR-IWW) System Navigation Feasibility Study 2004. Rock Island, St. Louis, and St. Paul Districts. 626 pages plus appendices.
- U.S. Army Corps of Engineers (USACE). 2008. Record of Decision, Final Integrated Feasibility Report and Programmatic Environmental Impact Statement for the Upper Mississippi River-Illinois Waterway (UMR-IWW) System Navigation Feasibility Study 2008. Washington D.C. 6 pages.
- U.S. Army Corps of Engineers (USACE). 2024. Upper Mississippi River Mooring Facilities Pool 7, Navigation and Ecosystem Sustainability Program Final Supplemental Environmental Assessment. St. Paul District. 29 pages plus appendices.
- U.S. Army Corps of Engineers. 2024. Supplemental Environmental Assessment, Navigation and Ecosystem Sustainability Program, Upper Mississippi River Mooring Facilities, Pools 11, 14, 16, 21, and 22, Iowa, Illinois, Missouri, Rock Island Illinois, 2024. Rock Island District.

II. ALTERNATIVES

A. No-Action Alternative.

Under the No-Action Alternative, no mooring facilities would be constructed at Lock 10. Waiting towboats would continue to moor up against shore, ground their barges, or run their engines to maintain position waiting to lock through. Downbound tows would continue to have long wait times for up bound tows to pass them prior to being able to head to the lock. Wait times are estimated around 90 minutes from an upbound tow leaving the lock to a downbound tow entering the lock.

B. Preferred Alternative.

The Recommended Plan in the 2004 System Study included the authorization to construct mooring facilities at L&Ds 12, 14, 18, 20, 22, and 24. At the time these locations were identified as having the greatest need for reducing commercial traffic delays.

The 2007 WRDA authorized the construction of the mooring facilities listed above or mooring facilities at “other alternatives locations that are economically and environmentally feasible”. In 2022 the USACE, along with leaders in Industry, identified locks and dams that would benefit from mooring facilities to reduce commercial traffic delays. That included Lock 10, which is the focus of this SEA.

Construction of a mooring facility near Lock 10 is the Preferred Alternative evaluated in this SEA. A mooring facility at this location would allow downbound tows to wait just offshore, upstream of the lock while waiting to lock through. The selected location appears to best accommodate commercial navigation while minimizing impacts to public use and recreation as well as potential adverse environmental effects within this portion of the river (Figure 2). The facility at Lock 10 will include a mooring cell upstream of the lock (Figures 2 and 3). The location of this cell would be anticipated to decrease wait times between lockages by approximately 90 minutes due to its proximity to the lock by eliminating the upbound tow and downbound tow

travel time upstream of the lock. Downbound tows would no longer have to wait farther upstream for the upbound lock to pass them before heading downstream. Downbound tows would attach to the mooring cell which will serve as the anchor point with the current keeping the front of the tow from swinging back into the channel and river traffic (Figure 4). The cell would allow a downbound tow to wait safely in a location out of the way of upbound traffic while waiting for an upbound lockage to complete and safely pass prior to the downbound tow entering the lock. The estimated maximum time that each tow would be moored to the cell is approximately 120 minutes, or the length of time it takes to lock through a 15-barge tow, under a scenario where a downbound tow reaches the mooring cell just as an upbound tow begins to lock through.

The mooring cell would be approximately 40 feet in diameter and would be made of steel sheet piling with concrete and aggregate fill and a concrete foundation surrounded by rip-rap scour protection on the riverbed (Figure 5, Appendix C).

Construction of the mooring facility in this area would meet the depth requirements authorized for the 9-ft Navigation Channel Project. A floating construction barge is anticipated to be used to properly facilitate construction and to stage heavy equipment and construction materials. Additionally, on shore staging areas may be used at Lock 10. Staging area use is anticipated to be limited to vehicle parking and possibly some material/equipment storage.

Construction will include mechanical excavation of roughly 350 cy of river sediment. The cell footprint will be roughly 1,230 square feet in size and have rip rap scour protection of 16,168 square feet (17,398 square feet, or approximately 0.40 acre total). The area of disturbance is anticipated to be less than 20,000 square feet. Based on borings within the mooring cell footprint, river sediment is a mixture of poorly graded sands. This material will be transported by barge to the established USACE channel maintenance temporary dredged material placement site at McMillan Island, River Mile 618.7 (Figure 6). Access to the site will follow the path and location already used for dredged material off-loading and material would be used and disposed of in accordance with procedures for other sand placed at this location. No access or maintenance dredging is proposed as part of this alternative. There should be no routine maintenance from operation of the mooring cell required once the mooring cell is constructed, beyond what is already conducted for operation and maintenance of the 9-ft Channel Project.

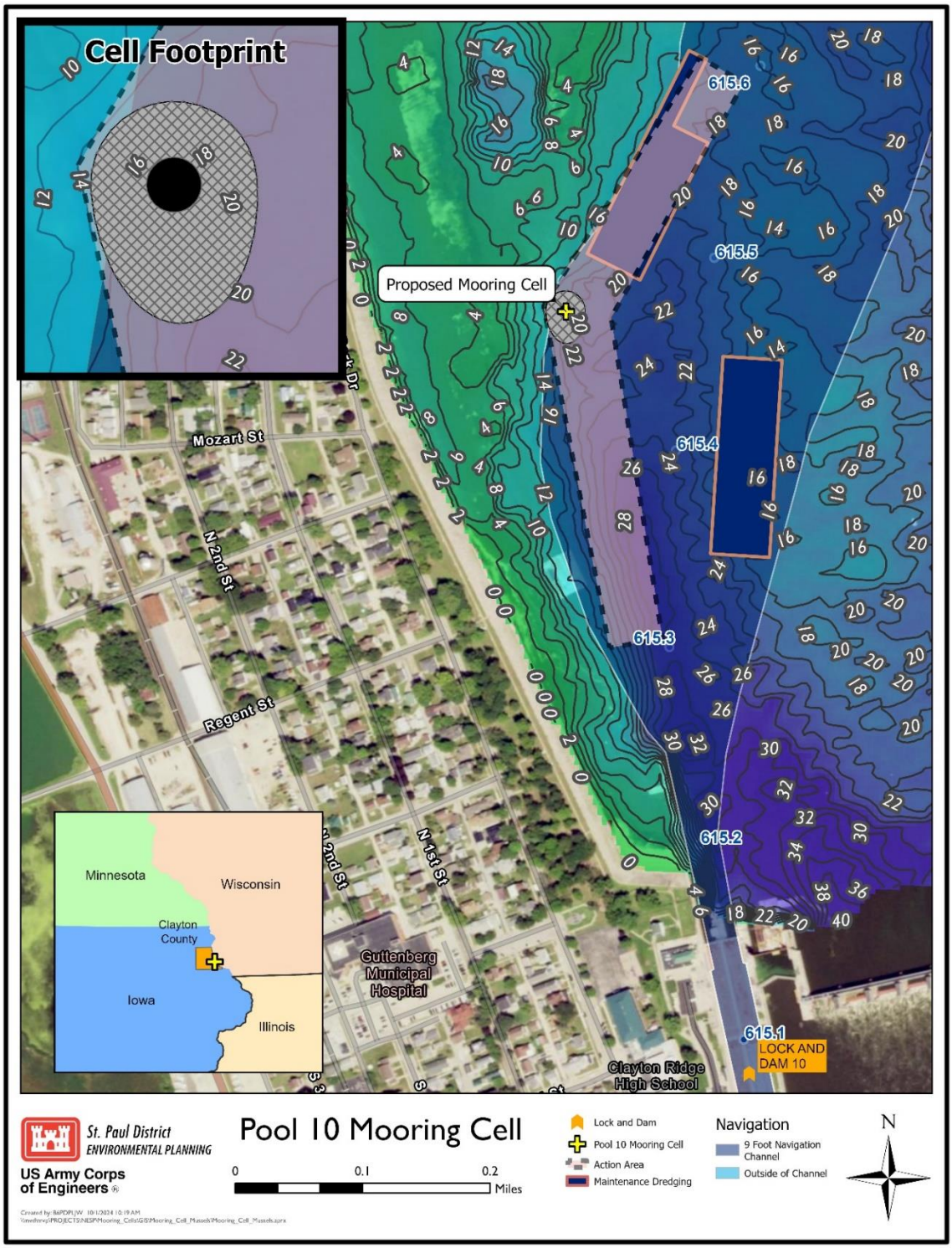

Figure 2. L&D 10 Mooring Facility and footprint. The hatched polygon is the proposed footprint of the cell (including the cell and its riprap scour protection) and the pink box is the proposed action area. Dark blue boxes with grey outline are past maintenance dredging areas. Once constructed the only regularly visible part of the structure will be the mooring cell itself. The rip rap scour protection will be below the water's surface.

Figure 3. Image of Typical Mooring Cell in the Mississippi River

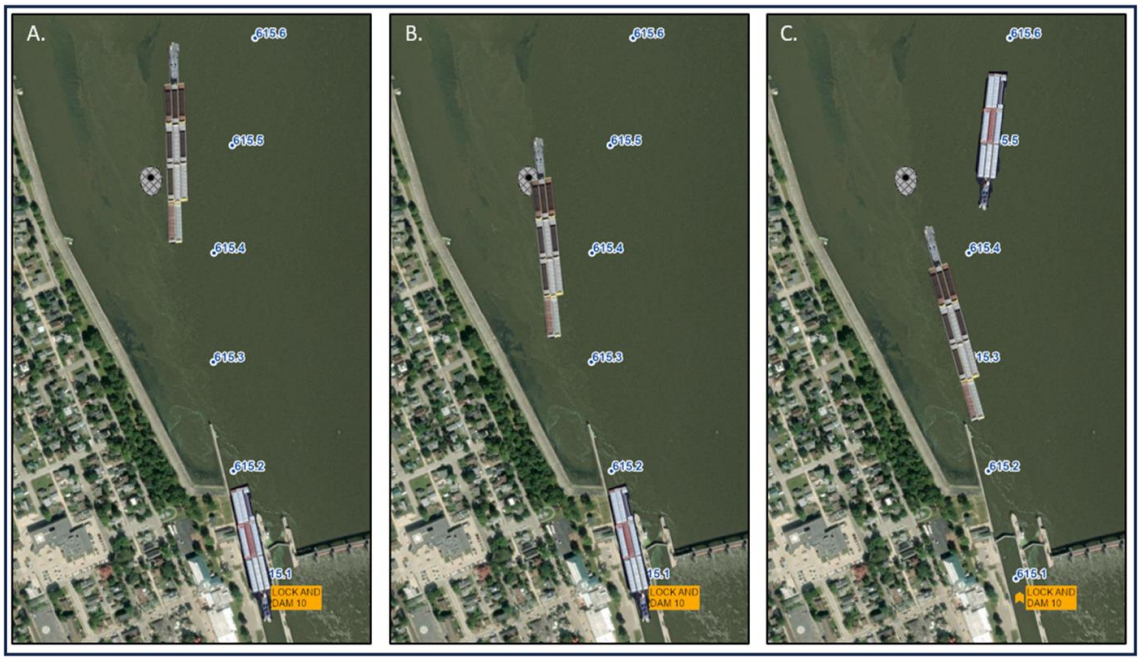

Figure 4. (A) A downbound tow approaches the cell while an upbound tow is already in the lock chamber. (B) The downbound tow has attached to the cell and the upbound tow is completing its lockage. (C) The upbound tow completes its lockage and continues upstream while passing the downbound tow which has detached from the cell and is heading towards the lock chamber.

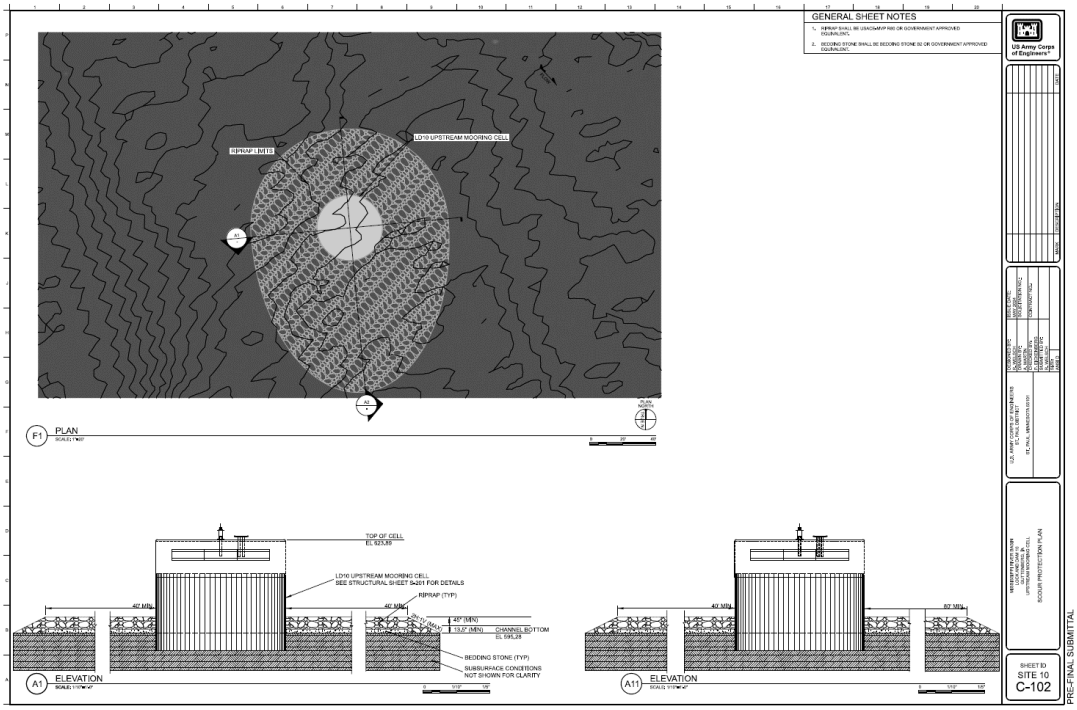

Figure 5. Schematic of the proposed mooring cell at river mile 615.5

Figure 6. Proposed placement site for excavated sand from the mooring cell footprint. This is the established McMillan Island USACE St. Paul District Temporary Placement Site for channel maintenance dredged material. Site is at RM 618.7.

C. Other Alternative Considered.

Apart from the mooring facility locations originally identified in the 2004 System Study, other alternative mooring locations at Lock 10 were also considered. These locations were provided by a Corps of Engineers research study and by local members of the community.

A study conducted by the Engineering Research and Development Center (hereafter ERDC) examined automatic identification system (hereafter AIS) transponder data from 2019 to 2022 and identified multiple potential alternative locations. AIS transponders are required to be on all commercial navigation vessels and emit a location signal every 3 minutes. Multiple signals sent from the same point indicate a stationary or grounded tow. Using that data, several potential cell locations were identified and examined. Each of these locations however were screened out due to either not providing enough benefit and efficiency compared to current conditions, or due to infeasibility of construction and use of a mooring cell in that location. Areas identified as having long residency times of downbound tows (indicating grounding and waiting) include locations at river miles 632.5, 620 and 618. River mile 618 was also identified by the local community members as a potential location for a cell. The alternative to place a cell at river mile 632.5 was screened due to being too far from Lock and Dam 10 (17 miles upstream) and not providing enough benefit to move forward. Locations identified by the study and local residents at miles 620 and 618 were screened for infeasibility due to the channel being too narrow in those locations for a cell to be in use and an upbound tow to pass at the same time.

During a public information open house held in the City of Guttenberg on November 7th, 2024, an alternate location upstream between miles 616 and 617 near Abel Island was also suggested. This location had not previously been considered and the feasibility of construction of a cell at this location was unknown. The Corps has concluded that this site would not meet the project purpose and is not likely to be feasible or practicable for construction of a cell due to multiple concerns. This location would not fulfill the project purpose to increase efficiency and safety, including reducing delays between lockages, because of its distance from the lock. It could introduce safety conflicts with recreational craft entering/exiting the backwater lakes and sloughs in close proximity. In addition, the location falls within the McMillan Higgins Eye Essential Habitat Area. Essential habitat areas are places that have been identified for their importance in maintaining and restoring endangered species. it would have similar or greater effects than the preferred alternative on other natural resources and recreation.

At the public information open house, a temporary mooring cell was also suggested. A temporary mooring cell would not be anticipated to be utilized; see discussion in comments below.

III. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The affected environment is the area and resources that might be affected by the alternatives. The affected environment includes the project footprint (specific area covered by proposed features) and project area (area for effects that varies by resource in the vicinity of the project). Construction is expected to occur over one month, likely some time in 2025. The duration of temporary impacts would last throughout the entire construction timeframe. Short-term effects include those impacts that would occur during implementation of the project, as well

as transient ecological effects that can be expected to occur during the first 1 to 3 years. Long-term effects might be expected to persist for up to 10 years and beyond.

The adverse effects of the Preferred Alternative appear minor and would likely be similar to or less than the other alternatives screened earlier in the analysis.

A. Aesthetics.

Aesthetics and visual resources are institutionally important because of the laws and policies affecting visual resources, most notably NEPA and the USACE ER 1105-2-100. Visual resources are technically important because of the high value placed on the preservation of unique geological, botanical, and cultural features. Aesthetic resources are publicly important since environmental organizations and the public support the preservation of natural pleasing vistas. The associated Locks and Dams are some of the primary features near this location. Portions of the Upper Mississippi River National Wildlife and Fish Refuge are adjacent to the

Figure 7. Current view from residences looking across the street towards the proposed cell location. If constructed the cell would be slightly visible between the stairs and the park bench to the right of them.

mooring facilities on the opposite side of the river. The National Wildlife Refuge provides scenic natural areas for recreation opportunities. Parks, walking and biking trails, scenic overlooks, and other related features can be found near some of the more populated areas with proposed mooring facilities. The proposed mooring cell facilities are on the Iowa side of the river where the main channel runs closer to the town of Guttenberg as it approaches Lock and Dam 10 (Figure 1). The area along the river is residential with multiple homes that have a view that includes the location of the proposed mooring cell. A walking trail runs the length of the levee and users of it have a view of the proposed cell location. Current aesthetic conditions are those of a typical river town, with views of the river and wildlife as well as passing tows (Figure 7). Due to the proximity to the lock in this location, tows currently come in close to town as they approach the lock. During night hours tows must use their lights for safety and multiple homes are in view of the lights from tows as they enter or leave the lock. Currently tows periodically ground in the location of the proposed cell as they wait to enter the lock chamber, as well as further upstream out of view of the river front. Grounding tows can damage shorelines by breaking trees and erosion which negatively impact aesthetics. Typically, a tow is waiting between 30 and 120 minutes for an upbound tow to lock through and pass. Generally no more

than 2-4 downbound tows a day, at peak season, would be anticipated, with not all tows needing to wait for upbound traffic.

No-Action Alternative.

Under the No-Action Alternative the aesthetic impacts of tows waiting in the viewshed of riverfront residences would be unchanged from the current condition. Residences and walking trail users would continue to see tows as they pass through the locks and channel upstream. Tows would still use their lights to navigate during the night impacting light pollution. Residences and users of the walking trail would still see tows periodically grounded in the location of the cell while they wait to enter the lock. Tows would still ground to shore negatively impacting shoreline aesthetics.

Preferred Alternative.

Aesthetic impacts due to construction activities in the vicinity of the site would be both temporary and permanent. Temporary impacts would consist of construction equipment and floating construction plants. The surrounding area is expected to recover quickly from temporary impacts after project completion because equipment and floating construction plants would no longer be present. While the cell would present additional visual impacts to residents and users of the walking trail, it would be approximately 500 feet from shore and not obstruct the immediate view of the river. When not in use the cell be barely visible from the first story of homes that look upon the river due to the earth levee that protects the town. Users of the walking trail atop the levee would not have their view of the opposite river bank or nearby island obstructed when the cell is not in use. Usage of the cell would occur predominantly during the navigation season and would only be periodic through the day while barges hold at the mooring facility awaiting downbound lockage. It is anticipated that a tow would be waiting at the cell for no more than 120 minutes. There is no anticipated increase in the volume of navigation traffic as a result of the cell's construction. Mooring cells are common river navigation features that are found near other populated areas. The cell will include small solar powered lights to assist with identification at night to improve safety and avoidance. When in use some of the river view would be obscured by a tow that is using the cell, however it will not obscure the entire viewshed and is expected to be minor and temporary. The opposite bank and nearby island would be anticipated to remain visible over the tow and barge, similar to visibility around tows traveling upstream/downstream under current conditions except closer to the Iowa side of the river. There is no reason to believe the Preferred Alternative would become a barge fleeting area with large numbers of barges continuously using the location. Ultimately, the long-term effects of the Preferred Alternative on area aesthetics would be relatively minor and provide benefit through prevention of shoreline degradation due to tows grounding onto shore by providing a designated place for them to wait.

B. Air Quality and Green House Gases.

The U.S. Environmental Protection Agency (USEPA) is required by the Clean Air Act to establish air quality standards that primarily protect human health. These National Ambient Air Quality Standards (NAAQS) regulate six criteria pollutants across the United States. When an area meets the standard for each of the six pollutants, it is called an "attainment area" for that contaminant. Areas that do not meet the standards are called "nonattainment areas". Clayton County, IA is classified as attainment area for each of the six contaminants and therefore, is not an area of impaired ambient air quality. This designation means that the project areas have relatively few air pollution sources of concern.

There are currently no Federal Greenhouse Gases (GHG) emission thresholds. Therefore, a GHG significance threshold to assess impacts is not proposed. Rather, in compliance with NEPA implementing regulations, the anticipated emissions as well as their associated social costs are disclosed for each alternative without expressing a judgment as to their significance.

On January 9, 2023, the CEQ released National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change. This guidance provides details for how federal agencies can incorporate GHG and climate change considerations into the NEPA process, including assessing and reducing impacts from GHG emissions or incorporating climate resiliency considerations into alternatives. While the Climate Change Guidance is considered "interim," it is effective immediately, while CEQ seeks public comment on the guidance.

As discussed in this guidance, when conducting climate change analyses in NEPA reviews, agencies are recommended to consider the potential effects of a Preferred Alternative on climate change, including by assessing both direct and indirect GHG emissions and reductions from the Preferred Alternative, quantifying the baseline (no-action) emissions, and the effects of climate change on a Preferred Alternative and its environmental impacts. The guidance further recommends that greenhouse gas emissions should be quantified for the gross and net emissions for each chemical species (i.e., methane, nitrous oxide, etc.) and summarized as carbon dioxide equivalent (CO2e) and social cost of greenhouse gases. The guidance also emphasizes the "rule of reason" which states that the depth of the GHG analysis should be commensurate to the amount of greenhouse gases emitted.

No Action Alternative.

The No Action Alternative would not require any construction resulting in air quality impacts or GHG emissions. Barge users would continue to contribute to air quality impacts and GHG emissions. Barges would continue to idle in place while waiting to move through the lock.

Preferred Alternative.

Project construction would have temporary contributions to air pollution but would not appreciably change pollutant levels because of the short construction timeframe and minimal construction. The operation of heavy equipment during construction would similarly generate GHG emissions; however, the construction timeframe is 1 month. After construction, the preferred alternative may have minor beneficial effects on air quality and GHG emissions because the construction of the mooring cell would allow barges to tie to these facilities and reduce engine power or turn off their engines instead of idling in place, reducing emissions from engine exhaust. The Preferred Alternative is not expected to increase barge traffic but to improve the efficiency of barges moving through the lock. Proposed location is approximately 500 feet from shore which would allow localized air pollution from exhaust to dissipate to ambient air pollution levels away from the city of Guttenberg. Therefore, the project would have a minor adverse impact on air pollutions and GHG emissions during construction. Changes in barge use are not expected to result in significantly different air and GHG emissions.

C. Aquatic Resources/Wetlands.

Pool 10 of the UMRS extends about 33 miles from Lock and Dam 10 in Guttenberg, Iowa upstream to Lock and Dam 9 located near Lynxville, Wisconsin. Small Iowa and Wisconsin river towns, state parks and limestone bluffs border this pool. This pool is also part of the Upper Mississippi River National Wildlife and Fish Refuge. The proposed mooring cell facilities are on

the Iowa side of the river where the main channels runs closer to the town of Guttenberg as it approaches Lock and Dam 10 (Figure 1). There are no sidechannels or backwaters immediately adjacent to the proposed mooring cell site on that side of the river. All sidechannels, backwaters or river floodplain habitat are located on the Wisconsin side of the channel away from the proposed project area. There are no wetlands within the project footprint; therefore, the No-Action and Preferred Alternatives would have no effect on wetlands.

No-Action Alternative.

Portions of this area are currently utilized by waiting towboats. AIS transponder data along with eyewitness accounts illustrate current and previous usage of the proposed cell location by tows as a place to wait for an up bound tow to pass prior to moving into the lock. This demonstrates that the area is already subject to a number of physical changes associated with tow movement. These changes include drawdown, increased wave energies, changes in water velocities, and increased turbulence. The No-Action Alternative would result in towboats continuing to either ground barges along the shoreline or run engines to maintain position, degrading benthic habitats such as mussel beds and vegetation beds by crushing them and tearing out the vegetation respectively. Sediment resuspension and erosion caused from prop wash would continue to be an issue. Sediment resuspension and erosion would result in a localized increase in turbidity which would locally suppress phytoplankton productivity; however, this effect would be short-term.

Preferred Alternative.

The Preferred Alternative would result in the permanent loss of river bottom habitat by the addition of the mooring cell in addition to temporary impacts following the initial placement of scour protection rip rap. The area of the cell itself would no longer be available for use by mussels and other bottom-dwelling and benthic organisms which may currently use these areas for feeding, reproduction, and other life requisites. In the area where scour protection will be placed there will be changes in benthic habitat. Benthic organisms will be crushed and lost from placement of the mooring cell and associated rip rap. Fish would likely avoid the local area during construction. The formation of new flow patterns around the structures and riprap may also impact the environment by creating altered sediment or erosion patterns in the surrounding area as well as attracting fish such as smallmouth bass, walleye, sauger and catfish species.

Over time, the project would result in minor benefits to natural resources, largely through reducing or eliminating the need for towboats to run engines continuously. This would reduce the potential for sediment resuspension, erosion by prop wash, or damage to trees, which might be used for tie-off under current conditions. The need for towboats running up onto shore (grounding), which can be very destructive to shoreline habitat, would also be eliminated with the addition of a mooring cell for tie-off. The project would concentrate habitat disturbance to one area, reducing the area of disturbance overall while still providing some benefit to organisms in the area of the proposed cell. While concentrated, the habitat disturbance would still be less than significant.

The proposed work would be authorized under NWP 25 – Structural Discharges. Therefore, an individual Clean Water Act Section 404(b)(1) evaluation was not prepared.

D. Fish and Wildlife Habitat.

Typical riverine and floodplain habitat are common throughout the Project area. However, habitat within the immediate area proposed for the mooring facilities at Lock 10 are limited. The

proposed project footprint is main channel border habitat that transitions into a shallow flat between the main channel and shoreline of the town of Guttenberg. All floodplain terrestrial habitat is on the opposite side of the river or north of the project area. Habitat in the project footprint is relatively simple with no adjacent structural features (e.g., side channels, scour holes, wingdams, etc). Periodic channel maintenance activities such as dredging occur in the area, most recently in 2018.

No-Action Alternative.

Under the No-Action Alternative conditions for fish and wildlife species should not change significantly. Minor degradation of the shoreline and river bottom due to towboats grounding and bumping into shore would likely continue, potentially impacting local mussel communities. Channel maintenance activities would continue.

Preferred Alternative.

The Preferred Alternative would impact the immediate footprint by converting aquatic habitat to the mooring cell. However, the amount of area is small, and the value of the habitat for most aquatic species is limited. Fish and wildlife species would be disrupted temporarily due to construction, but impacts are expected to be minimal. Navigation traffic using the mooring facilities in the future would not substantially impact or disrupt habitat as there is little habitat immediately adjacent to the project. Most available river habitat in the project area extends to the east away from the mooring facilities. Fish species, if present, would largely avoid the area during construction but would return to the area once construction is complete. The structure and scour protection would act as an attractant for some species of fish that may not have used the area prior as well. Bald eagles feed in open tailwater areas of Mississippi River dams during winter. Mooring facilities would be a located away from the dam and should not disrupt eagle feeding habits; therefore, no impact to this species is anticipated as a result of the project. Effects on T&E species are discussed in the following section.

E. Threatened & Endangered Mammal, Bird, Insect, and Plant Species.

USACE accessed the USFWS', IPaC website (https://ecos.fws.gov/ipac/) on October 8, 2024 to identify the federally-listed threatened and endangered species potentially found in the Project area (Table 2 and Appendix D). There is no designated critical habitat, as defined by the Endangered Species Act, within the proposed location.

Table 2. Federally-listed Species within the footprint area of the Preferred Alternative.

	Common and Scientific Name	Status	Habitat
Mammals	Northern long-eared bat (*Myotis septentrionalis*)	Endangered	Hibernates in caves and mines – swarming in surrounding wooded areas in autumn. Roosts and forages in upland forests during late spring and summer.
Insect	Monarch Butterfly (*Danaus plexippus*)	Candidate	During the breeding season, monarchs lay their eggs on their obligate milkweed host plant.

	Common and Scientific Name	Status	Habitat
	Rusty Patched Bumble Bee (*Bombus affinis*)	Endangered	Observed in prairies, woodlands, marshes, agricultural landscapes and residential parks, and gardens. Nests in upland grasslands and shrublands that contain forage during the summer and fall and as far as 30 meters into the edges of forest and woodland.
Flowering Plants	Northern Wild Monkshood (*Aconitum noveboracense*)	Threatened	Typically inhabits shaded to partially shaded cliffs, algific talus slopes or coll, streamside sites. Perennial species which reproduces from both seed and small tubers. Flowers bloom between June and September depending on location with the range and are insect pollinated.
	Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	Threatened	Species occurs in a wide variety of habitat form mesic prairies, sedge meadows, marshes and even bogs. Current decline of the species is linked to habitat degradation, and requires habitat with robust vegetative diversity.
Mussels	Higgins eye (*Lampsilis higginsii*)	Endangered	Typically found in deep water with moderate currents and stable substrate that varies from sand to boulders. The animals bury themselves in the substrate of the river bottoms with just the edge of their partially opened shells exposed. They are usually found in mussel beds that contain at least five other species.
	Spectaclecase (*Cumberlandia monodonta*)	Endangered	Typically found in sheltered areas within large rivers, clustered in firm mud and sheltered areas such as the interstitial spaces between rocks. Relies on mooneye (*Hiodon tergisus*) and goldeneye (*H. alosoides*) as host species for propagation.
	Salamander Mussel (*Simpsonaias ambigua*)	Proposed Endangered	Small, thin-shelled mussel that inhabits swift-flowing rivers where they shelter under rocks or in crevices. Species relies on mudpuppy (*Necturus maculosus*) as a host species for propagation.
	Sheepnose (*Plethobasus cyphyus*)	Endangered	Typically found in shallow areas of medium to large rivers and streams that contain moderate to swift currents with substrate containing coarse sand and gravel.

No Action Alternative.

The No-Action Alternative would have no effect to listed mammal, bird, insect, and plant species. The No-Action Alternative would have no significant effects to listed mussel species. However, minor degradation of the shoreline and river bottom due to towboats grounding and bumping into shore would likely continue, which can impact local mussel communities where present.

Preferred Alternative.

The Preferred Alternative would have no effect on any federally listed or candidate bat, insect, bird and plant species at the proposed mooring facility location. The proposed facility would be located in the Mississippi River and does not contain suitable habitat for any of these terrestrial species.

The Preferred Alternative would have less than significant adverse effects to one listed mussel species. In the fall of 2023 a mussel dive survey was conducted to characterize habitat and the mussel community in and around the footprint of the proposed cell location. The survey resulted in the collection of 24 mussel species with a total of 2,111 live mussels. The overall density of mussels in the entire survey area was 26.3 mussels/meter^2 however densities in the footrprint of the cell itself were much lower (Figure 6). During the survey a total of seven (7) endangered Higgins Eye (*L. higginsii*) were collected. Although no Higgins Eye were collected within the project footprint, a Biological Assessment was completed and submitted to the U.S. Fish and Wildlife Service (USFWS) in August of 2024 due to likely adverse effects including take of the species within Pool 10. The USFWS issued a Biological Opinion concurring that the project would not jeopardize the continued existence of the species. More information about the direct and indirect effects of the proposed cell on Higgins Eye can be found in Attachment E. Biological Opinion.

For all other federally listed mussel species including, sheepnose mussel (*P. cyphyus*), spectaclecase (*C. monodonta*), and salamander mussel (*S. ambigua*) the preferred alternative would have no effect. This is due to there being poor habitat for these species at the preferred mooring cell location and not being found during mussel survey indicating they are absent from the area.

To offset the anticipated adverse effects of the proposed mooring cell on the Higgins Eye population, a mussel relocation will be conducted prior to construction of the cell. All mussels including *L. higginsii* will be removed out of the construction work limits and placed within favorable habitat containing an existing mussel bed, within the area adjacent to the action area along the Iowa side of the navigation channel, away from any future navigation related disturbances. The relocation would be conducted as close to the construction timeline as possible (likely ≤ 60 days) to avoid mussels recolonizing areas prior to construction. The relocation will be done by trained divers and overseen by a qualified malacologist who will identify, mark and catalog all mussels found by divers prior to their relocation to the adjacent bed. Further discussion on the relocation can be found in the BO (Attachment E). It is anticipated that relocation efforts will include 80 percent of mussels in the impact area, and that 5 percent of mussels will not survive relocation.

F. State Listed Species.

State-listed freshwater mussel species for Iowa are outlined in Table 3. Attached in Appendix F is the full list of Iowa State listed flora and fauna that are found in the vicinity of the proposed mooring cell.

Table 3. Iowa State-listed mussel species believed to being the area of the Preferred Alternative.

Scientific Name	Common Name
Plethobasus cyphyus	Sheepnose
Ellipsaria lineolate	Butterfly
Tritogonia verrucosa	Pistolgrip
Lampsilis higginsii	Higgins Eye
Strophitus undulatus	Creeper
Cyclonaias tuberculata	Purple Wartyback
Lampsilis teres	Yellow Sandshell

No-Action Alternative.

The No-Action Alternative would have no significant effects to state listed species. However, minor degradation of the shoreline and river bottom due to towboats grounding and bumping into shore would likely continue, potentially impacting local mussel communities.

Preferred Alternative.

The Preferred Alternative would have no significant effect on any state listed species at this location. State listed fish species would avoid the project area during construction but would return to the area once construction is complete. Within the proposed project footprint a single individual of a state listed mussel species was found (*Pleurobema sintoxia*); however due to a mussel relocation of Federally Endangered species, impacts to state listed species will be minor and temporary. Due to the nature of mussel relocations, all mussels found within the footprint of the cell, including federal and state listed species as well as species with no conservation concerns, will be relocated.

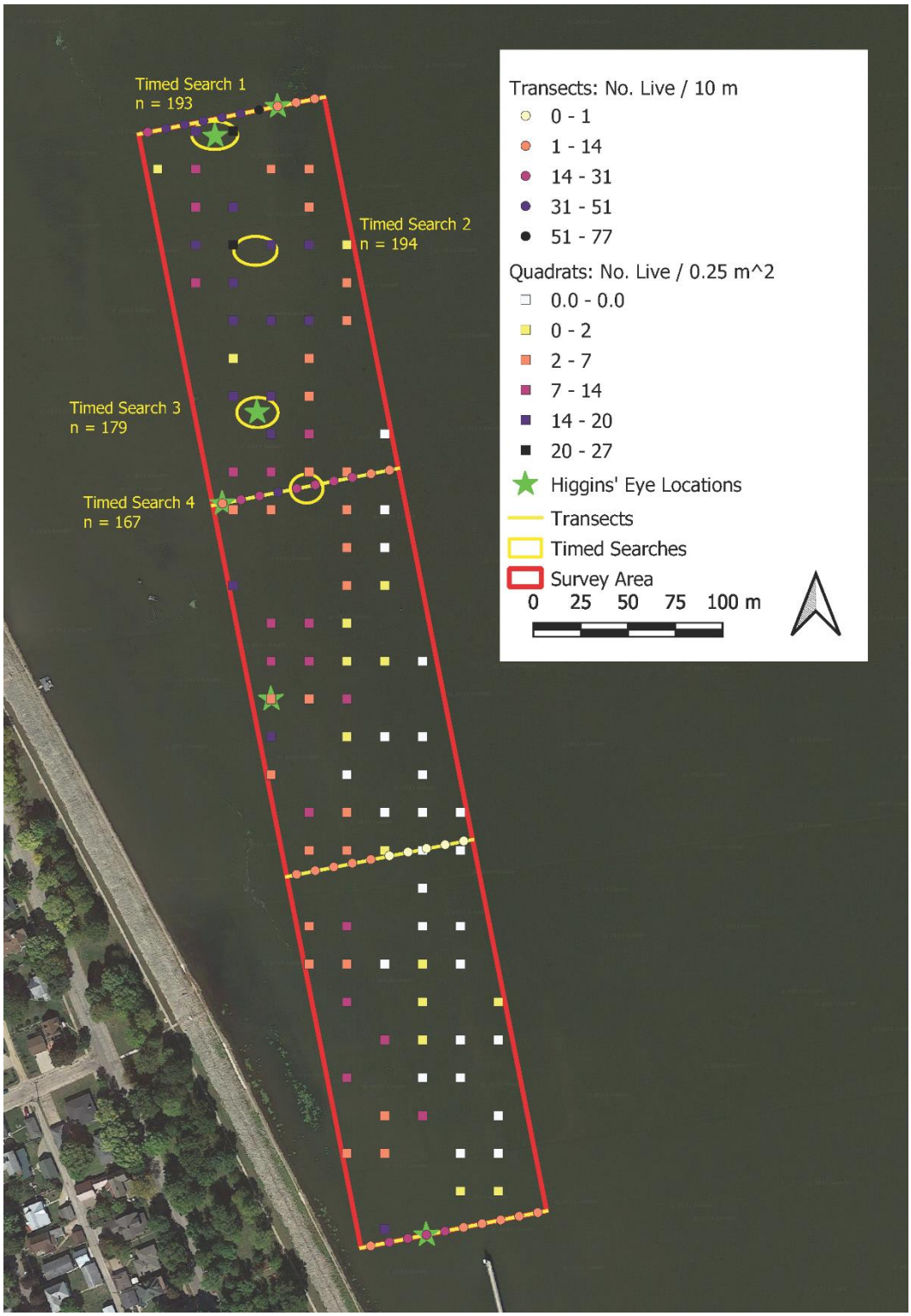

Figure 8. 2023 mussel survey results for the proposed Lock 10 mooring facilities (provided by EnviroScience).The location of the proposed cell is approximately within Timed Search 4, along the second from the top transect.

G. Floodplains.

A mooring structure that is no larger than 40 feet in diameter placed in the Mississippi River is a very small fraction of the cross-sectional area of the river. Although each of the structures are proposed to be placed in the regulatory floodway, impacts to conveyance are assumed to be insignificant with regards to increasing hydraulic profiles. The No-Action and Preferred Alternative would have no effect on the floodplain or flood heights.

H. Hydrology.

No-Action Alternative.

The No-Action Alternative would have no effect to the current Mississippi River hydrology.

Preferred Alternative.

The Preferred Alternative would have no significant effect to the current Mississippi River system hydrology. Slight changes in flow patterns around the structures may have minor impacts to the environment by creating altered sediment or erosion patterns in the surrounding area.

I. Public Infrastructure.

The Mississippi River's navigation channel and supporting elements such as wing dams, closing dams, and locks and dams help maintain the channel's depth and are the primary public infrastructure features at each of the proposed mooring facility locations. At this location public infrastructure includes Lock and Dam 10. Several courtesy docks maintained by the city of Guttenberg for recreational boaters that can be seen along the shore in Figure 4.

No-Action Alternative.

The No-Action Alternative would have no effect to the public infrastructure features at the proposed mooring facility locations.

Preferred Alternative.

The Preferred Alternative would have no effect to the public infrastructure at the proposed mooring facility locations. The project would not adversely affect Lock and Dam 10. Improvements in commercial navigation efficiency above Lock and Dam 10 may improve the usability for recreational vessels as well. The preferred alternative would have no substantial effect on the courtesy docks maintained by the city. The docks would still be accessible and usable if the mooring cell were constructed and if it were in use by a tow. If the cell were in use when a boater is trying to access or leave the courtesy docks, they would need to travel around the tow.

J. Land Use.

Mooring facilities would be located in open water and would have no significant effect on land use. The presences of a mooring cell could have a minor impact to the character of existing residential areas, however, few residences are within direct view of the proposed site. Also, mooring cells are common river navigation features that are found on the river and would be located several hundred feet from any residence. The No-Action and Preferred Alternative would have no significant adverse effect on adjacent land use.

K. Soil.

The No-Action and Preferred Alternatives would have no effect on soils. Mooring facilities are entirely within the water. The river bottom would be disturbed within the noted footprint area and replaced with the mooring cell and dolphin. However, this total area is relatively small. Staging areas for the proposed mooring facility are in the developed areas at Lock and Dam 10. Placement of excavated fine and sand material at the McMillan Island placement site would have no effects as this is an already approved site for dredged material placement.

L. Water Quality.

Much of the UMRS is listed as an impaired water body under the section 303(d) of the Federal Clean Water Act (CWA). States must evaluate "all existing and readily available information" and are required to submit their list for EPA approval every two years. Pool 10 of the UMRS is currently 303d listed for Mercury, Phosphorous and PCBs by the State of Wisconsin. The state of Iowa does not consider the pool impaired due to insufficient information.

No-Action Alternative.

The No-Action Alternative would continue to have a minor, adverse effect on water quality due to towboats continuing to ground barges along the shoreline which increasing the potential for sediment resuspension and erosion caused from prop wash.

Preferred Alternative.

The Preferred Alternative would have a temporary and minor effect on water quality during construction of the mooring cell due to a localized increase in turbidity; however, turbidity levels would return to normal soon after work is completed. Section 401 water quality certification has been issued for Nationwide Permit (NWP) 25 – Structural Discharges and would apply to the Preferred Alternative. All conditions of NWP 25 and the associated 401 certification would be followed for the project. The Preferred Alternative should improve water quality slightly by reducing the frequency of barges mooring along shore and disturbing the river bottom, or by idling in the river to hold position while waiting to lock through.

M. Noise.

Noise levels within the proposed mooring facility location is influenced greatly by river navigation, including commercial barges and recreational navigation. The localized area often has noticeable noise under existing conditions due to these features and their relatively heavy use.

No-Action Alternative.

Under the No-Action Alternative, periodically elevated noise would continue. There would be no change in noise from the current condition.

Preferred Alternative.

The temporary increase in noise levels created during project construction would impact the surrounding residential area. However, construction should be relatively brief, and not substantially contribute to the existing condition during the short duration of construction (e.g., about a month). While work could occur over two construction seasons, the duration of construction is short. Since tows are already navigating and/or waiting in the vicinity of the proposed mooring facilities no additional long-term impacts are expected. Construction of the

mooring facilities would allow tows to reduce engine usage, or turn engines off entirely, while waiting to lock and thus reduce the level of noise impacts.

N. Commercial Navigation.

Each lock and dam serves as a link between the upstream ports of Minneapolis and St. Paul, and the remaining Mississippi River navigation system downstream. More than 580 facilities ship and receive commodities within the Mississippi River 9-foot Channel Navigation Project. Grains (corn and soybeans) dominate traffic; cement and concrete products are the second largest commodity. A modern 15-barge tow transports the equivalent of 1,050 semi-trucks (26,250 tons, 937,387 bushels of corn, or 240 rail cars). In 2016, the 9-foot channel project generated an estimated $2 billion of transportation cost savings compared to its approximately $246 million operation and maintenance cost (USACE 2018). For Lock and Dam 10, the ten-year average (2014-2023) is 2,242 commercial navigation lockages per year, with a ten-year average of 14.4 million tons of cargo passing through, per year (USACE Lockage Data).

No-Action Alternative.

Mooring facilities would not be constructed in the No-Action Alternative. Tows would continue to moor along shorelines resulting in continued lockage delays.

Preferred Alternative.

The Preferred Alternative would provide adequate mooring for towboats that is preferred by commercial users for use over other forms of mooring facilities such as mooring buoys. Once constructed the cell would provide mooring for a single tow while it awaits lockage downstream. The purpose of the mooring facilities is to allow tows to wait closer to the lock, thereby shortening overall lockage time and improving navigation efficiency. The number of lockages and volume of navigation traffic are not anticipated to increase as a result of constructing the preferred alternative. Overall, the Preferred Alternative would have a beneficial effect on commercial navigation by allowing navigation traffic a place to wait close to the lock prior to moving through the locks. It is estimated that downbound tows could save up to 90 minutes by waiting at the mooring cell, as opposed to existing upstream areas.

O. Recreation.

The ten-year average (2014-2023) for the number of recreation lockages and vessels that lock through Lock and Dam 10 is 899 lockages with 1882 recreational vessels passing per year (USACE Lockage Data). There are several boat accesses, marinas, private docks and accesses are also scattered throughout the project area, and people enjoy the river for many recreational activities. Fishing is a common recreational activity in throughout Pool 10 with backwater lake areas being popular fishing spots. The nearest backwater lake to the proposed cell location is Bussey Lake. The entrance to Bussey Lake from the proposed cell location is approximately ½ mile away. There are also multiple courtesy docks maintained by the city of Guttenberg in the vicinity of the mooring cell that provide temporary docking to recreational boaters.

No-Action Alternative.

Recreational use of the area would be unchanged from the current condition.

Preferred Alternative.

The Preferred Alternative would have no significant impacts to recreation at the proposed mooring facility locations. Access to the marinas, camping areas, or other public recreation areas is not currently hindered or interrupted by tows waiting and/or moving through these locations and should remain unchanged under the Preferred Alternative. Mooring would not be anticipated to prevent or interfere with community events such as firework shows. Access to local courtesy docks may require navigating around a tow if one is moored at the location, however that would only be periodic as the cell is only expected to be used periodically throughout a given day in the navigation season. Access to the nearest backwater lake will not be impeded by use of the cell due to its distance from the proposed location. Users of the walking trail atop the levee will have minor impacts to their view of the river when the cell is in use, however that will only be periodic and temporary. Improvements to commercial navigation efficiency may allow a slight increase in recreational lockage efficiency. The mooring cell will include small solar powered lights to assist with identification at night to improve safety and avoidance.

P. Socio-Economic Resources.

The Project area includes Clayton County, IA, and the community of Guttenberg, IA. Table 8 summarizes the most recent data from the American Community Survey concerning the population and race demographics of the proposed mooring facility location.

Table 4. Population and Race Demographics for the Counties with Proposed Mooring Facilities.

State, County, Town	Population	White	African American	Asian	Other	Two or More Races	Hispanic*
Clayton County, IA	17123	95%	0%	0%	0%	2%	2%
Guttenberg	1692	97%	0%	0%	0%	0%	2%

*Hispanic includes respondents of any race. Other categories are non-Hispanic

Table 9 summarizes the median age and housing information for the proposed mooring facility at Lock 10.

Table 5. Age and Housing Information for the Counties with Proposed Mooring Facilities.

State, County, Town	Median Age	Median Household Income	Number of Households
Clayton County, IA	46	$ 60,441	7,286
Guttenberg	58	$ 50,833	840

Although it is difficult to determine the future demographics of the Project area communities, the No-Action and Preferred Alternatives would likely have no significant effect on socio-economic resources.

Q. Environmental Justice.

Environmental Justice (EJ) is institutionally significant because of Executive Order 12898 of 1994 (E.O. 12898) and Department of Defense's Strategy on Environmental Justice of 1995, which directs federal agencies to identify and address any disproportionately high adverse human health or environmental effects of federal actions to minority and/or low-income populations, as well as E.O. 14008, 13985 and 13990.

Because the analysis considers disproportionate impacts, two areas must be defined to facilitate comparison between the area affected and a larger regional area that serves as a basis for comparison and includes the area affected. The larger regional area is defined as the smallest political unit that includes the affected area and is called the community of comparison. For purposes of this analysis, the affected area is a 5-mile ring around the project area. Clayton County, Iowa is the community of comparison.

A minority population, for the purposes of this environmental justice analysis, is identified when the minority population of the potentially affected area is greater than 50% or the minority population is meaningfully greater than the general population or other appropriate unit of geographic analysis. Additionally, the CEQ identifies "low-income" using Census data for "individuals living below the poverty level." The USEPA EJScreen mapping and screening tool was used to obtain minority population and low-income population data. Within the affected area, people of color account for 3 percent and low-income populations account for 30 percent of the population compared to 5 and 29 percent respectively for Clayton County, IA (U.S. Environmental Protection Agency 2024).

USACE also reviewed the proposed study area using version 1.0 of the Climate and Economic Justice Screening Tool (CEJST), which is identified in ASA(CW) guidance as the default tool for EJ analysis, for further detail on the census tract including the project area. The tract is not considered disadvantaged. It does not meet any burden thresholds **or** at least one associated socioeconomic threshold identified in the tool. Based on the above, the affected area does not include a minority or low-income population. There is one disadvantaged community approximately 5 miles downstream of the project area to CEJST data. No adverse effects to this area are anticipated. The project would not have any adverse impacts related to environmental justice. There are no concerns with environmental justice for the Preferred Alternative.

R. Cultural Resources.

The Area of Potential Affect (APE) includes the underwater location of work limits to the immediate shoreline to include up to the first three rows of residential properties to account for potential visual, vibrational, and auditory effects. The projected buffer including the project site measures 1.26 miles in circumference and includes the residences from Washington Street to Regent Street going as far inland as North Second Street. The staging area will be located along the land wall within the Lock and Dam 10 (LD10) complex below Pool 10 outside of the project location buffer. The Corps background research consisted of reviewing available archaeological investigations within the APE, reviewing historic aerial imagery and maps, and reviewing state archaeological site files.

No-Action Alternative.

Under the No-Action Alternative, mooring facilities would not be constructed and there would be no effect to cultural resources or historic properties.

Preferred Alternative.

The Preferred Alternative would have No Adverse Effect to Historic Properties. Within the APE and projected buffer there are twelve potentially historic houses that have been inventoried ranging in construction dates from ca. 1850-1950. While the land planned for the staging is owned by the Corps it is also included within the boundaries of the Front Street (River Park Drive) Historic District, and the Guttenberg National Hatchery and Aquarium Historic District. Lock and Dam 10 complex is part of the thematic group of locks and dams 3-10 built for the Upper Mississippi Nine-Foot Navigation Channel Project which are eligible for the National Register of Historic Places (NRHP).

Apart from the two historic districts and the Lock and Dam 10 complex which is eligible for the NRHP, the buffer for the project location included inland residential area to account for visual, auditory, and visual effects. The closest of the properties is approximately 740' away from the project site. The construction of the mooring cell will be limited to one navigation season with the expectation that the work could be completed within a month. The impact of the visual, vibration, and auditory noise during the construction would be temporary. Once completed the mooring cell would have low visual impacts as the cell would be approximately 20' in radius with about 13.5' of its height seen above usual water levels which would decrease in higher water levels. Additionally, the Undertaking would reduce the need for vessels to maintain their engines on as they wait for entrance into the lock chamber, reducing noise impacts at the site.

As the construction of the mooring cell within Pool 10 will aid in the purpose of the LD10's purpose of navigation, and the primary location of the project is approximately half a mile from the staging area that is within the boundary of the two historic districts, and the visual impact is low to the potentially historic houses inland, the Corps has determined that the proposed Undertaking will have No Adverse Effect on Historic Properties.

S. Irreversible and Irretrievable Commitment of Resources.

Fuels, materials, and various forms of energy would be utilized during the construction activities.

T. Relationship of Short-Term Uses and Long-Term Productivity.

Construction of the Preferred Alternative would result in short-term construction-related impacts such as limited air emissions, increase in ambient noise levels, disturbance of wildlife, and disturbance of recreational and other public facilities. These impacts would be temporary and would occur only during construction and are not expected to alter the long-term productivity of the natural environment. Negative long-term impacts are expected to be minimal or non-existent on all ecosystems associated with the Preferred Alternative. The Preferred Alternative would assist in the long-term reliability of the navigation system and the movements of commercial vessels up and down the UMR. Additionally, the Preferred Alternative would prevent commercial vessels from tying to trees, grounding the barges, and maintaining engine power to hold position within these pools. This would prevent erosion, sediment resuspended, and habitat degradation within these pools.

U. Cumulative Impacts.

The CEQ regulations requires the USACE to consider the cumulative effects of a program when evaluating potential environmental impacts for an EA or Environmental Impact Statement. The CEQ defines cumulative effects as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action (40 CFR § 1508.7).

Analyzing cumulative effects requires identifying the environmentally relevant area and the past, present, and future actions in that area that would contribute incrementally to the overall effect. The environmentally relevant area is determined by both location and time. Future actions are those that are reasonably likely to occur. The environmentally relevant area for cumulative effects of this action for all resources is Pool 10 except with respect to commercial navigation. Cumulative effects of all mooring cells are also discussed below for disclosure purposes. The 2004 IFR/EIS (Chapter 9- Cumulative Effects) contains detailed identification of past, present, and future actions throughout the UMR. Since 2004, various other projects and activities have occurred or been implemented within the UMR, including ongoing navigation O&M activities, UMRR HREP are planned or approved for construction, including the Lower Pool 10 HREP and the Sny Magill NESP cultural resources protection project.

No-Action Alternative.

Under the No-Action Alternative no mooring facilities would be constructed. This would mean that commercial navigation traffic would continue to experience delays as the move up and down the Mississippi River. Additionally, towboats would continue to wait at unofficially mooring sites within these pools, requiring them to tie to trees and/or ground their barges and maintain engine power to hold position.

Preferred Alternative.

No cumulatively significant effects to any resource are anticipated for the Preferred Alternative when combined with the past, present and reasonably foreseeable activities in Pool 10. Effects of the project when combined with other activities proposed or planned in Pool 10 will not be cumulatively significant as the construction effects are short term and temporary, with most other projects planned for restoration or shoreline protection purposes. The proposed action would have less than significant adverse effects on endangered species, and impacts combined with other activities would not be cumulatively significant. The Corps concluded that effects on Higgins eye would be wholly discountable for the Lower Pool 10 HREP and therefore would not contribute to cumulative effects. Lower Pool 10 HREP will be avoided with construction of the preferred alternative. The mooring cell construction and the Sny Magill construction may occur in the same general timeframe and would both have adverse effects on higgins eye that include mortality. Both projects include avoidance, minimization and offsetting measures that reduce effects to less than significant. The projects, while in the same pool, are also several miles distant and would not have synergistic effects on the species and its habitat. Any adverse impacts would be short-term one-time events and would have no long term adverse impacts to Higgins Eye populations within Pool 10, which contains three Essential Habitat Areas with healthy Higgins Eye populations.

Reasonably foreseeable actions within the UMR include the other mooring cells proposed to be implemented. With respect to commercial navigation, the cumulative effects of the mooring cells would be beneficial for navigation efficiency but not cumulatively significant. With respect to other resources including fish and wildlife, T&E species, noise, air quality/GHG, and

recreation, effects are anticipated to be primarily temporary, minor, and local, with no cumulatively significant effects. No other mooring cells are anticipated to contribute to adverse effects on listed species.

Mitigation of impacts from the project will occur in multiple ways. During construction impacts to light and noise of the surrounding area will be mitigated through set construction periods so there are no impacts during night hours. Access to the site during construction will be limited and only allowed off of the main channel to prevent impacts to recreational boat launches and impacts to benthic habitats that could be caused by access dredging. Staging will only be allowed in specific designated areas and the area will be required to be remediated following demobilization. Impacts to both state and federally listed mussel species will be offset through a mussel relocation prior to construction beginning.

IV. ENVIRONMENTAL COMPLIANCE

The Preferred Alternative consists of the proposed action at Lock 10. This is one of eight similar yet separable actions to be implemented in the near future. Each proposed mooring facility are being evaluated for site specific impacts. This SEA applies to conditions at Lock 10. SEAs for additional locations including those in the Rock Island District and Lock and Dam 7 have already been completed.

The Preferred Alternative will comply with Federal environmental laws, Executive Orders and policies, and applicable State and local laws. Table 11 includes a summary of the status of compliance activities.

A. National Environmental Policy Act.

The National Environmental Policy Act (NEPA; 42 USC § 4321 et seq.) establishes the broad national framework for protecting our environment. NEPA's basic policy is to assure proper consideration to the environment prior to undertaking any major Federal action. This document has integrated the content required of a NEPA environmental compliance document. Multiple alternatives were considered, and the significance of the project impacts have been evaluated. The document will be distributed to agencies, the public, and other interested parties to gather any comments or concerns. If no significant effects to the environment are identified during the comment period, a FONSI would be signed.

B. Bald and Golden Eagle Act.

The Bald and Golden Eagle Protection Act prohibits anyone from taking, possessing, or transporting an eagle, or the parts, nests or eggs of such birds without prior authorization. Disturbing an eagle to a degree that causes, or is likely to cause injury to an eagle, decrease productivity or cause nest abandonment are considered forms of take. Activities that directly or indirectly lead to take are prohibited without a permit. There are no known eagle nests within the vicinity of the project area and no take is anticipated for the Preferred Alternative.

C. Clean Water Act.

The Clean Water Act (CWA; 33 USC §1251 et seq.) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the United States and is administered by USACE. The proposed work would be authorized under Nationwide Permit (NWP) 25 – Structural Discharges, which includes structures "…for general navigation, such as mooring cells." An individual Clean Water Act Section 404(b)(1) evaluation will not be prepared.

Section 401 water quality certification is required for actions that may result in a discharge of a pollutant into waters of the United States to ensure that the discharge complies with applicable water quality standards. Section 401 water quality certification has been issued by the State of Iowa for NWP 25 and would apply to the Preferred Alternative (Appendix B).

D. Endangered Species Act.

The Endangered Species Act (16 USC § 1531 et seq.) provides for the conservation of threatened and endangered plants and animals and the habitats in which they are found. There are nine Federally listed species that may occur within this action area. It was determined that the Preferred Alternative for the mooring facility location would have no effect to eight of those species listed for the proposed Lock 10 mooring facility. Formal consultation with the Fish and Wildlife Service has been initiated and a Biological Assessment was prepared for the endangered Higgins eye (*Lampsilis higginsii*) mussel due to anticipated take of the species. A Biological Opinion for the project was issued by the US Fish and Wildlife Service on November 29th, 2024 which concurred with the Corps Biological Assessment.

E. Fish and Wildlife Coordination Act.

The Fish and Wildlife Coordination Act (FWCA; 16 USC 661–667e) requires Federal agencies to coordinate with the USFWS and applicable state agencies when a stream or body of water is proposed to be modified. The proposed project was coordinated with U.S. Fish and Wildlife Service (USFWS) and Iowa Department of Natural Resources (IA DNR) through both mail and email (Appendix A).

F. Migratory Bird Treaty Act.

The Migratory Bird Treaty Act (MBTA) of 1918 regulates the taking, possession, transportation, sale, purchase, barter, exportation, and importation of migratory birds. All eight locations in the Preferred Alternative are located within the Mississippi Flyway. Because the construction activities occur immediately adjacent to the main channel, is it unlikely that there will be migratory bird take as defined by the Act.

G. Executive Order 13112 Invasive Species.

This Preferred Alternative does not authorize or carry out any actions that are likely to promote invasive species proliferation.

H. National Historic Preservation Act.

As amended by Public Law 96-515 (94 Statute 2987), this act established national policy for historic preservation, authorized the Secretary of the Interior to expand and maintain a National Register of Historic Places, and created the Advisory Council on Historic Preservation. Section 106 specifies that Federal agencies, before approval of any expenditure or before issuance of

any license, must consider the effect of the action on any property included in or eligible for the National Register of Historic Places and must afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on this action. The Corps has determined the proposed project would have No Adverse Effect to Historic Properties. The Corps initiated consultation with the Iowa State Historic Preservation Office (SHPO) on October 17, 2024 and received concurrence with our No Adverse Effect determination on November 19, 2024 (Appendix A).

Table 6. Compliance with Environmental Protection Statutes and Other Environmental Requirements.

Environmental Requirement	Compliance[1]
Federal Statutes	
Archaeological and Historic Preservation Act	Full
Bald and Golden Eagle Protection Act of 1940, as amended	Full
Clean Air Act, as amended	Full
Clean Water Act, as amended	Full
Coastal Zone Management Act, as amended	NA
Endangered Species Act of 1973, as amended	Full
Farmland Protection Policy Act of 1981	NA
Federal Water Project Recreation Act, as amended	Full
Fish and Wildlife Coordination Act, as amended	Full
Land and Water Conservation Fund Act of 1965, as amended	Full
Migratory Bird Treaty Act of 1918, as amended	Full
National Environmental Policy Act of 1969, as amended	In Progress
National Historic Preservation Act of 1966, as amended	Full
National Wildlife Refuge Administration Act of 1966	Full
Noise Pollution and Abatement Act of 1972	Full
Watershed Protection and Flood Prevention Act	Full
Wild and Scenic Rivers Act of 1968, as amended	NA
Executive Orders, Memoranda	
Floodplain Management (E.O. 11988)	Full
Safeguarding the Nation from the Impacts of Invasive Species (E.O. 13112)	Full
Protection and Enhancement of Environmental Quality (E.O. 11514)	Full
Protection and Enhancement of Cultural Environment (E.O. 11593)	Full
Protection of Wetlands (E.O. 11990)	Full
Analysis of Impacts on Prime and Unique Farmland (CEQ Memorandum, 30 August 1976)	NA
Environmental Justice (E.O. 12898)	Full

The compliance categories used in this table were assigned according to the following definitions:

a. Full – All requirements of the statute/EO/policy/regulations have been met for the current stage of planning.
b. In Progress – Some requirements of the statute/EO/policy/regulations remain to be met for the current stage of planning.
d. Not Applicable (N/A) – Statute/EO/policy/regulations are not applicable.

V. COORDINATION, PUBLIC REVIEWS, AND COMMENTS

A. Agency Coordination

Throughout the planning process for all mooring cells, the Corps has met regularly with other Federal and State agencies including, but not limited to, U.S. Fish and Wildlife Service, Minnesota Department of Natural Resources (DNR), Iowa DNR, Illinois DNR, and Missouri Department of Conservation via emails and virtual meetings. This has included coordination on the full group of mooring facilities under the NESP Program, including proposed facilities at Locks 7, 10, 11, 14, 15, 20, and 22.

Mooring facilities for the NESP Program were coordinated with the following agencies on May 26, 2023 (Appendix A):

U.S. Environmental Protection Agency (USEPA)
U.S. Fish and Wildlife Service (USFWS)
Illinois Department of Natural Resources
Iowa Department of Natural Resources
Minnesota Department of Natural Resources
Missouri Department of Conservation
Wisconsin Department of Natural Resources

B. Communication to the Public

Additional coordination on the proposed NESP mooring facilities was provided by letter on February 20, 2024. This provided opportunity for comment during a 45-day period. Notice was posted on both the Rock Island and St. Paul Districts Public notice webpages and a letter with enclosures was emailed to Federal, State, and local governments, councils, Industry representatives, and other environmental, historic preservation, and tourism groups (Appendix A). The Corps used the input received to help guide project decision making and develop the Preferred Alternative.

The 45-day public input period began on February 20, 2024, and ended on April 5, 2024.The Corps received multiple comments as a result of public review that related to the mooring facility at Lock 10 (Appendix A). The following summarizes those comments:

1. Several comments shared concerns of noise, light, and air pollution due to navigational use of the mooring cell

   Corps Response: Installation of the mooring cell would generally not increase noise and air pollution. A mooring cell at this location would provide a location for downbound tows to tie off to and idle their engines reducing noise levels and emissions. It's not believed the conditions for noise and air pollution would be substantially different than existing conditions where barges currently have to align with and enter the adjacent lock chamber. There could be localized increases in light pollution during night time hours when barges are occupying the mooring cell, and the mooring cell itself will have small lights for safety.

2. Multiple comments voiced concerns about impacts to the rivertown's aesthetics.

   Corps Response: While the construction of the mooring cell will have a permanent impact on the viewshed from the town's levee walking trail, visual impacts from existing

commercial and recreation navigation are currently minor and ongoing. The mooring cell would be a permanent change. Barges periodically using the mooring cell would be an additional change to the viewshed because they would be somewhat closer to the town than typical barge traffic, but views of the opposite bank and nearby island would not be blocked, and cell use would be intermittent and of relatively short durations. Construction of the cell would not increase navigation traffic in the area. There will be no fleeting in the area of the cell as it will be close enough to main channel that fleeting would impede navigation traffic and close enough to shallow water areas that barges would not be able to access those areas. The changes that occur to the viewshed would be a tradeoff to the benefits of increased navigation efficiency and other benefits of using the mooring cell.

3. Several comments voiced concern about impacts to wildlife and recreation, as well as cause sedimentation

   Corps Response: While there would be increased noise as a result of the construction, long term impacts are expected to be minor. Tows attaching to the mooring cell would not need engine propulsion to maintain position, reducing the risk of adverse effects from propwash. The cell is located far enough away from the backwater area that it will not significantly impact wildlife in the area nor will it substantially impact aquatic habitat in Bussey Lake. The cell will be located far enough downstream that a moored tow will not block access to the lake which is more than a half mile upstream of the proposed cell location. The goal of the proposed cell is to provide commercial traffic a designated place to wait to lock through Lock and Dam 10 reducing potential impacts to wildlife and recreation.

4. Multiple comments were received from state and federal partners voicing concerns that the project may impact fish habitat and aquatic vegetation. Discussion with state agency partners at the public information open house (discussed below) included potential alternate locations for the proposed mooring cell. Some comments at the meeting expressed the not to construct a mooring cell in lower Pool 10.

   Corps Response: The proposed location of the cell is within the authorized 9-foot navigation channel and construction of the cell would have minor impacts to aquatic vegetation and fish habitats. Usage of the cell would reduce ongoing impacts of navigation traffic by allowing tows a place to tie off to and reduce their engines to idle which would decrease sedimentation and impacts to vegetation from prop wash.

C. Public Information Open House

A public information open house was held on the evening of November 7th, 2024 in Guttenberg, Iowa to better inform the public of the project and to discuss concerns about the project with local residents. There were approximately 50 members of the public in attendance as well as staff from the Iowa Department of Natural Resources.

Members of the public expressed several concerns regarding the proposed cell installation. Chief among them were concerns that the town's view would be obstructed, and that the project would lead to increased light and noise pollution, especially at night, due to tows mooring and bumping into the cell. Some doubted the cell's necessity, suggesting that a similar downstream cell was underutilized, while some others were uncertain about how the cell would be used by tows. Some suggested using a temporary cell similar to one that was used previously farther

upstream. Meeting attendees also recommended moving the proposed site upstream to around River Mile 617 to avoid impacts to local residents.

Members of the public also raised concerns that the cell would result in potential disruption to a man-made willow island and goose nesting, increased air pollution, and effects on nearby restoration projects. Additionally, residents expressed concern that the project would cause disruptions to local events like river fireworks and increased navigation traffic. Concerns were also raised about impacts to Guttenberg's courtesy docks for recreation boaters. Some individuals also raised concerns about the cells potential effects to property values of homes that may have a view of the cell.

Many of the concerns raised by local residents were raised earlier in the project and during previous coordination and outreach efforts and are addressed throughout this document. New concerns raised during the information open house have also been incorporated and addressed in the document as well.

New concerns that were raised include those about Canada goose nesting areas that could potentially be impacted by the cell, impacts to nearby restoration projects, disruptions to town events held near the river, impacts to local courtesy docks, underutilization of existing or previous cells in nearby locations, and impacts to property values of those along the river with a view of the cell location.

A new location for the cell was also suggested during the meeting and the analysis and feasibility of constructing a cell in that location has also been incorporated into this document.

With respect to disturbing Canada goose nesting habitat, construction would occur after Canada geese have finished nesting and would no longer be disturbed by construction activities. To address concerns about the construction of the cell disrupting the habitat restoration project also occurring in the area, coordination between the two projects has been ongoing to ensure that there are no conflicts between the two projects.

Impacts to local events and courtesy docks used by recreational boaters have been considered, however the Corps believes that construction of the mooring cell will not have a substantial effect on local community events or have negative impacts for boaters. We believe that it will not have a substantial impact on local events because there will not be an increase in navigation traffic using the locks. Under current conditions are that during these events navigation traffic is still moving through the area during these events. For local courtesy docks, access to the docks will not be blocked and the docks will still be usable by boaters even if the cell is in use. If a boater wishes to use a courtesy dock while the cell is in use by a tow, the boater would navigate around the tow to access the dock instead of straight to it.

With respect to the comments about the cell being underutilized because a mooring buoy downstream is not commonly used and a previous one upstream was not commonly used as well, the Corps understands the mooring buoy currently downstream of the lock and the historical one upstream of the lock is and was to be/have been underutilized because they are not a preferred type of mooring facility by tow captains. This is due to the mooring buoy being much shorter than the proposed cell which makes it difficult to tie off because it cannot be seen by tow captains and is only anchored to the bottom of the river which allows it to move. The proposed cell will be a rigid structure of a height tall enough to be easily seen by tow captains making it a more desirable location to tie off to.

With regard to impacts to property values of homes with a view of the currently proposed location, changes to the viewshed from the mooring cell are anticipated to be minor. When not in use, the mooring cell top will be visible over the berm but will not obstruct the viewshed. When in use, the tops of barges and the tow would be visible but not obstruct the view of the opposite bank or nearby island.

Regarding moving the proposed mooring cell location upstream to River Mile 617, the location would not be consistent with the project purpose to increase efficiency and safety. The barges would have to wait for tows to clear the upstream location which is about 1.5 to 2.0 miles upstream of the lock. Mooring at this location could also introduce safety conflicts with recreational craft. In addition, this area is within a Higgins Eye Mussel Essential habitat area.

Following the meeting, participants were encouraged to provide a means to contact them so that they may review this document and provide comment to it during the public review period.

VI. DISTRIBUTION & REVIEW OF THE DRAFT SEA

This draft SEA is being made available for a 30-day public review and comment period. This document can be viewed at: https://www.mvp.usace.army.mil/Home/Public-Notices/

Questions on this project at Lock 10 or comments on this draft SEA can be directed to:

District Engineer
US Army Corps of Engineers, St. Paul District
Attn: RPEDN (Wiechmann)
332 Minnesota Street
Suite E1500
St. Paul, Minnesota 55101

VII. REFERENCES

U.S. Army Corps of Engineers (USACE). 2004. Final Integrated Feasibility Report and Programmatic Environmental Impact Statement for the Upper Mississippi River-Illinois Waterway (UMR-IWW) System Navigation Feasibility Study dated 24 September 2004. U.S. Army Corps of Engineers, Rock Island, St. Louis, and St. Paul Districts. 626 pages plus appendices.

2008. Record of Decision, Final Integrated Feasibility Report and Programmatic Environmental Impact Statement for the Upper Mississippi River-Illinois Waterway (UMR-IWW) System Navigation Feasibility Study dated 4 June 2008. U.S. Army Corps of Engineers, Washington D.C. 6 pages.

U.S. Environmental Protection Agency (USEPA). 2024. EJSCREEN. Retrieved October 1, 2024, from https://www.epa.gov/ejscreen.

U.S. Fish and Wildlife Service (USFWS). 2024. Biological Opinion for a Mooring Cell at Lock and Dam 10, Mississippi River Pool 10, Clayton County Iowa. Dated 29 November 2024.

U.S. Fish and Wildlife Service Ecological Field Service Minnesota- Wisconsin Field Office, Bloomington, Minnesota. 38 pages.

FINDING OF NO SIGNIFICANT IMPACT

UPPER MISSISSIPPI RIVER MOORING FACILITES AT LOCK AND DAM 10
Clayton County, IOWA

The U.S. Army Corps of Engineers, Rock Island and St. Paul Districts (Corps), conducted an environmental analysis in accordance with the National Environmental Policy Act of 1969, as amended. The final Upper Mississippi River Mooring Facilities at Lock and Dam 10, Supplemental Environmental Assessment (SEA) dated **XXXXXX**, addresses the construction of mooring facilities in Pool 10 of the Upper Mississippi River.

In addition to a "no action" plan, one alternative mooring cell location was evaluated.

For all alternatives, the potential effects were evaluated, as appropriate. Table 1 is a summary assessment of the recommended alternative's potential effects of the.

Table 1: Summary of Potential Effects of the Recommended Alternative

	Insignificant Effects	**Insignificant Effects as a Result of Mitigation***	**Resource Unaffected by Action**
Aesthetics	☒	☐	☐
Air Quality	☒	☐	☐
Aquatic Resources/Wetlands	☒	☐	☐
Invasive Species	☐	☐	☒
Fish and Wildlife Habitat	☒	☐	☐
Threatened/Endangered Species/Critical Habitat	☒	☐	☐
Historic Properties	☐	☐	☒
Other Cultural Resources	☐	☐	☒
Floodplains	☐	☐	☒
Hazardous, Toxic & Radioactive	☐	☐	☒
Hydrology	☒	☐	☐
Land Use	☐	☐	☒
Navigation	☒	☐	☐
Noise Levels	☒	☐	☐
Public Infrastructure	☒	☐	☐
Socio-Economics	☒	☐	☐
Environmental Justice	☐	☐	☒
Soils	☒	☐	☐
Tribal Trust Resources	☐	☐	☒
Water Quality	☒	☐	☐
Climate Change	☐	☐	☒

All practicable and appropriate means to avoid or minimize adverse environmental effects were analyzed and incorporated into the Preferred Alternative. Best management practices as detailed in the SEA or referenced documents will be implemented, if appropriate, to minimize impacts.

No compensatory mitigation is required as part of the Preferred Alternative.

Public review of the draft SEA and FONSI was completed on **XXXXXX**. All comments submitted during the public review period were responded to in the Final SEA and FONSI.

Pursuant to section 7 of the Endangered Species Act of 1973, as amended, the U.S. Fish and Wildlife issued a biological opinion, dated 3 December 2024, that determined that the recommended plan will not jeopardize the continued existence of the following federally listed species or adversely modify designated critical habitat: Higgins Eye mussel. All terms and conditions, conservation measures and reasonable and prudent measures resulting from the consultation shall be implemented in order to minimize take of endangered species and avoid jeopardizing the species.

Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, the Corps determined the Preferred Alternative will have no adverse effect on historic properties. The Iowa State Historic Preservation Officer concurred on November 19, 2024.

Pursuant to the Clean Water Act of 1972, as amended, the discharge of dredged or fill material associated with the Preferred Alternative would be authorized under NWP 25 – Structural Discharges. Therefore, a Clean Water Act Section 404(b)(1) evaluation was not prepared.

A water quality certification pursuant to section 401 of the Clean Water Act was obtained from the Iowa Department of Natural Resources. All conditions of the water quality certification shall be implemented in order to minimize adverse impacts to water quality.All applicable laws, executive orders, regulations, and local government plans were considered in evaluating alternatives. Based on this report, the reviews by other Federal, State and local agencies, Tribes, input of the public, and the review by my staff, it is my determination the Preferred Alternative would not cause significant adverse effects on the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

_____ _____

Date

ERIC R. SWENSON
COL, EN
Commanding