

**Quad Cities Sub-area Response Strategies
For Pools 14-16 of the Mississippi River**

April 2007

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Introduction

Through the combined efforts of Regions 5 and 7 of the United States Environmental Protection Agency (EPA), the states of Iowa and Illinois, local representatives from Scott and Rock Island counties and other agencies, a Quad Cities Sub-area Committee was organized and a Quad Cities Sub-area Contingency Plan (QC SACP) was developed and released. The QC SACP, a voluntary effort created pursuant to the Oil Pollution Act of 1990, is designed as a means of facilitating responses to releases of oil or discharges of hazardous materials. The Quad Cities Sub-area Response Strategies are intended to complement the QC SACP and to provide explicit information on site-specific response strategies for events on the Mississippi River in the stretch from near Princeton, Iowa, and Cordova, Illinois, downstream to Lock and Dam 14. These strategies should be used in conjunction with the *Inland Waterways Spill Response Atlas*, a comprehensive set of maps of the Mississippi River that were created through the efforts of EPA Region 5, the Upper Mississippi River Basin Association, the United States Geological Survey, and other agencies. Details on contacts, notifications and other response information are available in the QC SACP. A current version of the QC SACP is available at <http://www.umrba.org/hazspills/quadcitiesplan.pdf> on the Internet.

Teams of federal, state and local responders completed field assessments on the Mississippi River in April 2002. Additional assessments were undertaken in October 2006 as the Response Strategies were updated. During the initial assessments land-based teams coordinated with teams on boats to record and evaluate any feature that could play a role in a spill on the Mississippi, e.g., as a potential source, a potential launch point to combat a spill, or as an economic or environmental asset that required protection from spilled material. The 2006 assessments concentrated on features missed during the initial reconnaissance. Areas were evaluated as being suitable for containment and collection, diversion or exclusion of spilled material, staging of equipment, or other response strategies. The strategies were determined by such factors as river characteristics, habitat and environmental sensitivity, seasonal and weather considerations, accessibility, and emergency equipment needed to implement a strategy at a particular location. The purpose of these response strategies is to improve the effectiveness of responses. There is, however, no guarantee that a strategy outlined herein will be effective in mitigating the effects of a spill. Use of an outlined strategy does not relieve Responsible Parties of their responsibility to satisfactorily address discharges or releases, should the chosen strategy prove to be ineffective.

The field data, including photographs, were compiled into the site descriptions in the following pages. Each description includes the site name or names, a number unique to the QC Response Strategies, any applicable number from the *Inland Waterways Spill Response Atlas*, the *Response Atlas* tile number (i.e., the *Atlas* map on which the site is located), the location by river mile, property ownership, any response strategy developed, site description, access points, and protection strategy requirements. Each map also identifies the tile number/s for the corresponding page(s) of the *Spill Response Atlas*.

The Strategies were created to promote collaboration among operators and responders with a goal of enhancing both planning and emergency response efforts. This document is designed to serve as a quick guide to be taken to the field. It is meant to complement the Spill Response Atlas and the QC SACP and should be used in conjunction with them.

Any corrections or additions to these Response Strategies should be directed to the EPA Region 7 on-scene coordinator assigned to the Quad Cities Sub-area: OSC for Quad Cities Sub-area Contingency Plan, Emergency Response and Removals Program, USEPA, 901 N. 5th Street, Kansas City, KS 66101.

Site Name: Princeton Public Use Area, Princeton, Iowa

Site Number: 504-a

Inland Waterways Spill Response Atlas Icon: S 543

Inland Waterways Spill Response Atlas Tile Number: 47

Location: RDB 504.0 Mississippi River

GPS Location: N 41° 41.673' W 90° 20.211'

Response Strategy: Diversion of oil from environmentally sensitive areas.

Property Ownership: Managed by Iowa Department of Natural Resources

Description: Princeton Public Use area, including Grant Slough and Steamboat Slough

Access Points: The ramp can be reached by traveling north from Princeton on U.S. 67 for about 1.25 mile before turning right on a dirt road (285th Street) as the highway curves west. The boat ramp can be reached by traveling one-half mile north and then a half-mile east (onto 266th Street) from the turnoff.

Protection Strategy Requirements: This area has excellent wildlife values. The shallow water and braided nature of the sloughs would make collection/diversion of spilled materials extremely difficult. It could be used to launch small boats for reconnaissance.

Site Name: Cordova Public Boat Ramp, Cordova, Illinois

Site Number: 503-a

Inland Waterways Spill Response Atlas Tile Number: 47b1

Location: LDB 503.4 Mississippi River

GPS Location: N 41° 41'--" W 90° 19'10"

Response Strategy: Boat launching, possible staging area and collection point for spilled material.

Property Ownership: Public boat ramp located on northeast side of City of Cordova

Description: This is an urban setting with the ramp located in a bend of the river. The water is quite deep, with barges and larger boats sometimes tying up to a jetty, which was underwater at the time of the survey.

Access Points: The Cordova Public Boat Ramp is located at the intersection of 6th Street and Main Avenue.

Protection Strategy Requirements: The open sand and mud area, coupled with the ramp and public ownership, make it a potential area for use during a spill. The location in a natural bend of the river and the presence of a jetty might make it conducive to collecting oil at low water levels.



Cordova Public Boat Ramp

Site Name: The Boat House, 501 Main Avenue, Cordova, Illinois

Site Number: 503-b

Inland Waterways Spill Response Atlas: Icon: M99

Inland Waterways Spill Response Atlas Tile Number: 47b1

Location: LDB 503.2 Mississippi River

GPS Location: N 41°40'48" W 90°19'27"

Response Strategy: Boat launching, possible containment, staging and collection point

Property Ownership: Private, open to members only

Description: Sand and mud beaches with minimal vegetation on shore.

Access Points: Located one block west of city boat ramp.
Permission to use would be needed.

Protection Strategy Requirements: Use would be contingent on obtaining permission. No further details were documented.



Ramp at The Boat House

Site Name: Private Boat Ramp, Cordova, Illinois

Site Number: 503-c

Inland Waterways Spill Response Atlas Tile Number: 47b1

Location: LDB 503.1 Mississippi River

GPS Location: N 41°40'44" W 90°19'42"

Response Strategy: Possible staging area and collection point for spilled material.

Property Ownership: Private boat ramp within residential area

Description: Gradually sloping ramp in area of relatively calm and shallow water. The ramp is located on the outside bend of the river.

During a response this ramp could be used to supplement the city's public boat ramp, which is the best launching area in Cordova, and is located .3 mile upstream.

Access Points: Might be accessible during emergency, pending ownership.

Protection Strategy Requirements: The open sand and mud area coupled with shallow water and lack of a steep ramp suitable for launching large boats would limit its use. Could be used as an area to collect oil in some circumstances.



Private Ramp in Cordova

Site Name: Princeton Marina and Public Boat Ramp, Princeton, Iowa

Site Number: 502-a

Inland Waterways Spill Response Atlas Icon: M 98

Inland Waterways Spill Response Atlas Tile Number: 47b1

Location: RDB 502.3 Mississippi River

GPS Location: N 41° 40.255' W 90° 20.234'

Response Strategy: Collection of spilled material.

Property Ownership: City of Princeton, Iowa

Description: The Princeton Public Boat ramp is located adjacent to the privately owned Princeton Marina. While the ramp is in good repair, the public docks are not. The docks at the Princeton Marina are in good condition.

Access Points: The ramp, located at the south end of Princeton, is suitable for boat launches, but the water moves quite rapidly at this location, making it unappealing for staging.

Protection Strategy Requirements: Some spilled oil would naturally move up against the RDB as a result of a swirling eddy, an effect that would be magnified by a south wind. The water appears to be quite shallow and is choppy. Lower water levels would presumably reduce the choppiness of the water, but could affect the mobility of boats. The offshore current is quite rapid, meaning most oil from any spill upstream would rapidly flow past this area.



Downstream from Princeton



Princeton Marina Next to Public Ramp

Site Name: Camp Hauberg Public Boat Ramp, Port Byron, Illinois

Site Number: 500-a

Inland Waterways Spill Response Atlas Tile Number: 47b1

Location: LDB 500.4 Mississippi River

GPS Location: N 41°38'39" W 90°20'16"

Response Strategy: Launching small boats

Property Ownership: Public camp ground, ownership unknown

Description: This camp ground is on the river at the end of a narrow dirt road.

Access Points: The ramp is suitable for john boats only.

Protection Strategy Requirements: Small reconnaissance boats could be launched from the area, which is generally of limited value because of the narrow road, lack of space to maneuver large equipment, and the gradual increase in depth that would limit launching larger equipment.



Camp Hauberg Public Ramp

Site Name: Port Byron Municipal Boat Ramps, Port Byron, Illinois

Site Number: 497-a

Inland Waterways Spill Response Atlas Tile Number: 47

Location: LDB 497.7 Mississippi River

GPS Location: N 41°36'24" W 90°20'13"

Response Strategy: Launching/staging area

Property Ownership: City of Port Byron, Illinois

Description: The Port Byron Municipal Boat Ramps are located in the center of the city in an area of developed river front. Three ramps allow access to the river, which appears to deepen gradually at this location. The ramps are surrounded by ample parking in paved lots. This appears to be the best staging/launching area on the Illinois side of the river within Lock and Dam 14, though Shalers Shady Grove has more room for equipment. This facility likely receives heavy use during the summer and the parking lot would be crowded.

Access Points: Three ramps supported by ample parking in paved lots combine to offer excellent access.

Protection Strategy Requirements: While this location provides excellent river access and staging facilities, the river current in the area is generally quite fast and there are no obvious points for collection of spilled material on the east side of the river. The Inland Sensitivity Atlas indicates the presence of sensitive invertebrates in the immediate area.



Port Byron Municipal Ramps



Potential Staging Area at Port Byron Boat Ramps

Site Name: LeClaire Public Ramp, LeClaire, Iowa

Site Number: 497-b

Inland Waterways Spill Response Atlas Tile Number: 47

Location: RDB 497.1 Mississippi River

GPS Location: N 41° 35.937' W 90° 20.536'

Response Strategy: A possible collection point at a launching point that includes a good staging area for vehicles and equipment.

Property Ownership: Public boat ramp within City of LeClaire.

Description: This is an urban setting with the ramp located along a north-south portion of the river. While there are economic assets in the area, including a popular restaurant, no sensitive environmental resources are apparent.

Access Points: The public boat ramp is located below the intersection of Wisconsin Street and U.S. 67.



LeClaire Public Boat Ramp

Protection Strategy Requirements: The area is a popular one because of the location of Sneaky Pete's restaurant just above the ramp and dock. This could be more of a hindrance than help during a response during the recreational season because of the number of boats desiring to use the ramp, dock and parking facilities.

Site Name: Shalers Shady Grove, Illinois

Site Number: 496-a

Inland Waterways Spill Response Atlas Tile Number: 47

Location: 496.4 LDB Mississippi River

GPS Location: N 41°34'58" W 90°20'33"

Response Strategy: A possible site for containment or collection of material. It offers a favorable point for staging equipment and access to the river because there is a large area for maneuvering equipment. There is a small, low island at the location with a cottage on it. Based on what is visible from the shore, it appears to offer the opportunity for collection of spilled material, particularly with a west wind, which would keep oil against the shore.

Property Ownership: Private

Description: A privately owned boat ramp, which would likely be very crowded in the summer.

Access Points: The ramp is suitable for boat launches and there is ample space in the parking lot for maneuvering equipment.

Protection Strategy Requirements: Some spilled oil would naturally move up against the east bank as a result of a sharp bend in the river.



Parking at Shalers Shady Grove Ramp

Site Name: Captains Quarters Dry Stack Marina, LeClaire, Iowa

Site Number: 495-a

Inland Waterways Spill Response Atlas Icon: M 97

Inland Waterways Spill Response Atlas Tile Number: 47

Location: RDB 495.7 Mississippi River

GPS Location: N 41° 35.055' W 90° 21.377'

Response Strategy: This is a potential spill source as a tank of gasoline is located on the shoreline at this facility. The single ramp at the facility could be used for launching boats, but little space exists for vehicle turnarounds or other maneuvering. A relatively strong current parallels the shore, which could limit use of this area for either collection or diversion of spilled material. No features suitable for anchoring boom were observed.



Captains Quarters Dry Stack Marina

Property Ownership: Private boat ramp.

Description: This location is a mix of undeveloped river bank along with a developed dock and marina. Dozens of boats are stored at this location in a large dry dock building. The current at this point is rather swift and the water appears to be deep. There is a minimum of space for staging equipment and the owner's attitude towards those surveying the river raised questions of whether he would be cooperative in the event his ramp were needed during a response.

Access Points: The private boat ramp is located immediately east of the marina and dry dock.

Protection Strategy Requirements: The ramp is suitable for boat launches and appears capable of being used for larger craft. The area does not appear to have any sensitive environmental features, and no features exist that would lend the area to either collection or diversion of spilled material.

Site Name: Green Gables Marina, LeClaire, Iowa

Site Number: 494-a

Inland Waterways Spill Response Atlas Icon: M 96

Inland Waterways Spill Response Atlas Tile Number: 46

Location: RDB 494.8 RDB Mississippi River

GPS Location: N 41° 34.535' W 90° 22.58'

Response Strategy: Collection of spilled material.

Property Ownership: Property is leased from USACE.

Description: This is a privately owned marina on leased property. The owner indicated he was receptive to allowing use of the facility in the event a spill response were necessary. The development extends for some distance along the bank, but limited roadside space would hamper staging operations. Some docks in the area were in disrepair at the time of the survey, and such a situation could to some extent hamper booming and recovery efforts. Ownership of those docks was not determined.

Access Points: Green Gables is located on U.S. 67 about a half mile south of the Interstate 80 bridge over the Mississippi. It is approximately 1.5 miles north of Lock and Dam 14. The ramp would handle large boats.

Protection Strategy Requirements: Spills collect naturally in the dock area making it a potential point for collection, but a lot of oil-soaked material could be created because of the extensive network of docks. An estimated 500 feet of boom would be needed to effectively contain oil in the area.



Ramp at Green Gables Marina

Site Name: Smith's Island and LeClaire Channel

Site Number: 493-a

Inland Waterways Spill Response Atlas Icon: O22

Inland Waterways Spill Response Atlas Tile Number: 46d4

Location: RDB 493.3 to 494.2 Mississippi River

GPS Location: N 41°34'8" W 90°23'14"

Response Strategy: Possible diversion or exclusion of spilled material from environmentally sensitive area. Boom stretched across the mouth of LeClaire Channel could divert oil out of the channel, protecting waterfowl and other wildlife in the channel. It appears it would take at least 1,000 feet of boom to effect such a diversion. Boom anchored at the head of Smith Island could be used to divert spilled material from shallow areas on the east side of the island, which faces the river's main channel.

Property Ownership: USACE

Description: This feature, most of which is just above Lock and Dam 14, has a mix of fortified shoreline as well as natural areas, including hiking trails on Smith's Island. A rock pile is present just upriver of Smith's Island. The water on both sides of the island is quite shallow, often less than 2 feet deep. The east side of the island supports lily pads and other vegetation in the shallow water. Pelicans, cormorants and ducks are attracted to the area, and an osprey was observed during the river survey. The LeClaire Channel actually bypasses Lock and Dam 14. A minimum of 1,000 feet of boom would be needed to attempt either of the diversions discussed in the response strategies. The current in this area might naturally keep oil away from the island and LeClaire Channel, unless the wind were from the east.

Access Points: The area surrounding the island is very shallow. Access would have to be gained from an upstream location, such as Green Gables, or by using the Lock and Dam 14 Flats or the USACE's LeClaire Service Base, which is gated but could be accessed with permission from the USACE.

Protection Strategy Requirements: John boats would be necessary to maneuver in the shallow waters around Smith Island. At least 1,000 feet of diversion boom would be necessary to effect any meaningful diversion of spilled material from around the island or channel.

Site Name: Illiniwek Forest Preserve, Illinois

Site Number: 493-b

Inland Waterways Spill Response Atlas Icon: R743

Inland Waterways Spill Response Atlas Tile Number: 46d4

Location: 493.2 LDB Mississippi River

GPS Location: N 41° 34.006' W 90° 23.975'

Response Strategy: The site has ample space for parking and is suitable for launching small boats. The turbulence and shallowness of the river at this point just below Lock and Dam 14 would hamper the area's use for any collection of spilled material. Launching boats would be difficult during low water levels.

Property Ownership: USACE

Description: This public campground is a favorite of fishermen. The water in the area is quite shallow and turbulent, with conditions no doubt affected temporally by operations at Lock and Dam 14, which is immediately upstream. The parking area could be crowded in the summer. The beach has sand and mud and there is natural vegetation on the riverbank.

Access Points: A high-quality surfaced road leads to a ramp suitable for launching small boats, and there is ample space in the parking lot for maneuvering equipment.

Protection Strategy Requirements: The river in this area is shallow and turbulent and consequently not conducive to collecting spilled oil.



**Illiniwek Boat Ramps below
Lock and Dam 14**

Site Name: Lock and Dam 14 Flats/Recreation Area

Site Number: 492-a

Inland Waterways Spill Response Atlas Icon: LD 14

Inland Waterways Spill Response Atlas Tile Number: 46d4

Location: RDB 492.8 Mississippi River

GPS Location: N 41° 34.375' W N 90° 24.35'

Response Strategy: This is a potential collection area for spilled oil, as well as an excellent area for staging boats, utilizing vacuum trucks and otherwise responding to a spill.

There are, however, some seasonal factors that could affect use of this area, as it is used extensively by bald eagles from approximately November 15 to about March 15 of each year. If potential impacts to wintering eagles were not a concern, oil could be collected against the bank, particularly if winds were



Lock & Dam 14, Recreational Lock at Left

from the south. South winds might also move oil into the recreational lock on Lock and Dam 14, from which it could be removed with a vacuum truck.

Property Ownership: The facility is managed by the Iowa Department of Natural Resources, though the USACE operates a repair yard on the property.

Description: This location has a mix of natural habitats, along with some developed features that allow viewing of Lock and Dam 14. The area is popular with bird watchers when bald eagles are present from November to March. Twin boat ramps allow easy access to the river and there is a recreational lock on Lock and Dam 14 to facilitate movement of water craft upstream. There is an ample parking lot and other features that would make the area an excellent location for staging equipment during a spill response. While certain features of the area would allow for collection of oil, it may be necessary to exclude as much oil as possible from the area during periods when bald eagles are present.

Access Points: Twin ramps appear capable of handling any boats that would be needed during a response. The parking lot is large, with points where vacuum trucks could operate to remove oil from the river.

Protection Strategy Requirements: Approximately 500 feet of boom could be employed to facilitate collection of spilled material, though it appears it might be possible to collect significant amounts of oil without deploying boom under certain weather conditions, i.e., winds from the south. When bald eagles are present, it might be desirable to boom areas below the access area to divert spilled material away from the shoreline. An estimated 500 feet of boom would be needed. In addition, if winds are from the south or southeast, booming of the mouth of Spencer Creek, which is less than one-half mile downstream, should be considered in order to prevent the oiling of trees and other vegetation during high water levels.

Site Name: Hampton Marina, Hampton, Illinois

Site Number: 492-b

Inland Waterways Spill Response Atlas Tile Number: 47

Location: 492.6 LDB Mississippi River

GPS Location: N 41°33'35" W 90°24'45"

Response Strategy: This is a privately owned harbor with a channel to the river. With permission of the unidentified owner, it could be used as a collection point for oil, as a boat launching point, and as an area where limited staging of resources could be undertaken. This site is about .7 mile upstream of Campbell's Island, which would be impacted by any spill moving downstream.

Property Ownership: Private, owner not identified during survey.



Hampton Marina

Description: This is a privately owned harbor with a channel leading from the ramp to the Mississippi. The facility was constructed in 2001. It is located at the north end of the city of Hampton and is in an area of developed shoreline.

Access Points: The ramp is suitable for boat launches but the parking lot is small and unsuited for maneuvering equipment.

Protection Strategy Requirements: Some spilled oil would naturally move into the channel. There does not appear to be point that would allow for boom to be anchored to divert oil into the channel. If barges were aligned so as to divert oil into the channel, it would be an excellent collection point, presuming permission could be obtained from the owner.

Site Name: Empire Park, East Moline, Illinois

Site Number: 491-a

Inland Waterways Spill Response Atlas Tile Number: 46d4

Location: 491.1 LDB Mississippi River

GPS Location: N 41° 32.635' W 90° 25.239'

Response Strategy: Empire Park is located along a straight section of vegetated shoreline that would not appear to lend itself to collection of spilled material. The park faces the upper end of Campbell Island across a slough. If sufficient

boom – at least 600 feet – were available, the best response strategy would be to divert spilled material around the upper end of Campbell Island into the main stream of the Mississippi, because mussel beds are located immediately downstream of the boat ramps and also at the lower end of Campbell Island. If the entry of spilled material into the slough were inevitable, the material could be contained and collected in the relatively calm waters of the slough, though there would likely be impacts to sensitive species.

Property Ownership: Empire Park is owned and maintained by the City of East Moline, Illinois

Description: This large city-owned park is located at the extreme northern edge of East Moline's city limits. Hampton, Illinois is less than one mile north of the park, which receives heavy use during the summer. This is a well-developed park with numerous amenities.

Access Points: There are three boat ramps with docks beside them. The slough that lies between the park and Campbell Island does not appear to be very deep, but the depth was not determined during the survey. The boat ramps would likely be unusable during high water. The parking lots contain ample space for staging and maneuvering equipment and would be ideal for use during a response, provided permission was obtained from the City of East Moline.



Empire Park Boat Ramps

The Inland Waterways Spill Response Atlas shows the Island Marina is located near the south end of Campbell Island in Campbell Island State Park, at LDB 489. The marina has 40 boat slips. It was not surveyed during either reconnaissance conducted to review river features.

Protection Strategy Requirements: Booming the mouth of the slough would be desirable because of the mussel beds in the backwater. At least 600 feet of boom would be necessary to divert spilled material around the slough. Trees along the riverbank might be suitable for anchoring deflection boom.

Site Name: Pleasant Harbor, Bettendorf, Iowa

Site Number: 491-a

Inland Waterways Spill Response Atlas Tile Number: 46d3

Location: RDB 491.4 Mississippi River

GPS Location: N 41° 33.263' W 90° 25.386'

Response Strategy: Protection of residential development by placing deflection boom across entrance to dredged canal.

Property Ownership: Private residential development

Description: This is a residential development with between 20 and 30 moderately priced to expensive homes. Many of the homes have private docks and boat ramps.

Access Points: While there are many docks and ramps, access to the area is poor. It is likely the only circumstance under which permission to use the private docks would be granted, would be if actions were being taken to protect the canal from spilled oil.

Protection Strategy Requirements: While the entry to the dredged canal was not fully visible from the available vantage point, it is estimated 200 feet of boom would be sufficient to exclude spilled material from the mouth of the dredged canal. No points for anchoring deflection boom were observed.

Site Name: Pigeon Creek Park, Bettendorf, Iowa

Site Number: 491-b

Inland Waterways Spill Response Atlas Tile Number: 46d3

Location: RDB 491.1 Mississippi River

GPS Location: N 41° 33.171' W 90° 26.075'

Response Strategy: Booming at the confluence of Pigeon Creek and the Mississippi River is desirable because of the environmentally sensitive nature of the area. The park is designated as a high use area for bald eagles between November 15 and March 15. No ramps exist at the park; consequently it is not suitable as a staging area. While this area has never been surveyed, it is known to contain an extensive mussel bed that may contain Federally or State-listed endangered or threatened species. Consultation

with Natural Resource Trustees should be initiated prior to any actions that threaten to disturb the banks or riverbed. Emergency consultation should be undertaken after the fact, if immediate action is needed.

Property Ownership: City of Bettendorf

Description: This park is primarily developed as an area for eagle watching. It has a limited number of surfaced trails leading to the river's edge. No ramps or docks are present at the park. This section of the river contains a dense mussel bed that should be taken into consideration during any response.

Access Points: No access to the water is available. Access for booming or other activities would be through Eagle's Landing Park.

Protection Strategy Requirements: No obvious anchor points for deflection or exclusion boom were observed during the river survey. An estimated 500 feet of boom would be needed to adequately protect the mouth of Pigeon Creek. Efforts should be made to avoid concentrating any contaminants that might mix in the water column in this area, because of the existence of extensive mussel beds.

Site Name: Eagle's Landing Park, Bettendorf, Iowa

Site Number: 490-a

Inland Waterways Spill Response Atlas Icon: S7902, Crow Creek Protected Waters, is .2 mile downstream

Inland Waterways Spill Response Atlas Tile Number:
46d3

Location: 490.55 RDB Mississippi River

GPS Location: N 41° 32.926' W 90° 26.457'

Response Strategy: Eagle's Landing Park offers a variety of protection strategies, including containment and collection, exclusion and diversion. The park has relatively new ramps and a large parking lot that would allow for staging of equipment and launching of boats. Protection of Crow Creek and the adjacent forest would be possible through deployment of boom at the mouth of the creek, which is a state-protected water in Iowa.

Property Ownership: City of Bettendorf

Description: Eagle's Landing Park was completed in 2002. It is reached by driving through a small industrial park. The park has a large parking lot and a solid boat ramp and dock. The park is located between Pigeon Creek Park, which is approximately one-half mile upstream, and Crow Creek, a state-protected water, one-quarter mile downstream. Neither of the other areas has a boat ramp. Both of the other areas are used extensively by wintering bald eagles. Numerous waterfowl and wading birds were observed at Crow Creek during a river survey.

Access Points: The ramp is suitable for boat launches and there is ample space in the parking lot for maneuvering equipment. The park can be reached by taking either Shoreline Drive (marked with a sign



Eagle's Landing Park Dock During High Water

for the park) or 62nd Court (no sign) south off of U.S. 67. Travel south until reaching a small industrial park.

Enter the park from the east (if using Shoreline Drive) or the west (if driving on 62nd Court). Turn south towards the river between buildings occupied by Arch Mirror-North and John Frey. That entrance is across the street from Grafc0, located at 2732 62nd Court. Go straight to the river.

Protection Strategy Requirements: An estimated 200 to 300 feet of boom would be adequate to collect oil around the docks at the park. From 500 to 1,000 feet of boom would be needed to protect the mouth of Crow Creek and the associated riparian forest.

Site Name: Mainstream Discharge - Downstream East Moline WWTP, East Moline, Illinois

Site Number: 490-b

Inland Waterways Spill Response Atlas Icon: WP012

Inland Waterways Spill Response Atlas Tile Number: 46d3 or 46d4

Location: 490.0 LDB Mississippi River

GPS Location: N 41°32.030' W 90°25.473'

Response Strategy: Containment and collection of spilled material.

Property Ownership: City of East Moline

Description: This is a small stream that serves as a discharge point for the East Moline Wastewater Treatment Plant. The confluence with the Mississippi River is in an urban setting with steep banks with riprap. Shrubs grow in upland areas. The area has some potential as a containment and collection point.

Access Points: The bank is steep but it is possible to reach the water from this point. There is no ramp.

Protection Strategy Requirements: Not specified.



East Moline WWTP Outfall

Site Name: MidAmerican Energy Company Riverside Generating Station, Bettendorf, Iowa

Site Number: 490-c

Inland Waterways Spill Response Atlas Icon: W 150

Inland Waterways Spill Response Atlas Tile Number: 46d3

Location: 490.0 RDB Mississippi River

GPS Location: N 41°32.379' W 90°26.587'

Response Strategy: The MidAmerican Riverside Generating Station has the potential to be a spill source and its intake should be protected in the event of any local or upstream spill that could reach the area.

Property Ownership: Private: MidAmerican Energy Company

Description: The intake provides water to a large coal-fired plant, and it should be protected during any spill event that brings contamination into the area. The facility also has two diesel fuel tanks that are used

to serve its vehicle fleet. Those tanks are located near the plant's offices. While they are unbermed, it appeared during the survey that they are double-walled tanks.

Access Points: Access would be from the river via boats and by land through the company's fenced property.

Protection Strategy Requirements: 50 feet of diversion boom to keep material out of the intake.

Site Name: Alcoa Allied Aerospace Rolled Products, Bettendorf, Iowa

Site Number: 489-a

Inland Waterways Spill Response Atlas Icon: # 288

Inland Waterways Spill Response Atlas Tile Number: 46d3

Location: RDB 489.8 to 489.4 Mississippi River

GPS Location: Not determined.

Response Strategy: Alcoa is a potential source because of stored fuel at the facility. Two collection and removal points for materials spilled by Alcoa or other facilities are present along property owned by Alcoa. The first of these locations is immediately downstream of the outfall for the Alcoa plant,



Dike and Spill Collection Point at Alcoa Plant

where there is an indentation in the shoreline and materials would tend to pool naturally. Approximately 500 feet of boom anchored to the shoreline and to a boat in the Mississippi would concentrate additional material. Vacuum trucks could be stationed on the levee to remove concentrated product.

The second potential collection point is located upstream and above the water treatment outfall, where another indentation in the shoreline is present. Approximately 300 feet of floating boom attached to a boat and the shoreline would concentrate oil that could be removed by vacuum trucks atop the river levee.

Both of these strategies are contingent on gaining access from Alcoa and on finding suitable on-shore anchoring points and having large enough boats to maintain the boom in the water.

Property Ownership: Alcoa

Description: This is a large industrial facility with fuel storage. Entry onto the plant grounds is controlled.

Access Points: The facility is fenced and not accessible without the company's permission.

Protection Strategy Requirements: The strategy outlined above is contingent on having 300 to 500 feet of diversion boom present, along with shoreline anchors sufficient to hold it and boats large enough to extend it. Permission from Alcoa to enter its grounds for the purpose of vacuuming any spilled material also would be necessary.

Site Name: John Deere Harvester Works-East Moline Water Intake

Site Number: 489-b

Inland Waterways Spill Response Atlas Icon: W 494

Inland Waterways Spill Response Atlas Tile Number: 46d3

Location: LDB 489.4 Mississippi River

GPS Location: N 41° 31.499' W 90° 26.288'

Response Strategy: This is an accessible site with good road access and open space to work in. It lends itself to either containment of spilled material or diversion of material from

the water intake. Some of the shoreline is hardened with steep riprap, which would limit access. During periods of low water the area may be inaccessible to most boats because of shallow water.

Property Ownership: Private: John Deere

Description: This water intake structure is in an urbanized area. The area is approachable from on land via a good road and there is open space to stage equipment, but the bank itself is rip rapped.

Access Points: The East Moline Public Boat Ramp is located downstream at LDB 488.4 and the Marquis Small Boat Harbor is located downstream at 488.2 LDB.

Protection Strategy Requirements: Two hundred feet of boom would be needed to protect the water intake.



John Deere Water Intake

Site Name: Alcoa Davenport Works, Bettendorf, Iowa

Site Number: 489-c

Inland Waterways Spill Response Atlas Icon: W 152

Inland Waterways Spill Response Atlas Tile Number: 46d3

Location: RDB 489.6 Mississippi River

GPS Location: Not determined.

Response Strategy: Booming of water intake to exclude spilled material from reaching plant.

Property Ownership: Private: Alcoa

Description: This is a very large industrial facility and one of the largest employers in the area. The water intake provides water for its industrial processes.

Access Points: Access would be from the river via boats and by land through the company's fenced property.

Protection Strategy Requirements: 50 feet of diversion boom to keep material out of the intake.

Site Name: East Moline Water Intake, East Moline, Illinois

Site Number: 489-d

Inland Waterways Spill Response Atlas Icon: W 282

Inland Waterways Spill Response Atlas Tile Number: 46d3

Location: LDB 489.2 Mississippi River

GPS Location: N 41° 31.431' W 90° 26.471'

Response Strategy: Diversion of spilled material around water intake.

Property Ownership: City of East Moline, Illinois

Description: This public water intake can be reached by boat or a levee road. The intake is within a levee along the river. There is a nearby parking lot suitable for staging equipment. The shoreline is steep and hardened with riprap, which would make maneuvering of boom somewhat difficult.

Access Points: The East Moline Public Boat Ramp is located upstream at LDB 488.4 and the Marquis Small Boat Harbor is located downstream at 488.2 LDB. The area also is accessible by a road atop the flood levee.

Protection Strategy Requirements: One hundred feet of boom to divert spilled material around the intake.



City of East Moline Water Intake

Site Name: Citgo Petroleum Terminal, Bettendorf, Iowa

Site Number: 488-a

Inland Waterways Spill Response Atlas Icon: # 89

Inland Waterways Spill Response Atlas Tile Number: 46d3

Location: RDB 488.5 Mississippi River

GPS Location: N 41° 30.514' W 90° 28.055'

Response Strategy: This is a potential spill source because of the large quantity of fuel stored only one-quarter mile north of the Mississippi River.

Property Ownership: Citgo Petroleum

Description: This is a large petroleum terminal with numerous large tanks containing gasoline and other fuels.

Access Points: The facility is fenced and not accessible without the company's permission.

Protection Strategy Requirements: Contact is Bob Keiser, 563-386-3104; cellular: 563-349-2915.



Citgo Terminal Gate

Site Name: East Moline Public Boat Ramp, East Moline, Illinois

Site Number: 488-b

Inland Waterways Spill Response Atlas Tile Number: 53a3

Location: LDB 488.4 Mississippi River

GPS Location: N 41° 30.565' W 90° 29.35'

Response Strategy: This is a one of the better boat launch and staging areas on the Illinois side. It is also relatively close to lodging and other accommodations that would be needed during a long-term response. The water in the area is relatively deep and apparently would accommodate a vessel suitable for containing collected oil, however, the current moves quite rapidly and there is no obvious collection point for spilled material. There are potential boom anchoring points onshore. This is an environmentally sensitive area, as there are extensive mussel beds above and below this location; however, there are no obvious means to protect these beds through diversion or exclusion of spilled material.

Property Ownership: City of East Moline

Description: This ramp is part of an urban park setting along Ben Butterworth Memorial Parkway. The park is located near the boundary between Moline and East Moline, Illinois.

Access Points: The ramp is located off River Drive, a short street at the north end of the Ben Butterworth Memorial Parkway.

Site Name: Case-International Harvester Stormwater Outlet, East Moline, Illinois

Site Number: 488-c

Inland Waterways Spill Response Atlas Tile Number: 53a3

Location: 488.2 LDB Mississippi River

GPS Location: N 41° 31.168' W 90° 27.328'

Response Strategy: Containment

Property Ownership: Case - International Harvester

Description: This is a storm water outlet to the Mississippi River from the Case - IH plant in East Moline. The area is fenced from the shoreline and there is a steep embankment of riprap, but the area near the water is accessible.

Access Points: Accessible to crews arriving via boats or other watercraft.

Protection Strategy Requirements:

Site Name: Marquis Small Boat Harbor-Captains Table

Site Number: 488-d

Inland Waterways Spill Response Atlas Icon: M 417

Inland Waterways Spill Response Atlas Tile Number: 53a3

Location: LDB 488.1 Mississippi River

GPS Location: N 41° 31.597' W 90° 28.131

Response Strategy: This is a potential spill source because of the presence of land-based fuel storage. The area also provides an opportunity as a launching point and as a staging area for vehicles and equipment.

Any material emanating from the facility could be contained in the harbor area with boom. The harbor could be protected by placing boom across the entrance.

Property Ownership: Private: The Captains Table

Description: This commercial harbor, located at 4801 River Drive in Moline, can handle small boats. Fuel stored on site possibly could reach the river. The facility is in a developed area with riprap on all of the shoreline.

Access Points: As a harbor, it is accessible by water from various points. It is also accessible off Ben Butterworth Memorial Parkway.

Protection Strategy Requirements: Approximately 100 feet of boom would be sufficient to block the entrance to the harbor, either to keep spilled material in or out.



The Captains Table

Site Name: Moline Consumers, East Moline, Illinois

Site Number: 488-e

Inland Waterways Spill Response Atlas Tile Number: 53A3

Location: 488.0 LDB Mississippi River

GPS Location: N 41° 30.541' W 90° 30.179'

Response Strategy: Containment and collection.

Property Ownership: Private: Moline Consumers

Description: This is an extensive commercial operation with sand beaches that would provide good access from shore. The current is slow at this point and there is an area where boom could be anchored to contain spilled material.

Access Points: The sand beaches and shallow water would allow this area to be used by crews staged on the bank. There is no ramp.

Protection Strategy Requirements: There is an area of slow-flowing water where boom could be used to collect oil.

Site Name: Moline Municipal Landing/Butterworth Port-Boat Ramp, Moline, Illinois

Site Number: 487-a

Inland Waterways Spill Response Atlas Icon: M 94

Inland Waterways Spill Response Atlas Tile Number: 53a3

Location: LDB 488.8 Mississippi River

GPS Location: N 41° 30.565' W 90° 29.350'

Response Strategy: Site suitable for boat launching in conjunction with collection and diversion. This is in an urban park, which has features suitable for use as anchors for boom. The depth of the water near the shore is likely to be too shallow for larger boats during periods of low water.

Because this area is popular with both resident and migrant waterfowl, floating contaminants have the potential to oil a large number of waterfowl.

Property Ownership: City of Moline

Description: This is an urban park with wide-open spaces suitable for staging equipment. Open water in this area is used by semi-domesticated mallard ducks year round. The area also attracts flocks of wild waterfowl and other aquatic birds during migration.

Access Points: The area is accessible from the water and by land off of Ben Butterworth Parkway.

Protection Strategy Requirements: Wildlife collection points and the needs of wildlife rehabilitators should be addressed. It might be necessary to prevent predators, such as the bald eagles that winter in the Quad Cities area, from congregating around the impacted waterfowl.



Ben Park North Access Ramp Butterworth

Site Name: Flint Hills Pipeline Company, Bettendorf, Iowa

Site Number: 487-b

Inland Waterways Spill Response Atlas Icon: #663

Inland Waterways Spill Response Atlas Tile Number: 53a3

Location: RDB 487.7 Mississippi River

GPS Location: N 41° 31.262' W 90° 28.375'

Response Strategy: This is a potential source for a major spill, with hundreds of thousands of gallons of fuel stored on site. All large tanks in the tank farm are in secondary

containment and the tanks are separated from the tank farm by a levee on the Mississippi River. Loadouts of fuel occur

over the river, however. With a south wind, it appears spilled fuel could be driven upriver to a potential collection area. The potential collection area, however, is at the mouth of Duck Creek, located at RDB 487.7 to 487.8. Duck Creek is a State Protected Water and is annotated as S7901 on the Inland

Sensitivity Atlas. Considering most spilled material would move downstream, it would be easier to exclude it from the mouth of Duck Creek than it would be to collect significant amounts there.

Property Ownership: Private: Flint Hills Pipeline

Description: This is a developed oil terminal, though the levee is grassed. The area around the barge loading point is hardened with riprap. The mouth of Duck Creek, located immediately east of the terminal, is heavily wooded. A road leads completely around the facility's bermed tanks.

Access Points: No ramp is present at the facility. It is possible to drive completely around the facility by taking 35th Street South off U.S. 67 at the east edge of Bettendorf, going east on Elm Street and turning left (north) on 42nd Street. There is no driving access to Duck Creek at this point.

Protection Strategy Requirements: The mouth of Duck Creek could be protected with an estimated 500 feet of boom, provided suitable anchor points can be found on the upstream and downstream sides of the mouth. With relatively high water and winds from the west or north, it is less likely that Duck Creek would need to be protected with boom.



Flint Hills Pipeline Barge Terminal on River



Confluence of Duck Creek and Mississippi

Site Name: TexPar Energy, Inc. Bettendorf Terminal, Bettendorf, Iowa

Site Number: 487-d

Inland Waterways Spill Response Atlas Icon: # 123

Inland Waterways Spill Response Atlas Tile Number: 53a2

Location: RDB 487.1 Mississippi River

GPS Location: N 41° 31.291' W 90° 29.22'

Response Strategy: This is a potential source for a significant spill, because of the quantity of petroleum products stored on the site. It is flanked on both sides by elements of ConocoPhillips Pipeline's terminal, depicted as icons # 222 and #124 on the Inland Sensitivity Atlas. The facility was not entered during the survey. The contact for determining response capabilities is Jim Marshall, Terminal Manager, 563-324-5276.

Property Ownership: Private: TexPar Energy, Inc.

Description: This is an urbanized setting dominated by the terminal facility. Public entry is controlled.

Access Points: Access is possible only through a manned entry point off of U.S. 67 at 33rd Street.

Protection Strategy Requirements: Not identifiable from vantage point available during survey.

Site Name: Butterworth Port Boat Ramp, Moline, Illinois

Site Number: 486-a

Inland Waterways Spill Response Atlas Tile Number: 53a2

Location: LDB 486.5 Mississippi River

GPS Location: N 41° 30' 51" W 90° 29' 48"

Response Strategy: This is a potential launch point for small boats, but there is not much room for staging equipment. There is some opportunity to divert spilled material from the area, which is listed as being an important area for mussels.

Property Ownership: City of Moline

Description: This is an urban park setting where small boats can be launched. Limited parking is available.

Access Points: The boat ramp is located directly off Ben Butterworth Parkway and is less than one-half mile upriver from the Memorial Bridge, which carries U.S. Highway 6 and Interstate 74 over the Mississippi. Because of its location just off the Parkway, maneuvering vehicles in the area might be difficult.

Protection Strategy Requirements: Not specified.



South Butterworth Ramp

Site Name: Isle of Capri Casino, Bettendorf, Iowa

Site Number: 486-b

Inland Waterways Spill Response Atlas Tile Number: 53a2

Location: 486.3 RDB Mississippi River

GPS Location: N 41° 31.209' W 90° 30.162'

Response Strategy: Containment and collection of spilled material above the casino jetty and diversion of spilled material around the casino.

Property Ownership: Privately owned casino

Description: The Isle of Capri Casino is protected from the current by a manmade, riprapped jetty on the upstream side of the river. Because the jetty extends out into the river, it would tend to impede oil moving downstream on the right descending bank. If highly flammable material were released and there was a desire to divert it around the casino, that would be possible through use of boom attached to the jetty extending into the river. Lesser scaup (a.k.a. bluebills) ducks, a species in decline, were observed upstream of the casino during the river survey.

Access Points: No ramp is present at the casino but the Leach Park Boat Launch is located less than a mile downstream. The river is accessible from a driveway leading east from the casino, however, the bank leading down to the river is quite steep and covered with riprap. A significant length of hose would be necessary to vacuum oil collected in the area east of the casino dike.

Protection Strategy Requirements: At least 300 feet of boom would be necessary for either collection of spilled material against the casino jetty or to divert spilled material around the casino. Future diversion around the casino could be facilitated by installation of a boom anchor point at the riverward point of the casino jetty.



Isle of Capri Casino

Site Name: Sylvan Slough-Friday's Boat Dock, Moline, Illinois

Site Number: 485-a

Inland Waterways Spill Response Atlas Icon: 134

Inland Waterways Spill Response Atlas Tile Number: 53a2

Location: LDB 485.85 Mississippi River

GPS Location: N 41° 30.371' W 90° 31.108'

Response Strategy: Diversion or exclusion from environmentally sensitive area

Property Ownership: State of Illinois and U.S. Army

Description: This dock lies at the head of the Moline Pool, which becomes Sylvan Slough a half-mile downstream at Sylvan Island. It lies on the Illinois shore off the head of Arsenal Island. It is in an urban



Friday's Boat Dock at Head of Sylvan Slough

setting with rocky banks and concrete barriers dominating the shoreline. The area is important as a walleye spawning area, and the riparian habitat supports beaver and otter. Mussel beds in the slough/side channel contain Federally listed and state-listed endangered and threatened species. The upper reach (above the hydrodam) is classified as Essential Habitat for the Higgin's eye pearly mussel. The State of Illinois classifies the entire reach as a Mussel Sanctuary.

Access Points: A boat ramp is located in Hyde Park in Bettendorf, Iowa, which is just downstream of the I-74 Bridge at RDB 485.5. Access is from River Drive. A lateral rock pile lies along the Illinois side of the river in this area. The obstruction should be crossed only at designated points.

Protection Strategy Requirements: Consultation with Federal and State trustees should be initiated prior to ground-disturbing actions if possible, or emergency consultation should be employed after the fact if immediate action is needed. An estimated 700 feet of boom would be needed for each of two channels.

Site Name: City of Moline Water Intake, Moline, Illinois

Site Number: 485-b

Inland Waterways Spill Response Atlas Icon: W 283

Inland Waterways Spill Response Atlas Tile Number: 53a2

Location: 485.8 LDB Mississippi River

GPS Location: N 41° 30.471' W 90° 30.517'

Response Strategy: Protection of water intake or diversion of spilled material.

Property Ownership: City of Moline

Description: The City of Moline water intake is located in Sylvan Slough just above the tip of Arsenal Island at the head of the Moline Pool. The area is mostly developed, but the beach is grass covered. The area is just downstream of the Memorial Bridge, a potential spill source as a result of a transportation accident.

Access Points: The area is accessible by land off 18th Street in Moline, which leads to 1st Avenue along the river. The nearest boat ramp is the Butterworth Port Boat Ramp, located upstream at LDB 486.4.

Protection Strategy Requirements: Diversion around the water intake could be achieved with 500 feet of boom. Existing piers would be suitable for anchoring deflection boom to protect the inlet to the water intake.

Site Name: Leach Park Boat Launch/City of Bettendorf Municipal Ramp, Bettendorf, Iowa

Site Number: 485-b

Inland Waterways Spill Response Atlas Tile Number: 53a2

Location: RDB 485.6 Mississippi River

GPS Location: N 41° 31.237' W 90° 30.592'

Response Strategy: This location has many positive features for launching boats, staging, collection and removal of spilled material. In addition to its other virtues, it is located near the heart of the Quad Cities area, so it would be useful for responding to spills from various sources. Boats and vacuum trucks would have easy access to the area. A wind from the south or east would be helpful in pushing oil to the area for collection.



Leach Park Docks and Possible Collection Area

Property Ownership: City of Bettendorf

Description: This is a public park that has many features that would lend it to being used during a spill response. Two ramps and two docks are located in the park, with the area generally consisting of riprapped shorelines with grassy upland areas. It appears the ramps in the park would be readily useable at various water levels.

Access Points: This is an excellent access point to the river and for vacuum trucks pumping oil off the water.

Protection Strategy Requirements: In addition to the other virtues, pilings set at various points in the area would be suitable for anchoring boom. There is a natural eddy along the shoreline where oil could be collected. An estimated 500 feet of boom would be necessary to effect collection and removal of spilled material.

Site Name: East Arsenal Island Lock Chamber, Rock Island, Illinois

Site Number: 485-c

Inland Waterways Spill Response Atlas Icon: LD15

Inland Waterways Spill Response Atlas Tile Number: 53a1

Location: 485.0 LDB Mississippi River

GPS Location: N 41° 31.220' W 90° 31.440'

Response Strategy: Containment and collection of spilled material.

Property Ownership: Open water, various ownership along the shore.

Description: The East Arsenal Lock Chamber extends upstream from Lock and Dam 15 for a distance of about two miles. There is a large open area, with different points being potential sites for containment

and collection of oil. The value of a particular site would depend on water levels and wind velocities. No collection of spilled material would be feasible during high winds, unless the winds were driving oil to a shoreline.

Access Points: The area is accessible by water from numerous launching points in the area. Access by land varies by terrain and developed features. There is no levee in the City of Davenport, but abutments and other features preclude river access in the area.

Protection Strategy Requirements: Various features on both the shoreward and riverward side of the channel would allow for anchoring of boom for containment of spilled material. In addition, there are some anchor points on small islands in this section of river.

Site Name: Arsenal Island Water Intake, Rock Island, Illinois

Site Number: 484-a

Inland Waterways Spill Response Atlas Icon: W 285

Inland Waterways Spill Response Atlas Tile Number: 53a2

Location: 484.2 LDB Mississippi River

GPS Location: N 41° 31.254' W 90° 32.3409'

Response Strategy: Protection of water intake from spilled material.



Arsenal Island Intake

Property Ownership: Department of Defense

Description: The Rock Island Arsenal's water intake is located on the riverward side of the main channel of the Mississippi, i.e., on Arsenal Island's north side. The intake is in a developed setting with rocky banks and riprap. The main road around Arsenal Island runs parallel to the river at this point. There are several points along the road where equipment could be staged.

Access Points: Access could be achieved either from the road around the island or from the river.

Protection Strategy Requirements: An estimated 300 feet of boom would be needed to encircle the water intake. The water depth is adequate to accommodate the boats needed for such an operation.

Site Name: Lindsay Park Boat Club, Davenport, Iowa

Site Number: 484-b

Inland Waterways Spill Response Atlas Icon: M 93

Inland Waterways Spill Response Atlas Tile Number: 46

Location: 484.0 RDB Mississippi River

GPS Location: N 41° 31.073' W 90° 32.773'

Response Strategy: The Lindsey Park Boat Club could serve as an area for either collection and removal of spilled material



Lindsay Park Boat Club Fuel Dock

or as an area to be protected by diverting spilled material around expensive boats. The marina is a suitable location for putting in boats and equipment, and docks at the site would make it a potential area for staging operations. It is also a potential spill source as gasoline pumps are located on the dock.

Property Ownership: Lindsay Boat Club

Description: The Lindsey Park Boat Club is located at the intersection of Mound Street and River Drive in a developed area. The shoreline is dominated by riprap and docks. Previous spills in the area have tended to hug the shoreline at this point and spilled material has sometimes been collected from within the marina. Oil has been collected in the harbor itself and upstream of the marina, which juts out from the shoreline and blocks the downstream flow of oil against the upstream side of the marina. A south or east wind would tend to drive more oil



Lindsay Yacht Club Docks Immediately East of Iowa American Water Treatment Plant

into the marina, while it appears it would be easier to protect the vessels in the marina during periods of lower water. The shallow-water bay on the Iowa side just upstream of the harbor contains permanent submerged aquatic plant beds that serve as an important larval fish nursery for the lower pool. Larval fish and juvenile fish densities during the summer can be expected to be very high and would be sensitive to chemical products that float or mix in the water column.

Access Points: This is a suitable point for launching boats and equipment. During previous collection of spilled material from this area, responders have found that a considerable amount of hose was needed to reach from vacuum trucks to the areas where material was concentrated.

Protection Strategy Requirements: About 100 to 150 feet of boom would be needed to divert oil around the entrance to the marina. An estimated 600 feet would be needed to encircle the inside of the harbor and protect all boats in the marina, should the inner harbor be used as a collection area. There are fixed points on the rip-rapped shoreline and on the docks that would be suitable for anchoring boom necessary to divert oil around the boats and yachts in the marina. There is a bed of an invasive exotic species (Eurasian watermilfoil - *Myriophyllum spicatum*) above the harbor and precaution should be taken to remove pieces of plant material from boat trailers so as to prevent transfer of this aggressive non-native species to other water bodies where it may become established and replace native vegetation.

Site Name: Iowa American Water Treatment Plant, Davenport, Iowa

Site Number: 484-c

Inland Waterways Spill Response Atlas Icon: W 1881

Inland Waterways Spill Response Atlas Tile Number: 53a1

Location: 483.8 RDB Mississippi River

GPS Location: N 41° 31.424' W 90° 32.521'

Response Strategy: Protection of water treatment plant intake.

Property Ownership: Iowa American Water Company

Description: The intake for the Davenport Water Treatment Plant, owned by Iowa American Water, is located 22 feet deep in the main river channel, on the edge of the plant. The intake might be protected by anchoring boom to guard rails on the plant or by floating boom down from the upstream Lindsey Yacht Club.

Access Points: From within the river only.

Protection Strategy Requirements: At least 1,000 feet of exclusion boom would be needed.

Site Name: Quad City Marine and Wakeen's Family Boating Center of Davenport, Davenport, Iowa

Site Number: 483-a

Inland Waterways Spill Response Atlas Icon: M 418

Inland Waterways Spill Response Atlas Tile Number: 53a1

Location: RDB 483.6 Mississippi River

GPS Location: N 41° 31.306' W 90° 33.359'

Response Strategy: Although there is an extensive dock that extends along these two establishments, there is no boat ramp at this location. Boats would apparently have to be lowered into the water. The coordination required for such an operation does not make it an optimum place for response operations.

Property Ownership: Private Businesses

Description: Family Boating Center of Davenport is located at 935 East River Drive and Quad City Marine is located next door at 1065 East River Drive. This is a developed area with the businesses high off the water. No sensitive resources are present that would require protection as the boats sold at the facility are kept well above the waterline.

Access Points: A dock extends along both businesses, but there is no ramp at either facility.

Protection Strategy Requirements: Barge tie-offs are located at points along a parking lot east of Quad City Marine. Should spilled material pool in the area, it would be possible to anchor boom to the tie-offs. The water in the area appears to be quite deep, which might allow use of a skimmer vessel.

Site Name: Corps of Engineers Inlet Bay, Dock and Ramp at Lock & Dam 15, Rock Island, Illinois

Site Number: 483-b

Inland Waterways Spill Response Atlas Icon: LD 15

Inland Waterways Spill Response Atlas Tile Number: 53a1

Location: LDB 483.1 Mississippi River

GPS Location: N 41° 31.088' W 90° 33.780'

Response Strategy: Containment or collection of spilled material or diversion of material into inlet.

Property Ownership: U.S. Army Corps of Engineers

Description: The Inlet Bay and boat ramp and dock at Lock & Dam 15 are located on the north side of Arsenal Island and face Lock 15. This is a developed area, with several USACE facilities and parking lots. The shoreline is riprap with grassy banks.

Access Points: Access can be gained from the river or by obtaining permission from the USACE to enter from the land. The Arsenal gates are secured, with entry limited to approximately 7 a.m. to 6 p.m. on weekdays.

Protection Strategy Requirements: At least 300 feet of boom would be needed to effect collection of spilled material. The ramp is not suitable for launching larger boats at high water levels. Water depth in the inlet ranged from 0 to 7 feet deep at a time when the river water was five feet above normal. There are docks at the facility, which can be accessed through the USACE. Assuming favorable wind and current conditions, boom for deflection or containment could be anchored to either the shore or off a wall of Lock 15.



USACE's Arsenal Island Inlet

Site Name: City of Rock Island Water Intake

Site Number: 482-a

Inland Waterways Spill Response Atlas Icon: W284

Inland Waterways Spill Response Atlas Tile Number: 53A1

Location: 482.9 RDB Mississippi River

GPS Location: N 41° 31' 3.6481" W 90° 33' 59.998"

Response Strategy: The City of Rock Island's Water Intake is located 13 feet below normal water surface level in the Lock and Dam Powerhouse. The Powerhouse is located between the lock and the dam. Due to its location beneath the surface, the intake would be susceptible to taking in contaminants that sink, become miscible or otherwise disperse through the water column. Booming would likely provide little protection from such contaminants. Floating contaminants might be deflected



Arrow depicts water intake location

into the nearby lock for collection or the dams farthest from the Powerhouse to the northwest might be selectively opened to direct the river flow away from the intake. Such an action, however, would be likely to increase the amount of spilled material reaching the vicinity of the Rhythm City Casino, located immediately downstream at 482.4 RDB.

Property Ownership: The city's water intake is located within property owned by the U.S. Army Corps of Engineers.

Description: The City of Rock Island's water intake is located 13 feet below the normal water level in the Lock and Dam 15 powerhouse at the approximate junction of 24th Street and 16th Avenue, Rock Island, Illinois. The intake is approximately 10 feet upstream from the southern end of the dam. The powerhouse is between Lock 15 and the Dam.

Access Points: Access from upstream by boat is possible from the Inlet Bay and boat ramp located on the north side of Arsenal Island. This facility faces Lock and Dam 15. The nearest downstream access by water would be from the Main Street Boat Ramp, which is located just below the Rhythm City Casino. Access is also possible by foot through use of a series of walkways that originates at the Clock Tower Building, which is a secure area controlled by the U.S. Army Corps of Engineers.

Protection Strategy Requirements: The water intake could be protected from floating contaminants by various booming strategies that would require small amounts of boom. Protection from contaminants dispersed through the water column would be difficult, because the intake is 13 feet below the normal surface level. Depending on the location and nature of the spill it might be possible to divert the spill away from the intake through selective opening of the roller dams on Lock and Dam 15. Responders should confer with the Army Corps of Engineers to discuss such options. The location of the Lock and Dam 15 Powerhouse Water Intake immediately downstream, the presence of the Rhythm City Casino immediately downstream on the RDB, and the Casino Rock Island just downstream on the LDB would likely complicate recovery and cleanup efforts.

Site Name: Lock and Dam 15 Powerhouse Water Intake

Site Number: 482-b

Inland Waterways Spill Response Atlas Icon: W4320

Inland Waterways Spill Response Atlas Tile Number: 53A1

Location: 482.8 RDB Mississippi River

GPS Location: Not available.

Response Strategy: The water intake for the Lock and Dam Powerhouse is located in the Mississippi River approximately 400 feet south-southwest of the Lock and Dam Powerhouse. Due to its location beneath the surface, the intake would be susceptible to taking in contaminants that sink, become miscible or otherwise disperse through the water column. The mixing of any contaminant into the water column is

likely to be exacerbated by the location of the intake just downstream of the lock and dam complex. The water drawn in by this intake is not potable. In the event of a discharge or release responders should confer with the USACE at 309-794-5266.

Property Ownership: The U.S. Army Corps of Engineers owns and operates the Lock and Dam 15 Powerhouse Water Intake.

Description: The Lock and Dam 15 Powerhouse Water Intake is located in the Mississippi River approximately 400 feet south-southwest of the Lock and Dam Powerhouse. The intake is not visible from the surface of the river and was not visited during reconnaissance efforts to identify river features.

Access Points: Access from upstream is possible from the Inlet Bay and boat ramp located on the north side of Arsenal Island. This boat ramp faces Lock and Dam 15. Use of this ramp would necessitate locking through at Lock 15. The nearest downstream access would be from the Main Street Boat Ramp, which is located just below the Rhythm City Casino. Additional downstream access is available via the Marquette Street Park boat ramp at 481.7 RDB.

Protection Strategy Requirements: Booming operations immediately downstream of Lock and Dam 15 are unlikely to be productive. Depending on the location and nature of the spill it might be possible to divert the spill away from the intake through selective opening of the roller dams on Lock and Dam 15. Responders should confer with the Army Corps of Engineers, which owns the intake and operates Lock and Dam 15, to discuss such options: 309-794-5266.

Site Name: Rhythm City Casino, Davenport, Iowa

Site Number: 482-c

Inland Waterways Spill Response Atlas Tile Number: 53a1

Location: 482.5 RDB Mississippi River

GPS Location: N 41° 31.090' W 90° 34.267'

Response Strategy: Protection of casino passengers from flammable materials that may be floating around the riverboat.

Property Ownership: Private casino

Description: The Rhythm City Casino is located approximately one-half mile downstream of Lock and Dam 15 on the Iowa side of the river. It is in an urban setting and is surrounded by streets and development on its shoreward side.

Access Points: The Marquette Street Ramp is located nearby at the foot of Marquette Street.

Protection Strategy Requirements: This site does not lend itself to protection because of the relatively fast water below the lock and dam and the general hydrology of the river. Closing portions of Lock and Dam 15 to divert spilled material away from the Rhythm City Casino would have the effect of diverting



Rhythm City Casino

the material across the river to the Casino Rock Island, which is almost directly across the Mississippi River. It appears boom could be anchored to concrete posts about 400 feet upriver from the casino, but there would be minimal diversion of spilled material unless the end of the boom could be moved toward the middle of the river.

Site Name: Main Street Boat Ramp

Site Number: 482-d

Inland Waterways Spill Response Atlas Icon:

Inland Waterways Spill Response Atlas Tile Number: 53A1

Location: 482.4 RDB Mississippi River

GPS Location: N 41° 31.133' W 90° 34.534'

Response Strategy: This is a large ramp in an area of little current and it appears large boats could be launched from this point to address spills in the area. Boats and other response equipment could be staged and launched

from this ramp in order to address spills that might threaten the adjacent Rhythm City Casino or Casino Rock Island, which is moored directly across the river. Launching of large boats from this ramp during periods of low water might be difficult.

Property Ownership: This park is owned and operated by the City of Davenport.

Description: The Main Street Boat Ramp is located in a city park and is immediately adjacent to the south of the Rhythm City Casino. In addition to the large boat ramp, there is ample parking in the park that could serve as parking and staging space during an incident.

Access Points: The Marquette Street Boat Ramp is located less than one-half mile downstream at RDB 481.7. That ramp also has capacity to launch large boats into relatively calm water. Access from upstream is possible from the Inlet Bay and boat ramp located on the north side of Arsenal Island on the LDB. Use of this ramp would necessitate locking through at Lock 15.

Protection Strategy Requirements: In addition to its potential as a launching point for boats of various sizes, this area could serve as a collection point for spilled material. It appears it might be possible to deploy boom from the Rhythm City Casino dock, though use of a manned boat would likely facilitate any boom deployment. Booming of any volatile material should be avoided due to the potential for a fire that could involve the nearby casino. At least 500 feet of containment boom would be needed to effectively collect spilled material at this location.



Main Street Boat Ramp

Site Name: Casino Rock Island, Rock Island, Illinois

Site Number: 482-e

Inland Waterways Spill Response Atlas Icon: None

Inland Waterways Spill Response Atlas Tile Number: 53A1

Location: 482.3 RDB Mississippi River

GPS Location: N 41° 30.787' W 90° 34.536'

Response Strategy: This is a large privately owned and operated riverboat casino that may host hundreds of people during busy periods. As with any riverboat casino, consideration should be given to evacuating patrons and crewmembers if there is any danger they will be surrounded by volatile spilled material that could be ignited. The riverboat casino itself is permanently anchored. Surveyors did not provide a specific response strategy for this facility when the original on-water survey was conducted.

Property Ownership: This is privately owned gambling casino.

Description: The Casino Rock Island is permanently anchored along the waterfront near downtown Rock Island, Illinois. The casino is located on the LDB less than one mile downstream from Lock and Dam 15.

Access Points: The Main Street Boat Ramp is located directly across the Mississippi River just west of the Rhythm City Casino. The Marquette Street Park Boat Ramp is located less than a mile downstream and across the river. Both of those ramps are capable of accommodating large boats. Access from upstream is possible from the Inlet Bay and boat ramp located on the north side of Arsenal Island on the LDB. Use of this ramp would necessitate locking through at Lock 15. The nearest launching point on the LDB is at Sunset Park, where public ramps and commercial marinas are located. Sunset Park is approximately 2.5 miles downstream.

Protection Strategy Requirements: As previously noted, no specific protection strategies were developed when reconnaissance of this property was undertaken in April 2002.

Site Name: Marquette Street Boat Ramp

Site Number: 481-a

Inland Waterways Spill Response Atlas Icon: None

Inland Waterways Spill Response Atlas Tile Number: 53A1

Location: 481.7 RDB Mississippi River

GPS Location: N 41° 30.953' W 90° 35.540'

Response Strategy: This is a large ramp in an area of little current and it appears large boats could be launched from this point to address spills in the area. Boats and other response equipment could be staged and launched from this ramp in order to address spills that might threaten the Rhythm City Casino, one-half mile upstream, or Casino Rock Island, which is moored directly across the river. Containment

boom could be deployed from the bank and anchored at various points. Launching boats when the water is extremely low would be difficult.

Property Ownership: This area is shown on the *Inland Waterways Spill Response Atlas* as Antoine LeClair Park. It is owned by the City of Davenport.

Description: The boat ramp is located in LeClair Park. Locals, however, generally do not refer to the park by that name and the ramp is known as



Marquette Street Park Boat Ramp

Marquette Street Boat Ramp. The ramp is well built and provides excellent access to the river. The surrounding parking lot could easily serve as a staging area for response equipment.

Access Points: The Main Street Boat Ramp is located about one-half mile upstream. The Credit Island Boat Ramp is located approximately two miles downstream and the Sunset Marina is located about two miles downstream and across the river. The Credit Island Boat Ramp is unusable during periods of high water.

Protection Strategy Requirements: In addition to its potential as a launching point for boats of various sizes, this area could serve as a collection point for spilled material. At least 500 feet of containment boom would be needed to effectively collect spilled material at this location.

Site Name: Credit Island Boat Ramp, Davenport, Iowa

Site Number: 479-a

***Inland Waterways Spill Response Atlas* Tile Number:** 53a1

Location: 480.8 RDB Mississippi River

GPS Location: N 41° 29.861' W 90° 36.456'

Response Strategy: The Credit Island Boat Ramp is located on an outward, east-facing, bend of the river. It offers a



Facing Southeast toward Credit Island Ramp

double ramp suitable for launching a wide variety of boats, with a large area for staging and maneuvering equipment. It would be an excellent area for staging equipment and launching recovery operations during low or normal water levels, but it would be unusable during high water, as the road to Credit Island closes at a water level of 16.5 feet.

Property Ownership: City of Davenport

Description: Credit Island is a large island that sits relatively close to the Iowa shoreline. It lies in line with the river's flow at this point, which is from the northeast to the southwest. Willow Island is a smaller slender island that lies off the head of Credit Island to the east. It trends from north-northeast to the south-southwest. The Credit Island Boat Ramp is a well-maintained city-owned ramp

located on the east end of the island. It faces east, directly towards Willow Island. The ramps would be accessible and valuable during a spill response in the area, because there is ample space in the parking lot for staging and maneuvering equipment. Credit Island is, however, susceptible to flooding. The entire island was inundated during the Great Flood of '93.

Access Points: The only vehicular access to Credit Island is via a causeway leading off West River Drive. The causeway is closed during flooding. Additional water access in the area is available from the Buese Boat Launch at the Slough Boat Harbor. The latter launch point is in Davenport Harbor and is located at the intersection of Miller Avenue and Concord. Concord exits off West River Drive.

Protection Strategy Requirements: Planners at one pipeline facility in the Quad Cities area have estimated that two 750-foot sections of containment boom would be needed to deflect spilled material away from the north shore of Credit Island Park and to protect the west shoreline of Willow Island. If such an arrangement were possible, it would protect Davenport Harbor, a sensitive environmental area heavily used by waterfowl. Booming under the causeway at the mouth of Davenport Harbor would be another option, one that would require much less boom. Oil might be collected in this area.

Site Name: Sunset Park, Rock Island, Illinois

Site Number: 479-b

Inland Waterways Spill Response Atlas Icon: M 91 Rock Island Boat Club & M 90 Sunset Marina

Inland Waterways Spill Response Atlas Tile

Number: 53a1 for Boat Club; 52a4 for Marina

Location: LDB 479.7 Mississippi River

GPS Location: N 41° 29'37" W 90°36'40"

Response Strategy: Staging areas, boat launching, containment and collection of spills in park.

Property Ownership: City of Rock Island

Description: Sunset Park has three ramps in Lake

Potter and one on the river, and there are docks at the Rock Island Boat Club and Sunset Marina. There is limited staging area at the ramp at the north end of Lake Potter and no area for staging at the ramp on the east side of Lake Potter. A ramp located on the Mississippi River was not accessible at the time of the river survey, and a ramp farther south in Lake Potter, located due east of Sunset Marina, was not described during the survey, perhaps because it was under the high water prevailing at the time of the survey.

Access Points: Several launch points exist within Sunset Park and adjacent marinas. While not ideal because of their distance from the river and the lack of space to stage equipment, some of the ramps can be used during periods of high water when other ramps in the area may be unusable. They would be



Sunset Ramp and Parking Lot

highly useful in the event of a spill within the Lake Potter area.

Protection Strategy Requirements: Response planners for a facility in the Quad Cities area have estimated that the inlet from the Mississippi River into Lake Potter could be protected with two 600-foot sections of deflection boom. The inlet to Lake Potter, where Sunset Park and the marinas are located, is 550 feet across.

Site Name: Buese Boat Launch (aka Slough Boat Harbor and Davenport Inland Harbor), Davenport, Iowa

Site Number: 479-b

Inland Waterways Spill Response Atlas Icon: M 3152

Inland Waterways Response Atlas Tile Number: 52a4

Location: 479.5 RDB Mississippi River

GPS Location: N 41° 29.651' W 90° 37.485'

Response Strategy: This is primarily a boat launching point. If possible, contaminants should be kept out of the area, which is sensitive habitat for waterfowl and other species. The best means of keeping river-borne contamination out of the slough would most likely be by deploying containment boom under the causeway that leads from West River Road to Credit Island Park. There is potential, however, for contamination to reach the slough through Blackhawk Creek, which enters the Mississippi River between the Credit Island Causeway and the Buese Boat Launch.

Property Ownership: Unknown

Description: Buese Boat Launch features ramps on both ends of a floating dock. The ramps, located within Davenport Inland Harbor, face Credit Island. This is a popular recreation area, which also serves as a sensitive environmental area. Rafts of ducks and gulls were present when a reconnaissance was conducted in October 2006. There is ample space in the parking lot for staging and maneuvering equipment. The Boat Launch is at the intersection of Concord Street and Miller Drive. Concord exits toward the river off West River Drive. The ramps are likely to be unusable during high water.

Access Points: The nearest upstream access point is the Credit Island Boat Ramp, which is approximately one-half mile away. During the Flood of '93 small boats were launched directly off West River Drive because both the Credit Island and Buese ramps were underwater.

Protection Strategy Requirements: During periods of low to modest flow booming beneath the Credit Island Causeway might be successful in keeping floating contaminants out of the Davenport Inland Harbor. Several hundred feet of boom would be necessary. A combined strategy of deploying (1,200 feet) deflection boom, as outlined for protecting Credit Island Park, and containment boom beneath the causeway might provide optimum protection — provided that amount of containment boom were available.

Site Name: Blackhawk Fleet, Davenport, Iowa

Site Number: 475-a

Inland Waterways Spill Response Atlas Tile Number: 52

Location: RDB 475.8 Mississippi River

GPS Location: N 41° 27.500' W 90° 40.105'

Response Strategy: Available resources to combat spill.

Property Ownership: Private: Blackhawk Barge Fleet

Description: This is a commercial barge towing operation, which is located at 10910 South Utah, Davenport, Iowa. The manager present during the April 2002 river survey said Blackhawk has 2,000 feet of absorbent boom that it would be willing to deploy in the event of a major spill.

Access Points: Barges dock at the site on a makeshift ramp built along the river's edge.

Protection Strategy Requirements: It would be necessary to contact Blackhawk Fleet to gain permission to deploy the boom, and it would be necessary to transport the boom to wherever it is needed.

Site Name: Riverway - Dodge Access, Buffalo, Iowa

Site Number: 473-a

Inland Waterways Spill Response Atlas Icon: S 8028

Inland Waterways Spill Response Atlas Tile Number: 52

Location: RDB 473-475 Mississippi River

GPS Location: N 41° 27.0189 W 90° 42.284'

Response Strategy: This boat ramp is located in the City of Buffalo. There is sufficient space for staging equipment for a cleanup. The site has no particular characteristics that lend it to use for containment and removal of spilled material and there are no anchor points for boom. The dock at the site is not usable during high water as it cannot be reached from land.

Property Ownership: State of Iowa

Description: The Riverway access point is one of two ramps in the Dodge Access Area. It is located in the City of Buffalo at River Mile 473. Maps show another ramp at River Mile 475, but that ramp was not observed during the river survey. The ramp may have been under the high water present at the time or was missed because of a storm in progress at the time of the survey. The area around the Riverway ramp is characterized by rocky banks and sand and mud.

Access Points: There is a boat ramp at this location and another, according to maps, two miles upstream at River Mile 475.

Protection Strategy Requirements: This site is suitable for boat launches and equipment staging, but the dock cannot be reached from land during high water.

Site Name: Loomis Landing – Andalusia Harbor (aka Buffalo Passage)

Site Number: 472-a

Inland Waterways Spill Response Atlas Icon: M 89

Inland Waterways Response Atlas Tile Number: 52

Location: 472.8 LDB Mississippi River

GPS Location: N 41° 26.683' W 90° 43.281'

Response Strategy: This location could serve as a boat-launching site, but the primary response strategy would be to boom off the mouth of the dredged harbor to protect the boats in the 45 slips at the facility.

Property Ownership: In October 2006 the property was owned by Marie Loomis, Andalusia, Illinois: 563-340-5906.

Description: Loomis Landing is a privately owned harbor that has been created by dredging an area out of the river's bank. The harbor contains 45 slips, some of which are covered. The harbor opens onto Andalusia Slough and faces Buffalo Passage, an opening between major islands in the Mississippi River. This area is popular with hunters and fishermen and the entire area is recognized as a sensitive environment.

Access Points: In addition to access at the Loomis Landing Ramp, river access is possible less than two miles downstream at the Wintergreen Harbor and Inn. Access is also possible directly across the river at the Riverway-Dodge Access in Buffalo, Iowa, and the Buffalo Shores Access area, also in Buffalo, Iowa.

Protection Strategy Requirements: About 200 feet of boom would be needed to deflect spilled material away from the harbor entrance.



Loomis Landing ramp and slips



Buffalo Passage

Site Name: Buffalo Shores Access Area, Buffalo, Iowa

Site Number: 472-b

Inland Waterways Spill Response Atlas Icon: S 8020

Inland Waterways Spill Response Atlas Tile Number: 52

Location: 472.0 RDB Mississippi River

GPS Location: N 41° 27.125' W 90° 44.341'

Response Strategy: This site has high potential as a boat launching and equipment staging area, and with sufficient



Buffalo Shores Ramp

boom it could be a collection point for spilled material. While the water levels were quite high and fast at the time of the survey, it appears that an area just downstream of the ramp would produce an eddy where spilled material could be collected at lower water levels, particularly with winds from the south or east.

Property Ownership: Public: Scott County Conservation Board

Description: The Buffalo Shores Access area is an attractive boat launching area with a dock and ample space for parking and potentially for staging equipment. The paved parking area is surrounded by forest, grassy areas and other vegetation. A heavily wooded island lies offshore from the boat ramp and dock.

Access Points: The ramp and dock at this location are in good shape and there is sufficient space in the parking lot for staging any equipment that might be needed during a response.

Protection Strategy Requirements: In addition to its attributes as a staging and launching area, this area would be suitable for containing and collecting oil, particularly at lower water levels. Trees on the island offshore from the boat ramp and dock are large enough to serve as anchors for boom. It appears at least 1,000 feet of boom would be needed to hold oil at this point.

Site Name: Wintergreen Harbor and Inn

Site Number: 471-a

Inland Waterways Spill Response Atlas Icon: M 89

Inland Waterways Response Atlas Tile Number: 52

Location: 471.4 LDB Mississippi River

GPS Location: N 41° 26.317' W 90° 44.975'

Response Strategy: A new ramp was constructed at this harbor in 2006. The ramp could provide river access with the

permission of the owner. The harbor entrance should be boomed off to protect the facility and its boats should a spill occur. Permission would be needed to operate from this location during an incident. There is adequate parking, but it is not uniformly accessible, which would make staging of equipment difficult.

Property Ownership: The property is privately owned: 309-798-2525

Description: Wintergreen Harbor and Inn is a privately owned harbor located on a short canal that leads to the Mississippi River. The harbor has eight slips and a concrete boat ramp constructed in 2006.

Access Points: In addition to access at the Loomis Landing Ramp, located two miles upriver, access is possible less than a mile downstream at the North Andalusia Boat Ramp. Access is also possible from across the river, but boaters would have to cross through the Buffalo Passage, which is two miles north of Wintergreen Harbor.

Protection Strategy Requirements: One hundred feet of containment boom would be needed to deflect spilled material away from the harbor entrance.



Wintergreen Harbor Ramp

Site Name: North Boat Ramp in Andalusia Slough Recreation Area, Rock Island County, Illinois

Site Number: 470-a

Inland Waterways Spill Response Atlas Tile Number: 52

Location: 470.5 LDB Mississippi River

GPS Location: N 41° 26.354' W 90° 46.604'

Response Strategy: A location for launching small boats and staging equipment during a response.

Property Ownership: USACE

Description: This concrete ramp is the northernmost of two public boat ramps in the Andalusia Slough Recreation Area. The area surrounding the ramp has mud and sand beaches. While the ramp would accommodate only small boats, there is ample space for staging equipment. The water in the vicinity flows rapidly and there are no obvious collection or containment points for spilled material. The ramp area would likely be crowded during peak recreation periods.

Access Points: Another ramp is located approximately 1.3 miles downstream, and additional ramps are located across the river in Buffalo, Iowa, and just upstream and downstream of Buffalo.

Protection Strategy Requirements: This site is suitable for launching nearly any boat under all conditions.



Andalusia North Ramp Parking Lot

Site Name: Cargill Buffalo Terminal Dock, Buffalo, Iowa

Site Number: 469-a

Inland Waterways Spill Response Atlas Icon: # 127

Inland Waterways Spill Response Atlas Tile Number: 52

Location: RDB 469.8 Mississippi River

GPS Location: 41° 27'27.1" N 90° 44'52.9"W

Response Strategy: This barge terminal is a potential spill source as it stores nearly 3 million gallons of corn oil. In addition, there is a ramp on the property where small boats could be launched. There appears to be a natural eddy against the shoreline at the facility where spilled material could be collected. Operations on the property generally would be contingent on gaining permission from Cargill representatives to use their facility.

Property Ownership: Cargill

Description: This barge terminal is located on the Mississippi River. Along with nearly 3 million gallons of corn oil stored at the facility, more than a million gallons of liquid fertilizer are present.

Access Points: The facility was unlocked at the time of the river survey and contact was made with Cargill staff. If Cargill's ramp were not available for boat launching, other ramps are available within two miles upstream and downstream.

Protection Strategy Requirements: Not determined.

Site Name: South Boat (aka Rocky Point) Ramp Andalusia Slough Recreation Area,
Rock Island County, Illinois

Site Number: 468-a

Inland Waterways Spill Response Atlas Tile Number: 52

Location: 468.9 LDB Mississippi River

GPS Location: N 41° 26.495' W 90° 47.807'

Response Strategy: Launching small boats during response.

Property Ownership: USACE

Description: The South Boat Ramp in the Andalusia Slough Recreation Area lies down a steep roadway. The gravel ramp was under water at the time of the initial river survey.

While small boats could be launched from the ramp during lower water, this is not a good area for either launching boats or staging equipment. The area surrounding the ramp includes sand and mud beaches.

Access Points: The North Boat Ramp in the Andalusia Slough Recreation Area is 1.3 miles upstream. Two ramps in Loud Thunder County Forest Reserve are located less than two miles downstream.

Protection Strategy Requirements: Only small boats can be launched from this ramp and those only at relatively low water levels.



**South Andalusia Slough Boat Ramp
Parking Lot**

Site Name: Fair Station Central Iowa Power Station Intakes, Muscatine County, Iowa

Site Number: 467-b

Inland Waterways Spill Response Atlas Tile Number: 52

Location: 467.8 RDB Mississippi River

GPS Location: N 41° 27.42' W 90° 49.68'

Response Strategy: Diversion of spilled material away from water intakes.

Property Ownership: Central Iowa Power

Description: The power plant intake is in an urbanized area with hardened banks of rock and riprap.

Access Points: The USACE's Clark's Ferry Ramp is located adjacent to the intake.

Protection Strategy Requirements: If it can be positioned and held, two hundred feet of boom would be adequate to divert spilled material around the water intake. If it is necessary to anchor boom to the dock on the power plant 1,000 feet upstream, more than 1,000 feet of boom would be needed. Truck access for removing spilled material is available adjacent to the water intake.

Site Name: Clark's Ferry Ramp/Recreation Area, Montpelier, Iowa

Site Number: 467-a

Inland Waterways Spill Response Atlas Tile Number: 52

Location: 467.8 RDB Mississippi River

GPS Location: N 41° 27.276' W 90° 48.324'

Response Strategy: River access and equipment staging.

Property Ownership: USACE

Description: The Clark's Ferry Ramp in Montpelier, Iowa, is in an urbanized setting, but trees, shrubs and grassy areas surround the structure. There is adequate space to stage any equipment necessary to mount a spill response, but there are no obvious points for containment and collection, as the rapid current flows parallel to the bank.

Access Points: The ramp is adequate to launch boats of sizes likely to be used for a response. Additional ramps are located 4 miles upstream at Buffalo Shores Access.

Protection Strategy Requirements: This site is suitable for boat launching and staging.



Clark's Ferry Boat Ramp, Montpelier, Iowa

Site Name: Loud Thunder County Forest Reserve, Rock Island County, Illinois

Site Number: 467-c

Inland Waterways Spill Response Atlas Icon: R 744

Inland Waterways Spill Response Atlas Tile Number: 51

Location: 467 LDB Mississippi River

GPS Location: N 41°26'18" W 90°49'51"

Response Strategy: Loud Thunder has two boat ramps, which are located in conjunction with a very large parking area that would be ideal for staging, except for the steepness of the road leading to the parking area. Because of the extremely large parking area, this would be an excellent staging area, should conditions and resources make it necessary and possible to utilize helicopters during a response. One of the boat ramps is large, but appears to lead into shallow water. It is suitable for pontoon boats. The other ramp is smaller and perhaps suitable for small boats only.

Property Ownership: Rock Island County

Description: The Loud Thunder Nature Reserve is a sensitive environment in that it covers several hundred acres of undeveloped state-owned property. The shorelines in the area of the boat ramp have trees, but are relatively open.



Larger of Two Ramps in Loud Thunder Reserve

Access Points: As stated above there are two ramps at this location that could accommodate most response boats. Additional ramps are located about a mile across and upriver at the Clark's Ferry Ramp in Montpelier, Iowa, and within two miles upstream on the Illinois side of the Mississippi in the Andalusia Slough Recreation Area.

Protection Strategy Requirements: Not specified

Site Name: Pine Creek, Muscatine County, Iowa

Site Number: 465-a

Inland Waterways Spill Response Atlas Tile Number: 51

Location: 465.7 RDB Mississippi River

GPS Location: N 41° 27.09' W 90° 10.82'

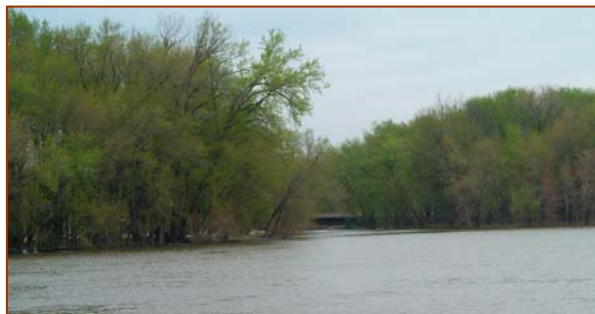
Response Strategy: Protection of state protected stream at low flows through use of exclusion boom.

Property Ownership: State-managed stream.

Description: Pine Creek is a state-protected stream, which contains grass pickerel and star-headed top minnows. Highway 22 crosses over the creek near its confluence with the Mississippi. Oil would not move up the creek during typical flows, but it might move upstream during periods of low flow, which could necessitate exclusionary booming.

Access Points: Boom could be delivered to the immediate area on Highway 22. Boats could be launched at Shady Creek Recreation Area, which is less than a mile downstream.

Protection Strategy Requirements: Trees present along the shoreline are large enough to anchor boom.



Pine Creek at Confluence with Mississippi River

Site Name: Shady Creek Recreation Area, Muscatine County, Iowa

Site Number: 464-a

Inland Waterways Spill Response Atlas Tile Number: 51

Location: 464.8 RDB Mississippi River

GPS Location: N 41° 26.67' W 90° 52.67'

Response Strategy: This facility has two ramps that would be good for launching small boats. The shelter

houses would be ideal for staging of equipment, should there be a nearby spill. The ramps might be unsuitable for larger boats, especially during periods of low water. While there is no strong current in the area, no obvious pooling locations for spilled materials exist. Likewise, no structures or trees that could serve as boom anchors are present in key spots.



Shady Creek Recreation Area

Property Ownership: USACE

Description: This is a USACE fee area. A concrete ramp and numerous campsites are present. As with other developed areas, it is assumed this area would be busy during peak recreational periods.

Access Points: Boats can be launched from the ramp at this location, though it is doubtful large boats could be launched during periods of low water.

Protection Strategy Requirements: This is an excellent area for staging equipment as far as covered space and parking are concerned, though security problems would exist if the area were used during the summer recreation period and campers were allowed to continue using the area.

Site Name: Lower Pine Creek Outlet, Muscatine County, Iowa

Site Number: 463-a

Inland Waterways Spill Response Atlas Tile Number: 51

Location: 463.8 RDB Mississippi River

GPS Location: N 41° 26.26' W 90° 53.57'

Response Strategy: Exclusion of spilled material from Lower Pine Creek through booming.

Property Ownership: Unknown

Description: Lower Pine Creek is in a relatively natural state at this point, with sand and mud beaches and natural forest, though a cabin is located within 100 feet of the creek. The small creek is known to contain grass pickerel and star-headed top minnow, which are on Iowa's Threatened and Endangered Species list. Bald Eagles also use the area.

Access Points: Water access could be gained by launching one mile upstream at Shady Creek Recreation Area.

Protection Strategy Requirements: Trees suitable for use as boom anchors grow on both banks of the creek at the confluence with the Mississippi and could be used to anchor deflection boom. An estimated 200 feet of boom would be needed to effect the exclusion.



Confluence of Lower Pine Creek and Mississippi

Site Name: Fairport State Fish Hatchery Intake, Fairport, Iowa

Site Number: 463-b

Inland Waterways Spill Response Atlas Tile Number: 51

Location: 463.5 RDB Mississippi River

GPS Location: N 41° 26.17' W 90° 53.86'

Response Strategy: Diversion of spilled material from intake to fish hatchery.

Property Ownership: Iowa Department of Natural Resources

Description: The Fairport Fish Hatchery has several ponds, which are replenished with water pumped from the Mississippi River. The intake for the hatchery is located from 20 to 30 feet out into the river, with the pump for the system being housed in a red pump house on site. The intake could be protected with deflection boom anchored to a point on the shore and in the water, which would deflect spilled material around the intake.

Access Points: Land access is possible through the hatchery itself, while boats could be launched approximately a mile and a half upstream at Shady Creek.

Protection Strategy Requirements: Approximately 200 feet of boom would be sufficient to deflect spilled material around the intake, if it can be anchored on shore and held out in the water.

Site Name: Fairport Landing Marina, Fairport, Iowa

Site Number: 463-c

Inland Waterways Spill Response Atlas Tile Number: 51

Location: RDB 463.2 Mississippi River

GPS Location: N 41° 26.10' W 90° 54.07'

Response Strategy: A possible area for containment and collection.



Fairport Landing Marina Ramp

Property Ownership: Private

Description: The Fairport Landing Marina is a privately owned marina operating in a developed setting. In addition to its ramp there are several boat docks. Some of the docks are not easily accessible from land, and thus would not be ideal for staging. The site would appear to have limited value as a containment and collection point for spilled oil, because a relatively strong current parallels the shore in the area. The topography is such that optimum collection of spilled material could occur only with a wind from the south. There are sensitive resources in the area in the form of mussel beds.

Access Points: Boats of various sizes can launch at this point during most water levels.

Protection Strategy Requirements: At least 800 to 1,000 feet of boom would be necessary to undertake containment and collection.

Site Name: Izaak Walton League Clubhouse, Fairport, Iowa

Site Number: 462-a

Inland Waterways Spill Response Atlas Tile Number: 51

Location: RDB 462.8 Mississippi River

GPS Location: N 41° 26.008' W 90° 54.356'

Response Strategy: Launching of small boats and staging of limited amounts of equipment.

Property Ownership: The Izaak Walton League of America

Description: The Izaak Walton League at Fairport includes a small clubhouse in a rural setting. The single ramp at the facility is located on the south end of the property. The rock-covered ramp is steep and probably suitable for smaller boats only. The advantage of the ramp, said a member who was present during the river survey, is that it is the only ramp in the vicinity from which a boat can be launched during high water. It would be necessary to gain permission from the Izaak Walton League to use this facility.

Access Points: Other nearby ramps include Fairport Landing Marina and the Fairport Public Use Area.

Protection Strategy Requirements: This site should be considered as an option only if other ramps are unusable because of high water.



Izaak Walton League Ramp

Site Name: Dead Slough (Andalusia Rehabilitation and Enhancement Project), Rock Island County, IL

Site Number: 462-b

Inland Waterways Spill Response Atlas Icon: F 8031

Inland Waterways Spill Response Atlas Tile Number: 51

Location: 462.7 LDB Mississippi River

GPS Location: N 41° 27.88' W 90° 55.47'

Response Strategy: If conditions were favorable, oil could be diverted into Dead Slough, where trucks parked on the dike could vacuum it out. This would be contingent on oil coming down Sisco Chute, with winds, ideally, from the north.

Property Ownership: The Illinois Department of Natural Resources has responsibility for this rehabilitation project taking place in the Mississippi.

Description: This is a low priority sensitive environment, where IL DNR is trying to effect measures to improve environmental conditions. Dead Slough is within the Andalusia Rehabilitation and Enhancement Project.

Access Points: The nearest boat launching points are approximately a mile away across and down river at the Fairport Public Use Area.

Protection Strategy Requirements: An estimated 1,000 feet of boom would be needed to divert spilled material coming down Sisco Chute into the Dead Slough backwater, from which it could be vacuumed by trucks parked on the dike road to the south of the slough.

Site Name: Fairport Public Use Area, Muscatine County, Iowa

Site Number: 461-a

Inland Waterways Spill Response Atlas Tile Number: 51

Location: 461.7 RDB Mississippi River

GPS Location: N 41° 25' 54.5" W 90° 55' 33.8"

Response Strategy: Suitable for limited staging and launching of boats only.

Property Ownership: Iowa DNR

Description: This public use area has a relatively large parking lot and is in an area with good fishing for flathead catfish and other species. The sandnose darter, a fish on the Iowa Threatened and Endangered list, has been reported from the area. The habitat around the park is generally natural in appearance, except for some residences.

Access Points: There are two boat ramps within the public use area, but no docks. The south ramp is poorly constructed and of limited use, while the north ramp is in good condition. A local member of the Izaak Walton League says the ramps in the public use area are unusable during high water.

Protection Strategy Requirements: Suitable for small boats only. No docks are present.



Fairport Public Use Area North Ramp

Site Name: Lock and Dam 16 Boat Access Park, Rock Island County, Illinois

Site Number: 457-a

Inland Waterways Spill Response Atlas Tile Number: 51

Location: 457.3 LDB Mississippi River

GPS Location: N 41° 25.317' W 90° 52.32'

Response Strategy: Launching of small boats for work within immediate area of Lock and Dam 16.

Property Ownership: USACE

Description: The Lock and Dam Boat Access Park is located on the levee road approximately one-quarter mile upstream from the driveway leading into the Lock and Dam area.



Lock and Dam 16 Boat Access Park

The rock-covered ramp has large trees on both sides of it, has no turnaround space and is generally poorly suited for either boat launching or equipment staging. During high water, spilled material would move into

the tree line in this area, making it very difficult to remove. This location is part of an Illinois natural area.

Access Points: There are no other known boat ramps in the immediate area.

Protection Strategy Requirements: This location is of limited utility. It would be suitable for launching small boats for reconnaissance.

Site Name: Lock and Dam 16

Site Number: 457-b

Inland Waterways Spill Response Atlas Icon: LD 16

Inland Waterways Spill Response Atlas Tile Number:

Location: 457 Mississippi River

GPS Location: N 41⁰ 25.298' W 90⁰ 00.301' W

Response Strategy: Containment and collection of oil.

Property Ownership: USACE

Description: Lock and Dam 16 is the furthest downstream point visited on the river survey. It could be used by boats coming into the sub-area from downstream through normal lock operations. At certain water levels oil could be collected in the lock as well as on certain faces of the dam. During periods of high water, the flow passes unimpeded over the spillway on the right descending bank and it is unlikely collection of any oil would be feasible.

Access Points: Access by boat would be feasible from downstream through the lock. The nearest access from upstream would be via the Lock and Dam Boat Access Park, a ramp located one-quarter mile upstream of the Lock and Dam on the Illinois side of the Mississippi River.

Protection Strategy Requirements: As with any Lock and Dam, permission to use the facility to collect or divert spilled material would depend on the existing conditions, the cooperation of the USACE and other factors. No unique features were observed that would facilitate collection.

Acronyms Used in These Response Strategies

GPS	Global Positioning System
IDNR.....	Iowa Department of Natural Resources
LDB	Left Descending Bank
RDB	Right Descending Bank
USACE	United States Army Corps of Engineers