GOAL: Collect spilled product to protect sensitive downstream resources

Site Number	Waterbody, River Mile	Site Name	
753a	Mississippi River 753.0 LDB	Lock an	d Dam 4
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	2000	Y	N

Strategy Implementation (Go to aerial view)

Divert product from spillway and collect above L&D 4. Close water control structure in low-flow; boom needed in high flow, anchor to fence or riprap. Note mussel bed and fish habitat in dam tailwaters.

Site Access

From US Hwy 61 just N of Zumbro River and Kellogg, go east and north .6 mi. on Co. Rd. 30, then east 2.2 mi. on Co. Rd. 24, then south .3 mi. on 140th Ave., then east along dam access road.

Latitude: 44.32445
UTM Y: 4908471.307
Longitude: -91.92511
UTM X: 585707.436



Dam 4 lock chamber

GOAL: Keep spilled product from passing through culverts toward sensitive backwaters

Site Number	Waterbody, River Mile	Site Name	
753b	Mississippi River 753.0 RDB	Dam 4 (Culverts
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	200	Y	N

MN DNR public access south of road allows walk-in access. Protect or close 4 hand-crank gate culverts to 1st, 2nd, and 3rd Finger, Lower Peterson, and Clear Lakes. Use 50 ft. boom to protect openings. Fourth culvert has 2 crank gates on south side of road.

Site Access

From US Hwy 61 just north of Zumbro River and Kellogg, go east and north .6 mi. on Co. Rd. 30, then east 2.2 mi. on Co. Rd. 24, then .2 mi east on 652nd St., then south .3 mi. on 140th Ave., then east along dam access road. Private owner at road must grant access.

Latitude: 44.323293 Longitude: -91.937165 UTM Y: 4908330.506 UTM X: 584747.91



Locked gate at dam access road



View of 3rd culvert

GOAL: Notify facility of spill and assist with protection of water intakes if requested

Site Number	Waterbody, River Mile	Site Name	
751a	Mississippi River 751.6 LDB	Dairylan	d Power
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	100	Y	Y

Strategy Implementation (Go to aerial view)

Notify facility of spill. Protect 2 water intakes if requested. Limited spill response equipment onsite. Contact Larry Stenzel, Site Safety Manager 608-685-6624. Peregrine falcons and bald eagles often present in area.

Site Access

500 Old State Hwy 35, 1 mi. south of Lock & Dam 4. Good paved boat ramp and staging area at boat access just upstream of power plants.



Dairyland Power water intake facility



Facility outfall

GOAL: Keep spill on Zumbro River from spreading into important backwater habitats

Site Number	Waterbody, River Mile	Site Name	
751b	Zumbro River N/A	Finger Lakes Inflow	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	100-500	N	N

Boom across opening or exclude from oxbow to keep spilled product from spreading into backwater complex. Not needed unless Zumbro River is in flood stage. Important fish, songbird, and mammal habitat.

Site Access

Oxbow old channel of Zumbro River, 1.5 mi. upstream of the Mississippi River. Access area through private property. High-flow opening during high water on NE side of backwater.

Latitude: 44.303757 **Longitude:** -91.938956 **UTM Y:** 4906158.711 **Longitude:** -91.938956 **UTM X:** 584633.166

GOAL: Keep spilled product in main channel to protect mussel bed in Chute

Site Number	Waterbody, River Mile	Site Name	
750	Mississippi River 750.0 RDB	West New	ton Chute
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	1000-2000	Y	Y

Chute opening 500 ft. wide. Use barge or boom to keep spill in main channel. -OR- Eddy on west shore may be useful to deflect oil to ramp for collection. Flow too strong in high water. Protect mussel bed in upper chute.

Site Access

From US Hwy 61 just south of Kellogg, go northeast .25 mi. on Co. Rd. 18, then east and south 4 mi. on Co. Rd. 84, then east on 622nd St. to access.

GOAL: Keep spilled product in main channel to protect habitat in West Newton Chute

Site Number	Waterbody, River Mile	Site Name	
749a	Mississippi River 749.7 RDB	74	9a
Strategy Type*	Boom Length	Land Access	Boat Access
Div.	500-1000	N	N

Exclude spill from slough to keep product in main channel and protect West Newton Chute. Deep water should allow positioning of a barge. -OR- Divert spill into slough and West Newton Chute for collection at strategy 747b. Bald eagles use open water in winter.

Site Access

Slough along Island 42 from main channel to West Newton Chute. Reach by boat from West Newton Chute ramp .4 mi. west at RSP 750.

Latitude: 44.28369 UTM Y: 4903948.972 Longitude: -91.920366 UTM X: 586145.367

GOAL: Close culvert to keep spilled product from spreading into Island 42 waterfowl habitat

Site Number	Waterbody, River Mile	Site Name	
749b	Mississippi River 749.5 RDB	Island 42 North	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	50	N	N

Use water control structures to keep spilled product from entering sensitive Island 42 backwaters. Structures are currently not functional and are closed/blocked (2015).

Site Access

Culvert on upper north shore of Island 42. Reach by boat from West Newton Chute ramp .6 mi. west at strategy 750.

Latitude: 44.283299
UTM Y: 4903910.848
Longitude: -91.915543
UTM X: 586530.745

GOAL: Keep spill within railroad loop from spreading into Mississippi River

Site Number	Waterbody, River Mile	Site Name	
749c	Mississippi River 749.3 LDB	Dairyland Power RR Loop	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	50	Y	N

Wide lower culvert opens to river backwaters. Boom across opening to keep spill within rail loop from spreading to the river. Peregrine falcons and bald eagles often present in area.

Site Access

At southwest part of rail loop. Land access only along railroad (no road to culvert), contact facility for access. Boat access to river side of ballast from Great River Harbor Marina, 2 mi. downstream on LDB.

GOAL: Prevent spilled product from spreading into Island 42 waterfowl habitat

Site Number	Waterbody, River Mile	Site Name	
749d	Mississippi River 748.8	Island 4	12 West
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	100	N	N

Close off channel enterance with rock protection as part of HREP maintainence. Deploy boom across channel. Anchor to trees on either side.

Site Access

Small opening on west side of Island 42, 1000 ft. below main channel. Reach by boat from West Newton Chute ramp .6 mi. west at strategy 750.

Latitude: 44.279863 **Longitude**: -91.917649 **UTM X**: 586367.727

GOAL: Keep spilled product from spreading into important fish spawning habitat

Site Number	Waterbody, River Mile	Site Name	
748a	Mississippi River 748.8 LDB	74	8a
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	400	N	N

During high water conditions, exclude spilled product from backwater area using boom. Key fish overwintering area. Anchor to trees on either side of opening.

Site Access

Opening to backwaters south of Dairyland Power. Reach by boat from Great River Harbor Marina, 1.5 mi. downstream on LDB.

 Latitude:
 44.282988
 Longitude:
 -91.903408

 UTM Y:
 4903889.157
 UTM X:
 587499.439

GOAL: Collect spilled product to protect sensitive downstream fish and raptor habitats

Site Number	Waterbody, River Mile	Site Name	
748b	Mississippi River 748.3 RDB	West Newton Placement Site	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1000	N	N

Boom to contain spilled product from main channel. Anchor to trees on lower side of opening. Collect from barge. Opening less than 100 ft. wide in moderate flow. Contact USACE 651-290-5807 for current status.

Site Access

West Newton placement site. Use as collection site depending on fill. Reach by boat from Great River Harbor Marina, 1 mi. east on LDB, or Bellvidere boat landing, 1.3 mi. downstream on LDB.

GOAL: Use Marina for staging equipment and responding to spill in Pool 5

Site Number	Waterbody, River Mile	Site Name	
747a	Mississippi River 747.9 LDB	Great River H	larbor Marina
Strategy Type*	Boom Length	Land Access	Boat Access
Other	0	Y	Y

Strategy Implementation (Go to aerial view)

Concrete ramp. Open May-October. Good access, moderate staging area. Too far off main channel to collect at site.

Site Access

S2221 WI Hwy 35, Alma, WI. Off-channel in backwater, at marker 747.9 LDB. RR track crossing off highway.

Latitude: 44.272573 Longitude: -91.882588 UTM Y: 4902754.769 UTM X: 589176.497



Great River Harbor Marina parking lot



Great River Harbor Marina ramp

GOAL: Close culverts to keep spilled product from spreading into Weaver Bottoms

Site Number	Waterbody, River Mile	Site Name	
747b	Mississippi River 747.8 RDB	Halfmoor	n Landing
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	100	Υ	Y

Close four culverts under road to keep product from moving from West Newton Chute into Halfmoon Lake and Weaver Bottoms. May serve as collection site if strategy 749a used to divert oil into side channels. Note powerlines near boat ramp.

Site Access

Five mi. southeast of Kellogg, off Co. Rd. 84/West Newton Rd., on Half-Moon Lake. Boat ramp just below causeway.

Latitude: 44.265668
UTM Y: 4901961.093
Longitude: -91.907392
UTM X: 587207.235



Looking north from landing to road and culverts



For safety, note power lines overhead at boat ramp

GOAL: Prevent spilled product from entering Cut and spreading into Weaver Bottoms

Site Number	Waterbody, River Mile	Site Name	
747c	Mississippi River 747.5 RDB	Murph	y's Cut
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	400	Y	N

High priority site. Boom across opening to exclude oil from entering Weaver Bottoms inflow, attach boom to rocks on shore. May need 2nd boom inside slough. Blandings turtle habitat, private residences along shore.

Site Access

Murphy's Cut, 5.5 mi. southeast of Kellogg, off Co. Rd. 84/West Newton Rd. Reach by boat from Great River Harbor Marina, 1.3 mi. north and east on LDB. Access also at channel enterance with permission from West Newton Colony property owners.

Latitude: 44.26222 Longitude: -91.898588 UTM Y: 4901587.47 UTM X: 587915.211

GOAL: Prevent spilled product from spreading into sensitive fish and raptor habitat

Site Number	Waterbody, River Mile	Site Name	
746a	Mississippi River 746.9 RDB	Kruegei	⁻ Slough
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	300	N	Y

Boom across opening to keep spilled product from spreading into Fisher Island backwaters. Private residences along shore at opening. Attach boom to breakwater or dock (private property - Jeff Graner, request MN DNR to contact owner).

Site Access

Fisher Island opening. Reach by boat from Bellvidere boat landing through Roebucks Run or from private boat access in West Newton Colony, .5 mile upstream.

GOAL: Use landing for staging equipment and responding to spill in Pool 5

Site Number	Waterbody, River Mile	Site Name	
746b	Mississippi River 746.8 LDB	Belvidere Slough	
Strategy Type*	Boom Length	Land Access	Boat Access
Other	0	Υ	Y

Strategy Implementation (Go to aerial view)

Good staging and deep access. Can be used as collection site if spilled product enters Belvedere Slough, but flow normally too strong along shore.

Site Access

Co. Rd. OO, Town of Belvidere, WI. Reach via WI Hwy 35.

Latitude: 44.260959
UTM Y: 4901468.402
Longitude: -91.879155
UTM X: 589468.082



Parking lot at Belvedere Slough landing



Belvedere Slough ramp

GOAL: Prevent spilled product from moving from main channel into Belvedere Slough

Site Number	Waterbody, River Mile	Site Name	
746c	Mississippi River 746.5	Roebucks Run	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	800	N	N

Wing dams, use caution off main channel, current below marker much slower. Boom from marker riprap to S shore, wing dam breaks current. Boom from north shore to marker riprap, cascade in sections to push oil beyond marker. High flow entrance into slough.

Site Access

Roebucks Run, connecting main channel to Belvedere Slough. Reach from Belvedere Slough Landing, .6 mi. upstream.



Marker in middle of opening



Upper shore of opening

GOAL: Collect spilled product to prevent spread into Weaver Bottoms

Site Number	Waterbody, River Mile	Site Name	
745a	Mississippi River 745.8 RDB	Fisher Island Placement Site	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1000	N	N

Strategy Implementation (Go to aerial view)

Boom to contain spilled product from main channel. Floating anchor points needed in channel to divert product. Collect from barge. Opening less than 100 ft. wide in moderate flow. Contact USACE 651-290-5807 for current status. Bald eagles in area.

Site Access

Fisher Island placement site. Use as collection site depending on fill. Reach by boat from Belvedere Slough Landing, 1.5 mi. north and east on LDB.

Latitude: 44.243317 Longitude: -91.891352 UTM Y: 4899495.767 UTM X: 588520.984



Looking downstream from upper side of opening



Fisher Island 'bathtub'

GOAL: Keep spilled product in main channel to protect sensitive downstream resources

Site Number	Waterbody, River Mile	Site Name	
745b	Mississippi River 745.7 LDB	Sand	l Run
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	600	N	N

Cascade boom to keep spilled product in main channel. Depending on wind, may use sandy banks on LDB to anchor boom. Otherwise need floating anchor points in main channel to exclude product from backwaters. Bald eagle nests near opening.

Site Access

Sand Run, reach by boat from Belvedere Slough Landing, 1.5 mi. N and E on LDB.



View downstream from upper shore to head of Lost Island



Looking upstream from same point toward Site 745a

GOAL: Keep spilled product in main channel to protect sensitive habitat in Weaver Bottoms

Site Number	Waterbody, River Mile	Site Name	
745c	Mississippi River 745.5 RDB	Weaver Bottoms	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	1000-2000	N	Z

First priority site. Cascade boom from Fisher Island across first opening and from island to keep spill in main channel. Lay secondary boom across lower openings to ensure no oil enters Weaver Bottoms. Wind dependent placement, anchor to trees. Mussel bed and fish overwintering in openings. Bald eagles in area.

Site Access

Multiple openings to Weaver Bottoms, around river mile 745 RDB. Reach by boat from Belvedere Slough Landing, 2 mi. north and east on LDB. Must stop spill before small riprap lined channel on canoe trail that opens to backwater area.

Latitude: 44.240206 UTM Y: 4899148.08 Longitude: -91.893296 UTM X: 588370.371



Looking downstream into first opening

GOAL: Collect product spilled into WMA before it spreads into Weaver Bottoms

Site Number	Waterbody, River Mile	Site Name	
745d	Snake Creek N/A	McCarthy Lake WMA	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	100	Y	N

For spill from railroad or highway into the WMA, collect spilled product from bridge to keep from spreading into Weaver Bottoms. Boom from W side to collect on E. Little space for response vehicles, may need lane closure.

Site Access

From Kellogg, go 5 mi. southeast on US Hwy 61, then north and east on Co. Rd. 84 to bridge over Snake Creek.



Upstream side of Co. Rd. 84 bridge over Snake Creek



Looking southeast from bridge

GOAL: Collect spilled product to protect sensitive downstream resources

Site Number	Waterbody, River Mile	Site Name	
744a	Mississippi River 744.8 LDB	Lost Island Placement Site	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	750-1000	N	N

Strategy Implementation (Go to aerial view)

Boom to contain spilled product from main channel, plenty of shore anchor points present. Several possible collection areas along sand beach. Collect from barge. Full in 2015. Contact USACE 651-290-5807 for current status. Bald eagles in area.

Site Access

Lost Island placement site. Use as collection site depending on fill. Reach by boat from Belvedere Slough Landing, 2.5 mi. north and east on LDB.



Sand pile and slack water at Lost Island, 2015

GOAL: Collect product spilled into Whitewater River before it spreads into Weaver Bottoms

Site Number	Waterbody, River Mile	Site Name	
744b	Weaver Bottoms N/A	Swan Island	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	500-750	N	N

Use embayment to contain spill from Whitewater River. Anchor to island, protect shore with sorbents. Collect from boat or evaluate for in-situ burn. No open water in summer, wild rice beds present. Response depends on water depth and vegetation.

Site Access

Swan Island within Weaver Bottoms. Reach from Weaver Bottoms Landing along US Hwy 61 or Buffalo City, 4 mi. across river on LDB. Whitewater River swift and shallow at mouth, outboard motor impractical here.



By on southwest side of Swan Island, looking east



Looking west to mouth of Whitewater River

GOAL: Collect spilled product in slack water area to protect downstream resources

Site Number	Waterbody, River Mile	Site Name	
742a	Mississippi River 742.7 RDB	74	2a
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	2000	N	N

Partial closure slows flow from Weaver Bottoms. Collect spill from main channel in slack water next to RR tracks. Need hazing plan during waterfowl migration and use. South wind may push oil into Weaver Bottoms. Anchor boom to trees or on rocky shore.

Site Access

At outlet from Weaver Bottoms where main channel meets MN shore, at Minneiska Daybeacon and Rail Mile 324.8, ten miles northwest of Winona. Non-sensitive riprap shore on RDB. Reach by boat from Lower Spring Lake Landing, 3 mi. east on LDB.



View of Weaver Bottoms outlet from Highway 14/61



Looking west from river into Weaver Bottoms

GOAL: Exclude spilled product to protect sensitive migratory waterfowl habitat

Site Number	Waterbody, River Mile	Site Name	
742b	Mississippi River 742.1	Sommerfield Island	
Strategy Type*	Boom Length	Land Boat Access Access	
Exc.	300	N	N

Strategy Implementation (Go to aerial view)

Run exclusion boom around southeast bank to keep spill from entering island backwater. High waterfowl use of islands during fall migration. Sandbars in area, adjust implementation to fit water levels.

Site Access

Across main channel from Minneiska, at junction of US Hwy 61 & Co. Rd. 25. Island opening on downstream side. Reach from Minneiska ramp or from Spring Lake access across river on LDB.



Looking northwest at island backwater opening



Emergent vegetation around island, looking southeast

GOAL: Close opening to keep spilled product out of Spring Lake Closed Area

Site Number	Waterbody, River Mile	Site Name	
742c	Mississippi River 742.0 LDB	74	2c
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	50	N	Z

Strategy Implementation (Go to aerial view)

Boom across opening to keep spilled product from spreading into Spring Lake Closed Area. Anchor booms on either side using riprap, trees, or bushes. High water overtops riprap seasonally. Bald eagle nests in area.

Site Access

Small opening 1000 ft. S of Upper Spring Lake Landing on S River Rd. in Buffalo. Lower Spring Lake Landing, 1 mi. southeast, better for response boats.

Latitude: 44.210415 Longitude: -91.849504 UTM Y: 4895887.104 UTM X: 591913.601



Small (5 ft.) opening in low water

GOAL: Close culverts to prevent spilled product from spreading into Whitman Dam backwaters

Site Number	Waterbody, River Mile	Site Name	
741a	Mississippi River 740.4 LDB	Whitman Dam 1	
Strategy Type*	Boom Length	Land Boat Access Access	
Exc.	100-200	Y	N

Exclude spilled product to keep from spreading through 3 culverts into Whitman Dam Wildlife Area backwaters. Chevron boom if culverts are open (200'). High water rises above gates, floods top of levee. Reverse, slow flow in spring.

Site Access

S River Rd. along upper Whitman Dam. Reach from Buffalo or Cochrane via Co. Rd. OO. Access via boat at Lower Spring Lake Landing.

Latitude: 44.198248 Longitude: -91.831881 UTM Y: 4894555.576 UTM X: 593340.655



One of 3 gates in dam



Good anchors present on both sides of structure

GOAL: Collect spilled product from creek to prevent spread into Whitman Dam backwaters

Site Number	Waterbody, River Mile	Site Name	
741b	unnamed creek N/A	Co. Rd. OO	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	50	Y	N

For spill from railroad tracks 2 mi. upstream, boom or dam culverts and collect spilled product from road on upstream side. Can also close water control structure north of bridge.

Site Access

Creek crossing along Co. Rd. OO, south of Cochrane and Buffalo between Co. Rd. O and Mississippi River.

Latitude: 44.216007 UTM Y: 4896526.252 Longitude: -91.833483 UTM X: 593184.621



Water control structure 50 ft. north of Co. Rd. OO



Looking northwest from water control structure

GOAL: Collect spilled product along Dam 5a to prevent spread downstream into Pool 6

Site Number	Waterbody, River Mile	Site Name	
739a	Mississippi River 739.5 LDB	Whitma	n Dam 2
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1050	Y	N

Four foot culvert has slots for stop blocks, contact Lockmaster 5. Contain oil along dam, 50 ft. boom across culvert opening, collect from vac truck on dam. Wind may push oil to LDB and slack water.

Site Access

Surface culvert on service road along Whitman Dam. Reach from Buffalo or Cochrane via Co. Rd. OO and S River Rd. Contact Lockmaster 5 for guidance. Lower Spring Lake Landing provides boat access.

Latitude: 44.179072 Longitude: -91.826048 UTM Y: 4892432.238 UTM X: 593837.243



River side of culvert



Same location, looking upstream along dam

GOAL: Collect spilled product from Kamrowski Road to protect Whitman Dam backwaters

Site Number	Waterbody, River Mile	Site Name	
739b	Bensel Pond outlet N/A	Whitman Dam WA	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	100	Υ	N

Strategy Implementation (Go to aerial view)

For spill from railroad or highway into Bensel Pond, contain spilled product in slack water and collect from bridge to keep from spreading into Whitman Dam Wildlife Area. Road is prone to spring flooding. Rapid current during normal water levels.

Site Access

Kamrowski Rd. bridge over Bensel Pond outlet. Reach from WI Hwy 35 via Prairie Moon Rd. or from Cochrane via Co. Rd. O.



Looking east from road bridge to railroad bridge



View from road into Whitman Dam Wildlife Area

GOAL: Collect spilled product to prevent spread downstream into Pool 6

Site Number	Waterbody, River Mile	Site Name	
738	Mississippi River 738.2 RDB	Lock & Dam 5	
Strategy Type*	Boom Length	Land Boat Access Access	
C&C	1500	Y	N

Anchor boom to end of guide wall to collect spill in slack pool above lock. Requires upstream deflection to move product to RDB. Key collection site. Farley Haase (USACE), 651-290-5633, can be contacted about water levels and gates. Sturgeon and paddlefish congregate and spawn in dam tailwaters.

Site Access

Lock & Dam 5, 12554 US Hwy 61, Minnesota City, MN 55959. Contact Lockmaster for access, Tim Tabery 507-689-2101; 651-290-5944 (emergency).



Entrance with dam gates in background



Slack water pool in foreground, seen from Highway 61

GOAL: Collect spilled product to protect downstream fish and bird habitats

Site Number	Waterbody, River Mile	Site Name	
737	Mississippi River 737.7 RDB	Bass Camp Resort	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1000	Y	Y

Strategy Implementation (Go to aerial view)

Contain spill from main channel for collection along shore. Boom off boats/small inlet. Boat landing suitable for collection with heavy equipment. Swift currents, could increase depending on Lock & Dam 5.

Site Access

Marina .3 mi. downstream of Lock & Dam 5, along US Hwy 61. Camp charges launch fee.

Latitude: 44.155222 UTM Y: 4889806.618 Longitude: -91.80577 UTM X: 595496.6



Harbor opening, ramp at right



View from river, directly opposite top photo

GOAL: Prevent spilled product from spreading into diverse fish and bird habitats

Site Number	Waterbody, River Mile	Site Name	
736a	Mississippi River 736.9 LDB	Island 53	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	300	N	N

Strategy Implementation (Go to aerial view)

Exclude spill from entering Fountain City Bay inflow channel. Kick boom across opening to keep spill in main channel, shore has anchor points. Soft bottom. Walleye spawning throughout floodplain forest waters.

Site Access

Backwater opening 1.1 mi. downstream of Lock & Dam 5 at Island 53.

Latitude: 44.153879
UTM Y: 4889677.164
Longitude: -91.788896
UTM X: 596848.089



View of opening from river

GOAL: Prevent spilled product from spreading into sensitive fish and waterfowl habitats

Site Number	Waterbody, River Mile	Site Name	
736b	Mississippi River 736.6 RDB	Haddock Slough Openings	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	2000	N	N

Exclude spill from entering Haddock Slough. Multiple openings may require cascade boom on upstream side to keep spill in main channel, shore has many anchor points.

Site Access

Multiple backwater openings from RM 737 to RM 736.4. Boat access from Fountain City, 4 mi. downstream on LDB or Bass Camp Resort, 1.3 mi. upstream on RDB.

Latitude: 44.148965 UTM Y: 4889136.343 Longitude: -91.784631 UTM X: 597197.233



Main backwater opening, looking north



Sand bar and islet below opening

GOAL: Prevent spilled product from spreading into sensitive waterfowl and fish habitats

Site Number	Waterbody, River Mile	Site Name	
736c	Mississippi River 736.2 LDB	Devil's Cut	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	500	N	N

Anchor deflection boom to tip of island to keep spilled product in main channel, shore has many anchor points. Soft bottom. Prevent spill from spreading into Fountain City Bay backwaters. Bald eagle nests in area.

Site Access

Downstream tip of Island 54, 2 mi. below Lock & Dam 5. Boat access from Fountain City, 3.5 mi. downstream on LDB or Bass Camp Resort, 1.8 mi. upstream on RDB.



Looking east into Devil's Cut

GOAL: Prevent spilled product from spreading into sensitive backwater habitat

Site Number	Waterbody, River Mile	Site Name	
735	Mississippi River 735.5 RDB	Straight Slough	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	1000	N	N

Exclude spill from entering Straight Slough. Multiple openings may require cascade boom on upstream side to keep spill in main channel. Bald eagle nests in area.

Site Access

Multiple backwater openings from RM 735 to RM 735.7. Boat access from Fountain City, 2.5 mi. downstream on LDB or Bass Camp Resort, 2.3 mi. upstream on RDB.

Latitude: 44.141167 **Longitude:** -91.766673 **UTM Y:** 4888291.558 **UTM X:** 598646.378



Main channel to left, Island 53 at far right



Middle opening, Island 57 at left

GOAL: Collect spill at lower end of Service Base to protect sensitive downstream resources

Site Number	Waterbody, River Mile	Site Name	
733a	Mississippi River 733.3 LDB	USACE Fountain City Service Base	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1000	Y	N

Strategy Implementation (Go to aerial view)

Deep water along dock and RR tracks. Divert spill from main channel to LDB, lower end of base can be used for collection. Use trees on island for anchor points.

Site Access

USACE Fountain City Service Base along WI Hwy 35. Service base has equipment, boats, barges.

Latitude: 44.134666
UTM Y: 4887619.738
Longitude: -91.725503
UTM X: 601950.53



USACE Fountain City Service Base

GOAL: Prevent spilled product from spreading into sensitive fish and waterfowl habitat

Site Number	Waterbody, River Mile	Site Name	
733b	Mississippi River 733.1 RDB	733b	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	500	N	N

Smaller, upstream opening requires 100' boom, attach to trees, rocks in center of opening. Larger opening requires 150' boom. Attach to trees, wing dams on either side. Bald eagle nests in area.

Site Access

Two backwater openings across from Fountain City, WI. Reach from upper Fountain City landing directly across main channel.

Latitude: 44.129363
UTM Y: 4887032.347
Longitude: -91.724192
UTM X: 602064.527



View of opening from main channel



View across side channel opening, looking downstream

GOAL: Collect spilled product to protect Polander Lake Closed Area downstream

Site Number	Waterbody, River Mile	Site Name	
732	Mississippi River 732.1 LDB	Founta	ain City
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1000	Υ	Y

Strategy Implementation (Go to aerial view)

Contain spilled product along riprap shore of landing site, collect with vac truck. Good access and staging. Anchor boom from forested point out to red buoy. Good staging and access on site.

Site Access

End of Mill St. in Fountain City. Reach via WI Hwy 35.

Latitude: 44.121526 Longitude: -91.70863 UTM Y: 4886181.334 UTM X: 603323.178



Fountain City ramp and dock



Boat access seen from main channel

GOAL: Prevent spilled product from passing over spillway into Straight Slough

Site Number	Waterbody, River Mile	Site Name	
728a	Mississippi River 728.5 RDB	Dam 5a Spillway	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	100	Y	N

Strategy Implementation (Go to aerial view)

Exclude from Straight Slough spillway to protect downstream resources. Two 9 ft. culvert notches exist at spillway at very edges of slough. Block notches if water is not overtopping spillway. Mussel bed below spillway.

Site Access

Dam 5a spillway. Reach via Prairie Island Rd. between Winona and Minnesota City. Reach by boat from McNally Landing (.3 mi. upstream on RDB) or Prairie Island Spillway Boat Ramp (1/16 mi. downstream on RDB).

Latitude: 44.080177
UTM Y: 4881620.586
Longitude: -91.683424
UTM X: 605413.395



Parking lot at Prairie Island boat ramp



View of spillway notch from Prairie Island boat ramp

GOAL: Keep spilled product from spreading into fish overwintering and spawning areas

Site Number	Waterbody, River Mile	Site Name	
728b	Mississippi River 728.0 RDB	Blackbird Slough	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	500	N	N

Strategy Implementation (Go to aerial view)

Anchor boom to upstream side of Blackbird Slough to keep spill in main channel. Fish overwintering area.

Site Access

Entrance to Blackbird Slough, half mile below Lock & Dam 5a. Reach by boat from Winona Municipal Harbor, 2 mi. downstream.

Latitude: 44.081214 Longitude: -91.666009 UTM Y: 4881758.24 UTM X: 606805.87



Tip of Island 68 (at left) with Lock & Dam 5a beyond



Tip of Island 68 (at right) and exposed flats at slough opening

GOAL: Collect spilled product to prevent spread downstream into Pool 6

Site Number	Waterbody, River Mile	Site Name	
728c	Mississippi River 728.5	Lock and Dam 5a	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1500	Y	N

Divert product from spillway and collect above Lock & Dam 5a. Close water control structure in low-flow; boom needed in high flow, anchor to fence or riprap.

Site Access

Off WI Hwy 35, 4 miles S of Fountain City, Wisconsin. Access lock and offices by walking across the dam.

Latitude: 44.089522 UTM Y: 4882679.314 Longitude: -91.667332 UTM X: 606684.971



Dam 5a, with lock chambers in background



Gated vehicle entrance off Highway 35

GOAL: Collect spilled product to protect sensitive downstream fish and bird habitats

Site Number	Waterbody, River Mile	Site Name	
728d	Mississippi River 728.5 LDB	Breezy Point Marina	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	500	Y	Y

Strategy Implementation (Go to aerial view)

Boom in J-hook. Great access for trucks and tankers. Private road for summer homes extends downstream half mile along slough for collection and removal.

Site Access

1000 ft. downstream from Lock & Dam 5a on LDB, access from WI Hwy 35 & Breezy Point Ln. Collect spilled product at landing above marina and homes. Powerlines overhead at ramp.

Latitude: 44.086929 UTM Y: 4882395.6

Longitude: -91.664025 **UTM X:** 606954.439



Looking downstream at ramp



Slack water on north side of ramp; Dam 5a in background

GOAL: Block culvert to keep spilled product from spreading into or out of Hunters Lake

Site Number	Waterbody, River Mile	Site Name	
727	Mississippi River 727.2 RDB	Prairie Island Rd.	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	50	Y	N

Water flows into backwater during high river stage, out of backwater in low river stage. Block culvert if needed to prevent spilled material from passing through culvert. Locked gate to access stop gate. Fish spawning and overwintering areas.

Site Access

Culvert under Prairie Island Dike Rd., 500 ft. N of Riverview Dr.



East end (river side) of culvert



Gate and water control on west side of levee

GOAL: Collect spilled product above marina to protect sensitive downstream resources

Site Number	Waterbody, River Mile	Site Name	
725	Mississippi River 725.0 RDB	Winona Riverfront	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	550	Υ	Υ

Contain spilled product in slower flow area below where levee juts into river. Collect from levee with vac truck and skimmers. J-hook 250 ft. boom, cascade three 100 ft. sections to shore.

Site Access

Slow water area just above Winona Marina at end of Laird St. Small ramp at marina, moderate staging by substation next door.



Winona Marina boat ramp



Slow flow area with Bay City Milling in background

GOAL: Collect spilled product at boat ramp to protect sensitive downstream resources

Site Number	Waterbody, River Mile	Site Name	
724	Mississippi River 724.5 RDB	St. Charles Street Boat Ramp	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1000	Y	Y

Strategy Implementation (Go to aerial view)

Deflect spilled product into containment area on downstream side of boat landing. Note outfall 200 ft. downstream. Collect with vac truck at ramp or along riprap shore.

Site Access

660 E Front St., Winona, at Lions Park.

Latitude: 44.051101 Longitude: -91.617372 UTM Y: 4878477.808 UTM X: 610756.149



View of point from dock



Slack water area, opposite side of dock

GOAL: Block culvert to prevent spread of spilled product into main pool

Site Number	Waterbody, River Mile	Site Name	
723	Trempealeau NWR N/A	Trempealeau Oxbow Dik Culvert	
Strategy Type*	Boom Length	Land Boat Access Access	
Exc.	50	Υ	N

Strategy Implementation (Go to aerial view)

Slow flow, sub-surface pond levelors present under culvert. Dam culvert and encircle with boom to keep spill into west pool from spreading into rest of Refuge. Cooperate with BNSF to ensure responder safety.

Site Access

3 ft. culvert under RR tracks at end of Oxbow Dike road. Reach via WI Hwy 35 and River Bottoms Rd. Contact Refuge to unlock gated access. No staging, single dirt track dike with small turnaround for pickup or smaller vehicle.

Latitude: 44.05496 UTM Y: 4878954.104 Longitude: -91.582327 UTM X: 613556.115



View of west end of culvert from Oxbow Dike road.

GOAL: Collect spilled product at creek mouth to protect sensitive downstream resources

Site Number	Waterbody, River Mile	Site Name	
722	Mississippi River 722.0 RDB	Pleasant Valley Creek	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1000	Y	Z

Contain spilled product in slack water behind railroad ballast, collect with vac truck from turnoff along highway. Minimal staging on site. Cooperate with CP to ensure responder safety.

Site Access

Small embayment behind railroad at mouth of Pleasant Valley Creek, 1.5 mi. east of Winona along US Hwy 14/61, at CP Rail Mile 305.

Latitude: 44.025479
UTM Y: 4875681.163
Longitude: -91.581227
UTM X: 613700.582



View of railroad bridge from river



Small turnaround off Highway 14/61

GOAL: Block culverts to keep spilled product from reaching pumps and lower pool or river

Site Number	Waterbody, River Mile	Site Name	
719a	Trempealeau NWR N/A	Trempealeau Kieps Island Pumphouse	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	50	Y	Ν

Boom across culvert openings to keep spill into main pool from spreading into lower pool. Backflow can occur, ask Refuge staff for seasonal status. Pump operated by Refuge staff.

Site Access

Reach via Kieps Island Road, contact Refuge to unlock gate at canoe launch and pumphouse. Also provides access to RR tracks on foot. T-culvert passes from main pool to lower pool and through 80hp pumps to Mississippi River.

Latitude: 44.027121 Longitude: -91.52664 UTM Y: 4875940.283 UTM X: 618071.949



Pump behind pumphouse



River end of culvert

GOAL: Collect product spilled upstream to keep from spreading to Mississippi River

Site Number	Waterbody, River Mile	Site Name	
719b	Trempealeau NWR N/A	Trempealeau River Bridge	
Strategy Type*	Boom Length	Land Boat Access Access	
C&C	300	Y	Y

Boom from RDB above bridge to divert product spilled upstream to small earthen ramp on LDB below bridge. Anchor to trees on shore. Dam culvert to keep spill from spreading through wetlands. Minimal staging on site.

Site Access

Refuge access road bridge over Trempealeau River. Access from WI Hwy 35 via W Prairie Rd. Also small culvert at bottom of slope from entrance parking lot.

Latitude: 44.051105 UTM Y: 4878615.405 UTM X: 618649.443



Bridge viewed from small boat access



Opposite view from bridge to access

GOAL: Block culverts to keep spill into lower pool from spreading into Trempealeau River

Site Number	Waterbody, River Mile	Site Name	
718a	Trempealeau NWR N/A	Trempealeau Outlet	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	100	Υ	N

Strategy Implementation (Go to aerial view)

Boom across water control structure openings to keep spill into lower pool from spreading into rivers. Four gates can be closed with drill. Structure has electric weir to block fish passage. Backflow can occur, ask Refuge staff for seasonal status.

Site Access

Reach via Dike Road, contact Refuge to unlock gate. Culverts open to Trempealeau River.

Latitude: 44.027056 UTM Y: 4875969.196 Longitude: -91.501618 UTM X: 620077.34



Dike road water control structure

GOAL: Collect product spilled into side channel to prevent spread into main channel

Site Number	Waterbody, River Mile	Site Name	
718b	Mississippi River 718 RDB	Forest River Campground	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1000	Y	Y

For spill along MN shore, collect and recover at campground boat landing. Boom from island to deflect, anchor at landing to draw product to shore. Spill in main channel prevented by island and wing dams from moving to site.

Site Access

Three miles east of Winona along US Hwy 61.

Latitude: 44.013311 **UTM Y:** 4874436

Longitude: -91.506185

UTM X: 619739



Campground boat access and small staging area



Looking WNW from dock into side channel

GOAL: Prevent spilled product from spreading into sensitive fish habitat and wetlands

Site Number	Waterbody, River Mile	Site Name	
717a	Mississippi River 717.5 RDB	717a	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	500	Y	N

Cascade boom to keep spilled product in main channel and protect important fish spawning and overwintering habitat and commercial fishery.

Site Access

Wetlands just above mouth of Cedar Creek, across river from Trempealeau Mountain. Six mi. downstream of Winona, at CP Rail Mile 299.8. Access from Sunset Bay Marina, 3.3 mi. downstream on LDB.

Latitude: 44.01041 Longitude: -91.497825 UTM Y: 4874126 UTM X: 620415



Emergent vegetation at small upper opening



Wider backwater opening below small, unnamed island

GOAL: Close backwater openings to protect island waterfowl and fish habitats

Site Number	Waterbody, River Mile	Site Name	
717b	Mississippi River 717.2	Johnson Island 1	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	200	N	N

Boom across openings to protect important habitat within the island complex. Anchor to trees on both sides. Bald eagle nest in area.

Site Access

Double opening on island just across side channel from mouth of Trempealeau River. Access from Sunset Bay Marina, 3 mi. downstream on LDB.

Latitude: 44.014712 Longitude: -91.48753 UTM Y: 4874618.848 UTM X: 621231.509



Large upper opening, 500 ft. above site 716a



Looking upstream, Trempealeau Mountain at right

GOAL: Close backwater openings to protect island waterfowl and fish habitats

Site Number	Waterbody, River Mile	Site Name	
716a	Mississippi River 717	Johnson Island 2	
Strategy Type*	Boom Length	Land Access	Boat Access
Exc.	50	N	N

Strategy Implementation (Go to aerial view)

Boom across opening to protect important habitat within the island complex. Anchor to trees on both sides.

Site Access

Small opening on island south of mouth of the Trempealeau River. Access from Sunset Bay Marina, 3 mi. downstream on LDB.

Latitude: 44.013932 Longitude: -91.483934 UTM Y: 4874537.517 UTM X: 621521.339



Small lower opening, 500 ft. downstream of site 717b

GOAL: Collect spill to protect fish habitat and mussel beds below spillway in Pool 7

Site Number	Waterbody, River Mile	Site Name	
714b	Mississippi River 714.2 RDB	Dam 6 Spillway	
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	1500	Y	N

Protect mussel beds below dam. Low flow may allow use of boom to keep spilled product from passing over spillway. Depending on product, boom below the spillway may be used to collect at private sites. Bald eagle nests in area.

Site Access

Downstream end of Pool 6 along Minnesota bank. CP Rail gated access from US Hwy 61. Private access below spillway.

Latitude: 43.993214 Longitude: -91.44521 UTM Y: 4872294.22 UTM X: 624668.674



View across railroad tracks toward wall at spillway



West end of spillway, note notch near wall

GOAL: Collect spilled product above Lock and Dam 6 to prevent spread into Pool 7

Site Number	Waterbody, River Mile	Site Name	
714c	Mississippi River 714.2 LDB	Lock and	d Dam 6
Strategy Type*	Boom Length	Land Access	Boat Access
C&C	2000	Y	Υ

Strategy Implementation (Go to aerial view)

Divert product from spillway and collect above L&D 6. Leaking vessel can be held in lock. Vac truck can access either site easily. Excellent staging area. Avoid strategies that close nearby marina.

Site Access

Turn south from WI Hwy 35 on Fremont St., cross railroad tracks and bear right on Lock and Dam Rd. Request access at security gate. Boat access available at adjacent marina.

Latitude: 44.00017 UTM Y: 4873078.62 Longitude: -91.437404 UTM X: 625279.916



Tip of lock guide wall, marina to left, lock & dam to right



Trempealeau Marina ramp