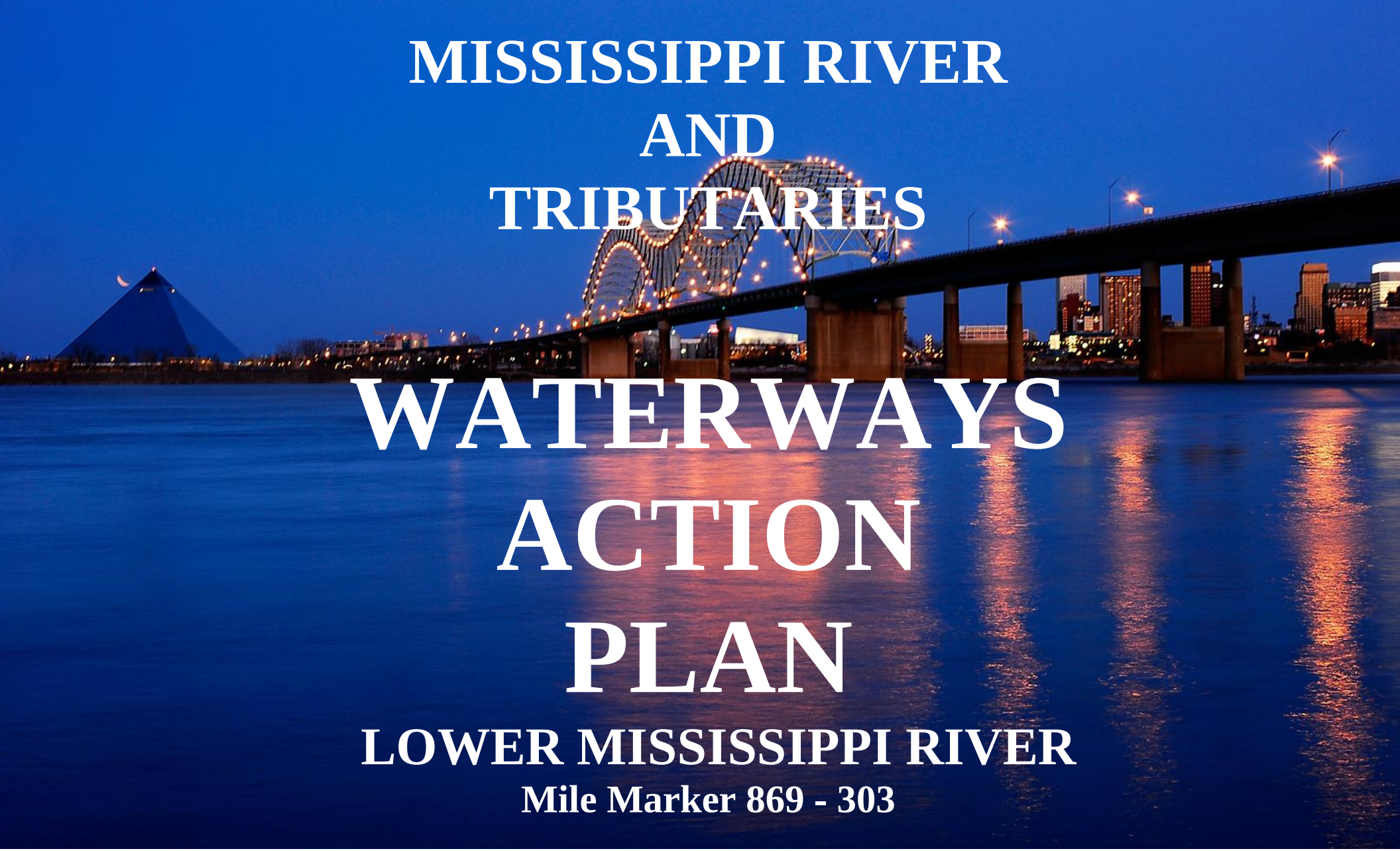


MISSISSIPPI RIVER AND TRIBUTARIES

WATERWAYS ACTION PLAN

LOWER MISSISSIPPI RIVER

Mile Marker 869 - 303

ANNEX 2016

US Army Corps of Engineers

USCG SECTOR LOWER MISSISSIPPI RIVER

LOWER MISSISSIPPI RIVER ANNEX

Executive Summary

This annex provides general information and reference gauges to be used as a guideline for a high and low water events on the Lower Mississippi River between river miles marker 869 to 303. It is the responsibility of the United States Coast Guard (USCG), Army Corps of Engineers (USACE), and River Industry representatives to meet and discuss river conditions and possible restrictions on the Lower Mississippi River. As well as, ***annually*** review the actions specified in the plan. The Lower Mississippi River is broken down into 3 zones. Each zone is delineated by river mile and is characterized by river stage, with three action phases (e.g., *Watch, Action, and Recovery Phases*) described in the plan. A combination of reference gauges, historical data and known impact areas were used to derive these zones.

The Waterways Action Plan (WAP) is a living document that should be frequently updated. This plan establishes a framework for all parties to use when taking proactive or reactive steps to manage and respond to high water, high velocity, and low water conditions. The overall goal of this plan is to ensure safety of life and navigation, protection of infrastructure and property, and to prevent marine causalities. This Sector Lower Mississippi River WAP supports the Coast Guard District Eight WAP originally promulgated in 2007, which gives overall context, history, and intent for WAPs throughout the district.

The WAP also supports the Department of Transportation in its role in Emergency Support Function (ESF) #1 of the National Response Plan to coordinate the Emergency Management of the Transportation System (EMTS) in the prevention/mitigation, preparedness, recovery, infrastructure restoration, safety, and security of the Nation, and its transportation system. EMTS is intended to report damage to the transportation infrastructure as a result of an incident, coordinate alternate transportation services, coordinate the restoration and recovery of the transportation infrastructure, and coordinating and supporting prevention, preparedness, and mitigation among transportation stakeholders at the state and local levels.

Conference calls between USCG, USACE, Lower Mississippi River Committee (LOMRC) and industry stakeholders have proven critical throughout the years of response to river emergencies, and they remain useful tools to successfully manage river emergencies.

USACE, USCG, and Industry Leaders from Missouri, Oklahoma, Tennessee, Arkansas, Louisiana, Mississippi, and Texas worked jointly to update the 2016 Sector Lower Mississippi River Waterways Action Plan.

Geographic Description

HYDROLOGICAL AND IMPACT CONCERNS

The Mississippi River and its tributaries form a complex waterway system spread out over millions of square miles. In order to predict changes in conditions in this system, waterway managers must constantly monitor a number of hydrological and meteorological factors. These include water flow, soil moisture, snow cover, precipitation, temperature, weather patterns and most importantly, geography. Effective waterway managers must constantly monitor these factors and forecast river conditions in order to ensure they are adequately prepared to deal with a regional transportation emergency. The area most significantly affected by the factors mentioned above is the Lower Mississippi River (LMR). This portion of the river, from Caruthersville, MO to Natchez, MS consists of free flow river with no lock and dams. The USACE is authorized to provide a channel depth of 9 feet deep and 300 feet wide for commercial navigation. Major tributaries to the LMR, including the White River, McClellan-Kerr Arkansas River Navigation System (MKARNS), Red River and the Ouachita/Black River have impoundments that create reservoirs. Flows from these reservoirs impact the water levels of the LMR. Numerous variables affect how much water is in the system at any given time. Listed below are some of the key variables waterways managers must consider:

LOWER MISSISSIPPI RIVER LOW WATER

Waterway management concerns occur during low water on the LMR. Groundings during low water conditions delay commercial traffic, cause substantial damage to the navigation channel and can necessitate dredging.

LOWER MISSISSIPPI RIVER HIGH WATER

Under flood conditions, controlling factors are gauge readings at specific locations. These are general elevations at which water levels may impact levee conditions, damage homes or create unsafe navigation conditions, as described in the "narrative" section of each zone. Well before water levels near or reach these levels, the Coast Guard in conjunction with U.S. Army Corps of Engineers (USACE), and industry shall implement the "Watch Phase" of the plan (which vary for each zone) and establish communications to discuss the current and forecasted conditions. These discussions should include an analysis of data, weather history and forecast, impact upon river environment, and commercial traffic requirements. Furthermore, general considerations such as levee conditions, wake damage, bridge clearances and lock operating restrictions/closures shall be discussed.

Acronym List for Lower Mississippi River Annex

ATON = AIDS TO NAVIGATION
AWO = AMERICAN WATERWAYS OPERATORS ASSOCIATION
AWS = ALERT WARNING SYSTEM
BNM = BROADCAST NOTICE TO MARINERS
CFS = CUBIC FEET/SECOND
EMTS = EMERGENCY MANAGEMENT OF THE TRANSPORTATION SYSTEM
EOC = EMERGENCY OPERATION CENTER
ESF = EMERGENCY SUPPORT FUNCTION
HLSEM = HOMELAND SECURITY AND EMERGENCY MANAGEMENT
ICP = INCIDENT COMMAND POST
JIC = JOINT INFORMATION CENTER
L&D = LOCK AND DAM
LMR = LOWER MISSISSIPPI RIVER
LOMRC = LOWER MISSISSIPPI RIVER COMMITTEE
MM = MILE MARKER
MSIB = MARINE SAFETY INFORMATION BROADCAST
MSL = MEAN SEA LEVEL
NGVD = NATIONAL GEODETIC VERTICAL DATUM
NOAA = NATIONAL OCEANIC ATMOSPHERIC ADMINISTRATION
NWS = NATIONAL WEATHER SERVICE
RIAC = RIVER INDUSTRY ACTION COMMITTEE
RIBB = RIVER INFORMATION BULLETIN BOARD
RIETF = RIVER INDUSTRY EXECUTIVE TASK FORCE
RM = RIVER MILE
SEC = SECTOR
SEMA = STATE EMERGENCY MANAGEMENT
UMIB = URGENT MARINE INFORMATION BROADCAST
USACE = UNITED STATES ARMY CORPS OF ENGINEERS
USCG = UNITED STATES COAST GUARD
VIC = VICKSBURG INFORMATION CENTER
WAP = WATERWAYS ACTION PLAN

Parties and Roles

U.S. Coast Guard (USCG)

The USCG Sector Commander Lower Mississippi River, with its principal office in Memphis, Tennessee is responsible for safe navigation, security, and law enforcement along the Lower Mississippi River. The USCG Sector Lower Mississippi River Prevention Department, using the cutters KANKAKEE, KANAWHA, PATOKA, KICKAPOO, GREENBRIER, MUSKINGUM and Aids to Navigation COLFAX are responsible for maintaining and setting buoys and shore aids along the Lower Mississippi River and tributaries. The USCG LMR Prevention Department focuses on licensed mariners issues, permits, casualty investigations, and security verifications. The USCG Sector Lower Mississippi River Response Department uses small boats, other law enforcement partnerships, and first responders to patrol and respond to emergencies or incidents on the Lower Mississippi River.

U.S. Army Corps of Engineers (USACE)

The USACE maintains Lock and Dam facilities on the Arkansas River, Red River and along the Upper Mississippi River and Ohio Valley region, under the supervision of their local District Offices. Through management of these facilities, the USACE maintains pool levels that are sufficient to accommodate commercial traffic on the river. The USACE maintains a nine-foot navigation channel in open river conditions with river channel management supplemented by dredging, dike work and river revetment operations. During high water conditions, Emergency Operations coordinate flood fight activities.

U.S. Coast Guard District Eight Bridge Branch (dwb)

The Bridge Administration Program has a mandated responsibility to protect the public's right of navigation. Activities include determining location of navigation channel piers and issuing bridge permits. They establish, revise and monitor drawbridge regulations and prescribe bridge lighting. Also, Truman-Hobbs studies of unreasonable obstructive bridges are conducted on a nationwide basis.

Lower Mississippi River Committee (LOMRC)

The Lower Mississippi River Committee (LOMRC) is an association of companies and organizations who are stakeholders in the commercial industry on the inland rivers. As the name suggests, they act in an advisory capacity on a wide range of issues affecting the activities of the industry on the rivers. They provide an industry perspective to the USCG and the USACE on matters such as high and low water, shoaling, marine accidents, etc.

Fleeting Facility Managers

Fleeting facility managers have a direct commercial interest in navigation conditions on the LMR and any actions taken by the USCG or USACE in response to hazardous conditions that develop on the river. They play a valuable role in providing feedback to other parties on both river conditions and impact of proposed actions of the USCG and USACE.

Designated Waterfront Facilities

Like the fleeting facility managers, the commercial interests of the designated waterfront facilities are directly impacted by navigation conditions on the LMR and any actions taken by the Coast Guard or Corps of Engineers in response to hazardous conditions that develop on the river. They play a valuable role in providing feedback to other parties on both river conditions and impact of proposed actions of the USCG and USACE.

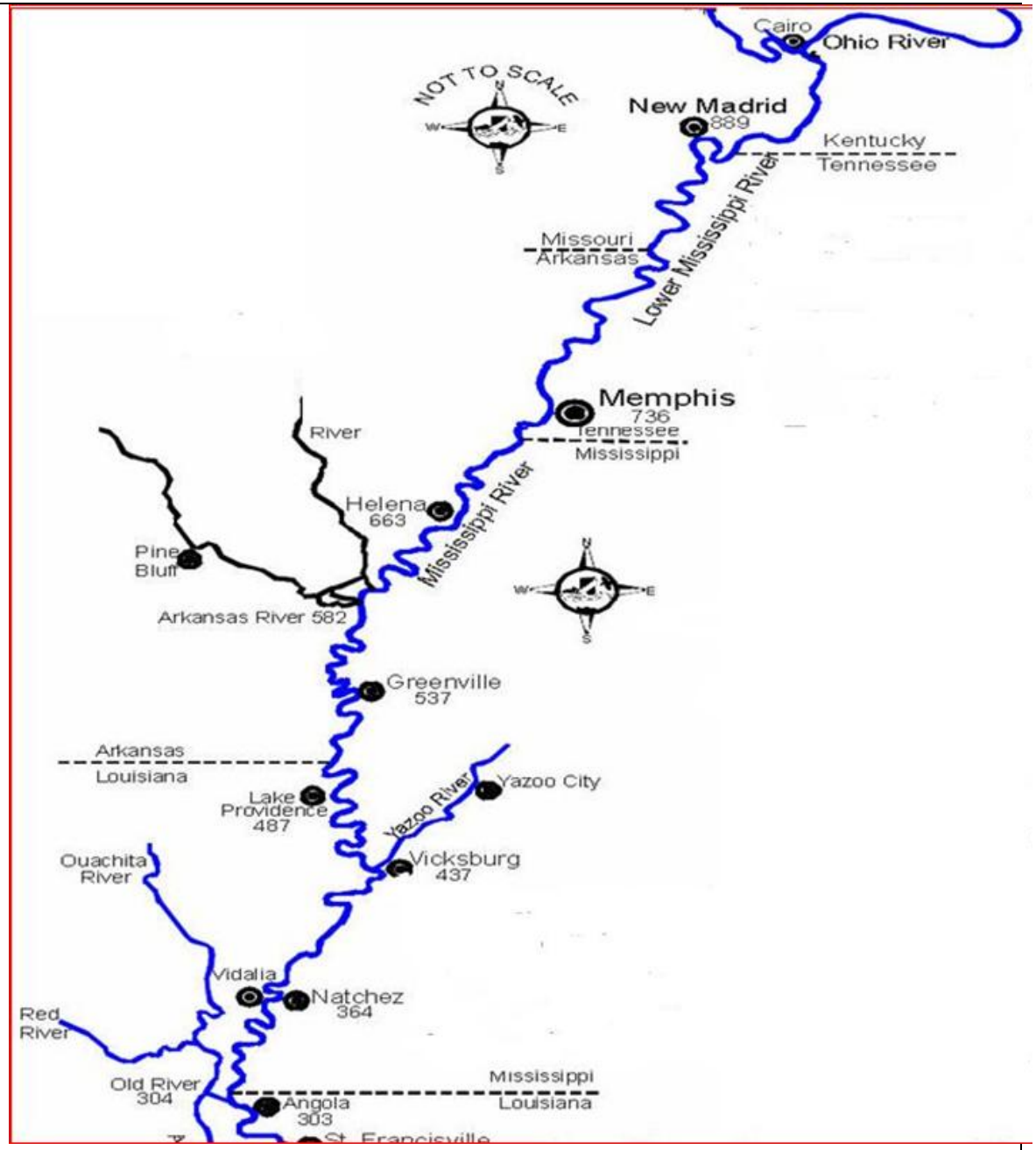
State Emergency Managers

Hazardous conditions on the LMR frequently require state emergency managers to coordinate with Federal, State, and Local government officials provide support during extreme environmental emergencies. Extreme high water events and flooding conditions require local community response and a vigilant communication plan between federal/state/local partners.

Section 1 – Geographic Description

This annex addresses Mile 303 to Mile 869 of the Lower Mississippi River and includes the Lower Old River and the Old River Control Complex. The following bridges are also contained within the geographic area for this annex:

- Caruthersville Bridge/I-155
  Caruthersville, MO (MM 838.9)
- Hernando De Soto Bridge/ I-40
  Memphis, TN (MM 740)
- Harahan Bridge/ Railroad
  Memphis, TN (MM738)
- I-55 Memphis-Arkansas Memorial Bridge
  Memphis, TN (MM738)
- US-49 Helena Bridge
  Helena, AR (MM 661.8)
- New Greenville Bridge/US-82 Project
- Old Vicksburg Bridge/Railroad Crossing
  Vicksburg, MS (MM 437.8)
- Vicksburg Bridge/I-20
  Vicksburg, MS (MM 437.7)
- Natchez-Vidalia Bridge/US-65 & US-84
  Natchez, MS (MM 363.3)



Section 2 – Parties and Roles

USCG SECTOR LOWER MISSISSIPPI RIVER (SEC LMR)			
POSITION	**DUTIES & RESPONSIBILITIES**	**Current Incumbent**	**Reports to:**
Officer In Charge, USCGC GREENBRIER	Responsible for daily ATON services for LMR 363 to 155, Red River 0.0 to 43.5, and Atchafalaya River 0.0 to 40.6	BMCM Ellis	**ATON OFFICER**
Officer In Charge, USCGC KICKAPOO	Responsible for daily ATON services for LMR 480 to 363	BMCM Eagleton	
Officer In Charge, USCGC PATOKA	Responsible for daily ATON services for LMR 598 to 480	BMCM Geiman	
Officer In Charge, USCGC KANAWHA	Responsible for daily ATON services for LMR 683 to 598, Arkansas River 10.3 to 71.2, White River 0.0 to 10.3	BMCS Holston	
Commanding Officer, USCGC KANKAKEE	Responsible for daily ATON services for LMR 813.6 to 683, McKellar Lake 0.0 to 7.2	CWO3 Wagner	
Officer In Charge, USCGC CHENA	Responsible for daily ATON services for LMR 953.8 to 813.6	BMCM Harlacher	*SECTOR OHIO VALLEY ASSET
SECTOR STAFF (MEMPHIS, TN)			
Aids to Navigation Officer (ATON)	Coordinate the short/long term activity of Cutter Fleet, Manage ATON inventory	CWO Hendrix	Chief, Waterways Management
Chief, Waterways Management	Coordinate the short/long term activity of Cutter Fleet, Manage Safety/Security Zones and Marine Permits.	LT Thomas	Chief, Prevention Department
Chief, Prevention Department	Coordinate Commercial Vessel Safety Program including Waterways Management, ATON, Marine Inspection and Investigation.	LCDR Marlin	Deputy Sector Commander
Deputy Sector Commander	Second in Command Alternate Captain of the Port, Alternate Federal Maritime Security Coordinator Alternate Federal On Scene Coordinator, Acting Officer in Charge and Marine Inspection.	LCDR Adams	Sector Commander
Sector Commander	Commanding Officer Captain of the Port, Federal Maritime Security Coordinator Federal On Scene Coordinator, Officer in Charge and Marine Inspection.	CAPT Wendt	Chief of Staff
EIGHTH COAST GUARD DISTRICT STAFF (NEW ORLEANS, LA)			
Director, Western Rivers	Coordinates all CG Activity on Western Rivers	CAPT Dittman	Chief of Staff
Chief of Staff	Second in Command	CAPT Bouboulis	District Commander

US ARMY CORPS OF ENGINEERS-Memphis District			
POSITION	**DUTIES & RESPONSIBILITIES**	**Current Incumbent**	**Reports to:**
Chief of Navigation	Coordinate the short/long term activity of USACE assets. Primary liaison with USCG.	Mr. Donald Mayer	Mr. Timothy Marshall
USACE MEMPHIS DISTRICT STAFF			
Master, George C. Grugett	USACE channel condition patrols. Assist with ATON, per MOU with USCG. Contact pilot, primary liaison with USCG.	Mr. Harold Lawrence	Mr. Donald Mayer
Deputy Commander	Deputy District Engineer for Memphis District	LTC Rhett Blackmon	COL Jeffery Anderson
Commander	District Engineer for Memphis District responsible for flood risk management, navigation, environmental stewardship, emergency operations, other authorized civil works, and work for others along 610 miles of the Mississippi and White Rivers, encompassing a 25,000 square mile area in six states: Illinois, Missouri, Arkansas, Kentucky, Tennessee, and Mississippi.	COL Jeffery Anderson	MG Michael Wehr
US ARMY CORPS OF ENGINEERS-Mississippi Valley Division			
Commander	Commander USACE Activities within Mississippi Valley Division including St. Paul, Rock Island, St. Louis, Memphis, Vicksburg, and New Orleans.	Major General Michael Wehr	LTG Bostick

US ARMY CORPS OF ENGINEERS-Vicksburg District			
POSITION	**DUTIES & RESPONSIBILITIES**	**Current Incumbent**	**Reports to:**
Contact Pilot	Master for on water operations involving USACE assets. Primary liaison with USCG.	Captain Michael Jensen	Mrs. Viviana Berrios Williamson
USACE VICKSBURG DISTRICT STAFF			
Chief of Navigation	Navigation Engineer for Vicksburg District	Mr. Joel Brown	Mr. Thomas Hengst
Deputy Commander	Deputy District Engineer for Vicksburg District	Major Jeffrey Shultz	COL Cross
Commander	District Engineer for Vicksburg District responsible for flood risk management, navigation, environmental stewardship, emergency operations, other authorized civil works for seven major river basins, including 278 miles of the Mississippi River's main stem, in Arkansas, Louisiana, and Mississippi and about 800 miles of commercially navigable streams and rivers including the Ouachita-Black system, the Pearl, the Red, and the Yazoo rivers.	COL John Cross	MG Michael Wehr
US ARMY CORPS OF ENGINEERS-Mississippi Valley Division			
Commander	Commander USACE Activities within Mississippi Valley Division including St. Paul, Rock Island, St. Louis, Memphis, Vicksburg and New Orleans	Major General Michael Wehr	LTG Bostick

Section 3 – Communications

Members will include representatives from: the Coast Guard (CG), Army Corps of Engineers (USACE), and Industry. All individuals within the Communications Matrix shall participate in the conference call or provide a replacement that has the decision making authority to act on their behalf. Initial notification for conference call to interested parties will be through the use of LOMRC Chairman's email distribution list. Unless otherwise stated, the Conference Phone Number will be provided by the LOMRC Chairman. All members listed in the Communications Matrix will be added to SLMR's Alert Warning System (AWS) notification list for the Waterways Action Plan. To add or remove contact information from the LOMRC email distribution list, AWS, or WAP system, contact SLMRs Waterways Management Division. This matrix will be updated/verified semi-annually by the Waterways Management Division.

The format of the Waterways Action Plan/Lower Mississippi River Conference is as follows, coordinated by the LOMRC Chairman:

Opening: LOMRC Chairman/Call to Order.

By Agency:

1. National Weather Service
    a. Current Rainfall predictions
    b. Short and Long term forecast
2. USACE (by lead District Representative): General Overview of River Conditions.
    a. Current Situation.
    b. River Forecasts.
3. CG (by Sector LMR):
    a. Assessment,
    b. Actions Taken (e.g., Broadcast Notice to Mariners (BNMs)) including current status of Buoy Tenders/Areas worked
    c. Anticipated Future Actions Based on River Forecasts.
4. Industry (by lead Committee Representative):
    a. Assessment,
    b. Actions Taken
    c. Future Actions Based on River Forecasts.
5. General Discussion/Future Plans and Recommendations for Implementation

Closing: Next Meeting: Discussion of the Focus and Participants in Future Meetings (Based on Projected River Conditions).

INTERNET SITE PURPOSE	ADDRESS
USACE Mississippi Valley Division- Navigation Connection	**http://www2.mvr.usace.army.mil/nic2/default.cfm**
USACE Memphis District	http://www.mvm.usace.army.mil/
USACE Vicksburg District	http://www.mvk.usace.army.mil/
CG Sector Lower Mississippi River Homeport	**http://homeport.uscg.mil/SLMR** **Select Port Directory and Sector Lower Mississippi River.** **http://www.uscg.mil/d8/sector/lwrmsrvr**
CG MSU Baton Rouge Homeport	
River Gages.com	http://www.rivergages.com
River Industry Bulletin Board	http://www.ribb.com/index.php

CRITICAL AREA DESCRIPTION	*TIMING*	PHASE	ACTION
Grounding inside navigable channel resulting in impact to safe navigation (Sunken barges Unreported shoaling, I=time incident occurred	I	Initial Actions	▪ Responsible Party completes mandatory notifications to USCG. ▪ Sector Lower Mississippi River (SLMR) Command Center notifies principals. ▪ Issue advisory for hazard to navigation. All vessels within 2 hours of casualty site required to report position and Estimated Time of Arrival to site to SLMR Command Center for additional traffic information. ▪ SLMR Response Team deployed.
	I+4hours	Action	▪ SLMR Chief, Waterways Management initiates principal conference call to assess status of hazard to navigation, impediments to safe passage by all vessels, need for traffic control, etc. ▪ Assess need to activate communications plan. ▪ Notification to USACE. ▪ Responsible Party (RP) arrange for site survey.
	I + 12 hours	Action	▪ Establish battle rhythm for teleconferences/ information sharing. ▪ RP to provide Salvage Plan in writing.
		Recovery	▪ Test tow verification to confirm channel integrity.
		Normal Ops	▪ Cancel Safety Zone and resume normal traffic patterns and tow sizes. ▪ Hot wash actions and update annex as appropriate w/in 48 hrs.

Section 4a – Action Plan (HIGH WATER)

<table>
<tr><th>CRITICAL AREA DESCRIPTION</th><th>TRIGGER READING</th><th>TREND</th><th>DESCRIPTION</th><th>PHASE</th><th>ACTION</th></tr>
<tr><td rowspan="11">Caruthersville to Memphis

LOWER MISSISSIPPI RIVER

MM 869-725.5

Reference Gauges:
Cairo, IL
Caruthersville, MO
Memphis, TN

Trigger Reading
Memphis, TN</td><td>20 feet</td><td>Rising</td><td>Normal Operations</td><td>Watch</td><td>▪ Initiate communications plan.
▪ Issue advisory; indicate high water, exercise extreme caution; discuss voluntary horsepower and tow size restrictions.</td></tr>
<tr><td>25 feet</td><td>Rising</td><td>High Water</td><td>Action</td><td>▪ Assess need for daylight/visibility/one way traffic restrictions.
▪ Assess need to activate Up-Bound transit limits to:
-Maintain average 3.0mph bridge crossings.
▪ Assess need to activate Down-Bound transit limits to:
UTV Horsepower | HP/Barge | Max Tow Limit
Less than 6000 hp | 240 hp/loaded barge (ALL) | 25
6001-7200 hp | 30
7201-8400 hp | 35
Greater than 8401 hp | 36</td></tr>
<tr><td>30 feet</td><td>Rising</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess need for companies to use wheelman with recent experience handling current conditions.
▪ Assess Down-Bound restrictions to:
-Night time restriction to tows over 110ft wide at Memphis Bridge.
-Loaded Red Flag barges in a mix tow shall be placed inboard and protected.
-Reduce tow sizes based on following constraints, not to exceed 36 total:
UTV Horsepower | HP/Barge | Max Tow Limit
Less than 6000 hp | 280 hp/barge | 20
Less than 6000 hp with mixed tow | 280 hp per load
140 hp per empty | 15 loads, 25 total barges</td></tr>
<tr><td>35 feet</td><td>Rising</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess further tow restrictions/river closure options.
▪ Assess Down-Bound restrictions to tows over 110ft wide at Helena Bridge.</td></tr>
<tr><td>40 feet</td><td>Rising</td><td>Extreme High Water</td><td>Action</td><td>▪ Discuss/assess Caruthersville Floodwall precautions
▪ Assess need for 300 hp/barge; 150 hp/empty</td></tr>
<tr><td>35 feet</td><td>Falling</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess decreasing HP/ tow size to 30ft and rising criteria.</td></tr>
<tr><td>30 feet</td><td>Falling</td><td>High Water</td><td>Recovery</td><td>Relax HP/loaded barge restriction
UTV Horsepower | HP/Barge | Max Tow Limits
Less than 6000 hp | 240 hp/loaded barge (ALL) | 25
6001-7200 hp | 30
7201-8400 hp | 35
Greater than 8401 hp | 36</td></tr>
<tr><td>25 feet</td><td>Falling</td><td>Normal Operations</td><td>Recovery</td><td>▪ Cancel Safety Zone and resume normal traffic patterns and tow sizes.</td></tr>
<tr><td>20 feet</td><td>Falling</td><td>Normal Operations</td><td>Normal Ops</td><td>▪ Hot wash actions and update annex as appropriate</td></tr>
</table>

<table>
<tr><th>CRITICAL AREA DESCRIPTION</th><th>TRIGGER READING</th><th>TREND</th><th>DESCRIPTION</th><th>PHASE</th><th>ACTION</th></tr>
<tr><td rowspan="8">Memphis to Vicksburg

LOWER MISSISSIPPI RIVER

MM 725.5- 439

Reference Gauges:
Helena, AR
Arkansas City, AR
Greenville, MS
Memphis, TN

Trigger Reading:
Greenville, MS</td><td>40 feet</td><td>Rising</td><td>Normal Operations</td><td>Watch</td><td>▪ Initiate communications plan.
▪ Issue advisory; indicate high water, exercise extreme caution; discuss voluntary horsepower and tow size restrictions.</td></tr>
<tr><td>45 feet</td><td>Rising</td><td>High Water</td><td>Action</td><td>▪ Assess need for daylight/visibility/one way traffic restrictions.
▪ Assess need to activate Up-Bound transit limits to:
-Maintain average 3.0mph bridge crossings.
▪ Assess need to activate Down-Bound transit limits to:
- Assess Down-Bound restrictions to tows over 110ft wide at Helena Bridge.
- Reduce tow sizes based on following constraints:
<table>
<tr><th>UTV Horsepower</th><th>HP/Barge</th><th>Max Tow Limit</th></tr>
<tr><td>Less than 6000 hp</td><td rowspan="4">240 hp/loaded barge (ALL)</td><td>25</td></tr>
<tr><td>6001-7200 hp</td><td>30</td></tr>
<tr><td>7201-8400 hp</td><td>35</td></tr>
<tr><td>Greater than 8401 hp</td><td>36</td></tr>
</table></td></tr>
<tr><td>50 feet</td><td>Rising</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess need for companies to use wheelman with recent experience handling current conditions.
▪ Assess need for BNM minimize wake MM 595.0 to MM 591.0 home owners in area.
▪ Assess Down-Bound restrictions to:
-Loaded Red Flag barges in a mix tow shall be placed inboard and protected.
-Reduce tow sizes based on following constraints, not to exceed 36 total:
<table>
<tr><th>UTV Horsepower</th><th>HP/Barge</th><th>Max Tow Limit</th></tr>
<tr><td>Less than 6000 hp</td><td>280 hp/barge</td><td>20</td></tr>
<tr><td>Less than 6000 hp with mixed tow</td><td>280 hp per load
140 hp per empty</td><td>15 loads, 25 total barges</td></tr>
</table></td></tr>
<tr><td>55 feet</td><td>Rising</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess further tow restrictions/river closure options
▪ Assess need for 300 hp/barge; 150 hp/empty</td></tr>
<tr><td>55 feet</td><td>Falling</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess decreasing HP/ tow size to 50ft and rising criteria.</td></tr>
<tr><td>50 feet</td><td>Falling</td><td>Extreme High Water</td><td>Recovery</td><td>Relax HP/loaded barge restriction
<table>
<tr><th>UTV Horsepower</th><th>HP/Barge</th><th>Max Tow Limits</th></tr>
<tr><td>Less than 6000 hp</td><td rowspan="4">240 hp/loaded barge (ALL)</td><td>25</td></tr>
<tr><td>6001-7200 hp</td><td>30</td></tr>
<tr><td>7201-8400 hp</td><td>35</td></tr>
<tr><td>Greater than 8401 hp</td><td>36</td></tr>
</table></td></tr>
<tr><td>45 feet</td><td>Falling</td><td>High Water</td><td>Recovery</td><td>▪ Assess removing Safety Zone requirements</td></tr>
<tr><td>40 feet</td><td>Falling</td><td>Normal Operations</td><td>Normal Ops</td><td>▪ Cancel Safety Zone and resume normal traffic patterns and tow sizes.
▪ Hot wash actions and update annex as appropriate.</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

<table>
<tr><th>CRITICAL AREA DESCRIPTION</th><th>TRIGGER READING</th><th>TREND</th><th>DESCRIPTION</th><th>PHASE</th><th>ACTION</th></tr>
<tr><td rowspan="13">Vicksburg to Natchez

LOWER MISSISSIPPI RIVER

MM 439-303

Reference Gauges:
Greenville, MS
Vicksburg, MS
Natchez, LA

Trigger Reading:
Vicksburg, MS</td><td>30 feet</td><td>Rising</td><td>Normal Operations</td><td>Watch</td><td>▪ Initiate communications plan.
▪ Issue advisory; indicate high water, exercise extreme caution; discuss voluntary horsepower and tow size restrictions.</td></tr>
<tr><td>36 feet</td><td>Rising</td><td>High Water</td><td>Action</td><td>▪ Assess need for daylight/visibility/one way traffic restrictions.
▪ Assess need to stand up Vicksburg Information Center.
▪ Assess need to activate Up-Bound transit limits to:
-Maintain average 3.0mph bridge crossings.
▪ Assess need to activate Down-Bound transit limits to:
- Reduce tow sizes based on following constraints:
<table><tr><th>UTV Horsepower</th><th>HP/Barge</th><th>Max Tow Limit</th></tr><tr><td>Less than 6000 hp</td><td rowspan="4">240 hp/loaded barge (ALL)</td><td>25</td></tr><tr><td>6001-7200 hp</td><td>30</td></tr><tr><td>7201-8400 hp</td><td>35</td></tr><tr><td>Greater than 8401 hp</td><td>36</td></tr></table></td></tr>
<tr><td>40 feet</td><td>Rising</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess need for companies to use wheelman with experience handling current conditions.
▪ Vicksburg Information Center
▪ Assess Down-Bound restrictions to:
- Night time restriction to tows over 110ft wide at Vicksburg Bridge.
- Loaded Red Flag barges in a mix tow shall be placed inboard and protected.
- Reduce tow sizes based on following constraints, not to exceed 36 total:
<table><tr><th>UTV Horsepower</th><th>HP/Barge</th><th>Max Tow Limit</th></tr><tr><td>Less than 6000 hp</td><td>280 hp/barge</td><td>20</td></tr><tr><td rowspan="2">Less than 6000 hp with mixed tow</td><td>280 hp per load</td><td rowspan="2">15 loads, 25 total barges</td></tr><tr><td>140 hp per empty</td></tr></table></td></tr>
<tr><td>45 feet</td><td>Rising</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess further tow restrictions/river closure options
▪ Assess need to reduce tow sizes to 30 or 25 barges max depending on conditions.
▪ Assess need for MSIB Down-Bound restrictions at Vicksburg Bridge as per MSIB Vicksburg Enclosure 7 (example).
▪ Assess need for Natchez, MS Safety Zone, levee protection (55’ ft Natchez Gauge).</td></tr>
<tr><td>50 feet</td><td>Rising</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess need for 300 hp/barge.
▪ Assess need to reduce tow size to 25 or 20 barges depending on conditions.</td></tr>
<tr><td>45 feet</td><td>Falling</td><td>Extreme High Water</td><td>Action</td><td>▪ Assess decreasing HP/ tow size to 40ft and rising criteria.</td></tr>
<tr><td>40 feet</td><td>Falling</td><td>Extreme High Water</td><td>Recovery</td><td>Relax HP/loaded barge restriction
<table><tr><th>UTV Horsepower</th><th>HP/Barge</th><th>Max Tow Limits</th></tr><tr><td>Less than 6000 hp</td><td rowspan="4">240 hp/loaded barge (ALL)</td><td>25</td></tr><tr><td>6001-7200 hp</td><td>30</td></tr><tr><td>7201-8400 hp</td><td>35</td></tr><tr><td>Greater than 8401 hp</td><td>36</td></tr></table></td></tr>
<tr><td>36 feet</td><td>Falling</td><td>High Water</td><td>Recovery</td><td>▪ Assess removing Safety Zone requirements</td></tr>
<tr><td>30 feet</td><td>Falling</td><td>Normal Operations</td><td>Normal Ops</td><td>▪ Cancel Safety Zone and resume normal traffic patterns and tow sizes.
▪ Hot wash actions and update annex as appropriate w/in 48 hrs.</td></tr>
</table>

High Water Notes

- The entrance to McKellar Lake (MM 725.5) is the dividing line between the Caruthersville to Memphis and the Memphis to Vicksburg Waterways Action Plan (WAP) areas. This allows vessels to drop off or pick up tows depending on the direction they are headed.

- Caruthersville riverfront flood wall is at an elevation of 50ft on the Caruthersville gauge. U.S. Army Corps of Engineers (USACE) requests no traffic after 48ft on the Caruthersville gauge.

- Natchez/Vidalia riverfront levees are at an elevation of 57ft on the Natchez gauge. USACE and local government request vessels transit in the center of the channel at slowest safe speed with one way traffic (i.e. no meeting, passing, or overtaking) and one mile spacing between tows from MM 361 to MM 365 for river levels 55ft and rising on the Natchez, MS gauge.

- Factors that should be considered in making the decision to stand up the **Vicksburg Information Center (VIC)** include the Mississippi River current, the rate of rise on the Mississippi River and the flow rate of the Yazoo River. The VIC should be operated by industry representatives from 06:00 to 18:00 and operated by Coast Guard personnel at all other times. The Coast Guard should provide oversight and assistance as needed.

- While it is not considered necessary to square-off down-bound tows in the SLMR area during high water periods, requests for vessels to push one or two additional barges in excess of established horse power requirements to fill in a 'notch' in the tow, will be handled on a case by case basis.

- The **Lower Mississippi River Committee (LOMRC) chairman or vice chairman** will normally keep the Regional Advocate for the **American Waterways Operators Association (AWO)** and the **River Industry Executive Task Force (RIETF)** apprised of current levels and associated restrictions to allow for better flow of commerce throughout the entire river system and its suppliers/customers.

- Historic Safety Zones for High Water Events:

    1. Private homes near the Left Descending Bank LMR MM 535 to 537.
    2. Entergy Nuclear Power Company "Grand Gulf Nuclear Facility" LMR MM 405.0 to MM 408.0 at 47 ft Vicksburg, MS Gauge.
    3. Vidalia/Natchez LMR MM 361.0 to MM 365.0 at 55ft Natchez Gauge.
    4. Old River Control Structures LMR MM 311 to MM 319, iaw 33CFR165.802.

HIGH WATER BROADCAST NOTICE TO MARINERS (BNM) Enclosure 1 (example)

THE COTP LOWER MISSISSIPPI RIVER IS ISSUING A SAFETY ADVISORY DUE TO THE EXPECTED RAPID INCREASE IN RIVER LEVELS ON THE LOWER MISSISSIPPI RIVER OVER THE NEXT SEVERAL DAYS. MARINERS ARE ADVISED TO TRANSIT THE AREA WITH CAUTION DUE TO THE HAZARDOUS CONDITIONS ASSOCIATED WITH STRONG CURRENTS, SEVERE OUT DRAFTS, MISSING/OFF STATION ATON, AND DIVING BUOYS. FLEET OPERATORS SHOULD REGULARLY CHECK THEIR FLEETS AND IMMEDIATELY REPORT BARGE BREAKAWAYS TO THE USCG.

HIGH WATER BNM 240 HP RESTRICTION Enclosure 2 (example)

1. THE COTP LOWER MISSISSIPPI RIVER IS ISSUING A HIGH WATER SAFETY ADVISORY FOR THE LOWER MISSISSIPPI RIVER FROM MM xxx TO xxx.
2. MARINERS ARE ADVISED TO TRANSIT THE LMR WITH CAUTION DUE TO THE HAZARDOUS CONDITIONS ASSOCIATED WITH STRONG CURRENTS, SEVERE OUTDRAFTS, MISSING/OFF STATION ATON AND DIVING BUOYS.
3. THE COTP WITH THE CONCURRENCE OF THE LOWER MISSISSIPPI RIVER COMMITTEE RECOMMENDS THE FOLLOWING LIMITS FOR TOWS WHEN THE MEMPHIS GAUGE REACHES 25.0' FT AND/OR GREENVILLE GAUGE REACHES 45’ FT AND/OR VICKSBURG GAUGE REACHES 36’ FT AND WILL BE TRANSITING THE LMR FROM MM xxx TO MM xxx.
4. ALL DOWN-BOUND TOWS:

A. TOWING VESSELS MUST HAVE AT LEAST 240 HP PER BARGE WITH A MAXIMUM TOW SIZE OF 36 BARGES.
B. TOWING VESSELS WITH LESS THAN 6000 HP A MAXIMUM TOW SIZE OF 25 LOADED BARGES.
C. TOWING VESSELS WITH 6000 HP TO 7200 HP A MAXIMUM TOW SIZE OF 30 BARGES.
D. TOWING VESSELS WITH 7201 HP TO 8400 HP A MAXIMUM TOW SIZE OF 35 BARGES.
E. TOWING VESSELS WITH GREATER THAN 8401 HP A MAXIMUM TOW SIZE OF 36 BARGES.

5. FLEET OPERATORS SHOULD REGULARLY CHECK THEIR FLEETS AND IMMEDIATELY REPORT BARGE BREAKAWAYS TO THE U.S. COAST GUARD.
6. MARINERS ARE REQUESTED TO CONTACT SECTOR LMR ON CH 16 VHF-FM OR 1-866-777-2784 FOR FURTHER INFORMATION OR THE REPORT AREAS OF CONCERN.

HIGH WATER BNM 280 HP RESTRICTION Enclosure 3 (example)

1. THE COTP LOWER MISSISSIPPI RIVER IS ISSUING AN EXTREME HIGH WATER SAFETY ADVISORY FOR THE LOWER MISSISSIPPI RIVER FROM MM xxx TO xxx.
2. MARINERS ARE ADVISED TO TRANSIT THE LMR WITH CAUTION DUE TO THE HAZARDOUS CONDITIONS ASSOCIATED WITH STRONG CURRENTS, SEVERE OUTDRAFTS, MISSING/OFF STATION ATON AND DIVING BUOYS.
3. THE COTP WITH THE CONCURRENCE OF THE LOWER MISSISSIPPI RIVER COMMITTEE RECOMMENDS THE FOLLOWING LIMITS FOR TOWS WHEN THE MEMPHIS GAUGE REACHES 35.0' FT AND/OR GREENVILLE GAUGE

REACHES 50’ FT AND/OR VICKSBURG GAUGE REACHES 40’ FT AND WILL BE TRANSITING THE LMR FROM MM xxx TO MM xxx.
4. ALL DOWN-BOUND TOWS:
A. WHEELMEN ARE TO HAVE RECENT EXPERIENCE HANDLING CURRENT CONDITIONS.
B. TOWING VESSELS MUST HAVE AT LEAST 280 HP PER LOADED BARGE OR 140 HP PER EMPTY WITH A MAXIMUM OF 30 BARGES.
C. TOWING VESSELS WITH LESS THAN 6000 HP A MAXIMUM TOW SIZE OF 20 LOADED BARGES.
D. TOWING VESSELS WITH LESS THAN 6000 HP WITH A MIXED TOW CAN PUSH A MAXIMUM TOW SIZE OF 15 LOADS AND 10 EMPTIES FOR A TOTAL MIXED TOW SIZE OF 25 BARGES.
E. NO NIGHT TIME TRANSIT OF THE VICKSBURG AND/OR MEMPHIS BRIDGES FOR TOWS WIDER THAN 110 FT.
F. ALL LOADED RED FLAG BARGES IN MIXED TOWS SHALL BE PLACED IN INBOARD STRINGS, SHALL NOT BE A LEAD LOAD IN ANY STRING, AND SHALL BE COVERED/PROTECTED BY A DRY-CARGO OR EMPTY RED FLAG BARGE.
5. ALL UP-BOUND TOWS:
A. MUST MAINTAIN AN AVERAGE SPEED OF 3.0 MPH OVER THE GROUND FOR TWO MILES LEADING UP TO THE VICKSBURG AND/OR MEMPHIS BRIDGES. IF A TOW IS UNABLE TO AVERAGE A MINIMUM SPEED OF 3 MPH, IT MUST ARRANGE FOR AN ASSIST TUG OR REDUCE TOW SIZE THROUGH THE MEMPHIS BRIDGES.
6. FLEET OPERATORS SHOULD REGULARLY CHECK THEIR FLEETS AND IMMEDIATELY REPORT BARGE BREAK-AWAYS TO THE U.S. COAST GUARD.
7. MARINERS ARE REQUESTED TO CONTACT SECTOR LMR ON CH 16 VHF-FM OR AT 1-866-777-2784 FOR FURTHER INFORMATION OR TO REPORT AREAS OF CONCERN.

HIGH WATER BNM 300 HP RESTRICTION Enclosure 4 (example)

1. THE COTP LOWER MISSISSIPPI RIVER IS ISSUING AN EXTREME HIGH WATER SAFETY ADVISORY FOR THE LOWER MISSISSIPPI RIVER FROM MM xxx TO xxx LMR.
THE FOLLOWING RESTRICTIONS ARE NOW IN EFFECT FOR THE LOWER MISSISSIPPI RIVER FROM MM xxx TO xxx.
2. MARINERS ARE ADVISED TO TRANSIT THE LMR WITH CAUTION DUE TO THE HAZARDOUS CONDITIONS ASSOCIATED WITH STRONG CURRENTS, SEVERE OUTDRAFTS, MISSING/OFF STATION ATON AND DIVING BUOYS.
3. THE COTP WITH THE CONCURRENCE OF THE LOWER MISSISSIPPI RIVER COMMITTEE RECOMMENDS THE FOLLOWING LIMITS FOR TOWS WHEN THE MEMPHIS, TN GAUGE REACHES 40' FT, AND/OR GREENVILLE, MS GAUGE REACHES 55’ FT, AND/OR VICKSBURG, MS GAUGE REACHES 50’ FT AND WILL BE TRANSITING THE LMR FROM MM xxx TO MM xxx.
4. ALL DOWN-BOUND TOWS:
A. WHEELMEN ARE TO HAVE RECENT EXPERIENCE HANDLING CURRENT CONDITIONS.
B. TOWING VESSELS MUST HAVE AT LEAST 300 HP PER LOADED BARGE WITH A MAXIMUM OF 25 OR 20 (Vicksburg Gauge) BARGES.

C. TOWING VESSELS MUST HAVE AT LEAST 150 HP PER EMPTY BARGE WITH A MAXIMUM OF 25 OR 20 (Vicksburg Gauge) BARGES.
D. NO NIGHT TIME TRANSIT OF THE MEMPHIS AND VICKSBURG BRIDGES FOR TOWS WIDER THAN 110 FT.
E. ALL LOADED RED FLAG BARGES IN MIXED TOWS SHALL BE PLACED IN INBOARD STRINGS, SHALL NOT BE A LEAD LOAD IN ANY STRING, AND SHALL BE COVERED/PROTECTED BY A DRY-CARGO OR EMPTY RED FLAG BARGE.
5. ALL UP-BOUND TOWS:
A. MUST MAINTAIN AN AVERAGE SPEED OF 3.0 MPH OVER THE GROUND FOR TWO MILES LEADING UP TO THE MEMPHIS AND VICKSBURG BRIDGES. IF A TOW IS UNABLE TO AVERAGE A MINIMUM SPEED OF 3 MPH, IT MUST ARRANGE FOR AN ASSIST TUG OR REDUCE TOW SIZE THROUGH THE MEMPHIS BRIDGES.
6. FLEET OPERATORS SHOULD REGULARLY CHECK THEIR FLEETS AND IMMEDIATELY REPORT BARGE BREAK-AWAYS TO THE U.S. COAST GUARD.
7. MARINERS ARE REQUESTED TO CONTACT SECTOR LMR ON CH 16 VHF-FM OR AT 1-866-777-2784 FOR FURTHER INFORMATION OR TO REPORT AREAS OF CONCERN.

HIGH WATER VICKSBURG INFORMATION CENTER (VIC) BNM Enclosure 5 (example)

1. THE VICKSBURG INFORMATION CENTER (VIC) WILL BE ESTABLISHED BY THE LOWER MISSISSIPPI RIVER COMMITTEE (LOMRC) WHEN THE VICKSBURG GAUGE REACHES 36’ FT TO PROVIDE MARINERS WITH THE MOST CURRENT INFORMATION RELATED TO RIVER CONDITIONS EFFECTING TRANSIT THOUGH THE VICKSBURG BRIDGES AND APPROACH.
2. THE FOLLOWING GUIDELINES ARE IN PLACE TO AID IN THE SAFE TRANSIT OF THE VICKSBURG BRIDGES AND APPROACH.
A. DOWN-BOUND TOWS GREATER THAN 110’ FT SHALL ONLY TRANSIT THROUGH THE VICKSBURG BRIDGES FROM SUNRISE TO SUNSET WHILE THE VIC IS IN OPERATION.
B. DOWN-BOUND TOWS WILL CHECK IN WITH THE VIC DURING DAYLIGHT HOURS AT THE FOLLOWING LOCATIONS: MM 455 – MILLIKEN BEND AND MM 445 – BROWNS POINT.
C. UP-BOUND TOWS WILL NORMALLY BE CLEARED DURING THE NIGHT BUT CAN BE PASSED DURING THE DAY IF DOWN BOUND TRAFFIC IS LIGHT OR IF THE VIC COORDINATOR DEEMS IT SAFE.
D. VESSEL QUEUES WILL BE MAINTAINED BY THE VICKSBURG INFORMATION CENTER DURING THIS HIGH WATER EVENT.
3. THE VICKSBURG INFORMATION CENTER (VIC) CAN BE REACHED ON CH 13 VHF-FM OR VIA LAND LINE AT 601-631-3428 AND IS THE PRIMARY CONTACT.

HIGH WATER CANCELLATION BNM Enclosure 6 (example)

CANCEL BNM _____ DUE TO IMPROVING WATER CONDITIONS. REPORT ANY HAZARDOUS CONDITIONS TO THE U.S. COAST GUARD.

HIGH WATER MARINE SAFETY INFORMATION BROADCAST (MSIB) Enclosure 7 (example)

VTS Down Bound Measures at Vicksburg R/R Bridge MM 435.6

The Vicksburg Information Center (VIC) is established by the Lower Mississippi River Committee (LOMRC) when the Vicksburg Gauge is above 45' feet to provide mariners with the most current information related to river conditions effecting transit through the Vicksburg Bridge and approach.

The COTP LMR and LOMRC require all vessels to follow actions before and during transit thru this area.

A. Each vessel shall have a briefing with their Port Captain prior to transiting to Kings Point, LMR MM 439.8.
B. This briefing shall include but are not limited to the following:
    a. Confirm tow size and horsepower of vessel meet COTP requirement.
    b. Review river stage and conditions at Vicksburg, MS.
    c. Review all information reported from the VIC and other vessels.
    d. Evaluate wheelhouse experience level of both Captain and Pilot.
    e. Indentify which wheelhouse person has the most recent experience with current conditions?
    f. Determine who will be operating the vessel thru the area based on discussion?
    g. Confirm everyone involved has a clear understanding of the circumstances?
C. Once discussion and plan is complete with Port Captain. The wheelhouse is required to receive an update from the VIC prior to proceeding below Kings Point MM 439.8.
D. The VIC is required to confirm wheelhouse personnel have answered "YES" to the following questions prior to vessel being cleared to precede Down Bound and transit the area.
    a. Are you comfortable given this tow configuration and at this river stage to transit the bridge?
    b. Is the tow configured correctly?
    c. If answer "NO" to any of these questions; tow must stop until all criteria are corrected.
E. Down Bound tows shall have both the Captain and Pilot onboard be in the wheelhouse from Kings Light MM 439.8 until clearing the Vicksburg Bridges MM 435.
F. Down Bound tows greater than 110' feet and Red Flag vessels shall only transit though the Vicksburg Bridges from sunrise to sunset while the VIC is in operations.
G. Down Bound tows will check in with the VIC during daylight hours at the following locations:
    a. MM 455 – Milliken Bend
    b. MM 445 – Browns Point
H. Down Bound dry-cargo, mix tow, and Red Flag tows:
    a. All loaded Red Flag barges in mixed tows shall be placed in inboard strings and shall not be a lead load in any string and shall be covered/protected by a dry-cargo barge or empty Red Flag barge.
I. Up Bound tows will normally be cleared during the night but can be passed during the day if Down Bound traffic is light or if the VIC Coordinator deems it safe.

J. The VIC is required to confirm wheelhouse personnel have answered "YES" to the following questions prior to vessel being cleared to precede Up Bound and transit the area.
    a. Are you maintaining a minimum of 3 mph from Sgt. Pt. MM 422 to Race Track MM 432?
    b. If answer "NO"; tow must stop until criteria is corrected.
K. Vessel queues will be maintained by the Vicksburg Information Center during this high water event.
L. The Vicksburg Information Center (VIC) can be reached on VHF-FM ch 13 or via land line at 601-631-3428 and is the primary contact.
M. All tow vessels shall have a paper or electronic copy of this MSIB in the wheelhouse.

For additional information, contact the following:

Waterways Management: (901) 521-4825
Email address: STL-DG-SECLMR-WATERWAYS@uscg.mil
Sector LMR Command Center (24 hour): (901) 521-4822 or VHF-FM channel 16

Section 4b – Action Plan (LOW WATER)

CRITICAL AREA DESCRIPTION	*TRIGGER READING*	TREND	DESCRIPTION	PHASE	ACTION
Caruthersville to Memphis LOWER MISSISSIPPI RIVER **MM 869-725.5** Reference Gauges: Cairo, IL Caruthersville, MO Memphis, TN Trigger Reading **Memphis, TN**	Above 5 feet		Normal Operations		▪ Normal Operations. ▪ No restrictions on traffic.
	5 feet	Falling	Low Water	Watch	▪ Initiate Communications Plan. ▪ Issue Low Water Advisory. ▪ Discuss voluntary draft and tow size restrictions.
	0 feet	Falling	Low Water	Action	**Consider:** ▪ Where channel is less than 600 feet in bends: - Activate pre-established safety zone restricting transits to daylight only or one way traffic. Where 'bump-n-go' reported: ▪ Redirect USACE dredge/survey services. ▪ Redirect USCG ATON services.
	-8 feet and lower	Falling	Extreme Low Water	Action	▪ Implement Safety Zone prohibiting traffic. ▪ Implement twice daily conference calls to assess situation. ▪ Continue monitoring mitigation strategies for additional preventative measure for implementation.
	-8 feet and lower	Rising	Extreme Low Water	Recovery	▪ Continue Safety Zone. ▪ Employ test tow(s) pushing non-regulated cargo loaded to gain sense of channel's ability to support limited navigation restrictions are in place. ▪ Assess ATON status. ▪ USACE surveys of channel following dredging to identify build-ups.
	-5 feet	Rising	Extreme Low Water	Recovery	▪ If favorable results from test tow(s), cancel safety zone. ▪ Maintain safety zone restricting transits for day-light only.
	0 feet	Rising	Low Water	Recovery	▪ Resume day/night transits.
	Greater than 5 feet	Rising	Normal Operations	Recovery	▪ Issue final advisory, indicate return to normal operations. ▪ Report hazardous conditions to Coast Guard. ▪ Schedule hot wash of activity within 48 hrs to refine actions.

CRITICAL AREA DESCRIPTION	*TRIGGER READING*	TREND	DESCRIPTION	PHASE	ACTION
Memphis to Greenville LOWER MISSISSIPPI RIVER **MM 725.5- 520** Reference Gauges: Helena, AR Arkansas City, AR Greenville, MS Trigger Reading: **Greenville, MS**	Above 20 feet		Normal Operations		▪ Normal Operations. ▪ No restrictions on traffic.
	20 feet	Falling	Low Water	Watch	▪ Initiate Communications Plan. ▪ Issue Low Water Advisory. ▪ Discuss voluntary draft and tow size restrictions.
	15 feet	Falling	Low Water	Action	**Consider:** ▪ Where channel is less than 600 feet in bends: - Activate pre-established safety zone restricting transits to daylight only or one way traffic. Where 'bump-n-go' reported: ▪ Redirect USACE dredge/survey services. ▪ Redirect USCG ATON services.
	10 feet	Falling	Extreme Low Water	Action	▪ Implement Safety Zone prohibiting traffic. ▪ Implement twice daily conference calls to assess situation. ▪ Continue monitoring mitigation strategies for additional preventative measure for implementation.
	10 feet	Rising	Extreme Low Water	Recovery	▪ Continue Safety Zone. ▪ Employ test tow(s) pushing non-regulated cargo loaded to gain sense of channel's ability to support limited navigation restrictions are in place. ▪ Assess ATON status. ▪ USACE surveys of channel following dredging to identify build-ups.
	15 feet	Rising	Extreme Low Water	Recovery	▪ If favorable results from test tow(s), cancel safety zone. ▪ Maintain safety zone restricting transits to day-light only.
	20 feet	Rising	Low Water	Recovery	▪ Resume day/night transits.
	Above 20 feet	Rising	Normal Operations	Recovery	▪ Issue final advisory, indicate return to normal operations. ▪ Report hazardous conditions to Coast Guard. ▪ Schedule hot wash of activity within 48 hrs to refine actions.

CRITICAL AREA DESCRIPTION	*TRIGGER READING*	TREND	DESCRIPTION	PHASE	ACTION
Greenville to Natchez LOWER MISSISSIPPI RIVER **MM 520-303** Reference Gauges: Greenville, MS Vicksburg, MS Trigger Reading: **Vicksburg, MS**	Above 10 feet		Normal Operations		▪ Normal Operations. ▪ No restrictions on traffic.
	10 feet	Falling	Low Water	Watch	▪ Initiate Communications Plan. ▪ Issue Low Water Advisory. ▪ Discuss voluntary draft and tow size restrictions. ▪ Initiate USACE Communication for Miller Materials Operations barge loading constraints.
	7 feet	Falling	Low Water	Action	**Consider:** ▪ Where channel is less than 600 feet in bends: - Activate pre-established safety zone restricting transits to daylight only or one way traffic. Where 'bump-n-go' reported: ▪ Redirect USACE dredge/survey services. ▪ Redirect USCG ATON services.
	5 feet	Falling	Extreme Low Water	Action	▪ Implement Safety Zone prohibiting traffic. ▪ Implement twice daily conference calls to assess situation. ▪ Continue monitoring mitigation strategies for additional preventative measure for implementation.
	5 feet	Rising	Extreme Low Water	Recovery	▪ Continue Safety Zone. ▪ Employ test tow(s) pushing non-regulated cargo loaded to gain sense of channel's ability to support limited navigation restrictions are in place. ▪ Assess ATON status. ▪ USACE surveys of channel following dredging to identify build-ups.
	7 feet	Rising	Extreme Low Water	Recovery	▪ If favorable results from test tow(s), cancel safety zone. ▪ Maintain safety zone restricting transits to day-light only.
	10 feet	Rising	Low Water	Recovery	▪ Resume day/night transits.
	Above 10 feet	Rising	Normal Operations	Recovery	▪ Issue final advisory, indicate return to normal operations. ▪ Report hazardous conditions to Coast Guard. ▪ Schedule hot wash of activity within 48 hrs to refine actions.

LOW WATER BROADCAST NOTICE TO MARINERS (BNM) Enclosure 1 (example)

1. LOW WATER CONDITIONS ARE FORECASTED IN THE (MEMPHIS / GREENVILLE / VICKSBURG) COTP ZONE. US ARMY CORPS OF ENGINEERS MAINTAINED DEPTH AND WIDTH MAY NOT BE OBTAINABLE ON ALL BUOY LINES. IT IS ADVISED THAT ALL MARINERS MONITOR ALL GAUGE READINGS FOR SAFE NAVIGATION.

LOW WATER BNM Enclosure 2 (example)

1. THE U.S. COAST GUARD CAPTAIN OF THE PORT LOWER MISSISSIPPI RIVER IS ISSUING A LOW WATER SAFETY ADVISORY FOR THE LOWER MISSISSIPPI RIVER FROM MM xxx TO MM xxx.
2. MARINERS ARE ADVISED THAT USACE MAINTAINED DEPTH AND WIDTH MAY NOT BE AVAILABLE ON ALL BUOY LINES AND SHOULD TRANSIT WITH CAUTION.
3. MARINERS ARE REQUESTED TO TRANSIT FLEETING AREAS AND FLEETS WITH A WIDE OF BERTH AS IS SAFE.
4. THE COTP WITH THE CONCURRENCE OF THE LOWER MISSISSIPPI RIVER COMMITTEE RECOMMENDS THE FOLLOWING LIMITS FOR TOWS TRANSITING THE LOWER MISSISSIPPI RIVER FROM MM xxx TO MM xxx.
5. FOR ALL UP BOUND TOWS:
A. MAXIMUM xx BARGES.
B. DRAFTS NO GREATER THAN xx FT xx IN.
C. LOADED BARGES TO BE CONFIGURED xx WIDE AND xx LONG TO BE PLACED IN THE CENTER OF THE TOW. OVERALL TOW CONFIGURATION NOT TO EXCEED xx WIDE AND xx LONG OR xx WIDE AND xx LONG.
6. FOR ALL DOWN BOUND TOWS:
A. MAXIMUM xx BARGES.
B. DRAFTS NO GREATER THAN xx FT xx IN.
C. LOADED BARGES TO BE CONFIGURED xx WIDE AND xx LONG TO BE PLACED IN THE CENTER OF THE TOW. OVERALL TOW CONFIGURATION NOT TO EXCEED xx WIDE AND xx LONG OR xx WIDE AND xx LONG.
7. ALL BARGES THAT ARE CURRENTLY IN THE SYSTEM WITH DRAFTS GREATER THAN xx FT xx IN SHALL BE PLACED NEAREST TO THE CENTER OF THE TOW AS POSSIBLE.
8. REQUEST ALL MARINERS CONTACT SECTOR LMR VIA VHF-FM CH 16 OR TOLL FREE AT 866-777-2784 TO REPORT SHOALING, HAZARDOUS CONDITIONS OR MISSING ATON.

LOW WATER EMERGENCY DREDGING BNM Enclosure 2 (example)

1. STARTING (month day, year DATE) AND CONTINUING THROUGH (month day, year DATE), THE DREDGE (Name of vessel) AND ATTENDING PLANT WILL BE OPERATING AT location MM xxx, RIGHT/LEFT (side of river) DESCENDING BANK. MARINERS ARE ADVISED TO TRANSIT THE AREA WITH EXTREME CAUTION AND AT SLOWEST SAFE SPEED. CONTACT THE DREDGE (Name of vessel) ON VHF CH 13 OR CH 16 FOR PASSING ARRANGEMENTS.

LOW WATER BNM Enclosure 3 (example)

1. CANCEL BNM _____ DUE TO IMPROVED WATER CONDITIONS. REPORT ANY HAZARDOUS CONDITIONS TO THE U.S. COAST GUARD.

EXAMPLE OF 2012 LOW WATER RESTRICTIONS Enclosure 4 (example)

(For reference only. Current event may require different actions based on river conditions and groundings)

Gauge	Mile Marker	Gauge Reading	Draft Restriction	Example of Tow Restrictions
Memphis	869 – 725.5	**0.0 ft**	**10.5 ft**	**No Restriction**
Memphis	869 – 725.5	**-4.0 ft**	**10.0 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 40 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 6 wide and 7 long. **2. Down Bound Tows:** Maximum 36 barges. **3.** All barges that are currently in the system with 10 ft 6 inches drafts shall be placed nearest to the center of the tow as possible.
Memphis	869 – 725.5	**-5.5 ft**	**9.5 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 36 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 5 wide and 7 long or 6 wide and 6 long. **2. Down Bound Tows:** Maximum 30 barges. **3.** All barges that are currently in the system with drafts greater than 9 ft 6 inches shall be placed nearest to the center of the tow as possible.
Memphis	869 – 725.5	**-7.0 ft**	**9.0 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 36 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 5 wide and 7 long or 6 wide and 6 long. **2. Down Bound Tows:** Maximum 30 barges. **3.** All Barges that are currently in the system with drafts greater than 9 ft shall be placed nearest to the center of the tow as possible.
Greenville	725.5 – 437	**15.0 ft**	**10.5 ft**	**No Restriction**
Greenville	725.5 – 437	**11.0 ft**	**10.0 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 40 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 6 wide and 7 long. **2. Down Bound Tows:** Maximum 36 barges. **3.** All barges that are currently in the system with 10 ft 6 inches drafts shall be placed nearest to the center of the tow as possible.

Gauge	Mile Marker	Gauge Reading	Draft Restriction	Example of Tow Restrictions
Greenville	725.5 – 437	**9.5 ft**	**9.5 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 36 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 5 wide and 7 long or 6 wide and 6 long. **2. Down Bound Tows:** Maximum 30 barges. **3.** All barges that are currently in the system with drafts greater than 9 ft 6 inches shall be placed nearest to the center of the tow as possible.
Greenville	725.5 – 437	**8.0 ft**	**9.0 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 36 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 5 wide and 7 long or 6 wide and 6 long. **2. Down Bound Tows:** Maximum 30 barges. **3.** All Barges that are currently in the system with drafts greater than 9 ft shall be placed nearest to the center of the tow as possible.
Vicksburg	437 – 303	**7.0 ft**	**10.5 ft**	**No Restriction**
Vicksburg	437 – 303	**3.0 ft**	**10.0 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 40 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 6 wide and 7 long. **2. Down Bound Tows:** Maximum 36 barges. **3.** All barges that are currently in the system with 10 ft 6 inches drafts shall be placed nearest to the center of the tow as possible.
Vicksburg	437 – 303	**1.5 ft**	**9.5 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 36 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 5 wide and 7 long or 6 wide and 6 long. **2. Down Bound Tows:** Maximum 30 barges. **3.** All barges that are currently in the system with drafts greater than 9 ft 6 inches shall be placed nearest to the center of the tow as possible.
Vicksburg	437 – 303	**0.0 ft**	**9.0 ft**	**1. Up Bound Tows:** Maximum 20 loaded barges with a total of 36 barges overall. Loaded barges to be configured 4 wide and 5 long to be placed in the center of the tow. Overall tow configuration not to exceed 5 wide and 7 long or 6 wide and 6 long. **2. Down Bound Tows:** Maximum 30 barges. **3.** All Barges that are currently in the system with drafts greater than 9 ft shall be placed nearest to the center of the tow as possible.