MISSISSIPPI RIVER AND TRIBUTARIES WATERWAYS ACTION PLAN

UPPER MISSISSIPPI RIVER ANNEX 2012

UPPER MISSISSIPPI RIVER ANNEX

Introduction

This appendix provides general information and target gauges to be used as a guideline for a crisis on the Upper Mississippi River (UMR) between river miles 0.0 to 857.6. In the face of such a crisis, it is the responsibility of the United States Coast Guard, Army Corps of Engineers (ACOE), and River Industry representatives to meet and discuss conditions on the UMR and to *annually* review the actions specified in the plan, typically *the first week of November*. Section 4 of this appendix breaks down the entire UMR into 28 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 & known impact areas were used to derive these zones.

This plan supports the Department of Transportation in its role in 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. It 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.

Section 1 – 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 Upper Mississippi River (UMR). This portion of the river, from the confluence of the Ohio River, northward, consists principally of pooled waters created by a series of locks and dams operated by the ACOE. The purpose of these structures is to maintain water levels to provide the minimum channel depth of nine feet required by law for commercial navigation. Major tributaries to the UMR, including the Missouri River (MOR), Illinois Waterway (ILWW), Iowa River, Des Moines River, and the Ohio River, have impoundments that create reservoirs. Flows from these reservoirs impact the water levels of the UMR. 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:

UMR LOW WATER & ICE CONDITIONS

Waterway management concerns also occur during low water and ice conditions on the UMR. Low water is of particular concern in the Middle Mississippi River. Groundings during low water conditions delay commercial traffic, cause substantial damage to the navigation channel and can necessitate dredging. Ice conditions not only reduces water levels but causes ice to build up underneath barges causing them to "ground" without ever touching the river bottom. Ice navigation can be very difficult as the ice removes navigation buoys, causes ice gorges and damages the hulls of towing vessels and barges.

CONTROLLING FACTORS & WATERWAYS MANAGEMENT PLANNING

Under flood conditions, controlling factors are gauge readings at specific locales and locks. These are general elevations at which water levels may cause impact upon 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 Army Corps of Engineers (ACOE), and industry shall implement the "Watch Phase" of the plan (which vary for each zone) e.g., establish communications to discuss the current and forecasted conditions. These discussions should include an analysis of data, weather history & 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 Upper Mississippi River Annex

ACOE = ARMY CORPS OF ENGINEERS
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
IEMA = IOWA EMERGENCY MANAGEMENT
ICP = INCIDENT COMMAND POST
ILWW = ILLINOIS WATERWAY
IRCA = ILLINOIS RIVER CARRIERS ASSOCIATION
JIC = JOINT INFORMATION CENTER
L&D = LOCK AND DAM
LSAF = LOWER SAINT ANTHONY FALLS
MOR = MISSOURI RIVER
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
RM = RIVER MILE
SEMA = STATE EMERGENCY MANAGEMENT
SITREP = SITUATION REPORT
UMIB = URGENT MARINE INFORMATION BROADCAST
UMR = UPPER MISSISSIPPI RIVER
USACE = UNITED STATES ARMY CORPS OF ENGINEERS
USAF = UPPER SAINT ANTHONY FALLS
USCG = UNITED STATES COAST GUARD
WAP = WATERWAYS ACTION PLAN
WEM = WISCONSON EMERGENCY MANAGEMENT

Section 2 – Parties and Roles

U.S. Coast Guard (USCG)
The USCG Sector Commander Upper Mississippi River, with its principal office in St Louis, MO is responsible for safe navigation, security, and law enforcement along the Upper Mississippi River. The USCG Sector Upper Mississippi River Prevention Department, using the cutters CHEYENNE, stationed in St. Louis, the SCIOTO stationed in Keokuk, and the WYACONDA, stationed in Dubuque, is responsible for maintaining and setting buoys and shore aids along the Upper Mississippi River. The Prevention Department also focuses on licensed mariners issues, permits, casualty investigations, and security verifications. The USCG Sector Upper Mississippi River Response Department uses small boats, other law enforcement partnerships, and first responders to patrol and respond to emergencies or incidents on the Upper Mississippi River.

U.S. Army Corps of Engineers (ACOE)

The ACOE maintains twenty-nine Lock facilities along the UMR, under the supervision of their St. Louis, MO, Rock Island, IL, and St. Paul, MN District Offices. Through management of these facilities, the ACOE maintains pool levels that are sufficient to accommodate commercial traffic on the river. The Middle Mississippi River maintains a nine-foot navigation channel in open river conditions with river structures supplemented by dredging. During high water conditions, our 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.

RIAC
The River Industry Action Committee (RIAC) 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 Coast Guard and the ACOE on matters such as high and low water, ice conditions, shoaling, marine accidents, etc.

Fleeting Facility Managers
Fleeting facility managers have a direct commercial interest in navigation conditions on the UMR, and any actions taken by the Coast Guard or Corps of Engineers in response to hazardous conditions that develop on the river. They can play a valuable role in providing feedback to other parties on both river conditions and impact of proposed actions of the Coast Guard and Army Corps of Engineers (ACOE).

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

State Emergency Managers

Hazardous conditions on the UMR, particularly high water/flooding conditions, frequently involve state emergency managers, as they become involved in responding to affected communities, and take a direct interest in conditions or activities that can affect the levee systems that protect those communities.

ACOE POSITION St. Louis District RM 0 – 300.0	**DUTIES & RESPONSIBILITIES**	**EQUALS**	**USCG POSITION**	**DUTIES & RESPONSIBILITIES**
Chief, Water Control Operations	River Stage Forecast & Control		Sector Upper Mississippi River Chief of Prevention	Manages daily waterway management and casualty operations
Operations Dredging Project Manager, St. Louis, MO	Channel Patrol & O&M Dredging Activities Upper Mississippi River		Sector Upper Mississippi River Chief of Prevention	Manages daily waterway management and casualty operations
Operations Manager, Rivers Project Office, Alton, IL	Supervises Upper Mississippi River all O&M Activities		Sector Upper Mississippi River Chief of Prevention	Manages daily waterway management and casualty operations
REPORTS TO:				
Chief of Operations, St. Louis District	Supervises Operations Managers		Sector Upper Mississippi River Chief of Response	Supervises operational response issues
REPORTS TO:				
District Engineer, St. Louis District	Supervises Chief of Operations		Commander, Sector Upper Mississippi River	Senior USCG officer in area
REPORTS TO:				
Division Engineer, Mississippi Valley Division	Supervises District Engineer		Commander, Eighth Coast Guard District	Senior USCG officer in District

ACOE POSITION Rock Island District RM 300.0 - 613.9	**DUTIES & RESPONSIBILITIES**	**EQUALS**	**USCG POSITION**	**DUTIES & RESPONSIBILITIES**
Chief, Water Control	River Stage Forecast		Sector Upper Mississippi River Chief of Prevention	Manages daily waterway management and casualty operations
Operations Dredging Project Manager Rock Island, IL	Channel Patrol & O&M Dredging Activities Upper Mississippi River		Sector Upper Mississippi River Chief of Prevention	Manages daily waterway management and casualty operations
REPORTS TO:				
Operations Manager, Mississippi River Project Office, Pleasant Valley, IA	Supervises Upper Mississippi River all O&M Activities		Sector Upper Mississippi River Chief of Response	Supervises operational response issues
REPORTS TO:				
District Engineer, Rock Island District	Supervises Chief of Operations		Sector Commander Upper Mississippi River	Senior USCG officer in area
REPORTS TO:				
Division Engineer, Mississippi Valley Division	Supervises District Engineer		Commander, Eighth Coast Guard District	Senior USCG officer in District for Marine Safety

ACOE POSITION St. Paul District RM 614.0 - 857.6	**DUTIES & RESPONSIBILITIES**	**EQUALS**	**USCG POSITION**	**DUTIES & RESPONSIBILITIES**
Chief, Water Control Operations	River Stage Forecast & Control		Sector Upper Mississippi River Chief of Prevention	Manages daily waterway management and casualty operations
Operations Dredging Project Manager, St. Paul, MN	Channel Patrol & O&M Dredging Activities Upper Mississippi River		Sector Upper Mississippi River Chief of Prevention	Manages daily waterway management and casualty operations
Operations Manager, Rivers Project Office	Supervises Upper Mississippi River all O&M Activities		Sector Upper Mississippi River Chief of Prevention	Manages daily waterway management and casualty operations
REPORTS TO:				
Chief of Operations, St. Paul District	Supervises Operations Managers		Sector Upper Mississippi River Chief of Response	Supervises operational response issues
REPORTS TO:				
District Engineer, St. Paul District	Supervises Chief of Operations		Commander, Sector Upper Mississippi River	Senior USCG officer in area
REPORTS TO:				
Division Engineer, Mississippi Valley Division	Supervises District Engineer		Commander, Eighth Coast Guard District	Senior USCG officer in District

Section 3 – Communications Plan

Initiation of Communications Plan – This section provides guidance on the methods of communicating and receiving information. The Coast Guard and maritime industry all carefully monitor river conditions and levels. When any of the conditions warrant attention, (high water, low water, high flow, ice or any other hazardous condition), any UMR stakeholder can request a conference call by contacting either the USCG Sector Chief of Response UMR, the ACOE, or the Chair of RIAC and/or IRCA. If further discussion is needed the members listed on the following pages of this section to include Industry, and State personnel will be contacted via email or phone call. The RIAC and/or IRCA chairs will contact those members of their respective organizations. From there, if appropriate, a teleconference will be set up to confer with all parties on possible measures to take and joint courses of action using the guidance from this annex as a basis to make a determination. By conferring frequently with all UMR stakeholders a joint action plan to safely navigate during the condition that warranted initiating the communications plan will be developed. The action plan will then be communicated to all UMR stakeholders using Broadcast Notice to Mariners, posting on the River Industry Bulletin Board (www.RIBB.com), and if time permits, Local Notice to Mariners.

Phone Conference Call Agenda:

I. Roll Call by Phone Conference Host
II. Protocol for Conference Call
III. Open Statement by Chairman or Co-Chairman of RIAC on Issues
IV. Weather Forecast by NWS or USACE
V. River Stage Forecast by USACE
VI. Channel Report for Area Of Concern by USACE Dredging Section
VII. Status of Dredging and Next Scheduled Locations
VIII. USCG Report on Advisories and Remarks
IX. USCG Buoy Tender Report on Channel Conditions
X. River Condition Report and Issues of Conference Call by Industry
XI. Discussion of Issues on Current Situations
XII. Assessment, Actions to Be Taken
XIII. Closing

ALL AGENCIES & ORGANIZATIONS: To ensure effective interagency cooperation during periods of coordinated response to high and low water, or other hazardous river conditions, stakeholder organizations are advised to **maintain active and ongoing communications with one another during normal river conditions and while planning together for joint response activities**. This will greatly facilitate speedy and effective communications under the pressure of responding to an event. These communications will be facilitated by the Contact List provided on page 14. As an aid to those looking to better understand Coast Guard and ACOE internal notification procedures, a description of these procedures is provided starting on page 8.

Vessel to Vessel and Vessel to Shore Communications
VHF communications on the Missouri River are handled by the communications center at USCG Sector Upper Mississippi River in St. Louis, MO, primary contact is made on channel 16 then; generally, you will be instructed to switch to another channel such as 22A to continue discussion.

NOTIFICATIONS:

U. S. Coast Guard

The U. S. Coast Guard maintains a 24 x 7 live watch at its Sector Upper Mississippi River Command Center in St. Louis, MO. Hazardous river conditions are monitored by Sector personnel at Sector Upper Mississippi River and reported as appropriate to the Sector Commander, Sector Upper Mississippi River. As conditions dictate, the Sector Commander will release Broadcast Notices to Mariners (BNM) or Urgent Marine Information Broadcasts (UMIB) with safety advisories, safety zones, or river closures. As noted above, these waterways control measures are determined in consultation with the ACOE and representatives of the river industry. The Sector Upper Mississippi River Command Center in the Robert A. Young Federal Building in St. Louis is responsible for these notifications.

Sector 24 Hour Contact Number: 314-269-2332

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

During normal working hours U.S. Coast Guard District Eight Bridge Branch can be contacted at (314) 269-2378. After normal working hours contact Sector Upper Mississippi River at 314-269-2332 and they will relay information to the appropriate personnel.

CORPS OF ENGINEERS: ST. PAUL DISTRICT

During Normal Work Hours

During periods of hazardous river conditions the St. Paul District, Corps of Engineers (Corps) field offices work closely with river users and the basin communities. River users may report hazardous conditions to the nearest Lock and Dam. The Lockmaster will assess the situation and then contact the appropriate office(s) to take the necessary actions. The following offices may be contacted depending on the situation: Operations Manager, Locks & Dams; Operations Manager, Channels & Harbors; Operations Manager, Physical Support Branch; Chief, Operations Division; Chief, Water Control; Chief, Readiness Branch; Deputy District Engineer; District Commander. The District Team will coordinate with the USCG throughout the hazardous period. When river conditions become too hazardous for safe navigation the Corps through the District Commander may make recommendations to the USCG to issue safety zone restrictions or river closures. Likewise, as river conditions improve the Corps through the appropriate District Commander will make recommendations to remove the safety zone restrictions or reopen the river to navigation.

After Normal Working Hours, Weekends, and Holidays

As with Normal working hours, river users may report hazardous conditions to the nearest Lock and Dam. From there the same sequence of contacts will be made throughout the district until all of the appropriate personnel are contacted to address the situation.

Channel 14 (156.7 MHZ) and channel 12 (156.6 MHZ) are the primary and secondary working frequencies for port operations. The Upper Mississippi lock and dams monitor ch14 and ch12 in an alternating fashion up the river. For instance if lock and dam 1 is monitoring ch14 as its primary frequency with ch12 as its secondary frequency then lock and dam 2 would monitor ch12 as its primary frequency with ch14 as its secondary. The reason for alternating frequencies is to allow mariners to communicate with each lock and dam without “stepping on” other mariners communicating with other lock and dams. If for some reason the hailing vessel is unable to hail the lock and dam on ch12 or ch14

they should be able to hail that lock and dam on ch16 156.8MHZ. All lock and dams are required to monitor ch16 for emergency purposes.

Lock and Dam 24 Hour Phone Numbers:

Lock and Dam St. Anthony Falls Upper	612 333-5336	CH. 14
Lock and Dam St. Anthony Falls Lower	612 332-3660	CH. 12
Lock and Dam 1, Minneapolis, MN	612 724-2971	CH. 14
Locks and Dam 2, Hastings, MN	651 437-3150	CH. 12
Locks and Dam 3, Welch, MN	651 388-5794	CH. 14
Lock and Dam 4, Alma, WI	608 685-4421	CH. 14
Lock and Dam 5, Minnesota City, MN	507 689-2101	CH. 12
Lock and Dam 5A, Fountain City, WI	507 452-2789	CH. 14
Locks and Dam 6, Trempealeau, WI	608 534-6774	CH. 12
Locks and Dam 7, LaCrescent, MN	507 895-2170	CH. 14
Lock and Dam 8, Genoa, WI	608 689-2625	CH. 12
Lock and Dam 9, Eastman, WI	608 874-4801	CH. 14
Lock and Dam 10, Guttenberg, IA	563 252-1261	CH. 12

Points of contact for specific river conditions:

Channel\Dredging Issues:	(608) 687-3112	Steve tapp
Lock & Dam Operations:	(608) 687-9104	Jerry Stalder
Water Control:	(651) 290-5624	Scott Bratten

Corps of Engineers: Rock Island District

During Normal Work Hours

During periods of hazardous river conditions the Corps of Engineers works closely with river users and the basin communities. River users may report hazardous conditions to the nearest Lock and Dam or the Mississippi River Project Office. These field offices will contact the Operations Manager who then contacts the appropriate office(s) to take the necessary actions. The following offices may be contacted depending on the situation: Chief, Lock and Dam Section; Chief, Maintenance Section; Chief, Dredging Section; Chief, Water Control; Chief, Emergency Management; Chief, Operations Division; Deputy District Commander; District Commander. The District Team will coordinate with the USCG throughout the hazardous period. When river conditions become too hazardous for safe navigation the Corps through the District Commander will make recommendations to the USCG to issue safety zone restrictions or river closures. Likewise, as river conditions improve the Corps through the District Commander will make recommendations to remove the safety zone restrictions or reopen the river to navigation.

After Normal Work Hours, Weekends and Holidays

As with normal working hours, river users may report hazardous conditions to the nearest Lock and Dam or the Mississippi River Project Office. From there the same sequence of contacts will be made throughout the district until all of the appropriate personnel are contact to address the situation.

Lock and Dam 24 Hour Phone Numbers:

Lock and Dam 11, Dubuque, Iowa	563 582-1204	CH. 14
Lock and Dam 12, Bellevue, Iowa	563 872-3314	CH. 14
Lock and Dam 13, Fulton, Illinois	815 589-3313	CH. 14

Locks and Dam 14, Pleasant Valley, Iowa	563 332-0907	CH. 14
Locks and Dam 15, Rock Island, Illinois	309 794-5266	CH. 14
Lock and Dam 16, Illinois City, Illinois	309 537-3191	CH. 14
Lock and Dam 17, New Boston, Illinois	309 587-8125	CH. 14
Lock and Dam 18, Gladstone, Illinois	309 873-2246	CH. 14
Lock 19, Keokuk, Iowa	319 524-2631	CH. 14
Lock and Dam 20, Canton, Missouri	573 288-3320	CH. 14
Lock and Dam 21, Quincy, Illinois	217 222-0918	CH. 14
Lock and Dam 22, New London, Missouri	573 221-0294	CH. 14

Mississippi River Project Office Contact List:

	Office	Cell
Bill Gretten	309 794-4512	309 737-3181
Dennis Shannon	309 794-4580	309 738-0179

Corps of Engineers: St. Louis District

During Normal Work Hours

During periods of hazardous river conditions the Corps of Engineers works closely with river users and the basin communities. River users may report hazardous conditions to the nearest Lock and Dam. The Lockmaster will report the hazardous river conditions and impacts to their District Office Point of Contact. Once the report of the hazardous condition is received in the District Office the following persons will be informed: District Water Control Manager, Emergency Management Manager, Operations Dredging Project Manager, Rivers Project Office Manager, the Chief of Operations, District Deputy Engineer and the District Commander. The District Team including Water Control, Emergency Management and Operations staff will coordinate with the Coast Guard throughout the hazardous period. When river conditions become too hazardous for safe navigation or if continuing navigation causes an unsafe condition such as causing levee erosion or interfering with flood fighting, etc, the Corp through the District Commander will make recommendations to the Coast Guard to issue safety zone restrictions or river closures. Likewise as river conditions improve the Corps through the appropriate District Commander will make recommendations to remove the safety zone restrictions or reopen the river to navigation.

After Normal Work Hours, Weekends and Holidays

Here is the most up-to-date contact list with work and cell phone numbers, which are maintained by Corps staff responsible for emergency response to hazardous river conditions.

- River users may report hazardous conditions to the nearest Lock and Dam. The Lockmaster will report the hazardous conditions and possible impacts to Water Control Personnel and River Project Manager.

Lock and Dam 24 Hour Phone Numbers:

Lock and Dam 24, Clarksville, Missouri	573 242-3524	CH. 14
Lock and Dam 25, Winfield, Missouri	314-566-8120	CH. 12
Lock and Dam 26, Alton, Illinois	618 462-1713	CH. 14
Lock and Dam 27, Granite City, Illinois	618 452-7107	CH. 12

1. Water Control Contact List:

	Work	Cell
Joan Stemler	314-331-8330	314-630-6292
Russel Errett	314-331-8337	314-681-7625
Liz Behrens	314-331-8351	314-277-5825
Leonard Hopkins	314-331-8348	314-799-3458

2. River Project Contact List:

	Work	Cell
Andy Schimpf	636-899-0044	314-630-6280
Peg O'Bryan	314-331-8100	314-660-0890

3. Dredging Operations

	Work
Lance Engle	314-263-4708

- Corps of Engineers will report hazardous conditions to Coast Guard.
- Corps of Engineers will coordinate with Coast Guard for issuance of safety zones.

Illinois Emergency Management Agency (IEMA)

In the event of an incident occurring on the waterways, which could involve the state of Illinois, you should immediately phone our telecommunications center. This will alert our Operations staff which enables the IEMA to monitor and pre-position resources if circumstances dictate. It is at this initial call number that the agencies equipped to provide a response; mitigation and recovery are quickly notified. Periodic status reports to the telecommunications center (IEMA) allows the IEMA staff time to prepare for management procedures.

IEMA Telecommunications Center: 217-782-7860 or 800-782-7860

Iowa Homeland Security & Emergency Management (HLSEM)

HLSEM is responsible for coordinating emergency preparedness activities across the State of Iowa. Iowa Homeland Security supports asset protection initiatives and promotes security awareness among all citizens. When an emergency of state or regional significance occurs, HLSEM coordinates response and recovery assistance. We engage all state response capabilities and facilitate emergency aid across local and state political boundaries. When it is needed, HLSEM is responsible for requesting and coordinating assistance from partner states and the federal government.

HLSEM believes that productive information sharing relationships are critical to homeland security and emergency preparedness. When information concerning the safety and security of Iowa's citizens and communities becomes available, please contact the HLSEM Duty Officer at 515-979-2200 or 515-281-3231. Our Duty Officer can put you in contact with Jeff McKinney, Operations Officer (MARSEC POC), or Jerry Ostendorf, Chief of Operations.

Minnesota Emergency Management

The Department of Public Safety, Homeland Security and Emergency Management (HSEM) is responsible for coordinating emergency preparedness activities within the State of Minnesota. HSEM works closely with State law enforcement officials, Sheriff's Offices, and other local law enforcement agencies in support of emergency response preparedness, critical infrastructure protection, and security awareness among all agencies and private businesses. When an emergency of state or regional significance occurs, HSEM coordinates response and recovery assistance.

Intelligence information about public safety and security or incidents involving critical infrastructure should be reported to the Minnesota Duty Officer at 1-800-422-0798, Twin Cities Metro Area is 651-649-5451, Fax 651-296-2300, TDD: 651/215-6952 (Metro Area) and 1-800-627-3529 in Greater MN. Additional information is available at www.hsem.state.mn.us

Missouri State Emergency Management Agency

The Missouri State Emergency Management Agency (SEMA) coordinates and develops the State Emergency Operations Plan, oversees Missouri's disaster preparedness, floodplain management, hazard mitigation and public assistance programs as well as coordinates the state's response operations for all types of large-scale emergencies anywhere in the state.

SEMA and the State Emergency Operations Center (SEOC) are located at the Missouri Army National Guard Ike Skelton Training Site, east of Jefferson City. SEMA has a state-of-the-art facility and technical equipment to direct Missouri's disaster emergency response and recovery operations. The SEOC enables all state agencies to come together during an emergency, gather information from local jurisdictions and quickly respond to the disaster. The EOC has fully functional workstations, access to communication resources that include radio, telephone, satellite and wireless computer links.

The State EOC is designed to support 24/7 operations with kitchen facilities, showers, security, and lodging capability. The Missouri Information Analysis Center is located directly adjacent to SEMA offices and is an integral part of Missouri's response team.

SEMA has direct coordination and support for local emergency managers through nine area coordinators, one assigned to each region of the state. These SEMA employees have vehicles equipped with the latest in radio, satellite and mobile data terminal technology, most recently used during a dam failure in rural Missouri.

SEMA has a 24-hour duty officer who can be reached at (573) 751-2748; SEMA's agency toll-free number is (800) 298-6289. The State Communications Officer is Richard Stump (573) 526-9201; the State EOC Manager is Steve Sloan (573) 526-9144; the Operations Chief is Steve Moody (573) 526-9145; Area Coordinator Supervisor is Chuck May (573) 526-9112.

SEMA's Director is Mr. Ron Reynolds (573) 526-9104 and Deputy Director is Mr. Duane Nichols (573) 526-9100.

Wisconsin Emergency Management (WEM)

Wisconsin Emergency Management (WEM) coordinates disaster response activities across the state. In the event of an incident on the Mississippi River, Wisconsin Emergency Management can be contacted through our Duty Officer System. The Duty Officer System can be accessed through the 24 hour telephone number 800-943-0003. The Duty Officer will notify WEM management staff and appropriate state agencies. The Duty Officer will make initial contact with the affected jurisdiction to obtain on the scene information related to the event and to assess the need for state assistance. WEM will also initiate contact with the appropriate federal agencies to facilitate coordination at all levels of government. If the situation requires the State EOC will be activated and state agency personnel will be sent to the scene.

CONTACT INFORMATION: In order to facilitate communications between UMR stakeholders, a contact list is provided on the following pages. This contact list is for internal use only and shall not be provided to non-plan users without permission by the contactee.

ACTION PLAN TABLE
HIGH WATER
St. Paul, MN to Chester, IL
RM 857.6 – 109.9

This Information is Applicable to all Tables

In the event of an unexpected river closure, the following steps should be considered prior to reopening the river as appropriate:

- Conduct test tows if necessary for potential problem areas.
- Develop and initiate recovery plan to clear the queue.
- Issue advisory or establish safety zone if deemed necessary to indicate extreme low water, high water, high flow, or extreme ice conditions.
- Coast Guard and ACOE will typically reset buoys in those narrow channel locations within reach and continue an increased level of channel reconnaissance.
- Consider draft limits, tow sizes, and helper boats.
- Evaluate fleet dimensions.
- Be aware of shifting channels
- Emergency dredging may be required at some locations.
- Consider restrictions on single skin barge movement.
- Continue communications. (e-mails, conference calls or others) – consider establishing notices, advisories and/or safety zones as needed using standard communication links.

Section 4 – Action Plan

The actions to be taken during High Water, Low Water, High Current, and Ice conditions are described in the following Action Plan Tables.

ACTION PLAN TABLE – High Water Zone 28

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 28** **Miles 109.9 to 185.4** Reference Gauge: St. Louis RM 179.6 Flood Stage: 30’ / 409.94’ MSL/NGVD MSL/NGVD Gauge Zero: 379.94’	18’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	20’	Rising	High Water	Watch 20’ to 24.9’	Initiate communication plan. Issue advisory between UMR mile 160.0 – 201.0 that indicates high water and drift potential. Advise the use of caution and minimize wake. All tow boat operators should be experienced in high water operations. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues. Down streaming operations are not recommended unless the vessel is equal to or greater than 75 feet in length and the vessel has a minimum of 1800 horsepower. Maintain communication between ACOE, RIAC, USCG, and other agencies involved.
	25’	Rising	High Water	Action 25’ to 29.9’	Establish safety zone in St. Louis harbor, mile 179 to 184. Southbound tows greater than 600' in length, excluding the towboat, should limit transit to daylight hours only. All towing vessels should have a minimum of 250 horsepower for each loaded barge, and should proceed at the slowest safe operating speed based upon prevailing conditions in order to minimize wake damage to personal property. Maintain communication between ACOE, RIAC, USCG, and other agencies involved. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	30’	Rising	Extreme High Water	Action 30’ to 37.9	Continue Safety Zone currently in effect. Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift

					current caution. Northbound tows must have enough horsepower to maintain a minimum speed of 3 MPH on approach to the St. Louis harbor bridges. It is recommended all towing vessels have a pilot onboard with recent high water experience with similar size tows through the St. Louis harbor bridges. All towboats are restricted from carrying barges on the "hip." DARTs are placed on 6 hour standby, daily SITREPS are prepared, and contact is made with local, state, and federal emergency agencies. Maintain communication between ACOE, RIAC, USCG, and other agencies involved. Consider standing up an Incident Command Post if not done already.
	38'	Rising	Extreme High Water	Action 38' and up	River may be closed until St. Louis gauge drops below 38' or conditions warrant reopening river. Monitor levee conditions and deploy DARTs if necessary. Create plan for reopening river and clearing the queue. Continue SITREPs until river falls below 30'. Maintain communication between ACOE, RIAC, USCG, and other agencies involved. Consider standing up an Incident Command Post.
	38'	Stable or Falling	Extreme High Water	Recovery	Continue safety zone currently in effect between UMR mile 179 to mile 184. Evaluate river conditions for river reopening. Initiate plan for clearing the queue. Continue SITREPs until river falls below 30'. Maintain communication between ACOE, RIAC, USCG, and other agencies involved.
	30'	Falling	Extreme High Water 30' and stable or falling	Recovery	Continue Safety Zone currently in effect between UMR 179 to 184. Reopen river if conditions warrant. Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Disaster Response Teams remain on 6 hour standby, daily SITREPS are prepared, and contact is made with local, state, and federal emergency agencies. Maintain communication between ACOE, RIAC, USCG, and other agencies involved.
	24.9'	Falling	High Water	Recovery	Cancel current safety zone in St. Louis harbor and issue advisory between mile 160 to mile 201. Advisory should indicate high water and drift potential. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, and discuss mooring

					arrangements. Down streaming operations are not recommended unless the vessel is equal to or greater than 75 feet in length and the vessel has a minimum of 1800 horsepower. Maintain communication between ACOE, RIAC, USCG, and other agencies involved.
	20.0’	Falling	High Water	Recovery	Issue advisory that indicates high water and to exercise caution; Users to report hazardous conditions to Coast Guard. Initiate comms plan if river level begins rising.
	18’	Falling	Normal operations		Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 27

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 27** **Miles 185.5 to 200.4** Reference Gauge: Lock and Dam #27 Tail water Gauge: RM 185.1 Flood Stage: Reference St. Louis Flood Stage: 30'/409.94' MSL/NGVD MSL/NGVD Gauge Zero: 350.0' L&D Closure: Reference St. Louis Stage: 47'/426.94' MSL	25.0' St. Louis Stage	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	38.0' St. Louis Stage	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	40.0' St. Louis Stage	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	42.0' St. Louis Stage	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions. Use of test tows should be considered prior to opening the river.
	38.0' St. Louis Stage	Falling	High Water	Recovery	Issue advisory that indicates high water and to exercise caution; Users to report hazardous conditions to Coast Guard. Initiate comms plan if river level begins rising.
	25.0' St. Louis Stage	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 26

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 26** **Miles 200.5 to 241.3** Reference Gauge: Mel Price Lock & Dam #26 Tail water Gauge: RM 200.5 Flood Stage: 21'/416.48 MSL/NGVD MSL/NGVD Gauge Zero: 395.48' L&D Closure: 36.5'/432.0' MSL	16'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	21'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	36.5'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	21'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions. Issue advisory that indicates high water and to exercise caution; Users to report hazardous conditions to Coast Guard. Initiate comms plan if river level begins rising.
	16'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 25

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 25** **Miles 241.4 to 273.3** Reference Gauge: Lock & Dam #25 Tail water Gauge: RM 241.2 Flood Stage: 26'/433' MSL/NGVD MSL/NGVD Gauge Zero: 407.00 L&D Closure: 33.75'/440.75' MSL	21'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	26'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	33.8'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	24'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions. Issue advisory that indicates high water and to exercise caution; Users to report hazardous conditions to Coast Guard. Initiate comms plan if river level begins rising.
	21'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 24

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 24** **Miles 273.4 to 301.1** Reference Gauge: Lock & Dam #24 Tail water Gauge RM 273.24 Flood Stage: 25' / 446.81' MSL/NGVD MSL/NGVD Gauge Zero: 421.81 L&D Closure: 32.5'/454.75' MSL Louisiana HWY Drawbridge at RM 282.1	20'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	25'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	29'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	25'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions. Issue advisory that indicates high water and to exercise caution; Users to report hazardous conditions to Coast Guard. Initiate comms plan if river level begins rising.
	20'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 23 is N/A

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High Water Zone 22

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 22** **Miles 301.2 to 324.8** Reference Gauge: Lock & Dam #22 RM 301.2 Flood Stage: 16.0' / 462.1' MSL MSL/NGVD Gauge Zero: 446.10 L&D Closure: 21.9' / 467.5' MSL	11'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	16'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	21.4'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	16'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions. Issue advisory that indicates high water and to exercise caution; Users to report hazardous conditions to Coast Guard. Initiate comms plan if river level begins rising.
	11'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 21

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 21** **Miles 324.9 to 343.1** Reference Gauge: Lock & Dam #21 RM 324.9 Flood Stage: 17.0' / 474.8' MSL MSL/NGVD Gauge Zero: 457.80 L&D Closure: 21.9'/ 479.7' MSL	12'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	17'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	21.9'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	17'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions. Issue advisory that indicates high water and to exercise caution; Users to report hazardous conditions to Coast Guard. Initiate comms plan if river level begins rising.
	12'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 20

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 20** **Miles 343.2 to 364.1** Reference Gauge: Lock & Dam #20 RM 343.2 Flood Stage: 14.0’ / 482.5’ MSL MSL/NGVD Gauge Zero: 468.50 L&D Closure: 18.0’ / 486.5’ MSL	9’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	14.0’	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	16.0’	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	14’	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	9’	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 19

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 19** **Miles 364.2 to 410.4** Reference Gauge: Lock & Dam #19 RM 364.2 Flood Stage: 16’ / 493.83’ MSL MSL/NGVD Gauge Zero: 477.83 L&D Closure: 21.2’ / 499.03’ MSL	11’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	16’	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	18’	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	16’	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	11’	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 18

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 18** **Miles 410.5 to 437.0** Reference Gauge: Lock & Dam #18 RM 410.5 Flood Stage: 10’ / 528.52’ MSL MSL/NGVD Gauge Zero: 518.52 L&D Closure: 15’ / 533.52’ MSL	5’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	10’	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	12’	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	10’	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	5’	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 17

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 17** **Miles 437.1 to 457.1** Reference Gauge: Lock & Dam #17 RM 437.1 Flood Stage: 14' / 540.7' MSL MSL/NGVD Gauge Zero: 526.70 L&D Closure: 18.2' / 544.9' MSL	9'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	14.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	16.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	14.0'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	9'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 16

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 16** **Miles 457.2 to 482.8** Reference Gauge: Lock & Dam #16 RM 457.2 Flood Stage: 15’ / 548.6’ MSL MSL/NGVD Gauge Zero: 533.60 L&D Closure: 17’ / 550.6’ MSL	10’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	15’	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	17’	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	15’	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	10’	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 15

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 15** **Miles 482.9 to 493.2** Reference Gauge: Lock & Dam #15 RM 482.9 Flood Stage: 15’ / 557.5’ MSL MSL/NGVD Gauge Zero: 542.50 L&D Closure: 20’ / 562.5’ MSL	10’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	15’	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	17’	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	15’	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	10’	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 14

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 14** **Miles 493.3 to 522.3** Reference Gauge: Lock & Dam #14 RM 493.3 Flood Stage: 11' / 568.08' MSL MSL/NGVD Gauge Zero: 557.08 L&D Closure: 14' / 571.08' MSL	6'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	11'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	13'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	11'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	6'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 13

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 13** **Miles 522.4 to 556.6** Reference Gauge: Lock & Dam #13 RM 522.4 Flood Stage: 16’ / 584.7’ MSL MSL/NGVD Gauge Zero: 568.70 L&D Closure: 18’ / 586.7’ MSL	11’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	16’	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	18’	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	16’	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	11’	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 12

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 12** **Miles 556.7 to 582.9** Reference Gauge: Lock & Dam #12 RM 556.7 Flood Stage: 17’ / 597.2’ MSL MSL/NGVD Gauge Zero: 580.20 L&D Closure: 18.4’ / 598.6’ MSL	12’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	17’	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	19’	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	17’	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	12’	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 11

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 11** **Miles 583.0 to 615.0** Reference Gauge: Lock & Dam #11 RM 583.0 Flood Stage: 16' / 604.2' MSL MSL/NGVD Gauge Zero: 588.20 L&D Closure: 19.5' / 607.2' MSL	11'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	16'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	18'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	16'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	11'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 10

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 10** **Miles 615.1 to 647.8** Reference Gauge: Lock & Dam #10 RM 615.1 Flood Stage: 14' / 614.0 MSL/NGVD MSL/NGVD Gauge Zero: 600.0 L&D Closure: 21' / 621.0' MSL	9.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	14.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	16.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	14.0'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	9.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 9

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 9** **Miles 647.9 to 679.1** Reference Gauge: Lock & Dam #9 RM 647.9 Flood Stage: 22' / 622' MSL MSL/NGVD Gauge Zero: 600.0 L&D Closure: 31' / 631' MSL	17.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	22.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	24.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	22.0'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	17.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 8

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 8** **Miles 679.2 to 702.4** Reference Gauge: Lock & Dam #8 RM 679.2 Flood Stage: 34' / 634' MSL MSL/NGVD Gauge Zero: 600.0 L&D Closure: 36' / 636' MSL	29.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	34.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	36'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	34'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	29.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 7

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 7** **Miles 702.5 to 714.2** Reference Gauge: Lock & Dam #7 RM 702.5 Flood Stage: 42’ / 642’ MSL MSL/NGVD Gauge Zero: 600.0 L&D Closure: 46.5’ / 646.5’ MSL	37.0’	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	42.0’	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	44.0’	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	42.0’	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	37.0’	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 6

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 6** **Miles 714.3 to 728.5** Reference Gauge: Lock & Dam #6 RM 714.3 Flood Stage: 47' / 647' MSL MSL/NGVD Gauge Zero: 644.5 L&D Closure: 51.5' / 651.5' MSL	42.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	47.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	49.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	47.0'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	42.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 5A

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 5A** **Miles 728.6 to 738.0** Reference Gauge: Lock & Dam #5A RM 728.5 Flood Stage: 53' / 653' MSL' MSL/NGVD Gauge Zero: 600.0 L&D Closure: 60' / 660' MSL	48.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	53.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	55.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	53.0''	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	48.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 5

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 5** **Miles 738.1 to 752.7** Reference Gauge: Lock & Dam #5 RM 738.1 Flood Stage: 65' / 665' MSL MSL/NGVD Gauge Zero: 600.0 L&D Closure: 64.5' / 664.5' MSL	60.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	65.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	67.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	65.0'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	60.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 4

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 4** **Miles 752.8 to 796.8** Reference Gauge: Lock & Dam #4 RM 752.8 Flood Stage: 68.0' / 668' MSL MSL/NGVD Gauge Zero: 600.0 L&D Closure: 71.5' / 671.5' MSL	63.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	68.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	70.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	68.0'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	63.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 3

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 3** **Miles 796.9 to 815.1** Reference Gauge: Lock & Dam #3 RM 796.9 Flood Stage: 77' / 677' MSL MSL/NGVD Gauge Zero: 600.0 L&D Closure: 83' / 683' MSL	72.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	77.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	79.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	77.0'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	72.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 2

CRITICAL LOCATION DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 2** **Miles 815.2 to 847.5** Reference Gauge: Lock & Dam #2 RM 815.2 Flood Stage: 89' / 689' MSL MSL/NGVD Gauge Zero: 600.0 L&D Closure: 92' / 692' MSL	84.0'	Rising	Normal Operations		As stage rises towards flood stage at a gauge or series of gauge locations consider the need to initiate communications plan with ACOE, RIAC, and USCG. Monitor river gauges frequently.
	89.0'	Rising	High Water	Watch	Initiate communication plan. Issue advisory that indicates high water and drift potential. All tow boat operators should be experienced in high water operations. Advise the use of caution and minimize wake. Consider tow restrictions, hp requirements, dangers of down streaming, discuss mooring arrangements, and bridge clearance issues.
	91.0'	Rising	Extreme High Water	Action	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions to determine the need to establish a safety zone/river closure. Discourage/prohibit recreational vsl transit, assess bridge clearances in advance, minimize speed to avoid wake damage, favor ctr of channel, prohibit laying up on levees, caution in passing/meeting situations, monitor fleeting areas and mooring lines/arrangements, review anchoring req, have towboat attend fleets at all times, coord with adjacent facilities/fleeters for assistance in event of breakaway, pre-identify lay-up areas in event of river closure, allow fleeting to continue, advise swift current caution. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	89.0'	Stable or Falling	High Water	Recovery	Use watch stage along with high current reports, impacted river reach, towboat positions and levee conditions if and when to reopen the river (if a safety zone or closure was established). Determine what action advisories need to be removed or remain depending on river conditions.
	84.0'	Falling	Normal Operations	Recovery	Issue final advisory that indicates return to normal operations. Users to report hazardous conditions to the Coast Guard. Cease all advisories if conditions allow.

High Water Zone 1 is N/A

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ACTION PLAN TABLE
HIGH FLOW
St. Paul, MN to Chester, IL
RM 857.6 – 109.9

High Flow Zone 28

CRITICAL AREA DESCRIPTION	TRIGGER READING	TREND	TRIGGER FLOW	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 28** **Miles 109.9 to 185.4**		Rising		Normal operations	Watch	Monitor flow and traffic. Continue standard communication practices to keep a good understanding of flow conditions.
		Rising		High Flows	Watch	Establish or monitor normal communications between ACOE, MWRD, Industry and USCG as needed to discuss specific flow problem(s), potential impacts and possible solutions.
		Rising	504,000 CFS	Very High Flows -	Action	Continue normal communications (e-mails, conference calls or others) – consider establishing notices, advisories and/or safety zones as needed using standard communication links between ACOE, MWRD, Industry (RIAC/fleeters), and USCG. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
		Falling		High Flows	Recovery	Continue normal communications between ACOE, MWRD, Industry, and USCG.
		Falling		Normal operations	Watch	Monitor flow and traffic. Continue standard communication practices to keep a good understanding of flow conditions.

High Flow Zones 27 - 2

CRITICAL AREA DESCRIPTION	TRIGGER READING	TREND	TRIGGER FLOW	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zones 27 - 2** **Miles 847.6 to 185.5**				High flow conditions are dealt with under normal operating conditions regarding out draft signs (refer to specific information for zone 1 on p55) at lock approaches and different operating conditions and approach methods at bridges and bend ways. Erosion/scour conditions along flood control levees during high flows are very site specific and are integrated into High Water conditions.		Consider use of assist boats when out draft conditions exist Some locks display out draft warning signs during certain flow conditions; this is performed as part of normal operations at the navigation locks and dams

High Flow Zone 1

CRITICAL AREA DESCRIPTION	TRIGGER READING	TREND	TRIGGER FLOW	DESCRIPTION	PHASE	ACTION
Upper Mississippi River **Zone 1** **Miles 847.6 to 857.6**		Rising	18,000 CFS measured at Upper St. Anthony Falls	Normal Operations		Monitor flow and traffic. Continue standard communication practices to keep a good understanding of flow conditions.
		Rising	20,000 CFS measured at Upper St. Anthony Falls	High Flows Out draft indicators are placed out at Upper St. Anthony Falls and Lower St. Anthony Falls.	Watch	Establish or monitor normal communications between ACOE, Industry and USCG as needed to discuss specific flow problem(s), potential impacts and possible solutions. At Lock and Dam #1, the out draft indicator will be turned on with 0.2 foot of flow over the rubber dam whether it is inflated or deflated.
		Rising	30,000 CFS measured at Upper St. Anthony Falls Lock closed at 40,000 CFS	Very High Flows Recreational traffic is halted through lock and Dams at 30,000 CFS	Action	Continue normal communications (e-mails, conference calls or others) – consider establishing notices, advisories and/or safety zones as needed using standard communication links between ACOE, Industry (IRCA/RIAC/fleeters), and USCG. Consider press release and/or Joint Information Center and formation of Incident Command Post if needed.
		Falling	Below 30,000 CFS measured at Upper St. Anthony Falls	High Flows	Recovery	Consider reopening the lock to recreational traffic. Continue normal communications between ACOE, MWRD, Industry (IRCA) and USCG.
		Falling	Below 20,000 CFS measured at Upper St. Anthony Falls	Normal Operations		Monitor flow and traffic. Continue standard communication practices to keep a good understanding of flow conditions.

ACTION PLAN TABLE
LOW WATER
St. Louis, MO to Chester, IL
RM 185.4 – 109.9

***** FINAL 01NOV2012*****

ACTION PLAN TABLE – LOW WATER CONDITIONS UPPER MISSISSIPPI RIVER, Low Water Zone 28

CRITICAL REACH DESCRIPTION	ST.LOUIS TRIGGER READING	THEBES TRIGGER READING	TREND	TRIGGER FLOW	DESCRIPTION	PHASE	ACTION
UPPER MISSISSIPPI RIVER **Zone 28** **Miles 0.0 to 185.4** Reference Gage: St. Louis RM 179.6 Low Water Reference plane for St. Louis Harbor: -3.5/9 ft. channel **UPPER MISSISSIPPI RIVER** **Zone 28**	**15'**	**22'**	Falling		Normal Operations	Watch	USACE continues normal survey efforts and channel patrols to identify dredging locations. Based on forecast, determines dredging start date.
	5'	**12'**	Falling		Normal Operations w/Advisory	Action	Monitor channel conditions and traffic. Consider initiating communications plan. USACE to plan additional channel reconnaissance surveys and obtain river forecasts. Continue standard methods of survey and communication practices to maintain awareness of channel conditions and known buoy locations. Prioritize dredging, aids to navigation (buoys), and data collection. **Realign green buoys at Thebes as a precautionary measure, if necessary.**
	0'	**7'**	Falling		Low Water Channel narrows in various conditions	Action	Initiate communication plan. Issue advisories to indicate low water between UMR miles 0 to 185, and mariners should exercise caution, beware of shifting channels, transit at slow speed near fleet areas, and place heavy barges in middle of tow. USACE initiates increased channel reconnaissance surveys, monitors potential problem areas, and provides updates on dredging actions. Communications between USACE, USCG and Industry as needed to discuss problem areas, potential impacts and possible solutions. **USACE considers requesting permission to capture extra water in reservoirs and assesses boat ramp availability for survey vessel access.** **Industry considers moving deep draft barges out of Zone 28.** **Issue BNM for towboat operators to use caution and avoid RDB buoy line at MM 42-43 due to dangerous rock pinnacles. Reset buoys within that reach, as**

Miles 0.0 to 185.4 **Reference Gage: Thebes Bridge RM 43.7** **Low Water Reference Plane for Thebes Bridge: 4.8ft.** **UPPER MISSISSIPPI RIVER** **Zone 28** **Miles 0.0 to 185.4** COTP Responsibility **USCG Sector**							**necessary.** ***** At (STL gage -2.0) Thebes gage 5.0, rock pinnacle cluster mid-channel at MM 38.5 becomes hazard to navigation, mark with buoys. *****
	-3'	**4'**	Falling		Extreme Low Water Channel continues to narrow and channel depth decreases	Action	Issue advisories or establish safety zones, if necessary, to indicate extreme low water between UMR miles 0 and 185. Consider draft limits and tow size restrictions. Reiterate for mariners to be mindful of speed and wake near fleeting areas. Reset buoys in narrow channel locations within reach. USACE will continue increased channel reconnaissance. Emergency dredging may be required at some locations. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed. **Continue to assess boat ramps.** **Industry confirms fuel/water and fleet area/space logistics in the event of prolonged closures/restrictions.** **Realign channel to best mark hazardous pinnacles between MM 45-46 by resetting buoys within that reach. Discuss possible actions to reduce risk at pinnacle cluster mid-channel MM 38.5.** **At Grand Tower area, adjust red buoys near MM 79.3LDB to account for encroaching rock.** ***** At (STL gage -4.0) Thebes gage 3.0, there is additional rock encroaching on the channel at multiple locations between MM 39.4 and 46. Adjust buoys where appropriate using USACE overlay files, observed depths and industry input. Some tow size restrictions may be necessary depending on final channel widths after buoys are set. *****
	-5'	**2'**	Falling		**Minimum Navigation** **In many areas of zone, channel is at best 300-ft wide by 9-ft deep**	Action	Establish safety zones between UMR miles 0 and 185 with restrictions if conditions warrant. Fleeting may continue if conditions warrant. Survey, dredge (if possible) and re-buoy critical areas. Monitoring channel conditions and communication between USACE, USCG, RIAC and other affected agencies likely occurs on a daily basis. Consider USCG/USACE/Industry Joint

Ohio Valley Miles 0.0-109 **USCG Sector Upper Mississippi River Miles 109-185** **UPPER MISSISSIPPI RIVER** **Zone 28** **Miles 0.0 to 185.4** **NOTE: St. Louis and Thebes reference gages**							Information Center, Incident Command Post, and Marine Transportation System Recovery Unit. **Continue to assess boat ramps. Consider ice effects on drafts.** **Consider any combination of these actions:** • **draft restrictions (Industry should be prepared for a 1-foot under keel safety factor at discretion of COTP with consultation of RIAC, e.g. 8-ft draft restriction in 9-ft channel depth)** • **restrictions on tow size (equate to dry cargo barge dimensions)** • **helper boat requirements** • **daylight only operations** **Consider one-way traffic between MM 38-47. Consider establishing VTS to support vessel queue management. Discuss with industry whether mariners have transited the route recently.** **At Grand Tower area, readjust red buoys from MM 79.1 to 79.3 to account for additional rock reducing channel width.**
	-6'	**1'**	Falling		**Below Minimum Navigation**	Action	USCG Safety Zones with navigation restrictions. Consider all USACE/USCG/Industry actions and options to mitigate risk. Fully Staff USCG/USACE/Industry Joint Information Center, Incident Command Post and Marine Transportation System Recovery Unit. Joint Public Affairs press release. **Discuss Grand Tower area (should be at 9' channel depth). There is rock mid-channel at MM80.**
	-7'	**0'**	Falling		**Historic Low Water**	Action	**Evaluate additional COTP restrictions.**

do not directly coincide. These trigger readings are for planning purposes only.	**-5’**	**2’**	Rising		**Minimum Navigation** Channel continues to improve and channel depth increases	Recovery	Issue advisories to indicate extreme low water between UMR mile 0 and 185. USACE continues channel reconnaissance surveys and identifies/monitors potential problem areas. Continue communications between USACE, USCG and Industry as needed to discuss specific problem areas, potential impacts and possible solutions.
	0’	**7’**	Rising		Low Water Channel returning to normal	Recovery	Continue advisories to indicate low water. Continue to monitor channel conditions for possible repeat of extreme low water. USCG will monitor buoys in narrow channel locations within reach. USACE will continue increased level of channel reconnaissance. Lift advisories as river conditions warrant. Continue communications as needed. Cancel any notices, advisories and safety zones as channel conditions improve.
	3’	**10’**	Rising		Normal Operations	Recovery	Cancel all advisories and commence normal operations. Report any hazardous conditions to USCG.

Low Water Zones 2-27 is N/A due to Pooled River

ACTION PLAN TABLE
ICE CONDITIONS
St. Paul, MN to Chester, IL
RM 857.6 – 109.9

ACTION PLAN TABLE – ICE CONDITIONS UPPER MISSISSIPPI RIVER, ALL ZONES

CRITICAL REACH DESCRIPTION	TRIGGER READING	TREND	DESCRIPTION	PHASE	ACTION
ALL ZONES Upper Mississippi River	No Ice		Normal Operations		
	Ice Build-Up in Channel and Sheet Ice Formation	Predicted weather forecast indicates extreme temperatures. Ice build up begins in the creeks and tributaries.	Mariners consulting with lock masters for indications of ice build up. Ice Interferes with Normal Navigation.	Watch	Consider advisories on missing buoys and safety zone restriction for tow width and length. Ice couplings for entering locks. Single-file traffic in ice-narrowed channels. Navigators are cautioned to exercise extreme care when entering or departing the lock chamber to avoid damage to the lock gates. When ice builds up to the extent that full usage of the lock chamber is prohibited, length and/or width restrictions may be imposed on lockages.
	Heavy Ice Gorges	Prolonged extreme temp.	Channel blocked in some locations. River reach impassable. Gorged ice becomes a particular hazard when attempts are made to drive barges through the formation. Barges could be damaged when forced through or over gorged ice.	Action	Consider river closure if ice conditions prevent vessel transit or allow single lane traffic in open areas only. Navigators are advised to exercise due caution to avoid sinking barges and unusual currents and high localized flow or out draft conditions due to water bypassing the temporary dam formed by the gorge. Navigators approaching a known ice gorge should make an assessment of conditions prior to attempting to transit through ice and consider the limitations of the vessel and tow. Consider press release and/or Joint Information Center, and formation of Incident Command Post if needed.
	Rotting ice, increased flow softening ice	Rising temperatures and rain flushing ice out.	Ice softening, water noticeable on top of the ice flow, channel conditions improving, and ice receding from channel.	Recovery	ATON checks, locks and dams flush ice; lock personnel will notify USCG to release a broadcast prior to prolonged flushing at the locks. Consideration should be taken that the lead barges of the first tow through. First vessel through Lake Pepin should be non-petroleum, non-hazardous cargo.

Lock and Dam Information Table

ZONE	LOCK	FLOOD STAGE			OUTDRAFT INDICATORS			LOCK CLOSURE			NOTES (p. 56)
		Stage	Elev.	Flow (CFS)	Stage	Elev.	Flow (CFS)	Stage	Elev.	Flow (CFS)	
Zone 1	USAF	See #1	See #1 below		See #1 below	See #1 below	20,000	NA	NA	40,000	1,2,4,5
Zone 1	LSAF						20,000	NA	NA	40,000	1,2,4,5
Zone 1	L/D 1	29	729	37,000	n/a	n/a	See # 3 below	NA	NA	40,000	1,2,3,4,5
Zone 2	L/D 2	89	689	84,500	87.2	687.2	31,000	92	692	116,000	5,6
Zone 3	L/D 3	77	677	56,000	74	674	21,000	83	683	125,000	5,6
Zone 4	L/D 4	68	668	110,000	66.5	666.5	60,000	71.5	671.5	160,000	5
Zone 5	L/D 5	65	665	202,000	59.5	659.5	70,000	64.5	664.5	188,000	5
Zone 5A	L/D 5A	53	653	90,000	50	650	32,000	60	660	183,000	5,6
Zone 6	L/D 6	47	647	114,000	44.5	644.5	44,600	61.5	651.5	200,000	5,6
Zone 7	L/D 7	42	642	146,000	39	639	44,000	46.5	646.5	235,000	5
Zone 8	L/D 8	34	634	166,000	30	630	40,200	36	636	225,000	5,6
Zone 9	L/D 9	22	622	105,000	19	619	55,000	31	631	220,000	5,6
Zone 10	L/D 10	14	614	140,000	10.5	610.5	47,000	21	621	238,000	5,6
Zone 11	L/D 11	16	604.2	152,900	9	597.2	N/A	19.5	607.2	197,200	
Zone 12	L/D 12	17	597.2	174,500	7	587.2	N/A	18.4	598.6	196,900	
Zone 13	L/D 13	16	584.7	153,700	7	575.7	N/A	18	586.7	182,100	
Zone 14	L/D 14	11	568.08	162,300	7	564.08	N/A	14	571.1	221,300	
Zone 15	L/D 15	15	557.5	N/A	9	551.5	N/A	20	562.5	N/A	
Zone 16	L/D 16	15	548.6	160,000	8	541.6	91,400	17	550.6	186,800	
Zone 17	L/D 17	14	540.7	142,900	6	532.7	N/A	18.2	544.9	212,400	
Zone 18	L/D 18	10	528.52	172,300	6	524.52	104,500	15	533.5	271,600	
Zone 19	L/D 19	16	493.83	N/A	N/A	N/A	N/A	21.2	499	N/A	
Zone 20	L/D 20	14	482.5	194,600	6	474.5	N/A	18	486.5	274,600	
Zone 21	L/D 21	17	474.8	212,100	6	463.8	N/A	21.9	479.7	294,600	
Zone 22	L/D 22	16	462.1	210,500	8	454.1	N/A	21.4	467.5	310,800	
Zone 23	L/D 23	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Zone 24	L/D 24	25	446.81	175,000	16.4	438.2	86,000	32.5	454.3	365,000	
Zone 25	L/D 25	26	433	180,000	17.5	424.5	90,000	33.75	440.75	320,000	
Zone 26	L/D 26	21	416.48	VARIABLE	N/A	N/A	N/A	36.5	432	VARIABLE	
Zone 27	L/D 27	30/St. Louis	409.94	504,000	N/A	N/A	N/A	47/St. Louis	426.94	990,000	
Zone 28	N/A	30/St. Louis	409.94	504,000							

Notes

#1.) Stage/elevation at USAF flow rates depend upon status of boards on Xcel dam.
#2.) Flow rates are at USAF.
#3.) LD1 out draft indicators turned on with 0.2 ft of flow over the rubber dam whether it's inflated or deflated.
#4.) USAF, LSAF & LD1 close to pleasure craft at 30,000 cfs.
#5.) Stages/elevations are upstream readings.
#6.) Lock closure elevations shown are for a "slow rise". For a "fast rise" the lock closure is 0.5 ft lower.

Sector Upper Mississippi River
Marine Casualty Risk Assessment Tool Assumptions for Data

1. In the WAP process Marine Casualty Data is the starting point for discussion.
2. The data is not a complete record.
3. Since 1990 there are over 5,000 Coast Guard investigation data records for Sector Upper Mississippi River's area of responsibility. These records were screened and 370 met the following criteria:
    a. From May 1998 to May 2005
    b. A risk factor as identified in the WAP process (High water, low water, high flow, and Ice) was a contributing factor to the marine casualty.
4. It is important to note that the WAP guidelines did not provide any definition for the risk factors.
5. Five individuals conducted a review of the data and made decisions concerning each record.
6. As data was reviewed, individuals conducting the reviews noted several important issues:
    a. Shoaling could occur at any stage. In light of this, grounding occurring during a low river level condition were sought to populate the low water risk assessment.
    b. Low Water Reference Plane is the position relative point at which the ACOE maintained its mandated channel depth. Vessel drafts were not considered, nor are they included in the records.
    c. High flow could have several different affects on vessels (i.e. Eddy's may push vessels up stream. L&D outfalls may push vessels toward a bank.)
    d. Cubic Foot/Second (CFS) is a shaky at best determination of high flow rate. As water flows down river, the differentiating depths and widths of the river are constantly affecting current flow rates. Furthermore, some CFS readings are proportionally based on the river stage at the same gauge and are not a separate reading. Also, CFS readings were limited mainly to gauges located at Lock and Dams.
7. Initial review of records relied on the incident narrative to make a determination risk factor contribution.
8. Where information was incomplete, a review of river stage, current, other casualties at the same time were viewed for clues to determine if one of four risk factors contributed to casualty.
9. Once data was screened, Risk Assessment Tools were populated.

10. For WAP uniformity, High, Medium, Low definitions for each of the five formula elements (obstructions to navigation, channel width, bend radius, congestion, and casualty history count) and their corresponding point value could not be changed. Also, the format of the tool could not be altered.
11. Variables that could be changed in the Risk Assessment Tool are:
    a. The length of river sections
    b. The Acceptable Risk Score
12. Although narrowing the casualty data record may have eliminated some pertinent casualty data REMEMBER ITEM NUMBER 1: The casualty data is the starting point. The natural working group is not bound to the tool when determining appropriate operational protocols.
13. Dissection of data may have masked problem areas which could be more visible by looking at geographic points with all casualty data available. If parties are interested in further casualty data analysis or discussions apart from the WAP forum they may contact LCDR Patrick Clark of Sector Upper Mississippi River's Prevention Department.

Footnote: Gauge readings used for risk assessment were from the RCAP and not from ACOE River Charts.

How Sector Upper Mississippi River obtained Data for the Risk Assessment

	Action Description	Approximate Incident Count /Personnel Hours
1	USCG HQ provided a download of every investigation from 1990 till present filed by Sector Upper Mississippi River.	5000/9 Hours
2	Data was refined to included only marine casualties for the last seven years ending May 2005.	N/A
3	Review of each record and eliminated all marine casualties that were plainly not the result of ice, high water, low water, or high flow (i.e. fire, mechanical failure, pollution, etc…) and did not occur on one of the three rivers included in the Waterway's Action Plan.	N/A
4	Every narrative was read to determine if the incidents were plainly stated as being the result of ice, high water, low water, or high flow.	N/A
5	River levels and flow rates (when and where available from ACOE and NOAA records) were assigned to each remaining record. Then, a common sense approach was made with regard to river characteristics in place at the time of the incident in order to either eliminate or include each record in a particular assessment: • If the river level was not relatively low for the locality then the record was eliminated from the low water assessment. Groundings that occurred during high water or out of the channel (i.e. pushed in to allow other vessel to transit) were eliminated from the low water assessment. This included a thoughtful look at groundings due to shoaling (which is capable of occurring regardless of river stage). • Allisions occurring during low water were eliminated from high water or high flow assessments. • Groundings on submerged objects (dikes, timbers, unknown items) were eliminated. A close look at each casualty to ensure that ice, high water, low water, or high flow was a direct contributor to the casualty. (I.e. a bridge allision during high water may have been caused by high winds and had nothing to do with river stage.) * Steps 1-5 completed for zones 1-30	400/200 Hours
6	The risk assessment was completed and validated with extensive participation from members of industry and Coast Guard Sector Upper Mississippi River. In addition to the data described above, the Coast Guard Cutter Officer in Charge summaries based on buoy placement, and a compilation of pilot data from several industries were extensively used. The Midland (April 2001) document did not contain information for the Upper Mississippi River.	NA/3 Hours

Legend

	Risk Factors				
Need for Precise Control	**Navigational Complexity**			**Congestion**	
	Obstructions to Nav	**Channel Width (Full Banks)**	**Bend Radius**		**Casualty History (7 yr period)**
High	Multiple Obstructions	Narrow (single passage)	sharp bend(>180 deg)	Traffic always present	>10
Medium	Single Obstruction	Medium (dual passage possible/likely)	gradual bend (btn 90 and 180 or	Traffic sometimes present	6>x>10
Low	No Obstructions	Wide (more than 2 vsl passage possible)	no bend (>90 deg) or no river crossing	Traffic rarely present	<6

Casualty Count (*Summary*)

MM	Description	High Flow Casualties	High Water Casualties	Low Water Casualties	Ice Casualties
847.6 – 857.6	Zone 1: Upper/Lower St. Anthony Falls Lock & Dam #1	2	0	0	0
815.2 – 847.5	Zone 2: Lock & Dam #2	1	0	4	1
796.9 – 815.1	Zone 3: Lock & Dam #3	5	0	4	0
752.8 – 796.8	Zone 4: Lock & Dam #4	2	0	6	0
738.1 – 752.7	Zone 5: Lock & Dam #5	0	0	2	0
728.6 – 738.0	Zone 5A: Lock & Dam #5A	0	0	4	0
714.3 – 728.5	Zone 6: Lock & Dam #6	3	0	0	0
702.5 – 714.2	Zone 7: Lock & Dam #7	1	0	1	0
679.2 – 702.4	Zone 8: Lock & Dam #8	2	1	9	0
647.9 – 679.1	Zone 9: Lock & Dam #9	3	0	1	0
615.1 – 647.8	Zone 10: Lock & Dam #10	1	0	0	0
583.0 – 615.0	Zone 11: Lock & Dam #11	2	0	4	0
556.7 – 582.9	Zone 12: Lock & Dam #12	1	2	8	0
522.4 – 556.6	Zone 13: Lock & Dam #13	10	0	10	0
493.3 – 522.3	Zone 14: Lock & Dam #14	7	1	2	0
482.9 – 493.2	Zone 15: Lock & Dam #15	5	0	12	0
457.2 – 482.8	Zone 16: Lock & Dam #16	6	0	7	0
437.1 – 457.1	Zone 17: Lock & Dam #17	2	0	2	0
410.5 – 437.0	Zone 18: Lock & Dam #18	4	0	0	1
364.2 – 410.4	Zone 19: Lock & Dam #19	21	2	1	0
343.2 – 364.1	Zone 20: Lock & Dam #20	1	1	2	0
324.9 – 343.1	Zone 21: Lock & Dam #21	0	2	0	0
301.2 – 324.8	Zone 22: Lock & Dam #22	6	1	9	0
273.4 – 301.1	Zone 24: Lock & Dam #24	2	15	2	0
241.4 – 273.3	Zone 25: Lock & Dam #25	4	1	0	0
200.5 – 241.3	Zone 26: Lock & Dam #26	5	0	3	0
185.5 – 200.4	Zone 27: Lock & Dam #27	3	1	1	0
109.9 – 185.4	Zone 28: St. Louis Harbor and South	6	1	43	4

High Flow Risk Assessment

Calculate Risk Score	Factors to Increase Likelihood of Casualty								Score
	Obstruction to Nav.	Channel Width	Bend Radius	Congestion	Casualty History	Risk Score			
847.6 – 857.6 Zone 1: Upper/Lower St. Anthony Falls Lock & Dam #1									
815.2 – 847.5 Zone 2: Lock & Dam #2	High	High	Medium	Medium	Low	122			
796.9 – 815.1 Zone 3: Lock & Dam #3	Medium	Medium	Medium	Medium	Low	42			
752.8 – 796.8 Zone 4: Lock & Dam #4	Medium	High	Medium	Medium	Low	132			
738.1 – 752.7 Zone 5: Lock & Dam #5	Low	High	Medium	Medium	Low	123			
728.6 – 738.0 Zone 5A: Lock & Dam #5A	Low	High	High	Medium	Low	213			
714.3 – 728.5 Zone 6: Lock & Dam #6	Low	Medium	Medium	Medium	Low	33			
702.5 – 714.2 Zone 7: Lock & Dam #7	Low	Medium	Medium	Medium	Low	33			
679.2 – 702.4 Zone 8: Lock & Dam #8	Medium	High	High	Medium	Low	222			
647.9 – 679.1 Zone 9: Lock & Dam #9	Low	Medium	High	Medium	Low	123			
615.1 – 647.8 Zone 10: Lock & Dam #10	Low	Medium	Medium	Medium	Low	33			
583.0 – 615.0 Zone 11: Lock & Dam #11	Low	Medium	Medium	Medium	Low	33			
556.7 – 582.9 Zone 12: Lock & Dam #12	High	Medium	Medium	Medium	Low	132			
522.4 – 556.6 Zone 13: Lock & Dam #13	High	Medium	Medium	Medium	High	330			
493.3 – 522.3 Zone 14: Lock & Dam #14	High	Medium	Medium	High	Medium	240			
482.9 – 493.2 Zone 15: Lock & Dam #15	Low	High	Medium	High	Low	213			
457.2 – 482.8 Zone 16: Lock & Dam #16	High	Medium	Medium	High	Medium	240			
437.1 – 457.1 Zone 17: Lock & Dam #17	Low	Medium	Medium	High	Low	123			
410.5 – 437.0 Zone 18: Lock & Dam #18	Low	Medium	Medium	High	Low	123			
364.2 – 410.4 Zone 19: Lock & Dam #19	High	Medium	Medium	High	High	420			
343.2 – 364.1 Zone 20: Lock & Dam #20	Low	Medium	Low	High	Low	114			
324.9 – 343.1 Zone 21: Lock & Dam #21	Medium	Medium	Medium	High	Low	132			
301.2 – 324.8 Zone 22: Lock & Dam #22	Medium	Medium	Medium	High	Medium	150			
273.4 – 301.1 Zone 24: Lock & Dam #24	High	Medium	Medium	High	Low	222			
241.4 – 273.3 Zone 25: Lock & Dam #25	Low	Medium	Medium	High	Low	123			
200.5 – 241.3 Zone 26: Lock & Dam #26	Low	Medium	Medium	High	Low	123			
185.5 – 200.4 Zone 27: Lock & Dam #27	Medium	Medium	Medium	High	Low	132			
109.9 – 185.4 Zone 28: St. Louis Harbor and South	High	High	High	High	Medium	420			

High Water Risk Assessment

Calculate Risk Score	Factors to Increase Likelihood of Casualty								Score
	Obstruction to Nav.	Channel Width	Bend Radius	Congestion	Casualty History	Risk Score			
847.6 – 857.6 Zone 1: Upper/Lower St. Anthony Falls Lock & Dam #1									
815.2 – 847.5 Zone 2: Lock & Dam #2	High	High	Medium	Medium	Low	222			
796.9 – 815.1 Zone 3: Lock & Dam #3	Medium	Medium	Medium	Medium	Low	42			
752.8 – 796.8 Zone 4: Lock & Dam #4	Medium	High	Medium	Medium	Low	132			
738.1 – 752.7 Zone 5: Lock & Dam #5	Low	High	Medium	Medium	Low	123			
728.6 – 738.0 Zone 5A: Lock & Dam #5A	Low	High	High	Medium	Low	213			
714.3 – 728.5 Zone 6: Lock & Dam #6	Low	Medium	Medium	Medium	Low	33			
702.5 – 714.2 Zone 7: Lock & Dam #7	Low	Medium	Medium	Medium	Low	33			
679.2 – 702.4 Zone 8: Lock & Dam #8	Medium	High	High	Medium	Low	222			
647.9 – 679.1 Zone 9: Lock & Dam #9	Low	Medium	High	Medium	Low	113			
615.1 – 647.8 Zone 10: Lock & Dam #10	Low	Medium	Medium	Medium	Low	33			
583.0 – 615.0 Zone 11: Lock & Dam #11	Low	Medium	Medium	Medium	Low	33			
556.7 – 582.9 Zone 12: Lock & Dam #12	High	Medium	Medium	Medium	Low	132			
522.4 – 556.6 Zone 13: Lock & Dam #13	High	Medium	Medium	Medium	Low	132			
493.3 – 522.3 Zone 14: Lock & Dam #14	High	Medium	Medium	High	Low	222			
482.9 – 493.2 Zone 15: Lock & Dam #15	Low	High	Medium	High	Low	213			
457.2 – 482.8 Zone 16: Lock & Dam #16	High	Medium	Medium	High	Low	222			
437.1 – 457.1 Zone 17: Lock & Dam #17	Low	Medium	Medium	High	Low	123			
410.5 – 437.0 Zone 18: Lock & Dam #18	Low	Medium	Medium	High	Low	123			
364.2 – 410.4 Zone 19: Lock & Dam #19	High	Medium	Medium	High	Low	222			
343.2 – 364.1 Zone 20: Lock & Dam #20	Low	Medium	Low	High	Low	114			
324.9 – 343.1 Zone 21: Lock & Dam #21	Medium	Medium	Medium	High	Low	132			
301.2 – 324.8 Zone 22: Lock & Dam #22	Medium	Medium	Medium	High	Low	132			
273.4 – 301.1 Zone 24: Lock & Dam #24	High	Medium	Medium	High	Low	222			
241.4 – 273.3 Zone 25: Lock & Dam #25	Low	Medium	Medium	High	High	321			
200.5 – 241.3 Zone 26: Lock & Dam #26	Low	Medium	Medium	High	Low	123			
185.5 – 200.4 Zone 27: Lock & Dam #27	Medium	Medium	Medium	High	Low	132			
109.9 – 185.4 Zone 28: St. Louis Harbor and South	High	High	High	High	Low	402			

Low Water Risk Assessment

Calculate Risk Score	Factors to Increase Likelihood of Casualty								Score
	Obstruction to Nav.	Channel Width	Bend Radius	Congestion	Casualty History	Risk Score			
847.6 – 857.6 Zone 1: Upper/Lower St. Anthony Falls Lock & Dam #1									
815.2 – 847.5 Zone 2: Lock & Dam #2	Zone 1 through Zone 27 are pooled and will only have low water conditions if the pool is lost due to catastrophic failure.				Low	2			
796.9 – 815.1 Zone 3: Lock & Dam #3					Low	2			
752.8 – 796.8 Zone 4: Lock & Dam #4					Medium	20			
738.1 – 752.7 Zone 5: Lock & Dam #5					Low	2			
728.6 – 738.0 Zone 5A: Lock & Dam #5A					Low	2			
714.3 – 728.5 Zone 6: Lock & Dam #6					Low	2			
702.5 – 714.2 Zone 7: Lock & Dam #7					Low	2			
679.2 – 702.4 Zone 8: Lock & Dam #8					Medium	20			
647.9 – 679.1 Zone 9: Lock & Dam #9					Low	2			
615.1 – 647.8 Zone 10: Lock & Dam #10					Low	2			
583.0 – 615.0 Zone 11: Lock & Dam #11					Low	2			
556.7 – 582.9 Zone 12: Lock & Dam #12					Medium	20			
522.4 – 556.6 Zone 13: Lock & Dam #13					Medium	20			
493.3 – 522.3 Zone 14: Lock & Dam #14					Low	2			
482.9 – 493.2 Zone 15: Lock & Dam #15					Medium	20			
457.2 – 482.8 Zone 16: Lock & Dam #16					Medium	20			
437.1 – 457.1 Zone 17: Lock & Dam #17					Low	2			
410.5 – 437.0 Zone 18: Lock & Dam #18					Low	2			
364.2 – 410.4 Zone 19: Lock & Dam #19					Low	2			
343.2 – 364.1 Zone 20: Lock & Dam #20					Low	2			
324.9 – 343.1 Zone 21: Lock & Dam #21					Low	2			
301.2 – 324.8 Zone 22: Lock & Dam #22					Medium	20			
273.4 – 301.1 Zone 24: Lock & Dam #24					Low	2			
241.4 – 273.3 Zone 25: Lock & Dam #25					Low	2			
200.5 – 241.3 Zone 26: Lock & Dam #26					Low	2			
185.5 – 200.4 Zone 27: Lock & Dam #27					Low	2			
109.9 – 185.4 Zone 28: St. Louis Harbor and South	High	High	High	High	High	600			

Ice Casualty Risk Assessment

Calculate Risk Score	Factors to Increase Likelihood of Casualty								Score
	Obstruction to Nav.	Channel Width	Bend Radius	Congestion	Casualty History	Risk Score			
847.6 – 857.6 Zone 1: Upper/Lower St. Anthony Falls Lock & Dam #1									
815.2 – 847.5 Zone 2: Lock & Dam #2	High	High	High	Low	Low	303			
796.9 – 815.1 Zone 3: Lock & Dam #3	High	High	High	Low	Low	303			
752.8 – 796.8 Zone 4: Lock & Dam #4	High	High	High	Low	Low	303			
738.1 – 752.7 Zone 5: Lock & Dam #5	High	High	High	Low	Low	303			
728.6 – 738.0 Zone 5A: Lock & Dam #5A	High	High	High	Low	Low	303			
714.3 – 728.5 Zone 6: Lock & Dam #6	High	High	High	Low	Low	303			
702.5 – 714.2 Zone 7: Lock & Dam #7	High	High	High	Low	Low	303			
679.2 – 702.4 Zone 8: Lock & Dam #8	High	High	High	Low	Low	303			
647.9 – 679.1 Zone 9: Lock & Dam #9	High	High	High	Low	Low	303			
615.1 – 647.8 Zone 10: Lock & Dam #10	High	High	High	Low	Low	303			
583.0 – 615.0 Zone 11: Lock & Dam #11	High	High	High	Low	Low	303			
556.7 – 582.9 Zone 12: Lock & Dam #12	High	High	High	Low	Low	303			
522.4 – 556.6 Zone 13: Lock & Dam #13	High	High	High	Low	Low	303			
493.3 – 522.3 Zone 14: Lock & Dam #14	High	High	High	Low	Low	303			
482.9 – 493.2 Zone 15: Lock & Dam #15	High	High	High	Low	Low	303			
457.2 – 482.8 Zone 16: Lock & Dam #16	High	High	High	Low	Low	303			
437.1 – 457.1 Zone 17: Lock & Dam #17	High	High	High	Low	Low	303			
410.5 – 437.0 Zone 18: Lock & Dam #18	High	High	High	Low	Low	303			
364.2 – 410.4 Zone 19: Lock & Dam #19	High	High	High	Low	Low	303			
343.2 – 364.1 Zone 20: Lock & Dam #20	Low	High	High	Medium	Low	213			
324.9 – 343.1 Zone 21: Lock & Dam #21	Medium	High	High	Medium	Low	222			
301.2 – 324.8 Zone 22: Lock & Dam #22	Medium	High	High	Medium	Low	222			
273.4 – 301.1 Zone 24: Lock & Dam #24	High	High	High	Medium	Low	312			
241.4 – 273.3 Zone 25: Lock & Dam #25	Low	High	High	Medium	Low	213			
200.5 – 241.3 Zone 26: Lock & Dam #26	Low	High	High	Medium	Low	213			
185.5 – 200.4 Zone 27: Lock & Dam #27	Medium	High	High	High	Low	312			
109.9 – 185.4 Zone 28: St. Louis Harbor and South	High	High	High	High	Low	402			

Activity Date	Latitude	Longitude	Activity Title	River Mile	Contributing Factor	River Level (Stage)	Flow Rate	Notes
10/25/1998	N 37° 21' 18.00"	W 089° 25' 24.00"	MC98016227-J.RUSSELL FLOWERS/58.5UMR	58.5	High Flow Rate	29.2		S/B M/V ROlSTON B., pushing 2 benzene barges, collided w/ the N/B M/V J.RUSSELL FLOWERS, pushing 17 loaded barges N/B, in a bend north of Picayune Light. ROLSTON B. then grounded on a dike. Cause of accident was error in judgment on the part of the master of the ROLSTON B., Charles T. Brown. Capt. Brown underestimated the effect of current on his tow, which caused his vessel to collide with the FLOWERS in a river bend. Lack of area familiarity contributed.
02/27/2001	N 38° 00' 30.00"	W 090° 05' 30.00"	MC01003290-UTV PATTY ANN DOWNSTREAMING	127.2	High Flow Rate	163.2		John Distefano, pilot of the UTV PATTY ANN was reported missing when the vessel sank at the Tower Rock Stone Co. on the Upper Mississippi River, MI 127.2, on Feb 27, 2001. While attempting a down streaming maneuver the current pushed the UTV PATTY ANN sideways to starboard pinning her into the rake of the adjacent barge. Water started flooding over the gunnel, entering the open engine room doors pulling the vessel down to port. Pilot is missing and presumed dead.
09/02/2004	N 38° 04' 51.00"	W 090° 11' 27.00"	LAURIE S JOHNSON GROUNDING UMR MI 135	135	High Flow Rate	17.1		REPORTING PARTY STATES: AT 0330 2 SEP 2004 M/V LAURIE S JOHNSTON WAS WORKING A TOW ON UMR MI 135. RIVER STAGE DROPPED QUICKLY DURING THE WORK CAUSING BARGES CC 9208 & CC 8021 OF PORT STRING TO GROUND. ASSIST TUGS HELPED BREAK OUT BARGE CC 9208, PULL IT OFF GROUND AND RE WIRE BACK INTO TOW. CC 8021 WAS LEFT AGROUND. CARGO WAS PARTIALLY TRANSFERRED, CC 8021 WAS REFLOATED & CARGO WAS RELOADED. CC 8021 WILL BE PICKED UP ANOTHER VSL. NO DAMAGE TO EITHER VSL. 9-1 20' / 9-2 17' / 9-3 15' on Brickeys' River Gauge.
06/03/2004	N 38° 11' 15.00"	W 090° 20' 47.00"	RAY J ECKSTEIN	146	High Flow Rate	25.3		REPORTING PARTY STATES: AT 23:30 03 JUN 2004 M/V RAY A ECKSTEIN WAS UPBOUND ON UMR MI 146 W/23 LDS & 5 EMPTIES. TOW ENCOUNTERED A STRONG DRAFT ONTO THE HEAD OF OSBORNE CHUTE. TOW DRAFTED HARD TO STBD & LANDED ACROSS THE MOUTH OF THE CHUTE PINNING THE TOW ON THE HEAD OF THE ISLAND. DUE TO THE EXTREME CROSS DRAFT THE TOW COULD NOT BE UNSTRANDED WITHOUT DISASSEMBLING THE TOW. ASSIST TUGS HELPED BREAK DOWN TOW, MOVE IT DOWN STREAM & RE-ASSEMBLE IT. NO DAMAGE TO TOW OR VSL.

04/21/1999	N 38° 34' 06.00"	W 090° 13' 48.00"	MC99005764-M/V MISS JULES, 175 UMR(SLMMS)	175	High Flow Rate	29.3		At or about 0200 on April 21, 1999 the M/V MISS JULES (D626199) was operating near Mile 175 on the Upper Mississippi River with two loaded barges in tow ahead. During a topping-around evolution, the boat and barges were carried by a swift current onto the Reidy East Side Fleet, causing the the lead barge, OR 5235(D962557), to allide with the fleeted load TCB 425(D595663). As a result, both barges were damaged.
06/19/2001	N 38° 36' 36.00"	W 090° 11' 00.00"	MC01008552-B&H TOWING, INC. 179 UMR SLMMS	179	High Flow Rate	18.37	274000	On 6/19/01 at 1045 hours M/V Harry J. Brock was topping four (4) loads around at the Osage Fleet, mile 179 UMR. Strong current caught the M/V and its tow causing the M/V to drift into the Anchor Fleet. The aft of M/V Harry J. Brock allided with Barge NM 305b. No damage reported to M/V Harry J. Brock. Some damage to Barge NM 305b. Master states that he was unable to drive out.
05/26/2002	N 38° 46' 20.00"	W 090° 59' 00.00"	M/V MARY ANN-ALLISION	192	High Flow Rate	88.4		EPORTING PARTY STATES-AT 0340hrs 05/26/2002 M/V MARY ANN WAS SOUTHBOUND ON UMR MM192 W/14 LDS & 1 EMPTY IN 3X5 IN HIGH WATER CONDITIONS. THE CURRENT SET TOW TOWARDS LEFT DESCENDING BANK OF CHANNEL.
11/01/2004	N 38° 50' 09.00"	W 090° 06' 23.00"	BARGE S 22 COLLISION UMR MI 197.5	197.5	High Flow Rate	16.2	74150	Incident involves two reporting parties. Zupan states: AT 21:45 01 NOV 2004 due to a rapid rise in river level barge S 22 broke loose of moorings at UMR MI 198.1 and drifted down striking barge MM 42 at UMR MI 197.5 (CONOCO PHILLIP'S dock).
09/17/1998	N 38° 51' 30.00"	W 090° 08' 18.00"	MC98013332-TRUCK MORRISON/200UMR (SLMMS)	200	High Flow Rate	16.06	67360	On 17 Sep 98, M/V TRUCK MORRISON north bound w/15 loaded dry cargo barges was approaching Melvin Price L&D when back draft caused head of tow to allide with lower guide wall. Also reported AGS 675B sustained extensive damage. L&D reported damage to lower downstream cell. The American dredge co. was dredging in area of entrance to lock chamber. This made entering lock chamber different from normal operations.
05/31/2001	N 38° 52' 06.00"	W 090° 09' 18.00"	MC01006849-M/V NORMAN P. PROCHL	200.8	High Flow Rate	10.66	149400	The M/V NORMAN P. PROCHL was preceding Southbound with a tow of three (3), one (1) wide. As the tow was entering the small chamber, the current going through the middle flood gates drafted the tow to the long wall. The middle barge (WEB-221B) allided with the bull nose of the wall. Barge WEB-221B was in the tow with the bow to the rear, therefore the damage was to it's port side. The damage to WEB-221B was approximately $10,000. SLMMS
02/15/2001	N 38° 52' 12.00"	W 090° 09' 18.00"	MC01002813-JERRY JARRETT 200.8 UMR SLMMS	200.8	High Flow Rate	11.77	74950	M/V JERRY JARRETT was south bound at mile 200.8, UMR. with eleven (11) barges in tow. As she was attempting to enter Lock 28 barge CC-311B's port stern allided with the lock's bullnose. Barge B-246B was located on the port side of barge CC-311B in the tow was damaged as a result of the allision.

06/13/2002	N 38° 52' 11.00"	W 090° 09' 16.00"	DEWEY R-ALLISION	200.8	High Flow Rate	16.97	138800	REPORTING PARTY STATES-M/V DEWEY R WITH 4 LDS. WAS MAKING A SOUTHBOUND APPROACH TO LONG WALL AT MEL PRICE LOCK MM200.8 UMR. AS TOW APPROACHED WALL IT STARTED SETTING HARD TO WALL. PILOT STEERED TO PORT AND CAME AHEAD ON ENGINES TO CLEAR THE END OF THE WALL. THE STARBOARD HEAD BARGE, APEX3508, HIT WALL AT #2 WING TANK, THE WING TANK WAS CRACKED. THERE WAS NO DAMAGE TO THE CARGO TANK OR THE WALL.
04/30/2001	N 38° 51' 30.00"	W 090° 08' 18.00"	MC01005830-M/V HAMILTON COLLISION	201	High Flow Rate	15.99	195200	Vessel was S/B approaching the long wall of Mel Price Lock. The out draft set the vessel over onto the long wall with the tow landing at the stern of barge CBC 513, denting the STBD side in about 4 inches and 30-35 ft long.
08/19/1998	N 38° 52' 18.00"	W 090° 09' 24.00"	MC98014394-D. RAY MILLER/201UMR (SLMMS)	201	High Flow Rate	16.11	68420	On 19AUG98, as the M/V D. RAY MILLER(D555425) w/15 loaded dry-cargo barges in tow was approaching the MELVIN PRICE LOCK AND DAM from the North, a strong out draft set the tow to starboard, causing the barge S.C & N.O. 7316B(D552126) to allide with the upper end of the Main Lock long wall. Subsequently, as the M/V D. RAY MILLER was working the starboard stern of the tow toward the long wall, barge AR 811(D636636) allided w/the Northernmost protection cell.
07/30/1999	N 39° 00' 18.00"	W 090° 41' 06.00"	MC99009982-M/V DORTHY BURKE (GROUNDING)	241.4	High Flow Rate	22.89		The M/V DORTHY BURKE pushing 4 loaded tank barges was S/B on the UMR attempting to enter L&D #25 with the assistance of the M/V MISSY TEDDY when the stern of the DORTHY BURKE swung out and contacted a submerged dike, damaging the starboard steering rudder and propeller. The M/V DORTHY BURKE was able to proceed through the lock and transit to National Maintenance in St. Louis for repairs.
06/19/2002	N 38° 59' 00.00"	W 090° 40' 30.00"	M/V JACOB MICHAEL ECKSTEIN Grounding MI 241 UMR	241.4	High Flow Rate	25.01		On 19 June 2002, at approximately 1815, the M/V JACOB MICHAEL ECKSTEIN was northbound on the Upper Mississippi River (MI 241.4) with fifteen loaded barges in tow. As the tug and tow entered Lock & Dam #25, the starboard lead barge lightly bumped the bullnose of the Lock which caused dents in the port and starboard corners. The tow also sustained eleven broken wires on the various barges in the tow.
04/08/2000	N 38° 59' 36.00"	W 090° 40' 30.00"	MC00004378-JAMIE LEIGH SLMMS	241.5	High Flow Rate	14.81		ON 08APR00, AT APPROX. 1500 HOURS, THE M/V JAMIE LEIGH WAS SB EXITING LOCK 25 UMR (MM241.5) W/5 LOADED CEMENT BARGES. WHILE THE CAPTAIN WAS PUSHING THE TOW OUT THROUGH THE FRONT GATE, A WALL OF WATER DEVELOPED IN FRONT OF THE TOW CAUSING THE TOW TO SLIDE BACKWARDS STRIKING THE LOCK GATE WITH THE STARBOARD STRING. SEE MCNS FOR ADDITIONAL DETAILS. ALSO SEE PS00042914 FOR DETAILS OF SUBCHAPTER "C" BOARDING.

07/17/1998	N 39° 03' 18.00"	W 090° 42' 30.00"	MC98010131-NAN/245UMR (SLMMS)	245	High Flow Rate	25.56		On 17 Jul 98, M/V NAN s/b w/15 in tow grounded into right descending bank while catching tie off wire. Reported that current held head of tow off bank and caused stern to hit bank. No damage reported.
09/29/2002	N 39° 39' 18.00"	W 091° 14' 29.00"	MV FRANK R ALTER-GROUNDING	301	High Flow Rate	5.53	59474	REPORTING PARTY STATES- AT 01:15 092902 VESSEL WAS SB ON UMR AT M301 APPROACHING LOCK 22 WITH 15 LOADS. ENGINES WERE ASTERN WHILE ALIGNING FOR LOCK. OUT DRAFT FORCED TOW INTO CENTER OF RIVER. TOW GROUNDED IN SHALLOW WATER ABOVE DAM. NO DAMAGE OBSERVED. ANOTHER TOWBOAT ASSISTED VESSEL IN PULLING OFF GROUND.
10/03/1998	N 39° 38' 00.00"	W 091° 14' 48.00"	MC98014311-M/V DECATUR LADY 301 UMR	301	High Flow Rate	5.56	61875	The M/V Decatur Lady was north bound at UMR mile 301.2 with 9 empty barges. While making the entrance to Lock 22, the tow was set off the wall striking a protection cell. WHILE PUSHING N/B INTO LOCK, PILOT COULDN'T CONTROL HEAD OF TOW AND FREIGHT BARGE ART 195 LANDED ON PROTECTION CELL. BARGE SUSTAINED A 4"X3" CRACK IN #2 STBD WINGTANK. NO POLLUTION OBSERVED. LOCKMASTER RTPD NO DAMAGE TO PROTECTION CELL. There were no injuries, and no pollution.
03/16/2001	N 39° 38' 18.00"	W 091° 14' 30.00"	MC01004305-BEVERLY ANN 301.2 UMR SLMMS	301.2	High Flow Rate	12.23	145445	The M/V BEVERLY ANN was nthbd on the UMR w/15 loaded barges in tow. The Captain stated that as he was maneuvering into Lock #22, the tow was caught by a strong upstream eddie. As a result, the Captain was backing the tow out when the port lead barge (AGS-726) struck the lower protection cell. The allision caused a breakaway of the port string of barges. Two barges (AGS-726 & NOMA-237) were slightly damaged during the accident. SEE MCCG for details on damaged barges.
03/25/2001	N 39° 38' 18.00"	W 091° 14' 30.00"	MC01004099-M/V CHARLES SOUTHERN ALLISION	301.2	High Flow Rate	12.62	158171	Vsl started pushing out of L&D 22 after making tow. M/V DECATUR LADY was S/B and needed time to tie off to the cell above. M/V CHARLES SOUTHERN began holding up and draft set the tow over to short wall. Barges landed on short wall and the coupling between barges STC 120B & TWII broke, allowing barges STC 2806 & STC 120B to top out and around the short wall. UTV SIR LARRY tried to hold the barges but could not and they landed against the dam
07/19/2001	N 39° 41' 54.00"	W 091° 18' 18.00"	MC01010492-PHYLLIS 306 UMR SLMMS	306	High Flow Rate	10.7		On 07/19/01 SUBJ vessel was transiting S/B UMR with nine loaded grain barges when vessel appeared to have been moved by the current to the left descending bank (LDB) where barge AGS 821B ran aground. SUBJ vessel backed down the tow and was able to refloat barge with no assistance. <See MCNS>
05/25/1999	N 39° 42' 30.00"	W 091° 21' 06.00"	MC99011450-KEVIN MICHAEL/309.9UMR/PEOD	309.9	High Flow Rate	18.64		M/V KEVIN MICHAEL W/15 LOADED FREIGHT BARGES RPTD ALLIDING WITH THE LDB PROTECTION CELL OF THE HANNIBAL RAILWWOAD BRIDGE AT MILE 309.9 UMR. AFTER NAVIGATING HEAD OF TOW THROUGH BRIDGE, TOW BEGAN TO SET TO PORT. PORT BARGES LIGHTLY LANDED ON PROTECTION CELL. NO

								DAMAGE TO BRIDGE. BARGES CC 8002 AND RW 153 SUSTAINED ONE SMALL CRACK EACH. CRACKS SHINGLED AND TOW CONTINUED TO DESTINATION. RIVER STAGE 2' ABOVE FLOOD W/ FAST CURRENT.
07/11/1998	N 39° 50' 00.00"	W 091° 25' 06.00"	MC98014534-LOYD C BEESECKER/319.0UMR/PEOD	319	High Flow Rate	17.16		M/V LOYD C. BEESECKER W/15 LOADS RPTD ALLIDING WITH THE AMERICAN CYANAMIDE MOORING CELL AT MILE 319.0 UMR. THE FREIGHT BARGE SG 305 SUSTAINED DAMAGE IN THE WAY OF THE BOW RAKE, THE #1 & #2 STBD WINGTANKS. NO POLLUTION NOTED. UNDERSTEER AND CURRENT CAUSE OF INCIDENT.
06/16/1998	N 39° 50' 00.00"	W 091° 25' 06.00"	MC98012976-TITLETOWN, USA/319.8UMR/PEOD	319.8	High Flow Rate	14.69		ON 16JUN98, THE M/V TITLETOWN, USA W/ 15 LOADS (GRAIN) RPTD ALLIDING WITH A MOORING CELL AT THE AMERICAN CYANAMIDE DOCK AT MILE 319.8 UMR. TOW WAS S/B WHEN PILOT COULD NOT CONTROL THE HEAD OF THE TOW WHILE MAKING BEND, STBD LEAD BARGE ALLIDED WITH MOORING CELL. BARGE CC 7940 WAS CONSIDERED BY OWNER (CARGO CARRIERS) AS TOTAL LOSS. ESTIMATES ARE AS FOLLOWS: BARGE 75-100K, CARGO 35- 75K, SALVAGE 100K AND PROTECTION CELL REPLACEMENT 100K.
04/20/1999	N 40° 23' 30.00"	W 091° 22' 30.00"	MC99006444-RIVER WILDCAT, 364 UMR	364	High Flow Rate	13.2		Vessel was north bound and was pulling out of Lock #19. After clearing the lock wall the tow was set outside of the channel by the current. The starboard lead barge made contact with the wall of the Union Electric Co power plant. There were no injuries, no pollution, and no damage to the vessel or power plant.
06/08/2002	N 40° 37' 20.00"	W 091° 18' 50.00"	Alix Anne Eckstein Allision	383	High Flow Rate	8.15		While northbound on Upper Mississippi, tow vessel with 15 barges allided with Fort Madison bridge protection cell. No damage to bridge or tow. Casualty attributed to high water and fast current.
12/08/2000	N 40° 47' 42.00"	W 091° 05' 30.00"	MC01000441-M/V TROJAN DAVD	403	High Flow Rate	7.25		M/V Trojan while underway rubbed the right descending pier, no damage to the vessel or barge.
12/09/2002	N 40° 52' 57.00"	W 091° 01' 39.00"	M/V River Hawk Allision	403	High Flow Rate	7.93		While making the Burlington railroad bridge, starboard stern barge landed on protector pier and broke starboard face wire.
11/26/1999	N 40° 47' 42.00"	W 091° 05' 30.00"	MC00000113-R.W.NAYE/403 UMR/ DAVD	403	High Flow Rate	8.22		M/V R.W.NAYE was S/B with 15 empties transiting the Burlington RR Bridge when vessel rubbed against fender work. Bridge tender advised pilot of no damage to the bridge. No damage to tow or vessel. No other damage, pollution, or injuries were reported.

03/11/1999	N 40° 47' 42.00"	W 091° 05' 30.00"	MC98016926-M/V CHARLES SOUTHERN 403 UMR	403	High Flow Rate	8.66		M/V W/3 EMPTY BARGES WAS SOUTHBOUND THROUGH BURLINGTON R/R BRIDGE. PILOT STATED CURRENT PUSHED STERN OF CF-105 AGAINST UPRIVER PROTECTION CELL ON THE RIGHT BANK. NO DAMAGE TO MOORING CELL AND MINOR DAMAGE SUSTAINED TO CF-105. BARGE TO STOP IN PADUCAH, KY TO MAKE REPAIRS.
07/15/2001	N 40° 47' 42.00"	W 091° 05' 30.00"	MC01011749-M/V KLJ ERICKSON DAVD	403	High Flow Rate	9.47		While N/B navigating the Burlington Northern Railroad Bridge BARGE trs-452b5 lightly rubbed the protection cell. No damage to the vsl, barge, or bridge was reported.
03/15/2000	N 40° 47' 42.00"	W 091° 05' 30.00"	MC00003737-SHOW-ME-STATE/403 UMR/DAVD	403	High Flow Rate	9.76		M/V Show-Me-State was S/B with 9 loaded when vsl came into contact with the Burlington RR Bridge. Vsl stopped 1.5 miles down river where damage survey was done. Barge #CC-7916 had a large hole of unknown dimensions, which was lightered to new barge. No known damage was reported by the bridge. Damage estimated at 50,000.00 to the barge. No other damage, pollution, or injuries were reported
07/15/1999	N 40° 47' 42.00"	W 091° 05' 30.00"	MC99010433-DEETTE ANDERSON	403	High Flow Rate	10.66		M/V DeEtte Anderson was N/B with 3 empties. While transiting the Burlington RaILWWoad Bridge the port side of the Coastal 2522 rubbed the fenderworks on the turntable. No damage, pollution or injuries reported.
04/14/2002	N 40° 47' 42.00"	W 091° 05' 30.00"	M/V KLJ Erickson - Allision	403	High Flow Rate	10.97		While running the shore span of the Burlington Draw Bridge, the vsl stopped and Allided with the turntable.
03/29/2004	N 40° 47' 54.00"	W 091° 05' 30.00"	M/V W.T. Toutant Allision with Burlington RR Bridg	403	High Flow Rate	11.14		On March 29, 2004, the M/V W.T. Toutant was traveling Southbound on the Upper Mississippi River. At Mile 403 the barge CCT 281made contact with the Burlington Northern RaILWWoad Bridge. Only minor damage was noted to the tow and none to the bridge.
07/09/2003	N 40° 52' 57.00"	W 091° 01' 39.00"	M/V Tom Behringer-Allision	403	High Flow Rate	11.34		M/V Tom Behringer was southbound with 14 loads and one empty in tow, arranged 3 x 5. While navigating bridge near mile 403 Upper Mississippi river, starboard string barge ACBL 118 came in contact with right descending protection pier.
10/17/2002	N 40° 52' 57.00"	W 091° 01' 39.00"	M/V L J Sullivan - Allision	403	High Flow Rate	11.75		M/V L J. Sullivan made a controlled landing on upper portion of the inside span of the Burlington RR Bridge. Barge VL 81437 made contact. Bridge was notified of intention to pass 3 miles upstream and bridge indicated that it would be open. Bridge failed to open in time requiring the tow to be stopped just above bridge and flanked through. No reported damage to tow or bridge.
05/03/2005	N 40° 52' 01.00"	W 091° 01' 01.00"	M/V LJ Sullivan Allision w/ RR bridge MM 403 UMR	403	High Flow Rate	11.87		LJ Sullivan was southbound with 15 barges in tow. While navigating bridge with helper boat on head of tow near mile 403 UMR starboard string barge ACBL 4224 came in

								contact with protection shear fence.
08/07/1999	N 40° 47' 42.00"	W 091° 05' 30.00"	MC99010446-ROBERTA TABOR	403	High Flow Rate	12.1		M/V Roberta Tabor was N/B transiting the Burlington R/R Bridge when barge (SER 243)rubbed the protective cell.
04/29/2003	N 40° 52' 57.00"	W 091° 01' 39.00"	M/V Cooperative Mariner-Bridge Allision	403	High Flow Rate	12.33		While Passing through Burlington RaILWWoad Bridge, barge SER 230 rubbed right descending bridge pier, breaking 2' of horizontal timbers. No barge damage was evident.
06/18/2002	N 40° 52' 57.00"	W 091° 01' 39.00"	M/V Penny J. Eckstein - Allision	403	High Flow Rate	13.14		13 JUN02 @ 0330 – M/V Penny J. Eckstein was NB when @ UMR403 (Burlington Northern Santa Fe R.R. Bridge) she made light contact with the lower protection cell of bridge. No damage to bridge, vessel or tow. No actionable negligence on the part ofthe pilot.
06/06/2002	N 40° 52' 57.00"	W 091° 01' 39.00"	M/V R. W. NAYE	403	High Flow Rate	13.87		MV RW NAYE was southbound with 12 loads in tow. While navigating the Burlington Northern RaILWWoad bridge near mile 403 UMR, the starboard string barge SER 419 rubbed the right descending bridge pier.
06/04/2001	N 40° 47' 42.00"	W 091° 05' 30.00"	MC01009056-M/V GRANDMA GERT DAVD	403	High Flow Rate	15.42		THE M/V GRANDMA GERT WAS N/B AS THE PILOT WAS ATTEMPTING TO NAVIGATE THROUGH THE BURLINGTON RR BRIDGE. THE PORT LEAD BARGE LANDED ON THE LEFT PIER CAUSING A HOLE IN BARGE # RW189. DRUGS AND ALCOHOL ARE NOT CONSIDERED PART OF THIS CASE.
06/09/2001	N 40° 47' 42.00"	W 091° 05' 30.00"	MC01007548-M/V PRAIRIE DAWN	403	High Flow Rate	15.84		WHEN TRANSITING THE IL SIDE OF THE BURLINGTON RR BRIDGE THE CENTER BARGE IN THE PORT STRING RUBBED ALONG THE BRIDGE FOR APPROX. 10'. NO DAMAGE TO THE BRIDGE OR BARGE.
06/02/1999	N 40° 47' 42.00"	W 091° 05' 30.00"	MC99010464-COOPERTIVE AMBASSADOR	403	High Flow Rate	16.45		M/V Cooperative Ambassador was N/B transiting the Burlington RR Bridge when the barge AB 130 touched the turntables upper end.
04/21/2005	N 40° 52' 01.00"	W 091° 01' 01.00"	M/V James Buky Allision w/ RR Bridge MM 404 UMR	404	High Flow Rate	12.49		According to 2692 - M/V James Buky was southbound wit 15 barges in tow. While making bridge near mile 404 UMR current set tow to starboard and starboard lead barge VL 81240 came in contact with upper cell.
06/17/2001	N 40° 52' 36.00"	W 091° 01' 54.00"	MC00014798-M/V JOE PAT ECKSTEIN DAVD	410.5	High Flow Rate	8.79		Strong outdraftat the lock caused difficulty entering the lock chamber. Had no time to steer awat from the wall and barge cc-7913 lightly bumped the lower long wall. There was no damage to the lock or the vessel.

06/10/1999	N 40° 53' 12.00"	W 091° 01' 06.00"	MC99009738-SHOW-ME-STATE	411	High Flow Rate	9.53		M/V Show-Me-State was S/B entering L&D 18. When entering the lock an out draft began pulling the stern and tow toward mid-river. The drafting action caused the forward port side of the tow to swing to the port side. The port lead barge hit the lock-gate damaging approximately 6 to 8 feet of one gate timber. Damage to lock was $2500. No pollution or injuries was reported.
07/04/2002	N 40° 54' 18.00"	W 090° 59' 00.00"	M/V LOYD BEESECKER GROUNDING UMR MILE 413	413	High Flow Rate	7.21		On 04 July 2002, at around 1725 the M/V Loyd Beesecker was north bound at mile 413 on the Upper Mississippi River, with 16 empty barges. Due to a strong cross current it was pushed up on a dike. Tug assistance was used, but was unable to move the vessel. The port captain advised that they stop for the night and get the engine started in the morning and work their way out. On 07/05/02 at 0800 hours it received tug assistance and was pulled off the dike. There was no damage to any vessels.
05/26/1999	N 41° 11' 30.00"	W 091° 03' 00.00"	MC99008354-M/V ARDYCE RANDALL	437	High Flow Rate	16.9	179964	M/V Ardyce Randall was N/B locking though L&D 17 when the stbd. barge (ART 533) struck the lower gate resess. The barge had a 8"X 1.5" hole in the rake slope. No other damage, pollution, or injuries were reported.
06/28/2001	N 41° 11' 30.00"	W 091° 03' 42.00"	MC01010177-M/V MARY ELIZABETH ALL UMR 437	437.1	High Flow Rate	13.8	126491	Vessel was making approach to lock chamber at L&D 17 pusing two liquid fertilizer barges. Port bow of barge PC 2804 allided with the long wall resulting in damaged sheet piling extending 30ft. There was not significant damage to the barges. ACOE reported cost to repiar sheet piling would be approximately $200,000 in AUG 01. At time of casualty, ACOE was unable to provide estimated dollar amount. No chemical testing was conducted.
09/26/2000	N 41° 25' 18.00"	W 091° 00' 48.00"	MC00014802-M/V HARVEST RUN ALLISION	457	High Flow Rate	3.59	43018	M/V Harvest Run was S/B locking through No. 16 UMR While shoving out of the chamber, the downriver gates were opened and the tow surged backwards with barge CBL-311 struck the upriver landwall No.2 miter gate. No damage was reported for either the barge or lock.
05/16/2002	N 41° 31' 08.00"	W 090° 34' 11.00"	M/V JULIE S - Allision	481	High Flow Rate	11.77		M/V Julie S was southbound with 15 loads in tow arranged 3x5. While navigating bridge near mile 481 UMR current set tow to starboard and barge ML 527B in starboard string came in contact with BNSF Crescent R.R. bridge right descending sheer fence.
06/15/2000	N 41° 30' 42.00"	W 090° 32' 42.00"	MC00007729-M/V GLADIATOR/UMR 481/DAVD	481	High Flow Rate	11.95		M/V Gladiator was N/B when vessel landed on the fencing of the Cresent R/R Bridge with the barge XL-287.
06/17/2001	N 41° 30' 42.00"	W 090° 32' 42.00"	MC01008112-M/V WASHINGTON DAVD	481	High Flow Rate	12.4		The M/V Washington was S/B with 15 loads. While navigating bridge near mile 481 UMR stbd bow (CCT 37) came in contact with the protection cell. No daamage to barge of cell reported.

06/24/2004	N 41° 31' 08.00"	W 090° 34' 11.00"	Butch Barras Allision on Cresent bridge	481	High Flow Rate	12.8		MV Butch Barras was southbound with 12 loads in tow arranged 3 x 4. While making bridge near mile 481 UMR in high water conditions current set tow to starboard and starboard stern barge PV 5904 rubbed the upper cell of the bridge. Transfer of cargo from PV 5904 was arranged.
04/12/2005	N 41° 53' 21.00"	W 090° 09' 43.00"	M/V Andrea Leigh Allision	481.4	High Flow Rate	12.3		According to 2692 - Mitch Degenhardt reported tow was southbound. Wind and cross current set tow over on the upper ice breaker of snear fence on left descending span of the Crescent RaILWWoad Bridge.
06/15/1999	N 41° 30' 54.00"	W 090° 34' 06.00"	MC99009747-M/V NATHEN	482	High Flow Rate	10.11		M/V Nathen was S/B locking into L&D 15 when barge hit the bullnose. Vsl. was then being pulled into the rollerdams. Vsl. Attempted to back-up but current was to strong, crew was forced to unface the barge to save vsl. The barge came to rest on the #2 gate. Damage to the lock was $3000 and damge to the barge was $7000. No other damage or pollution was reported.
05/25/2001	N 41° 30' 54.00"	W 090° 34' 00.00"	MC01006782-M/V GEORGE KING DAVD	482.9	High Flow Rate	11.95		M/V George King bumped the upper end wall of L&D 15 breaking wires in the first coupling. No damage to lock, vessel, or barges.
07/27/2002	N 41° 31' 05.00"	W 090° 30' 39.00"	M/V Lady Lone Star - Allision	483	High Flow Rate	7.34		Entering small chamber South bound at Lock & Dam 15 UMR483. An out draft pulled M/V Lady Lone Star outwards of Lock wall causing the head of the Tow to point in at the upper end of the intermediate Lock gate. No damage to barge WG #2 which made contact with gate. Damage listing #6 miter Gate 28' wallway.
05/05/1999	N 41° 33' 54.00"	W 090° 26' 54.00"	MC99006861-J.W.HERSHEY	491	High Flow Rate	7.51	91523	MV J.W. HERSHEY WAS SOUTHBOUND WITH 14 LOADS IN TOW ARRANGED 3X5 WITH A NOTCH ON PORT STRING HEAD. WHILE NAVIGATING INSIDE BUOY LINE CURRENT SET TOW TO STARBOARD AND STARBOARD STERN BARGE ACBL 2908 CAME IN CONTACT WITH RIVER BOTTOM. NO POLLUTION, DAMAGE OR INJURIES.
04/08/2005	N 41° 53' 21.00"	W 090° 09' 43.00"	Grounding of M/V James F. Neal	493.3	High Flow Rate	7.83	105480	Vessel had just departed out of Lock 14 southbound with 14 lds and 1 mty. Curret set vessel down to right descending side of channel where boat bumped in shallow water. Pilot backed vessel to stop tow when stbd side of tow grounded. Break coupling of tow broke and caused vessel with 6 barges to break loose and 9 barges to ground. Further inspection showed only 3 barges had actually grounded T13885, DR 6257, ING 5624.
05/01/2002	N 41° 53' 21.00"	W 090° 09' 43.00"	M/V Joe Pat Eckstein	493.3	High Flow Rate	9.67	135125	while making Lock 14, a strong out draft pushed tow against wall causing scratch approx. 16x1/8 in upper wall of Lock.
07/07/2003	N 41° 53' 21.00"	W 090° 09' 43.00"	M/V Lois Ann-Allision	518	High Flow Rate	9.02	77517	M/V Lois Ann was southbound on the Upper Mississippi river, with six loaded barges. At approximately 0210 M/V Lois Ann made contact with the Clinton raILWWoad bridge. As a result of the contact, several barges were damaged, and the tow came apart.

05/06/2003	N 41° 53' 21.00"	W 090° 09' 43.00"	M/V Contie Arlie-Allision	518	High Flow Rate	10.9	99127	M/V Contie Arlie was southbound with 4 loads, navigating bridge in Clinton. Strong cross current set tow on drawset and bumped upper cell with starboard stern of barge PV-9915.
06/06/2000	N 41° 50' 06.00"	W 090° 11' 00.00"	MC00007625-M/V MARIAN HAGASTAD/UMR 518/DV	518	High Flow Rate	11.33	103492	M/V Marian Hagastad was S/B with 2 loaded barges when vsl came into contact with the Clinton RR Bridge on the right decending peer. No apparent damage to barge, vessel, or bridge. No other damage, pollution, or injuries were reported.
06/28/2001	N 41° 50' 06.00"	W 090° 11' 00.00"	MC01008959-M/V RUSTY FLOWERS DAVD	518	High Flow Rate	13.47	124407	The M/V Rusty Flowers was southbound with three loaded barges in tow. While navigating the Clinton Highway Bridge the stbd stern barge came in contact with the protection cell. No damage was reported on the cell.
06/13/2004	N 41° 53' 21.00"	W 090° 09' 43.00"	MV Butch Barras Allision	518	High Flow Rate	14.1	130929	MV Butch Barras was north bound with 16 empties in tow arranged 3x5 with barge on starboard side of boat. While navigating bridge near mile 518 UMR starboard string barge SCNO 8010 lightly rubbed the upper protection cell on left descending side of bridge. No reported Damage to bridge or the barge. Casualty attributed to strong current caused by high water. No actionable negligence
05/11/2003	N 42° 07' 35.00"	W 090° 11' 43.00"	M/V Mary L.-Grounding and Allision.	535	High Flow Rate	8.95	75590	During Final approach from upstream side of the Sabula raILWWoad bridge, the high flow of the river current created an out draft, which caused the tow to crab to port. Capt. attempted to correct which did minimize impact, However barge RW843 landed on protection cell.
06/06/2000	N 42° 04' 18.00"	W 090° 09' 48.00"	MC00007726-M/V PHYLLIS/UMR 535/DAVD	535	High Flow Rate	11.33	103492	M/V Phyllis was s/b with 9 loaded with the help of Karen Renee on the head. Port lead barge stuck the bullnose of the Sabula R/R Bridge causing port wire to break. The fast current took 3 barges out of tow and onto the bridge piers. Barges had a total of $11,000.00 of damage, the bridge had 80,000.00 worth of damages No other damage, pollution, or injuries were reported.
07/12/1998	N 42° 04' 18.00"	W 090° 09' 48.00"	MC98010872-M/V DELL BUTCHER/UMR535/DAVD	535	High Flow Rate	11.69	107030	WHILE MAKING THE SABULIA R/R BRIDGE THE M/V DELL BUTCHER WAS SET TO THE PORT SIDE CAUSING THE PORT STRING BARGE CCT 250 TO CONTACT THE RDB BRIDGE PIER. NO INJURY, POLLUTION, OR NEGLIGNECE SUSPECTED. DAMAGE TO THE BARGE ESTIMATED AT $1,000.
06/09/2000	N 42° 04' 18.00"	W 090° 09' 48.00"	MC00007733-M/V JANE G HUFFMAN/UMR 535/DAV	535	High Flow Rate	11.85	108575	M/V Jane G Huffman was S/B with 15 loaded when transiting the Sabula R/R Bridge when vessel came into contact with the swing span of the bridge. No damage to the bridge or barge. No other damage, pollution, or injuries were reported.

06/11/2001	N 42° 04' 18.00"	W 090° 09' 48.00"	MC01008980-M/V CORAL DAWN DAVD	535	High Flow Rate	12.1	111023	The M/V Coral Dawn was S/B navigating the Sabuls RR bridge when the stbd bow came in contact with the protection cell for the brudge. No damage to the vessel or bridge was reported.
06/11/2000	N 42° 04' 18.00"	W 090° 09' 48.00"	MC00007742-M/V PRAIRIE DAWN/UMR 535/DAVD	535	High Flow Rate	12.25	112440	M/V Prairie Dawn was S/B with 12 loaded transiting the Sabula R/R Bridge when vessel came into contact with the upper end of turntable protection cell causing a 4" crack in barge # AB 240B.
05/21/2003	N 42° 07' 35.00"	W 090° 11' 43.00"	M/V Kathy Ellen-Allision Sabula R.R. Bridge	535	High Flow Rate	14.7	137606	M/V Kathy Ellen was attempting to transit sabula raILWWoad bridge southbound when allision with right descending pier occured.
04/15/2001	N 42° 04' 18.00"	W 090° 09' 48.00"	MC01006424-MV RUTH JONES DAVD	535	High Flow Rate	14.73	137962	M/V Ruth Jones was southbound with 9 loaded barges in tow arranged 3x3. While navigating bridge near MM535 UMR with help of an assist boat at the bow of the tow, current set tow to port and port lead barge WWT 875 came in contact with upper bridge cell protection.
04/15/2001	N 42° 04' 18.00"	W 090° 09' 48.00"	MC01006836-M/V RUTH D JONES DAVD	535	High Flow Rate	14.73	137962	M/V Ruth D Jones while transiting the Sabula R/R Bridge made contact with one of the protecting cells.
06/08/2004	N 42° 07' 35.00"	W 090° 11' 43.00"	O.H. Ingram Allision	540	High Flow Rate	13.77	127330	Vessel was proceeding downbound on the Upper Mississippi River pushing 12 barges. Landed the OR 1175 on upper end of trun table while transitting thru Sabula RR Bridge. Minor Damage to Barge, did not compromise structural integrity. Verified with bridge tender that some concrete on the protection cell was chipped, but no damage estimates were given. Bridge remained operational. Casualty attributed to strong current due to high water on river. Pilot erred in judgment when making approach to bridge. No actionable negligence.
06/16/2000	N 42° 43' 54.00"	W 091° 03' 00.00"	MC00007716-M/V ARROWHEAD/UMR 615/ DAVD	615	High Flow Rate	9.6	80400	M/V Arrowhead was S/B with 15 loaded waiting to lock through L&D 10 when stbd barge drifted out and grounded. Vessel was on ground for 30 min. navigation was not affected.

08/29/1998	N 42° 47' 00.00"	W 091° 05' 42.00"	MC98011497-M/V PRAIRIE DAWN/UMR615/DAVD	615	High Flow Rate	no data available	27500	WHILE MAKING L&D 10 U/B THE M/V PRAIRIE DAWN LANDED THE PORT LEAD BARGE HARD ON THE LONG WALL. APPROX. $150 DAMAGE TO THE BARGE NO DAMAGE TO THE LOCK, NO INJURY, NO POLLUTION AND NO NEGLIGENCE SUSPECTED.
09/25/1998	N 42° 47' 00.00"	W 091° 06' 00.00"	MC98013908-DECATUR LADY, STPD, 615.1 UMR	615.1	High Flow Rate	no data available	23300	On 25 SEP 98 the M/V Decatur Lady while locking though L&D #10 with 09 loaded dry cargo barges allided with the lock wall. Tow set behind lock wall and rubbed stb side. The stb lead barge, RRS 8016B, sustained 03 small cracks above the waterline at the stb stern. No pollutin and no damage to lock.
07/18/2002	N 43° 30' 02.00"	W 091° 13' 03.00"	UTV MARTHA R. INGRAM Allision with Lock & Dam 9	647.9	High Flow Rate	617.66	61100	On 18Jul02 at 0045 local time, the UTV MARTHA R. INGRAM was pushing a string of 15 freight barges south on the UMR above Lock & Dam 9 (Mile Mark 647.9). The MARTHA INGRAM was using a checking line from the guide wall during the approach into the chamber. As the lead barges in the string approached the chamber, the MARTHA INGRAM was pushed away from the guide wall by a strong out draft current. The port lead barge in the tow was consequently pushed toward the left descending bank of the river and allided with the lock gate. The river flow rate at the lock at the time of the incident was 63,000 cfs (well above normal). After the initial contact, the operator of the MARTHA INGRAM was able to bring the tow back under control and entered the lock chamber without further incident.
07/29/2002	N 43° 13' 00.00"	W 091° 06' 00.00"	Collision, M/v Badger & Barge CC-8113	648	High Flow Rate	616.23	48900	At approximately 0340 hours 0n 29 July 2002, M/V Badger was steering into Lock and Dam 9, stern would not lift causing head to come off wall, breaking 9 wires, causing Barge CC-8113 to bump the bull nose. No damage to Lock or vessel. Investigation complete.
08/13/2002	N 43° 30' 02.00"	W 091° 13' 03.00"	M/V Joe Pat Eckstein/Allision	648	High Flow Rate	616.29	49600	At approximately 0630L on 13 August 2002, while making Lock 9, barge CC-8112 lightly rubbed bullnose of Lock 9 causing $3500 damage to the barge with no damage to the lock or other barges. Watchstander was in charge of the UTV at the time of the incident. Investigation complete.
09/13/1999	N 43° 51' 00.00"	W 091° 18' 00.00"	MC99016485-GENE HERDE, STPD, MI 700 UMR	700	High Flow Rate	632.12	28700	On 07 Sep 99 the M/V Gene Herde allided with the LaCrosse RR Bridge while downbound the UMR at mile 700.0 with a tow of 14 loaded and 01 empty dry cargo barges. Pilot landed on the protection cell while backing to stop. No damage to tow and four cracked timbers to the cell.
08/11/1999	N 43° 51' 00.00"	W 091° 18' 00.00"	MC99016442-EVEY T, STPD, MI 700.0 UMR	700	High Flow Rate	633.29	41500	On 11 AUG the M/V Evey T allided with the LaCrosse RR Bridge while downbound the UMR at mile 702.6. Vessel rubbed sheer fence and cracked a timber. No damage to vessel and no pollution.

04/20/2003	N 44° 00' 30.00"	W 091° 26' 10.00"	UTV MYRA ECKSTEIN, Allision	714	High Flow Rate	644.76	56800	The UTV MYRA ECKSTEIN, U/W, with 15 barges (3W X 5L), was southbound on the Upper Mississippi River at MM714 at the approach to Lock & Dam #6. The river was at a high flow condition which created a strong outflow condition at the upper lock guide wall. The outflow current drew the head of the tow out and away from the wall.
07/02/2001	N 44° 01' 00.00"	W 091° 29' 00.00"	MC01012240-STPD/ROY MECHLING/ALSN/LD6	714.3	High Flow Rate	644.34	60800	THE UTV ROY MECHLING, PUSHING 12 LOADED GRAIN BARGES, ALLIDED WITH L&D 6 UPPER WALL AFTER GROUNDING TOW AND TOPPING OVER. A WOODEN PROTECTION TIMBER WAS DAMAGED. ALLISION CREATED A CRACK IN THE #4 PORT WING TANK ON A DRY CARGO BARGE ACBL 1438. UTV SULAND ASSISTED IN REMAKING THE TOW.
08/01/2001	N 44° 01' 00.00"	W 091° 29' 00.00"	MC01012238-M/V GREG MINTON / GROUNDING	714.3	High Flow Rate	644.53	35999	Vessel was making approach below lock 6 wall, when the stern rubbed grounded which causing the head of the tow to land on sandbar 200 to 300 feet below lock. One tow wire subsequently broke, but no damage w3as reported to towboat or tow.
04/24/2002	N 44° 00' 00.00"	W 092° 26' 00.00"	Allision; M/V Loree Eckstein	714.3	High Flow Rate	646.17	100300	barge CC-9282 bumped long wall of bullnose at Lock 6, causing minor damage to barge(no repairs needed).
06/26/2000	N 44° 20' 00.00"	W 091° 56' 00.00"	MC00012535-STPD/UTV PRARIE DAWN/LOCK #4	752.8	High Flow Rate	11.95	24200	ON 26JUN00 AT APPROX 0015, WHILE ENTERING LOCK AND DAM 4, BARGE XL-742B ALLIDED WITH UPPER LOCK WALL WHILE BEING WEDGED THROUGH BY THE UTV PRAIRIE DAWN. THE ALLISION CRACKED THE HULL OF THE BARGE CAUSING IT TO TAKE ON WATER. DEWATERING OPERATIONS COMENCED AND THE LOAD WAS TRANSFERED TO ANOTHER BARGE TO REDUCE THE DRAFT OF THE XL-742B.
11/21/1999	N 44° 20' 00.00"	W 091° 56' 00.00"	MC99016475-LOYD BEESECKER, STPD, 753 UMR	753	High Flow Rate	11.39	16400	On 21 Nov 99 the M/V Loyd C. Beesecker while downbound the UMR at mile 753.0 allided with L & D #4. Vessel was pushing 15 loaded dry cargo barges. Pilot was caught in the current and hit lock wall causing damage to two barges (CC8003 & CC55). No further damage and no pollution.
07/31/1998	N 44° 46' 00.00"	W 092° 52' 00.00"	MC98012146-TOM TALBERT, STPD, 810.4 UMR	810.4	High Flow Rate	25.13	14800	On 31 JUL 98 the M/V Tom Talbert while downbound the UMR at mile 810.4 grounded it's tow of 12 dry cargo barges in the channel. No damage and no pollution.
07/13/2002	N 44° 44' 55.00"	W 092° 50' 00.00"	Allision/Barge MTC-358B & Hastings RaILWWoad Bridge	813	High Flow Rate	30.48	47200	At approximately 2305 hours on 13 July 2002, starboard bow corner of barge CC-8312 lightly rubbed cell above Hastings RaILWWoad Bridge causing part of the tow to break away. During the retrieval of the breakaways barge MTC-358 was damaged. Tow was put back together and voyage resumed. No damage was substained to the raILWWoad bridge or fendering system. Investigation complete.

06/22/1998	N 44° 46' 00.00"	W 092° 52' 00.00"	MC98009761-CO-OP MARINER, STPD, 814 UMR	814	High Flow Rate	no data available	20000	On 22 JUN 98 the M/V Cooperative Mariner grounded its starboard stern barge while downbound the UMR at mile 814.0. Tow consisted of 12 loaded dry cargo (grain) barges. No pollution.
11/02/2000	N 44° 44' 24.00"	W 092° 52' 00.00"	MC00016214-STPD/TRUCK MORRISON/RIVER BANK	814	High Flow Rate	no data available	8100	The UTV TRUCK MORRISON was southbound at 2.5-kts on the UMR with 14 loaded barges when it grounded it's lead barge on the west river bank in the vicinity of the Hastings Bridge. The stbd lead barge in the tow, ACBL 3047, suffered damage to the fwd rake & cargo, which was estimated at $20K.
09/30/1998	N 44° 46' 00.00"	W 092° 52' 00.00"	MC98013918-M/V T.BEESECKER, STPD, 815 UMR	815	High Flow Rate	no data available	3400	On 30 SEP 98 the M/V Teresa Renee Beesecker was pushing a tow of 05 MT and 07 loaded dry cargo barges allided with L&D #02 lock wall. Tow landed on the stb lead barge (CGB-142) causing minor damage above the waterline. No damage and no pollution.
05/15/1999	N 44° 56' 00.00"	W 093° 05' 00.00"	MC99008948-WILLIAM NORMAN, STPD, 841 UMR	841	High Flow Rate	9.98		On 15 May 99 the M/V William C Norman allided with the Omaha RR Bridge while downbound the UMR at mile 841.4. River was high and running swift. Vessel was pushing 06 loaded dry cargo barges. Capt. swung wide to avoid a large pile of drift and was unable to correct prior to impact with bridge. Bridge was inspected prior to rail traffic crossing and was found to have received minor cosmetic damage. Barges received minor damage as well. No pollution.
06/11/2003	N 44° 58' 43.00"	W 093° 14' 33.00"	M/V LYON: BRIDGE ALLISION	853	High Flow Rate	no data available	9656	On 11Jun03 at 0845 M/V LYON collided with a city bridge at MM 853.0. Two timbers were broke on the bridge sheer fencing and no damage was done to the tug and tow.
06/13/1999	N 44° 55' 00.00"	W 093° 12' 00.00"	MC99009046-MINNEAPOLIS, STPD, MI 853 UMR	853.3	High Flow Rate	no data available	15300	On 13 MAY 99 the M/V Minneapolis's tow allided with the lock wall at Lower St. Anthony Falls L & D. Vessel was downbound the UMR at mile 853.3 with two loaded dry cargo barges.
05/23/2003	N 41° 31' 08.00"	W 090° 34' 11.00"	M/V Mary Evelyn-Allision Crescent RaILWWoad bridge	482 approximate	High Flow Rate	12.7		While transitting the crescent raILWWoad bridge southbound, starboard stern of tow rubbed the approach cell. No damage to the tow or the bridge.

06/30/2001	N 41° 30' 42.00"	W 090° 32' 42.00"	MC01011743-M/V SHARON WILDMAN DAVD	485 approx	High Flow Rate	12.51		While S/B pushing 15 loaded barges the stbd string came in contact with the right decending pier. No damage to bridge, barge, or vessel were reported.
06/28/2000	N 37° 45' 06.00"	W 089° 39' 24.00"	MC00007858-M/V FLOYD H. BLASKE GROUNDING	94	High Water	31.03		Barge ACBL 3025 struck the bank, causing an undetermined sized hole in the hull flooding #1, #2 & #3 wing tanks. Total damage cost 16k. The Captain reported that there is a buoy marker missing from the channel and with the high waters and strong currents they misjudged the turn and settled on the bank. Grounding due to high water and loss of situational awareness.
06/02/2001	N 38° 47' 24.00"	W 090° 07' 18.00"	MC01007433-HARRY WADDINGTON 194.9UMR SLMM	194.9	High Water	93.6		On 02JUN01, the M/V HARRY WADDINGTON was transiting from the Missouri River sthbd onto the UMR (MM 194.9) with 9 loaded barges in tow. The Captain reported that as the tug and tow were entering the UMR, the tow landed on the Cherokee Dock. The Captain attributed the incident to higher than normal river stages which caused a greater than anticipated set over by the tow. The Captain reported no damage to the tug/tow or to the dock.
05/30/1998	N 38° 59' 30.00"	W 090° 40' 30.00"	MC98007956-MARY L/241.4UMR (SLMMS)	241.4	High Water	27.27		M/V MARY L with 15 loaded in tow approaching lock wall of L&D 25. Port lead barge allided wall and struck bull nose causing a dent on port side of RW 760 and pulled off cavel of RW 860. Damage estimate unknown.
11/21/2003	N 39° 26' 26.00"	W 091° 02' 28.00"	M/V NAN ALLISION UMR MI 282	282	High Water	11.94		REPORTING PARTY STATES: AT 04:10 21 NOV 2003 M/V NAN WAS DOWNBOUND W/15 LDS ARRANGED 3 X 5 ON UMR MI 282. WHILE NAVIGATING BRIDGE STBD STRING BARGE, ACBL 305, RUBBED RIGHT DESCENDING PROTECTION CELL. MINOR DAMAGE TO ACBL 304. UNKNOWN IF CELL DAMAGED.
04/09/2003	N 39° 38' 11.00"	W 091° 14' 48.00"	M/V BOB STITH Allision MM 282 UMR	282	High Water	12.14		On 09 April 2003, the M/V BOB STITH was southbound on the Upper Mississippi River (MM 282) with fifteen loaded barges in tow. As the tow was transiting through the LA RaILWWoad Bridge, the ACBL 5043 came in contact with the bridge's left pier.
11/22/2004	N 39° 22' 07.00"	E 090° 53' 35.00"	M/V PHYLLIS Allision with L&D 24	282	High Water	12.19		(no information found)
08/24/2002	N 39° 26' 22.00"	W 091° 02' 02.00"	M/V MYRA ECKSTEIN Allision MI 282 UMR	282	High Water	12.43		On 24 August 2002, at approximately 1215 hours, the M/V MYRA ECKSTEIN was southbound on the Upper Mississippi River (MI 282) with fifteen loaded barges in tow. As the tow was transiting through the Louisiana RaILWWoad Bridge, the port head barge (SG-306) lightly rubbed one of the protection cells on the bridge.

07/05/2001	N 39° 26' 18.00"	W 091° 02' 18.00"	MC01008697-JOHN BEESECKER ALLISION	282	High Water	14.66		M/V JOHN BEESECKER WAS SOUTHBOUND AT M282 UMR W/4 LDS IN LINE AHEAD. AS PILOT PASSED THROUGH THE LOUISIANNA RR BRIDGE THE LEAD BARGE LANDED AGAINST THE CELL AND SHEER FENCE. NO REPORTED DAMAGE TO BRIDGE. THE BARGE'S ESTIMATED DAMAGE IS $1,295.
05/09/2002	N 39° 26' 18.00"	W 091° 02' 18.00"	M/V Ruth D Jones Bridge Allision UMR Mile 282	282	High Water	14.93		he M/V Ruth D Jones was southbound with 15 loaded in tow arranged 3 x 5. While navigating near UMR mile 282 in high water conditions, a strong draft pushed the tow towards the Louisiana RR bridge turntable. The Port string barge ML516B came in contact with the left descending pier.
10/20/1998	N 39° 26' 24.00"	W 091° 02' 00.00"	MC99001981-PRAIRIE DAWN/282.1UMR/PEOD	282.1	High Water	14.07		M/V PRAIRIE DAWN W/ 15 LOADS RPTD RUBBING THE LDB PROTECTION CELL OF THE LOUISIANNA RR BRIDGE AT MILE 282.1 UMR. PORT STRING BARGE AT 615B LANDED ON PROTECTION CELL. TWO 2" CRACKS IN #2 WING TANK. NO POLLUTION RPTD AND NO DAMAGE RPTD TO BRIDGE. STRONG SET TO LDB PROTECTION CELL. PILOT COULD NOT QUITE OUT RUN SET.
06/21/1999	N 39° 26' 24.00"	W 091° 02' 18.00"	MC99007741-M/V SHOW ME STATE/ ALLISION	282.1	High Water	14.83		On 21 June 1999, at approx. 1645, the M/V SHOW ME STATE was at MM 282.1 of the UMR with 15 loaded cargo barges. The pilot, CLIFFORD R. WEST, was attempting to pass through the left descending span of the Louisiana RaILWWoad Bridge when one of the barges allided with the bridge causing all 15 barges to breakaway from the tow. Nine of the barges sustained damage and the bridge had to be closed until debris could be removed from the channel.
06/04/2001	N 39° 26' 24.00"	W 091° 02' 00.00"	MC01007365-FRANK ALTER 282.1 UMR SLMMS	282.1	High Water	17.32		The M/V FRANK ALTER was sthbd on the UMR w/15 loaded barges in tow. The Captain was attempting to maneuver through the Louisiana RR Bridge when the tow hit the right descending protective cell located just above the bridge. The Captain said that as he was approaching the bridge, the head of the tow was setting too far to port so he stopped the tow. As he was backing up to realign, the tow hit the cell. There was a small dent on AGS-434B, but no visible to the cell.
07/11/1998	N 39° 26' 18.00"	W 091° 02' 00.00"	MC98014539-TRUCK MORRISON/282.1UMR/PEOD	282.1	High Water	18.14		M/V TRUCK MORRISON W/15 LOADS RPTD ALLIDING WITH THE LOUISIANA RR BRIDGE AT MILE 282.1 UMR. WHILE PASSING THROUGH CHANNEL SPAN, THE 3RD BARGE BACK IN THE STBD STRING RUBBED THE BRIDGE PROTECTION CELL. FREIGHT BARGE CGB 119 RUBBED THE RDB PROTECTION CELL OF THE BRIDGE. NO DAMAGE RPTD TO BRIDGE. BARGE SUSTAINED DAMAGE TO THE #2 STBD WINGTANK.
06/18/2001	N 39° 26' 18.00"	W 091° 02' 18.00"	MC01007882-DECATUR LADY 282.9 UMR SLMMS	282.9	High Water	15.62		On 6/18/01 the M/V DECATUR LADY with assistance from the M/V PONDEROSA, was attempting to transit the Louisiana RR bride at MI 282.9 UMR, when she lost control of her tow and hit the upper turntable cell of the bridge with barge ART 479. The subsequent allision caused her tow to break apart and drift down stream. All barges were recovered with minor damage. The bridge received only

								minor damage.
07/02/2001	N 39° 27' 06.00"	W 091° 02' 24.00"	MC01008695-M/V ISSAQUENA ALLISION	283	High Water	14.18		M/V ISSAQUENA WAS SOUTHBOUND WITH 13 LOADS ARRANGED 3X4 WITH SPIKE BARGE AT HEAD OF TOW. WHILE NAVIGATING NEAR MILE 283 UMR WITH ASSISTANCE OF BOW BOAT, SPIKE BARGE ABC 334 CAME IN CONTACT WITH TURNTABLE OF BRIDGE. NO DAMAGE TO VESSEL OR BARGE.
05/08/1999	N 39° 27' 18.00"	W 091° 02' 42.00"	MC99001123-M/V J.W. HERSHEY, 283 UMR	283	High Water	16.3		M/V W/15 Loaded barges rubbed the Louisana Highway Bridge.Pilot stated the current set tow to the port and the port string barge MAC 201B came in contact with the bridge sheer fence. Minor cracks sustained to the barge and no damage reported from the bridge. No pollution or injuries.
07/12/1999	N 39° 38' 00.00"	W 091° 14' 48.00"	MC99010461-NEW DAWN	301	High Water	11.24		M/V New Dawn was transiting L&D 22 when the tow rubbed the long wall while entering lock. The barge AT 673B received 1" crack in #1 stbd wing tank, which was shingled. No other damage, pollution, or injuries where reported.
04/26/1999	N 39° 38' 00.00"	W 091° 14' 48.00"	MC99009711-EVEY T	301	High Water	17.69		M/V Evey T was locking through L&D 22 when barge WTT-8215 struck the long wall. The damage to the barge was a 2.5' x 1.5" dent in the port bow between the 5th and 6th beam on port rake bow. No damage was reported to L&D 22. No pollution or injuries reported.
05/14/2002	N 39° 43' 18.00"	W 091° 21' 29.00"	M/V PROSPERITY Grounding MI 310 UMR	310	High Water	16.49		he M/V PROSPERITY was southbound on the Upper Mississippi River (MI 310) with twelve barges in tow. The captain reported that as he was lining the tow up for transit under a raILWWoad bridge, the starboard stern barge (XL 336) in the tow grounded on an outcropping of rock.
06/09/2001	N 39° 54' 18.00"	W 091° 25' 42.00"	MC01007543-MV MARY KAY ECKSTEIN	324.9	High Water	18.79		While making Lock 21 on 09 June the tow came in contact with lock. No damage to vessel or lock.
05/31/1999	N 39° 56' 24.00"	W 091° 25' 54.00"	MC99010560-CECILIA CAROL	328	High Water	18.49		M/V Cecilia Carol was transiting the Quincy Bridge when the second barge on the stbd string rubbed the protective cell. No damage to barge or bridge. No other damage, pollution, or injuries were reported.
04/21/2002	N 40° 08' 12.00"	W 091° 30' 42.00"	M/V Darin Adrain - Allision w/ L&D 20	343.2	High Water	14.03	118249	While making Lock 20, port corner barge CC 7803 lightly bumped the ladder recess.

05/27/2003	N 40° 52' 57.00"	W 091° 01' 39.00"	M/V Badger-Allision Burlington B.N.S.F.R	403	High Water	15.59		/V Badger was transitting through the Burlington Northern Snata Fe Bridge at403 UMR. Tow lightly touched lower end of turn table of the bridge. No damages to the tow, vessel or the bridge.
05/27/2003	N 41° 11' 27.00"	W 091° 03' 30.00"	M/V Bonnie-Allision lock18	410	High Water	10.2		/V Bonnie was southbound with 15 loads in tow, while making approach to lock wall at 410 UMR in high water conditions, starboard lead barge CCT 61 came in contact with bull nose of short lock wall.
04/12/2005	N 41° 53' 21.00"	W 090° 09' 43.00"	M/V JW Hershey Allsion w/ Cresent RR Bridge	518	High Water	no data available	no data available	According to 2692 - M/V J. W. Hershey was southbound with 5 barges in tow. While navigating raILWWoad bridge near mile 518 UMR in high water and strong current, tow was set to starboard with starboard stern barge PV 5999 came in contact with bridge pier.
05/18/2003	N 42° 07' 35.00"	W 090° 11' 43.00"	M/V Jane G Huffman-Allision	579	High Water	14.9		M/V Jane Huffman was southbound with 15 loads in tow, at UMR 579, in high water conditions current set tow to port and port string barge K 316B came in contact with left descending bridge pier protection cell.
05/20/2003	N 42° 30' 48.00"	W 090° 38' 18.00"	M/V Joyce Hale-Allision Dubuque raILWWoad bridge	580	High Water	17.03		M/V Joyce Hale was southbound, rubbed Dubuque raILWWoad bridge with starboard side of tow approx. 200 feet back from head of tow.
11/07/2000	N 43° 40' 00.00"	W 091° 15' 00.00"	MC00016212-STPD/ARDYCE RANDALL:UNK OBJECT	686.1	High Water	622.19	27700	On 07NOV00 at 1525, the UTV ARDYCE RANDALL was pushing ahead 15 loaded barges northbound on the UMR when its stbd lead barge, ART 514, allided with an unknown submerged object. The ART 514 suffered a hole in its #2 wing void and damage was estimated at $500.
01/06/1999	N 37° 45' 06.00"	W 089° 39' 30.00"	MC99001844-ELAINE JONES/94UMR (SLMMS)	94	Ice Flow	8.41		M/V ELAINE JONES was pushing 20 barges and was proceeding Southbound. At mile 94 on the Upper Mississippi River the lead barge (CBX234) grounded. Captain reporte that there was no buoys present due to heavy ice conditions. No damage to barge reported.
01/15/1999	N 37° 45' 24.00"	W 089° 40' 06.00"	MC99001863-M/V BEVERLY ANN/95UMR (SLMMS)	95	Ice Flow	8.76		The M/V BEVERLY ANN with a tow of 20 loaded grain barges was steering around backbone, mile 95 Upper Mississippi River. The port lead barge, CH-132 rubbed bottom causing the tow to top around. The face and long wires broke as a result of the strain. The Master then pushed the tow into the bank, repaired the lines and continued south. The channel was not blocked and no injuries were reported. The cost of replacing the lines was estimated to be $1,200.

01/08/1999	N 37° 48' 36.00"	W 089° 42' 42.00"	MC99001847-CAROL P/100.5UMR (SLMMS)	100.5	Ice Flow	9.2		On 08JAN99 at 1800 hours the M/V CAROL P was southbound Upper Mississippi River with 20 loaded coal barges in tow. The river was 75% covered with floating ice and bouys were missing and the ice was building up under the barges. The tow grounded at mile 100.5, possibly out of the channel. 4 barges required lighter- ing to refloat. Channel was not blocked. Remaining barges were refloated by 0454 on 10JAN99. The total estimate of damage to the barges was $5,500.
01/06/2001	N 38° 02' 06.00"	W 090° 06' 30.00"	MC01000546-CHICAGO MI 129 UMR SLMMS	129	Ice Flow	136.9		On 06JAN01, at approx. 1800, the M/V CHICAGO was nthbd on the UMR (MM 129) w/2 loaded barges in tow when the crew discover a small quantity of water in the #2 void of one of the barges (SR 342). The barge was taking on a small amount of water while underway only. The tug & tow had been transiting an area with heavy ice which may have resulted in the damage to the barge. The water was pumped out and the voyage continued. MSO St. Louis has issued a CG-835 for the repair.
03/04/2002	N 41° 11' 27.00"	W 091° 03' 30.00"	M/V ROBERT GREEN	415	Ice Flow	1.77		M/V Robert Greene was northbound with 16 barges in tow. While navigating in heavy ice and unclearly marked channel near mile 415 UMR port string barge ACL 1713 came in contact with river bottom along black buoy line. It was reported buoy was off station in this area. Tug assistance was received in breaking tow apart so that ACL 1713 could be pulled off ground. River was restricted for 8 1/2 hours.
02/11/1999	N 44° 53' 00.00"	W 093° 02' 00.00"	MC99003037-MINNEAPOLIS, STPD, 833 UMR,	833	Ice Flow	gage malfunction		On 11 FEB 99 the M/V Minneapolis holed the loaded dry cargo barge BR2 while pushing through the ice at the enterence of Pigs Eye Slip (833.2 UMR). Barge was holed at both corners of the rake. Ice was thicker than anticipated by the operator. No other damage and no pollution.
10/23/2000	N 37° 20' 12.00"	W 089° 29' 06.00"	MC00016007-JULIE S GROUNDING	55	Low Water	8.49		☑ [illegible] S WAS SB W/25 LOADED BARGES 5X5. WHILE NAVIGATING BEND AT FLORA CRK. BARGE SER133, THIRD IN STB STRING, TOUCHED BOTTOM. THIS CAUSED THE CENTER CAVEL ON STERN OF CGB 350 TO PULL UP. STB FACE WIRE ON THIS CAVEL SLACKED. TOW PULLED TO PORT. LEAD BARGE, RMS 8001, GROUNDED. BOAT WAS KNOCKED OUT OF TOW AND ALL BARGES WENT ADRIFT. OTHER VESSELS IN AREA ASSISTED IN RECOVERING TOW. JULIE S CONTINUED ON W/TOW.
01/28/2000	N 37° 20' 12.00"	W 089° 28' 12.00"	MC00001527-GRANDMA GERT 56.2 UMR SLMMS	56.2	Low Water	7.17		On 28 JAN 00, at approximately 0040, the M/V GRANDMA GERT was southbound on the Upper Mississippi River (MM 56.2) with 20 loaded barges in tow. Pilot stated that the tow "rubbed" the river bottom as the vessel was transiting along the red bouy line. The grounding caused several tow wires to break as well as pulling the port stern cavel of the RW 127 barge. No other damage was noted to tug or tow. Wires were replace and the voyage continued.

12/15/2000	N 37° 20' 06.00"	W 089° 28' 06.00"	MC01000195-CHARLES SOUTHERN GROUNDING	56.7	Low Water	6.78		CHARLES SOUTHERN WAS NB M56.7 UMR W/3 LOADED BARGES IN LINE. IN CROSSING FROM FLORA CRK. TO DEVILS ISLAND THE TRAIL BARGE (STC3009) GROUNDED STOPPING TOW. TOW TOPPED AROUND AND THE LEAD BARGE (STC2806) HIT A SANDBAR AND BROKE OUT OF TOW. IT CAME TO REST BETWEEN DIKES ON RDB. THE COAL EXPRESS ASSISTED IN RETRIEVING STC2806. CHARLES SOUTHERN CONTINUED ON. NO DAMAGE TO BOAT OR BARGES. A FACE WIRE AND FOUR WINCH WIRES WERE BROKEN.
02/11/2003	N 37° 37' 10.00"	W 089° 30' 24.00"	M/V JULIE S Gounding MM 79 UMR	79	Low Water	4.99		M/V Julie S traveling N/B on or about mile 079 UMR, while holding up for n/b traffic and making crew change, he landed on dike due to Narrow channel, current and strong winds. Boat and his tow was assisted off ground by Southern Illinois Sand Co and proceeded underway to his destination without damage or personal injuries.
12/25/1999	N 37° 37' 06.00"	W 089° 30' 24.00"	MC00000258-CHRISTOPHER M PARSONAGE W/TOW:	79	Low Water	5.83		On 25Dec99 UTV CHRISTOPHER M. PARSONAGE, pushing ahead 30 loaded hopper barges, S-Bound on UMR near MM 79 in clear WX/6-mile vis/7kt south wind/2.5 mph D-bound current/low water conditions. Operator met N-Bound PATRICIA GALE prior to enterning bend @ MM79 & took held tight on green buoy line & ran 4 barges of stbd string over submerged object, holed 4-barges,flooding SUN212 bow-rake & #1 stbd wing tank. Drug/alcohol use, fatigue, not factors, 10.3' draft was factor
01/04/2001	N 37° 41' 06.00"	W 089° 30' 24.00"	MC01000321-CORAL DAWN 84 UMR GROUNDING	84	Low Water	5.81		CORAL DAWN WAS NB UMR84 WITH 2 LOADED AND 7 EMPTY BARGES. TOW GROUNDED CAUSING A FACE WIRE AND SEVERAL BARGE WIRES TO BREAK. THERE WAS NO EVIDENT DAMAGE TO BARGES OR BOAT.
01/25/2003	N 37° 42' 20.00"	W 089° 34' 14.00"	M/V LYDIA E. CAMPBELL Grounding MM 88.8 UMR	88.8	Low Water	2.45		On 25 January 2003, at approximately 1130 hours, the M/V LYDIA E. CAMPBELL was northbound on the Upper Mississippi River (MM 88.8) with ten barges in tow when the captain reported that the tug rubbed bottom while meeting a southbound vessel.
06/11/2000	N 37° 44' 36.00"	W 089° 38' 30.00"	MC00007160-M/V CARL CANNON, GROUNDING	93	Low Water	19.58		M/V CARL CANNON was southbound with 24 loaded and one empty barge. While making steer near mile 93 UMR starboard stern of boat grounded. T/B broke loose from tow, which subsequently landed against bank. Starboard lead barge ACBL 4330 struck bank and sustained damage to bow void. Starboard stern barge ACBL 3166 struck bank and sustained damage to #1 and #2 wing tanks. This tow was involved in another incident in the MSO PADUCHA zone. Grounding due to low water.

01/28/2003	N 37° 45' 01.00"	W 089° 39' 29.00"	M/V RICHARD A. BAKER Grounding MI 94 UMR	94	Low Water	2.57		On 28 January 2003, at approximately 1550 hours, the M/V RICHARD A. BAKER was southbound on the Upper Mississippi River (MM 94) with twenty loaded barges in tow. The captain of the vessel reported that while navigating along the black buoy line, in low water conditions, the starboard stern barge in the tow (DDC 0026) came in contact with the river bottom.
01/08/2001	N 37° 45' 24.00"	W 089° 40' 06.00"	MC01000545-PAT PICKETT GROUNDING	95.4	Low Water	4.14		Pat Pickett was southbound at M95.4 UMR with two loaded barges. Pat Pickett was runing slow due to tow ahead. Rear barge, MWT 7130B, of the tow ran aground. There were no bouys in the river at this point.
01/14/2000	N 37° 48' 18.00"	W 089° 41' 12.00"	MC00000836-M/V JAMES ERMER (ALLISION)	99	Low Water	6.4		The M/V JAMES ERMER was pushing 25 loaded hopper barges southbound with her tow arranged five wide and five long. While flanking into shore at mile 99 on the UMR, barge ACBL 1846, third barge out from the boat in the starboard string came in contact witht the point. Several wires broke and barge ACBL 338X, stern barge in the port string sustained a pulled port bow timberhead. Strong current and low water were contributing factors in the incident.
12/25/2000	N 37° 48' 18.00"	W 089° 41' 12.00"	MC01000319-MARGARET O GROUNDING	99.1	Low Water	3.2		MARGARET O WAS SB M99.1 UMR WITH 12 LOADED BARGES. TWO BARGES OF TOW GROUNDED IN CHANNEL. BARGES WERE LIGHTERED. TOW CONTINUED ON. NO DAMAGE.
12/26/2000	N 37° 52' 24.00"	W 089° 47' 24.00"	MC01000597-RED GRIFFIN GROUNDING	107.4	Low Water	1.74	128800	RED GRIFFIN WAS SB WITH 4 LOADED TANK BARGES AT M107.4 UMR. VESSEL WAS AT CURRENT SPEED IN MID RIVER AND THE TOW GROUNDED. MASTER BACKED TOW AND GROUNDED A SECOND TIME. VESSEL WORKED FREE AND CONTINUED ON.
02/08/2003	N 37° 53' 27.00"	W 089° 49' 25.00"	M/V TOM BEHRINGER	109	Low Water	-0.69	142100	REPORTING PARTY STATES: AT 04:30 08FEB03 M/V TOM BEHRINGER WAS NB ON MI109 UMR W/8 EMPTIES & 15 LDS. VESSEL STOPPED FOR SB TRAFFIC. TOW SETTLED ON GROUND DUE TO LOW WATER.
01/17/2000	N 38° 00' 06.00"	W 090° 03' 36.00"	MC00001140-M/V MISS CLAUDETTE (SINKING)	123.4	Low Water	139.4		M/V MISS CLAUDETTE & M/V LINDA TODD were Northbound pushing 23 pipeline pontoon barges & four small anchor barges. Captain stated at 2300 it felt like vessel bumped bottom & he immediately stopped engines & saw wire break on port side of pontoon barges.
01/14/2001	N 38° 00' 48.00"	W 090° 03' 36.00"	MC01001149-DON FILE MI 125 UMR SLMMS	125	Low Water	137.9		On 13JAN01, at approximately 0430, the M/V DON FILE was northbound on the UMR w/13 loaded barges. Pilot (John Towns) was preparing to meet the sthbd M/V GEORGE KING on the 2 whistle side when the CHEM 261 grounded on the right descending side of the channel. At approximately 0820, the M/V RUTH D. JONES arrived to provide assistance. The tow was reloated at approximately

								0850. No damage was noted to tug or tow. See MCNS for more details.
01/18/2003	N 38° 34' 10.00"	W 090° 13' 47.00"	THOMAS E ERICKSON-GROUNDING/COLLISION	126.3	Low Water	135.7		REPORTING PARTY STATES: AT1400H 18JAN03 M/V THOMAS E ERICKSON W/20 LDS WAS SB ON M126.3 UMR. TOW GROUNDED ON SAND BAR, TOPPED AROUND TOWARDS RIGHT DESCENDING BANK AND BUMPED FLEETED BARGES ON THE BANK CAUSING DAMAGES TO THREE FLEETED BARGES AND MINOR DAMAGE TO FOUR BARGES IN TOW.
09/08/2000	N 38° 02' 30.00"	W 090° 07' 54.00"	MC00011921-SHELBY L 129.5 UMR SLMMS	129.5	Low Water	139.2		M/V SHELBY L. was downstream with one loaded grain barge, BIG 9718B. The tow ran aground at mile 179.5 UMR. No visible damage to tow. Barge had to be lightered to pull off bar. Traffic was restricted until the crossing could be dredged to prevent another grounding.
01/23/2000	N 38° 04' 18.00"	W 090° 08' 18.00"	MC00001222-M/V MARK G. ARON	132.9	Low Water	0.76		M/V MARK ARON was Northbound pushing 27 empty hopper barges when it grounded at mile 132.9 on the UMR. The towboat was drafting 9'. The towboat hit a submerged object causing damage to the towboats hull. The forward hull space had a hole punctured causing water to enter & flood the space. The two main diesel tanks welds cracked causing both tanks to leak fuel into the engine room bilges. No one was injured. Towboat was drydocked at National Marine in St. Louis.
01/30/2003	N 38° 10' 04.00"	W 090° 17' 29.00"	M/V RON SHANKIN Grounding MM 143 UMR	143	Low Water	359.1		On 30 January 2003, at approximately 0005 hours, the M/V RON SHANKIN was southbound on the Upper Mississippi River (MM 143) with twenty loaded barges in tow. While transiting the channel during extremely low water conditions, the captain of the vessel reported that the M/V RON SHANKIN had grounded near MM 143.
12/14/2000	N 38° 10' 30.00"	W 090° 19' 06.00"	MC00016228-CHRISTOPHER M PARSONAGE GRD	145.5	Low Water	359.3		C. M. P. WAS NB M145.5 UMR W/24 BARGES, 12 EMPTY & 12 LOADED. STERN OF TOW GROUNDED IN CHANNEL. TOW TOPPED AROUND AND GROUNDED. EMPTIES BROKE OUT. TOW WAS REFORMED AND CONTINUED ON. SUN 204 HAD A CAVEL PULLED OFF. NO OTHER DAMAGE.
12/19/1999	N 38° 17' 42.00"	W 090° 22' 18.00"	MC99016416-MISS KAE D MI 154 UMR SLMMS	154	Low Water	366.3		On 19 Dec 99 @ approx 1115hrs UTV MISS KAE D U/W N-bound on UMR pushing ahead 20 loaded/4 empty/no red flag/barges from Cairo, IL to St. Louis, in low water, clear WX/good vis. Vsl encountered "bump-and-go" grounding in vicinity of MM 154. Upon arrival at MM167 barge CCT35, the stern barge of port center string listed forward. List result of previously undetected damage to&resultant flooding of Port #1 void. Drug/Alcohol use, fatigue not considered factors.

09/30/2003	N 38° 34' 10.00"	W 090° 13' 47.00"	M/V TITLETOWN, USA Grounding MM 158 UMR	158	Low Water	-4.2		the TITLETOWN USA was at MM 158 of the Upper Mississippi River with twenty-four barges in tow. The company reports that the captain had stopped the tow to allow southbound traffic to pass. While holding position the tow grounded on the river bank.
12/26/2000	N 38° 21' 18.00"	W 090° 21' 18.00"	MC01000320-MRYTLE E GRIFFIN GROUNDING	158	Low Water	-4.01		MYRTLE E GRIFFIN WAS SB M158 UMR W/3 LOADED RED FLAG BARGES. THE LEAD BARGE GROUNDED. MASTER STARTED TO BACK OFF AND TOW TOPPED AROUND. TOW LANDED ON A DIKE AND BROKE OUT. BOAT CAUGHT BARGES, REFORMED TOW AND CONTINUED ON. NO DAMAGE TO BOAT OR BARGES.
08/16/2001	N 38° 24' 18.00"	W 090° 18' 48.00"	MC01011078-SOUTHERN KRAFT NO.16 163UMR SL	163	Low Water	-2.5		Subj vessel's barge FMT 3033 grounded mid channel on silt built up. M?V JUDITH ELLEN assisted to pull barge off. No damage to barge or vessel. Vessel assumed voyage.
09/07/2000	N 38° 26' 30.00"	W 090° 17' 12.00"	MC00011730-HELEN B 166.0 UMR SLMMS	166	Low Water	-2.5		On 07SEP00, at approx. 0030 hours, the M/V HELEN B was stbd on the UMR (MM 166) w/6 loaded barges when the tow grounded in the channel. Captain states that the river stage was very low, .5 on the St. Louis Harbor guage, and the low water level contributed to the grounding of the tow.
11/20/2002	N 38° 28' 18.00"	W 090° 16' 26.00"	M/V RUSTY FLOWERS Grounding MM 168 UMR	168	Low Water	-2.01		On 20 November 2002, at approximately 1025 hours, the M/V RUSTY FLOWERS was southbound on the Upper Mississippi River (MM 168) with 10 loaded coal barges in tow when the captain made the decision to stop the tow and wait for assistance with the lightering of one of the barges. While holding position at MM 168, the captain reported that three barges (ACBL 345 X, ACBL 1310, and ACBL 224) came in contact with the river bottom. The company reported that the barges were not damaged during this incident.
01/10/2003	N 38° 28' 17.00"	W 090° 16' 26.00"	M/V COOPERATIVE ENTERPRISE Grounding MM 168.2 UMR	168.2	Low Water	-4.5		On 15 January 2003, at approximately 1345 hours, the M/V COOPERATIVE ENTERPRISE was southbound on the Upper Mississippi River (MI 168.2) with twenty loaded barges in tow. The company reported that the tug and tow were transiting a shallow channel when the M/V COOPERATIVE ENTERPRISE grounded on a bar.

12/10/2000	N 38° 28' 12.00"	W 090° 16' 24.00"	MC00016226-GRANDMA GERT GROUNDING	168.5	Low Water	-4.6		GRANDMA GERT WAS HOLDING IN CURRENT AT M168.5 UMR WAITING TO GO INTO FLEET. WHEN VESSEL GOT UNDERWAY BARGE RCI 1405B WAS STUCK ON A LUMP. VESSEL WORKED FREE AND CONTINUED ON. NO DAMAGE.
12/07/2002	N 38° 29' 13.00"	W 090° 16' 18.00"	GROUNDING- BEVERLY ANN MI169 UMR	169	Low Water	-5.01		REPORTING PARTY STATES: AT 23:45 7DEC02 M/V BEVERLY ANN W/15 LDS WAS SOUTHBOUND ON MI169 UMR. TOW GROUNDED IN CHANNEL DUE TO LOW WATER. A MISSING RED BOUY, NORMALLY LOCATED ABOUT 3/4 MILE ABOVE JEFFERSON BARRACKS BRIDGE, WAS REPORTED BY THE MASTER AS A FACTOR.
12/06/2002	N 38° 29' 21.00"	W 090° 16' 30.00"	M/V JOSEPH PATRICK ECKSTIEN Ground/Allision/Break	169	Low Water	-4.5		LDB and grounded. When the operator, XXXX attempted to straighten out his tow, he was unable to control the vessel and struck the RDB with barge CC95102 and the vessel. The subsequent grounding broke away several mooring wires causing the first fifteen barges directly in front of the M/V JOSEPH PATRICK ECKSTIEN to break away. The forward fifteen barges remained together at that time. Mr. XXXX reported the breakaway over the radio to all vessels in the immediate area to assist. Five tugs from Riverway arrived on-scene within minutes and started to gather the drifting barges. The M/V JOSEPH PATRICK ECKSTIEN proceeded to push the remaining fifteen barges through the JB Bridge and attempted to tie them along side the dolphins directly below the bridge. During the attempt to moor the remaining barges, the mooring wires started to break away and as a result the remaining fifteen barges were also set adrift. It is the opinion of this investigator that the cause of the grounding and subsequent break away is a result of low water conditions in the UMR and operator error on the part of Mr. XXXX
01/25/2000	N 38° 29' 12.00"	W 090° 16' 18.00"	MC00001526-HUGH C. BLASKE 169.6 UMR SLMMS	169.6	Low Water	-4.01		The M/V HUGH C. BLASKE was N/B on the UMR (MM 169.6) w/26 empty barges in tow. Pilot reported that as the tug navigated inside the marked channel, the vessel contacted the river bottom. Strong cross winds blew the tow towards the left descending bank and the pilot backed the vessel in an effort to control the landing of tow on the bank. An assist tug was required to pull the tow away from the bank. Pilot attributed the initial grounding on low water conditions.
12/17/2000	N 38° 29' 12.00"	W 090° 16' 18.00"	MC01000318-JOHN H.MACMILLAN GROUNDING	169.7	Low Water	-4.01		JOHN H MACMILLAN AND CORAL DAWN WERE WORKING WITH BARGE ART 466 AT M169.7 UMR RIGHT DECENDING BANK. ART 466 STRUCK THE SHORE HOLING THE PORT #1 WING TANK. THERE WAS $500 OF DAMAGE TO THE BARGE.

01/12/2003	N 38° 32' 21.00"	W 090° 15' 02.00"	M/V LOREE ECKSTEIN Grounding MI 173 UMR	173	Low Water	-5.5		On 12 January 2003, at approximately 1630 hours, the M/V LOREE ECKSTEIN was approaching a fleeting area at MI 173 of the Upper Mississippi River in order to pick up a tow when the vessel bumped the river bottom. The incident took place approximately 75' off the right descending bank.
08/13/2002	N 38° 39' 14.00"	W 090° 10' 32.00"	M/V NORMANIA-GROUNDING	182	Low Water	4.27	146100	REPORTING PARTY STATES-ON 08/13/02 AT 02:15H AT UMR M 182, AT BEELMAN TERMINAL ON THE RIGHT DESCENDING BANK, M/V NORMANIA WAS SPOTTING THE BARGE CCT 356. THE BARGE WAS RUN AGROUND. THERE WAS NO DAMAGE TO THE BARGE OR THE M/V NORMANIA. THE BARGE WAS AGROUND FOR 17 HOURS AND WAS UNLOADED TO GET IT UNDERWAY AGAIN.
09/27/1999	N 38° 39' 12.00"	W 090° 10' 30.00"	MC99012543-M/V ROSSTON B. (GROUNDING)	182	Low Water	4.37	150300	M/V ROSSTON B grounded pushing two loaded BENZENE barges southbound on the Upper Mississippi River at mile 182. The vessel grounded on the Missouri span area of the McKinley Bridge. The grounding caused the barges and towboat to swing and rubbed the bridge pier. No apparent damage to towboat. Barge WEB119 had a minor crack in the fwd rake void. No apparent damage to barge WEB108. See case # MI99031883 for details
01/08/2000	N 38° 39' 12.00"	W 090° 10' 30.00"	MC00000464-PIONEER 182.7 UMR SLMMS	182.7	Low Water	0.63	115700	On 08JAN00, the M/V PIONEER was attempting to moor a loaded barge (MEM-2011) at the Lange-Stegmann Dock, MM 182.7 of the UMR. The pilot was pushing the barge up the right side of the dock, per direction by dock personnel, when the barge ran aground due to low water around the dock. Crew stabilized the grounded barge by placing spuds around the vessel. The Tug returned on 10JAN00 to moor the re-floated barge to the Lange-Stegmann Dock. No damage noted to the barge.
09/21/1999	N 38° 40' 12.00"	W 090° 11' 06.00"	MC99013477-M/V LARRY Y. STRAIN, GROUNDING	183	Low Water	3.2		The M/V LARRY Y. STRAIN was pushing 12 loaded barges S/B on the UMR at mile 183 while being assisted by helper towboat through the St. Louis harbor bridges lead barge ACBL 330X grounded. Additional tug assistance was provided to help to re-float barge ACBL 330X. No apparent damage to the M/V LARRY Y. STRAIN or barges reported. Dredge AMERICA was pumping spoilage in the area of the grounding.
09/28/2002	N 38° 40' 08.00"	W 090° 11' 48.00"	MV FLOYD GOODMAN-GROUNDING	183.2	Low Water	1.77		REPORTING PARTY STATES-AT 08:20 092802 VESSEL WITH 15 LDS. WAS SB ON UMR M183.2 AND BUMPED BOTTOM JUST ABOVE THE MERCHANT'S BRIDGE. TOW MAY HAVE RUBBED BRIDGE DURING THE INCIDENT. NO DAMAGED TO BRIDGE WAS OBSERVED. BARGES ACBL 1873 AND ACBL 213 SUSTAINED MINOR DAMAGE.
10/22/2004	N 38° 41' 26.00"	W 090° 11' 24.00"	M/V MISS SHEILA GROUNDING UMR MI 183.2	183.2	Low Water	2.08		REPORTING PARTY STATES: At 15:45 22 Oct 2004 M/V Miss Sheila was down bound w/2 LDS on UMR MI 183.2. While transiting center span of Merchant's Bridge tow became stuck.

01/16/2000	N 38° 40' 06.00"	W 090° 11' 48.00"	MC00000834-M/V EVEY-T (GROUNDING)	183.4	Low Water	4.79		M/V EVEY-T was Southbound pushing 15 loaded hopper barges when it grounded in mid-channel at mile 183.4 on the UMR. Tow was grounded for one hour and thirty minutes. No apparent damage to barges or towboat.
09/10/1999	N 38° 40' 12.00"	W 090° 11' 06.00"	MC99011817-UTV JILL CAROLYN W/TOW:	183.5	Low Water	3.31		On 10Sep99 @ approx. 2300hrs UTV JILL CAROLYN,D625953, pusing ahead 2 loaded grain barges (ART-44135, ART-44145), S-Bound on UMR in vic MM 183.5 E/R ARTCO/REIDY TERMINAL fleet area in clear WX/good vis/calm winds/low water. Barges loaded to 10' draft made up abreast. As vsl departed facility, port barge ran hard aground. UTV and stbd barge continued until stbd barge aground causing UTV to pivot into grounded port barge.
01/30/2004	N 38° 41' 03.00"	W 090° 11' 40.00"	M/V RUSTY FLOWERS GROUNDING UMR MI 184	184	Low Water	0.17		REPORTING PARTY STATES: AT 10:45 30 JAN 2004 M/V RUSTY FLOWERS WAS TRANSITING THE RIVER AT MM184 ON THE UMR. WHILE SOUNDING THE RIVER IT HIT A SUBMERGED OBJECT THAT HOLED #2 FUEL TANK BELOW THE WATER LINE.
03/18/2000	N 38° 42' 12.00"	W 090° 12' 24.00"	MC00007533-M/V MARGERET O GROUNDING	185.6	Low Water	5.72		M/V MARGARET S/B UMR ABOVE MERCHANTS BRIDGE AND TO THE LEFT OF GREEN LIGHT. SOUNDERS INDICATED 11 FT WATER BUT TOW WAS UNRESPONSIVE. VESSEL BACKED DOWN TO STOP HEADWAY AND TOW SETTLED INTO POCKET ABOVE BRIDGE. TUG ASSISTANCE WAS REQUIRED TO PULL TOW OUT OF DEAD WATER, WITH NO DAMAGE SUSTAINED. GROUNDING DUE TO LOW WATER.
09/03/1999	N 38° 55' 18.00"	W 090° 30' 06.00"	MC99011954-LOREE ECKSTEIN, MI223UMR,SLMMS	223	Low Water	15.65	69450	ON 3SEP99, AT ABOUT 1300 HRS, THE M/V LOREE ECKSTEIN WAS SB ON THE UMR PUSHING A TOW OF 15 LOADED BARGES WHEN AT MM 223 THE M/V ENCOUNTERED THE M/V HUGH BLASKE AGROUND IN THE CHANNEL DUE TO LOW WATER. ACTING ON THE ADVICE OF THE M/V BLASKE, THE M/V ECJSTEIN ATTEMPTED TO PASS THE M/V BLASKE WHEN IT ALSO RAN AGROUND. THE M/V ECKSTEIN WAS ASSISTED OFF GROUND BY THE M/V THURSTON MORTON, AND THEN REWSUMED UNDERWAY OPERATIONS. NO DAMAGE REPORTED.
08/16/2001	N 38° 54' 30.00"	W 090° 30' 24.00"	MC01011087-BEVERLY ANN 223.9 UMR SLMMS	223.9	Low Water	15.23	76310	The M/V BEVERLY ANN was sthbd on the UMR w/3 loaded barges when the tow grounded on the river bottom. The Captain notified the COTP and then requested assistance from the M/V REGGIE G. The barges were re-floated and the Captain reasembled the tow further downstream. The depth of the channel was approx. 8.5' at the time of the incident. In addition, the DREDGE AMERICA was already beginning to dredge the channel just south of the incident location.

09/08/2003	N 39° 00' 11.00"	W 090° 41' 06.00"	M/V NAN Grounding MM 225 UMR	225	Low Water	16.69	64670	the M/V NAN was northbound on the Upper Mississippi River (MM 225) with fifteen loaded barges in tow. The tow was arranged in a standard 3 X 5 configuration. The company reports that as the tug and tow were transiting the area in low water conditions, the starboard lead barge (ACBL 6027) came in contact with the river bottom.
09/29/1999	N 39° 37' 24.00"	W 091° 14' 00.00"	MC99015002-J.W.HERSHEY/300 UMR/ DAVD	300	Low Water	6.31		M/V J.W.Hershey was N/B with 15 barges approaching L&D 22 when barge# (ACBL 2733) grounded on or near mile 300 UMR. Barge had two small cracks in the STBD #2 wing tank costing 1000.00 in damages. Cause of casualty was due to shoaling in that area No pollution or injuries were reported.
08/29/2001	N 39° 38' 18.00"	W 091° 14' 24.00"	MC01011941-ROBIN B.INGRAM UMR 301 GRNDNG	301	Low Water	5.3		Barge ING 5706 grounded on shoaling in channel immedieatly after clearing lock #22. Vessel was able to get barge off with no damage sustained and continued voyage.
08/15/2000	N 39° 38' 18.00"	W 091° 14' 30.00"	MC00010350-ARDYCE KANDALL 301.2 UMR SLMMS	301.2	Low Water	5.09		Tow grounded as it was exiting lock 22 southbound at mile marker 301.2. There was no apparent damage to tow or M/V. The Captain of the M/V was unable to determine which barge in the tow of fifteen loaded barges touched the bottom of the UMR. SLMMS.
10/10/2000	N 39° 41' 06.00"	W 091° 18' 24.00"	MC00013945-LOREE ECKSTEIN 306 UMR SLMMS	306	Low Water	9.74		The M/V LOREE ECKSTEIN was southbound at mile 306, UPPER MISSISSIPPI RIVER with fifteen (15) loaded hopper barges. It's speed was approximately one (1) mile per hour. River was low, barges had a light draft, nine (9) feet. Starboard lead barge, CC-95110 grounded in channel. M/V SIR RANDALL assisted in removing the barge from grounding. An inspection of the tow was made and no damage could be found as a result of the grounding.
07/28/2001	N 39° 41' 00.00"	W 091° 18' 18.00"	MC01009667-M/V DELL BUTCHER GROUNDING	306	Low Water	10.91		While transiting NB w/15 barges in tow, barge CGB0330 grounded. Barge was drafting 12 feet. Vessel was transiting area that had been broadcasted as a safety advisory for drafts to be maintained at 9 feet. Barge was removed with no damage sustained, vessel continued voyage.
08/02/2004	N 39° 41' 38.00"	W 091° 18' 00.00"	M/V MARY L GROUNDING UMR MI 306	306	Low Water	11.31		REPORTING PARTY STATES: AT 08:15 02 AUG 2004 M/V MARY L WAS DOWNBOUND ON UMR MI 306 W/15 LDS. MARY L GROUNDED IN MIDDLE OF CHANNEL.

08/02/2004	N 39° 41' 38.00"	W 091° 18' 00.00"	M/V JANE HUFFMAN GROUNDING UMR MI 306	306	Low Water	11.31		REPORTING PARTY STATES: AT 05:00 02 AUG 2004 M/V JANE G HUFFMAN WAS DOWNBOUND ON UMR MI 306 W/14 LDS & 1 EMPTY ARRANGED 3X5. WHILE IN THE CHANNEL THE TOW GROUNDED. LOCAL TUGS ASSISTED IN GETTING TOW OFF GROUND. VSL & TOW CONTINUED ON. NO DAMAGE
08/01/2001	N 39° 41' 24.00"	W 091° 19' 12.00"	MC01010498-M/V DAVE CARLTON GROUNDING	307	Low Water	10.55		VESSEL WAS SB UMR M307 W/15 LDS AT IDLE SPEED OVER SHALLOW SPOT AT CAVE HOLLOW AND FAVORING THE GREEN BOUY LINE. VESSEL GROUNDED IN CHANNEL. NO DAMAGE. VESSEL WORKED FREE AND CONTINUED ON.
09/01/2003	N 39° 54' 15.00"	W 091° 25' 55.00"	M/V JAMES W. BUKY Grounding MM 312 UMR	312	Low Water	10.04		M/V JAMES W. BUKY was northbound on the Upper Mississippi River (MM 312) with fifteen barges in tow arranged in a 3 X 5 configuration. The company reported that while navigating inside the marked channel in low water conditions, the port lead barge (ACL 1126) came in contact with the river bottom.
09/04/2003	N 39° 54' 15.00"	W 091° 25' 55.00"	M/V TITLETOWN, USA Grounding MM 312 UMR	312	Low Water	10.88		he M/V TITLETOWN, USA was northbound on the Upper Mississippi River (MM 312) with 11 barges in tow. The company reported that as the tug and tow were transiting the area during low water conditions, the CC-95136 lightly touched the river bottom.
12/14/2000	N 39° 45' 06.00"	W 091° 22' 00.00"	MC00016002-COOP.AMBASSADOR GROUNDING	312.5	Low Water	10.16		COOP AMBASSADOR WAS SB AT M312.5 UMR WITH 6 LOADED BARGES. TOW RAN AGROUND, PULLED OFF PORT STERN CAVEL OF ART 184 AND BROKE THREE WINCH WIRES, CAUSING $1,000 IN DAMAGE. TOW WAS WORKED FREE AND CONTINUED ON.
09/18/2001	N 40° 23' 29.00"	W 091° 22' 19.00"	Myra Eckstein grounding UMR 358	358	Low Water	3.23		Vessel proceeding down river pushing 1 empty and 9 loaded dry cargo barges. Barge CC-315B, located at stern of tow, grounded at UMR 358, within the marked channel, breaking 6 tow wires at 0040. No damage to towboat or barges. Barge refloated at 0930. Investigation complete.
08/05/2000	N 40° 14' 54.00"	W 091° 29' 18.00"	MC00010437-M/V BRUCE R. BIRMINGHAM/UMR351	359	Low Water	2.73		M/V Bruce R. Birmingham was N/B with 16 barges when vessel grounded inchannel with barge # ING-5684. Tow was broke apart and barge was worked off ground with the help of the M/V Roy E. Claverie. No damage was sustained to ING-5684, vessel was delayed for 10.5 hours. No other damage, pollution, or injuries were noted.

11/08/1999	N 40° 52' 36.00"	W 091° 02' 36.00"	MC99014740-NEW DAWN/409 UMR/ DAVD	409	Low Water	1.73		M/V w/8 empty hopper barges rubbed the river bottom. No damage was reported to boat or tow or L&D 18. No other damage, pollution, or injuries were reported.
08/09/2002	N 41° 23' 18.00"	W 091° 03' 01.00"	M/V Gladiator - Grounding	447.2	Low Water	7.4		09 AUG 02 @ 0645 M/V Galdiator was Northbound IVO UMR 447.2 when STBD lead Barge AB 127 bumped bottom approx 75' to 100' from the red buoy line. No damage to VSL or tow.
09/06/1998	N 41° 21' 42.00"	W 091° 01' 00.00"	MC98011356-M/V ELIZABETH LANE	451.3	Low Water	6.31		M/V ELIZABETH LANE WAS HEADED NORTHBOUND ON THE UPPER MISSISSIPPI RIVER, MILE 451.3. VESSEL WAS RUNNING APPROXIMATELY 20' OFF RED BOUY LINE, PUSHING A SQUARE ON THE STARBOARD STRING WHEN IT CAUGHT THE BOTTOM. STARBOARD STRING BROKE OUT OF TOW. VSL BACKED UP AND CAUGHT IT WITH SOFT LINES AND PROCEEDED TO MUSCATINE FLEET. NO POLLUTION, DAMAGE OR INJURIES.
07/17/1999	N 41° 25' 54.00"	W 090° 47' 00.00"	MC99009652-MEGAN BEESECKER	460	Low Water	9	76484	M/V Megan Beesecker was S/B Mile (460)UMR when vsl grounded. Vessel pilot stated that some areas of shoaling were noticed on the fathometer. Vsl was in mid-channel on left descending bank. Army Corp of Engineers (ACOE) draft readings were of 9' 3" in this area, the shoaling was reported to the ACOE and passed to RIAC. No damage or pollution was reported in this case.
04/16/2002	N 41° 26' 06.00"	W 090° 33' 48.00"	M/V Roy Mechling/Grounding UMR MM 461	461	Low Water	13.45	92347	M/V Roy Mechling was southbound above Hershey Chute when pilot Rudd was unable to steer around the turn. There was no water on the black bouy line and with Lock#16 drawing down the pool in anticipation was more water, he hit the tip of the island and the tow broke in half.
07/02/2002	N 41° 31' 08.00"	W 090° 34' 11.00"	M/V DeLasalle - Grounding	461.2	Low Water	8.65	103618	M/V De LaSalle was southbound above Hershey Chute when the pilot was unable to steer around the turn. There was no water on the Black Buoy line and with Lock & Dam 16 drawing the pool down in anticipation was more water. The pilot than hit the tip of the island and the tow broke in half. The M/V and 6 barges stayed on the good side of the island, with 9 barges grounding in the channel at the head of the island. With the help of another vessel our vessel was able to get the other 9 barges off the head of the island and back into the channel and continue Southbond. No apparent damage to barges or vessel. VSL Master expressed discontent with river levels.
09/01/1999	N 41° 30' 00.00"	W 090° 28' 42.00"	MC99011570-DARIN ADRIAN/476 UMR/ DAVD	476	Low Water	6.63		M/V Darin Adrain was N/B with 7 empties and four loaded ran around near mile 476 UMR. Vessel removed itself from the ground shortly after the incident. No damage was reported to barges or vessel. Low water and bouys off station where blamed for grounding.

07/22/2001	N 42° 29' 54.00"	W 090° 38' 54.00"	MC01011621-M/V GEORGE KING DAVD	479.9	Low Water	6		WHILE S/B BARGE #CC95169 LIGHTLY RUBBED THE ILLINOIS CENTRAL RAILWWOAD BRIDGE IN DUBUQUE IA. NO DAMAGE TO BRIDGE, VESSEL, OR TOW.
09/29/2003	N 41° 31' 08.00"	W 090° 34' 11.00"	M/V Darin Adrian Grounding-UMR482	482	Low Water	3.16		At approximately 0200 21 Sept 2003, while making southbound approach to Crescent RaILWWoad Bridge, starboard lead barge CC-97112 lightly bumped bottom causing a crack in the barge.
09/08/2003	N 41° 31' 08.00"	W 090° 34' 11.00"	M/V Robin B. Ingram-Allision Crescent RR Bridge	482	Low Water	3.8		Barge ING 5406 was part of a tow heading southbound when barge rubbed left hand pier of Crescent RaILWWoad Bridge while transitting in shallow water.
08/15/2001	N 41° 31' 30.00"	W 090° 32' 42.00"	MC01010964-CHANNEL CAT II GROUNDING/DAVD	484	Low Water	5.01		SMALL PASSENGER VESSEL LOST OUTBOARD PORT DRIVE WHEN GROUNDED IN MARINA. HULL DID NOT TOUCH BOTTOM. NO POLLUTION OR INJURIES RESULTED. MARINA LANDING WAS CLOSED DUE TO LOW WATER. VSL MASTER STATED HE HAD SEEN RISE IN WATER AND BELIEVED HE HAD GOOD WATER. AS HE APPROACHED LANDING, WIND AND CURRENT SET VSL DOWN RIVER, TOUCHING BOTTOM 20 FT OFF BREAKWATER, BREAKING OFF OUTBOARD DRIVE.
05/16/1999	N 41° 32' 06.00"	W 090° 32' 42.00"	MC99008383-CORAL DAWN MILE (484)	484	Low Water	14.63		M/V Coral Dawn was holding UP for L&D 15 when Art 536 grounded. Minor damage to the barge amounting to 350.00. No pollution or injuries.
11/25/1998	N 41° 32' 18.00"	W 090° 30' 06.00"	MC98016932-M/V DARIN ADRIAN/UMR486	486	Low Water	6.44		VESSEL D/B 9 LOADS, STARBOARD STERN BARGE (CC-259) BUMPED BOTTOM INSIDE CHANNEL HOLING STARBOARD #1 & #2 WING TANKS. TEMPORARY REPAIRS MADE. NO INJURIES, NO POLLUTION.
08/03/2001	N 41° 30' 24.00"	W 090° 30' 48.00"	MC01010474-M/V JOE PAT ECKSTEIN GRD/DAVD	486	Low Water	7.06		M/V JOE PAT ECKSTEIN was proceeding northbound on UMR when stern barge touched ground and 11 wires and 2 ratchets broke causing tow to top around and 4 barges landed on left desending bank. M/V JEREMY and M/V JOSHUA assisted in recovering barges. There was no damage to vessel or barges.
08/29/2000	N 41° 32' 30.00"	W 090° 28' 30.00"	MC00011535-M/V LOYD BEESECKER/UMR 488/DAV	488	Low Water	4.91		M/V Loyd Beesecker was S/B with 15 loaded when center lead barge grounded in mid channel. The Barge #VLX 7670 portside wing voids were compromised.

08/04/2001	N 41° 33' 06.00"	W 090° 27' 48.00"	MC01010403-M/V JANE G HUFFMAN ALL / DAVD	489	Low Water	7.15		M/V JANE HUFFMAN northbound on UMR near mile 489 going to pass southbound boat when barge ACBL3046 grounded on a rock. Barge was grounded for 19 hours.
07/27/1998	N 41° 33' 36.00"	W 090° 26' 06.00"	MC98011319-GRANDMA GERT 490 UMR	490	Low Water	5.17	45200	M/V W/15 BARGES IN TOW GROUNDED ABOVE L&D 14. HEAD OF TOW TWISTED OFF DYNAMITE ISLAND, STEARN GROUNDED AND HELD. NO POLLUTION, DAMAGE OR INJURIES. NO EVIDENCE OF NEGLIGENCE OR MISCONDUCT ON THE PART OF ANY LICENSED PERSONNEL.
07/17/2000	N 41° 33' 54.00"	W 090° 26' 54.00"	MC00009072-M/V JULIES/UMR 491/DAVD	491	Low Water	7.9	98174	M/V Julies was N/B with 11 barges in tow waiting for L&D 14 . Vessel drifted toward red buoy line when stbd stern barge (CGB 159) grounded, swinging rest of tow around grounding two other barges (NOMA 214 & MBL 519B). Vessel was grounded for 3.5 days.
03/12/2000	N 41° 33' 54.00"	W 090° 25' 12.00"	MC00003167-DECATUR LADY/492 UMR/DAVD	492	Low Water	6.18	68274	M/V Decatur Lady was S/B departing L&D 14 maneuvering around constuction barges when barge (AB 137) grounded. Barge received two holes in the #1 wing void, which were shingled. Damage was at the amount of $500.00. No other damage, pollution, or injuries were reported.
10/05/2000	N 41° 34' 24.00"	W 090° 22' 54.00"	MC00013542-M/V RICHARD C.YOUNG/UMR 493/DA	493	Low Water	4.34	25082	M/V Richard C Young was N/B with 11 barges when vessel came into contact with the riverbottom outside L&D 14. MST2 Hemminger and MST3 Mohlenkamp investigated the casulaty. The barge #VLX-7668 had minor damages in the stern and #4 void which were repaired. The barge was drafting 10"6'and 9"6'forward ACOE guarantees 9" channel in low water. Captain was advised,but said he was not responsibe for the barge.
11/30/1999	N 41° 33' 54.00"	W 090° 26' 54.00"	MC99011575-STARFIRE/493 UMR/ DAVD	493	Low Water	4.76	37132	M/V was S/B w/15 loaded hopper barges locking through L&D 14, when vsl attempted to flank off the long wall. The STBD steering rudder struck ground causing 350.00 worth of damage and caused a steering failure. Vsl was tied off and made repairs. No other pollution, damage, or injuries reported.
06/10/2000	N 41° 34' 24.00"	W 090° 24' 42.00"	MC00007748-M/V CRIMSON GLORY/UMR 493/DAVD	493	Low Water	8.42	110928	M/V Crimson Glory was S/B with 15 loaded waiting to lock through L&D 15 when vessel grounded. No damage to tow, jocky bar on steering rudders was bent. No other damage, pollution, or injuries were reported.

05/25/2000	N 41° 33' 54.00"	W 090° 20' 30.00"	MC00007750-DECATUR LADY/UMR 497/DAVD	497	Low Water	6.45	69739	M/V Decatur Lady was N/B with 15 empties. During a meeting & passing situation with the M/V Roy Clavery , STBD tow ran aground. No evident damage to tow. No other damage, pollution, or injuries were reported.
08/22/2002	N 41° 53' 21.00"	W 090° 09' 43.00"	M/V Show-Me-State - Grounding	497.5	Low Water	5.62	57372	M/V Show-Me-State was pushing 14 barges (coal and salt, No Red Flags Northbound to St.Paul. At approx. 1300 while IVO UMR 497.5 M/V SMS was reportedly 60' within Red bouy line and ran aground. 4 barges then broke loose w/2 barges in the Nav CH. At 1415 barges had been retrieved and a No Damage assessment was made. NB transit was then resumed.
09/28/2001	N 41° 53' 18.00"	W 090° 10' 30.00"	MC01012781-M/V NEW DAWN DAVD	522.5	Low Water	5.52	36170	While N/B through Lock 13 the port bow barge grounded on the gate recess cracking the stern corner of SG 650B. No damage to the vsl. or lock.
07/28/2000	N 41° 58' 12.00"	W 090° 10' 18.00"	MC00009628-M/V SULLIVAN /UMR 527/DAVD	527	Low Water	5.56	97077	M/V SULLIVAN WAS N/B WITH 14 LOADED WHEN PORT STRING OF TOW HIT BOTTOM CAUSING IT TO BREAK TOW. BARGE CGB 192 WAS THE LEAD BARGE THAT GROUNDED, NO DAMAGE TO BARGE OR VESSEL.
08/01/2000	N 41° 58' 12.00"	W 090° 10' 18.00"	MC00010182-M/V CORAL DAWN/UMR 527/DAVD	527	Low Water	5.91	43174	M/V Coral Dawn was S/B with 12 loaded barges when vessel grounded on the port bow. Vessel was pulled off ground, no aparrent damage was found.
07/24/1998	N 41° 58' 12.00"	W 090° 10' 18.00"	MC98010870-M/V ARROWHEAD/UMR 527/DAVD	527	Low Water	6.69	43751	WHILE U/W D/B VESSEL BUMPED BOTTOM. CAPTAIN STATED CHANNEL NOT MARKED PROPERLY. NO INJURY, DAMAGE, POLLUTION. NO EVIDENCE OF NEGLIGENCE OR MISCONDUCT ON THE PART OF ANY LICENSED PERSONNEL.
07/24/2000	N 41° 58' 12.00"	W 090° 10' 18.00"	MC00009223-MV ARDYCE RANDALL UMR527 DAVD	527	Low Water	8.21	81581	While U/W the M/V Ardyce Randall ran aground in mid-channel. No damage to vsl or barge no pollution or injuries.

07/17/2000	N 41° 58' 12.00"	W 090° 10' 18.00"	MC00009085-M/V RIVER HAWK/UMR 527/DAVD	527	Low Water	11.03	100459	VESSEL AND TOW WERE N/B WITH 10 LOADED AND 4 EMPTY BARGES WHEN THE STARBOARD STRING RAN AGROUND.
08/08/2002	N 42° 07' 35.00"	W 090° 11' 43.00"	M/V MARIAN HAGESTAD - Grounding	534	Low Water	6.78	53807	While proceeding Northbound, UMR 534, tow grounded in middle of channel. Broke tow in half to gett off ground. Assisted by M/V Karen Renee. No damage to tow.
08/15/2002	N 42° 07' 35.00"	W 090° 11' 43.00"	M/V WASHINGTON - Grounding	534	Low Water	7.64	61594	M/V WASHINGTON was Southbound with 15 loads in tow arranged 3x5. While navigating inside marked channel in low water conditions near mile 534 UMR Port Stern barge SCNO 8035 came in contact with river bottom. Barge was drafting excess of 9 ft. Survery showed shoal at 8 ft.
08/27/2000	N 42° 08' 30.00"	W 090° 10' 36.00"	MC00011017-M/V JANE G HUFFMAN/UMR 539/DAV	539	Low Water	5.87	32379	M/V Jane G.Huffman was S/B with 15 loaded, when vsl came aground inside the channel. The stbd lead barge VLX 7639 sustained no damage. No other damage, pollution, or injuries were noted.
11/11/2000	N 42° 11' 36.00"	W 090° 18' 42.00"	MC00014803-M/V DELL BUTCHER COLLISION	549	Low Water	6.51	45712	M/V Dell Butcher was N/B when meeting M/V Evey T. with 15 barges. Vessels agreed on two whistle passing in advance. Dell Butcher was proceeding on right when it contacted the bottom causing the tug boat to swerve into the barge RW 653B of the Evey T's tow. No damage reported to either vessel.
11/04/2001	N 42° 19' 12.00"	W 090° 24' 54.00"	MC01014047-M/V LEXINGTON DAVD	561	Low Water	5.4	36770	Vsl was S/B with 13 loads and 2 empties in tow when the stbd lead barge came in contact with with the river bottom. No damage reported to vsl, or barge.
09/15/1998	N 42° 21' 18.00"	W 090° 26' 42.00"	MC98012972-M/V TITLETOWN U.S.A. 564 UMR	564	Low Water	4.84	29125	Holding up for downbound traffic at UMR 564, M/V Titletown grounded port lead barge. Low water conditions existed. Damage to a few wires, ratchets and depth sounder cords. No other damage, injuries or pollution.
10/31/2000	N 42° 26' 42.00"	W 090° 34' 54.00"	MC00014799-MAC 626 GROUNDING	574	Low Water	7.11	23792	The M/V Arlie was N/B with tow of three wide and five long navigating along the black buoy line. the first barge back from the head (MAC626) came in contact with the bottom. Vsl was refloated and continued to destination.

10/31/2000	N 42° 26' 42.00"	W 090° 34' 54.00"	MC01000400-M/V CONTI ARLIE	574	Low Water	7.11	23792	M/V Arlie was northbound navigating along the black bouy line. The captain tried to steer off the blacks but was unable to do so due to low water. Vessels tow came in contact with the ground with no damage noted.
11/14/1999	N 42° 29' 06.00"	W 090° 38' 54.00"	MC99014847-RIVER HAWK/579 UMR/ DAVD	579	Low Water	8.1	42919	M/V River Hawk was S/B with 15 loaded barges crossing the Dubuque RR Bridge when tow landed on the upper end of turn table(right dec.) of shore span. Barges were checked after clearing bridge, barge ET-461 was damaged and taking on water. Hole was found in the #4 wing void, 1"X.5'hole, along with numerous other small fractures and pin holes totaling $10,000 damage. No other damage, pollution, or injuries reported.
11/22/1998	N 42° 29' 06.00"	W 090° 39' 18.00"	MC98016452-M/V PENNY ECKSTEIN/ALL/UKR579	579	Low Water	8.7	40357	VESSEL WAS D/B WITH 15 LOADS WHEN THE TOW STRUCK DUBUQUE HWY BRIDGE. MINOR DAMAGE TO BARGE DG 201. DAMAGED TIMBERS ON LOWER END OF PROTECTION CELL. NO POLLUTION OR NO INJURIES REPORTED.
07/25/2002	N 42° 30' 48.00"	W 090° 38' 18.00"	M/V SANTA ELENA - Allision	579	Low Water	10.21	71789	M/V SANTA ELENA was Southbound with 12 barges in tow, arranged 3 x 4. While navigating Dubuque R.R. bridge near UMR 579. Starboard string lead barge VL 81323 came in contact with right descending protection cell. No damage reported to cell.
07/22/2000	N 42° 29' 06.00"	W 090° 39' 18.00"	MC00009287-MV PRAIRIE DAWN UMR 579 DAVD	579	Low Water	10.7	73337	M/V Prairie Dawn was S/B with 15 loaded barges when vsl came into contact with the Dubuque HWY Bridge.
03/20/2000	N 42° 32' 24.00"	W 090° 38' 30.00"	MC00003630-LOYD C.BEESECKER/583 UMR/DAVD	583.5	Low Water	5.53	55882	M/V Loyd C. Beesecker was N/B with 4 barges when vessel grounded. Vessel was grounded for a total of 3 hrs. M/V Cleva Lee assisted vessel off ground. No damage was found on vessel or barges. No other damage, pollution, or injuries were reported.
06/05/2003	N 42° 41' 46.00"	W 090° 58' 10.00"	M?V Wayne P. Lagrange-Grounding	595	Low Water	7.24	66494	While navigating at or near 595 UMR, M/V Wayne P. Lagrange northbound with 5 loads, and 2 empties in tow ran aground when running up river mid channel, due to shallow channel. While attempting to back tow off ground, tow grounded again damaging ACBL3122.
05/16/1999	N 23° 39' 18.00"	W 090° 47' 18.00"	MC99008392-M/V J.W.HERSHEY MILE 595	595	Low Water	11.98	95257	M/V J.W.HERSHEY WAS S/B WITH 12 LOADS IN TOW ARRANGED 3X4. WHILE NAVIGATING MILE 595UMR THE PORT LEAD BARGE VL 7774 CAM INTO CONTACT WITH THE RIVER BOTTOM THIS SWUNG VLS AGAINST RIGHT DESCENDING BANK. VLS. HAD DAMAGE TO STHE STARBOARD RUDDER. VSL. WAS PUT INTO DRYDOCK DAMAGE ASSMENT WAS 10000. NO POLLUTION WAS REPORTED.

07/20/1999	N 42° 39' 18.00"	W 090° 47' 18.00"	MC99010475-ARDYCE RANDALL	595.2	Low Water	10.1	65733	M/V Ardyce Kandall was S/B when vessel hit bottom. Vsl. backed down and was able to release tow from the bottom. No damage was found on the vessel or tow. NO pollution, damage, or injuries were reported.
09/09/2004	N 43° 20' 08.00"	W 091° 10' 02.00"	STEAMER DELTA QUEEN	660	Low Water	7.92	no data available	REPORTING PARTY STATES: AT 05:30 9 SEP 2004 M/V DELTA QUEEN WAS UPBOUND ON UMR MI 660. VSL RUBBED SANDBAR IN CHANNEL. PILOT BACKED AWAY AND MOVED TO OTHER SIDE OF CHANNEL & CONTINUED ON.
08/11/2001	N 43° 41' 12.00"	W 091° 15' 30.00"	MC01011773-UTV AUNT MARY/SHOALING/GRND	687	Low Water	628.69	24800	UTV AUNT MARY WAS SOUTH BOUND PUSHING AHEAD 11 LODAED BARGES ON THE UMR @ MM687 WHEN SHE GROUNDED MID CHANNEL. HEAVY SHOALING WAS REPORTED IN THE AREA DUE TO SPRING FLOODING. THE PILOT WAS ABLE TO GET OFF-GROUND 2.5 HRS LATER & PROCEEDED SOUTH AT 0430. NO DAMAGE REPORTED TO TOWBOAT OR BARGES. REPORTED SHOALING TO ACOE FOR POSSIBLE EMERGECY DREDGING.
07/11/1999	N 43° 50' 00.00"	W 091° 15' 00.00"	MC99010427-HORNET, STPD, MI 688.0 UMR	688	Low Water	6.47	52000 (approx)	On 11 JUL 99 the M/V Hornet while downbound the UMR at mile 688.0 grounded within the channel with 15 loaded dry cargo barges. Grounding due to shoaling. No damage and no pollution.
05/14/1999	N 43° 42' 00.00"	W 091° 16' 00.00"	MC99007563-AMERICAN BEAUTY, STPD, 688 UMR	688.4	Low Water	7.78	71000 (approx)	On 13 MAY 99 the M/V American Beauty while downbound the UMR at mile 688.4 grounded by the stern while flanking a bend. Vessel may have made turn wide and suction may have been a factor. Grounding was minor in nature with no damage and ono pollution. Vessel worked off within two hours.
06/02/1998	N 43° 50' 00.00"	W 091° 15' 00.00"	MC98011193-MICHAEL W, STPD, MI 690.5 UMR	690.5	Low Water	no data available	no data available	On 02 JUN 98 the M/V Michael W grounded it's three lead barges while downbound the UMR at mile 690.5. Tow consisted of 15 loaded grain barges. Turning buoy was reported missing. No damage and no pollution.
08/28/1998	N 42° 01' 36.00"	W 096° 14' 12.00"	MC98011342-M/V EVELYN RUSHING	691.6	Low Water	no data available	no data available	WHILE U/W D/B THE M/V EVELYN RUSHINGS STERN OF BOAT BUMPED GROUND. NO DAMAGE, NO INJURY, NO POLLUTION, NO NEGLIGENCE SUSPECTED.
07/25/1999	N 43° 50' 00.00"	W 091° 15' 00.00"	MC99010442-RIVER EAGLE, STPD, 693.5 UMR	693.5	Low Water	7.15	65000 (approx)	On 25 JUL 99 the M/V River Eagle grounded its tow of 15 dry cargo barges (06MT, 09loads) while downbound the UMR at mile 693.5. Grounding was within the channel and due to shoaling. No damage and no pollution.

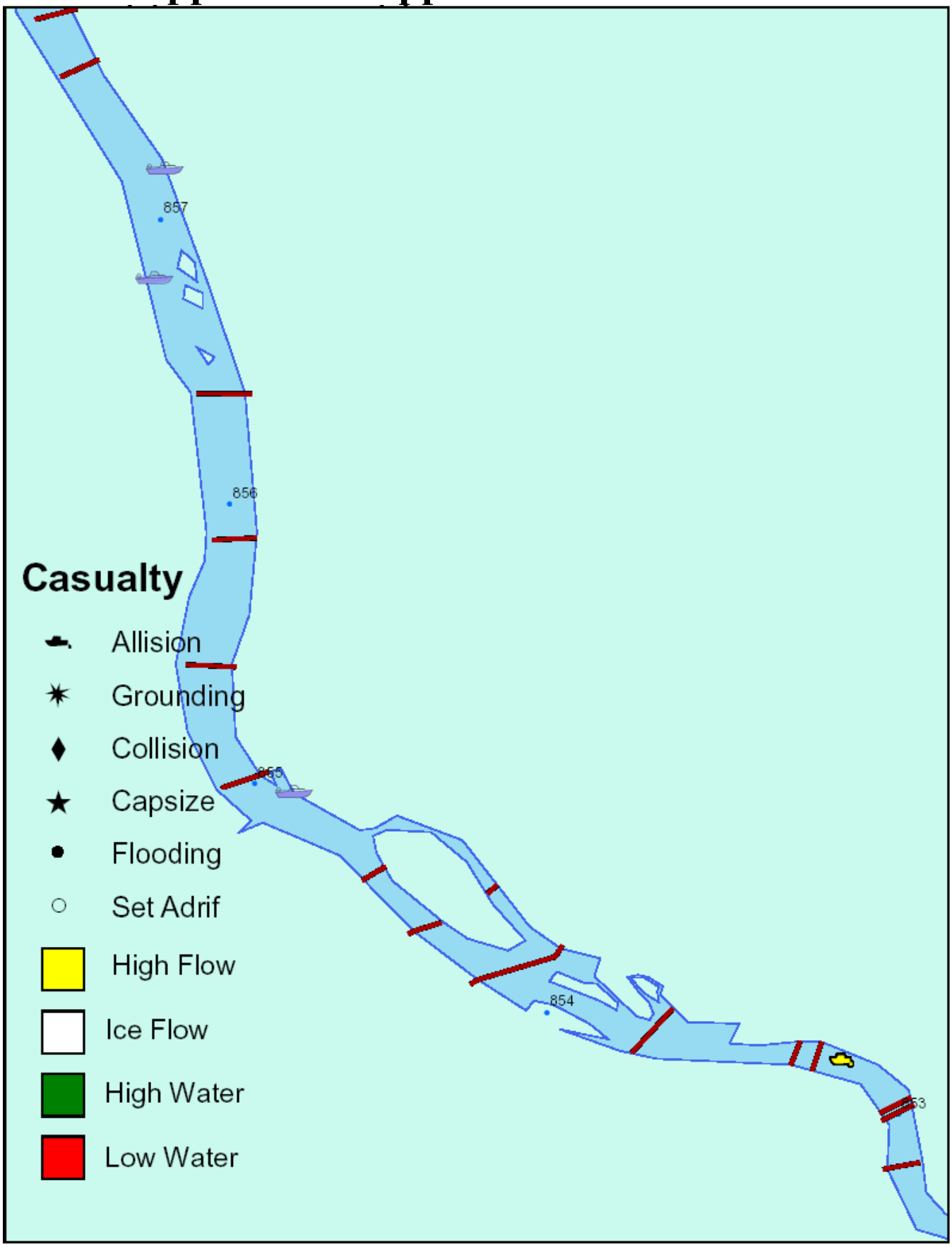
06/02/2000	N 43° 50' 00.00"	W 091° 15' 00.00"	MC00012505-M/V BILL STEGBAUER/GRND/STPD	693.8	Low Water	6.17	48000 (approx)	ON 02JUN00 AT APPROX 2200, THE M/V BILL STEGBAUER HIT A SANDBAR WHILE HEADING DOWNBOUND THROUGH THE GREEN BOUY LINE. AS A RESULT, THE TOW TOPPED AND FORCED THE STERN OF THE TOWBOAT AGROUND. THIS RESULTED IN DAMAGE TO THE STEERING RUDDER. ESTIMATED COST OF REPAIRS IS $12,000.
10/30/1998	N 43° 50' 00.00"	W 091° 15' 00.00"	MC98014912-ARDYCE RANDALL, STPD, 699 UMR	699	Low Water	no data available	no data available	On 30 OCT 98 the M/V Ardyce Randall while downbound the UMR at mile 699.8 with 15 loaded dry cargo barges grounded it's center and starboard lead barge. Grounding occurred while flanking to make the transit through the LaCrosse RR Bridge. No bridge allision occurred. No damage and no pollution.
06/14/1999	N 43° 50' 00.00"	W 091° 15' 00.00"	MC99009154-CRIMSON GLORY, STPD, 700 UMR	700	Low Water	634	52500	On 14 JUN 99 the M/V Crimson Glory grounded it's port lead barge while downbound the UMR at mile 700.0. Vessel grounded within the channel with a tow of 15 loaded dry cargo barges. Minor damage to A-664, pulled timberhead ($750.00). No pollution.
11/14/1999	N 43° 55' 00.00"	W 091° 22' 00.00"	MC99016487-MARTHA INGRAM, STPD, 707.5 UMR	707.5	Low Water	639.04	22700	On 14 Nov 99 the M/V Martha R. Ingram grounded out of the channel while downbound the UMR at mile 707.5 with 12 loaded dry cargo barges. Port lead barge grounded with minor damage. Gounding was due to a passing situation in a narrow channel. No further damage and no pollution.
04/24/1999	N 44° 05' 00.00"	W 091° 40' 00.00"	MC99005737-W.A. KERNAN, STPD, MI 731 UMR	731	Low Water	no data available	75700	On 29 APR 99 the M/V W.A. Kernan while downbound the UMR at mile 731.2 with 11 loaded grain and one empty dry cargo barge grounded its starboard lead barge within the channel. Grounding was due to shoaling. No damage and no pollution.
09/30/1999	N 44° 05' 00.00"	W 091° 40' 00.00"	MC99013757-M/V SS MS. QUEEN, STPD, 731UMR	731	Low Water	no data available	22400	On 30 SEP 99 the M/V SS Mississippi Queen grounded within the channel while upbound the UMR at mile 731.3. Grounding was due to shoaling. Ballast was pumped from the forward peak tank and the vessel was backed off the shoal. No damage and no pollution.
06/12/2003	N 44° 08' 04.00"	W 091° 45' 02.00"	M/V Philip Pfeffer	731.3	Low Water	no data available	41800	MSD St. Paul received a report that M/V PFEFFER, while transiting S/B IVO mm 731.3 UMR, STBD head of tow dry cargo barge ING 5858 grounded within channel with a 9' draft. While attempting to work free, stern of vessel contacted left descending shoreline breaking bolts in tiller arm, and caused a loss of steering.

10/26/1998	N 44° 05' 00.00"	W 091° 40' 00.00"	MC98015232-CECILIA CAROL, STPD, 734.2 UMR	734.2	Low Water	no data available	29200	On 26 OCT 98 the M/V Cecilia Carol while downbound the UMR at mile 734.2 and pushing 12 loaded dry cargo barges grounded whithin the channel. Port lead barge (ITC-119) was drafting 9.1 FT and grounded 75 FT inside the nun line. Cecilia Carol waited for upbound assist boat to refloat tow. Duration of grounding was 05 hours. ACOE is aware of shoaling condition. No damage and no pollution.
08/03/1998	N 44° 20' 00.00"	W 091° 56' 00.00"	MC98013234-RIVER WILDCAT, STPD, 743.0 UMR	743	Low Water	11.41	17800	On 03 AUG 98 while upbound the UMR at mile 743.0 with 15 MT dry cargo barges the M/V River Wildcat grounded. CGC Wyaconda had just sounded the area with it's small boat and had reported to the River Wildcat there was a 20 FT minimum channel depth. River Wildcat proceeded ahead and grounded with a draft of 9.5 FT. No pollution and no damage.
09/06/1999	N 44° 20' 00.00"	W 091° 56' 00.00"	MC99016482-ISSAQUENA, STPD, MI 752 UMR	752	Low Water	12.03	28000	On 06 Sep 99 the M/V Issaquena grounded its tow of 14 loaded and 01 empty dry cargo barges while downbound the UMR at mile 752. Port stern barge grounded within the channel due to shoaling.
09/17/1999	N 44° 20' 00.00"	W 091° 56' 00.00"	MC99016470-MYRA ECKSTINE, STPD, MI758 UMR	758.3	Low Water	no data available	no data available	On 17 Sep 99 the M/V Myra Eckstein while downbound the UMR at mile 758.3 grounded its tow of 05 loaded dry cargo barges within the channel. Shoaling is the cause of the grounding. No damage and no pollution.
07/18/1998	N 44° 23' 00.00"	W 092° 02' 00.00"	MC98011282-PRAIRIE DAWN, STPD, 765 UMR	765	Low Water	no data available	no data available	On 18 JUL 98 the M/V Prairie Dawn while downbound the UMR at mile 756.0, pushing 12 loaded dry cargo barges grounded it's port lead barge. No damage and no pollution.
07/19/1998	N 44° 23' 00.00"	W 092° 02' 00.00"	MC98011290-RICHARD C YOUNG, STPD, 765 UMR	765	Low Water	no data available	no data available	On 19 JUL 98 the M/V Richard C. Young while upbound the UMR at mile 765.0 pushing 05 loaded dry cargo and 03 MT barges grounded it's stb lead barge. No damage and no pollution.
08/01/1998	N 44° 23' 00.00"	W 092° 02' 00.00"	MC98012362-AUNT MARY, STPD, 765.0 UMR	765	Low Water	no data available	no data available	On 01 Aug 98 the M/V Aunt Mary with 13 loaded and 03 MT dry cargo barges grounded while downbound the UMR at mile 765.0. Grunding occured while in the channel. No damage and no pollution.

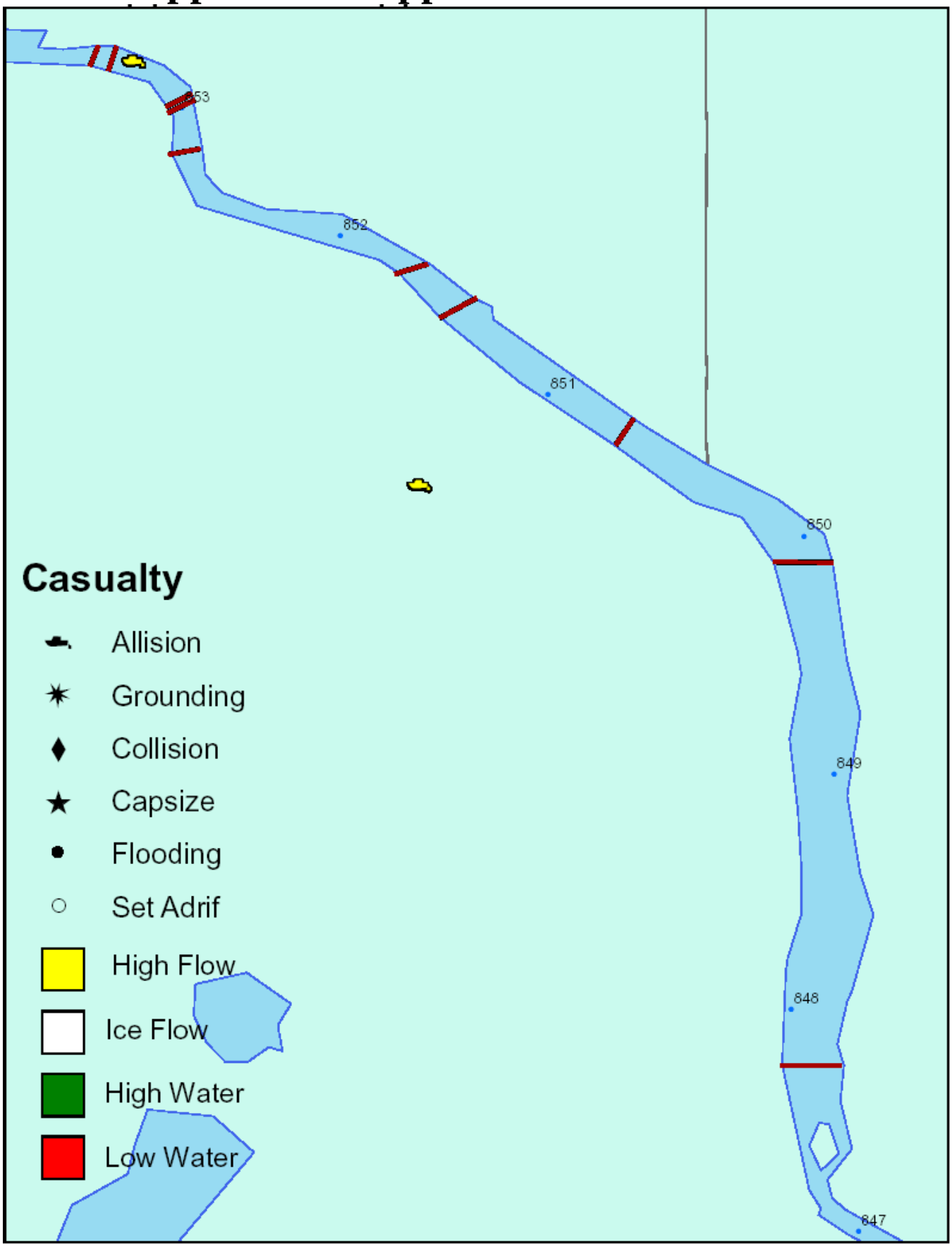
10/09/1999	N 44° 28' 00.00"	W 092° 16' 00.00"	MC99013690-ROY E CLAVERIE, STPD, 785 UMR	785	Low Water	no data available	no data available	On 09 OCT 99 the M/V Roy E Claverie grounded within the channel at mile 785 on the UMR. Vessel was downbound with 07 empty and 08 loaded dry cargo barges. The port lead barge sustained a 2' X 1/2" crack below the waterline in the bow rake. Damage is estimated a $10,000.00. Grounding was due to shoaling. No pollution.
07/13/1998	N 44° 37' 00.00"	W 092° 37' 00.00"	MC98011010-GRANDMA GERT, STPD, 787.7 UMR	787.7	Low Water	no data available	no data available	On 13 Jul 98 the M/V Grandma Gert while downbound the UMR at mile 787.7 pushing 12 loaded dry cargo barges grounded its stb lead barge while making a turn- mccg. No pollution and no damage.
09/18/1998	N 44° 37' 00.00"	W 092° 37' 00.00"	MC98013315-MARIAN HAGESTAD, STPD, 791 UMR	791	Low Water	no data available	no data available	On 18 SEP 98 the M/V Marian Hagestad grounded it's 02 loaded asphalt barges in the channel at mile 791.5 on the UMR. Grounding was due to shoaling, ACOE has been notified. No damage and no pollution.
08/13/1998	N 44° 37' 00.00"	E 092° 37' 00.00"	MC98013277-FLOYD BLASKE, STPD, 791.3 UMR	791.3	Low Water	no data available	no data available	On 13 AUG 98 the M/V Floyd H. Blaske grounded it's port lead barge at mile 791.3 on the UMR. Tow consisted of 11 loaded, and 01 MT dry cargo barges. Grounding occured in the channel and was due to shoaling. ACOE has been notified. There was no damage and no pollution.
08/18/1998	N 44° 37' 00.00"	W 092° 37' 00.00"	MC98013307-AUNT MARY, STPD, 792 UMR	792	Low Water	no data available	no data available	On 18 AUG 98 the M/V Aunt Mary grounded it's tow of 09 dry cargo barges at mile 792.0 on the UMR. Grounding was within the channel and due to shaoling. ACOE has been notified. No pollution and no damage.
08/30/1998	N 44° 37' 00.00"	W 092° 37' 00.00"	MC98013309-MARIAN HAGESTAD, STPD, 792 UMR	792	Low Water	no data available	no data available	The M/V Marian Hagestad while downbound the UMR at mile 792.0 grounded it's two asphalt barges in the channel. Grounding was in the channel and due to shoaling. ACOE has been notified. No damage and no pollution.
06/30/2003	N 44° 46' 30.00"	W 092° 54' 31.00"	M/V Sierra Dawn, Grounding	818.9	Low Water	no data available	35800	M/V Sierrra Dawn was heading Southbound when STBD lead barge grounded inside the marked channel at mile marker 818.9 on the Upper Mississippi River with a draft of 8'6". ACOE Survey vessels on scence reported five-six feet of water in the middle of the channel due to recent heavy rains and runoff. During the time frame commercial traffic was closed for two days for dredging operations and then limited southbound to twelve barge tows during daylight hours and nine barge tows during evening hours. Northbound commercial traffic was limited to fifteen barge tows.

08/05/1998	N 44° 56' 00.00"	W 093° 05' 00.00"	MC98012432-RIVER WILDCAT, STPD, 823 UMR	823	Low Water	no data available	9400	On 05 AUG 98 the M/V River Wildcat while upbound the UMR at mile 823.0 with 12 loaded dry cargo barges grounded its tow in the channel. No damage and no pollution. Grounding due to Shoaling.
06/29/1998	N 44° 53' 00.00"	W 093° 02' 00.00"	MC98007805-MAGNOLIA, STPD, 823.3 UMR	823.3	Low Water	no data available	35400	On 29 JUN 98 the M/V Magnolia while downbound the UMR at mile 823.3 on the UMR grounded it's lead barge while passing the dredge Thompson. Tow consisted of three red flags carring asphalt. Lead barge (MM35) sustained damage to the #1 wing tank and bow rake resulting in minor flooding.
03/28/2001	N 44° 56' 00.00"	W 093° 01' 00.00"	MC01004231-STPD/GRNDING/BECKY SUE/MM823.8	823.8	Low Water	no data available	6300	THE UTV BECKY SUE GROUNDED ITS TOW ON A SUBMERGED OBJECT ALONG THE RIGHT DESCENDING BANK OF THE UPPER MISSISSIPPI RIVER. THE OBJECT CRACKED THE STBD BOW CORNER OF THE BARGE SG-641 B, CAUSING APPROX $1500 IN DAMAGE. VISIBILITY WAS PARTIALLY RESTRICTED BY SNOW FALL.

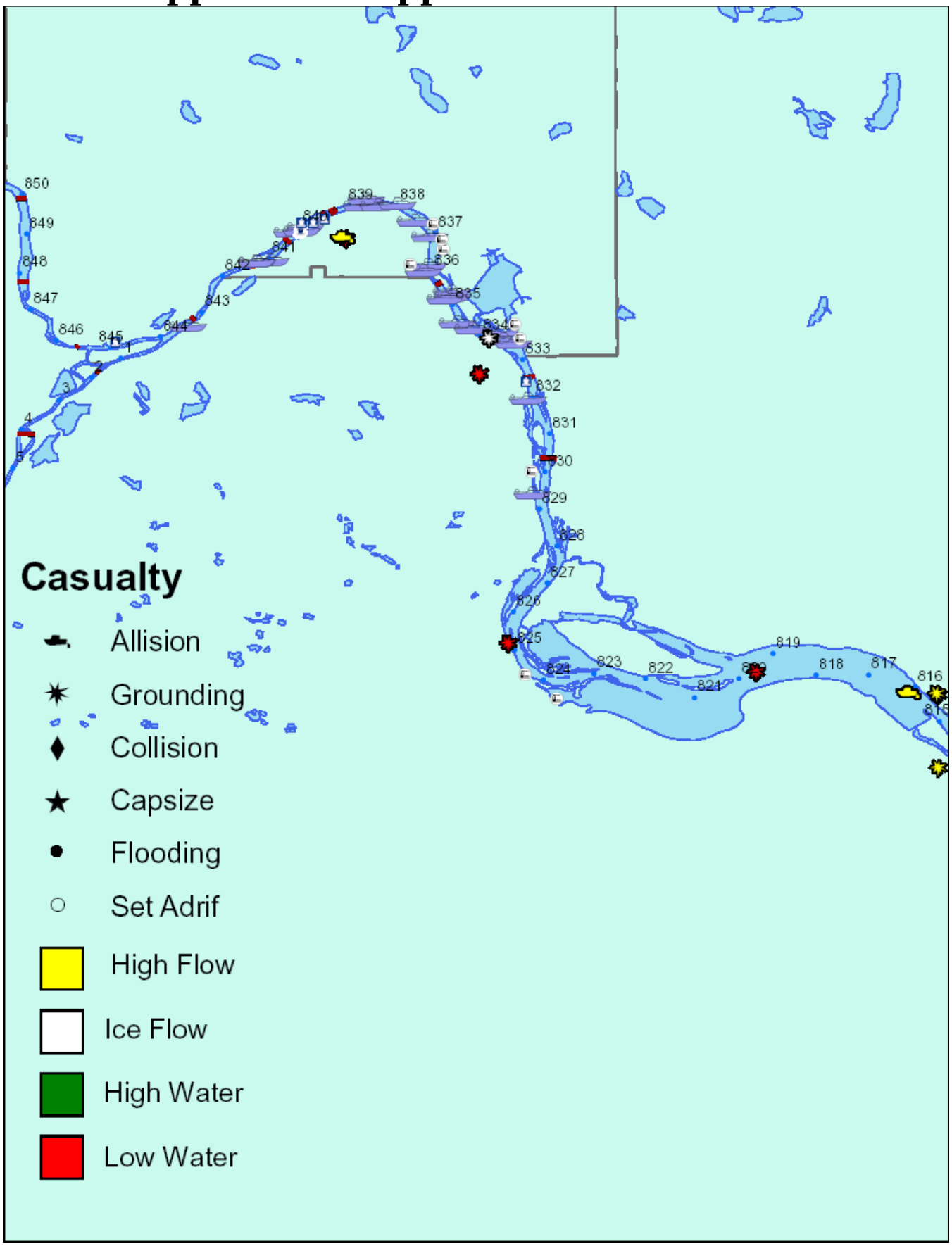
Zone 1
Upper Mississippi River 847.6 to 857.6



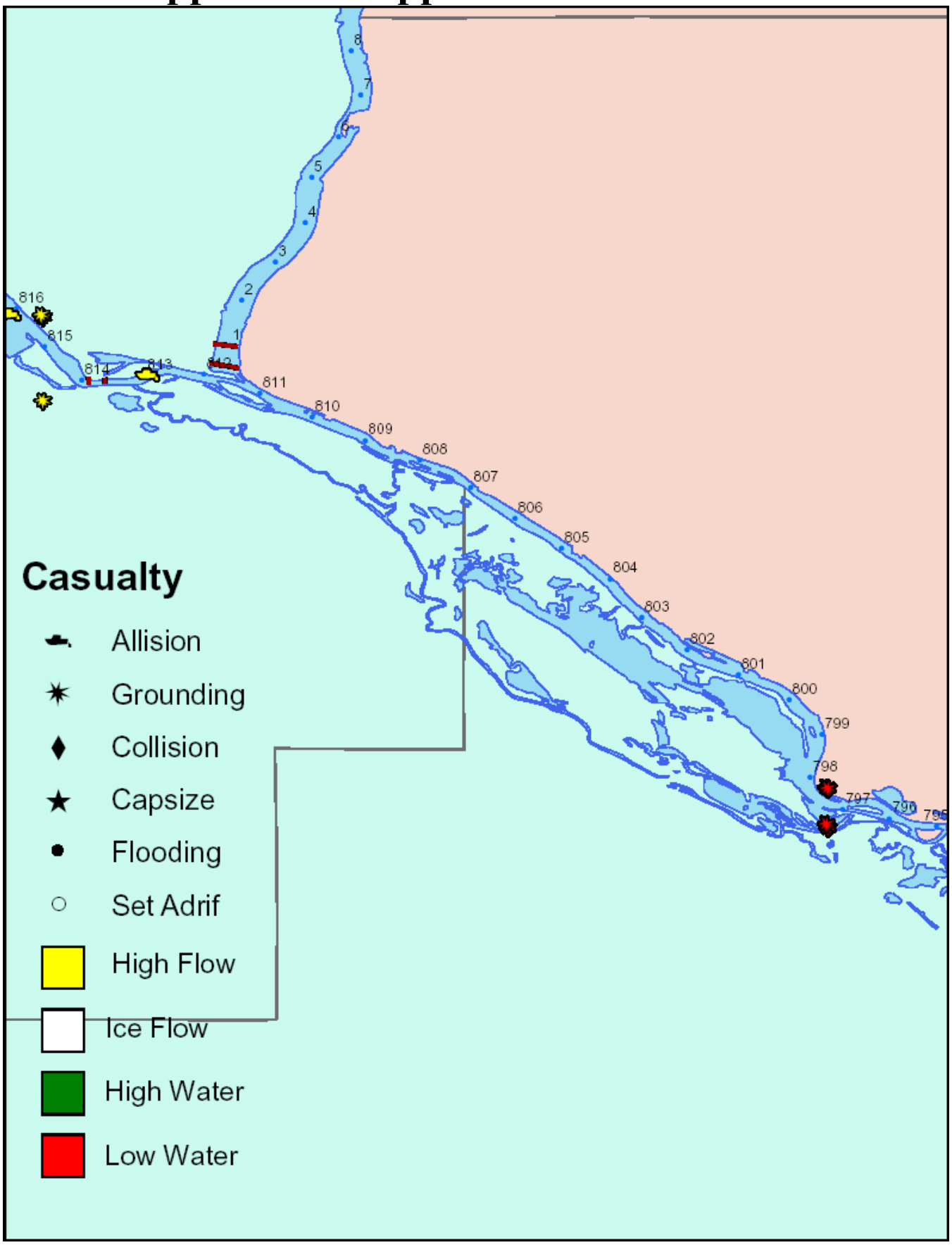
Zone 1 (continued)
Upper Mississippi River 847.6 to 857.6



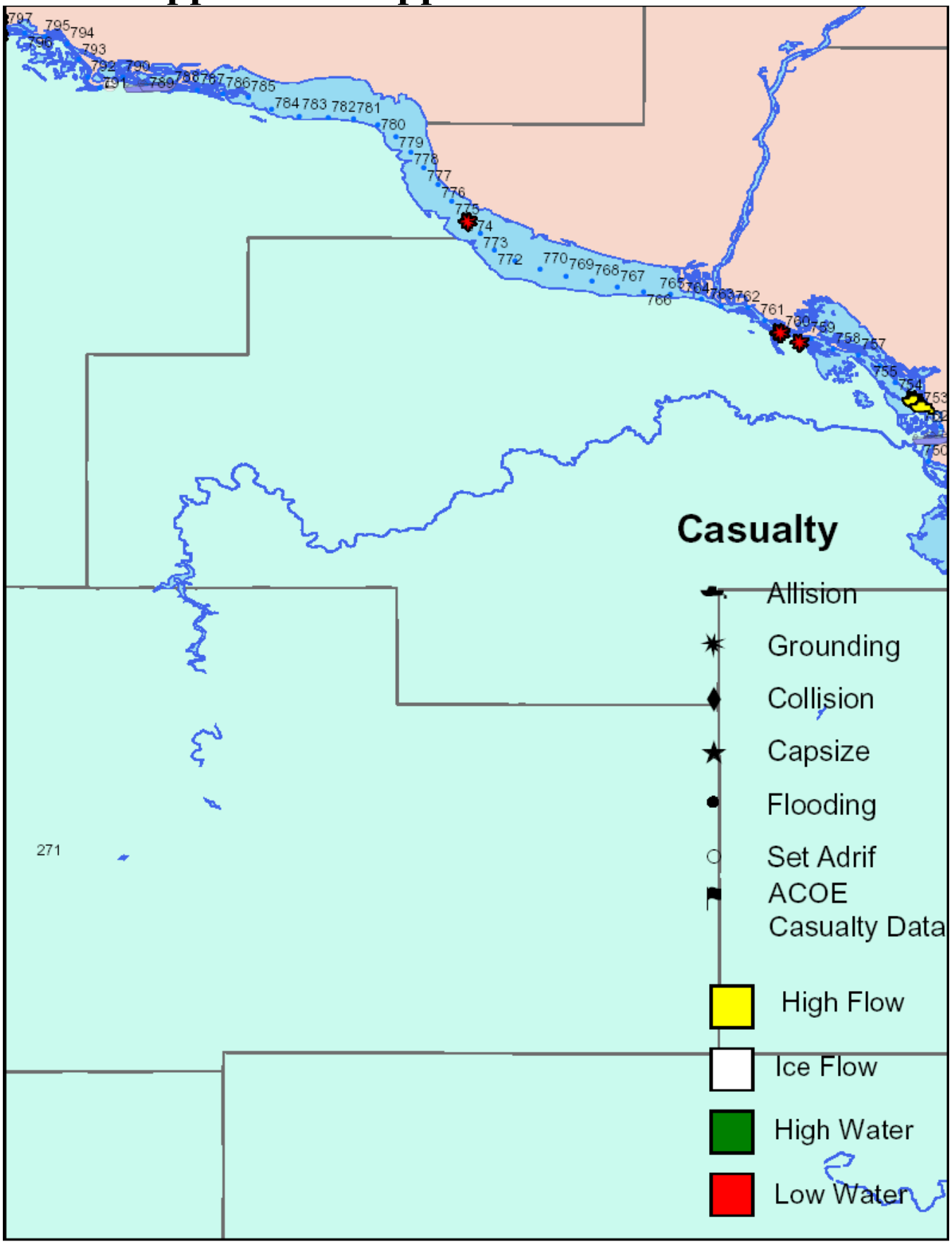
Zone 2
Upper Mississippi River 815.2 to 847.5



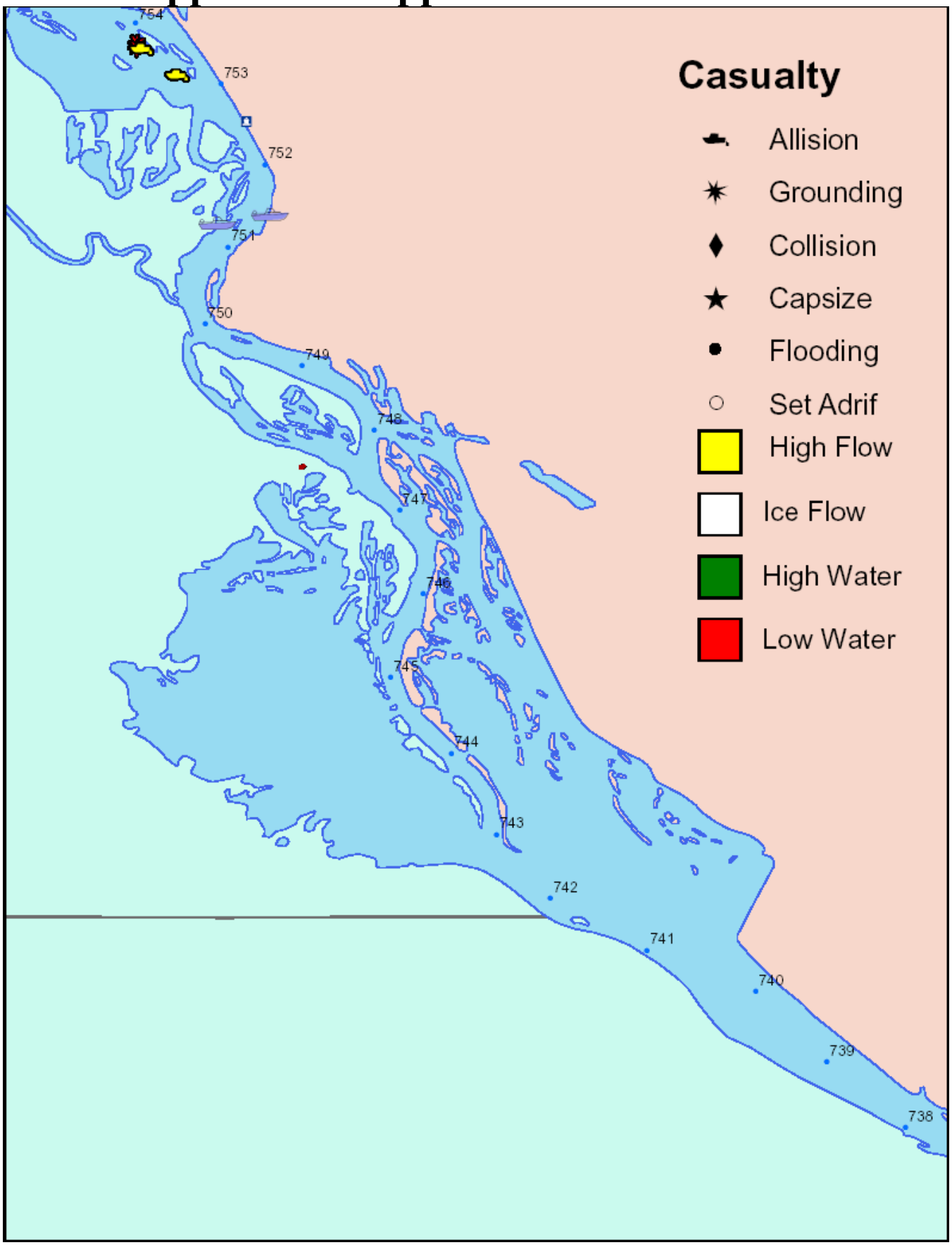
Zone 3
Upper Mississippi River 796.9 to 815.1



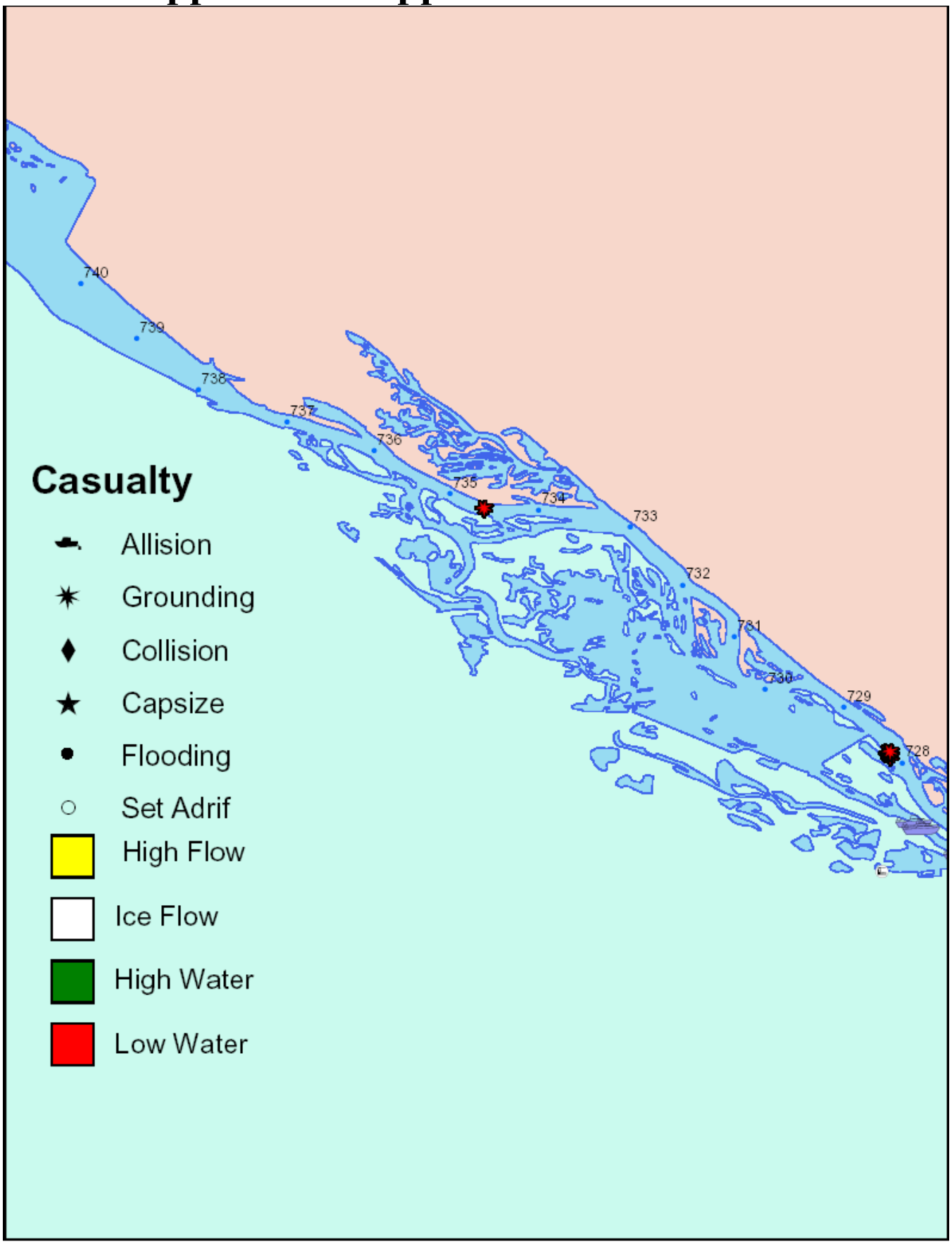
Zone 4
Upper Mississippi River 752.8 to 796.8



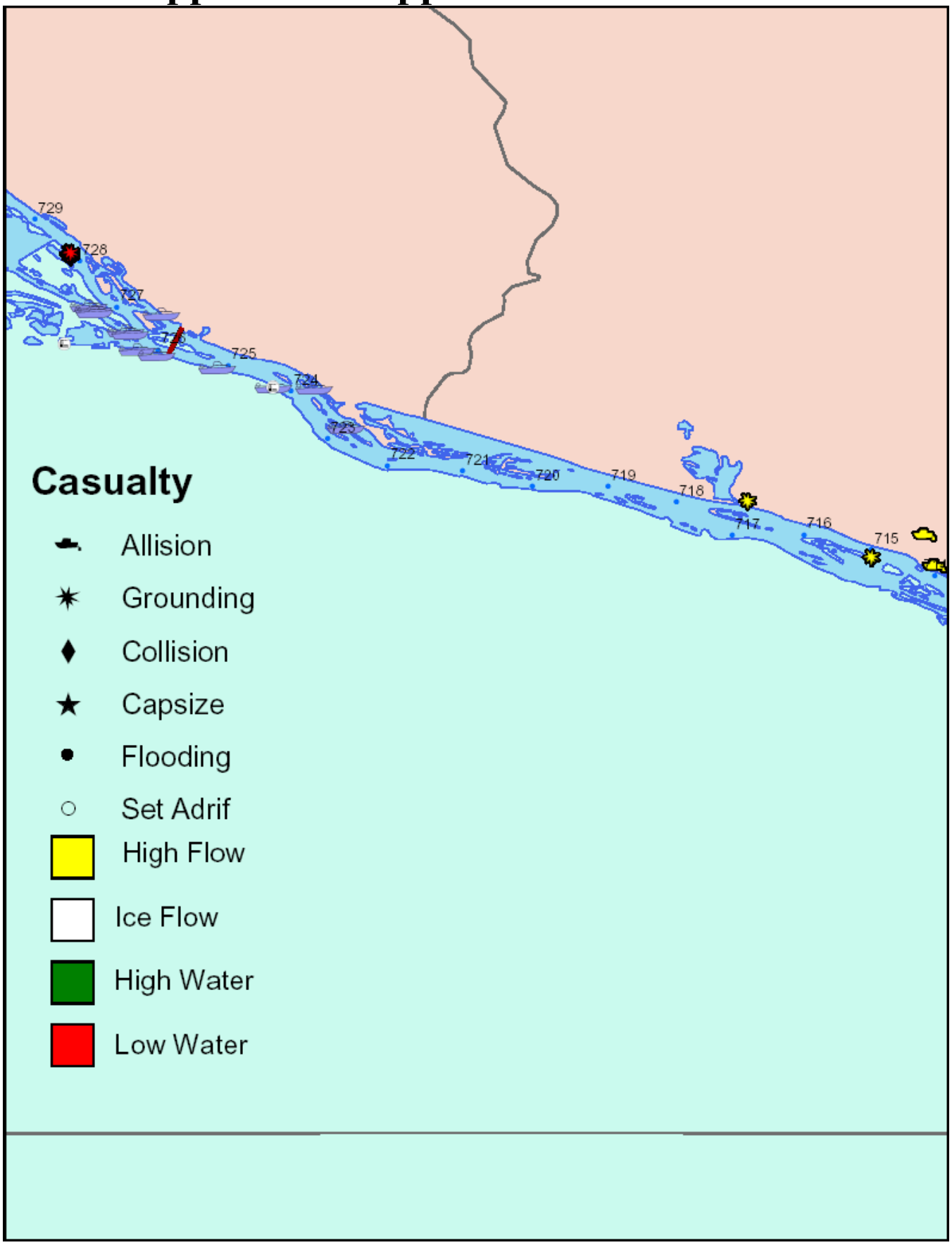
Zone 5
Upper Mississippi River 738.1 to 752.7



Zone 5A
Upper Mississippi River 728.6 to 738.0

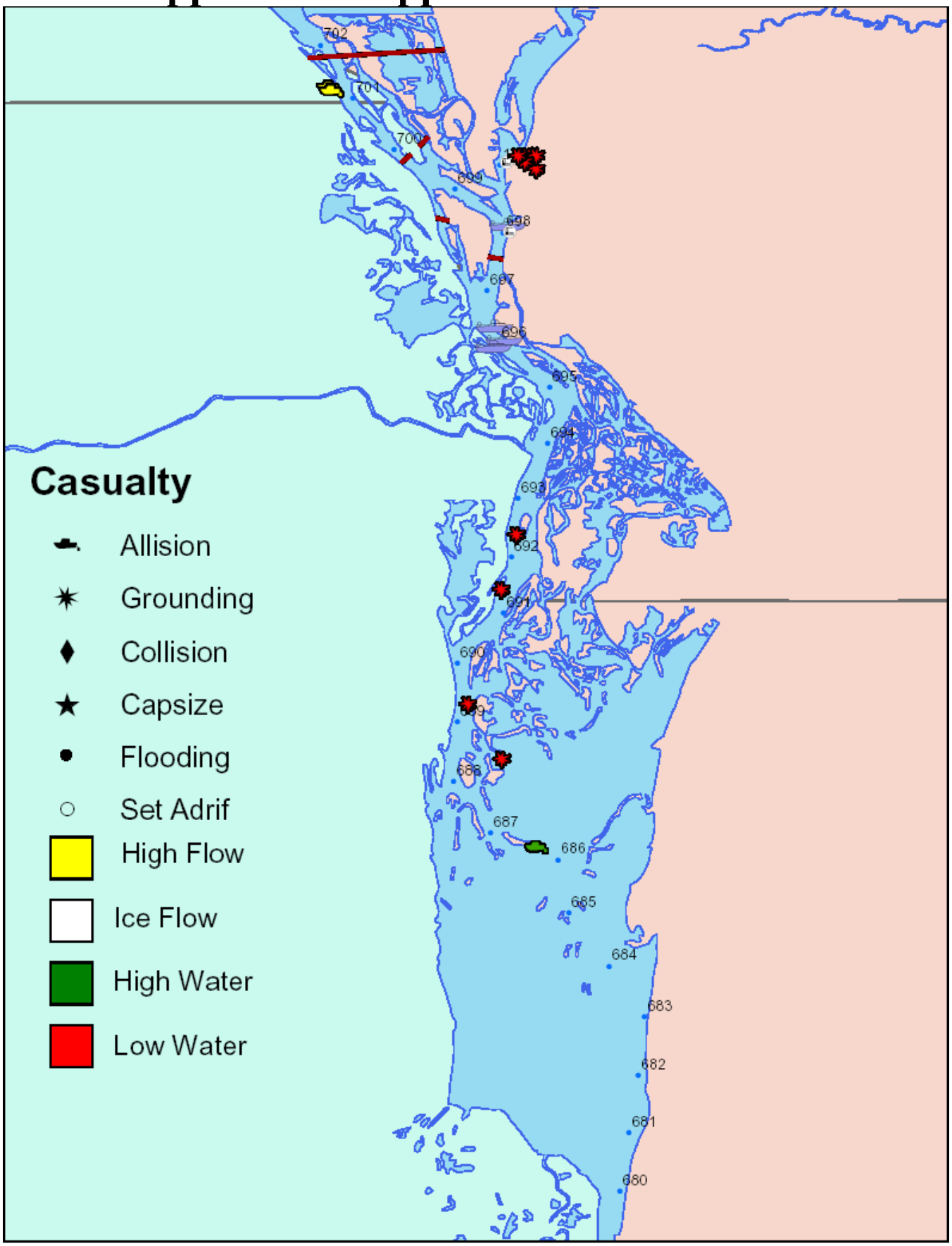


Zone 6
Upper Mississippi River 714.3 to 728.5

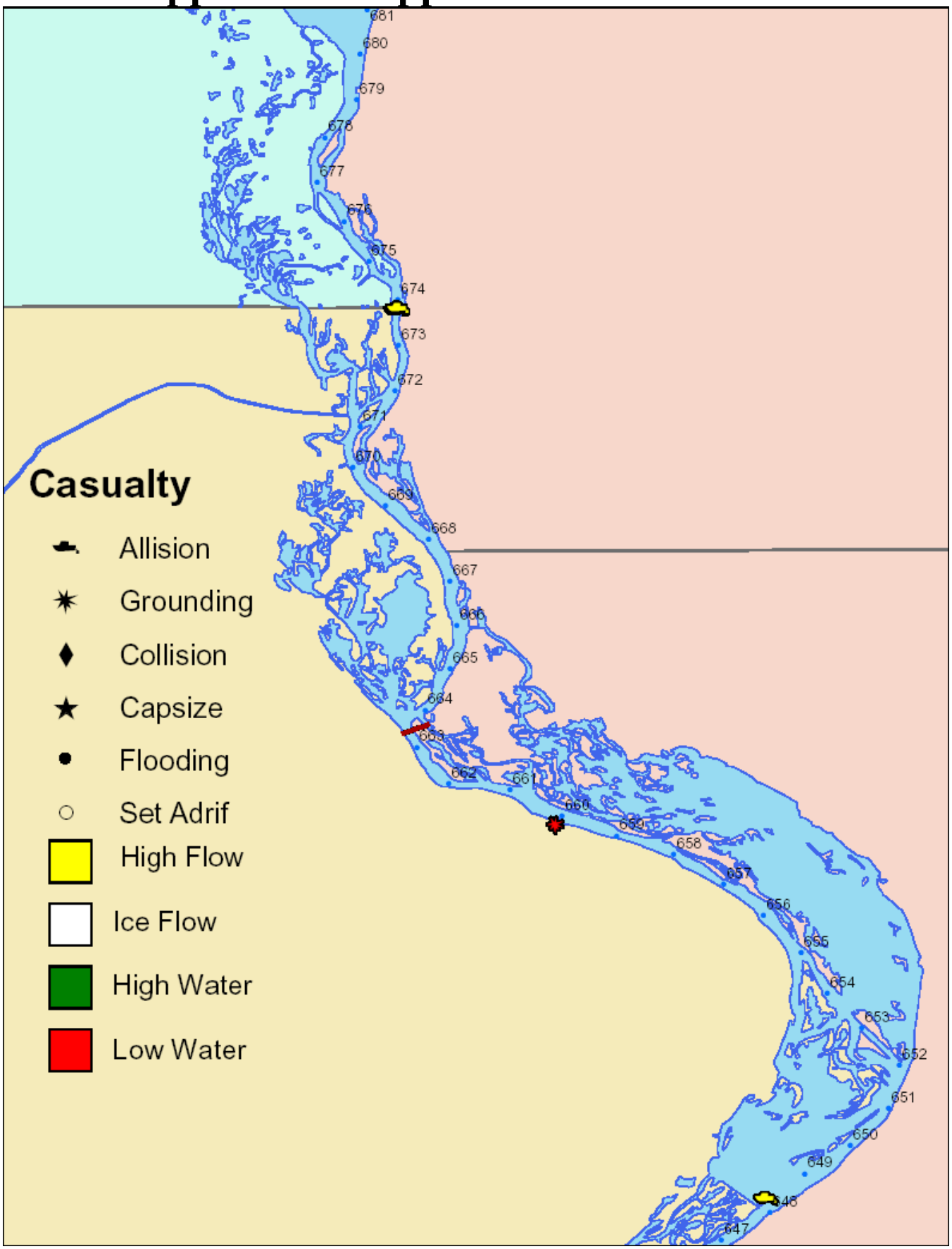


Zone 7
Upper Mississippi River 702.5 to 714.2

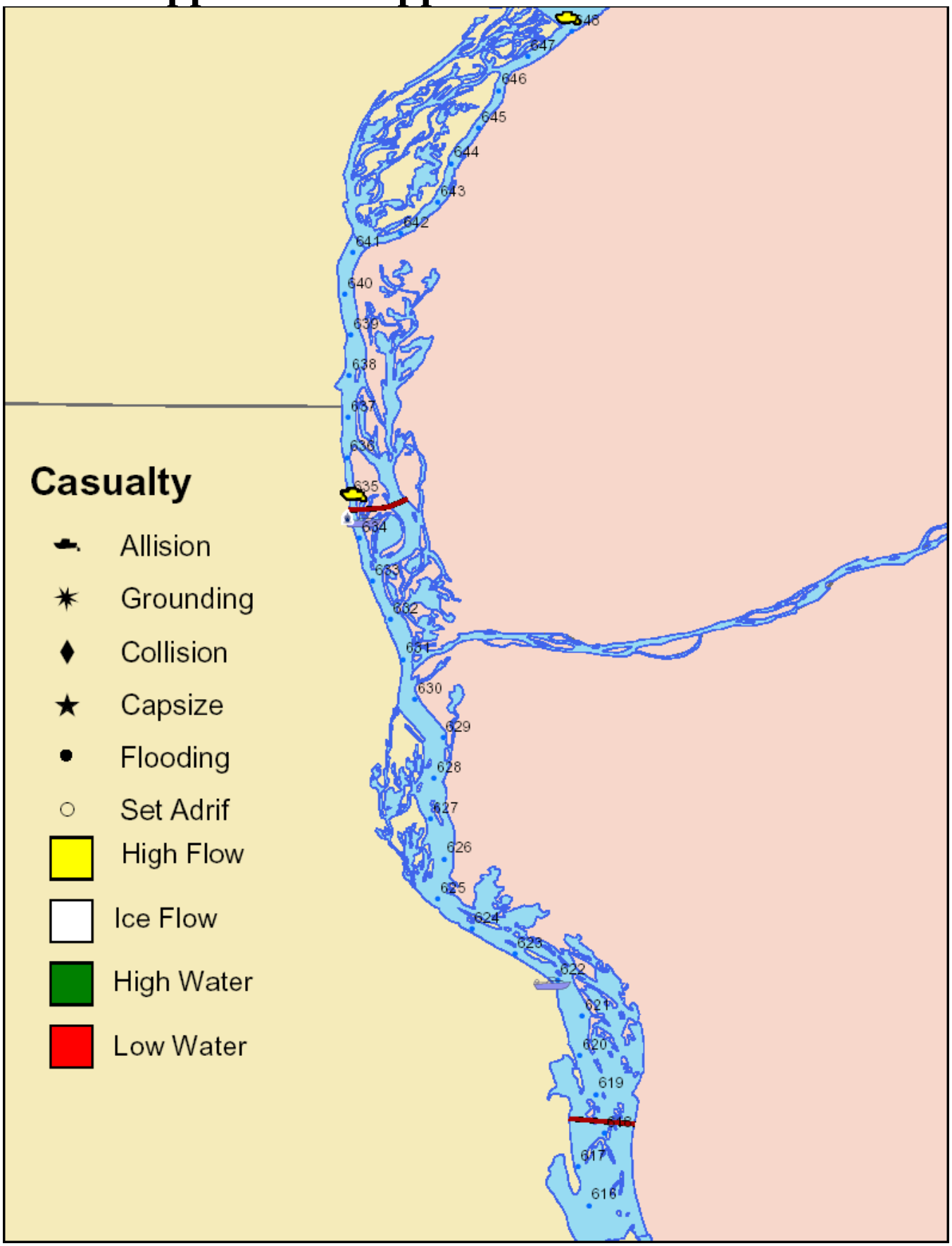
Zone 8
Upper Mississippi River 679.2 to 702.4



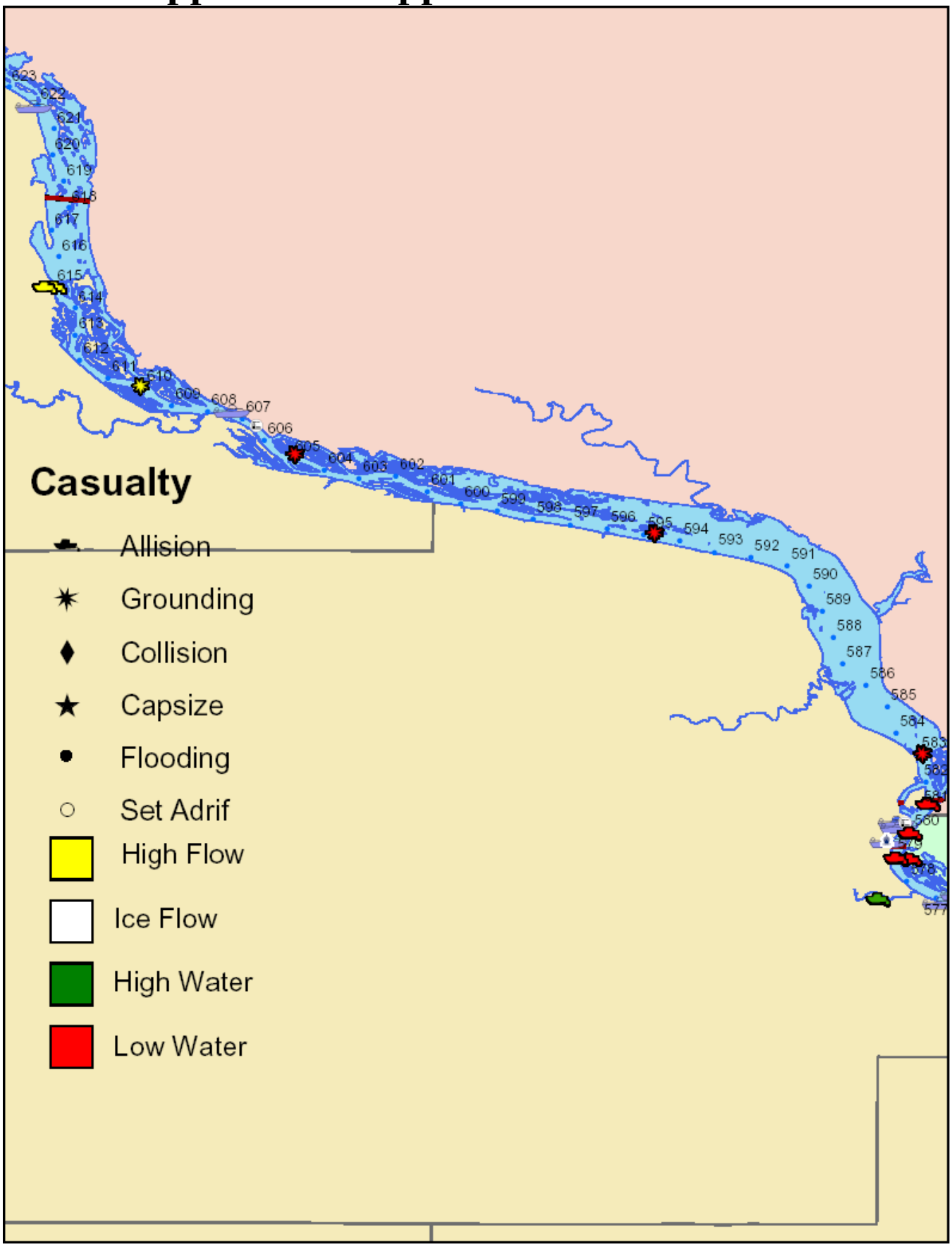
Zone 9
Upper Mississippi River 647.9 to 679.1



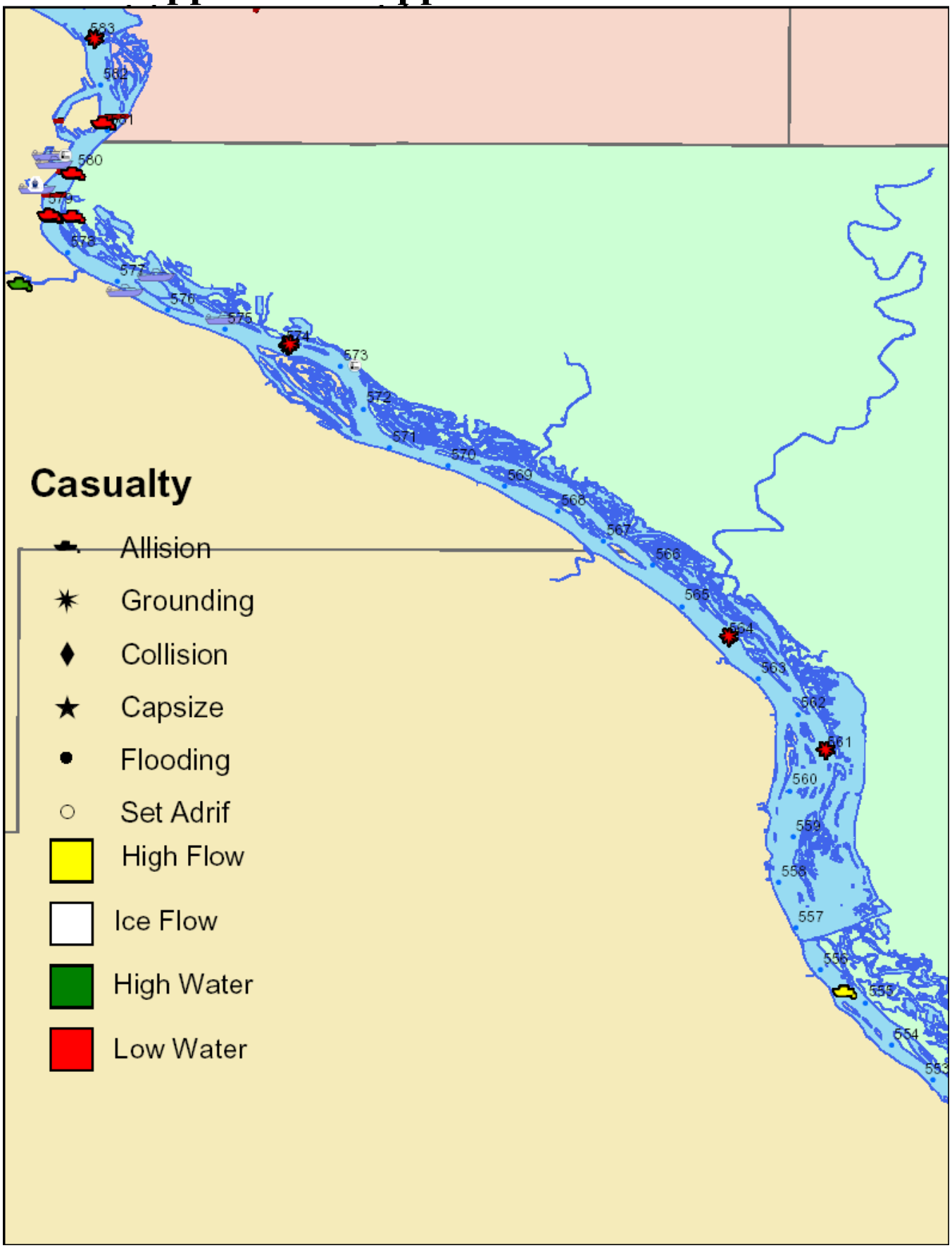
Zone 10
Upper Mississippi River 615.1 to 647.8



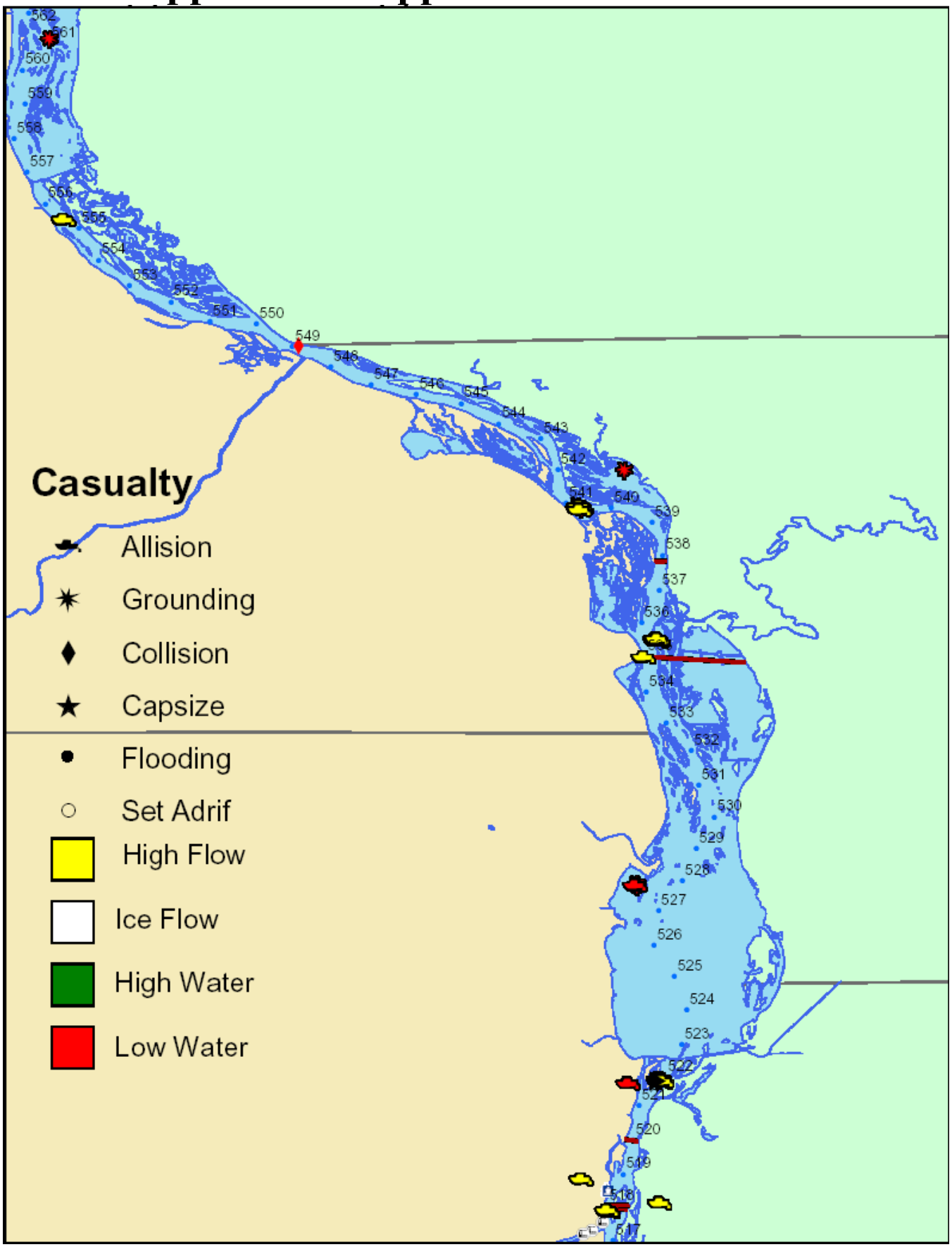
Zone 11
Upper Mississippi River 583.0 to 615.0



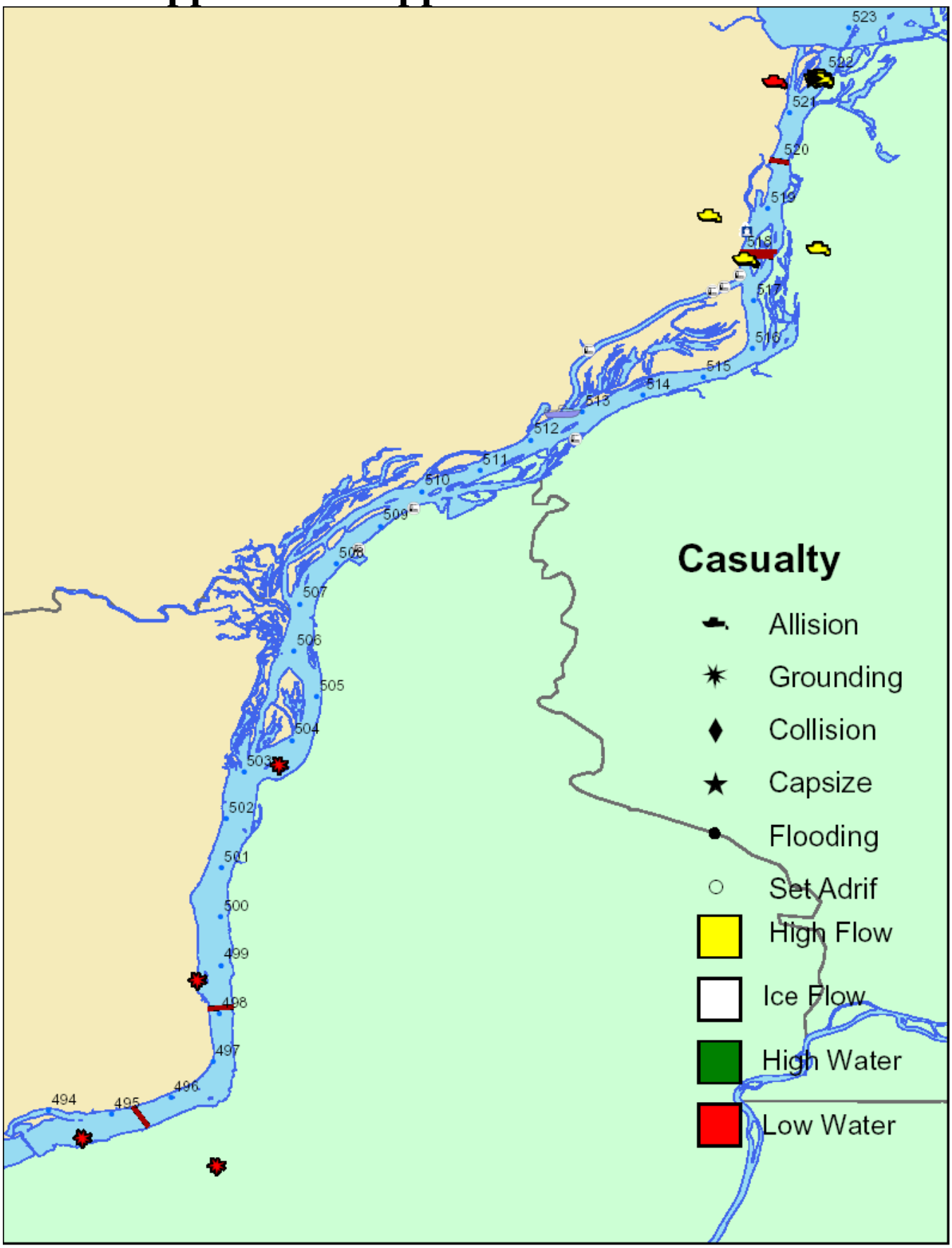
Zone 12
Upper Mississippi River 556.7 to 582.9



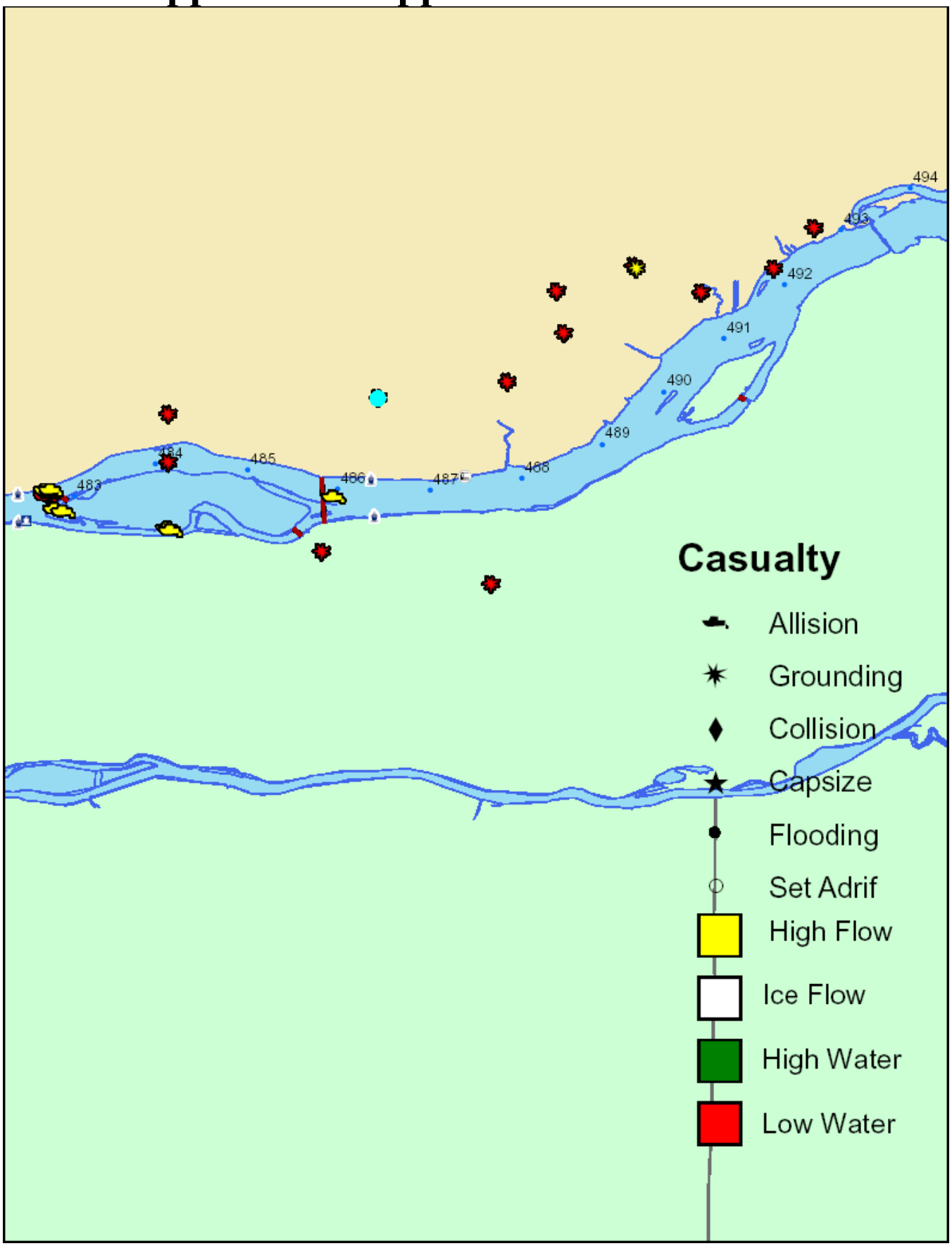
Zone 13
Upper Mississippi River 522.4 to 556.6



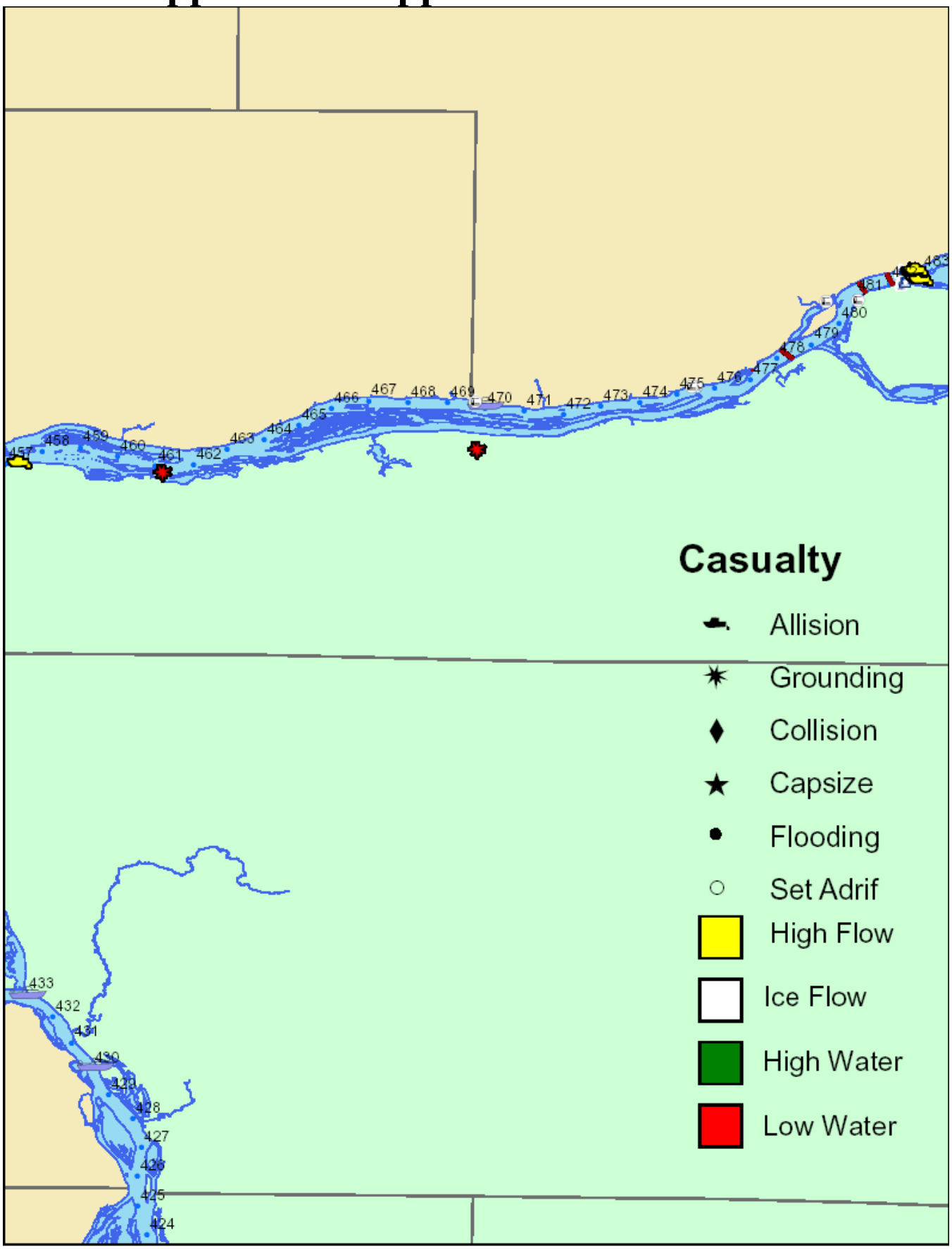
Zone 14
Upper Mississippi River 493.3 to 522.3



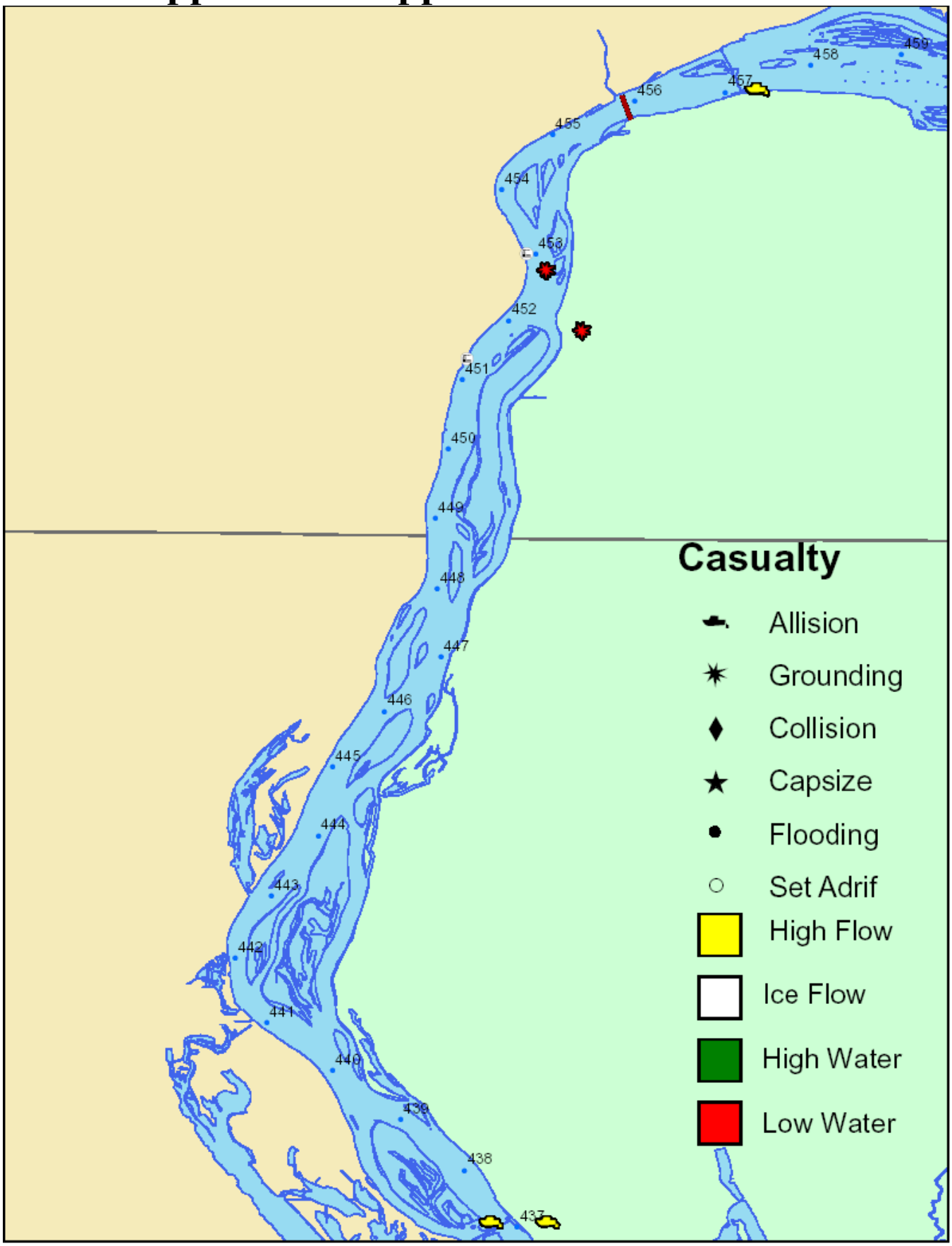
Zone 15
Upper Mississippi River 482.9 to 493.2



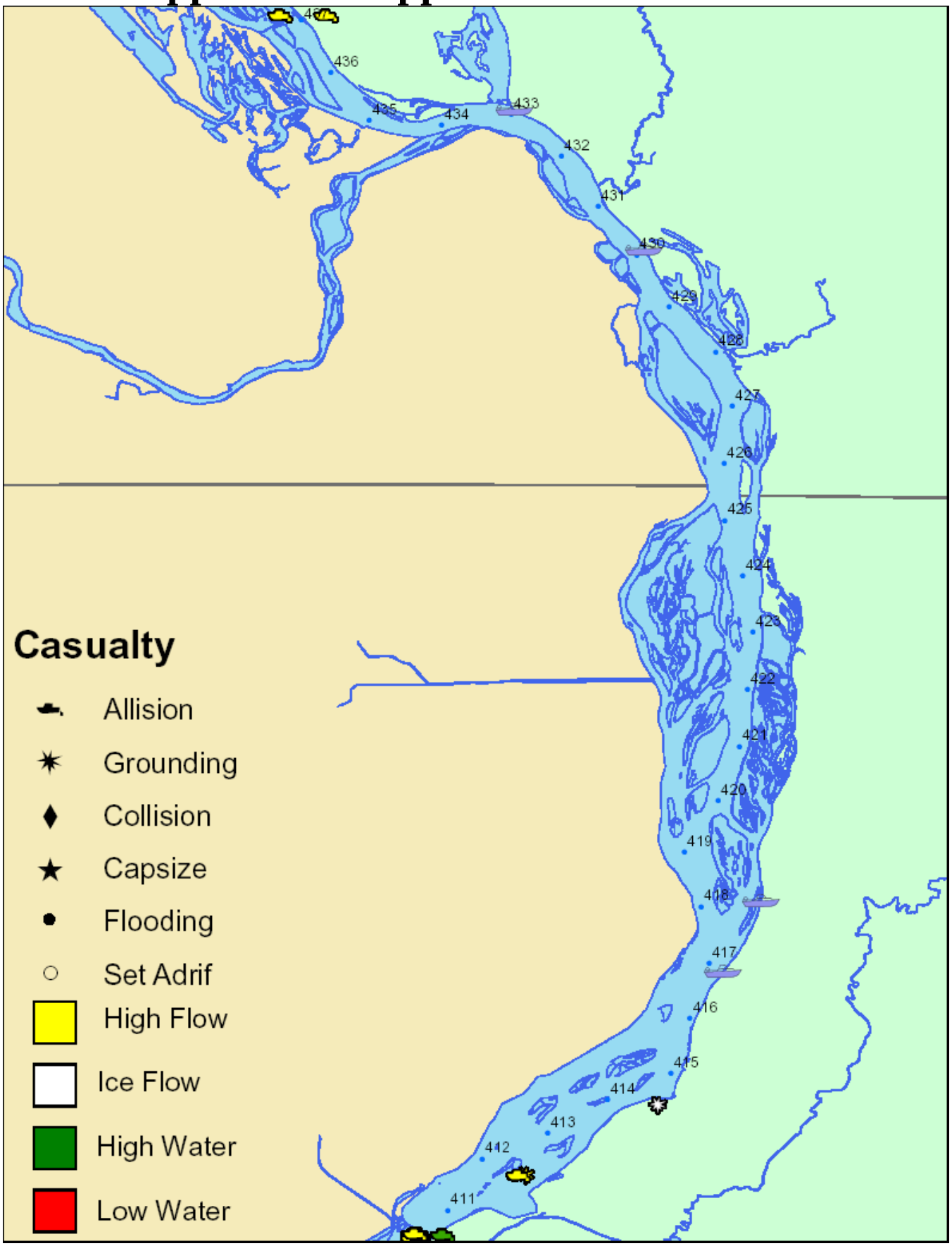
Zone 16
Upper Mississippi River 457.2 to 482.8



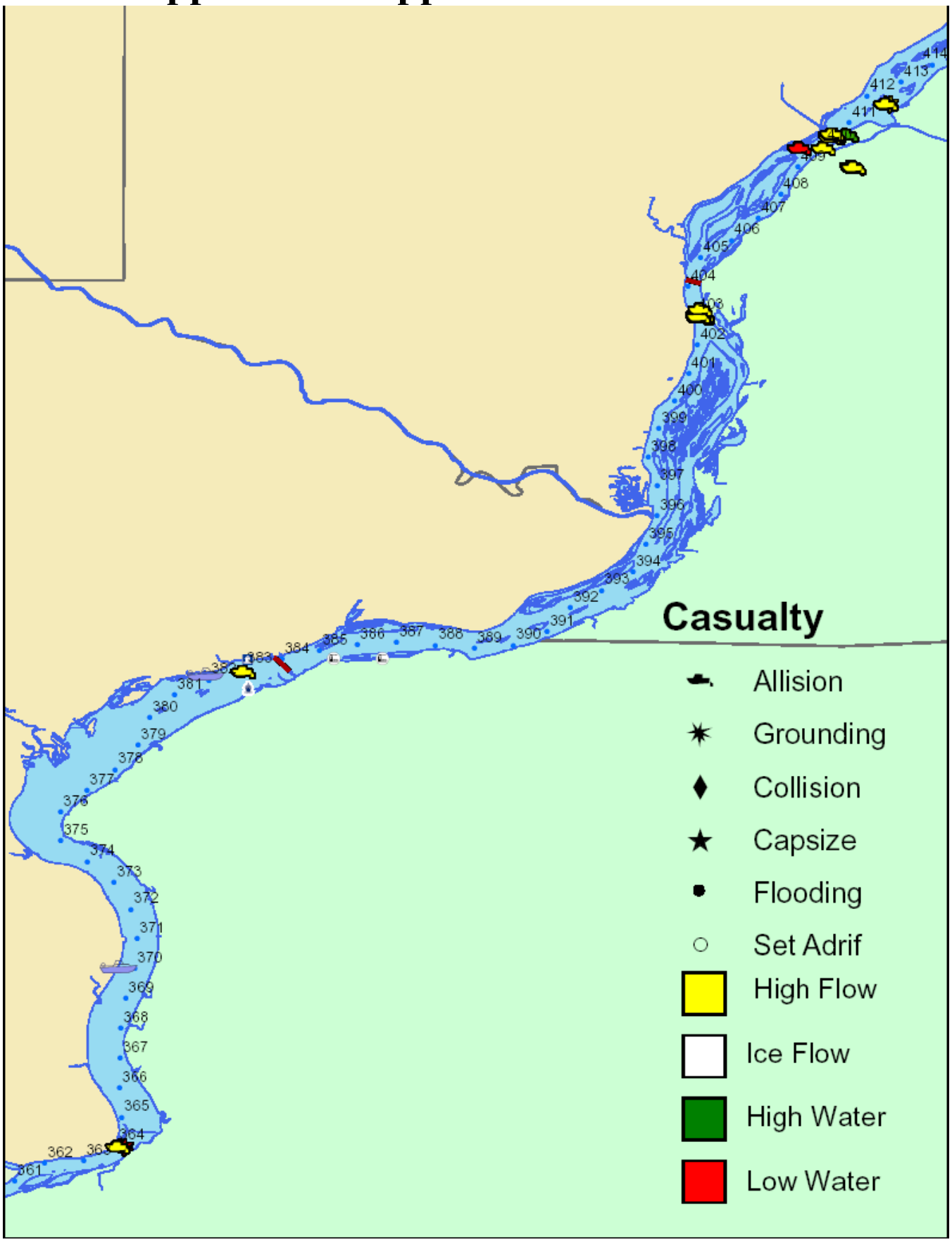
Zone 17
Upper Mississippi River 437.1 to 457.1



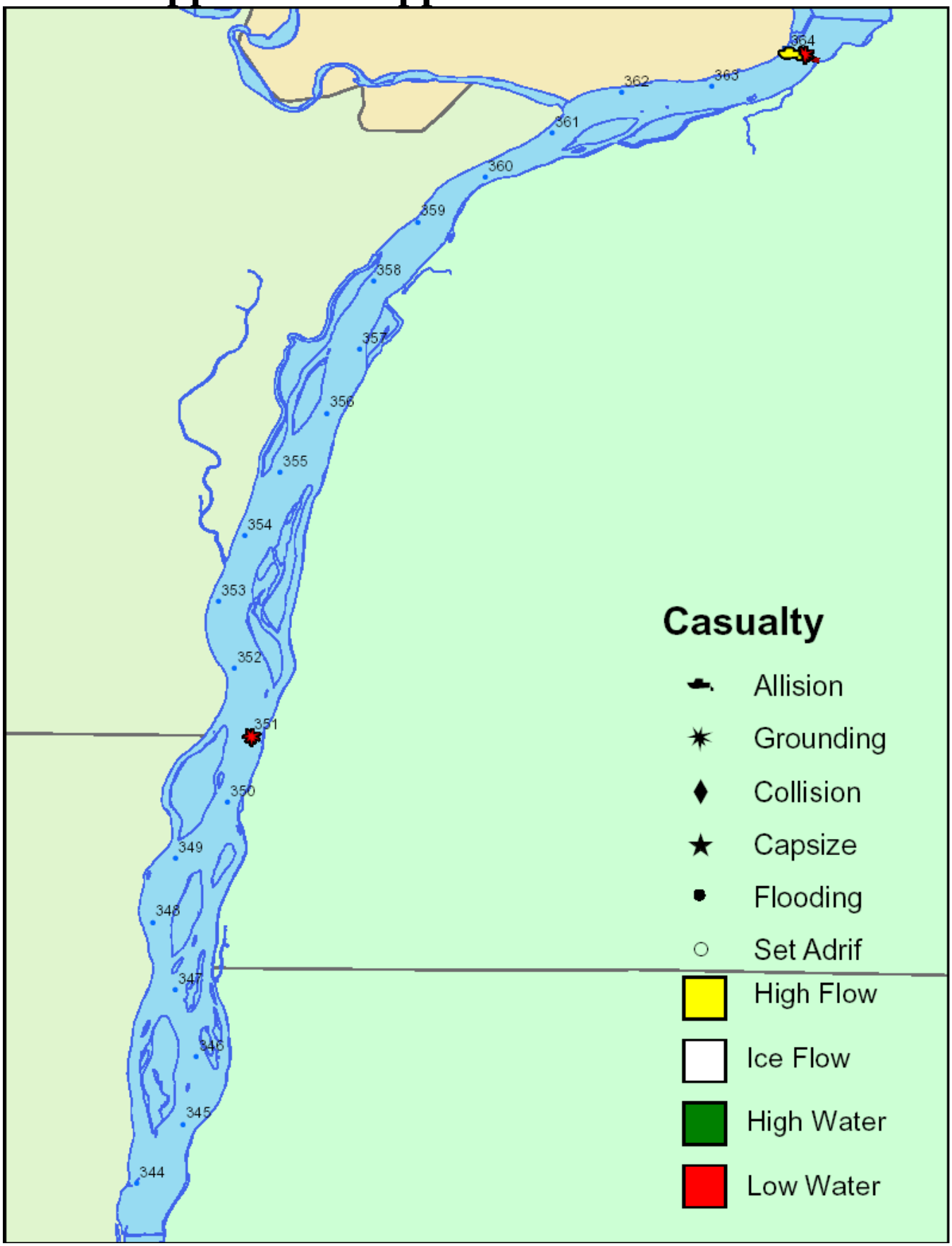
Zone 18
Upper Mississippi River 410.5 to 437.0



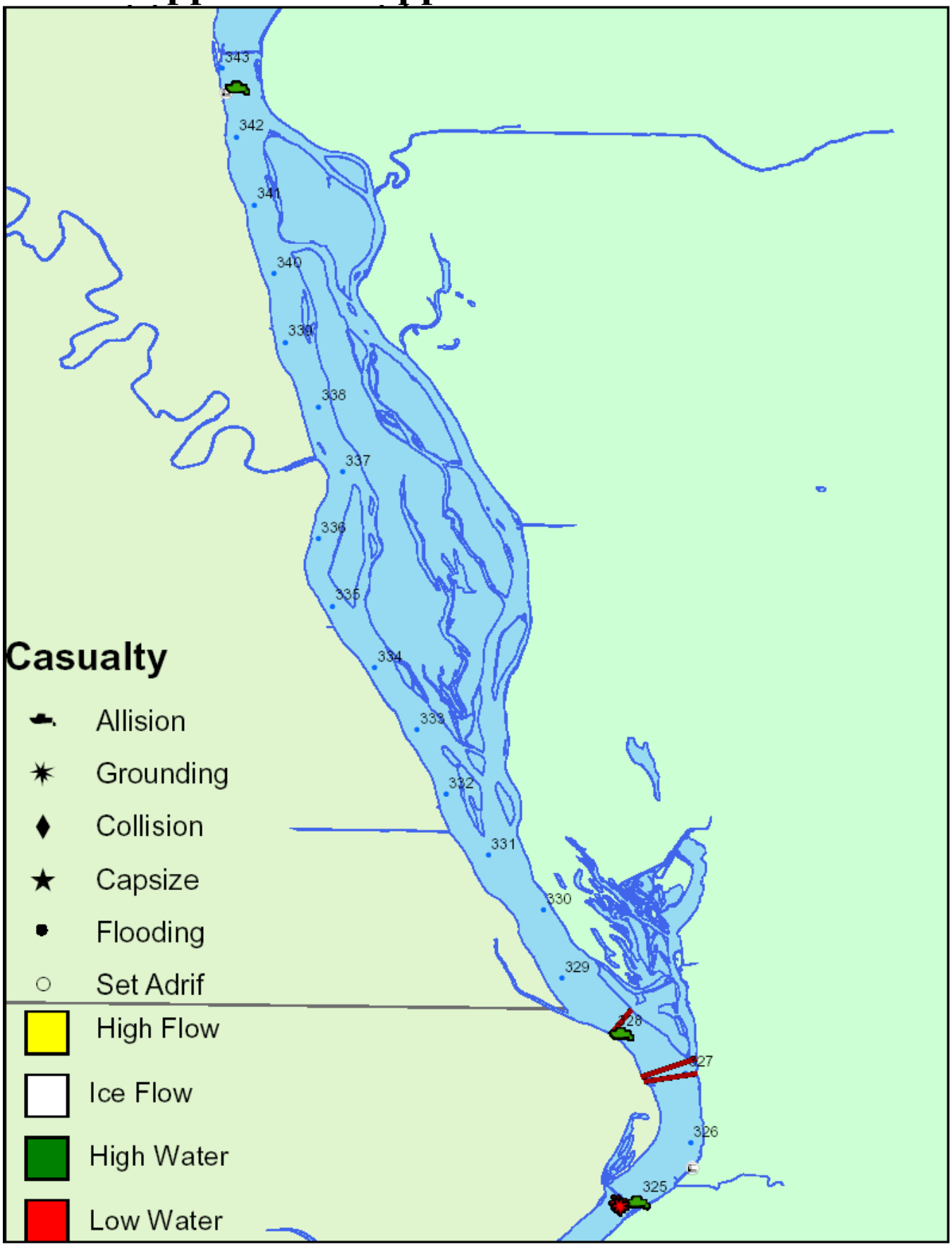
Zone 19
Upper Mississippi River 364.2 to 410.4



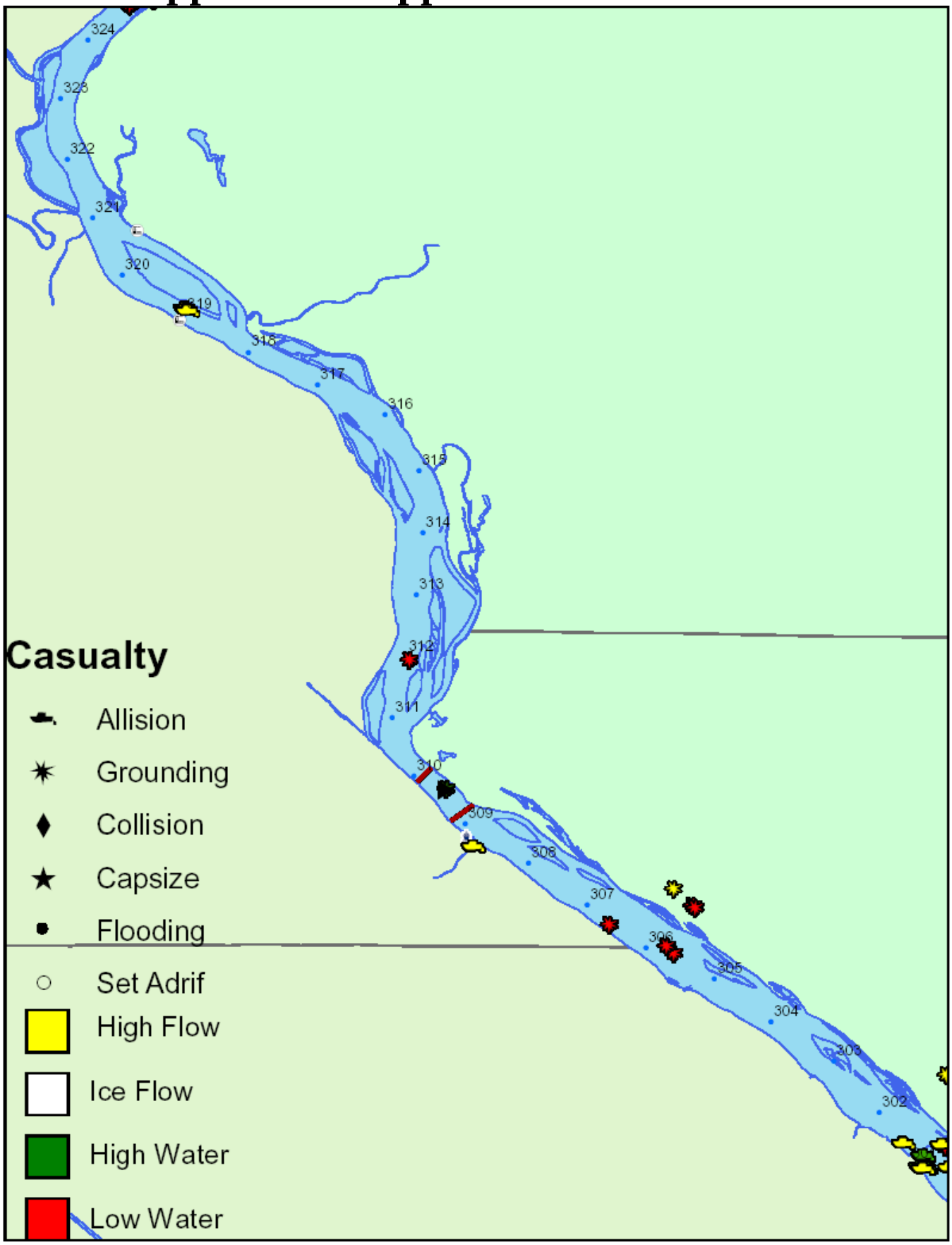
Zone 20
Upper Mississippi River 343.2 to 364.1



Zone 21
Upper Mississippi River 324.9 to 343.1



Zone 22
Upper Mississippi River 301.2 to 324.8



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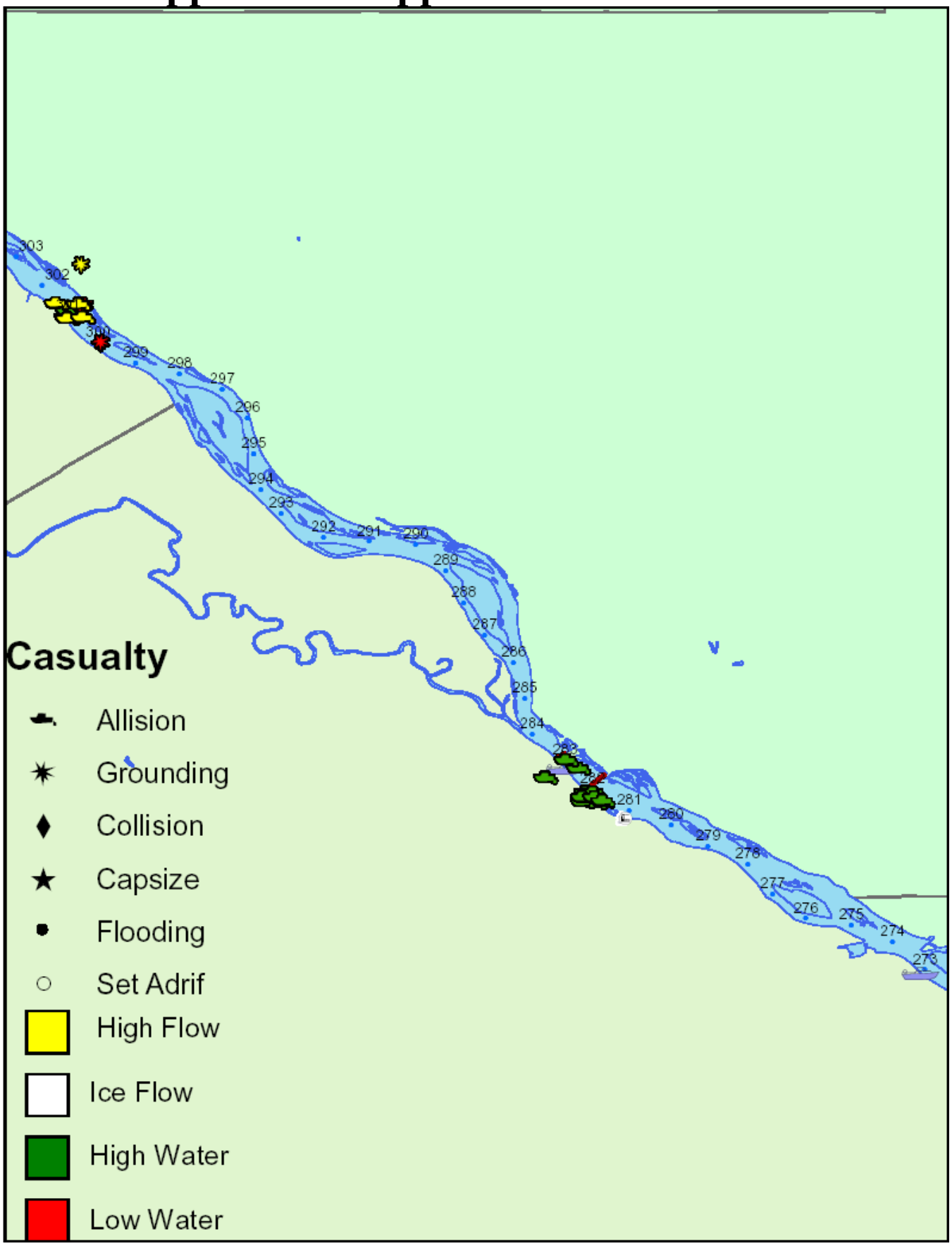
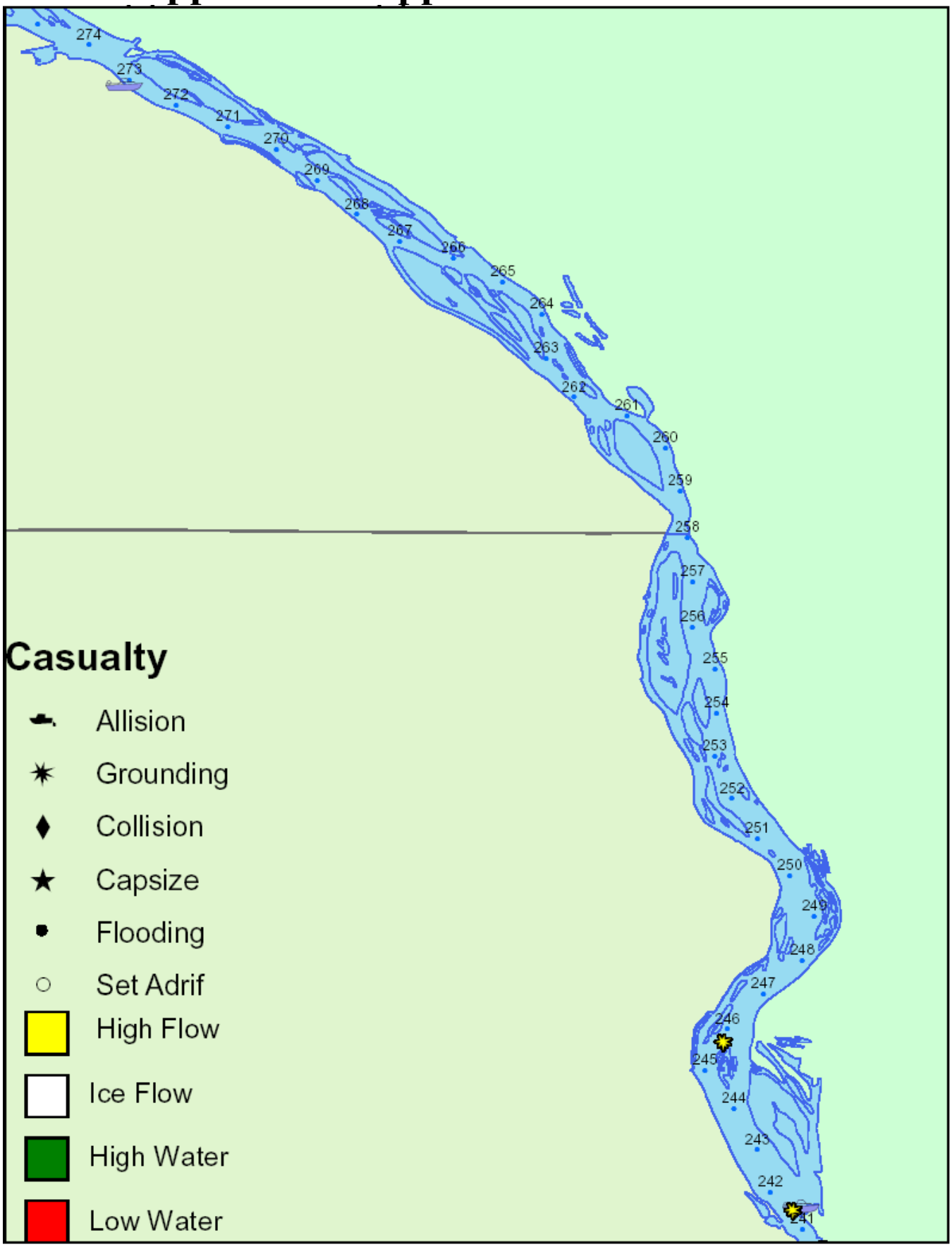
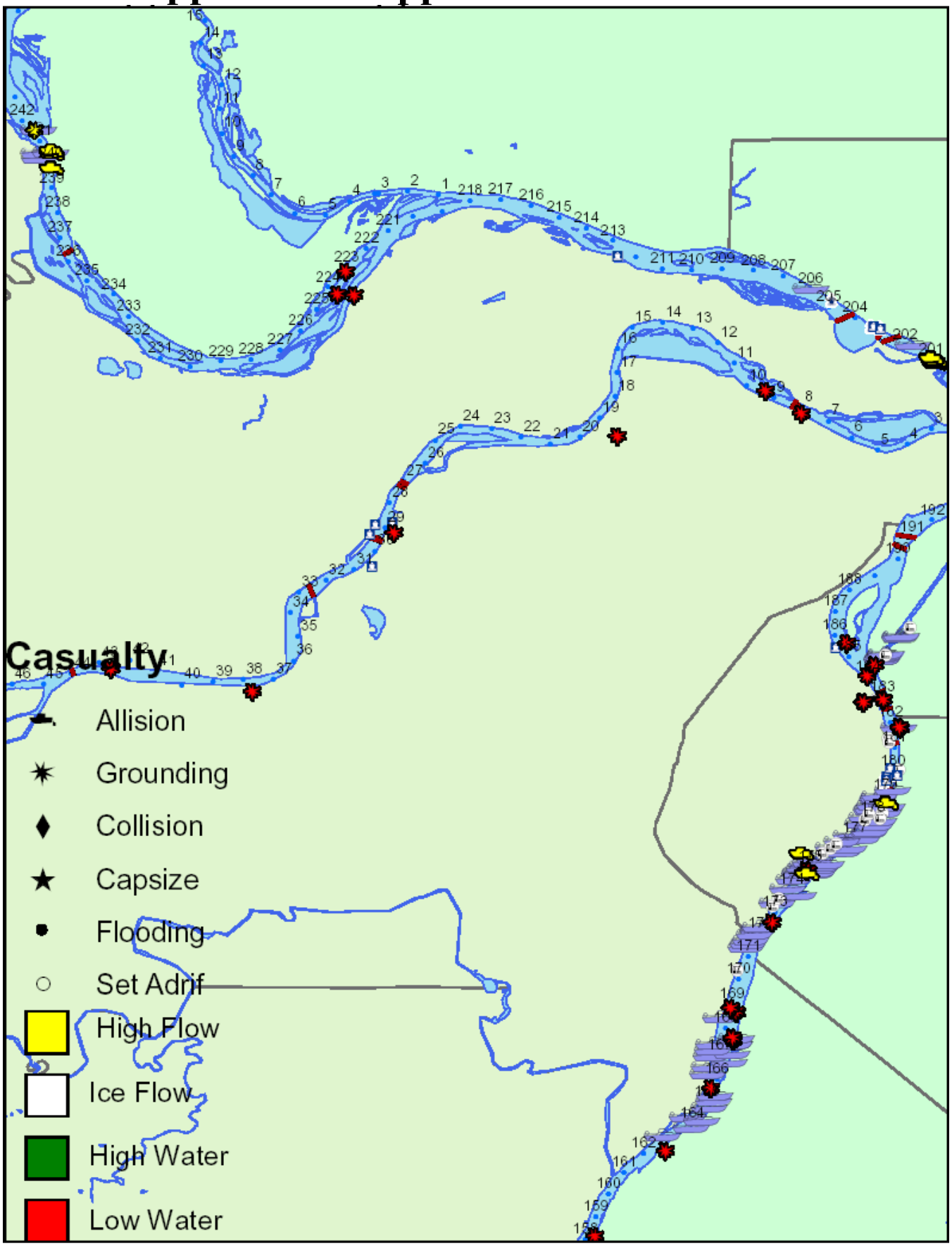
Zone 24
Upper Mississippi River 273.4 to 301.1



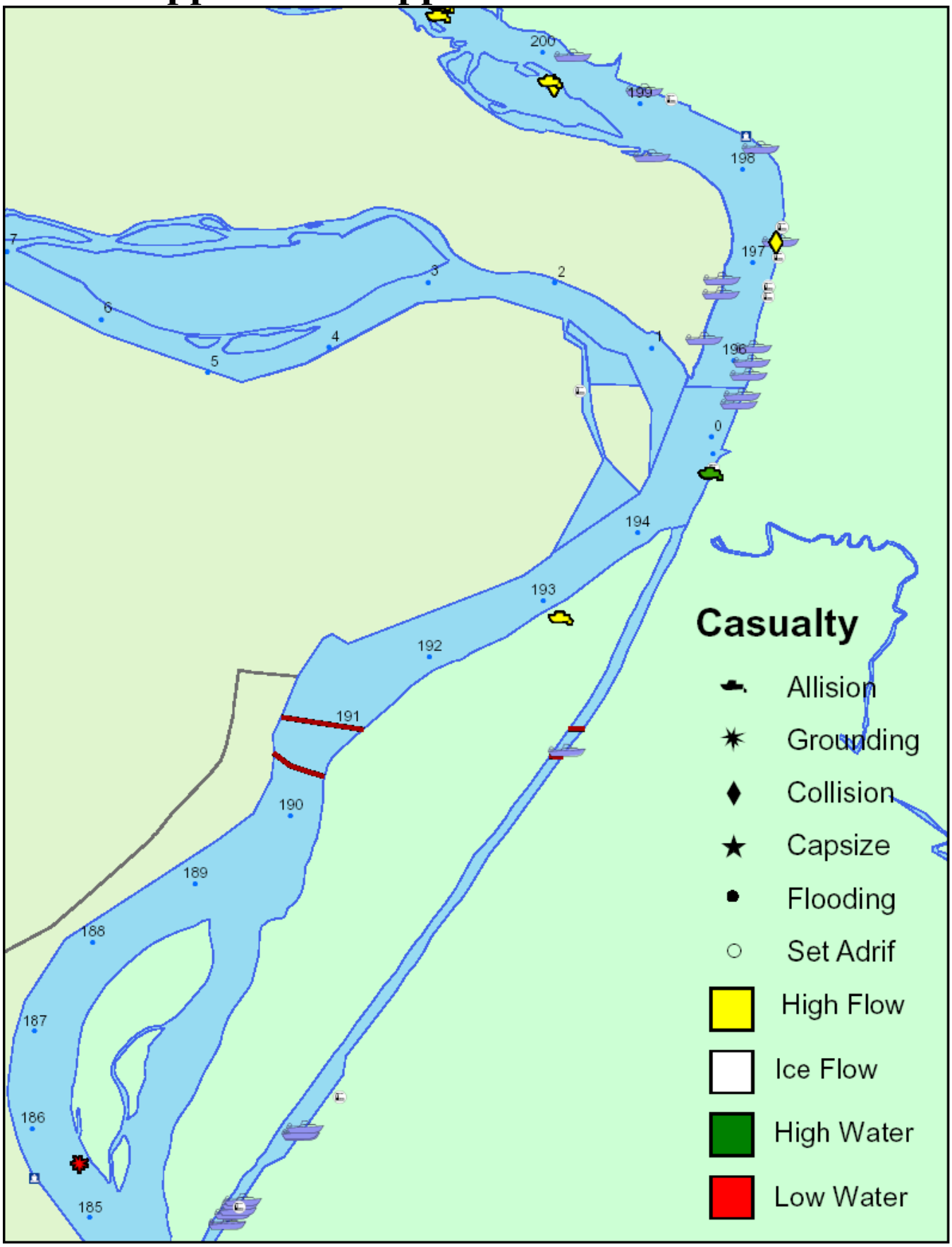
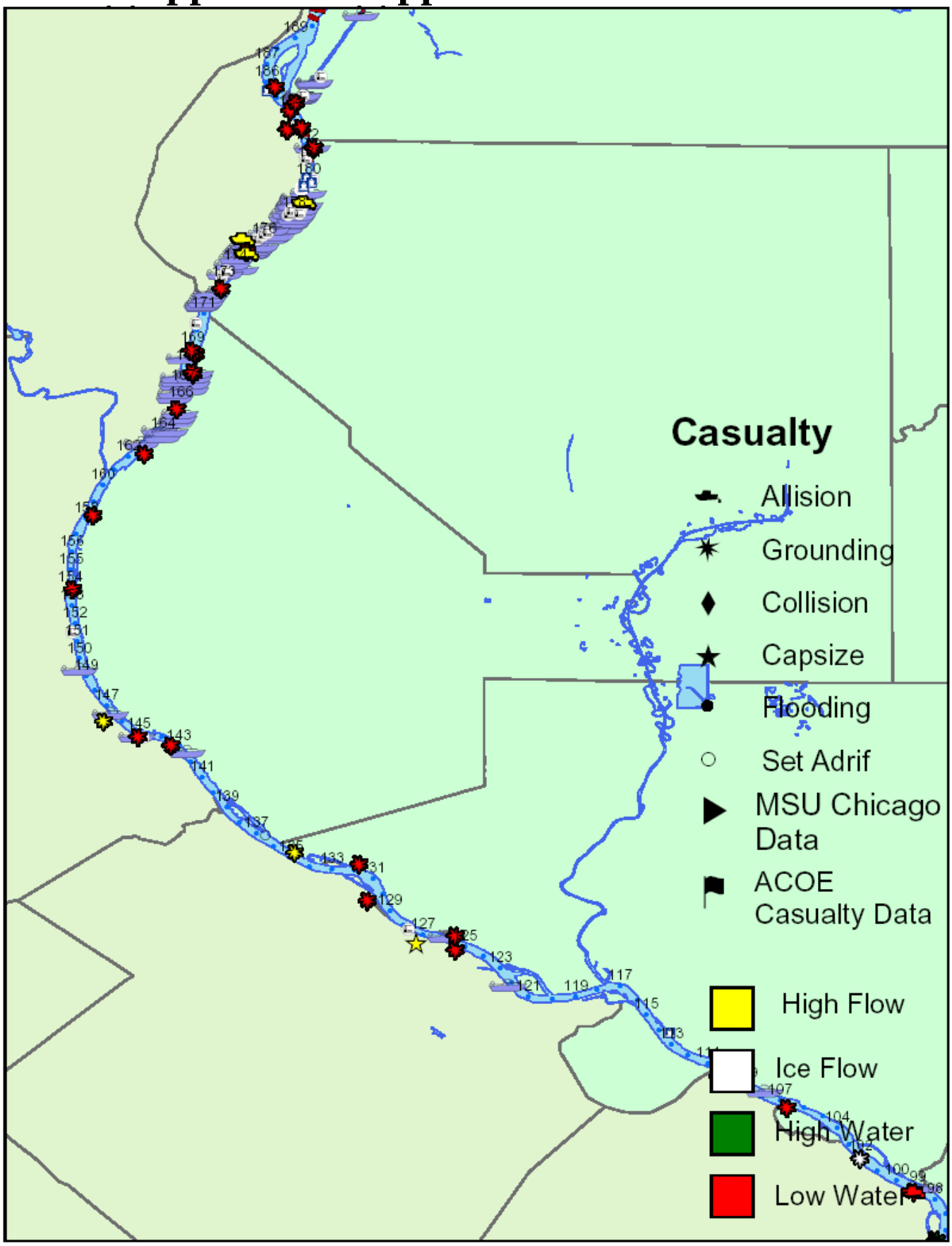
Zone 25
Upper Mississippi River 241.4 to 273.3



Zone 26
Upper Mississippi River 200.5 to 241.3



Zone 27
Upper Mississippi River 185.5 to 200.4



Zone 28
Upper Mississippi River 185.4 to 109.9