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Mark A. Wright
Vice President – Southern Region

September 5, 2018

Mr. Robert D. Lewald
Program Analyst – Office of Navigation Systems
U.S. Coast Guard
2703 Martin Luther King Jr. Ave. SE
Washington, D.C. 20593

RE: Coast Guard's Waterways Analysis and
Management System Study of the Western
Rivers Aids to Navigation System

Dear Mr. Lewald:

The American Waterways Operators is the national trade association for the tugboat, towboat and barge industry. AWO's member companies own and operate barges and towing vessels operating on the U.S. inland and intracoastal waterways; the Atlantic, Pacific and Gulf coasts; and the Great Lakes. Our industry's 5,500 towing vessels and 31,000 barges comprise the largest segment of the U.S.-flag domestic fleet. The tugboat, towboat and barge industry provides family-wage jobs and ladders of career opportunity for more than 50,000 Americans, including 38,000 positions as mariners on board our vessels, and supports more than 300,000 jobs in related industries nationwide. Each year, our vessels safely, securely and efficiently move more than 760 million tons of cargo critical to the U.S. economy, including petroleum products, chemicals, coal, grain, steel, aggregates, and containers. Tugboats also provide essential services in our nation's ports and harbors, including shipdocking, tanker escort and bunkering.

AWO appreciates the opportunity to provide comments on the importance of Western Rivers aids to navigation (AtoNs). We applaud the Coast Guard's decision to conduct a survey to allow mariners the opportunity to provide input that will assist in the development of the Coast Guard's Waterways Analysis and Management System (WAMS) study of the Western Rivers' AtoN system. The Western Rivers are a vital part of the U.S. marine highway system that efficiently delivers essential commodities throughout the nation via a fleet on the Mississippi River system that is estimated to be over 22,000 barges, as of March 2018.¹ Total commodity volumes moved via barge between U.S ports on the Western Rivers increased from 538.8 million tons in 2016 to 547.9 million tons in 2017, including 121.1 million tons of coal, 153.8 million tons of petroleum products, 98.3 million tons of agricultural products, and 53.9 million

¹ Barge Commodity Profile. Informa Economics IEG. Page 7. March 2018.

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tons of chemicals.² The average distance commodities traveled on the Western Rivers totaled 485 miles in 2016, with agricultural products, such as grain, corn, soybeans, and sugar traveling a staggering 996 miles on average. It has been estimated that the system supports more than \$200 billion in economic output annually and more than one million jobs.³

The efficient movement of waterborne commerce on the Western Rivers would not be possible without the utilization of physical AtoNs to support and enhance safe navigation. AWO has a long history of working with the Coast Guard to determine the appropriate balance between physical and electronic AtoNs on the inland waterways. In October 2013, the Coast Guard-AWO Safety Partnership's Mid-America Regional Quality Steering Committee (RQSC) established a Western Rivers Aids to Navigation Efficiency Quality Action Team (QAT) to evaluate and consider future changes to AtoN delivery and service in the Eighth and Ninth Coast Guard districts. The QAT met with mariners during eight meetings throughout the Western Rivers system and issued a preliminary report in January 2015. Two phases of this report have been completed through the RQSC, a partnership between AWO and the U.S. Coast Guard Eighth District. **The report explicitly states that navigation on the inland waterways cannot be conducted safely without some physical AtoNs.** We have included a copy of this report as an appendix to this letter, but here are the report's important conclusions:

- Buoys and other floating AtoNs, especially in bends, provide real-time environmental data such as current speed and direction. Professional mariners view these AtoNs as critical to maneuvering under constantly changing river conditions.
- Fixed structures at the entrance and exits to river bends give pilots a shore reference for steering and flanking.
- Crossing marks and mile boards have lost significance with the advent of electronic charting. Given the consistent feedback from mariners that mile boards are no longer needed due to electronic charting, the QAT recommended the Coast Guard consider disestablishing mile boards on the inland river system through the regulatory process.
- During the sessions, there was a strong consensus that regular AtoN assessments should occur between industry operating groups and Coast Guard representatives at the Sector or MSU level.
- Industry also expressed a willingness to help Coast Guard AtoN teams evaluate vessel operations efficiencies. Industry participants questioned whether the Coast Guard's inland buoy tenders were operated efficiently, but Coast Guard representatives explained that they were constrained by government requirements (such as bid laws) and older vessel repairs.

The Western Rivers AtoN QAT also conducted a baseline assessment of floating AtoNs with experienced licensed mariners, Sector commanders and the Officers in Charge (OICs) of buoy tenders. **The report concluded that “electronic navigation aids are not sufficient to replace physical aids on the vast majority of the Western Rivers” and “the mariners’ ability to ‘read’ the river facilitated by the physical buoys is critical to safe navigation.”** The QAT

² Barge Commodity Profile. Informa Economics IEG. Page 30-32. March 2018.

³ The Economic Profile of the Lower Mississippi River. Lower Mississippi River Conservation Committee. February 2014.

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determined that electronic aids “should be viewed as a supplement to augment floating buoys and not a replacement.” In addition, the report stated that the industry and the Coast Guard should conduct similar baseline assessments of all floating aids throughout the Western Rivers on a regular basis for the following reasons:

- The Western Rivers are dynamic and ever changing with constantly shifting channels, erosion, shoaling, and scouring. As a result, the rivers are continually fluctuating with high and low water. The information collected in this assessment will change over time, especially on the open river/non-pooled portions of the Upper and Lower Mississippi River south of St. Louis, and will require routine, deckplate- level communication in order for it to remain valid.
- Buoy tender officers rotate on average every two to four years. Assessing floating AtoN requirements with new OICs will help educate them on their customers’ needs while concurrently facilitating consistent, mutually beneficial dialogue that will build rapport between the OIC and local industry partners, nurturing trust and mutual respect. Annual assessments are considered critical by both industry and Coast Guard members engaged with the QAT.

Managing AtoNs during seasonally changing river conditions (high- and low-water events) requires additional Coast Guard resources. High- and low-water events necessitate heightened focus by the industry, as evidenced by the Waterways Action Plan.⁴ In order to produce a safer navigational environment, Coast Guard buoy tenders cannot wait until conditions return to normal. Managing river AtoNs is inherently different than managing coastal aids. As noted above, the Western Rivers environment is dynamic and constantly changing, which precludes reliance on design criteria found in other environments. For example, during low water, certain sections of the river may require a point and bend way channel depending on silting and rate of fall. However, this same section of river may not require a point and bend way channel during subsequent low water periods if the conditions in the area are different (e.g., rapid versus slow rate of fall increasing silting and decreasing self-scouring, etc.). Coastal, blue water ports lend themselves to stricter design criteria. In these areas, buoys mark an assigned position and once set to mark that position, are intended to remain on station for several years until serviced as part of a routine maintenance cycle. The changes constantly taking place throughout the Western River system requires buoy laydowns to be adjusted based on the prevailing conditions, precluding the Coast Guard’s ability to establish similar strict design criteria.

AWO greatly appreciates the Coast Guard’s decision to assess the navigational needs of mariners on the Western Rivers and the nation’s economic needs. AWO also encourages the Coast Guard to conduct a similar analysis of the Columbia/Snake River System (CSRS), which includes over 360 miles of inland navigable waterways and leads the nation in wheat exports.⁵

⁴ The Waterways Action Plan is a living documents that establishes a framework for agencies and industry to utilize when taking proactive or reactive steps to manage high-water and low-water events to ensure safety of life, and protection of infrastructure and the environment.

⁵ Columbia Snake River System Facts. Pacific Northwest Waterways Association.
<http://www.pnwa.net/factsheets/CSRS.pdf>

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Thank you again for the opportunity to comment. We would be pleased to discuss these comments further or provide additional information as needed.

Sincerely,

A handwritten signature in black ink that reads "Mark A. Wright". The signature is written in a cursive style with a large, stylized "M" and "W".

Mark A. Wright

Vice President – Southern Region

Attachment:

Report of the Mid-America Regional Quality Steering Committee's Western Rivers Aids to Navigation Quality Action Team. January 2018.

Report of the Mid-American Regional Quality Steering Committee's
Western Rivers Aids-to-Navigation Quality Action Team
January 2018

The Western Rivers Aids-to-Navigation (AtoN) Quality Action Team (QAT) was initiated on October 3, 2013, in accordance with the charter signed by Mid-America Regional Quality Steering Committee (RQSC) Co-Chairs CAPT John Arenstam, Eighth District Director of Western Rivers, and Mark Wright, AWO Vice President – Southern Region (Appendix 1.) This charter was a direct result of discussions between RADM Kevin Cook, Eighth District Commander, and members of the River Industry Executive Task Force and it was determined the RQSC was best positioned to conduct a holistic assessment of Western Rivers AtoNs to identify potential efficiencies while optimizing navigation safety.

RADM Cook and AWO President Tom Allegretti accepted the initial report from RQSC Co- chairs CAPT Christopher Palmer, Eighth District Director of Western Rivers and Mark Wright on January 22, 2015 (Appendix 2.) The Initial Report detailed the results of the first round of discussions held with industry representatives and Coast Guard personnel in the following cities: Vicksburg, MS; Memphis, TN; St. Louis, MO; Peoria, IL; Paducah, KY; Louisville, KY; and Huntington, WV. Participants were asked a series of open-ended questions to better understand stakeholder views regarding Western Rivers AtoN.

Originally, the term "efficiency" was used to describe the QAT's efforts. However, the term "efficiency" was initially viewed as an attempt to significantly reduce the number of existing physical river buoys and replace them with "virtual" electronic AtoN (e-AtoN). The term "optimization" was later adopted to effectively communicate the intent of the project.

Floating aids were the sole focus of the initial assessment for the following reasons:

1. Floating AtoNs were identified as the highest priority during the listening sessions noted in the January 20, 2015 QAT report.
2. The RQSC Co-chairs wanted to ensure a manageable span of control during the assessments. Including both fixed and floating AtoNs during the initial assessment was deemed to be too broad a focus area.

A system wide, base-line assessment of all floating aids has been completed with regional industry operating committees (i.e. LOMRC, IRCA, CORMIG, RIAC, etc.) and Coast Guard personnel from District Eight, the local Sectors, as well as Inland Buoy Tender Officers-in-Charge in the following cities: Natchez, MS; Vicksburg, MS; Memphis, TN; St. Louis, MO; Louisville, KY; Paducah, KY, Little Rock, AR and Mobile, AL. The assessment included the Mississippi, Ohio, Illinois, Cumberland, Tennessee, and Arkansas Rivers and the Tombigbee Waterway.

The various rivers and waterways were broken down into manageable sections using the 18 inland buoy tender (WLR) operating areas as sections of focus for each assessment. The OIC would display on a screen the most current buoy laydown using either the Vega or Aldebaran Charting tools. Beginning downriver, every five mile stretch of river was reviewed and assessed by the OIC with experienced licensed operators on that particular waterway. The optimal buoy laydown for that stretch of waterway (including high and low water sets for non-pooled areas) was discussed and documented in a spreadsheet. If e-Aton (i.e. virtual Aton) was a viable option to replace or augment the physical AtoN, this fact was noted. In addition, and most importantly, the QAT tried to “capture corporate knowledge” wherever possible. For example, if a particular bend in the river required a certain buoy set to support safe navigation, not only was the number of buoys, their location and spacing annotated in the spreadsheet but also the “why” this particular set was needed in this particular location. The “captured corporate knowledge” will help inform and educate subsequent assessments and new personnel assigned to carry out the AtoN mission in the future.

The attached assessment effectively fulfills, as it pertains to floating aids, the charter’s requirement to:

“Complete a base-line AtoN assessment with the Coast Guard throughout the inland river system to reduce non-priority aids. The analysis would also be used as a starting point for establishing a policy for AtoN waterway design. This has never been done systematically for AtoN on the inland rivers...These base-line assessments will provide the data needed to establish formal design criteria...A team will be selected to conduct these assessments which will include licensed pilots, Officers in Charge of inland tenders, Sector AtoN Officers and Eighth Coast Guard District waterways design staff.” [Western Rivers Aids to Navigation Efficiency Quality Action Team Preliminary Report dtd January 20, 2015]

Several conclusions were made/validated during the floating AtoN assessments:

- 1) Electronic navigation aids (i.e. Virtual AIS-AtoNs) are not sufficient to replace physical aids throughout the vast majority of the Western Rivers. The mariner’s ability to “read” the river facilitated by the physical buoys is critical to safe navigation. This function cannot be replaced by existing electronic AtoN. Electronic aids should be viewed as a supplement to augment floating buoys and not a replacement.
- 2) Industry and the Coast Guard should conduct similar base-line assessments of all floating aids throughout the Western Rivers on a regular basis for the following reasons:
 - A.) The Western Rivers are dynamic and ever changing with constantly shifting channels, erosion, shoaling, and scouring all as a result of continually fluctuating high and low water. The information collected in this assessment is perishable with time, in particular on the open river/non-pooled portions of the Upper and Lower Mississippi River south of St. Louis, and will require routine, deck plate level communication in order for it to remain valid.

B.) Coast Guard WLR OICs rotate on average every 2-4 years. Assessing floating AtoN requirements with new WLR OICs will help educate them to their customer's needs while concurrently facilitating consistent, mutually beneficial dialogue which will build rapport between the OIC and their local industry partners nurturing trust and mutual respect. Annual assessments were welcomed by both industry and Coast Guard personnel involved throughout these assessments.

- 3) The QAT should reassess the requirement noted in the original QAT Charter to *"develop design guidance on how to best mark the available channel limits."* As noted above, the Western Rivers environment is dynamic and everchanging, which precludes "strict" design criteria. For example, during low water, certain sections of the river may require a point and bend way channel depending on silting and rate of fall. However, this same section of river may not require a point and bend way channel during subsequent low water periods if the conditions in the area are different (i.e. rapid versus slow rate of fall increasing silting and decreasing self-scouring, etc.). Coastal, blue water ports lend themselves to stricter design criteria. In these areas, buoys mark an assigned position and once set to mark that specific assigned position, are intended to remain on station for several years until serviced as part of a routine maintenance cycle. This long-term, consistent AtoN placement lends itself to supporting strict design criteria. The omnipresent changes constantly taking place throughout the Western River system requires buoy laydowns to be adjusted based on the prevailing conditions precluding our ability to establish similar strict design criteria.

The attached floating AtoN assessment is intended to help guide and inform Coast Guard buoy placement in the future and provide the Coast Guard and the maritime industry a point of departure to discuss floating AtoN needs. However, this assessment should not be viewed as a hard and fast buoy laydown, in particular along the open, non-pooled areas of the Mississippi River. **As evidenced by the dialogue and rapport established during these assessments, frequent, candid and open dialogue between the Coast Guard Sectors and their industry operating committees is key to ensuring the ever changing and critical AtoN needs throughout the Western Rivers are effectively communicated and addressed to ensure navigation safety.**

A second assessment of all fixed aids to navigation will be initiated and led by the RQSC between the Coast Guard and the maritime industry using a similar process as noted above for the floating AtoN assessment. The RQSC anticipates having this fixed AtoN assessment completed in CY2018 and once complete, will finalize the system wide assessment called for in the Western Rivers Aids to Navigation Efficiency Quality Action Team Preliminary Report dated January 20, 2015.

Mid-America Regional Quality Steering Committee

Western Rivers Aids to Navigation Efficiency

October 3, 2013

I. TASK TITLE

Identify potential efficiency improvements in the Western Rivers Aids to Navigation (AtoN) system while maintaining a safe and secure waterway.

II. BACKGROUND

The Eighth District spends approximately \$6.7M annually for Western Rivers buoys and hardware to mark the western rivers system. District Eight needs to identify efficiencies in all mission areas and specifically conduct a review of Western River AtoN requirements with maritime industry involvement. This review is timely given the rapid development and usage of electronic navigation in the rivers.

III. PROBLEM STATEMENT

This Charter establishes a RQSC Quality Action Team to assess potential options for reducing the cost of the AtoN mission without adversely impacting maritime safety and mobility. The recommended option(s) will be available for consideration by 01 October 2014. Potential solutions may include all available options, including but not limited to an aid system design criteria, aid servicing guidelines, and/or changes to existing regulations that are outdated. The Quality Action Team will develop and review potential solutions, while considering operational realities and the safe navigational flow of waterborne commerce.

IV. TASK

Establish a Quality Action team comprised of industry and Eighth District personnel, via the Regional Quality Steering Committee (RQSC), to develop proposals to achieve the established objectives. The main objective of the proposals must be safe commercial navigation on the inland river system, while maintaining a cost effective and efficient service delivery system.

The proposal should be accomplished in five phases.

Phase I: Develop prototype AtoN criteria for inland waterways navigation. The system design should give overall guidance on safety considerations, variables that influence the need for buoys (include river conditions, currents, nighttime restrictions, etc. - utilize information contained in the Waterways Action Plan), and possible alternatives to current floating buoys.

Phase II: Utilizing the above information develop design guidance on how to best mark the available channel limits and include general servicing guidelines. Utilize the same annexes as the Waterways Action Plan to consider guidance on buoy placement.

Phase III: Participate and assist in the USCG HQ led Joint Capabilities Technical Demonstration (JCTD) - electronic and visual AToN needs on the Western Rivers. This effort will help USCG and industry analyze the role of electronic charting and navigation within the entire AtoN system. Identify the benefits and challenges of replacing AtoN with electronic charting and navigation.

Phase IV: Develop suggested changes to regulations. This may include but not limited to eliminating regulations that no longer are necessary for safe transit with modern technology.


Phase V: Develop outline of suggested training needed to accommodate increased usage of electronic charting and its relation to AtoNs..

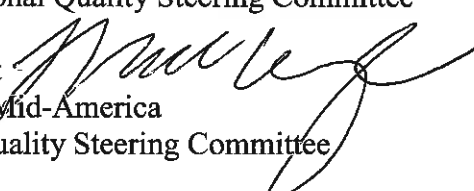
V. ESTIMATED TIME TO COMPLETE TASK

Workgroup participants will be named by October 15, 2013.

A project management plan and timeline for full completion of the task should be established by November 30, 2013.

VI. RQSC CONTACTS

Eighth District Contact:  CAPT John J Arenstam
CO-Chair, Mid-America
Regional Quality Steering Committee


Industry Contact:  Mark Wright
CO-Chair, Mid-America
Regional Quality Steering Committee

**Coast Guard-AWO Safety Partnership
Mid-America Regional Quality Steering Committee**

Western Rivers Aids to Navigation Efficiency Quality Action Team Initial Report

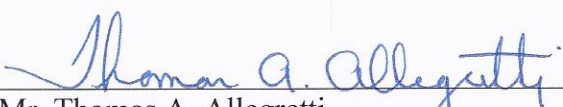
On behalf of the U.S. Coast Guard's Eighth District and the American Waterways Operators, we accept the initial report of the Western Rivers ATON Efficiency Quality Action Team (QAT) by Mid-America Regional Quality Steering Committee (RQSC) Co-Chairs, CAPT Christopher Palmer and Mr. Mark Wright. The report embodies the value created by the Coast Guard-AWO Safety Partnership.

We encourage the QAT to proceed to the next phase, as outlined in the report. In addition, we recommend that the Coast Guard and AWO use this process to determine ATON efficiencies nationally with the Atlantic and Pacific RQSC's. The process is an effective method for ensuring navigational needs and safety for the mariner in the towing industry.



RADM Kevin S. Cook
Commander, U.S. Coast Guard Eighth District

1/22/2015
Date



Mr. Thomas A. Allegretti
President & CEO, The American Waterways Operators

January 22, 2015
Date

TO: Eighth Coast Guard District Commander
Mid-America RQSC Members

CC: Western Rivers Aids-to-Navigation Quality Action Team

FROM: Mid-America RQSC Co-Chairs

DATE: January 20, 2015

RE: Western Rivers Aids to Navigation Efficiency Quality Action Team
Preliminary Report

The Mid-America RQSC established a Western Rivers Aids-to-Navigation Efficiency Quality Action Team (QAT) in October 2013 to evaluate and consider future changes to Aids to-Navigation (AtoN) delivery and service on the Western Rivers. The need for this QAT developed from a conversation between the industry members of the River Industry Executive Task Force (RIETF) and RADM Kevin Cook, Commander - Eighth District Coast Guard. The group agreed that a collaborative effort to identify how to accomplish the Coast Guard's AtoN mission in a more cost-effective manner and the emergence of electronic navigation tools was needed. As stated in the QAT Charter, it is an effort to "assess potential options for reducing the cost of the AtoN mission without adversely impacting maritime safety and mobility." This initial report is being provided to update the Eighth Coast Guard District Commander and Mid-America RQSC members on progress made thus far.

Since the formation of the QAT in November 2013, the following actions have been completed:

1. QAT members and industry representatives participated in the nationwide electronic navigation (E-NAV) listening sessions held within the Eighth Coast Guard District (New Orleans and St. Louis). The listening sessions were jointly hosted by the Army Corps of Engineers, the Coast Guard (CG-NAV-1), and NOAA and were well attended by industry participants. The listening sessions were designed to discuss the present and future state of electronic navigation and to solicit feedback from mariners. Currently, the Eighth

Coast Guard District is working in partnership with CG-NAV-1 to test virtual Automated Information System (AIS) based aids on bridge span piers in Sector New Orleans. The Eighth Coast Guard District is one of several test-beds throughout the nation. The RQSC will continue to monitor and participate in this joint venture as stated in the QAT Charter.

2. Mid-America RQSC Co-chairs CAPT Chris Palmer and Mr. Mark Wright, RQSC and QAT members have met with professional mariners and industry representatives in eight locations throughout the Western Rivers soliciting feedback on the state of the current AtoN system design and administration. Listening sessions were held in the major inland ports of St Louis, MO; Louisville, KY; Memphis, TN; Vicksburg, MS; Huntington, WV; Paducah, KY; Peoria, IL; and Baton Rouge, LA. The QAT made a particular effort to engage operation committees such as LOMRC, RIAC, IRCA, and ICE to help generate feedback.

The meetings held with mariners and industry representatives were based on the following questions about physical AtoN's as discussion primers:

- What do you like about what we have now?
- What don't you like about what we have now?
- What is the Coast Guard doing that you need?
- What is the Coast Guard doing that you don't need?
- What is the Coast Guard not doing that you need?

Consensus feedback was that electronic navigation alone would be insufficient to support safe navigation of commercial vessels on the inland river system. Physical AtoN, such as buoys, will need to remain a necessary part of safe navigation, especially in critical areas.

The groups agreed on prioritization of AtoN as follows:

1. **Highest priority:** Buoys and other floating AtoN, especially in bends, provide real-time environmental data such as current speed and direction. The professional mariners view this AtoN as critical to maneuvering under constantly changing river conditions.

2. **Medium priority:** Fixed structures at the entrance and exits to river bends give pilots a shore reference for steering and flanking.
3. **Lowest priority:** Fixed structures within the bends (such as, lights & day beacons), on points and in straits. Crossing marks and mile boards have lost significance with the advent of electronic charting. Given the consistent feedback from mariners that mile boards are no longer needed due to electronic charting, this QAT recommends the Coast Guard consider disestablishing mile boards on the inland river system through the public comment process.

During the sessions, there was a strong consensus that regular AtoN assessments should occur between industry operating groups and Coast Guard representatives at the Sector or MSU level.

Industry also expressed a willingness to help Coast Guard AtoN teams evaluate efficiencies with vessel operations.

The QAT should proceed and complete the tasks outlined the Charter. In order to do so, we recommend the following next steps and actions :

1. The Western Rivers AtoN QAT Charter will remain in effect to properly complete the entire project and address all phases of the charter. Deadlines and phases are detailed below.
2. Complete a base-line AtoN assessment with the Coast Guard throughout the inland river system to reduce non-priority aids. The analysis would also be used as a starting point for establishing policy for AtoN waterway design. This has never been done systematically for AtoN on the inland rivers. Currently the work group is in the planning stages of coordinating these AtoN assessments. These base-line assessments will provide the data needed to establish formal design criteria. Initial discussions on criteria have been a regular part of AtoN feedback sessions. A team will be selected to conduct these assessments which will include licensed pilots, Officers in Charge of inland river tenders, Sector AtoN Officers and Eighth Coast Guard District Waterways design staff. **Target Date:** June 30, 2015.

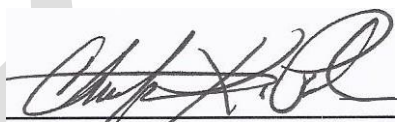
- 3 Following completion of the AtoN base-line assessment, a separate workgroup consisting of Coast Guard and industry subject matter experts will be tasked with codifying design criteria. These measures will satisfy the provisions of Phases I and II of this charter.

- 4 During several feedback sessions, industry members asked if the Coast Guard could provide clarification on chart carriage requirements under 33 CFR 164.72. They specifically asked: "Do electronic charts satisfy the current regulations, or are they also required to carry paper charts?" This came up due to the vetting process that takes place between companies as part of their auditing requirements. Currently, some companies are requiring paper copies of chart books for the Western Rivers because they are of the belief Coast Guard requires this under the regulations. Some in industry feel this is financially burdensome because they must keep updated paper charts on board when their primary source of charting is electronic. The Coast Guard National Center of Excellence (NCOE) for Towing Vessels is currently seeking clarification from CG-SP on this matter. This is the only issue brought up thus far pertaining to Phase IV. **Target date:** June 30, 2015

- 5 Phase V identification of training needs to accommodate increased usage of electronic charting will continue to be discussed and developed as part of Phases III and IV.

- 6 Status reports will be provided every six months; next report due April 30, 2015.

Eighth District:



 CAPT Christopher K. Palmer
 Co-Chair, Mid-America RQSC

1/20/15
 Date

Industry:



 Mr. Mark Wright
 Co-Chair, Mid-America
 RQSC

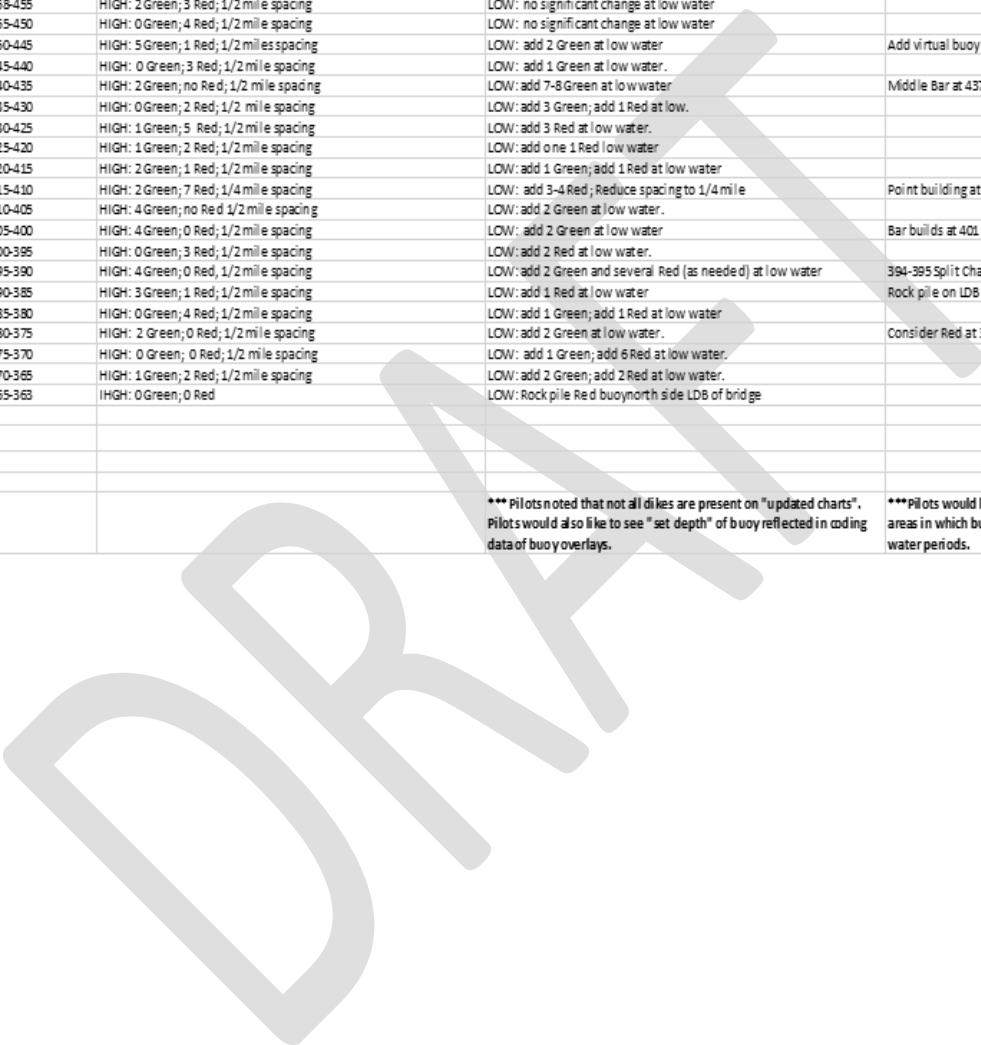
1/20/15
 Date

CGC GREENBRIER

River Segment	High Water	Low Water	Notes
			24
LMR 171-361	High Water: Trigger point of 43' FT and falling on the Natchez Gauge.	Low Water: Trigger point 20' FT and falling on the Natchez Gauge for CGC GreenBRIER reference	
361 - 353	High Water: 3 Red Buoys: 1 on dike and 2 below at 1/2 mile spacing. 6 Green Buoys at dikes.	Low Water: 4 Red, 6 Green.	RDB has 6 dikes, LDB has 2 Dikes. Buoys set at 1/2 mile spacing
352 - 349	High Water: 4 Red buoys: 4 on dikes; 1 mile spacing	Low Water: 4 Red buoys: 4 on dikes spaced 1 mile spacing	
348 - 343	High Water: 4 Green Buoys, 3 dikes; Green buoy at lead in Lower at MM 343.7; 1/2 mile spacing	Same as High Water	Glasslock LT is lead-in for bend at Lower end if bar. Low Water: Shoaling in the area requiring placement of buoy.
343-338	High Water: No consistent buoy lay down for stretch.	Low Water: No consistent buoy lay down for stretch.	
338-333	High Water: 9 Green, 5 Red; 1/2 mile spacing; 4 dikes; lay down remains the same High/Low Water	Same as High water	
332-327 (Grand Bend)	High Water: 10 red, no Green; 1/2 mile spacing	Low Water: 10 red, no Green; 1/4 spacing. Recommend 1/4 mile spacing above Grand Bend Light; 1/2 mile below.	
321-330	High Water: 5 Green; no red; same lay down High or Low Water; 1/2 mile spacing.	Same as High Water	
321 - 318	High Water: No Green; 3 red.	Low Water: 4 Green buoys; 3 Red; 1/2 mile spacing.	
318 - 316	High Water: No Green; 4 red 1/2 mile spacing.	Low Water: No Green buoys; 4 Red; 1/2 mile spacing.	
311 - 315	High Water: 2 Green Buoys, 1 mile spacing. High Water: 5 Green; No Red, 3/4 mile spacing. Pile up stock of buoys at this location when buoys need to be pulled due to rise of river. Widen Green up to Lump Point Plantation, LA	Low Water: 9 Green buoys; 5 Red; 1/4 mile spacing. Establish point way and bend way. Two channels due to bar in middle of channel.	Do not see a junction buoy on the river. Like seeing 1 red and 1 Green. This area is a problem area due to surveying middle bar.
311 - 305	High Water: 2 Green Buoys, 1 mile spacing. High Water: 5 Green; No Red, 3/4 mile spacing. Pile up stock of buoys at this location when buoys need to be pulled due to rise of river. Widen Green up to Lump Point Plantation, LA	Low Water: 5 Green Buoys; no Red; 3/4 mile spacing.	
300 - 305	High Water: 1 Green on trail dike; 4 Red, 1/2 mile spacing. Remove Red below Shreve Cut-off due to back channel.	Low Water: 1 Green buoy; 6 red; 1/2 mile spacing.	
300 - 297	High Water: 1 Green, 4 Red on dikes.	Low Water: High Water: 1 Green, 4 Red on dikes, Low Water: 6 Green, 5 Red; 1/2 mile spacing. Recommend adding a point way and bend way channel MM 293 Leatherman Point comprised of 6 Green, 6 Red.	Recommend add 1 Green on Trail Dike just below Smithland Lower Light at both High and Low Water
297 - 289	High Water: 4 Green, 3 Red, 1/2 mile spacing. Recommend pushing in Green buoys below Leatherman point for slack water.		
289 - 287	High Water: No Green, no Red.	Low Water: 3 Green, No Red; 1/2 mile spacing.	Pilots discuss: During High Water virtual buoys could work over dikes due to diving buoys and high risk evolution for CG recovery of buoy. Rose point system has large buoy markers that cover large part of river and sometime limit view of channel.
285 - 282	High Water: 1 Green, 2 Red. 1/2 mile spacing	Low Water: 1 Green, 2 Red; 1/2 mile spacing	
282 - 274	High Water: No Green, 8 Red. 1/4 mile and 1/2 mile spacing. Recommend removing 2 Red above tum. High Water: 6 Green, No Red. 1/2 mile and 1/4 mile in center for spacing. Recommend widen channel as much as possible.	Low Water: No Green, 8 Red; 1/4 mile, 1/2 mile spacing.	
274 - 265	High Water: 6 Green, No Red. 1/2 mile and 1/4 mile in center for spacing. Recommend widen channel as much as possible.	Same as High Water Low Water: 7 Green, 7 Red. 1/4 mile spacing. Area prone to shoaling. Establish point way and bend way when needed due to bar in middle of channel.	
265 - 261	High Water: 3 Green, 1 Red. 1/2 mile spacing.	Low Water: 2 Green, 1/2 mile spacing	
261	High Water: No Green, no Red.		
260 - 254	High Water: No Green, 6 Red; 1/4 and 1/2 mile spacing.	Low Water: No Green, 8 Red; 1/4 mile, 1/2 mile spacing.	Thomson Creek prone to shoaling after flash flooding and may require additional red buoys due to shoaling.
254 - 250	High Water: 5 Green, 1 Red; 3/4 mile spacing	Low Water: 6 Green, 1 Red; 1/2 mile spacing.	
250 - 245	High Water: 3 Green, 4 Red; 1/2 mile spacing	Low Water: 3 Green, 8 Red; 1/2 mile spacing.	
245 - 238	High Water: 5 Green, 3 Red; 3/4 mile spacing	Low Water: 5 Green, 4 Red; 3/4 mile spacing. May require additional Red(s) at lower water conditions.	
238 - 233	High Water: No Green, no Red.	Low Water: 5 Green, No Red; 1/4 mile spacing. Above Baton Rouge 17' FT try to remove 2 Green.	When Baton Rouge gauge above 17' FT, may need to remove 2 Green.
233 - 223	High Water: No aids set by Greenbrier	Low Water: No Aids set by Greenbrier	
223 - 220 (Missouri Bend)	High Water: 4-5 Red; no Green; 1/2 mile spacing	Low Water: 7-8 Red; 1/4-1/2 mile spacing	Leave chute clear when Baton Rouge gauge reads 20-foot or more.
220-215 (Manchaca)	High Water: No Red; 8 Green; 1/2 miles spacing	Low Water: No Red; 8 Green; 1/2 mile spacing	No buoys or sail line reflected in Corps download buoy lines.
215-208 (Plaquemines)	High Water: 5 Red; no Green; 1/2 mile	Low Water: no Green; 4 Red; 1/2 mile spacing	Critical lower red buoy routinely off station.
208-192 (Point Clair)	High Water: 2 Green	Same as High Water	
192-190 (White Castle)	High Water; 4 Red; no Green; 1/2 mile spacing	Low Water: 4 Red; no Green; 1/2 mile spacing	
188-190 (81-mile Point)	High Water: 3 Green; no Red	Low Water; 3 Green; no Red	
190-179	High Water: 2 Green; 2 Red	Low Water: 2 Green; 2 Red	
179-171 (Point Houmas)	High Water: 1 Red; 2 Green	Low Water: 1 Red; 2 Green	

CGC KICKAPOO

River Segment	HIGH WATER	LOW WATER	Notes:
LMR 363-480 AHP	KICKAPOO uses Wicksburg Gauge for Buoy Placement HIGH GAUGE: 32-FT and Falling	LOW GAUGE: 15-FT	
480-472	HIGH: 6 Green; 3 Red; 1/2 mile spacing	LOW: 0 Red, add 1-2 Green, 1/4-1/2 mile spacing	
472-467	HIGH: 1 Green; 5 Red; 1/2 mile spacing		Add one Green VIRTUAL BUOY at Klondike Landing if possible
467-463	HIGH: 0 Green; 4 Red; 1/2 mile spacing	LOW: 1 Green; add 1 Red; 1/4-1/2 spacing as needed Low: No real change during low water	
463-458	HIGH: 5 Green; 0 Red; 1/2 miles spacing	LOW: add 2 Green	
458-455	HIGH: 2 Green; 3 Red; 1/2 mile spacing	LOW: no significant change at low water	
455-450	HIGH: 0 Green; 4 Red; 1/2 mile spacing	LOW: no significant change at low water	
450-445	HIGH: 5 Green; 1 Red; 1/2 miles spacing	LOW: add 2 Green at low water	Add virtual buoy on lower dike Red side
445-440	HIGH: 0 Green; 3 Red; 1/2 mile spacing	LOW: add 1 Green at low water.	
440-435	HIGH: 2 Green; no Red; 1/2 mile spacing	LOW: add 7-8 Green at low water	Middle Bar at 437: marked at 20-ft
435-430	HIGH: 0 Green; 2 Red; 1/2 mile spacing	LOW: add 3 Green; add 1 Red at low.	
430-425	HIGH: 1 Green; 5 Red; 1/2 mile spacing	LOW: add 3 Red at low water.	
425-420	HIGH: 1 Green; 2 Red; 1/2 mile spacing	LOW: add one 1 Red low water	
420-415	HIGH: 2 Green; 1 Red; 1/2 mile spacing	LOW: add 1 Green; add 1 Red at low water	
415-410	HIGH: 2 Green; 7 Red; 1/4 mile spacing	LOW: add 3-4 Red; Reduce spacing to 1/4 mile	Point building at Buckridge Lt on LDB
410-405	HIGH: 4 Green; no Red 1/2 mile spacing	LOW: add 2 Green at low water.	
405-400	HIGH: 4 Green; 0 Red; 1/2 mile spacing	LOW: add 2 Green at low water	Bar builds at 401 on RDB
400-395	HIGH: 0 Green; 3 Red; 1/2 mile spacing	LOW: add 2 Red at low water.	
395-390	HIGH: 4 Green; 0 Red; 1/2 mile spacing	LOW: add 2 Green and several Red (as needed) at low water	394-395 Split Channel as Requi Red
390-385	HIGH: 3 Green; 1 Red; 1/2 mile spacing	LOW: add 1 Red at low water	Rock pile on LDB at 389 Revetment
385-380	HIGH: 0 Green; 4 Red; 1/2 mile spacing	LOW: add 1 Green; add 1 Red at low water	
380-375	HIGH: 2 Green; 0 Red; 1/2 mile spacing	LOW: add 2 Green at low water.	Consider Red at 389 on LDB
375-370	HIGH: 0 Green; 0 Red; 1/2 mile spacing	LOW: add 1 Green; add 6 Red at low water.	
370-365	HIGH: 1 Green; 2 Red; 1/2 mile spacing	LOW: add 2 Green; add 2 Red at low water.	
365-363	HIGH: 0 Green; 0 Red	LOW: Rock pile Red buoy north side LDB of bridge	
<p align="center">*** Pilots noted that not all dikes are present on "updated charts". Pilots would also like to see "set depth" of buoy reflected in coding data of buoy overlays.</p>			<p align="center">*** Pilots would like to see cutters drop a virtual buoy on areas in which buoys will not hold when coming off high water periods.</p>



CGC PATOKA

River Segment	HIGH WATER	LOW WATER	Notes:
LMR 480-598 AHP	PATOKA uses Greenville and Helena gauges for buoy placement		
	High Water Set Gauge: 38-feet and falling	Low Water Gauge: 16-feet	
480-485	HIGH: 5 Red; 0 Green; 1/2 mile spacing	LOW: May require up to 30 buoys to mark Pointway/Bendway at Lake Providence depending on severity of low water	483-485: Middle bar exists; may have split channel with numerous buoys at low water when Greenville Gauge reaches. 12
485-490	HIGH: 5 Red; 0 Green; 1/2 mile spacing	LOW: Add 3 Red during low water	May have to Add string of Green between Stack Island Lights at lower water.
490-495	HIGH: 4 Red; 1 Green; 1/2 mile spacing	LOW: Add 2-3 Red; Add 2 Green lead-in buoys at low water.	Verify presence of Dike #1 at Shoreline Construction facility.
495-500	HIGH: 0 Red; 6 Green; 1/2 mile spacing	LOW: Add 3 Green at low water.	
500-505	HIGH: 9 Red; 0 Green ; 1/2 mile spacing	LOW: Add 1-2 Red at low water; Reduce to 1/8 mile spacing	Move lead-in buoys shoreward IVO MM 501-502
505-510	HIGH: 0 Red; 3 Green; 1/2 mile spacing	LOW: Add 2 Red on Corregador Dikes; Add 2 Green lead-in's on RDB	
510-515	HIGH: 5 Red; 1 Green; 1/2 mile spacing	LOW: Add 1 Green at Grande Lake during low water	
515-520	HIGH: 0 Red; 4 Green; 1/2 mile spacing	LOW: Add 3-4 Green at Lower Kentucky Bend during low water	
520-525	HIGH: 0 Red; 4 Green; 1/2 mile spacing	LOW: Add 1 Green; Add 3 Red during low water	
525-530	HIGH: 2 Red; 1 Green; 1/2 mile spacing	LOW: Add 6 Red on American Bar; Add 2 Green on dikes at low water	Verify bank and shallow areas at 529.5
530-535	HIGH: 5 Red; 0 Green; 1/2 mile spacing	LOW: Add 4 Red during low water	
535-540	HIGH: 4 Red; 5 Green; 1/2 mile spacing	LOW: Add 4 Green; Add 1 Red lead-in at Leland Cutoff during low water	Consider virtual buoy on Tarpley Cutoff Dike (Dike 3R)
540-545	HIGH: 1 Red; 6 Green; 1/2 mile spacing	LOW: Add 2 Red at low water	Rock Pile below Miller Bend Lower Light
545-550	HIGH: 2 Red; 4 Green; 1/2 mile spacing	LOW: Add 5 Red on dikes during low water	
550-555	HIGH: 6 Red; 0 Green; 1/2 mile spacing	LOW: Add 2 Red during low water	
555-560	HIGH: 0 Red, 7 Green; 1/2 mile spacing	LOW: Add 1 Green lead in lower Choctaw bend during low water	
560-565	HIGH: 0 Red; 8 Green; 1/2 mile spacing	LOW: No significant changes during low water	
565-570	HIGH: 7 Red; 1 Green; 1/2 mile spacing	LOW: No significant changes during low water	
570-575	HIGH: 1 Red; 4 Green; 1/2 mile spacing	LOW: Add 1 Red on dike at 571 during low water	
575-580	HIGH: 6 Red; 0 Green; 1/2 mile spacing	LOW: Add 1 Red during low water	
580-585	HIGH: 0 Red, 5 Green; 1/2 mile spacing	LOW: Add 1 Green at 581 during low water	
585-590	HIGH: 6 Red; 2 Green; 1/2 mile spacing	LOW: Add 1 Red during low water.	
590-595	HIGH: 2 Red; 7 Green; 1/2 mile spacing	LOW: Add 1 Green lead-in at 594 during low water	Consider virtual buoy for northern dike on LDB at Victoria Bend
595-598	HIGH: 0 Red; 4 Green; 1/2 mile spacing	LOW: No significant changes	
		*** Pilots noted that not all dikes are present on "updated charts". Pilots would also like to see "set depth" of buoys reflected in coding data of buoy overlays.	***Pilots would like to see cutters drop a virtual buoy on areas in which buoys will not hold when coming off high water periods.

CGC KANKAKEE

River Segment	HIGH WATER	LOW WATER	Notes:
LMR 683-813.6 AHP	KANKAKEE uses the Memphis gauge for buoy placement		
	High Water Set Gauge: 26-feet and falling	Low Water Set Gauge: 0-feet	
683-685	HIGH: 3 Green; 0 Red; 3/4 mile spacing	LOW: No Significant Changes for Low Water	
685-690	HIGH: 5 Green; 0 Red; 1/2 mile spacing	LOW: Add 1 Green	Bluff bar at 686-687
690-695	HIGH: 0 Green; 6 Red; 1/2 mile spacing	LOW: Add 2 Red	
695-700	HIGH: 6 Green; 0 Red; 1/2 mile spacing	LOW: Add 3 Green	Add virtual buoy at dike 693
700-705	HIGH: 2 Green; 9 Red; 1/2 mile spacing	LOW: Add 1 Red above 703	Bar building south below below 702 - Add virtual buoys at Finley & Desoto Front.
705-710	HIGH: 8 Green; 0 Red; 1/2 mile spacing	LOW: Add Green at 705; Add Green at 709	
710-715	HIGH: 4 Green; 3 Red; 1/2 mile spacing	LOW: Add Green 710.5; Add Red at 712.5	
715-720	HIGH: 3 Green; 7 Red; 1/2 mile spacing	LOW: Add 2 Red; Reduce to 1/4 mile spacing	
720-725	HIGH: 10 Green; 0 Red; 1/2 mile	LOW: Add Green at 719.5, 720.5, 723.5	
725-730	HIGH: 4 Green; 6 Red; 1/2 mile spacing	LOW: Add Green 726.5; Add 3 Red	
730-735	HIGH: 5 Green; 0 Red; 1/2 mile spacing	LOW: Add 1 Green at 732.5	
735-740	HIGH: 5 Green; 0 Red; 1/2 mile spacing	LOW: No Significant Changes at Low Water	
740-745	HIGH: 3 Green; 4 Red; 1/2 mile spacing	LOW: Add 4 Green; Add 3-4 Red	
745-750	HIGH: 1 Green; 8 Red; 1/2 mile spacing	LOW: Add 2 Red	
750-755	HIGH: 5 Green; 5 Red; 1/2 mile spacing	LOW: Add 2 Green; Add 2 virtual buoys on Corona Bar Dikes.	
755-760	HIGH: 5 Green; 2 Red; 1/2 mile spacing	LOW: Add 2 Green; Reduce to 1/4 spacing; Add virtual buoy at Cedar Possible Point Way / Bend Way needed at 757-758 when Memphis Gauge -7. PT Upper	
760-765	HIGH: 3 Green; 5 Red, spacing 1/4-1/2 mile HIGH: 0 Green; 6 Red; 1/2 mile spacing	LOW: Add 1 Green; Add one Red	
765-770		LOW: Add 1 Red; 2 Green	Mark Surken Barge at Reverie when Memphis Gauge -7. Rock Pile at Beer Joint.
770-775	HIGH: 9 Green; 4 Red; 1/2 mile spacing	LOW: Add 3 Green; Add 3 Red	Add Virtual Buoy at Randolph.
775-780	HIGH: 4 Green; 3 Red; 1/4-1/2 mile spacing	LOW: Add 2 Red	
780-785	HIGH: 3 Green; 6 Red; 1/2 mile	LOW: Add 2 Red	
785-790	HIGH: 0 Green; 7 Red; 1/2 mile spacing	LOW: Add 2 Red	Add virtual buoys on dikes south of Kate Audbrey.
790-795	HIGH: 9 Green; 4 Red; 1/2 mile spacing	LOW: Add 2 Red; Add 2 Green	
795-800	HIGH: 3 Green; 5 Red; 1/4 mile spacing at 797, 1/2 mile elsewhere	LOW: Add 1 Red at 797.5	Add virtual boy at 796 to protect lead-in at 797
800-805	HIGH: 7 Green; 0 Red; 1/2 mile spacing	LOW: Add 1 Green	
805-810	HIGH: 0 Green; 11 Red; 1/4-1/2 mile spacing	LOW: Add 3 Red.	Hump Building mid-channel at 808.5. Mark when Memphis Gauge 5.
810-814	HIGH: 0 Green; 6 Red; 1/2 mile spacing	LOW: Add 2 Red.	
			*** Pilots noted that not all dikes are present on "updated charts". *** Pilots would like to see cutters drop a virtual buoy on areas in which buoys Pilots would also like to see "set depth" of buoy reflected in coding will not hold when coming off high water periods. data of buoy overlays.

CGC KANAWHA

River Segment	HIGH WATER	LOW WATER	Notes:
LMR 598-683 AHP	<p>KANAWHA uses Helena gauge for buoy placement</p> <p>High Water Set Gauge :32-feet and falling</p>	<p>Low Water Set Gauge: 7-feet</p>	
598-600	HIGH: 0 Green; 4 Red; 1/2 mile spacing	LOW: Add 2 Red, Reduce to 1/4 mile spacing.	Widen upper lead-in buoys channelward to roundoff turn.
600-605	HIGH: 4 Green; 4 Red; 1/2 mile spacing	LOW: Add 2 Green; Reduce to 1/4 mile spacing	
605-610	HIGH: 0 Green; 7 Red; 1/2 mile spacing	LOW: Reduce spacing to 1/4 mile at shoal at 608.	Shoal at 608
610-615	HIGH: 6 Green; 0 Red; 1/2 mile spacing	LOW: Add 1 Green; maintain 1/4 mile spacing	
615-620	HIGH: 3 Green; 3 Red; 3/4 mile spacing	LOW: Add 2 Red; Reduce to 1/2 mile spacing	Shoal between 615-616; Table-top building 619-620
620-625	HIGH: 2 Green; 7 Red; 1/2 mile spacing	LOW: No significant changes for low water.	
625-630	HIGH: 5 Green; 3 Red; 1/2 mile spacing	LOW: Add 1-2 Red; 2 Green	Added lead-in Green between 626-627 & marked dikes
630-635	HIGH: 1 Green; 6 Red; 1/2 mile spacing to 632; 1/4 mile spacing around bend	LOW: Add 1 Red; Maintain 1/4 mile spacing	Bar building at 632.5; Added Red at 632.5; Beware submerged rockpile at 633.5
635-640	HIGH: 9 Green; 2 Red; 1/4 mile spacing to 638, 1/2 mile spacing above 638	LOW: Add 1-2 Green during low water at Huey Upper.	
640-645	HIGH: 0 Green; 9 Red; 1/2 mile spacing	LOW: No significant changes at low water.	
645-650	HIGH: 5 Green, 0 Red; 1/2 mile spacing	LOW: Add 2 Green	Kangaroo Point Dike Buoy Will Not hold. Add Virtual Buoy.
650-655	HIGH: 0 Green; 6 Red; 1/2 mile lead-in spacing, then 1/4 mile spacing	LOW: Add 2 Red; 1-2 Green	
655-660	HIGH: 3 Green; 6 Red; 1/2 mile spacing	LOW: Add 1 Red; maintain 1/2 mile spacing	
660-665	HIGH: 0 Green; 2 Red; 1/2 mile spacing	LOW: Add 2 Red 662-663; Add 1 Green at 663.5.	
665-670	HIGH: 8 Green, 2 Red; 1/2 mile spacing; 1/4 mile spacing 665-667	LOW: Add VIRTUAL Red at Helena Island Dike	Shoal at 666.5 moving in and out at Fryer Lake Bar
670-675	HIGH: 0 Green; 7 Red; 1/2 mile spacing	LOW: No significant change at low water	
675-680	HIGH: 4 Green; 3 Red; 1/2 mile spacing	LOW: Add 1 green at 675; Add 1-2 Red; Reduce to 1/4 mile spacing	
680-683	HIGH: 3 Green; 6 Red; 1/4 mile spacing below 680, then 1/2 mile	LOW: Add 1 Red on lower end	Shelf building at 680.
		***Pilots noted that not all dikes are present on "updated charts". Pilots would also like to see "set depth" of buoy reflected in coding data of buoy overlays.	***Pilots would like to see cutters drop a virtual buoy on areas in which buoys will not hold when coming off high water periods.



CGC CHIPPEWA

River Segment	Normal/Mid-Water	Notes:	
UMR 0 - 104	Set at Cairo 15	No Specific High or lower water set, slight adjustments based off river gages for lower water conditions. Cutter does not get underway when Cairo gage above 40. Buoys spaced as needed.	
00 - 05	Green: 8 Red: 8	3-4 buoys set on bend dikes during higher water	Ensure 1 Red at ft, possible add range lights lined up off Cairo highway bridge
05 - 10	Green: 3 Red: 4	Add 2-3 Red at MM8.7 at lower water,	
10 - 15	Green: 11 Red: 6	Use chain and double sinker at 16.2, Add 3-4 Green at MM 15-16	Possibly remove daybeacon at Grand Lake lower Light, shift Green at 17.8 down 2 dikes
15 - 25	Green: 6 Red: 8	Add 5 Red near MM 23-24 at lower water,	
25 - 32	Green: 5 Red: 4	Add 1 Red and 1 Green at lower water below Commerical Point	
32 - 37	Green: 5 Red: 4	Add 4 Green at goose island at lower water	
37 - Thebes	Green: 5 Red: 7	Add 2 additional Red near Thebes Bridge	Stretch below Thebes is critical and needs to be well maintained
Grays Pt	Green: 4 Red: 4	None	Shoals below fleeting area near MM 46, Add 2 Red at lower water at MM 47
44 - Cape G Bridge	Green: 3 Red: 11	Add buoys as needed at lower water near dikes on bend.	Critical stretch for high and lower water, add buoy at slack water harbor with double sinker and chain, Add Green at rock pile, Add USACE symbol to chart
Cape G Bridge - 58	Green: 8 Red: 5	Add 1 Red above bend at Cape Rock near daybeacon	Ensure furthest extending dike near MM 58
58 - 63	Green: 3 Red: 1	Add Green as needed at MM 61 at lower water	
63 - 68	Green: 4 Red: 4	Add 1-2 Green at lower water above Shepherd Point near MM 65, add 1 Red near Moccasin Spring	
68 - 73	Green: 2 Red: 6	Add 1 Green near MM 70 at lower water	
73 - 82	Green: 8 Red: 9	Critical Stretch at high and lower water	Mark rock shelf below boatramp near pipeline
82 - 88	Green: 8 Red: 1	Minor adjustments at lower water, number remain same	
88 - 95	Green: 2 Red: 8	Add 1-2 Red at bend below MM 95 at lower water	
95 - 99	Green: 7 Red: 1	Add 2 Green at lower water	
99 - 104	Green: 7 Red: 4	Add 2-3 Red if shoaling between 100 - 102, add 2 Green near Mansker	
104 - Chester	Green: 7 Red: 4	Add 2-3 Green if necessary near Ford transfer dock at 105, minor adjustments	Add a Red straight out from elevator near MM 108

CGC CHEYENNE

River Segment	Normal/Mid-Water	Notes:	
UMR 110 - 200	Pooled water. No specific High and Low water sets. Set at 5 on St. Louis Gage	No specific High or Low water set. Buoys spaced as needed.	
110 - 115	Green: 7 Red: 3	Add 2 Reds from 114 - 115.5 at lower water	Add 2-3 Green above Chester Bridge all the time,
115 - 121	Green: 6 Red: 4		Critical area near 119
121 - 126	Green: 2 Red: 0		
126 - 132	Green: 6 Red: 2		
132 - 137	Green: Red: 5	Add Green below rock dock at lower water in the vicinity of 135.	
137 - 144	Green: 4 Red: 4		
144 - 150	Green: 0 Red: 0	Add 3 Reds and 2 Green at lower water	
150 - 154.5	Green: 1 Red: 0	Add 3-4 Reds at lower water	
154.5 - 159	Green: 1 Red: 3	Add 1 Red and 1 Green at MM 159 at lower water	
159 - 164	Green: 3 Red: 8	Add 1 Green and 1 Red at lower water	
164 - 171	Green: 0 Red: 6	Add 2-3 at lower water	
171 - 175	Green: 0 Red: 0	Add 2-3 Reds and 2-3 Green a low water	172-173 critical area to be marked.
175 - 180	Green: 0 Red: 0	Add 1 Red and 2 Green at lower water	
180 - 185	Green: 2 Red:	Add 1 Red at lower water 183.7	Add Virtual/synthetic aid near 182 near Chevron dike, Add Red buoy on dike on I side near 182.5
185 - 194	Green: 0 Red: 0	Canal No CG Buoys	
194 - 200	Green: 7 Red:	Add 1 Green at lower water	Critical area at high and low water

CGC SCIOTO

River Segment	Normal/Mid-Water	Notes:
UMR 200 - 295	Pooled water. No specific High and Low water sets. Set 9' at flat pool for entire AOR	
200.8-205	Green: 5 Red: 3	Buoy spacing approximately 1/4 mile apart. Mel Price, during max drawdown, there is a problem at mile 203 with buoy position
205-210	Green: 6 Red: 5	Green buoy end of dike (MM 209) - Critical
210-215	Green: 5 Red: 6	
215-220	Green: 11 Red: 9	Green buoy on dike (MM 218) - Critical (2 sinkers needed) Add Red buoy at MM 219. Numerous buoys needed in this section. Buoys set approx 1/2 - 3/4 mi apart
220-225	Green: 10 Red: 10	Remove Red buoy at Royal Landing (MM 223) Squaw Light downgrade to dayboard (MM 224)
225-230	Green: 9 Red: 8	1/4 mi buoy spacing on Red buoys - Shallow Mackers Landing - move Red buoy off dike and out towards channel. Re-evaluate Red buoy at end of Two Branch Isl and remove, if possible
230-235	Green: 6 Red: 11	1/4 mi or less buoy spacing
235-240	Green: 6 Red: 6	Remove Hastings Red buoy (MM 238-239)
240-245	Green: 7 Red: 9	
245-250	Green: 11 Red: 6	1/4 mi buoy spacing on average
250-255	Green: 5 Red: 10	Check for hump at MM 252.6 and Remove Red buoy if not necessary
255-260	Green: 10 Red: 7	Check Green buoy at Westport Isl Light (MM 256) and remove if not necessary. Add Green buoy on dike at MM 258
260-265	Green: 9 Red: 9	
265-270	Green: 7 Red: 12	
270-275	Green: 4 Red: 7	Remove Green buoy at MM 272 Confirm 2 Green buoys at MM 275
275-280	Green: 1 Red: 8	Remove Red buoy at Crider Bend (MM 279)
280-285	Green: 2 Red: 5	
285-290	Green: 9 Red: 5	
290-295	Green: 5 Red: 9	
295-300	Green: 8 Red: 5	Green buoy is set at MM 299.5 due to rocks which are exposed at low water
300-305	Green: 6 Red: 6	Cave Hollow is constantly moving, buoys must adjust with river.
305-310	Green: 4 Red: 5	

310-315	Green: 8 Red: 10	2017 Navigation season - change Green buoys from 4th to 6th class in this area. Red buoy at MM 314 - Critical (esp at higher water)
315-320	Green: 6 Red: 7	
320-325	Green: 2 Red: 9	
325-330	Green: 5 Red: 2	
330-335	Green: 6 Red: 11	Hogback (Critical area) - constantly changing - need to maintain this section straight.
335-340	Green: 9 Red: 14	
340-345	Green: 8 Red: 6	Remove Green buoy at Smoot Chute (MM 341) Remove Green buoy at MM 342 Add Green buoy just above L&D 20
345-350	Green: 8 Red: 12	
350-355	Green: 4 Red: 10	Hinge Point at Gregory critical.
355-360	Green: 7 Red: 9	
360-365	Green: 10 Red: 13	Remove Green buoy above mouth of DeMoines River (MM 361.5) Put buoys on double sinkers in the area around DeMoines River.
365-370	Green: 0 Red: 5	Buoys set 1 mi apart - one lighted
370-375	Green: 1 Red: 6	Buoys set 1 mi apart
375-380	Green: 8 Red: 8	1 Red lighted buoy
380-385	Green: 5 Red: 9	1 Green lighted buoy
385-390	Green: 8 Red: 7	Pontoosack Light downgrade to dayboard (MM 388)
390-395	Green: 9 Red: 13	1 Green lighted buoy - change to can (MM 394.3) Remove Red buoy at MM 393.5
395-400	Green: 10 Red: 11	Burlington Island - Critical area Add a day beacon to the Island
400-405	Green: 4 Red: 6	
405-410	Green: 5 Red: 7	
410-415	Green: 14 Red: 11	Green buoys from MM 413-415 - Critical
415-420	Green: 8 Red: 10	Check Red buoy at Benton (mm 419.7) - if good water, remove buoy
420-425	Green: 11 Red: 6	Remove Red buoy at MM 423 (waiting spot)
425-430	Green: 10 Red: 7	Critical buoys from MM 425-427 . Remove rock pile RDB at MM 425 - old Huron Island Light stand
430-435	Green: 11 Red: 10	Critical buoys at MM 431 (rock)
435-440	Green: 3 Red: 4	
440-445	Green: 8 Red: 6	
445-450	Green: 8 Red: 11	
450-455	Green: 0 Red: 9	
455-460	Green: 5 Red: 10	

460-465	Green: 11 Red: 9	IL City Landing Light - downgrade to day beacon	
465-470	Green: 11 Red: 11		
470-475	Green: 10 Red: 9		
475-480	Green: 10 Red: 16	Rock behind Red buoys MM 476-477 Check Green side at MM 477 for shallow water and for possible need for buoy(s)	
480-485	Green: 6 Red: 4	Remove Credit Isl Light (MM 484.6)	
485-490	Green: 11 Red: 13	Critical area (rock) Remove a buoy off Dynamite Island	
490-495	Green: 16 Red: 12	2017 Navigation season - possible location to test 6th class buoys	
495-500	Green: 4 Red: 6		
500-505	Green: 8 Red: 11		
505-510	Green: 6 Red: 6		
510-515	Green: 6 Red: 5		
515-522.5	Green: 13 Red: 12		

DRAFT

CGC WYACONDA

River Segment	Normal/Mid-Water	Notes:
UMR 522 - 858	Pooled water. No specific High and Low water sets. Set 9' at flat pool entire AOR	Buoys set 1/4 mi apart on average
522.5-525	Green: 5 Red: 4	
525-530	Green: 14 Red: 14	Widen buoys between Pomme De Terre and Elk River (MM 526)
530-535	Green: 7 Red: 14	Red buoy (MM 530) - Critical
535-540	Green: 7 Red: 7	
540-545	Green: 8 Red: 10	
545-550	Green: 9 Red: 11	Green buoy (MM 549) - Critical
550-555	Green: 14 Red: 12	
555-560	Green: 10 Red: 10	Remove Red buoy below MM 558.5
560-565	Green: 13 Red: 8	Green buoys (MM 560-562) - Critical
565-570	Green: 7 Red: 7	
570-575	Green: 11 Red: 6	
575-580	Green: 2 Red: 9	Buoys (MM 172-173) - Critical Red buoy below bridge - move out of the river (towards dike) to open channel width
580-585	Green: 7 Red: 8	
585-590	Green: 17 Red: 15	Downgrade Maquoketa Light to day beacon
590-595	Green: 10 Red: 10	Green buoy on dike (MM 595) constantly getting hit - Critical turn (*contact USACE to discuss)
595-600	Green: 10 Red: 15	
600-605	Green: 10 Red: 5	Check Red buoy at Jack Oak (MM 602) for hump - Widen if possible
605-610	Green: 9 Red: 12	
610-615	Green: 14 Red: 11	Remove Red buoy at St Louis Wood Yard (MM 611.5) Check Red buoy above MM 614 and remove if deep enough
615-620	Green: 12 Red: 8	Entire 5 mile span - Critical area
620-625	Green: 7 Red: 7	
625-630	Green: 11 Red: 10	
630-635	Green: 6 Red: 7	
635-640	Green: 7 Red: 7	
640-645	Green: 11 Red: 9	
645-650	Green: 6 Red: 10	Remove Green buoy just below the lock (MM 647) - if possible

650-655	Green: 8 Red: 5		
655-660	Green: 5 Red: 9		
660-665	Green: 10 Red: 11	Remove Green buoy at MM 662	
665-670	Green: 11 Red: 6	Entire 5 mile span - Shallow Add Red buoy above Indian Camp Light (MM 665.5)	
670-675	Green: 5 Red: 6		
675-680	Green: 2 Red: 7		
680-685	Green: 12 Red: 10		
685-690	Green: 16 Red: 14	Remove rock pile at Benover Slough (MM 686.7) Disestablish Raft Channel Head Light (MM 688) (*already in process)	
690-695	Green: 14 Red: 9	All buoys between MM 693-695 - Critical	
695-700	Green: 10 Red: 9		
700-705	Green: 8 Red: 10	Remove Green buoy at MM 700 Check Red buoy just below MM 701 - if good water, remove it (wait spot) Shallow above lock wall at L&D 7	
705-710	Green: 17 Red: 11	Check water below Green buoy (MM 706) - boats get stuck (wait spot)	
710-715	Green: 10 Red: 9		
715-720	Green: 13 Red: 13		
720-725	Green: 6 Red: 12		
725-730	Green: 9 Red: 11	Betsy Slough - critical (MM 730-732)	
730-735	Green: 15 Red: 13	Betsy Slough - critical (MM 730-732)	
735-740	Green: 9 Red: 7	Re-evaluate Red buoys at dikes MM 736-737 (wait spot along Bass Island)	
740-745	Green: 14 Red: 16	All buoys between MM 740-743 - Critical	
745-750	Green: 15 Red: 12	Shallow and narrow - Critical span	
750-755	Green: 8 Red: 10	Beef Slough (MM 754) - Critical	
755-760	Green: 14 Red: 14	Shallow - Critical	
760-765	Green: 8 Red: 12		
765-775	Green: 2 Red: 3	Lake Pepin - Check buoys and remove if not needed	
775-780	Green: 5 Red: 0	Point No Point lighted buoy (MM 780) - Reduce to non-lit Reduce number of Green buoys	
780-785	Green: 8 Red: 9	Shallow - Critical	
785-790	Green: 10 Red: 4		
790-795	Green: 9 Red: 10		
795-800	Green: 7 Red: 5		

800-805	Green: 12 Red: 10	Shallow and Narrow (MM 800-803) - Critical	
805-810	Green: 14 Red: 14	2017 navigation season - Change 4th to 6th class buoys on dikes at Prescott for evaluation	
810-815	Green: 3 Red: 11		
815-820	Green: 15 Red: 18	Green buoy just above lock (MM 816) - Critical Nininger Lake to Boulanger Bend (MM 818-821) - Critical	
820 - 825	Green: 13 Red: 16	Nininger Lake to Boulanger Bend (MM 818-821) - Critical 2017 Navigation Season - Test 6th class buoys at Pine Bend (MM 822.5-823.5) Turn at Pine Bend (MM 824) - Critical	
825 - 830	Green: 7 Red: 12	Remove Green buoy above MM 826 if present (wait spot)	
830 - 835	Green: 13 Red: 8		
835 - 840	Green: 7 Red: 3		
840- 845	Green: 0 Red: 0		
845 - 850	Green: 0 Red: 0		
850 - 857.5	Green: 0 Red: 0		

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CGC SAGAMON

River Segment	Normal/Mid-Water	Notes:
ILR 00 - 292	Pooled water. No specific High and Low water sets. Set at 9' for entire AOR	
	No hinges	
00 - 05	Green: 6 Red: 3	Buoys set 1000' apart
05 - 10	Green: 1 Red: 8	
10 - 15	Green: 5 Red: 5	
15 - 20	Green: 0 Red: 2	
20-25	Green: 0 Red: 4	Remove Red buoy at MM 22
25-30	Green: 5 Red: 12	
30-35	Green: 6 Red: 5	
35-40	Green: 9 Red: 9	Discontinue Twin Island Light (MM 37.8)
40-45	Green: 9 Red: 8	
45-50	Green: 11 Red: 7	
50-55	Green: 7 Red: 8	Discontinue Little Blue Light (MM 54) Check creeks for fluff bars (MM 52-53)
55-60	Green: 5 Red: 13	Florence Light buoys (3 Greens above bridge) - Critical Move Red buoy above Bevington Light (lay up spot/fleet on opposite bank)
60-65	Green: 7 Red: 8	Remove Green buoy just below MM 64
65-70	Green: 6 Red: 7	Green buoys above MM 66 - Critical
70-75	Green: 5 Red: 9	All Green buoys - Critical
75-80	Green: 14 Red: 15	Remove Green buoy below Morris Island Light
80-85	Green: 1 Red: 5	Briggs Landing Light (MM 84) - Critical Need additional Red (lead in) buoy above Briggs
85-90	Green: 8 Red: 5	Green buoys below Beardstown Bridge - Critical
90-95	Green: 8 Red: 9	Red buoys at FReederick Light (MM 91) - Critical
95-100	Green: 5 Red: 1	Green buoys at Sangamon Chute Light (MM 98.2) - Critical
100-105	Green: 4 Red: 4	
105-110	Green: 13 Red: 6	Red buoys at Anderson Lake Light (MM 109.4) - Critical
110 - 115	Green: 16 Red: 15	
115 - 120	Green: 3 Red: 6	

120 - 125	Green: 8 Red: 5	Buoys at Siebs Lake Light (MM 121) - Critical Add Green buoy above Havana Landing (MM 120) Add Red buoy (MM 122)
125 - 130	Green: 7 Red: 4	Green buoys at Liverpool Light (MM 129) - Critical
130 - 135	Green: 8 Red: 7	
135 - 140	Green: 10 Red: 11	Green buoys below (MM 137) - Critical
140-145	Green: 7 Red: 7	
145 - 150	Green: 7 Red: 20	Mackinaw River Light buoys - Critical Entire wiggles buoys (MM 149-151) - Critical
150 - 155	Green: 6 Red: 6	Entire wiggles buoys (MM 149-151) - Critical
155-163	Green: 7 Red: 6	Buoys below Peoria Lock - Critical (shallow) Buoys along Kickapoo Bend (MM 159-160) - Critical
163-167	Green: 8 Red: 9	Peoria Lake: narrows - Critical
167-173	Green: 16 Red: 18	Peoria Lake: All buoys - Critical
173 - 180	Green: 16 Red: 15	Peoria Lake: All buoys - Critical
180 - 185	Green: 8 Red: 9	Buoys at MM 180-182.5 - Critical
185 - 190	Green: 9 Red: 9	
190-195	Green: 1 Red: 10	
195 - 200	Green: 9 Red: 13	Red buoy above bridge (MM 196) - Critical
200-205	Green: 7 Red: 10	Green buoys in bend at (MM 200) - Critical
205-210	Green: 8 Red: 4	Green buoys above Hennipen Bridge - Critical
210-213	Green: 4 Red: 8	All buoys between MM 210-213 - Critical
213-218	Green: 11 Red: 13	All buoys at MM 214-217.5 - Critical
218-225	Green: 10 Red: 6	Remove Red buoy at MM 225
225-230	Green: 12 Red: 9	Need Red buoy marking the bar above the IL Central RR bridge (MM 225)
230-235	Green: 12 Red: 16	All buoys at MM 230-231 - Critical Buoys across lake (MM 231-237) - Critical
235-240	Green: 4 Red: 8	Buoys across lake (MM 231-237) - Critical
240-245	Green: 18 Red: 10	Buoys at Bulls Island (MM 240-241.5) - Critical
245-250	Green: 9 Red: 17	All buoys (MM 245-247 & MM 248-250) - Critical
250-255	Green: 9 Red: 3	
255-260	Green: 12 Red: 10	All buoys (MM 258-259.5) - Critical
260-265	Green: 6 Red: 3	
265-270	Green: 11 Red: 11	
270-275	Green: 8 Red: 10	Bonel Light (MM 274) - Critical
275-280	Green: 15 Red: 7	All buoys (MM 276-278) - Critical Treet's Island cut (MM 279) - Critical
280-285	Green: 10 Red: 18	Red buoys (MM 281-283) - Critical
285-291.1	Green: 4 Red: 1	Green buoys above Ruby St (MM 289-290) - Critical

CGC OSAGE

River Segment	Normal/Mid-Water	Notes:	
OHR	Pooled water. No specific High and Low water sets. Uses 10 ft at Normal Pool		
00 - 06	Green: 1 Red: 2	Marking rocks/wrecks	
06 - 13	Green: 7 Red: 4	Shallows/shoals/channel	
13 - 20	Green: 4 Red: 1	Marking shoal, set up for bridges	
20 - 23	Green: 2 Red: 2	Marking channel/shoal	
22 - 27	Green: 5 Red: 3	Marking channel/shoal, bridge approach and exit to Beaver River	Possibly add matching red to greens by bridge piers
27 - 31	Green: 3 Red: 2	Marking channel/bridge approach	
31 - 37	Green: Red: 3	Marking shoal at Phillis Island and 1 bridge approach	
37 - 41	Green: 4 Red:	Marking turn/channel	Georgetown Island Light is considered critical to industry, marks island that is barely visible, also fleeting, poor RADAR picture, prevents industry from confusing lights due to passing cars
42 - 47	Green: 4 Red: 3	Marking Babbs Island, bridge approaches	Babbs Island is 4th class due to legacy navigation safety issues/concerns
47 - 50	Green: 2 Red: 1	Marking Bakers Island	
50 - 54	Green: 0 Red: 1	Marks shoal/island, island at MM 52	
55 - 59	Green: 3 Red: 1	Marking shoals/channel	MM 59 Look for shoaling near Foxtan Bar
60 - 63	Green: 5 Red: 1	Marking channel/bridge approach	
63 - 68	Green: 8 Red: 3	Marking channel/bridge approach,	Cables Eddy Light considered critical, used as range, bridge markers important as bridge casts shadows
69 - 72	Green: 2 Red: 2	Marking shoals/bridge approach	
73 - 84	Green: 0 Red: 0	No Buoys	
84 - 87	Green: 10 Red: 5	Marking channel/shoals; important stretch no changes recommended	Departing Pike Island lock gives operators a range, Lower Sisters Light
88 - 91	Green: 6 Red: 1	Marks channel/shoals, bridge approach at 91.5	Add 2 Red at municipal wharf
91 - 94	Green: 2 Red: 2	Marking channel/shoals, bridge approach	Wheeling Island Light at 91.1
94 - 99	Green: 2 2 Lights	Marking channel/shoals, bridge approach	
99 - 105	Green: 2 1 Light	Marking channel/shoals, bridge approach	Light and Dayboard Critical, helps steer bend due to background lighting, lots of traffic
105 - 108	Green: 2 2 Lights	Campatina Light, marking shoals/channel	
108 - 116	Green: 0 Red: 4	Marking shoals/channel	
116 - 121	Green: 1 Red: 2	2 Lights, top and bottom of bend	
121 - 129	Green: 0 Red: 0	none	
129 - 132	Green: 2 Red: 1	Marking channel/shoals, lock approach, greens marking old lock walls	
132 - 136	Green: 1 2 Red	Marking channel/shoals, dike at head and foot of island	
136 - 142	Green: 0 0 Red	None	
143 - 145	Red: 2	Marking Island	
145 - 150	Green: 2 Red: 1	Marking Old lock	
150 - 154	Green: 1 Red: 2	Marking channel, grape island	
154 - 158	Green: 0 Red: 2	Marking bridge approach, 3 lights	
158 - 161.1	Green: 1 2 Red	Marking channel, approach to Willow Island Lock	
161.1 - 166	Green: 1 1 Red	Marking channel, shoals, Bull Creek Light	
166 - 170.5	Red: 4	Marking channel, shoals	
170.5 - 174	Red: 1	Marking Marietta Island, and Muskingum River	
174 - 178	Green: Red: 2	Marking Muskingum Island Dike	
178 - 182	Green: 2 Red: 0	Marking Old Lock	
182 - 186	Green: 2 4 Red	Marking shoals/channel	Traps Run Light Critical, used to judge making Parkersburg Bridges
186 - 190	Green: 0 2 Red	Head and Foot of Blennerhassett Island	
190 - 194	2 Green Lights	Marking shoals/channel	
194 - 199	Green: 0 5 Red	Marking shoals/channel; red aids critical at newbary island	
199 - 205.5	1 Light Red: 2	Marking shoals/channel	
205.5 - 210	Green: 1 Red: 4	Marking shoals/channel, 3 Red at longbottom critical	
210 - 216	Green: 2 1 Red	Marking shoals/channel	
216 - 222	Green: 2 Red: 1	Marking shoals/channel, Red marking old structure, critical at 221.5	
222 - 235	Red: 1	Leetard Island Light, Red buoy at 235 considered critical	
235 - 244	Green: 2 Red: 0	Marking old lock wall	
244 - 248	Green: 2 1 Light	Sliding Hill Bend light considered critical for approaching vsls, buoys at 245/47 is rocks	
248 - 252	Green: 2 2 Red	Marking bridge approach, Green at 251.5 is ice breaker/structure	
252 - 261	Green: 0 Red: 1	Red marks 8 mile island	
261 - 266	Green: 1 2 Red	Marking Bridge buoys at 265, mouth of Kanawha	
266 - 279	Green: 0 0 Red	None	
279 - 284	Green: 0 Red: 0	None	
284 - 288	Green: 2 6 Red	Marking bar/channel	

288 - 293	Green: 1 2 Red	Marking shoals/channel	
293 - 298	1 Green	Light discontinued at 298, Can buoy on RDB	
298 - 304	2 Green 2 Red	Marking shoals/channel, Greens mark old lock 27	
304 - 309	4 Green, 3 Red	Marking bridge approaches	Add Red nuns to compliment greens at 309
309 - 313	4 Greens	Marking shoals/channel	Add downbound Red at 311
313 - 322	None	None	
322 - 326	2 Greens	Marking bridge approach	
326 - 330	2 Red	Marking bridge approach, Ironton Bridge Light out being rebuilt	
330 - 342	None	None	
342 - 344	5 Red	Marking shoal/bar along LDB	

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CGC OBION

River Segment	Normal/Mid-Water	Notes:	:
OHR	Pooled water. No specific High and Low water sets. 19-22 feet at Pool		
344 - 347	Red: 2	Marking chanel	
347 - 351	Green: 3 Red: 8	Marking shoal/channel/bridge approach	
351 - 356	Green: 4 Red: 4	Marking shoal/channel/ Greens Marking bridge approach	
356 - 361	Green: 3 Red: 4	Marking shoal/channel/bridge approach	
361 - 366	Green: 2 Red: 4	Marking shoal	
366 - 369	Green: 0 Red: 3	Marking shoal	
369 - 376	Green: 4 Red: 0	Marking shoal	
376 - 383	Green: 1 Red: 2	Marking old lock (Reds), can see top at low water	
383 - 388	Green: 0 Red: 0	None	
388 - 391	Green: 0 Red: 2	Marking isolated shoal	
391 - 396	Green: 4 Red: 3	Marking Manchester Island	
396 - 408	Green: 0 Red: 0	None	
408 - 410	Green: 2 Red: 2	Marking shoals	
410 - 437	Green: 0 Red: 0	Wide open bank to bank	
437 - 441	Green: 9 Red: 0	Marking shoal water along RDB	
441 - 445	Green: 2	Marking shoal water along RDB	
445 - 448	Green: 2 Red: 4	Marking shoals/channel, isolated shoal at 448	
448 - 453	Green: 3 Red: 3	Marking shoal	
453 - 456	Green: 3 Red: 9	Marking shoal along LDB, Greens mark isolated shoals	
456 - 459	Green: 2 Red: 2	Marking shoal along LDB, Greens mark isolated shoals	
459 - 464	Green: 2 Red: 1	Marking bridge approach, gravel bar	
464 - 469	Green: 0 Red: 2	Marking shoal; look at additional Reds near Dayton Bar (3 missing Reds)	
469 - 471	Green: 2 Red: 3	Marking channel/bridges through Cincinnati	
471 - 478	Green: 0 Red: 1	Marking isolated shoal	
478 - 483	Green: 2 Red: 1	Marking isolated shoals, ice piers	
483 - 492	Green: 2 Red: 2	Marking Lawrenceburg Bridge	
492 - 499	Green: 0 Red: 1	Marking isolated shoal	
499 - 520	Green: 0 Red: 0	None	Possibly add Reds at MM 520/Patriot Bend
520 - 532	Green: 0 Red: 0	None	Possibly add Greens at Sugar Creek Bend MM 522.5
532 - 536	Green: 4 Red: 5	Marking shoals/channel, approach to Markland, Greens mark towhead; legacy spacing	
536 - 541	Green: 4 Red: 7	Marking shoals/channel	
541 - 544	Green: 5 Red: 1	Critical Craigs Bar area, sharp shoals, possibly not sand bottom	Craigs Bar Lower Light is critical if/when the buoys are missing or off station
544 - 548	Green: 2 Red: 2	Marking shoal	
549 - 553	Green: 2 Red: 2	Marking isolated shoals	
553 - 560	Green: 2 Red: 2	Marking bridge span	
560 - 564	Green: 1 Red: 4	Green Marking isolated shoal: Red bend Marking shoal	
564 - 565	Green: 0 Red: 2	Finishing out the Red bend	
565 - 571	Green: 1 Red: 0	Isolated shoal	
571 - 576	Green: 0 Red: 1	Isolated shoal	
576 - 581	Green: 0 Red: 3	Marking a shoal on a bend	
581 - 603	Green: 0 Red: 0	None	
603 - 605	Green: 6 Red: 2	Marking bridges in Louisville and lining approach to L&D; Reds critical	Add in the L&I Green
605 - 611	Green: 1 Red: 13	Marking sand bar and shoal on the Red side; Green Marking a rock (critical buoy 608.5)	Thin out the Red line below Sherman Mitton Bridge (McAlpine Red line) currently 13 buoys
611 - 615	Green: 2 Red: 0	Marking isolated shoal	
615 - 627.5	Green: 1 Red: 0	Isolated shoal	look at adding Red at MM 625.5
628 - 631	Green: 3 Red: 0	Marking a sand bar	
631 - 641	Green: 0 Red: 0	None	
641 - 648	Green: 2 Red: 0	Marking the bridge	
648 - 660	Green: 0 Red: 0	None	
660 - 663	Green: 3 Red: 2	Greens Marking upper Blue River Island; Reds Marking Lower Blue River Island	
663 - 715	Green: 0 Red: 0	None	
715 - 724	Green: 3 Red: 3	Greens Marking a legit sand bar; Reds Marking the bridge	
724 - 727	Green: 0 Red: 4	Marking Fulton Bar	
727 - 730	Green: 6 Red: 0	Marking sand bar at Mussle shoal bar	
730 - 733	Green: 2 Red: 5	Marking bend and bar	2 or 3 Reds could be removed; MM 731.5
733 - 737	Green: 2 Red: 7	Marking Anderson Bar on the Red side, and channel	MM735.3 - 737, Anderson Bar; Reds could be thinned out.

737 - 741	Green: 7 Red: 0	Marking shoal and slow turn near Corn Island	7 buoys is minimal amount needed to accurately mark the bend	
741 - 748	Green: 2 Red: 6	2 Red Marking the bridge, 4 below ; Greens marking the shoal	could remove some of the Reds leading to the bridge	
748 - 751	Green: 2 Red: 0	Greens marking shoal;		
751 - 753	Green: 0 Red: 3	Marking a shoal		
753 - 759	Green: 5 Red: 0	Marking bridge and shoal on a bend		
759 - 766	Green: 2 Red: 0	Marking Ellis Island		
766 - 774	Green: 0 Red: 3	Marking a shoal near Scuffelton Island		
774 - 779	Green: 0 Red: 5	Lead in for the L&D		
779 - 787	Green: 3 Red: 8	Marking shoals and channel		
787 - 791	Green: 11 Red: 2	Marking shoals and channel, buoys are in good place, using buoys to see shape of river	MM785 LDB potential buoy, Green River approach (ACOE). Also likely candidate for E-ATON	
791 - 796	Green: 3 Red: 12	Evansville Bend, buoys marking shoals/bend, 2nd most critical part of OBION AOR	Industry likes to cut the point and take out the buoy line, no room to stop, very unforgiving	
796 - 802	Green: 3 Red: 5	Marking shoals/channel near Dutch Island		
802 - 806	Green: 6 Red: 1	Marking shoals/channel; CSX Railroad Bridge approach and Henderson Island	Occasionally hit upper Green near Henderson Island due to fluid dynamics	
806 - 810	Green: 9 Red: 2	Marking shoals/channel, Reds mark sharp shoal		
810 - 817	Green: 2 Red: 7	Marking shoals/channel; Cypress Bend	Important to empties, especially in high winds	
817 - 822	Green: 8 Red: 2	Marking Diamond Island		
822 - 827	Green: 4 Red: 3	Marking shoals/channel		
827 - 830	Green: 1 Red: 4	Marking shoals/bend at Mt. Vernon		
830 - 836	Green: Red: 8	Marking shoals/channel	Industry/CG use opposite slough from the marked channel; possibly adjust sailing line at Slim Island Slough	
836 - 845	Green: 2 Red:	Marking former hazard	Possibly remove, not marking anything as per recent survey	
845 - 850	Green: 4 Red: 8	Critical Area; mouth of Wabash	Changes often after high water	
850 - 856.5	Green: 13 Red: 7	Bend/Raleigh Bar Area, Greens critical		
856.5 - 859	Green: 1 Red: 2	Marking bridge approach		
859 - 862	Green: 1 Red: 6	Marking Cincinnati Island		
862 - 868	Green: 4 Red: 8	Marking shoals/channel		
868 - 878	Green: 16 Red: 6	Marking channel/shoals near Dekoven, critical location		
878 - 893	Green: Red: 1	Marking Dike at 862.8		
893 - 896	Green: 4 Red:	Greens mark good shoal at Irish Jimmy's Bar		
896 - 903	Green: Red:	None		
903 - 908	Green: 2 Red: 2	Greens mark old lock at 903.5; marking isolated shoals with Red		
908 - 918	Green: 2 Red: 0	Greens mark Stewartd Island		

CGC CIMMARON CBR

Cumberland River	Pooled water. No specific High and Low Water sets.		
373 - 242	Few ATON	Run by CIMMARON once per year, not used by any known industry	No Changes
239 - 242	Green: 8 Red: 9	Marking turn, buoys in good place	No Changes
239 - 232	Green: 16 Red: 15	Buoys marking channel, give good RADAR picture	No Changes
232 - 227	Green: 6 Red: 10	Marking channel/shoals on narrow bend	No Changes
227 - 216.2	Green: 19 Red: 14	Old Hickory and approaches; marking channel and bend	No Changes
216.2 - 200	Green: 35 Red: 27	Lock tailwaters; buoys marking shoals and absolutely necessary, very shallow	No Changes
200 - 181	No Buoys	Good water, no buoys	No Changes
181 - 170	Green: 1 Red: 7	Cockrill Bend Lower daybeacon needed for turn, leave in place	No Changes
170 - 155	No Buoys	Good water, no buoys, discussed shore aids	No Changes
155 - 148	Green: 5 Red: 5	Cheatam Lock and approaches, Reds marking Harpeth Island	No Changes
148 - 140	Green: 5 Red: 5	Cheatam Tailwaters; controlled depth but buoys critical at low water	No Changes
140 - 104	Green: 1 Red: 2	Good water, not many buoys, buoys marking obstructions	discussed removing shore aids, few needed, can pull Cummings and Smith Branch Daybeacons, same with Hematite and Johnson daybeacons
104 - 94.5	Green: 9 Red: 7	Cross Creek mouth critical; otherwise bank to bank good water	Checked House daybeacon, Not used by industry can be removed
94.5 - 89	Green: 2 Red: 10	Marking slight turn near Cross Creek light, giving good RADAR picture	No Changes
89 - 86.2	Green: 1 Red: 1	Marking specific shoals/obstructions otherwise good water	No Changes
86.2 - 82	Green: 7 Red: 6	Marking channel/shoals	No Changes
82 - 78.1	Green: 6 Red: 3	Marking channel/shoals	No Changes
78.1 - 74.7	Green: 11 Red: 11	Narrow "S" turns, very difficult to navigate	Widen out turns if possible
74.7 - 69	Green: 14 Red: 14	Very narrow channel, high currents/debris take out Greens	Add Red at MM 70
69 - 62.6	Green: 20 Red: 20	Marking very narrow channel, Absolutely no water (4ft) outside reds	Very narrow, Request USACE dredge
62.6 - 57	Green: 14 Red: 14	Barkley Lake, very shallow, many gated pairs. Tough turn at MM 60	Buoys at MM 60 commonly hit/destroyed. No Changes recommended however.
57 - 53	Green: 11 Red: 11	Narrow, shallow straightaway, many gated pairs	No Changes
53 - 49	Green: 13 Red: 13	Narrow, shallow straightaway, many gated pairs	No Changes
49 - 45	Green: 10 Red: 11	Barkley Lake and Ingram Shoals, very shallow, many gated pairs	No Changes
45 - 39	Green: 34 Red: 23	Barkley Lake, very shallow, many gated pairs	No Changes
30 - 39	Green: 25 Red: 25	Approach to Barkley; Barkley Lake, winding curves, many gated pairs	No Changes
30 - 00	Green: 20 Red: 14	Barkley Lock tail water, good water but hard rock bottom outside channel; no changes. Bad shoaling near Luka, buoys critical, request USACE Dredge	Industry not using Taylor's Farm daybeacon can remove, same with Vicksburg Daybeacon

CGC CIMMARON TNR

River Segment	Normal/Mid-Water	Notes:	
TNR	Pool is 11 ft at 355 elevation		
206.7 - 200	Green: 16 Red: 6	Marking shoals and channel and approach to lock; Red side is rock	Add 1 Green
200 - 190	Green: 9 Red: 7	Marking Wolf Island and Diamond Island; no changes recommended	Industry does use Diamond Light to line up, leave in place
190 - 180	Green: 3 Red: 2	Savannah TN to Orras Point; Red marking bad rocks at Coffee Landing	No changes
180 - 170	Green: 3 Red: 5	Marking channel/shoals; good feedback from industry on turn	Satillo Daybeacon at 173.3 not used, could remove
170 - 160	Green: 7 Red: 0	Swallow Bluff Island, leave buoys and daybeacons in place all are used	Right below Swallow Bluff on right descending bank, hunting club has intense lighting which can be dangerous to navigation.
160 - 150	Green: 7 Red: 2	Approach to Clifton Bridge and Beach Creek; no changes	Beach Creek daybeacon, occasionally used for parking and meeting but otherwise not important
150 - 140	Green: 7 Red: 3	Double Islands and turns; Greens not very important could possibly be removed	Housing development gives operators geographic reference that eliminates need for buoys
140 - 130	Green: 2 Red: 2	Approach to Perrysville Bridge; no changes recommended	Lick Creek Daybeacon possibly damaged/destroyed industry needs repaired
130 - 120	Green: Red: 1	No changes	
120 - 110	Green: 4 Red: 2	Good water, marking approach to I-40 Bridge and near Duck River	
110 - 100	Green: 18 Red: 7	Mouth of Duck River, backside of Greens gets shallow quickly, 2 Greens marking wreck	No changes; Green sign for Birdsong Marina can be confused with dayboard, lots of drunk rec boaters
100 - 90	Green: 16 Red: 15	Approach to New Johnsonville RR bridge, lots of shoaling, marked well, no changes	Recent grounding, industry stated master was out of channel
90 - 80	Green: 15 Red: 15	Getting into KY Lake, marking channel, lots of gated pairs, good feedback regarding current buoy placement.	
80 - 70	Green: 15 Red: 15	KY Lake gated pairs; many gated pairs marking channel	Big Sandy Light/Buoy important
70 - 60	Green: 15 Red: 15	KY Lake gated pairs; many gated pairs marking channel	No Changes
60 - 50	Green: 15 Red: 15	KY Lake gated pairs; many gated pairs marking channel; good water	3 Greens near Pine Bluff Light not used, can remove; Pine Bluff Light dangerous for CG to maintain, industry says its useful and good aid
50 - 40	Green: 15 Red: 15	KY Lake gated pairs; many gated pairs marking channel and approach to Eggners	Buoys near Highland junction light are critical; sailing line near Eggner's Ferry Bridge does not match new bridge
40 - 30	Green: 6 Red: 2	KY Lake, good water, not many buoys	No changes
30 - 22	Green: 8 Red: 1	KY Lake, good water, no changes recommended	
22 - 00	Green: 16 Red: 9	KY Lock tailwaters; marking shoals and channel and bridge in Paducah	No changes

CGC OUACHITA TNR

River Segment	Normal/Mid-Water	Notes:	
TNR			
654 - 472	400 ATON	Marking Shoals, bridges, no comments	
472 - 467	Green: 9 Red: 10	No recommended changes	
424 - 467	Green: Red:	Marking rocks and critical navigation hazards, do not change	
426 - 423	Green: 10 Red: 9	Marking rocks and critical navigation hazards; maybe more reds	
420 - 423	Green: 8 Red: 9	Marking channel and bridge approach; no changes	
412 - 420	Green: 8 Red: 2	Marking narrow channel; no changes	
412 - 392	No ATON	No changes	
392 - 390	Green: 2 Red: 0	ATON not critical, industry comfortable with straight, remove ATON	
390 - 386	Green: 3 Red:	Marking bridge approach, channel, industry lines up on it; no changes	BB Comer Bridge lights very hard to see at MM 386
386 - 382	Green: 8 Red: 6	Marking channel and bridge approach; industry uses Green buoys, recreational vessels use Red buoys	
382 - 379	Green: 6 Red: 4	No changes	
379 - 375	Green: 5 Red: 6	Gated pairs marking channel; no changes, industry likes the gated pairs	Dangerous area during fog
375 - 372	Green: 7 Red: 6	Gated pairs marking channel; no changes, industry likes the gated pairs	Safety harbors marked on charts that are not safe for tows
372 - 363	Green: 50 Red: 50	Gated pairs marking channel; no changes, industry likes the gated pairs	Backside of Bridgeport Island, TVA
363 - 353	Green: 8 Red: 6	Marking channel and bridge approach, no changes recommended	
349 - 345	Green: 4 Red: 10	Reds marking channel; no changes recommended	
345 - 338	Green: 8 Red: 8	Marking Flint River mouth and Greenbriar light; industry occasionally runs backside of the island.	
338 - 335	Green: 3 Red: 2	Marking mouth of river above Hobbs Island; rock hazards at mouth; no change	
335 - 333	Green: 5 Red: 5	Gated pairs marking channel and bridge approach near Redstone Arsenal	Industry states some of the ATON is unnecessary; could mark turning point with one Red and a bridge buoy and all remove others
333 - 331	Green: 5 Red: 3	Marking channel and shoals; good set near bridge, no changes	
331 - 303	Green: 0 Red: 2	Reds marking channel near Meow Mix facility; no changes	
303 - 298	Green: 20 Red: 20	Marking two channels; lots of fleet tows in area, need the ATON for red flags	No changes recommended; heavy shoaling in areas outside channel
298 - 288	Green: 20 Red: 20	Gated pairs marking channel; no changes, industry likes the gated pairs	Shoal at 293 on Red side that absolutely needs to be marked, add 1 red buoy to shoal
288 - 284	No ATON	No changes	
284	Green: 3 Red: 4	Mouth of Elk River; industry does not use; could possibly privatize ATON on Elk River	
284 - 274	No ATON	Industry does not use lights; potentially remove fixed ATON in this area	MM 278.2 Wheeler, MM 286.2 Light remove, Some Masters do utilize Second Creek Light leave in place
274 - 272	Green: 3 Red: 4	Marking shoal, channel, and approach to lock; no changes recommended	
272 - 269	Green: 1	Marking steering point and TVA water testing equipment; no changes	
269 - 265	Wilson Pool Light	2 lights in this area, industry only uses downstream light; remove upper	
265 - 256	Green: 1 Red: 0	Marking set/exit to marina; dangerous area due to recreational traffic	
256 - 252	Green: 5 Red: 9	Marking shoals and channel; could remove lower Reds	
252 - 248	Green: 7 Red: 1	Marking shoals and channel; no changes	
248 - 244	Green: 4 Red: 1	Marking shoals and channel; try to straighten out	
244 - 240	Red: 6 Green: 6	Marking shoals and channel; try to straighten out	
240 - 236	Red: 7 Green: 9	Marking shoals and channel; no changes	
236 - 226	Green: 20 Red: 20	Gated pairs marking channel; no changes, industry likes the gated pairs	
226 - 209	No ATON	No changes	
209 - 206.7	Green: 3 Red: 3	Marking channel and approach to lock; no changes	

CGC MUSKINGUM

River Segment	Normal/Mid-Water	Notes:	
AR River including Verdigas and San Bois	Pooled water. No specific High and Low water set. Spacing: ½ Mile in straight aways and ¼ Mile in bends		
AR			
75-80	Green: 1 Red: 4	No Concerns.	
80-85	Green: 8 Red: 4	No Concerns.	
85-90	Green: 3 Red: 2	Shoaling exists coming out of the lock.	
90-95	Green: 4 Red: 8	No Concerns.	
95-100	Green: 6 Red: 6	No Concerns.	A buoy could be placed at the end of the dike at MM 99.
100-105	Green: 5 Red: 9	No Concerns.	
105-110	Green: 2 Red: 1	No Concerns.	
110-115	Green: 3 Red: 3	Possibly add a Greenbuoy at the pile of rock even though it is mostly clear.	Used to be a pile of rocks at MM 112 with a Greenbuoy near it. Most of the pile has been down to enable barges to safely cross over.
115-120	Green: 6 Red: 1	No concerns.	
120-125	Green: 3 Red: 4	No concerns.	
125-130	Green: 10 / 11 Red	Greenbuoy above 126.9 seems too far into the channel might need to move it out.	
130-135	Green: 6 Red: 10	No concerns.	Finger dike buoys have been adjusted some.
135-140	Green: 10 Red: 8	No concerns.	No issues.
140-145	Green: 10 Red: 6	No concerns.	Shoaling at 142-143 near Greenbuoy line.
145-150	Green: 1 Red: 11	No concerns.	
150-155	Green: 7 Red: 3	No concerns.	
155-160	Green: 8 Red: 3	No concerns.	
160-165	Green: 2 Red: 6	No concerns.	
165-170	Green: 4 Red: 7	No concerns.	
170-175	Green: 9 Red: 2	No concerns.	
175-180	Green: 7 Red: 10	179 - 180 is beginning to shoal.	
180-185	Green: 11 Red: 4	No concerns.	
185-190	Green: 7 Red: 6	185.7 Check for Red buoy. Add if missing.	
190-195	Green: 5 Red: 5	No concerns.	
195-200	Green: 4 Red: 8	No concerns.	
200-205	Green: 5 Red: 3	No concerns.	Downstream of lock 10 powerhouse side, shoaling is getting larger.
205-210	Green: 4 Red: 5	Buoy should be placed at 209.7 when day-beacon falls in.	
210-215	Green: 9 Red: 13	No concerns.	
215-220	Green: 2 Red: 4	No concerns.	
220-225	Green: 11 Red: 12	No concerns.	Shallow along the Red buoy line. Staying center channel is best.
225-230	Green: 12 Red: 10	No concerns.	
230-235	Green: 7 Red: 7	No concerns.	
235-240	Green: 3 Red: 10	No concerns.	
240-245	Green: 7 Red: 7	No concerns.	
245-250	Green: 5 Red: 8	No concerns.	
250-255	Green: 3 Red: 7	No concerns.	
255-260	Green: 3 Red: 3	No concerns.	
260-265	Green: 1 Red: 0	No concerns.	
265-270	Green: 0 Red: 3	No concerns.	
270-275	Green: 2 Red: 7	Add a Green to 272.	Shallows quickly outside of the channel.
275-280	Green: 15 Red: 4	No concerns.	
280-285	Green: 5 Red: 11	No concerns.	
285-290	Green: 7 Red: 7	No concerns.	
290-295	Green: 3 Red: 7	No concerns.	Red buoy at 292.3 likes to dive.

295-300	Green: 6 Red: 5	No concerns.	
300-305	Green: 8 Red: 2	No concerns.	
305-310	Green: 2 Red: 8	No concerns.	308.9 Red buoy gets lost frequently.
310-315	Green: 8 Red: 4	No concerns.	
315-320	Green: 0 Red: 12	No concerns.	Swift waters after lock.
320-325	Green: 4 Red: 1	No concerns.	
325-330	Green: 2 Red: 6	No concerns.	
330-335	Green: 5 Red: 4	No concerns.	
335-340	Green: 10 Red: 5	No concerns.	Robert S. Kerr Lake entrance.
340-345	Green: 17 Red: 21	No concerns.	Home Port for MUSKINGUM.
345-350	Green: 12 Red: 11	At 346.1 check buoy depths for shallow water.	
350-355	Green: 8 Red: 6	No concerns.	
355-360	Green: 6 Red: 9	No concerns.	
360-365	Green: 5 Red: 4	No concerns.	
365-370	Green: 3 Red: 1	No concerns.	
370-375	Green: 8 Red: 11	No concerns.	
375-380	Green: 3 Red: 4	No concerns.	
380-385	Green: 3 Red: 3	An additional buoy may be needed needed near the shoaling.	Center channel shoaling around 381-382
385-390	Green: 2 Red: 4	No concerns.	
390-395	Green: 8 Red: 4	No concerns.	Very important buoy at 395
Verdigris			
395-400 Verdigris	Green: 5 Red: 1	No concerns.	
400-405 Verdigris	Green: 2 Red: 0	No concerns.	
405-410 Verdigris	Green: 1 Red: 0	No concerns.	
410-415 Verdigris	N/A	No concerns.	No Buoys.
415-420 Verdigris	N/A	No concerns.	No Buoys.
420-425 Verdigris	Green: 3 Red: 1	No concerns.	Shoaling on Red side of channel at 421.
425-430 Verdigris	Green: 1 Red: 0	No concerns.	
430-435 Verdigris	N/A	No concerns.	No Buoys.
435-440 Verdigris	Green: 2 Red: 0	No concerns.	
440-445 Verdigris	Green: 0 Red: 2	No concerns.	Entrance to Port of Catoosa is very shallow.
San Bois			
0-5 Sans Bois	Green: 10 Red: 11	No concerns.	
5-10 Sans Bois	Green: 10 Red: 9	No concerns.	Cutter's small boat operates here with small buoys and doormoors to mark channel leading to animal feed facility.

CGC KANAWHA (AR)

River Segment	Normal/Mid-Water	Notes:	
AR and White Rivers	Pooled water. No specific High and Low water sets. Spacing: ½ mile in straights and ¼ mile in turns	White River: Downsizing to 6 th class buoys wouldn't present any issues.	
0-5 WHT	Green: 6 Red: 11	Nice to know where tip of the dike is at MM 2.5. If USACE can set the I-beam back at the dike end it would be helpful.	
5-10 WHT	Green: 9 Red: 4	Dredging at MM 6.2 turn from the USACE would be helpful.	Turn at MM 6 is the highest reported grounding area. Buoys are in at least 12ft of water in the turn. Shoal is building on the inside at MM 8.6 but still ok for now.
10-15 AR	Green: 0 Red: 0	N/A	No Buoys present.
15-20 AR	Green: 3 Red: 2	1 Red and 1 Green buoy at 17.8 are not necessary. Good water exists throughout area.	Buoys located at 17.8 not needed.
20-25 AR	Green: 4 Red: 9	Remove 2 of the buoys between 20-22 and space out a bit. Keep the buoys on each side of the bridge at 22.6.	Would like to open up Red buoy spacing at miles 20-22.
25-30 AR	Green: 6 Red: 10	At MM 27.8 Check depths center channel, shoaling has occurred.	No issues.
30-35 AR	Green: 7 Red: 6	No concerns.	H beam at 31.8 is laying at a 45° angle. We'll put buoys to cover these if they go down.
35-40 AR	Green: 11 Red: 7	2 Red buoys would be beneficial around 39.5 – 38.5 along the dikes as close as possible for temporary relief until I beams are replaced.	H beams are located at various locations along dikes. Would like to place a Green buoy at 40.3 at the dike tip.
40-45 AR	Green: 6 Red: 10	No concerns.	Shoal at LDB on MM 42 is building out slightly.
45-50 AR	Green: 7 Red: 6	On the lower approach there are dikes washed out with water topping over. No floating aid concerns.	Coming out of Lock 3 a Green has been added to mark the shoal.
50-55 AR	Green: 5 Red: 0	No concerns.	No issues.
55-60 AR	Green : 10 Red: 7	No concerns.	No Issues.
60-65 AR	Green: 4 Red: 8	No concerns.	Some buoys were moved in the last year around MM 64 to account for shoaling but it hasn't changed in the past year.
65-70 AR	Green: 5 Red: 2	No concerns.	No issues.
70-75 AR	Green: 3 Red: 4	No concerns.	Middle Green buoy at 70.5 disappears sometimes.