7 Review/Finalizing of the Standards

Performance standards can be modified at two points: following review by the public before Phase 1 dredging, and after Phase 1 dredging but before the start of Phase 2 dredging.

Upon receipt of public comments on the draft performance standards, comments will be addressed and standards will be modified as appropriate. Additional information obtained before finalizing the standards also will be incorporated into the standards as appropriate. This additional information may include preliminary design information, conceptual design information associated with the engineering performance standards, facility siting information, and information from other agencies. Following reviews by the public, the final performance standard document will be prepared and adopted by the USEPA as enforceable standards.

The information and experience gained during the first phase of dredging will be used to demonstrate compliance with the performance standards. Further, the data gathered will enable the USEPA to determine whether adjustments to operations or monitoring requirements are needed in the succeeding phase of dredging or if performance standards need to be reevaluated. However, it is anticipated that the methodology used during reevaluation will not be significantly different than that used to develop the standards. The USEPA will provide the public with data from Phase 1 dredging and an evaluation of the success or failure of the work in meeting the performance standards.

8 References

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A Fundamentals and Definitions (Noise and Lighting)

Lighting Background Information

Unwanted light in the nighttime environment is becoming a growing concern worldwide. Numerous local communities, cities, counties, and states have developed ordinances to control unwanted light. Unwanted or stray light can take the form of sky glow, light trespass, and glare.

"Sky glow" is the term used to describe the added sky brightness caused by the scattering of electric light into the atmosphere, particularly from outdoor lighting in urban areas. This phenomenon is of concern to astronomers and, to a lesser extent, the general public.

Light that strays from its intended purpose can become a visual annoyance or even temporarily disabling. The term "light trespass" is used to describe this effect. Most complaints about light trespass come from people upset by stray light entering their windows or intruding upon their property. In an effort to solve light trespass problems, various communities are now adopting outdoor lighting ordinances or regulations. Some of these specify measurable limits for light trespass in terms of horizontal illuminance at or within property lines.

A severe form of light trespass involves glare. Glare is the sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted, causing annoyance, discomfort, or loss in visual performance and visibility. It is often considered to restrict the vision of people performing driving tasks.

Light Measurement

A "lumen" is the unit of light output from a source. Lumens indicate a rate of energy flow and are therefore a power unit, like the watt or horsepower. The illumination level is the amount or quantity of light falling on a surface and is measured in footcandles or lux. The footcandle is equal to one lumen per square foot, and the lux is equal to one lumen per square meter. In monitoring light trespass, illuminance is measured with a footcandle meter and the results are then compared to allowable levels of light trespass found in local ordinances or other appropriate guidance documents.

References

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Illuminating Engineering Society of North America, 2000, IESNA Technical Memorandum on Light Trespass: Research, Results and Recommendations. IESNA TM-11-2000, New York, NY.

United States Code Title 33 - Navigation and Navigable Waters, Chapter 34 - Inland Navigational Rules, Part C - Lights and Shapes, Sections 2020 through 2024.

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Noise Background Information

Noise is defined as any unwanted sound, and *sound* is defined as any pressure variation that the human ear can detect. The human ear is capable of detecting pressure variations of less than one billionth of atmospheric pressure. Air pressure changes that occur between 20 and 20,000 times a second, stated as units of hertz (Hz), are registered as sound.

Sound is often measured and described in terms of its overall energy, taking all frequencies into account. However, the human hearing process is not the same at all frequencies. Humans are less sensitive to low frequencies (less than 250 Hz) than mid-frequencies (500 Hz to 1,000 Hz). Humans are most sensitive to frequencies in the 1,000 to 5,000 Hz range. Therefore, noise measurements are often adjusted or weighted as a function of frequency to account for human perception and sensitivities. The most common weighting networks used are the A- and C-weighting networks. These weight scales were developed to allow sound level meters to simulate the frequency sensitivity of the human hearing mechanism. They use filter networks that approximate the hearing characteristic. The A-weighted network is the most commonly used and sound levels measured using this weighting are noted as dB(A). The letter "A" indicates that the sound has been filtered to reduce the strength of very low and very high frequency sounds, much as the human ear does.

Because the human ear can detect such a wide range of sound pressures, sound pressure is converted to sound pressure level (SPL), which is measured in units called decibels. The decibel is a relative measure of the sound pressure with respect to a standardized reference quantity. Decibels on the A-weighted scale are termed dBA. Because the scale is logarithmic, a relative increase of 10 decibels represents a sound pressure that is 10 times higher. However, humans do not perceive a 10-dBA increase as 10 times louder. Instead, they perceive it as twice as loud. The following is typical of human response to relative changes in noise level:

- A 3-dBA change is the threshold of change detectable by the human ear,
- A 5-dBA change is readily noticeable, and
- A 10-dBA change is perceived as a doubling or halving of noise level.

The SPL that humans experience typically varies from moment to moment. Therefore, various descriptions are used to evaluate noise levels over time. Some typical descriptors are defined below:

1. L_{eq} is the continuous equivalent sound level. The sound energy from the fluctuating SPLs is averaged over time to create a single number to describe the mean energy, or intensity level. High noise levels during a monitoring period will have a greater effect on the L_{eq} than low noise levels. The duration of the measurement would be shown as $L_{eq(1)}$. A 24-hour measurement would be shown as $L_{eq(24)}$. The L_{eq} has an advantage over other descriptors because L_{eq} values from various noise sources can be added and subtracted to determine cumulative noise levels.

2. L_{dn} is the day-night equivalent sound level. It is similar to an $L_{eq(24)}$ but with 10 dBA added to all SPL measurements between 10:00 p.m. and 7:00 a.m. to reflect the greater intrusiveness of noise experienced during these hours.

3. L_{max} is the highest SPL measured during a given period of time. It is useful in evaluating L_{eq} for time periods that have an especially wide range of noise levels.

4. L_{10} is the SPL exceeded 10% of the time. Similar descriptors are the L_{50}, L_{01}, and L_{90}.

When adding sound pressure levels created by multiple sound sources there is no mathematical additive effect. For instance, two proximal noise sources that are 70 dBA each do not have a combined noise level of 140 dBA. In this case, the combined noise level is 73 dBA (see table below).

Approximate Addition of Sound Levels

Difference Between Two Sound Levels	Add to the Higher of the Two Sound Levels
1 dB or less	3 dB
2 to 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0 dB

(USEPA, Protective Noise Levels, 1974)

The decrease in sound level due to distance from any single noise source normally follows the "inverse square law." That is, the SPL changes in inverse proportion to the square of the distance from the sound source. In a large open area with no obstructive or reflective surfaces, it is a general rule that at distances greater than 50 feet the SPL from a point source of noise drops off at a rate of 6 dB with each doubling of distance away from the source. For "line" sources (such as vehicles on a street), the SPL drops off at a rate of 3 dB(A) with each doubling of the distance from the source. Sound energy is absorbed in the air as a function of temperature, humidity, and the frequency of the sound. This attenuation can be up to 2 dB over 1,000 feet. The drop-off rate will also vary with both terrain conditions and the presence of obstructions in the sound propagation path.

Wind can further reduce the sound heard at a distance if the receptor is upwind of the sound. The action of the wind disperses the sound waves, reducing the SPLs upwind. While it is true that sound levels upwind of a noise source will be reduced, receptors downwind of a noise source will not realize an increase in sound level over that experienced at the same distance without a wind.

In certain circumstances, sound levels can be accentuated or focused by certain features to cause adverse noise impacts at specified locations. At a hard rock mine, curved quarry walls may have the potential to cause an amphitheater effect while straight cliffs and quarry walls may cause an echo.

The three principal types of noise sources that affect the environment are mobile sources, stationary sources, and construction sources. Mobile sources are those noise sources that move in

relation to a noise-sensitive receptor—principally automobiles, buses, trucks, aircraft, and trains. Stationary sources of noise, as the name implies, do not move in relation to a noise sensitive receptor. Typical stationary noise sources of concern include machinery or mechanical equipment associated with industrial and manufacturing operations or building heating, ventilating, and air-conditioning systems. Construction noise sources comprise both mobile (e.g., trucks, bulldozers, etc.) and stationary (e.g., compressors, pile drivers, power tools, etc.) sources.

References

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New York State Department of Transportation Environmental Analysis Bureau, 1998, Environmental Procedures Manual, Chapter 3.1, Attachment 3.1.D (New York State Noise Analysis Policy).

United States Code of Federal Regulations, 1999, Part 772-Procedures for Abatement of Highway Traffic Noise and Construction Noise, 23 CFR Ch. I (4-1-99 Edition).

B Supplemental Navigation Information (Regulations and Factors Affecting Navigation)

Applicable Navigation Law, Rules, Regulations, and Other Factors Pertaining to the Navigation Performance Standard

1.0 Introduction

Navigation law, rules, regulations, and other factors were considered in the development of the navigation performance standard. This appendix documents a summary of federal and state law, federal and state regulations, and other factors adopted as the navigation performance standard. These requirements were selected for inclusion in the standard because they are applicable to the project; they promote safe and effective vessel movement and will allow the remedy to be completed without unnecessarily hindering overall non-project-related vessel movement. The navigation performance standard was specifically designed to minimize added traffic congestion (due to remedial activities); it does not specify additional requirements such as licensing. The following is a brief summary of the overall applicable and adopted laws, rules, and regulations, followed by a description (with citations) of the applicable components of each (see Section 2). Other factors pertaining to the navigation performance standard are included in Section 3.

Federal Protection of Navigable Waters

The River and Harbors Act of 1899, as amended, prohibits certain activities that would interfere with navigation without prior approval. The U.S. Army Corps of Engineers has administrative authority to protect navigable waters. The substantive elements of the rules are detailed within the U.S. Code.

Federal Inland Navigational Rules

The Inland Navigation Rules Act of 1980 sets out Rules 1 through 38 (33 U.S.C. §§ 2001-2038), and five Annexes (33 CFR §§ 84-88) were published through the U.S. Coast Guard as regulations, also in Chapter 1. These Inland Navigation Rules are very similar to the International Regulations for Preventing Collisions at Sea (commonly called 72 COLREGS) in content and format In addition, the incorporation of the U.S. Coast Guard into the Department of Homeland Security by the Homeland Security Act of 2002 resulted in the creation of new rules and regulations regarding inland and international navigation.

New York State Navigation and Canal Law and Regulations

The New York State Navigation Law is primarily administered by the Department of Parks and the Department of Environmental Conservation. The Navigation Law itself is very detailed. Few regulations have been promulgated by NYSDEC or the Parks Department related to the Navigation Law. The Canal Law governs operation of the canals in New York State, and it provides authority to the New York State Canal Corporation (NYSCC)for the administration and promulgation of regulations. While the majority of New York State navigation requirements are contained in the Navigation Law, the Canal Law is not as specific and leaves much of the detailed requirements to the discretion of the Canal Corporation to create and administer through the regulatory process.

Canal Navigation Law is contained in New York State Consolidated Laws, Chapter 5, Article 8, §§ 70-85. The NYSCC regulations pertaining to navigation were reviewed in the development of

the navigation quality of life standards. The applicable regulations are contained in Title 21 (Miscellaneous) of the New York State Code, Rules and Regulations, Chapter III (New York State Thruway Authority) Subchapter D (Canal System) Part 151 (Navigation Rules) (21 NYCRR 151).

2.0 Applicable Navigation Laws, Rules, and Regulations

2.1 Obstruction of Waters

Obstruction of navigable waters could interfere with the objective of the navigation performance standard. Therefore, the following requirements are included in the standard.

2.1.1 Federal Protection of Navigable Waters and Harbor and River Improvements

Under U.S. Code Title 33, Chapter 9, Section 409 - Obstruction of navigable waters by vessels; floating timber; marking and removal of sunken vessels is applicable to the Hudson River PCBs Superfund Site:

"It shall not be lawful to tie up or anchor vessels or other craft in navigable channels in such a manner as to prevent or obstruct the passage of other vessels or craft." In general, this law minimizes obstruction of navigation.

2.2 Lights, Signals, and other Aides to Navigation

The Federal Inland Navigation Rules, and New York State Navigation Law and Canal Regulations dictate the type, size, location, color, and use of lighting and sound signals on all ships and vessels that use the Canal system. It is important for these requirements to be followed in order to facilitate safe and efficient vessel movement. Applicable rules, laws, and regulations pertaining to lights and signals are described below.

2.2.1 Lights and Shapes

The following requirements apply to the type, size, location, color, and use of lighting on all ships.

2.2.1.1 Federal Inland Navigation Requirements

33 CFR §§ 84 to 88, under Chapter I (Coast Guard, Department of Homeland Security) Subchapter E, Annex I, describe requirements for positioning and technical details for lights and shapes for inland navigation in the United States. These requirements include vertical and horizontal positioning and spacing of lights, details of location of direction-indicating lights for dredges and vessels engaged in underwater operations and other requirements for screens, color, shape, and intensity of lights. In addition, Annex V describes additional requirements for lighting of moored barges and dredge pipelines.

2.2.1.2 New York State Navigation Law

Lighting requirements are described under New York State Navigation Law Article 4, Part 1, Section 43, "Lights to be displayed."

2.2.1.3 New York State Canal Regulations

New York State Canal Corporation Regulations describe lighting requirements for Moored Floats under 21 NYCRR Part 151.11.

2.2.2 Sound and Light Signals

The following requirements apply to the type, intensity, and use of lighting and sound for signaling on all vessels. Lighting and horn signals are important means of communication on the canal. These requirements also cover the use of aids to navigation such as signage and posted information.

2.2.2.1 Federal Inland Navigation Requirements

Annex III of the Inland Navigation rules (33 U.S.C. Part 86) provides requirements for the technical details of sound signal appliances, including frequency, intensity, range of audibility, directional properties, and information on the positioning and use of whistles. Annex IV (33 U.S.C. Part 87) provides requirements for distress signals.

2.2.2.2 New York State Navigation Law

NY CLS Nav § 35 - Aids to Navigation. Allows the placement of navigation aids to mark obstructions to navigation if it provides for safety of navigation. Each aid to navigation is to be displayed in a conspicuous place and in legible condition the letters "NYS." Section 35a - Floating Markers also applies.

2.2.2.3 New York State Canal Regulations

New York State Canal Corporation Regulations describe signaling, day markers, and shapes. The following sections are applicable:

21 NYCRR Part 151.6. Draft Marking on Floats
21 NYCRR Part 151.15 Buoys and Lights Displaced
21 NYCRR Part 151.23 Warning Signal Approaching Bends 21 NYCRR Part 151.26 Aids to Navigation

2.3 Piloting and Movement

Federal, and state rules, laws, and regulations regarding the piloting and movement of vessels were reviewed. Compliance with applicable and substantive requirements is necessary to ensure safe use of the river and prevent the unnecessary hindering of vessel traffic.

2.3.1 Federal Inland Navigation Rules

Annex V, "Pilot Rules" (33 CFR 88), of the Inland Navigation Rules, provides requirements for public safety activities, obtaining copies of rules, and law enforcement vessels.

2.3.2 New York State Navigation Law

NY CLS Nav § 41 Pilot Rules, provides piloting requirements that shall be observed on all mechanically propelled vessels on the navigable waters of the state.

2.3.3 New York State Canal Regulations

New York State Canal Corporation regulations describe piloting and other similar requirements. The following sections are applicable:

21 NYCRR Part 151.7. Number of Units in Tow
21 NYCRR Part 151.8. Formation of Tows
21 NYCRR Part 151.9. Propulsion of Barges by Pushing
21 NYCRR Part 151.17. Speed on Canals
21 NYCRR Part 151.18. Speed when Passing
21 NYCRR Part 151.19. When Passing Dredging etc.
21 NYCRR Part 151.20. Preference of Floats in Passing
21 NYCRR Part 151.21. Locks
21 NYCRR Part 151.24. When Traffic Congested

3.0 Factors Affecting Navigation

3.1 Basic Factors

The following is a summary of factors that will affect navigation in the project area and require consideration during design:

- **Existing width and depth of the navigational channel.** In an effort to determine the existing depth and width of the navigational channel, National Oceanic and Atmospheric Administration (NOAA) charts and information in existing project documents were reviewed. Because the river is a dynamic system, the width and depth of areas in the navigation channel change seasonally. Since the channel has not been dredged since 1979, the dimensions and depth of the channel shown on the NOAA charts may no longer be accurate. It is anticipated that new river surveys performed by the RD Team will yield information to establish specific clearance requirements by area of activity. The NYSCC will have to be consulted directly regarding the adequacy of clearance in each area.

- **Type of dredging operation and associated equipment/support vessels.** Mechanical and hydraulic dredging require different types of equipment and methods for transferring the dredged sediments to the processing facility. The vessels may be self-propelled or require the assistance of tugboats.

- **The river conditions (seasonal flow variations) and weather conditions.** Weather conditions such as rainfall, snow melt, high winds, etc., will impact the amount and depth of water and the current. These factors play a significant role in the immediate ability to navigate the channel in potentially adverse weather/current conditions and by changing the topography of the riverbed through scouring and deposition of suspended materials. In addition, the drawdown caused by the use of water by the New York State Electric and Gas (NYSEG) power-generating facility can change available water levels, causing changes in depth and current strength.

- **Duration and time of day of operation.** Vessel-traffic congestion is often a function of the time of day and/or duration of activities on or near the river.

- **Vessel traffic patterns.** The direction of traffic movement and the volume of traffic in different segments can affect congestion. Movements upstream and downstream impose different maneuvering requirements on vessels, depending on vessel design, mode of power, draft, etc. Areas where side channels and other traffic confluences (e.g., boat launches, marinas) occur may add or remove vessels from the traffic flow.

- **Vessel working configuration (fleeting) requirements.** Spuds, anchors, cables, and other equipment used to secure/tie off a vessel may affect navigation. The mooring or rafting of multiple vessels together in a specific location may encroach upon the channel in one area or offer a solution to traffic problems in another. Anchor chains, buoys, pipelines (whether on or below the surface), and the movement of vessels at anchor or while shifting positions may impede transit through an area.

- **Vessel operation and tow clearance.** Movement of vessels within confined areas may impede traffic flow. Barges may be towed alongside, astern, or pushed ahead of tugs, and the method of tow may change during a transit to account for changes in channel width or depth. Vertical and horizontal clearance at the surface (e.g., bridge height above water and clearance between support piers) as well as depth may impose restrictions in maneuvering that could cause traffic congestion while project vessels are in transit.

3.2 Unique Factors

The following is a summary of unique features in the project area that may affect navigation. Areas where specific navigational concerns exist along the channel include Locks 3, 4, 5, and 6. The following discussion presents key navigational concerns in the project area.

- **Lock 3 and Lock 4.** The navigational channel located between Lock 3 (in Mechanicville) and Lock 4 (in Stillwater) is currently dredged at the mouth of the Hoosic River. This portion of the channel receives large amounts of silt and coarse-grained sediment from the flow of the Hoosic River into the Hudson River. Dredging is performed by the NYSCC to maintain a navigational channel depth of 12 feet. Located north of Lock 3 is a fixed railroad bridge where the vertical clearance fluctuates between 12 and 15.5 feet, depending on the water drawdown from the downstream NYSEG power plant and natural fluctuations in the depth of the navigational channel. The width of the river at this location varies from 40 to 60 feet. During times of operation, the power facility controls the level of water between Locks 3 and 4 through hydraulically operated steel gates that serve as a dam.

The introduction of dredging vessels into this area could potentially interfere with recreational and commercial watercraft due to the narrowness of the river, coupled with the existing bridge support piers and fluctuation of the river levels. Furthermore, NYSEG has a planned improvement project at the Mechanicville plant to replace the hydraulically operated steel gates with bladder- (air-) operated steel gates. This project will require installation of flashboards in the area of the replaced unit to aid in the control of river levels during construction. Water drawdowns associated with this project may affect navigational clearance under the fixed bridge. The RD Team shall take into account potential impacts (if any) to the RD and the RA.

- **Area North of Lock 5.** Depth measurements taken in 2002 by the NYSCC in the vicinity of buoy R160, located north of Lock 5 and south of the Route 4 bridge, indicated that as little as 4 feet of water exists along the west side of the navigation channel and, on average, only 7 feet of water is available in the navigation channel for vessel passage. Vessels passing through this relatively narrow area currently must veer to the east side of the channel, resulting in some risk to vessels (TAMS Consultants, Inc. 2002).

- **Lock 5 and Lock 6.** The greatest movement of recreational river traffic occurs during the months of July and August, when Locks 5 and 6 experience the greatest amount of use in the project area. Because of the level of use this section experiences under normal conditions and the length of time required to travel through these locks and associated land cut areas, potential traffic congestion along this section of the river during implementation of the RA is a concern. In particular, Lock 6 requires passage through an approximate 2-mile long land cut section that may provide passage only for larger vessels in one direction. The White Paper - River Traffic (TAMS Consultants, Inc. 2002) indicates that under a mechanical dredging scenario, an estimated nine vessels (not including support and supply vessels) would be expected to move through these canal locks daily, and under a hydraulic dredging scenario, three vessels would be expected to move through these canal locks daily (not including support and supply vessels). During the peak canal season of July and August there is a potential for congestion at these locks.

  Project-related river traffic will be controlled and scheduled to minimize, to the extent practicable, adverse effects on the commercial or recreational use of the upper Hudson River. For example, use of the locks by project-related vessels during off-hours would aid in reducing potential river congestion, if not eliminate it entirely. Positioning the backfill vessel near the dredging vessel would aid in keeping a passage open for non-project-related vessels.

3.3 Jurisdiction Factors

Various law enforcement agencies, including the New York State Police, county and local sheriffs, the USCG, and local law enforcement, also (in addition to the NYSCC) have jurisdiction on the river, depending on the area and situation. These agencies enforce the various laws, including the New York State Canal Law on behalf of and in cooperation with the NYSCC. The river is patrolled primarily by the New York State police. Activities in the navigable portion of the project (the channel and the locks) are under the jurisdiction of the NYSCC. The NYSCC employs two principal methods of control in their jurisdiction. The first is a set of rules and regulations, 21 NYCRR Part 151 (Canal Corporation Regulations). Vessels that are in their jurisdiction must follow 21 NYCRR Part 151. The second method is a work permit program. The program includes a

review process that includes NYSDEC, the USACE, and the NYSCC[2]. According to the NYSCC, there are no written guidelines or requirements that one can review to determine whether a specific activity would be permitted. Rather, such requirements are determined by the NYSCC on a case-by-case basis. For example, when dredging is performed in the navigation channel, the required clearance for safe movement around the work area is situation-specific (i.e., a standard clearance distance is not specified). The process is interactive and is based on situation and circumstances. The NYSCC sends staff out to view the area and, based on their assessment of the situation, provide input on what is required. Circumstances such as expected vessel traffic in the proposed work area may dictate whether the situation meets the NYSCC's requirements (e.g., if a commercial vessel is scheduled to come through an area on a certain day, proposed work in the navigation channel may not be allowed on that day, or such work must be performed in a way that would allow the vessel to pass.). In addition, the lockmaster has direct control over movement through the locks. The lockmaster decides how many vessels (based on various factors such as size, etc.) are included in a lockage (one complete lock opening and closing cycle) and which vessels have priority to go through. Therefore, the lockmaster's decisions have a direct impact on the flow of vessel traffic.

Enforcement on the river in the project area can vary based on jurisdiction and situation. For example, the NYSCC has jurisdiction over the navigation channel and the locks, and it has established rules and regulations governing their use; however, the New York State police provide enforcement by boat patrols and also enforce a broader set of laws and regulations. Other law enforcement agencies such as local police and agencies such as NYSDEC, which has jurisdiction over recreational activities (e.g., fishing), also have enforcement roles on the river. Therefore, these other agencies and their associated enforcement roles and requirements could affect vessel movement on the river. For example, NYSDEC has established several public boat launching ramps in the project area, and the number of vessels that use these areas is not readily predictable. Though the number of lockages per day and by year is recorded by the NYSCC, detailed surveys (that include vessel size and type) of the number of vessels that pass through the project area have not been completed, according to the NYSCC and NYSDEC. The navigation channel is currently partially restricted by sediment in some areas since dredging has not occurred in the project area since 1979. It is expected that some navigational dredging will be required in the early part of Phase 1 dredging. Once boaters know that the navigation channel has been dredged, additional mariners may wish to use the river in the project area. In addition, the potential exists for increased traffic due to those interested in observing the remedial activities. This potential increased vessel traffic is not readily predictable.

The standard applies solely to the RA Team activities and does not dictate the movement of non-project-related vessels. The standard requires the RA Team to take into consideration the various sources of river traffic (as described above and including such things as tours, fishing tournaments, and festivals) and complete the RD/RA in a manner that minimizes the potential for additional vessel congestion that could affect the community's quality of life.

[2] CERCLA contains a permit exemption for the portion of the remedial action that is conducted on-site. However, the project will comply with substantive requirements of any otherwise necessary permits.

The quality of life performance standard for navigation was developed taking into account these factors and with attention to providing a reasonable, implementable, and measurable performance standard.