

10 Navigation Safety and Natural Resource Interactions

Target Statement

By 2050, state-of-the-art navigational safety aids, emergency response capacities and river maintenance dredging plans are in place to protect and sustain ecosystems while also supporting operational and safety needs for recreational and commercial navigation. These conditions ensure the safe on-river interaction of commercial and recreational user groups, prevent accidents and spills and protect or restore critical natural resources. By 2030, an active, diverse and collaborative Navigation Safety Committee has identified opportunities to reduce risk and has achieved early success by installing remotely accessed distance to water surface technology on all bridge infrastructure and additional state-of-the-art safety measures and resources, while DEC, USACE and port agencies on the Hudson are coordinating plans for dredging and dredged material management to assure win-win solutions that sustain navigation and restore ecosystems.*

Summary

The Hudson River estuary is used as a nationally significant commerce corridor, requiring that ecological and transportation goals come into alignment. In 2014, for example, nearly 18 million tons of cargo were shipped on the Hudson with 15.8 million tons bound for domestic ports and nearly 2 million tons shipped abroad; the Troy Lock and Dam alone provides safe passage of more \$6 billion of commerce annually. Commercial cargo being shipped on the river today includes raw materials (e.g., sand and gravel), iron ore, scrap metal, chemicals, cement, food products, large turbines, sewage sludge, wastewater and petroleum products. The Hudson remains a vital “working” river, and the potential for ecological and safety conflicts is important to recognize. Historically, extensive habitat loss accompanied the development and maintenance of the navigation channel. Oil spills and shipping accidents occur on a regular but infrequent basis. These impacts can be better managed.

Recent estimates identified more than 90 documented boat launches, marinas and port facilities in the region. This infrastructure supports recreation, tourism, public access and commercial shipping. While some significant facilities are being upgraded, such as the Port of Albany, others have routine maintenance needs and activities, while others could be expected to undergo upgrades in the foreseeable future. Sediment management is a significant challenge for these facilities as well as natural resource management. A calibrated and coordinated approach to facility upgrades and maintenance represents an area of activity capable of not only improving the safety and condition of these facilities but also making contributions to natural resource management objectives.

** Note: This TEC did not benefit from a focused working group as it was established as a standalone topic following the completion of the original TEC development process. No detailed description exists and we recommend working with the U.S. Coast Guard working group, as warranted and appropriate, to develop a summary of the topic and revise the goal statement and associated description as necessary.*

Co-existing with this increasing commercial use is a vibrant recreational boating community which includes kayaks, jet skis, sailboats, small fishing vessels, cabin cruisers and yachts. With more than 60 yacht/boat clubs throughout the estuary recreational boaters are another significant stakeholder in future management objectives in the region. The infrastructure necessary to support this community already exists in the form of public marinas and launches as well as private clubs, but this infrastructure also requires maintenance and risk management activities which need investment.

Sediment management is a principal concern of commercial and recreational navigation users, as well as natural resource managers. As identified in other components of the Hudson River CRP, sediment management is a fundamental necessity to ensure the long-term viability of both commercial and recreational uses on the river and ensure habitats and ecological functions are conserved. For example, Sediment-related turbidity is a beneficial factor in preventing algae blooms in the Hudson, and a certain amount of sediment may be necessary to sustain wetlands and ecosystems in the face of sea level rise.

Dredging activities in and adjacent to the 32-foot deep commercial shipping channel is largely managed through the U.S. Army Corps of Engineers while much of the navigational aid and emergency response infrastructure is managed by the U.S. Coast Guard. In the early 1900's, construction and early management of the navigation channel resulted in the estimated loss of more than 9000 acres of habitat, with most of the loss

occurring in the upper estuary. Future investments in port development have the potential to further damage habitats of the river unless properly designed and managed to incorporate new design elements and current knowledge of river ecology; ideally such future investments will incorporate restoration of habitats that were formerly destroyed.

Proper disposal of dredged material is a significant challenge to management and restoration that needs to be addressed. Although current dredging operations and material storage facilities do exist on the river, only one storage facility remains open. There is not sufficient capacity to accommodate the additional material generated by channel maintenance. Lack of disposal facilities has the potential to limit proposed habitat restoration activities as well.

Along with a much-improved understanding of sediment dynamics in the Hudson River Watershed, an improved, comprehensive sediment management strategy is necessary to sustain the viability of navigation and to effectively manage the habitats and ecology of the river. Nourishment of marshes with sediment may be needed in the context of sea level rise, and may present an opportunity for ecologically-sound placement of clean dredged material. Management of sediments, discussed under Sediments, is a key strategy that can support both recreational and commercial navigation if properly designed to also support ecological needs.

In addition, dredging options for the recreational marinas and clubs along the Hudson, especially in the lower reaches of the estuary, are severely constrained by the cost of testing for contaminants and the cost of disposal options triggered by the presence of contaminants. These facilities provide significant recreational access to the river, but they have few options to maintain their harbors and basins, which are now silting in. Similarly, contaminated sediments increase the cost of navigational dredging of the channel. Reduction of legacy contamination in sediments, discussed under Contaminants, is a key strategy that will support both recreational and commercial navigation by reducing the cost of dredged material disposal.

Safety is another principal concern for both commercial and recreational users. Increased commercial traffic, attributable, in part, to increased use of the Hudson as a fossil fuel shipping corridor, simply increases the odds of interactions with recreational users and the risk of spill-related accidents. Recreational users of all types would benefit from better understanding and appreciation of how to react to an encounter with a cargo ship, and ecologically sensitive areas to avoid. Commercial captains would benefit from improved, real-time information transfer, particularly associated with bridge clearance information as sea levels rise in the future. Resource managers and municipalities will benefit from continued upgrades to emergency response plans and capacities.

Coordination between navigation management and natural resource stakeholders is necessary to enhance safety on the river and reduce the impacts to sensitive natural resources. This coordination should extend to the development of ports and the conditions of use for anchorages. Currently, port expansion is not well coordinated and one of only two approved anchorages on the river is located over the most important spawning habitat for Atlantic Sturgeon; anchor scarring is currently evident in underwater imaging. River bottom conditions are crucial habitat factors for Sturgeon spawning success. Managing the use of existing anchorages to avoid such habitats would be a desirable outcome of enhanced coordination of ecological and navigation needs. The issue of establishing new anchorages has recently been a significant topic of concern in the region, with natural resource implications being one significant element of the debate. This topic is one of several examples of conflict identified in this initiative that will likely require further evaluation and dialogue over the near-term and may not produce an equitable or negotiated solution.

The U.S. Coast Guard has established a working group to address navigation related issues and challenges. "The Hudson River Safety, Navigation and Operation Committee" provides a seat for the Estuary Program, Riverkeeper, Hudson Valley Land Trusts, and a riverfront community representative. This is a significant milestone with the potential to improve the safety, coordination and collaboration of the vested stakeholders related to navigational management in the estuary, and beyond. We expect current and future safety concerns referenced above will be addressed swiftly and provide a solid foundation for future endeavors, particularly related to sediment management.

