

have been previously analyzed and identified (EPA 1999b). A review of the Future Actions in combination with the Proposed Project determines whether projects in the resource-specific study areas for cumulative impacts could result in similar impacts on the resource.

5.5 SCREENING FOR CUMULATIVE IMPACTS

Each resource area was researched, reviewed, and evaluated to determine whether Project-related impacts on that resource in concert with other Future Actions would result in the potential for cumulative impacts. This screening revealed that Project-related impacts in several resource categories addressed in Chapter 4 have the potential to contribute in more than a minor way to cumulative impacts. Other resource areas were determined unlikely to be cumulatively affected or would potentially contribute to cumulative impacts in only a minor way. The resource areas determined to have the potential for more than minor cumulative impacts were carried forward for further consideration and analysis. The rationale for these conclusions is presented in Table 5.5-1 with additional detail on impacts included in the corresponding section in Section 4.0 Environmental Consequences. Section 5.6 includes additional analyses of the impacts to any resource areas for which Alternative 1 (Proposed Project) has the potential to contribute to cumulative impacts in more than a minor way. For some resource areas, the Corps determined that, based on the additional analysis, there would be no cumulative impacts.

Table 5.5-1
Screening of Potential Cumulative Impacts by Resource Area

Resource Area	Potential to Contribute to Cumulative Impacts in More Than a Minor Way?	Rationale
Geology and Soils	No	Alternative 1 (Proposed Project) is anticipated to result in negligible impacts to geology and potentially minor adverse impacts to soils due to erosion, loss of topsoil, soil compaction, and runoff. Construction of Alternative 1 (Proposed Project) would cause a relatively small demand for fill material in comparison to available resources. Construction of Alternative 1 (Proposed Project) would not impact any soils that comprise sources of potable water. The interaction of Alternative 1 (Proposed Project) with other Future Actions is not anticipated to result in any cumulative impacts to geology and soils.

Resource Area	Potential to Contribute to Cumulative Impacts in More Than a Minor Way?	Rationale
Hydrology	No	Construction of Alternative 1 (Proposed Project) would cause a significant increase in impervious surface; however, with mitigation impacts would be minor Alternative 1 (Proposed Project) involve discharge into impaired water bodies; however, implementation of Best Management Practices (BMPs) would be required to reduce pollutant loads and prevent further impairment, resulting in negligible impacts. Alternative 1 (Proposed Project) are located in designated floodplains, however there would be a negligible adverse impact to base floodplains resulting from the placement of fill; negligible impact to flood hazard for other adjacent areas. The interaction of Alternative 1 (Proposed Project) with other Future Actions is not anticipated to result in any cumulative impacts to hydrology.
Water Quality	No	Alternative 1 (Proposed Project) has the potential to improve surface water quality over existing conditions due to improved treatment of stormwater runoff through addition of detention ponds, sediment forebays, and implementation of BMPs. All design requirements must be in compliance with the total maximum daily load (TMDL) for dissolved oxygen established for the Charleston Harbor, Cooper, Ashley, and Wando Rivers. Other Future Actions would be subject to similar regulatory standards and are not expected to interact with Alternative 1 (Proposed Project) in a way that would result in cumulative impacts to water quality.
Vegetation and Wildlife	No	Impacts to upland vegetation are anticipated to be minor adverse for Alternative 1 (Proposed Project). Impacts to wetland plant communities would be reduced by the avoidance and minimization of construction activities within tidal wetlands. This includes bridging any roadways and railways that are proposed to impact tidal wetlands and creeks. Impacts to mammals, wading birds, migratory birds, raptors, reptiles, fish, crustaceans and mollusks are anticipated to be minor adverse for Alternative 1 (Proposed Project) as a result of potential displacement and/or mortality of individuals during construction activities. The interaction of Alternative 1 (Proposed Project) with other Future Actions is not anticipated to result in any cumulative impacts to vegetation and wildlife.
Waters of the U.S.	Yes	Alternative 1 (Proposed Project) would result in fill impacts to 15.84 acres of wetland habitat (includes 6.65 acres of tidal salt marsh, 8.01 acres of freshwater wetlands, 1.14 acres of tidal open waters and 0.04 acres of non-tidal open-water impacts). The interaction of Alternative 1 (Proposed Project) with other Future Actions may result in cumulative impacts to waters of the U.S.
Protected Species	No	With the implementation of avoidance and minimization measures during construction activities and additional potential mitigation measures, Alternative 1 (Proposed Project) would have negligible effects on habitat alteration/fragmentation and species displacement of Protected Species. The interaction of Alternative 1 (Proposed Project) with other Future Actions is not anticipated to result in any cumulative impacts to Protected Species.

Resource Area	Potential to Contribute to Cumulative Impacts in More Than a Minor Way?	Rationale
Essential Fish Habitat	No	Alternative 1 (Proposed Project) would result in the loss of 7.79 acres of Essential Fish Habitat (EFH) and a minor impact to federally managed species during construction. Alternative 1 (Proposed Project) would have a negligible impact to oysters with the implementation of water quality BMPs and the potential for future oyster settlement and propagation. The interaction of Alternative 1 (Proposed Project) with other Future Actions is not anticipated to result in cumulative impacts to EFH.
Traffic and Transportation	Yes	The transportation study was designed to account for other Future Actions in the study area; therefore, the impacts inherently account for cumulative impacts. The interaction of Alternative 1 (Proposed Project) with other Future Actions is anticipated to result in cumulative impacts to transportation within the study area.
Land Use and Infrastructure	Land Use – Yes Infrastructure – No	<p>Land Use: Impacts to land use as a result of Alternative 1 (Proposed Project) is anticipated to be major, requiring rezoning as well as an amendment to the City of North Charleston Comprehensive Plan. Alternative 1 (Proposed Project) would require the demolition of approximately 88 structures. Additional off-site roadway and rail improvements would cause the demolition of approximately 23 structures, all of which would be considered a major permanent adverse impact.</p> <p>Infrastructure: Utility services for potable water, sanitary sewer, natural gas, telecommunications, and solid waste are currently in place and have sufficient capacity to serve Alternative 1 (Proposed Project). Peak service demands from the five electric cranes on the Project site would require upgrades to the local electric utility infrastructure. There may be temporary interruptions of utility services during construction as existing infrastructure is relocated and/or upgraded. No cumulative impacts to utilities are anticipated in the region.</p>
Cultural Resources	Yes	Impacts to historic properties as a result of Alternative 1 (Proposed Project) are anticipated to be adverse for the CNH historic district and the USMC Barracks. There would be negligible impacts to the remaining historic properties near Alternative 1 (Proposed Project) due to vibration. The potential for archaeological sites to exist within the Proposed Project site is minimal. There is the potential that the interaction of Alternative 1 (Proposed Project) with other Future Actions could result in cumulative impacts to cultural resources.

Resource Area	Potential to Contribute to Cumulative Impacts in More Than a Minor Way?	Rationale
Visual Resources and Aesthetics	Yes	Construction and operation of Alternative 1 (Proposed Project) would result in a minor, permanent adverse impact to scenic views. Alternative 1 (Proposed Project) would result in a major, permanent adverse impact to scenic resources (e.g., historic properties). There would be a range of negligible to major, permanent adverse impacts to visual quality and character of the Visual Resource study area (VRSA) from the construction and removal of structures and mature trees, including contributing elements of a historic district(s) under Alternative 1 (Proposed Project). The introduction of high-mast lighting (illuminated from dusk until dawn), as well as train head lamps, would introduce minor, permanent impacts from light and glare. Nighttime head lamps from trains could potentially disturb sleep for residences along curvatures in rail tracks under Alternative 1 (Proposed Project).
Noise and Vibration	Yes	For Alternative 1 (Proposed Project), traffic noise impacts would result in a negligible adverse impact overall and a negligible beneficial effect for several streets. Rail noise impacts would be a minor to moderate adverse impact along several segments due to increased rail activity and new track builds. Rail vibration impacts would be negligible. Construction impacts would be a minor to moderate adverse impact in the vicinity due to frequent operations of construction equipment. Operational impacts would be a minor to moderate exterior daytime adverse impact and major exterior nighttime impact in the vicinity due to standard train/crane operations. Negligible additive noise impacts would occur at Virginia Avenue (Traffic + Rail Noise) and minor to moderate additive noise impacts would occur at St. Johns Avenue (Traffic + Rail Noise). This Project, when combined with other Future Actions, could result in cumulative impacts.
Air quality	Yes	Alternative 1 (Proposed Project) would have minor impacts from criteria pollutants from both construction and operation. Criteria pollutants emitted for Alternative 1 (Proposed Project) along with the existing and projected criteria pollutants, would not put the Tri-County area into non-attainment for any criteria pollutants. Impacts from non-DPM HAP emissions would be within the acceptable range. Potential impacts from cancer risk would be within the acceptable range, and impacts from noncancer hazard would be negligible. There is a potential for cumulative impacts to air quality when combined with other Future Actions.
Climate Change	No	Climate Change impacts are inherently cumulative in nature. GHG emissions contribute cumulatively and adversely to Global Climate Change, such as sea level rise, increased frequency and intensity of storm events, and impacts to ecosystems. The GHG emissions Inventory would be 30,948 MT CO ₂ e from Alternative 1 (Proposed Project), resulting in minor long-term adverse impacts. Impacts due to sea level rise at the Proposed Project would be negligible. Impacts from increased frequency and intensity of storm events on the Proposed Project site would be major.

Resource Area	Potential to Contribute to Cumulative Impacts in More Than a Minor Way?	Rationale
Hazardous, Toxic and Radioactive Waste	No	Construction and operation activities would comply with the Navy’s permitting process and all applicable laws for testing and disposal of contaminated soils and treatment and disposal of dewatering effluent. All buildings requiring demolition are required to have asbestos and metals-based paint surveys; any impacts would be abated prior to demolition. All fuel and hazardous waste operations would be conducted in compliance with state and federal regulations. No impacts to Superfund sites or dangerous concentrations of hazardous materials are anticipated. Potential minor adverse impacts could result from Alternative 1 (Proposed Project). Other Future Actions would be subject to the same regulatory standards and are not expected to interact with Alternative 1 (Proposed Project) in a way that would result in a cumulative impact related to hazardous materials and waste.
Socioeconomics and Environmental Justice	Yes	Construction and operation of Alternative 1 (Proposed Project) would impact community resources, cohesion, business resources, mobility and access, and safety. Major short-term and indirect long-term beneficial impact as a result of the construction and operation of the ICTF to local and regional economies. Major adverse impacts to neighborhoods and communities, primarily in the form of residential displacements, would occur under Alternative 1 (Proposed Project). Alternative 1 (Proposed Project) would also have disproportionately high and adverse impacts to Environmental Justice populations.
Human Health and Safety	Yes	Overall, impacts to human health and safety as a result of Alternative 1 (Proposed Project) are anticipated to be negligible to minor adverse, and localized. There is a potential that these Project impacts would accumulate with impacts from other Future Actions to create an adverse cumulative impact to human health and safety.
Section 4(f) and 6(f) Resources	Yes	Alternative 1 (Proposed Project) would result in a direct use of the CNH Historic District from permanent incorporation (demolition of contributing elements of the historic district) and USMC Barracks from permanent incorporation (placement of arrival/departure tracks within the southwest corner of the Parade Ground), which are 4(f) resources. There is the potential that these Project uses would accumulate with uses from other Future Actions to create a cumulative use of Section 4(f) or 6(f) resources.