



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 6  
1201 ELM STREET, SUITE 500  
DALLAS, TEXAS 75270

April 7, 2021

Mr. Joe McMahan  
Regulatory Division Chief  
U.S. Army Corps of Engineers  
P.O. Box 1229  
Galveston, Texas 77553-1229

Dear Mr. McMahan:

The U.S. Environmental Protection Agency (EPA) Region 6 has reviewed the Public Notice (PN) SWG-2012-00381, dated March 4, 2021. We appreciate the extension of the comment period until April 12, 2021, under Part II.4 of the 1992 404(q) Memorandum of Agreement between our agencies.

The applicant, Space Exploration Technologies, Inc. (SpaceX), proposes to modify their vertical launch area with the expansion and addition of test, orbital, and landing pads, integration towers, associated infrastructure, stormwater management features, and vehicle parking. As proposed, the modification will impact an additional 10.94 acres of mud flats, 5.94 acres of estuarine wetlands, and 0.28 acres of non-tidal wetlands. The site is located in wetlands adjacent to Boca Chica Bay, east of Boca Chica Village, Cameron County, Texas. The site is approximately 20 miles from the nearest elementary school, Raquel Peña Elementary School in Brownsville, Texas, which serves a predominately Hispanic, Environmental Justice community. We understand the Corps will consider these and other related factors in its review in satisfaction of the 1994 EO 12898 *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* and in the Public Interest Review, which weighs the benefits and detriments of foreseeable impacts, including the needs and welfare of the people. The following comments are provided for use in reaching a decision compliant with the EPA's *404(b)(1) Guidelines for the Specification of Disposal Sites for Dredged or Fill Material* (Guidelines) (40 CFR Part 230).

The EPA finds this project may have substantial and unacceptable adverse impacts on aquatic resources of national importance (ARNI). Therefore, we recommend denial of the project, as currently proposed. This letter follows the field level procedures outlined in the August 1992 Memorandum of Agreement between the EPA and the Department of the Army, Part IV, paragraph 3(a) regarding Section 404(q) of the Clean Water Act.

The impacted mudflats, estuarine and non-tidal wetlands identified in the PN are aquatic resources of national importance. The wind-tidal flats are unique habitats with limited distributions in the world found only adjacent to hypersaline lagoons, such as the Laguna Madre of Texas and Tamaulipas. Wind-tidal flats support benthic invertebrate communities which make them essential foraging habitats for wintering and migrating shorebirds, including the threatened piping plover and red knot. The surrounding clay lomas, seagrass meadows, and the fringe salt marsh and mangroves additionally support numerous rare, threatened, and endangered species. In 2000, the Laguna Madre wetland complex in

Texas and Tamaulipas, Mexico, was designated by the Western Hemisphere Shorebird Network as a Site of International Importance. The wind-tidal flats and wetlands in Boca Chica Bay are part of the bi-national Laguna Madre ecosystem critical to the survival of many species of shorebirds and waterfowl. Due to their importance, losses to these habitat types should be avoided or greatly minimized.

The EPA has reason to believe the proposed project activities, magnitude of impacts, and subsequent loss of aquatic resource functions and ecosystem values may result in substantial unacceptable adverse effects to the ARNI. The EPA is concerned the direct, secondary, and cumulative impacts associated with destruction of the rare and valuable aquatic habitats within the project area may result in impacts to surrounding water quality and suitability for use of the surrounding area by federally and state listed species and by finfish, crustaceans, shorebirds and wading birds that utilize the area. As wind-tidal flat restoration or establishment projects have been difficult to successfully implement, impacts to the functions and values of these habitats should be avoided and minimized to the maximum extent practicable.

The EPA is concerned that the applicant has not supplied enough information for the Corps to evaluate the permit modification application in compliance with the 404(b)(1) Guidelines (the Guidelines). Under the Guidelines, no discharge of dredged or fill material may be permitted by the Corps if: (1) a practicable alternative exists that is less damaging to the aquatic environment, so long as that alternative does not have other significant adverse environmental consequences or (2) the nation's waters would be significantly degraded. Under the Guidelines, a project must incorporate all appropriate and practicable measures to first avoid impacts to wetlands, streams, and other aquatic resources and then minimize unavoidable impacts; after avoidance and minimization measures have been applied, the project must include appropriate and practicable compensatory mitigation for the remaining unavoidable impacts.

#### Prior Comments

The EPA reviewed the original project components during an initial PN comment period in May 2013 along with the numerous subsequent modifications in 2015, 2016, 2017, and 2018 as described in the PN. Through the various permit modifications, the project impacts increased from 3.3 acres to 5.31 acres of aquatic resources. The compensatory mitigation plan for the project has also evolved over time as proposed preservation site locations, land transfer recipients and transfer timing have been altered. In the EPA's previous communications, concerns have been expressed about proposed impacts to aquatic resources of national importance, which include estuarine intertidal marsh and depressions as well as unvegetated tidal flats. The EPA maintains many of the same concerns that were expressed in our prior correspondences about the proposed adverse impacts to the important aquatic resources of the Lower Laguna Madre, a lack of adequate analysis of less environmentally damaging alternatives, and whether adequate compensatory mitigation will be provided for project impacts. The EPA continues to recommend careful consideration, in light of the Guidelines, be given to the critical ecological functions provided by the environmental resources impacted by the proposed project modification.

#### Avoidance and Minimization

According to the PN, the applicant has stated that measures to avoid and minimize impacts to jurisdictional waters of the U.S. were incorporated into the project design. The PN indicates that constraints limited avoidance and minimization opportunities, but the PN also states that impacts to

wetlands may be reduced as site design is refined. While the identified efforts to avoid and minimize may be meaningful, the PN does not discuss the range of practicable alternatives that were considered for this project including a combination of alternatives or the no action alternative. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purpose. The full range of project footprint options or operational procedures evaluated and the associated aquatic impacts for those alternatives should be provided. As it is implied a refinement of site design may result in a reduction in impacts, the evaluation should include all reasonable options that will result in the least environmentally damaging practicable alternative (LEDPA). Without the the inclusion of a robust alternatives analysis, it is not feasible to fully evaluate compliance with the Guidelines.

As reflected by the numerous project modifications that have been requested over the course of the project history, it is unclear if the final scope of a single and complete project has been included for the proposed modification. Establishing the complete scope of analysis is essential to performing a complete alternatives analysis that conforms with the Guidelines. Based on project history, there are concerns future activities, not yet disclosed, may further impact aquatic resources. Project fragmenting should be avoided as it undermines a robust alternatives evaluation and is not in line with the Guidelines. More concerning is that aquatic resources that were previously identified as avoided and used as justification to identify the LEDPA during prior alternatives analysis are now being identified for impact in this proposed permit modification. Given that the proposed project site is located in an environmentally sensitive area with high quality habitats, emphasis should be placed on the importance of avoiding and minimizing impacts to these distinctly sensitive aquatic resources. If it has not yet done so, we recommend that the applicant submit an alternatives analysis to the Corps that evaluates the respective impacts of any practicable alternatives that meet the project purpose. Please note that providing this material after public review does not allow optimum analysis of the entire range of significant potential environmental impacts. Additionally, any new alternatives analysis information should also be provided for public comment.

#### Evaluation of Significant Degradation

Additionally, it does not appear that compliance with the requirements of Section 230.10(c) of the Guidelines has been clearly demonstrated. Section 230.10(c) requires that no discharge of dredged or fill material shall be permitted which will cause or contribute to significant degradation of the waters of the United States. The Guidelines explicitly require evaluation of all direct, secondary and cumulative impacts reasonably associated with the proposed discharge in determining compliance with Section 230.10(c). In determining significant degradation, the Guidelines direct consideration of effects on such functions and values as wildlife habitat, aquatic ecosystem diversity, stability and productivity, recreation, aesthetics, and economic values. Based on the information provided by the PN, the applicant does not appear to adequately reflect consideration of all impacts to these functions and values. There appears to be a potential for significant degradation due to direct fill, water quality impacts, induced development and usage, and impacts to surrounding habitat area due to launch and post-launch activities. Given the limited references to stormwater management features in the PN and project plans, there are concerns regarding stormwater and wastewater management and potential discharge impacts upon water quality associated with the current and proposed facilities.

As the project site has evolved over time, including size and type tests occurring, the scope of the previous Environmental Impact Statement (EIS) completed by the Federal Aviation Administration (FAA) in 2014 may not be consistent with the scope of current activities. Considering the nature of the impacts, the unique special aquatic sites within the Lower Laguna Madre, and the scope and scale of public interest in the project, the EPA recommends a thorough scientific evaluation of direct, secondary and cumulative impacts associated with the final identified project scope for SpaceX's Starship/Super Heavy project. We recommend that the applicant provide information to assist the Corps in making its factual determinations, as described in §230.11, for compliance evaluation with the restrictions on discharge in §230.10. In particular, since the September 2, 2014, Memorandum for the Record noted activities at the site are non-water dependent, and do not require siting in or on a special aquatic site, such as a wetland, to meet the basic project purpose, information is needed to address the restrictions at §230.10(a)(3). For non-water dependent activities, practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise.

### Mitigation

Regarding compensatory mitigation, the applicant has stated they are developing a comprehensive, multifaceted mitigation strategy that will be updated as the strategy is finalized. Based upon the numerous prior modifications to the compensatory mitigation for prior impacts, the EPA is concerned with the ability to provide adequate compensation in perpetuity for the proposed aquatic impacts. Our concerns are compounded by the ecologically sensitive nature of these habitats and the demonstrated challenges in replacing them. The 2008 Final Mitigation Rule states in Section 230.93(c)(1)(i) that for individual permits, the permittee must prepare a draft mitigation plan and submit it to the district engineer for review. The final mitigation plan must include the items described in paragraphs (c)(2) through (c)(14) of the same section, *at a level of detail commensurate with the scale and scope of the impacts* [emphasis added]. At the district engineer's discretion, some of the elements may be addressed as special conditions to the permit. These required elements include: objectives, site selection, site protection, baseline information, determination of credits, mitigation workplan, maintenance plan, performance standards, monitoring requirements, long-term management plan, adaptive management plan, financial assurances and other information as required by the district engineer. If any temporary fill activities are expected to be in place for an extended period of time, the EPA suggests consideration of additional mitigation for these impacts as well.

Specific to the conceptual mitigation statement provided with the PN and prior mitigation strategies utilized for the project, there are concerns if non-contiguous and out-of-kind mitigation through preservation is proposed. The 2008 Final Mitigation Rule assigns a low priority to compensatory mitigation for impacts using preservation. 40 CFR Section 230.93(h) establishes a number of criteria, including threat of destruction or adverse modification criteria, that must all be met for proposals that use preservation to meet compensatory mitigation requirements. Enhancement is also preferred over creation due to the higher likelihood of success. Any plan should clearly address how enhanced, created and preserved resources will be maintained in perpetuity. Given the inherent difficulties associated with restoration techniques for tidal and mud flats, it is even more critical to avoid and minimize impacts to the greatest extent possible. Furthermore, the potential for temporal losses should be addressed, as it is unclear how mitigation project timing and achievement of success criteria compare to the proposed project construction. The EPA recommends that the Corps require the applicant undertake an exhaustive

evaluation of potential mitigation opportunities based on restoration or enhancement prior to limiting mitigation to preservation as the methodology of choice. While submitting the complete plan is not required at the time of the PN, providing additional details at the earliest stage possible allows the public and commenting resource agencies to have a more complete understanding of the net impacts of the proposal, taking into account mitigation.

### Summary

Upon review of the current proposal, the EPA is of the opinion that this project may have substantial and unacceptable adverse impacts on the ARNI. The EPA continues to have concerns with the proposed project regarding the provided alternatives analysis, avoidance and minimization of impacts, evaluation of direct, secondary, and cumulative impacts, and proposed compensatory mitigation for unavoidable impacts. The EPA recommends the Corps work with the applicant to enhance the information provided to assist the Corps in determining compliance with the Guidelines. Without providing additional information, it is unclear how the project can be fully evaluated. The EPA would like to request that the Corps work with the EPA and other involved resource agencies to resolve the issues raised during the permit review period. The EPA also requests that prior to the decision to issue the permit, the Corps provide the EPA a copy of the draft permit and decision document in the interest of facilitating inter-agency coordination. We believe this information exchange is critical to ensure that all relevant factors and remaining issues are addressed prior to a permit decision.

Thank you for the opportunity to review and comment on this PN, and if you have any questions on these comments, please contact me at [martinez.maria@epa.gov](mailto:martinez.maria@epa.gov) or 214-665-2230, or you can also contact Paul Kaspar of my staff, at [kaspar.paul@epa.gov](mailto:kaspar.paul@epa.gov) or 214-665-7459.

Sincerely,



Maria L. Martinez  
Chief, Permitting & Water Quality Branch

cc: U.S. Fish and Wildlife Service, Corpus Christi, TX  
National Marine Fisheries Service, Galveston, TX  
Texas Commission on Environmental Quality, Austin, TX  
Texas Parks and Wildlife Department, Corpus Christi, TX