US Army Corps of Engineers®

Charleston District

CHARLESTON PENINSULA, SOUTH CAROLINA, A COASTAL STORM RISK MANAGEMENT STUDY

Charleston, South Carolina

VIEWS OF THE NON-FEDERAL SPONSOR(S) AND ANY OTHER AGENCIES HAVING IMPLEMENTATION RESPONSIBILITIES

APPENDIX - H

February 2022

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City of Charleston

JOHN J. TECKLENBURG
MAYOR

February 7, 2022

Lt. Col. Andrew Johannes
Commander and District Engineer
U.S. Army Corps of Engineers, Charleston District
69A Hagood Avenue
Charleston, SC 29412

Dear Lt. Col Johannes:

Thank you and the U.S. Army Corps of Engineers (USACE) Charleston District staff for your ongoing collaboration during the Charleston Peninsula Coastal Storm Risk Management (CSRM) study. I and my staff are grateful for the recurring discussions with General Kelly, the project team and you on (a) the development of the Recommended Plan and (b) improvements thereto that we will pursue in the Pre-Construction Engineering and Design (PED) project phase. Summarized below is a non-exhaustive list of improvements, key features and analyses the City will anchor in the Design Agreement (DA) and pursue in PED.

Alignment and Design Considerations

Johnson Street. The realignment for the South Carolina Port Authority's Union Pier and Columbus Terminals is a substantial improvement, providing protection for those facilities, nearby Eastside neighborhoods, and enabling a more constructible design by removing the structure off of East Bay Street and Morrison Drive. The realignment to Johnson Street, however, presents substantive challenges. Constructing the surge structure on Johnson Street *between the Palmetto Rail line crossing and Morrison Drive* divides, disrupts and substantially impairs the coherence, function and flow of the $600 million Morrison Yard development. There is sufficient space, regulatory flexibility and Justice40 opportunities to design and construct the wall outboard of the entire Morrison Yards development and provide important benefits to low-lying Morrison Drive and nearby Eastside communities.

Concord Street. Concord Street is a key corridor in the French Quarter and Gadsdenboro neighborhoods. These neighborhoods have high historical, cultural and economic significance. The City will explore alternative and / or refined alignments, the addition of flood risk mitigations for key assets – cultural, business, tourist, residential and City parks – in those neighborhoods that are presently external to or along the alignment of the surge structure, and aesthetic and accessibility improvements in both neighborhoods.
Lockwood Boulevard. Lockwood is an essential transportation corridor and key evacuation route for the Charleston peninsula, providing access to Charleston's downtown, historic and business districts, Medical Center facilities, key neighborhoods and institutions --The Citadel, WestEdge, Joe Riley Stadium -- north of Spring Street, for visitors and peninsula-based employees who live on James Island, Johns Island, in West Ashley and across the region.

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The Recommended Plan alignment assumes road gates across Lockwood Boulevard and Calhoun Street. The Lockwood alignment must stay to the west of Lockwood Boulevard to serve flood risk mitigation and essential transportation and evacuation functions. Urban functions and amenity along the Lockwood corridor will be enhanced by providing multiple benefits in conjunction with surge mitigation infrastructure, with the Low Battery restoration as a guiding design goal.

Gates and Crossings. The Recommended Plan recommends numerous pedestrian, vehicular and railroad gates. The City hopes to rationalize and reduce the location and number of gates in PED to decrease the risk of operational failure, lower operations and maintenance costs and improve functionality and aesthetics in key downtown corridors.

Non Structural. The Rosemont community and Bridgeview Apartments are culturally rich, yet historically-disadvantaged communities, targeted for non-structural flood risk mitigation. In PED, the City and USACE must communicate with and seek input from these communities to design and tailor non-structural strategies that work best for residents and the neighborhoods. Additional project features to reduce further the residual surge impacts to these communities risk should also be developed. The City intends to separately develop a resilience plan for the Rosemont community, the outcomes of which may provide additional considerations for the neighborhood in PED.

We note new Justice40 provisions governing cost-share and policy waiver / flexibility for federal infrastructure investments. While Justice40 does not explicitly apply to USACE projects, all federal agencies, including USACE, are instructed to identify and implement programs and practices that further Justice40 goals. The City will explore additional project features to benefit disadvantaged peninsula communities, including Rosemont, Bridgeview Apartments and Eastside communities, consistent with Justice40 goals.

Natural and Nature-Based Features (NNBFs). The City is pleased that NNBFs were added to the Recommended Plan. We are, however, disappointed that these NNBFs are deemed environmental mitigation and not project features that provide measurable project benefits. It is the City's view that NNBF's provide clear benefits beyond mitigation offsets and that project accounting should reflect these benefits.

The City intends to explore in PED the addition of NNBFs to (a) restore ecosystem functions impacted by structure construction and its alignment in the marsh and nearshore, (b) improve the structure's performance as sea levels rise, and (c) reduce wave heights impacting the structure's performance in the latter half of its useful life.

The City is pleased that Charleston District staff have engaged with leaders of USACE's Engineering with Nature (EWN) program and have committed to convening NNBF workshops with City stakeholders at the start of the PED phase. NNBFs are an essential addition to final project design.

Historic and Cultural Resources. Founded in 1670, the Charleston peninsula contains significant historic districts, properties, and cultural resources that are an integral part of our community's life and character. Preservation of this irreplaceable heritage is in the public interest. As we move toward implementation of the NHPA Section 106 Programmatic Agreement, the City is committed to a strategy of avoidance of adverse effects to historic and cultural resources, before turning to minimization or mitigation, in design and alignment of the surge structure and any other project features. We will rely on the Corps to do the same.

Design Expertise and Multiple Benefits. The surge structure, if built, will touch key economic and cultural assets and critical facilities on the peninsula, including several National Register designated

Historic Districts, properties and Landmarks. The alignment impacts urban neighborhoods whose flood mitigation needs are surge, but also drainage and tidal. Public comments are clear about the need to design an aesthetically pleasing structure that provides, or has integrated within it, multiple benefits. Such benefits could, at a minimum, include recreation, walking and pedestrian access, park-lets, as well as NNBFs, (see above). The City's Design Division has a compendium of ideas on these features and how they might be integrated.

The integration of such features can and will be pursued in PED, either as project features or betterments, and external design and engineering expertise will be needed. Adding such external design expertise is possible within PED and has been done elsewhere in the U.S. To bolster USACE's and the City's design and engineering capabilities, the City intends to ensure the procurement of such expertise for PED.

Analyses

Project Design, Still Water Elevation and Wave Overtopping. Additional, extensive modeling for storm surge risk, still water elevation, wave overtopping and impounded water will be conducted in PED. The Waggonner & Ball / Discovery Report team presented to USACE information regarding still water and wave overtopping conclusions in the Tentatively Selected Plan. PED analyses on wave overtopping, impounded water volumes and routing, and pumping regimes must be rigorous and subject to external or third-party validation. The structure's final design, level of service, and overtopped and impounded water mitigations must be sufficiently robust to manage such water over the structure's 50-year design life and have additional adaptive management built into that design given the uncertainties over the rate a sea-level rise. These particular studies warrant diligent performance and review.

The City will separately develop a long-term Integrated Water Management Plan for the entire City as well as an update to the City's Peninsula Plan. The peninsula-specific recommendations of this Water Plan and the Peninsula Plan may be relevant to the abovementioned PED analyses; likewise, PED analyses may inform Water Plan considerations if the schedules of PED and Water Plan development overlap.

Interior Hydrology and Pumps. Overtopped and impounded water will be managed through the addition of temporary and permanent pumps, wet wells, storage areas and flow routing regimes. The peninsula's interior drainage (natural, overland and manmade) must be carefully studied in PED to optimize the surge structure's pump locations, pump sizes, pump efficiencies, and, where feasible, integration thereof into the peninsula drainage system. The City intends to explore the upsizing of surge pump capacities and integration with the drainage system in PED.

Groundwater and Subsidence. PED analyses must address issues of peninsula groundwater, the surge structure's impact over its design life on peninsula groundwater, how those impacts upon groundwater will change as sea levels rise, and how the surge structure pumps will impact groundwater and peninsula subsidence.

System-Wide Risk Assessment. PED includes standard risk assessment on all surge structure and line-of-defense components. Given the complexity of the surge structure and its interaction with critical peninsula infrastructure, a System-Wide Risk Assessment (SRA) must inform, and a Risk-Informed Implementation Plan (RIIP) must be developed, in PED.

Community Engagement

PED must be accompanied by open, regular community engagement, to inform citizens and stakeholders about the structure's benefits and impacts, to enhance the structure's overall design for appropriate integration into Charleston's world-renowned architecture and historic districts, and to provide multi-functional benefits. The City will count on robust USACE partnership in these engagements.

I look forward to our ongoing efforts to improve and refine the Recommended Plan. The City's partnership with USACE over the last 3.5 years has been intense, productive and fruitful. The Charleston peninsula is a local, regional and national treasure and I am confident that USACE shares the City's desire to protect the peninsula for future generations.

Most sincerely yours,

John J. Tecklenburg
Mayor, City of Charleston