

THE TIDAL CREEK AND MARSH FAQ

- 1. The City’s proposals repeatedly mention that the process requires that relief should first be provided to downstream facilities and continue downstream with storage improvements. All the plans available seem to end consideration of the impacts at the pond. However, the pond is NOT where the waters will ultimately flow.**
 - a. The reference above is specifically outlined in §6.4 of [the Point and Downtown Drainage Study](#) which forms the conceptual basis for the design of the pump station and associated improvements. This paragraph references a philosophy for the implementation of improvements recommended by the subject study. For the purposes of a drainage study aimed at reducing flooding impacts, concluding the analysis at the terminus of the existing box culvert outfall to the marsh of the Beaufort River is an acceptable standard of care with the understanding that the detailed design would identify what, if any, impacts might result along the subject creek. As quantified during the detailed design process, and for an observed mean higher high-water tide, the expected increase in hydraulic gradient along the creek is approximately one inch. It is also important to note that prior to the installation of the existing box culvert and associated control structure which established the pond upstream of Federal Street, the subject crossing was accomplished by way of a timber bridge, which would offer little to no restriction to the discharge of the runoff generated by the subject watershed (i.e., historical flows would have likely been higher than what improvements will bring to the current system).
- 2. The creek is not nearly as large as the river, and waters directed there would be subject to a funnel type reaction. What mechanisms will be put into place to ensure this proposal does no harm to those along the creek?**
 - a. It is important to note that, prior to the construction of the existing box culvert and control structure which establishes the pond upstream of Federal Street, the Federal Street crossing of the subject creek was accomplished by timber bridge which offered little to no restriction to the discharge of the runoff generated by the contributing watershed. Further, the subject creek is substantially wider and has a far greater conveyance capacity than that of the outfall piping associated with the proposed pump station. Therefore, the receiving creek offers an expansion and not a contraction or “funneling” of the flow to be discharged.
- 3. Has piping the water directly into the river been considered?**
 - a. Piping of the discharge from the proposed pump station was not considered. Significant obstacles to the implementation of such a strategy include permitting, construction difficulty, and cost.
- 4. The proposal seems to indicate that the system would prevent king tides and stormwaters from flowing into the pond and the pump would turn on. Won’t this cause additional flooding in the surrounding tidal creek and marsh area as the facility will**

now act as a dam with additional water pumped out? It seems impossible that water levels will not rise.

- a. The proposed system will maintain the existing tidal exchange within the pond upstream of Federal Street, which is today limited by a tide-regulating flap gate that prevents the pond from reaching the elevations associated with king tides. Should the occurrence of a king tide coincide with a rainfall event, the proposed pump station has the capacity to operate during such conditions and will be able to provide drainage service to the upstream watershed. As a part of the design phase, changes in the water surface elevation along the course of the creek have been quantified, and for a mean higher high water tide the difference between the existing and proposed water surface elevation is a maximum of one inch with this difference decreasing to zero at the mouth of the creek. For tides higher than mean higher high water, the difference between the existing and proposed conditions reduces due to the additional depth of the water and the increase in conveyance associated with this additional depth.

5. What if any studies were done concerning the downstream pumped flow of water into the tidal creek and marsh?

- a. Two-dimensional hydraulic modeling has been performed as a part of the design phase of the project to quantify, at the design flow rates and for a range of tides, the differences in water surface elevation along the tidal creek. Follow-up surveying was conducted in March 2024.

6. In your report page 9, figure 9 addressing USDA soil data, the tidal marsh and creek are said to be Bohicket. Looking up at soilseries.sc.egov.usda.gov, Bohicket consisted of very poorly drained, very slowly permeable soils that formed in marine sediments in tidal marshes. What is the impact of adding additional waters into an area which your studies indicate drain poorly?

- a. The soil type of the marsh, and its inability to drain, does not impact the water surface elevations in the tidal creek.

7. Has there been any study as to anticipated changes in the tidal creek and marsh depth over time? Has the issue of preventing sediment, etc., being pumped into the tidal creek and marsh been addressed?

- a. The pond upstream of Federal Street acts as a primary sedimentation basin for the upstream watershed, and the sediment load generated by the contributing watershed does not change as a result of the installation of the proposed pump station. It should also be noted that the Beaufort River and its associated tide cycle also can move sediment into and out of the creek based on a myriad of factors.

8. What sediment and erosion control measures are being put in place, besides “channelscaping,” as our property directly abuts the outfall where water is being pumped out?

- a. Erosion control practices during construction will be designed in accordance with South Carolina Department of Health and Environmental Control (SCDHEC) regulations. Temporary sheet piling will be installed around the pump station and outfall area to maintain a dry work area during construction.

9. What exactly is the proposed “channelscaping”?

- a. Modifications to the channel outside of the sheet-piled area will be limited to grading from constructed surfaces back to existing grade at a stable slope. Rip rap will be placed in areas where establishing a stable, vegetated slope is not possible.

10. The marsh and tidal creek are where many people get bait fish and crabs. The pond is home to fish and other wildlife. Additionally, an assortment of wildlife seeks sustenance during low tide.

- a. Understood, respected, and being protected to the extent practicable.

11. How will the pump and outflow facility being proposed affect the fish and wildlife in the tidal creek and pond, as it will artificially change the level and flows of water?

- a. The tidal exchange will generally be maintained using a valved pipe except immediately before, during and after rainfall events when the pumps are running or could soon run. During pump operation the piped valve will be closed.

12. NPR noted that in almost every decision to divert flood waters there are winners and losers. Craig Colten, a professor of geography at LSU, notes “whenever you build structures to handle floods, you’re walking that fine line between offering protection and failing to provide protection.” What protections are being put in place to prevent the unintended consequences in this area? Will the properties that abut the pond and marsh be the losers?

- a. The stormwater runoff generated by the contributing watershed is not being diverted. The same volume of water will pass through the marsh prior to and following the proposed construction.

13. How will the adding and dumping of additional waters impact the nutrient loads in this waterway?

- a. No impact is expected as the runoff volume generated by the contributing watershed remains the same. Improvements to water quality will be realized because of the proposed project by reduction of flooding within roadways (a common source of contaminants from vehicles passing through or stranded in flood waters), and yards (a common sources of pet waste, pesticides, and fertilizers).

14. How does this plan mesh with environmental concern that drainage systems should have less impact on estuarine environments when this plan increases the impact?

- a. No material change is being made to discharge. The same volume of the same or better water quality will pass through the marsh after construction.