

Neuse River Basin Flood Risk Management Technical Report

Appendix I. PUBLIC AND AGENCY COMMENTS AND RESPONSES



February 2023

**US Army Corps
of Engineers**

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Tribal and Cultural Resources Stakeholder Comments

State Historic Preservation Office (SHPO) letter dated June 14, 2022 USACE responses below were provide by letter dated June 29, 2022

SHPO Comment 1: In response to the USACE’s request for comment on the original area of potential effects (APE) and invitation to participate in the Section 106 programmatic agreement (PA) stating, “We agree with the Risk Plan’s findings and recommendations and are prepared to enter consultation with the Wilmington District of the US Army Corps of Engineers (USACE) to develop and implement a Programmatic Agreement (PA) for Flood Risk Management in the Neuse River Basin.”

USACE Response 1: The USACE will update the SHPO regarding Section 106 compliance matters.

SHPO Comment 2: We note the inclusion of three Cherokee Tribes but wonder if this is correct given that their traditional territories are well beyond the Neuse River Basin. If they are to be included in the PA, we recommend that the USACE also reach out to the Catawba Nation as their traditional territories overlap with the Cherokee.”

USACE Response 2: The USACE will invite the Catawba Nation as a concurring party to the PA and will include the Catawba Nation in the distribution of the final Environmental Assessment and presumptive Finding of No Significant Impact or Environmental Impact Statement. Thank you for raising this issue.

SHPO Comment 3: While the PA refers to inclusion of the Tribes and the Certified Local Governments (CLGs) in Wake and Wilson Counties, they are not specifically invited to be concurring parties to the PA with the ability to receive all related correspondence and participate more fully in the process established by the PA.

USACE Response 3: The USACE will update language to include invitations for applicable federally recognized Tribes and CLGs to participate as concurring parties to the PA. To date, Wake County and the United Keetoowah Band of Cherokee Indians are the only Tribal and/or CLG invitees to have requested continued participation as concurring parties. All invited parties will still be included in future consultation, regardless.

SHPO Comment 4: Stipulation I.A.1.A. – Non-structural Measures needs to be more fully developed to outline how the USACE will coordinate with the State Historic Preservation Office/Office of State Archaeology (SHPO/OSA). As we have an established process for doing so, it needs to be more fully outlined at this point.

USACE Response 4: The USACE concurs and will include language similar to that found under Stipulation I. B. 1. a-g. of the Programmatic Agreement among the Federal Emergency Management Agency, Advisory Council on Historic Preservation, North

Carolina State Historic Preservation Officer, North Carolina Department of Public Safety, and Participating Tribe(s) for Hurricanes Matthew, Florence, and Dorian, Tropical Storm Michael, Covid-19 Pandemic that the North Carolina Division of Historical Resources had kindly provided to the USACE for an example on June 28, 2022 via email.

SHPO Comment 5: Stipulation II – Resolution of Adverse Effects may benefit from the inclusion of several standard “Treatment Measures” that we have developed with the Federal Emergency Management Administration and the North Carolina Office of Recovery and Resilience to resolve the adverse effect. The use of such “Treatments” helps to move the resolution of the Adverse effects more easily and quickly.”

USACE Response 5: The USACE will include language similar to that found in Appendix C (Treatment Measures) of the Programmatic Agreement among the Federal Emergency Management Agency, Advisory Council on Historic Preservation, North Carolina State Historic Preservation Officer, North Carolina Department of Public Safety, and Participating Tribe(s) for Hurricanes Matthew, Florence, and Dorian, Tropical Storm Michael, Covid-19 Pandemic that the North Carolina Division of Historical Resources has provided to the USACE as an example on June 28, 2022 via email.

SHPO Comment 6: Stipulation VI.B. and C. – Professional Qualifications and Standards needs to note that the latest/most current SHPO and OSA Standards and Guidelines are to be used.

USACE Response 6: The USACE will include the latest/most current SHPO/OSA guidelines (<https://archaeology.ncdcr.gov/osa-guidelines>) into Stipulation VI of the PA, regarding qualifications and standards.

SHPO Comment 7: Stipulation VII – Reporting should provide the annual report to the SHPO and all concurring parties to the PA, not simply be posted to the USACE’s project website.

USACE Response 7: The USACE will update the PA to reflect this delivery. Each year following the execution of the PA until it expires or is terminated, the USACE will provide the North Carolina SHPO, Certified Local Governments, and federally recognized Indian Tribes a summary report detailing work undertaken pursuant to this PA. This report will include any scheduling changes, problems encountered, project work completed, PA activities completed, and any objections and/or disputes received by the USACE in its efforts to carry out the terms of this PA. Copies of the summary report will also be posted in the USACE project website (<https://www.saw.usace.army.mil/Missions/Flood-Risk-Management/Neuse-River-Basin/>), with appropriate redactions to protect resources.

SHPO Comment 8: Stipulation X – Duration and Sunset Clause. Please note that it is our experience that the Advisory Council recommends and limits the duration of a PA to

five years rather than the ten provided in the draft. Given the ease in amending the PA under Stipulation XI, we believe the use of five years to be appropriate.

USACE Response 8: The USACE appreciates the SHPO's concern on this matter. The Program Analyst with the Advisory Council typically addressing USACE projects has worked in the past to find appropriate timelines given the USACE' planning, authorization, and construction processes. Recent USACE agreement documents with the ACHP have included the ten-year duration horizon, with the understanding they may need to be extended in the future. Should the ACHP raise concern, the ten-year duration may be shortened.

SHPO Comment 9: For the signature page, please note that our current State Historic Preservation Officer is Dr. Darin Waters, PhD.

USACE Response 9: The USACE appreciates the correction and will update the SHPO signature block to include Dr. Darin Waters, PhD.

State Historic Preservation Office (SHPO) letter dated August 8, 2022

SHPO Comment 1: Thank you for your June 29, 2022, providing the Wilmington District's comments and acceptance of the revisions we proposed for the Programmatic Agreement (PA) between our agencies for the above-referenced undertaking. We look forward to receipt of an updated draft that we will need to share for legal review. Once that review is complete and before sharing a draft with the Advisory Council on Historic Preservation, it may be helpful to arrange a meeting with the Tribes and local governments/commissions, who have expressed an interest in becoming concurring parties to the PA."

USACE Response 1: The project's area of potential effects (APE) and associated effects to historic properties has been reduced such that the original draft of the Section 106 PA has limited applicability to multiple stakeholders. A revised PA will be provided to your office and applicable stakeholders for review and comment before finalization. If necessary, a meeting to include Tribes and local governments/commissions may be arranged.

Advisory Council on Historic Preservation (ACHP) letter dated April 25, 2022 USACE response below was provide by email dated October 24, 2022

ACHP Comment 1: On 25 April 2022 the ACHP responded to the USACE's request for comment on the original APE and invitation to participate in the PA as a concurring party. The ACHP concluded that their "participation at this time...may be premature" and requested that the USACE provide the ACHP with an update within 180 calendar days as to the progress of the consultation since April 2022.

USACE Response 1: For your situational awareness, since our most recent communication (April 2022) this project (018239) has changed in terms of its anticipated

effects to historic properties. Anecdotally, the scale of potential effects has been reduced but is not clearly understood at this time. For this reason, as the USACE works to better understand the project's potential effects, Section 106-related consultation has been largely paused over the past six months. At which time an updated project description is available and can be re-coordinated with applicable stakeholders, the USACE will more formally reengage with the ACHP.

Wake County Historic Preservation Commission (WCHPC) email dated March 15, 2022

WCHPC Comment 1: In response to the USACE's request for comment on the original area of potential effects (APE) and invitation to participate in the Programmatic Agreement (PA) as a concurring party, the WCHPC agreed to "participate as a concurring party", had "no comments on the proposed APE for the recommended plan at this time", and requested that the USACE "Please keep us posted as the Study takes shape."

USACE Response 1: The USACE will update the WCHPC regarding Section 106 compliance matters.

United Keetoowah Band of Cherokee Indians (UKB) email dated March 15, 2022

UKB Comment 1: IN response to the USACE's request for comment on the original Area of Potential Effect (APE) and invitation to participate in the Programmatic Agreement (PA) as a concurring party, the UKB requested that the USACE "Please keep us updated going forward."

USACE Response 1: The USACE will update the UKB regarding Section 106 compliance matters.

Note that to ensure compliance with 36 CFR Part 800 and Section 106 of the National Historic Preservation Act (NHPA) (54 U.S.C § 306108) Programmatic Agreement will be finalized prior to any construction. A draft of the Programmatic Agreement is included as Appendix G of this Environmental Assessment.

Federal Agencies

US Environmental Protection Agency (EPA)

EPA Comment 1: Based on our review, the EPA does not anticipate significant impacts associated with study and has no additional comments.

USACE Response 1: Noted. Thank you.

US Fish and Wildlife Service (USFWS)

USFWS Comment 1: The Service recommends that the reference to mobility of the non-sturgeon species be removed from the document. Instead, for activities where the ground will be disturbed, the Service recommends that the Corps commit to require or utilize stringent sediment and erosion controls to avoid and minimize any impacts to listed aquatic species that may be present in the waterbodies near and downstream.

USACE Response 1: Concur. The report has been updated to reflect the USACE commitment per the USFWS recommendation for more stringent sediment and erosion control to further avoid any impacts to species that may be present in nearby waterbodies. Sediment and erosion controls will be used as for the dry floodproofing around each of the 12 structures within

USFWS Comment 2: The Service concurs with the Corps' species determinations for RCW, Michaux's sumac, Monarch butterfly, and NRWD designated critical habitat. If the Corps can commit to utilize or require stringent sediment and erosion controls as a condition of ground disturbance associated with structure elevation and floodproofing activities, then the Service could concur with a may affect, not likely to adversely affect determination for all of the listed aquatic species within our purview.

USACE Response 2: Based on the new recommended plan, which is limited to a small area around Crabtree Creek in Raleigh, NC, the effects determinations in Section 4.2.3 have been updated to no effect determinations for all species or critical habitat located within the project area.

National Oceanic and Atmospheric Administration - National Weather Service Morehead City (NOAA – NWS) Received Via Email during Public Review and comment response previously provided by USACE June 2022.

NOAA-NWS Comment 1: I am writing regarding the recommendation for the installation of a stream gauge in Craven County outlined in the Public Notice and Draft Assessment.

Not sure if you are aware, but there is a state funded (NC DPS) gauge within a mile of the proposed gauging location on NC-43 along the Neuse River. We are currently ingesting their data and posting to our AHPS site (linked here). Additionally, we have the ability to issue a river flood warning for this location covering several miles along the river upstream and downstream based on predetermined flood stages.

Finally, in my professional experience the city of New Bern is not significantly affected by freshwater flooding from upstream on the Neuse River. They had no major issues during the record freshwater flooding of the Neuse after Hurricane Matthew in 2016. The greater threat of flooding of the city of New Bern comes from wind driven surge as was seen during Hurricane Florence a few years ago.

In my opinion, development of a coupled model for storm surge and freshwater inputs would be of greater benefit to the citizens and community of New Bern (such a model should also include the lower portion of the Trent River).

USACE Response 1 (Provided by Water Resources Section on 21 June 2022): The USACE was not aware that this stream gauge was currently in operation. As was mentioned during the public meeting, based on preliminary discussions with the City of New Bern and Craven County, there was an expressed desire to better monitor the river stages above the mouth of the Neuse River. It was communicated that there is often difficulty for citizens to anticipate when the river stages will crest days or sometimes weeks after a major event, especially for a tropical-based storm. These peak riverine-based stages may not be directly contributed to the most damaging water surfaces, as you mentioned, that are predominately induced by storm surge. The USACE team will heavily weigh the existence of the Neuse River at Spring Garden stream gauge in the continued plan formulation process related to our feasibility study recommended plan.

Regarding development of a more comprehensive riverine/coastal coupled model, USACE recognized the potential usefulness of such a tool as part of the South Atlantic Coastal Study (SACS). Such a model suite was identified as “Activities and Areas warranting Further Analysis”. It was specifically recommended for a North Carolina-focused coupled model with key stakeholders being the National Hurricane Center and National Water Center. The following description of a comprehensive model was provided by the planner for the Neuse River basin study:

“It's safe to say that there is an effort underway within NOAA to implement a total water forecast system in NWM v.3.0. Our last understanding was that the plan was to deploy a continental-scale total water forecasting capability in the not too distant future. The total water forecast would be driven with ADCIRC/ESTOFS and PSURGE. Additionally, the National Hurricane Center (NHC) and National Water Center (NWS) – both parts of NOAA, would be carefully coordinating to ensure there is a clear and consistent method to applying this guidance to various forecast and watch/warning/advisory products, and that training will be developed for internal and external partners as the capability is further established. Not sure how many years in the future coupled modeling data would come to NC, but an effort is underway.”

Unfortunately, it is not anticipated that the scope required to develop such a coupled model could be accommodated as part of this Neuse River basin-wide study. However, it is duly noted that such a tool would be a valuable asset to stakeholders across multiple agencies and the public.

State Agencies

North Carolina Wildlife Resources Commission (NCWRC)

NCWRC Comment 1: During Specific project iterations, our agency reviewed and provided comments to address wildlife impacts within presented alternatives. Therefore, due to the familiarity of the project area and the type of activities proposed (non-structural within the Neuse Basin waterbodies and only residential building elevations and additional flood warning systems) the NCWRC has minimal concern with the activities presented within the IFR/EA and their impacts to wildlife resources. We appreciate the coordination expressed between all parties and encourage continued communication on basin wide assessments and proposals.

USACE Response 1: Noted.

North Carolina Department of Environmental Quality (NCDEQ)

NCDEQ Comment 1: Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900.

USACE Response 1: Concur. If burning is anticipated, then the requirement to follow state regulation 15 A NCAC 2D.1900 will be included in the specifications for the project.

NCDEQ Comment 2: Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950. Please Note - The Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, must be notified of plans to demolish a building, including residences for commercial or industrial expansion, even if no asbestos is present in the building.

USACE Response 2: Noted. Any buildings eligible for dry floodproofing will be tested for asbestos containing materials (ACM) if warranted and if ACM is found, the dry floodproofing will be completed in compliance with 15 A NCAC 20.1110 (a) (1), which requires notification and removal prior to demolition.

NCDEQ Comment 3: 401 Water Quality Certification (WQC) - Compliance with the T15A 02H .0500 Certifications are required whenever construction or operation of facilities will result in a discharge into navigable water as described in 33 CFR part 323.

USACE Response 3: Noted. The plan, which includes dry floodproofing of 12 structures adjacent to Crabtree Creek in Raleigh, NC will not result in a discharge into navigable water; therefore, a NC Section 401 WQC is not required. If the plan changes, the USACE will coordinate with NC Division of Water Resources to ensure compliance with Section 401, if required.

NCDEQ Comment 4: Compliance with Catawba, Goose Creek, Jordan Lake, Randleman, Tar Pamlico or Neuse Riparian Buffer Rules is required. Buffer requirements: <http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program>

USACE Response 4: Concur. There will be no impacts to areas within the Neuse River Buffer area.

NCDEQ Comment 5: Notification of the proper regional office is requested if “orphan” underground storage tanks (USTs) are discovered during any excavation operation.

USACE Response 5: Noted. Although not anticipated, if any “orphan” USTs are discovered during any excavation operation the USACE will contact the Raleigh Regional Office.

NCDEQ Comment 6: Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq., Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100. 30 days for review.

USACE Response 6: Noted. There would be no changes or alterations to the public water system; however if the plan change and alteration of the public water system is anticipated, the Plans and specifications for the construction, expansion, or alteration of a public water system will be coordinated with the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction.

NCDEQ Comment 7: If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100. 30 days for review.

USACE Response 7: Noted. If any water lines are relocated during the construction, plans for the water line relocation will be submitted to the Division of Water Resources/Public Water Supply Section for 30-day review.

NCDEQ Comment 8: Plans and specifications for the construction, expansion, or alteration of the City of Raleigh water system must be approved through the City of Raleigh delegated plan approval authority. Please contact them at 919.996.3245 for further information.

USACE Response 8: Noted. Although not anticipated, Plans and specifications for any construction, expansion, or alteration of the City of Raleigh water system will be coordinated with the City of Raleigh delegated plan approval authority.

NCDEQ, Regional Underground Storage Tank (UST) Supervisor

NCDEQ Comment 1: The study area is too broad for me to identify specific petroleum contamination sites associated with Underground Storage Tanks, Aboveground Storage Tanks, and other petroleum spills. I reviewed the above proposal and determined that this project should not have any adverse impact upon groundwater.

USACE Response 1: Noted.

NCDEQ Comment 2: The Washington Regional Office (WaRO) UST Section recommends removal of any abandoned or out-of-use petroleum USTs or petroleum above ground storage tanks (ASTs) within the project area. The UST Section should be contacted regarding use of any proposed or on-site petroleum USTs or ASTs. We may be reached at (252) 946-6481.

USACE Response 2: Noted.

NCDEQ Comment 3: Any petroleum USTs or ASTs must be installed and maintained in accordance with applicable local, state, and federal regulations. For additional information on petroleum ASTs, it is advisable that the North Carolina Department of Insurance at (919) 661-5880 ext. 239, USEPA (404) 562-8761, local fire department, and Local Building Inspectors be contacted.

USACE Response 3: Noted.

NCDEQ Comment 4: Any petroleum spills must be contained, and the area of impact must be properly restored. Petroleum spills of significant quantity must be reported to the North Carolina Department of Environmental Quality – Division of Waste Management Underground Storage Tank Section in the Washington Regional Office at (252) 946-6481.

USACE Response 4: Noted.

NCDEQ Comment 5: Any soils excavated during demolition or construction that show evidence of petroleum contamination, such as stained soil, odors, or free product must be reported immediately to the local Fire Marshall to determine whether explosive or inhalation hazards exist. Also, notify the UST Section of the Washington Regional Office at (252) 946-6481. Petroleum contaminated soils must be handled in accordance with all applicable regulations.

USACE Response 5: Noted.

NCDEQ Comment 6: Any questions or concerns regarding spills from petroleum USTs, ASTs, or vehicles should be directed to the UST Section at (252) 946-6481.

USACE Response 6: Noted.

NC Division of Waste Management (NCDWM)

NCDWM Comment 1: Seven Hundred Seventy Three (773) Superfund Section sites were identified within one mile of the project as shown on the attached report. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: <http://deq.nc.gov/waste-management-laserfiche> .

USACE Response 1: Noted. This information has been reviewed and additional information on the brownfield site located in the proximity of the Crabtree Creek project area has been incorporated in the final report.

NCDEQ – Division of Solid Waste Section

Solid Waste Section Comment 1: The Division of Waste Management, Solid Waste Section (Section) has reviewed the documents submitted for the subject project in Wake, Wilson, Wayne and Johnston County, NC. Based on the information provided in this document, the Section at this time does not see an adverse impact on the surrounding communities and likewise knows of no situations in the communities, which would affect this project.

USACE Response 1: Noted.

Solid Waste Section Comment 2: As always for any planned or proposed projects, it is recommended that during any land clearing, demolition and construction, the USACE and/or its contractors would make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. Any waste generated by and of the projects that cannot be beneficially reused or recycled must be disposed of at a solid waste management facility permitted by the Division. The Section strongly recommends that the USACE require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.

USACE Response 2: Noted.

North Carolina Division of Coastal Management (NCDCM)

NCDCM Comment 1: DCM has reviewed the submitted information pursuant to the management objectives and enforceable policies of Subchapters 7H and 7M of Chapter

7 in Title 15A of the North Carolina Administrative Code and concurs that the proposed activity is consistent with North Carolina's approved coastal management program.

USACE Response 1: Noted.

NCDCM Comment 2: Prior to the initiation of the activities described, the applicant should obtain any other required State approvals or authorizations. Should the proposed action be modified further, a revised consistency determination could be necessary. This might take the form of either a supplemental consistency determination pursuant to 15 CFR 930.46, or a new consistency determination pursuant to 15 CFR 930.36. Likewise, if further project assessments reveal environmental effects not previously considered, a supplemental consistency certification may be required. If you have any questions, please contact me at (252) 808-2808. Thank you for your consideration of the North Carolina Coastal Management Program.

USACE Response 2: The plan no longer includes coastal counties and only includes dry floodproofing of 12 structures adjacent to Crabtree Creek in Raleigh, NC. If the plan should change, any needed coordination with NCDCM and other state agencies would occur before final design and construction of the project.

Individuals, Associations, and Organizations

Individual Commenter Mr. John Merritt, comment was previously responded to by the USACE via email response below.

Public information meeting comment and email comment received from Mr. John Merritt Comment 1: Will you please look at the deployment of "sticker soils" in the urban areas to reduce immediate runoff during hurricanes. New Concepts are being promoted to keep water on the land for at least 4-5 days. Perhaps helpful for little cost. Needs investigation.

USACE Response 1: Noted. Thank you for providing the emails with the additional information for our consideration as we developed our final feasibility report.

City of Raleigh – Engineering Services Department (Mr. Wayne Miles), comment was previously responded to by the USACE via email response below.

City of Raleigh Comment 1: The report seems to focus on Crabtree Creek flooding impacts in the Raleigh area. Why was Walnut Creek not considered or referenced in the report? Was any analysis done in Walnut Creek? During our previous discussions early in your study, we discussed flooding impacts that Raleigh experiences in both Crabtree Creek and Walnut Creek watersheds. We believe that both watersheds should be considered in terms of an analysis of flooding impacts and potential mitigation alternatives.

USACE Response 1: The Hydrology and Hydraulics appendix (appendix A, Section 7.2.11) described a segment of Walnut Creek that was assessed in order to provide life-safety benefits to the Rosalynn Place and Maplewood Forest communities, as they were potentially at risk of becoming isolated during a significant flood event. While this effort was not described in detail in the main report, it was considered by the United States Army Corps of Engineers (USACE) team for viability as part of this feasibility study. Ultimately, the lack of structural damages and limited life-safety risk related to this segment, and the City of Raleigh's assumed bridge improvement plans already in place, resulted in flood risk reduction measures on Walnut Creek being screened from further consideration.

It was recognized during outreach with the City that there had been success in retrofitting existing reservoir operations in order to preemptively lower lake levels ahead of forecasted rain events within the Walnut Creek watershed. Furthermore, it was discussed if USACE could pursue similar engineering efforts elsewhere in the watershed as part of this feasibility study. However, making pre-releases ahead of a significant event (rainfall, tropical storm, etc.) is not something that the Wilmington District deems appropriate. It is USACE policy to deal with "water on the ground" regarding our own reservoir operations at Falls Lake. This is due to the inherent uncertainties with forecasting storm tracks and rainfall amounts. Releasing water ahead

of an event could make downstream flooding worse if the rainfall is downstream of our project (instead of upstream as expected), making it an unacceptable risk.

In initial assessments, USACE noted that a large number of structures appeared to be within the effective FEMA 1-percent flood zone near the headwaters of the Walnut Creek watershed. However, due to the small drainage area and associated flow discharge within the creek, these areas did not meet USACE Engineering Regulation (ER 1165-2-21) minimum criteria for consideration of nonstructural or structural measures (see Main Report Section 1.8.2 Constraints and Considerations for more details on this policy constraint).

City of Raleigh Comment 2: The economic analysis seems to use depth to damage curves applied to the property and content values of buildings/structures as a means of identifying the most significant flooding impacts. How were the impacts to people and public safety considered? How was equity considered. Many recent articles have been written regarding the flaws of economic analyses for flooding impacts that consider only property values. (here is one of many: <https://www.urban.org/research/publication/equitable-investments-resilience>). This approach values the impacts to wealthy property owners and residents over people of low wealth, who more often are renters without flood insurance and less able to recover economically from substantial flooding impacts. We recommend that you reconsider the method of your analysis to consider equity and the impacts of flooding to people's health and safety as well as a more equitable way that property values to prioritize flood mitigation measures.

USACE Response 2: Impacts to people and public safety were considered by modeling life safety in LifeSim software, which uses simulated flood events to estimate the number of individuals trapped in floodwaters. In the absence of a federal project, estimated life loss is near zero in the study area. Please refer to the Economic Appendix for life safety tables. Impacts to health and safety are discussed qualitatively in the Economics Appendix as well. Main report section 2.9 also summarizes how USACE factored in life-safety risk for this study.

USACE policy requires use of certified models and methodology in evaluating economic impacts from flood events. This includes estimating the value of damages by using approved depth-damage curves and property valuation methodologies. We recognize that lower-value structures would require higher levels of inundation to incur a similar dollar amount of economic damage as a high-value structure. However, for each separable area, Corps modeling randomly assigns properties values that are statistically representative of the entire separable area, which controls for only high-wealth pockets being recommended for project viability.

Additionally, USACE conducted an environmental justice analysis to assess if flood damage risk reduction benefits were being unevenly distributed between Environmental Justice (EJ) and non-EJ communities. As discussed in Main Report Section 5.6, the

areas where structural elevation and floodproofing measures are being recommended are overwhelmingly low-income census tracts. When looking at the draft recommended plan overall, the economic analysis methodology does not result in only wealthier North Carolina residents having their flood risk reduced.

City of Raleigh Comment 3: In reviewing the alternatives presented (1. No action; 2. Structure elevation/flood proofing plan; and 3. Property buyout plan) it seems that the benefic cost ratio of option 3 is the highest (2.4). Option 3 also has the lower cost compared to Option 2. Also the cost estimates of these two plans are within 23% of each other, which arguably is within the margin of error for cost estimates on this scale. We suggest this analysis be revisited to consider the potential benefits of Option 3, especially for residential properties where the public safety considerations are highest.

USACE Response 3: Agency policy (Engineering Regulation 1105-2-100 Appendix D) requires the USACE Project Delivery Team (PDT) to recommend the plan with the highest overall net benefits, not the highest benefit-cost ratio. In addition, a subsequent more detailed, higher cost estimate for Alternative 3, Property Buyouts, resulted in a revised BCR now less than that of Alternative 2. For Alternative 3, the net benefits were also reduced to a value lower than that published in the draft report. These revised results will be presented in the final report.

City of Raleigh Comment 4: We request more clarification on the comprehensive benefits criteria related to “Regional Economic Development” and “Other Social Benefits.” Given that the above referenced economic analysis considers only property values and not potential impacts to public safety or equity issues, we request that these comprehensive benefits criteria also be clarified and possibly expanded to consider the potential social and regional economic benefits from improved public safety of residential structures, safer transportation corridors, impacts of flooding in lower socio-economic areas, and other social and equity considerations.

USACE Response 4: Regional Economic Development is detailed in the Economics Appendix, as are impacts to life safety and Other Social Effects. The PDT is required by Agency policy to recommend the plan that reasonably maximizes net economic benefits consistent with protecting the Nation’s environment (National Economic Development (NED) plan) (see Engineer Regulation 1105-2-100), although the other categories referenced are analyzed in the report. The exception to this requirement is those extraordinary circumstances when the other categories referenced are substantial enough to merit recommending a plan that is not the NED plan. In which case the PDT would need to obtain a policy waiver from the Assistant Secretary of the Army for Civil Works to approve selection of the non-NED plan. The PDT does not believe there are overriding reasons to recommend a non-NED plan here. With low levels of inundation and low velocity floodwaters across the Neuse River Basin, the impact of flooding on life safety was quite low (zero at the 1% annual exceedance probability event for Crabtree Creek). The majority of recommended measures within the basin were located within lower-income communities and areas receiving the Center for Disease Control’s high social vulnerability ranking (See Main Report Section 5.6).

Capital Area Preservation, Inc.

Capital Area Preservation, Inc Comment 1: Have any National Register, Study List, or DOE properties in Wake County along Crabtree Creek been identified as needing this flood mitigation as part of this project?

USACE Response 1: The USACE cannot complete necessary surveys at this time due to inherent design uncertainty in the Study's feasibility stage, which ultimately prevents the USACE from making effects determinations. Given this limitation, the USACE proposed the development of a Study-specific Section 106 PA. The PA, when final, will outline the efforts and schedule for identifying historic properties, assessing the effects of proposed measures on historic properties, and avoiding, minimizing, and / or mitigating the effects of the measures on historic properties. A draft of the Section 106 PA is included in Appendix G of the Study's draft report / environmental assessment, and can be viewed here: <https://www.saw.usace.army.mil/Missions/Flood-Risk-Management/Neuse-River-Basin/>.

Based on data made available by the N.C. State Historic Preservation Office (<https://nc.maps.arcgis.com/apps/webappviewer/index.html?id=79ea671ebdcc45639f0860257d5f5ed7>), there are several National Register, Study List, and DOE properties and districts found partially or entirely within the Study area along Crabtree Creek (currently the only waterway within Wake County where Federal actions are potentially proposed) in reaches CTC3, CTC4, and CTC7. Efforts to thoroughly identify affected historic properties will be completed before release for a final report.

American Rivers - Mr. Peter Raabe, comment was previously responded to by the USACE via email response below.

American Rivers Comment 1: Encouragement to expand tentatively selected plan to incorporate Alternative 3 (buyouts).

USACE Response 1: After release of the draft report, the study team has continued to refine its analysis of portions of the study area which are still under consideration. These continued updates, which will be reflected in the final report, have indicated that structure buyout costs are more expensive than initially projected in the draft report, leading to costs which now exceed the benefits of Alternative 3. Adding buyout components into the final plan would not be an economically viable option at this time.

American Rivers Comment 2: Oppose the elimination of all of the Natural and Nature-based Features (NNBF) from the Study

USACE Response 2: Including NNBF's as part of a plan was considered by the study team. With the objectives of the study to reduce flood damages, the study team was unable to objectively capture flood damage reduction benefits which would justify stand-

alone NNBF features to address the objectives. The most likely opportunity to implement NNBF's was determined to be by combining them with more traditional structural measures, the latter of which might serve as a foundation to justify costs vs. benefits. When traditional structural measures were screened, so were NNBF's. The study team does not disagree with the overarching concept described in your comment; however, since the release of the draft report the study team has considered recreational and/or environmental benefits of alternative uses of the floodplain in areas vacated by structure buyouts. This assessment, which will be in the final report, indicates that given the current exceedance of costs over benefits with a buyout plan, a significant amount of benefits would need to be generated from recreational and/or environmental changes of the vacated property parcels, which appears unlikely.

American Rivers Comment 3: Encourage use of granting an exception to ER 1165-2-21 as outlined in section 7a(3) for cost-sharing options with urban areas

USACE Response 3: ER 1165-2-21 excerpt: "7.(3) Division Engineers, except for NED and POD, are authorized to grant exceptions to the 800 cfs, 10-percent flood discharge criterion specified in paragraph 7a(1) above whenever both of the following criteria are met:

- (a) The discharge for the one-percent flood exceeds 1800 cfs; and
- (b) The reason that the 10-percent flood discharge is less than 800 cfs is attributable to a hydrologic disparity similar to those described in paragraph 7a(2) above."

Where ER 1165-2-21 was applied, (a) was assessed to see if it met the criteria. None of the locations assessed produced 1% discharges that exceeded 1800 cfs. Likewise (b) was also looked into and was deemed unable to meet the criteria.

Princeton Town Administrator – Mr. Michael King, comment was previously responded to by the USACE via email response below.

Princeton Town Administrator Comment 1: Is there a process to fast track Army Corps of Engineer permits to fix drainage projects in flood areas of a municipality or county?

USACE Response 1: We suggest you call someone from the Wilmington District Corps of Engineers who oversees regulatory actions in Johnston County. I've included Mr. Hopper in this Email reply. Contacting the Corps in the early stages of a project that will ultimately require a permit from the Corps is recommended. Whether this fast tracks your project or not cannot be guaranteed. Here is Mr. Hopper's contact info:

USACE Regulatory Field Office (Washington, NC)
POC: Chris Hopper
christopher.d.hopper@usace.army.mil
919-588-9153

Princeton Town Administrator Comment 2: Could you provide the link for the JC Prelim Measure on page 37?

USACE Response 2: The link to the draft Neuse River Basin main report and appendices referenced during our meeting is:

<https://www.saw.usace.army.mil/Missions/Flood-Risk-Management/Neuse-River-Basin/>

Princeton Town Administrator Comment 3: Is there any assistance for river/stream removal? Grants? Who is the contact for stream/debris removal? I think this is correct below?

Edward E. Davis, Director
Columbus Soil and Water Conservation District
45B Government Complex Road
Whiteville, NC 28472
Phone: 910-642-2196 X 3

Could you provide the contact for Johnston County? I'll be glad to reach out to them for assistance as well. Any assistance you could provide would be great.

USACE Response 3: The state of North Carolina recommends you consider contacting the following folks for more information:

David Williams, NC Deputy Director of NC Department of Agriculture and Consumer Services, 919-707-3772 - (David.b.williams@ncagr.gov) is coordinating the allocation process for the state. Since some money may have already been allocated to the Conservation Districts, the best contact in Johnston County is probably Greg Walker, District Director, 919-934-7146 - (gregory.walker@johnstonnc.com), of the Johnston County Soil and Water Conservation District.

In Person Meeting Comment from Mr. Don Rains, comment was previously responded to by the USACE via email response below.

Mr. Rains Comment 1: Is there a process to fast track Army Corp of Engineer permits to fix drainage projects in flood areas of a municipality or county?

USACE Response 1: We suggest you call someone from the Wilmington District Corps of Engineers who oversees regulatory actions in Johnston County. I've included Mr. Hopper in this Email reply. Contacting the Corps in the early stages of a project that will ultimately require a permit from the Corps is recommended. Whether this fast tracks your project or not cannot be guaranteed. Here is Mr. Hopper's contact info:

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