





July 28, 2021  
AVO 32083

Mike White, Commissioner  
Johnson County, Precinct 3  
4300 E. FM 4  
Cleburne, TX 76031

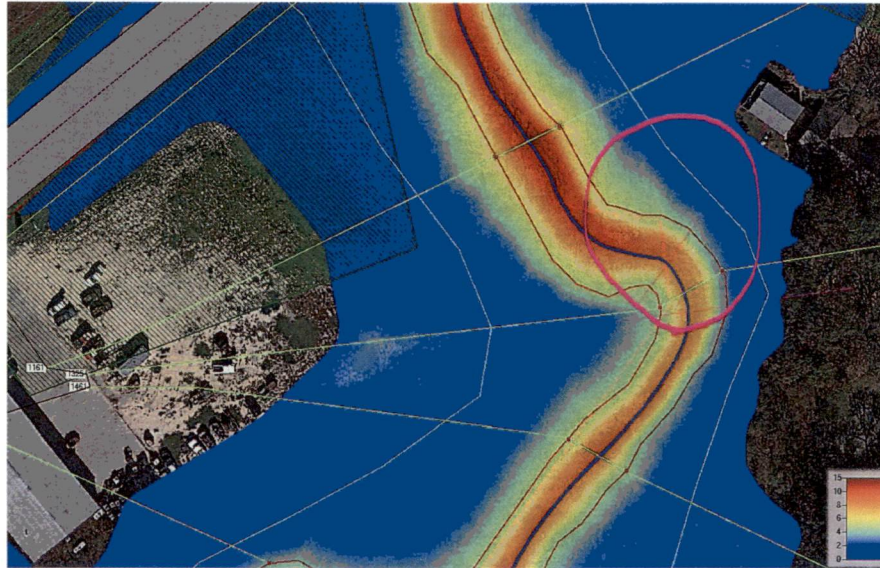
**Re: Orr Expansion – 8700 FM 917 – Flood Study Review #1**

Dear Mr. Woolley:

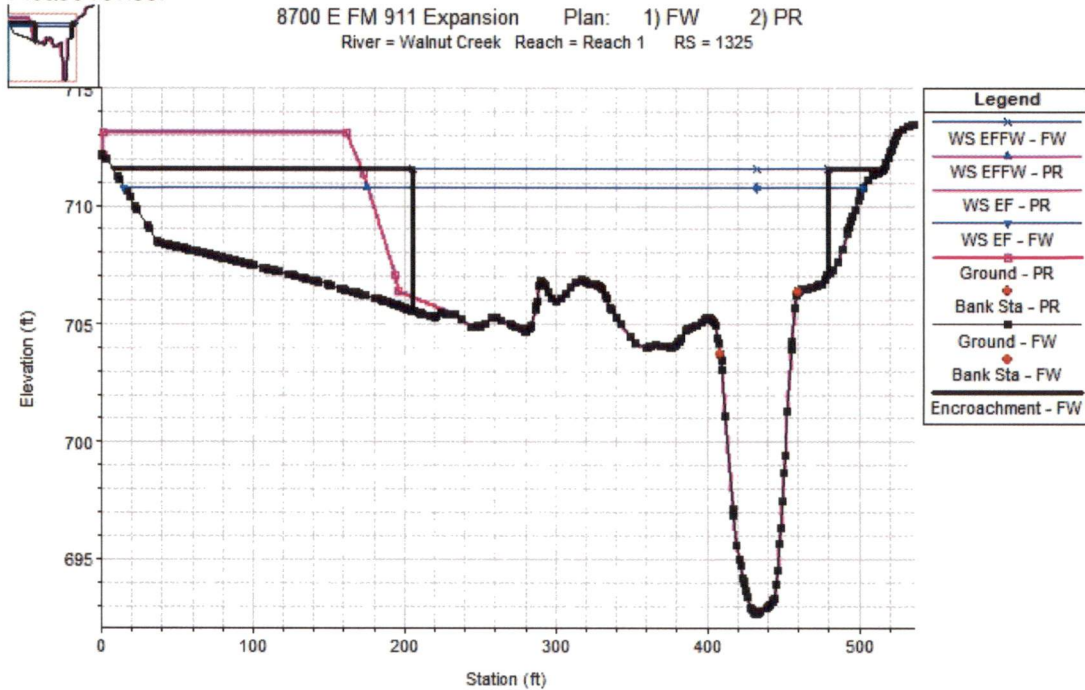
The flood study by MMA, Inc. for the referenced project was received by Halff Associates, Inc. on June 29, 2021. The intent of the flood study was to assess the flooding impacts of a proposed approximately 1 acre expansion which includes land reclamation by fill in the FEMA 100-year floodplain. As alluded to in the flood study report, we noted that some fill activity has already taken place in the floodplain. The existing conditions analysis was carried out based on FEMA effective conditions prior to any fill being placed in the floodplain at the project site. Our comments are as follows:

1. The report narrative refers to both an existing conditions analysis and a corrected effective analysis. However, the submitted HEC-RAS model only includes two geometries, named "Existing" and "Proposed". The plan which utilizes the "Existing" geometry matches water surface elevations labeled as Corrected Effective in results tables in the report. Please clarify the difference and ensure consistent naming between the report and models.
2. The ineffective area elevations for Cross Section 879 downstream of the FM 911 bridge, which is shown to overtop during the 100-year storm event, is not consistent with the upstream bounding Cross Section 950 ineffective area elevations. We recommend lowering the ineffective area elevations on Cross Section 879 so that they are below the 100-year water surface elevation (WSEL).
3. Please cite the source of the FM 917 bridge roadway deck and barrier geometry entered in the HEC-RAS model.
4. The report states that only one habitable structure appears to be impacted by floodplain, at Cross Section 2314. However, aerial imagery from Nearmap dated 1/24/2020 appears to show six (6) habitable structures in the floodplain in areas where there is a rise in WSEL between existing and proposed conditions. See attached exhibit with these structures highlighted in red. Please ensure the report wording is revised as needed and that the impacts of this project are addressed accordingly.

- The proposed condition shows an increase in erosive channel velocity between Cross Section 1161 and 1461. The existing condition channel velocity ranges from 5.8 ft/s to 8 ft/s. The proposed condition channel velocity ranges from 7.5 ft/s to 9.2 ft/s. This increase in velocity may have the potential to introduce erosion north of the channel bend as circled in purple below. The potential area of erosion includes a residential lot with a pool in the floodplain. We recommend providing an assessment of this erosion risk and including mitigation measures if necessary.



- Cross Sections 1161, 1325, and 1461 show fill extending beyond the toe of the main slope and into the modeled floodway. See screenshot of 1325 below. There should not be any fill in the floodway. Please revise.





7. The floodway run in the model sets new encroachments downstream of FM 917 compared to the effective FEMA floodway. We recommend setting encroachments which match the effective FEMA floodway designation.
8. We note that per the Subdivision Rules and Regulations of Johnson County (hereafter referred to as SRRJCO), Appendix A, Section F.2, a FEMA submittal may be required for this project. Please note that such a submittal would require tie-in to the effective FEMA mapping and FIS elevations, plus any other items required to establish/revise a regulatory floodway.
9. Please dedicate a public drainage easement containing the floodplain per SRRJCO, Appendix A, Section E.2
10. At the time a site drainage plan is developed, please ensure that the applicable notes and restrictions on drainage easements are included on the plat and/or accompanying sheets as outlined in SRRJCO, Section IV.C. Also include an erosion control plan, ensuring compliance with SSRRJCO, Appendix A, Section E.8.

**Please provide a written response to the above comments with the next submittal. Items revised in response to these comments may generate additional comments.**

If you have any questions or need additional information, please do not hesitate to call me at (817) 764-7481, or Ben Pylant at (817) 764-7488.

Sincerely,  
**HALFF ASSOCIATES, INC.**  
TBPE Firm No. 312



Randy Dueck, P.E., CFM



