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UTILITIES
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TO: A. Randolph Brown, Utilities Director

FROM: Alessandra Delfico, PE CFM

SUBJECT: Filter Building Hardening Design, Tetra Tech

Per the Facilities Assessment, subsequent CDM study (Building Structural Review for Hurricane Hardening Grant) that was previously conducted, and current Florida Building Code wind load requirements, it has been determined that some of the Water Plant facility still requires structural modifications and hurricane rated impact windows and doors for adequate hurricane hardening of the Water Treatment Plant.

Earlier this year Tetra Tech undertook a study evaluating the specific buildings, the study was completed in July and is attached. The first phase of implementation will be the retrofit of the Filter Building. Under this Work Authorization Tetra Tech will design the improvements to the Filter Building.

The Filter Operation Gallery addition was constructed as a steel frame with metal stud walls and steel roof deck. The structural members and components of the Filter Buildings were observed to be in good condition overall, with the exception of some stucco and concrete masonry unit (CMU) cracking. The structural deficiencies found for potential retrofitting are the exterior unreinforced CMU walls, metal stud walls, and steel roof deck attachment. The most significant finding was in the Filter Operation Gallery addition where the metal stud wall assembly does not meet the current code requirements and it would be best to replace the entire wall system. Some architectural openings in the building envelope are currently in process to be or have recently been replaced with High Velocity Hurricane Zone (HVHZ) compliant glazing and frames as result of renovation projects. There are still several original windows with shutters. Almost all the man-doors and frames have been replaced over the years but do not meet current requirements for anchoring, impact, or sealing to prevent compromising the building envelope in high winds. There is one overhead door in the HSP 1-4 Building that appears to be original and should be replaced for hurricane hardening. The rough order of magnitude (ROM) costs for this project is $803,000