

FLOOD PROTECTION LEVEL OF SERVICE FOR MIAMI-DADE COUNTY CURRENT AND FUTURE SEA LEVEL RISE CONDITIONS

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The South Florida Water Management District (SFWMD) is conducting a system-wide review of the regional water management infrastructure to determine the flood protection level of service (FPLOS) being provided by existing infrastructure under current and future conditions. The FPLOS describes the amount of protection provided by the water management facilities within a watershed considering sea level rise (SLR), future development, and known water management issues in each watershed. Notably, the SLR scenarios will also consider associated changes in groundwater levels and land-use changes.

This project involves preparing FPLOS analysis for the C2, C3W, C5 and C6 watersheds in central Miami-Dade County. This effort involves developing a calibrated and validated hydrologic and hydraulic (H&H) model of the subject watersheds. This region includes a significant extent of flood protection infrastructure including an extensive primary canal network with District owned and operated control structures throughout the highly managed system. Although the District canals and structures represent the primary infrastructure for providing flood protection in the area, the secondary drainage system is a significant component. In particular there are large canals, culverts and pumps in the project area that are owned and operated by Miami-Dade County and the municipalities of Belen, Sweetwater and West Miami.

Post calibration for this roughly 200 square mile area, simulations of design storm events for existing conditions and for future conditions were prepared. The future conditions simulation incorporated SLR, projected land use, and projected groundwater levels. The results of these scenarios were utilized to evaluate the FPLOS for existing infrastructure in the studied watersheds. Assessment was completed for a suite of performance measures under existing and future SLR conditions, and a narrative describing preliminary recommendations for potential flood mitigation projects was provided for the C-2, C-3W, C-5 and C-6 watersheds.

PRESENTER BIO: Justin Tagle graduated from University of Florida with his Bachelors in Science and Masters in Engineering in Civil Engineering. He is currently pursuing his PhD in Civil Engineering at Florida Atlantic University while working as a Project Engineer at Chen Moore and Associates.