

**Florida Floodplain Managers Association**  
**2019 Annual Conferences**  
**Abstracts**

---

|                         |   |
|-------------------------|---|
| <b>Title:</b>           | Floodplain Mapping for Future Conditions in Broward County  |
| <b>Length:</b>          | 30 minutes  |
| <b>Subject:</b>         | Floodplain Mapping  |
| <b>Target Audience:</b> | FPAs, Engineers, Anyone using FIRMs   |
| <b>Presenter Name:</b>  | John Loper, P.E.<br>Associate Vice President<br>Taylor Engineering, Inc.  |
| <b>Biography:</b>       | Mr. Loper is the founder of Interflow Engineerring, now a part of Taylor Engineering, and currently serves as associate vice president of the water resources group. He has over 24 years experience in hydrologic and hydraulic modeling, water resources investigations, stormwater management system design, and environmental resource permitting. He is an expert in solving complex water resources problems for governmental and private-sector clients, and in guiding proposed solutions from initial concepts through to final design and regulatory approvals.   |
| <b>Co-Presenter:</b>    | None  |
| <b>Biography:</b>       |   |
| <b>Abstract:</b>        | Authors: John Loper, Taylor Engineering, Mark Ellard, Geosyntec Consultants, Carolina Maran, Broward County, Michael Zygnerski, Broward County<br><br>Since 1977 Broward County has participated in the National Flood Insurance Program (NFIP) of the Federal Emergency Management Agency (FEMA). The FEMA maps, known as Flood Insurance Rate Maps (FIRMs), have been updated for portions of the county and/or communities at irregular intervals. In parallel with FEMA-oriented efforts, the County developed its own maps for floodplain management and for determining minimum finished floor elevations. Typically, the County maps proved to be more conservative and, by holding communities to those higher standards, saved the residents and the community considerable costs in flood insurance premiums and loss avoidance. This has made Broward County more resilient to flooding over the years.<br><br>FEMA last updated the FIRM maps in 2014 and those maps showed higher base flood elevations (BFEs), and in some cases higher than the County maps. Realizing that changes in sea level, and its influence on the groundwater table, will have a large effect on future flooding, in addition to current conditions showing a nearly built-out infrastructure, the County has initiated the implementation of a future conditions map series. These regulatory maps include future conditions average wet season groundwater elevations and 1% annual chance flood elevations that account for predicted changes in surface and groundwater levels due to sea level rise and other climate impacts.<br><br>Taylor Engineering, in cooperation with Geosyntec Consultants is currently developing an integrated groundwater and surface water model, using MIKE SHE and MIKE Hydro, to create future conditions flood maps that the County will use to maintain higher flood |

management standards and to develop a resilient community. The modeling and mapping will also incorporate potential increases in rainfall intensity associated with a warming climate.