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Abstract Title: Coastal Inundation Mapping: Results from Static and Dynamic Models of Storm Surge along Florida's Northeast and Central Coast

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Abstract: The St Johns River Water Management District (SJRWMD) is located in northeast and east-central Florida, comprised of all or part of 18 counties. SJRWMD contracted with the University of Central Florida (UCF) Coastal Hydroscience Analysis, Modeling & Predictive Simulations Laboratory to quantify the extent to which sea level rise (SLR) could reasonably cause coastal flooding particularly during extreme events such as hurricanes. The increases in sea level that were modeled are based on projected Army Corps of Engineers values using both a static (“bathtub”) method and a dynamic method: 0.13 m, 0.22 m, 0.25 m, 0.51 m, 0.56 m and 1.57 m. The UCF project deliverables included a set of shapefiles representing the extreme upslope lines of inundation for the 12 scenarios (6 levels, 2 model types). Polygons derived from the line work were then used by SJRWMD staff to evaluate the lands that would be impacted, using the SJRWMD 2009 Florida Land Use and Cover Code System (FLUCCS) based district wide layer. SLR at the NOAA Mayport station (Jacksonville, FL) is projected to increase by 0.13 m by approximately 2050. Sample results from the 0.13 m scenario, using the dynamic model are: 2,744 acres of residential, 96 acres of commercial, 1,645 acres of recreation and 187 acres of transportation, communication and utilities would be impacted. Results from all land cover classes for all scenarios will be presented.