

Using 3D GIS Visualization to Communicate Flood Risk and Climate Change Information in Coastal Communities

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As our climate continues to change and vary, flood risks and associated impacts are on the increase. Coastal communities in particular are threatened by rising water due to sea-level rise, high tides, storm surge, and heavy precipitation events. Community and sustainability planners, stormwater engineers, emergency managers, business owners, and other decision makers need meaningful and actionable information in order to increase their resiliency and lessen their exposure. Much related data and information exists, however it is often not presented in formats that decision makers can easily interpret.

3D GIS visualization can allow anyone to easily and virtually view potential flood impacts on coastal community infrastructure. Sea-level rise and climate change scenarios, storm surge models, and other flood risk datasets can be overlaid with buildings, elevated bridges and roads, and other community assets to assess varying levels of damage and destruction. Seeing these scenarios in 3D provides an added sense of realism that traditional data formats are not able to achieve. Knowing this type of information can lead to better decision making by coastal community leaders when planning for future climates.