

Lessons Learned

- Early engagement of stakeholders and support agencies are important toward identifying environmental issues early on in the study process. Such engagement is also helpful in determining the appropriate level of NEPA documentation.
- Early coordination with sponsor in regards to federal requirements for real estate acquisition is critical to meet Project Schedule
- Based on the extensive review and unforeseen changes in the MCACES, TPCS and Risk Analysis, the Cost MCX/TCX can begin their review process before the technical ATR officially begins in order to minimize schedule impacts to certification receipt and the economic team's efforts.
- Usage of certified models can speed study process.
- Usage of existing data can speed study process. For Walton County, we were able to utilize geophysical data (which can be a time consuming effort to obtain) collected by the sponsor as well environmental data that had also been collected.



Lessons Learned

- If a study is serving as a test bed for a new model that is yet to be certified (flying the airplane while building), there could be impacts to the schedule caused by the inherent uncertainty in the modeling process (enhancements, updates and bugs, for example). This information should be communicated early with the PDT, vertical chain, and sponsor and regular updates provided regarding study progress.
- Life cycle analysis is well suited for large scale coastal hurricane storm damage reduction projects, such as Walton County. The approach reduces the uncertainty in project performance; however, the process can be very data and processing intensive. This should be clearly communicated to stakeholders.
- There is often a lag between implementation of guidance and capability of applied tools. This was the case for Walton County with Sea level rise guidance and earlier versions of Beach-*fx*. Future Hurricane Storm Damage Reduction project utilizing Beach-*fx* should utilize the model to assess implications of potential sea level rise.
- As a study schedule lengthens, additional factors can come into play to further lengthen the schedule and affect study costs (changed physical conditions from additional storms, implementation of new guidance, change in PDT members).

