Sea Level Rise in Florida

Presentation to the

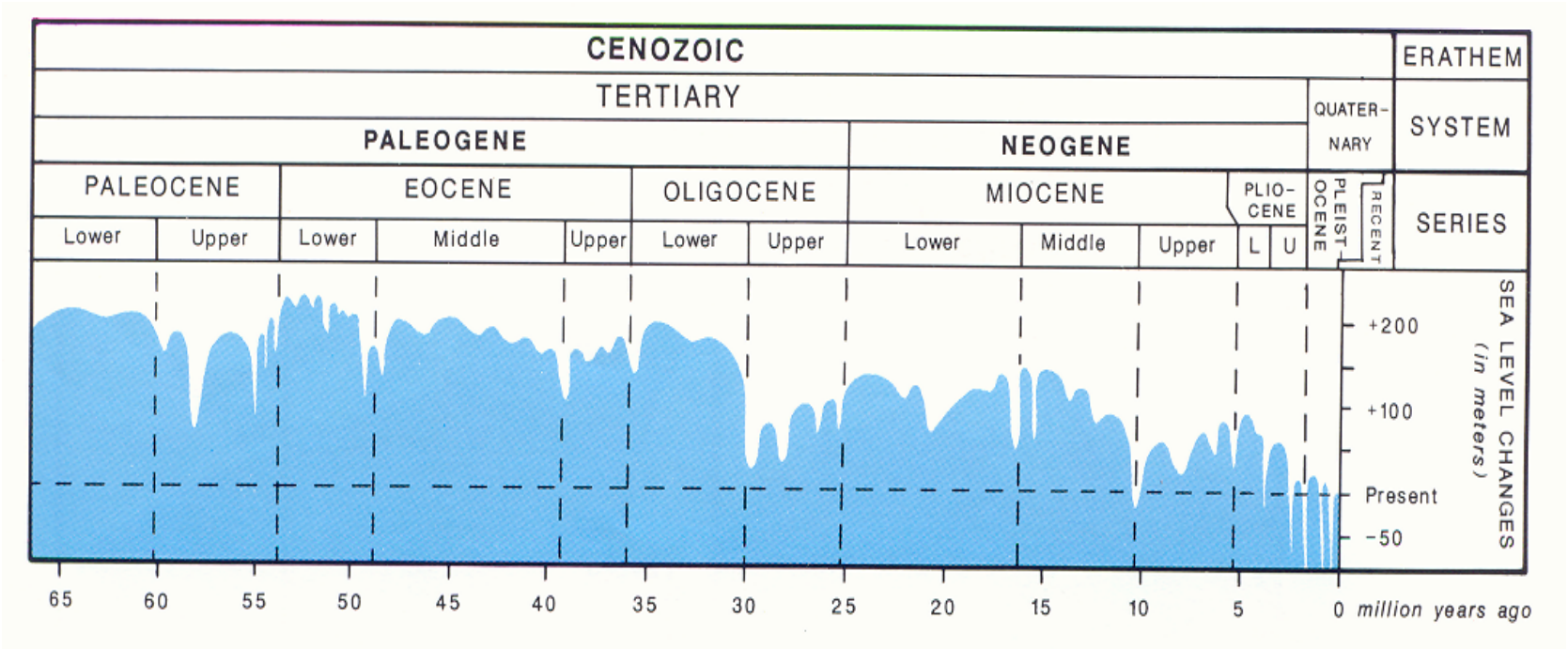
Climate Change Conference

May 9, 2007

Why Sea Level Rise?

- Sea level along the U.S. coast is rising at a rate of 10 to 12 inches per century
- There is concern that sea level may rise at an accelerated rate in the future
- Five warmest average global temperature years on record in 1990s
- Increased rates of beach erosion and acres of coastal wetland losses documented

Sea level changes during the last 65 million years



Project Genesis

- 1998 – U.S. Environmental Protection Agency (EPA) initiated a study of Sea Level Rise (SLR) impacts on the nation's economy
- 2000 – EPA contracted with Southwest Florida Regional Planning Council (SWFRPC) to coordinate a SLR study within Florida
- 2002 – SWFRPC contracted with other Regional Planning Councils to map SLR in other regions of the state

Purpose of the Study

- To raise awareness of SLR issues and stimulate local governments to begin planning for SLR
- The ultimate goal is to diminish loss of life and property from coastal hazards, such as erosion and flooding

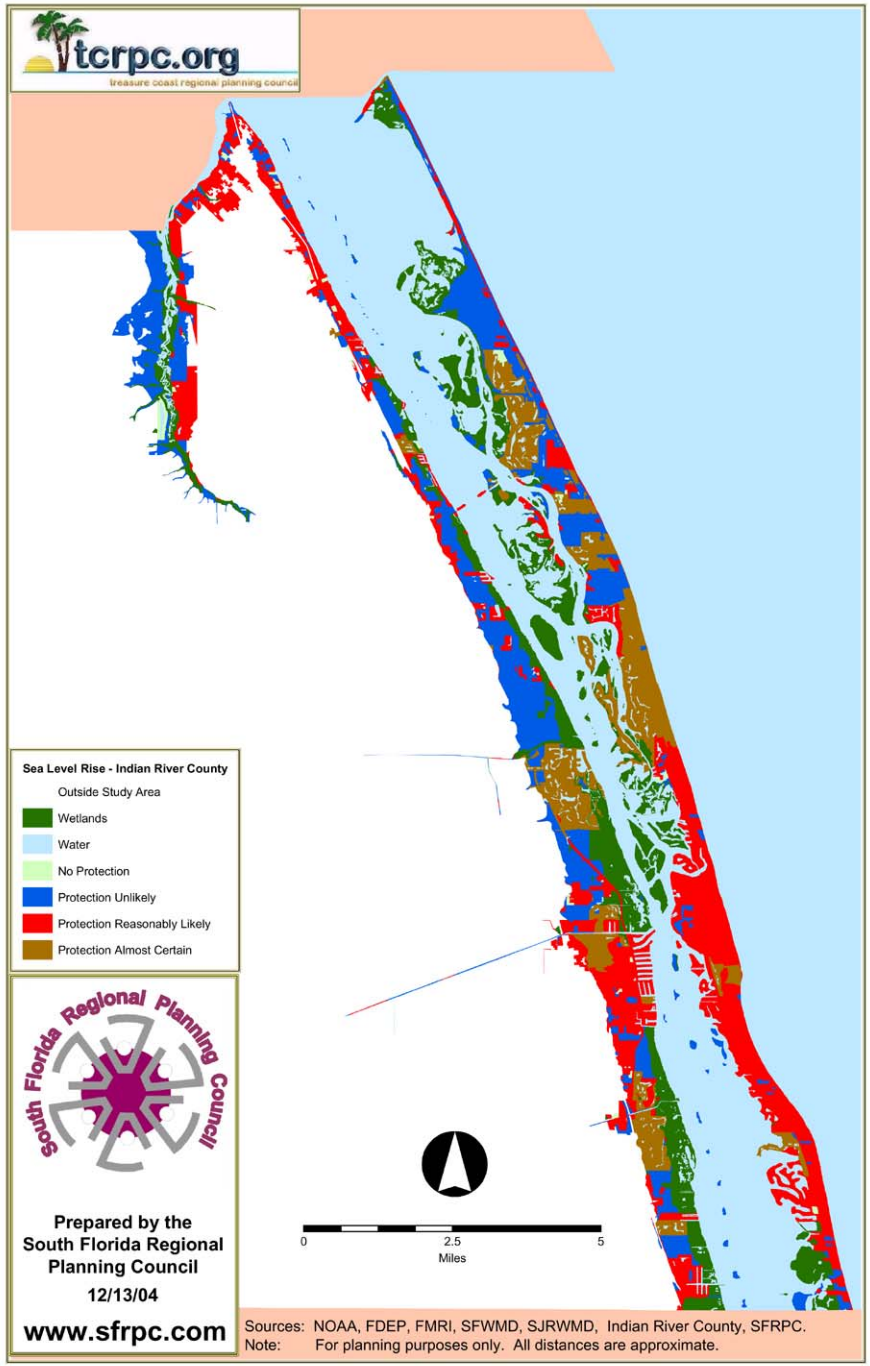
Mapping Procedures

- Followed the general approach of other SLR planning studies sponsored by the EPA
- Gathered the latest available GIS mapping data
- Mapped uplands from 0 to 10 feet in elevation and within 1000 feet of the shoreline
- Used decision rules in a statewide approach to identify likelihood of protection based on land use

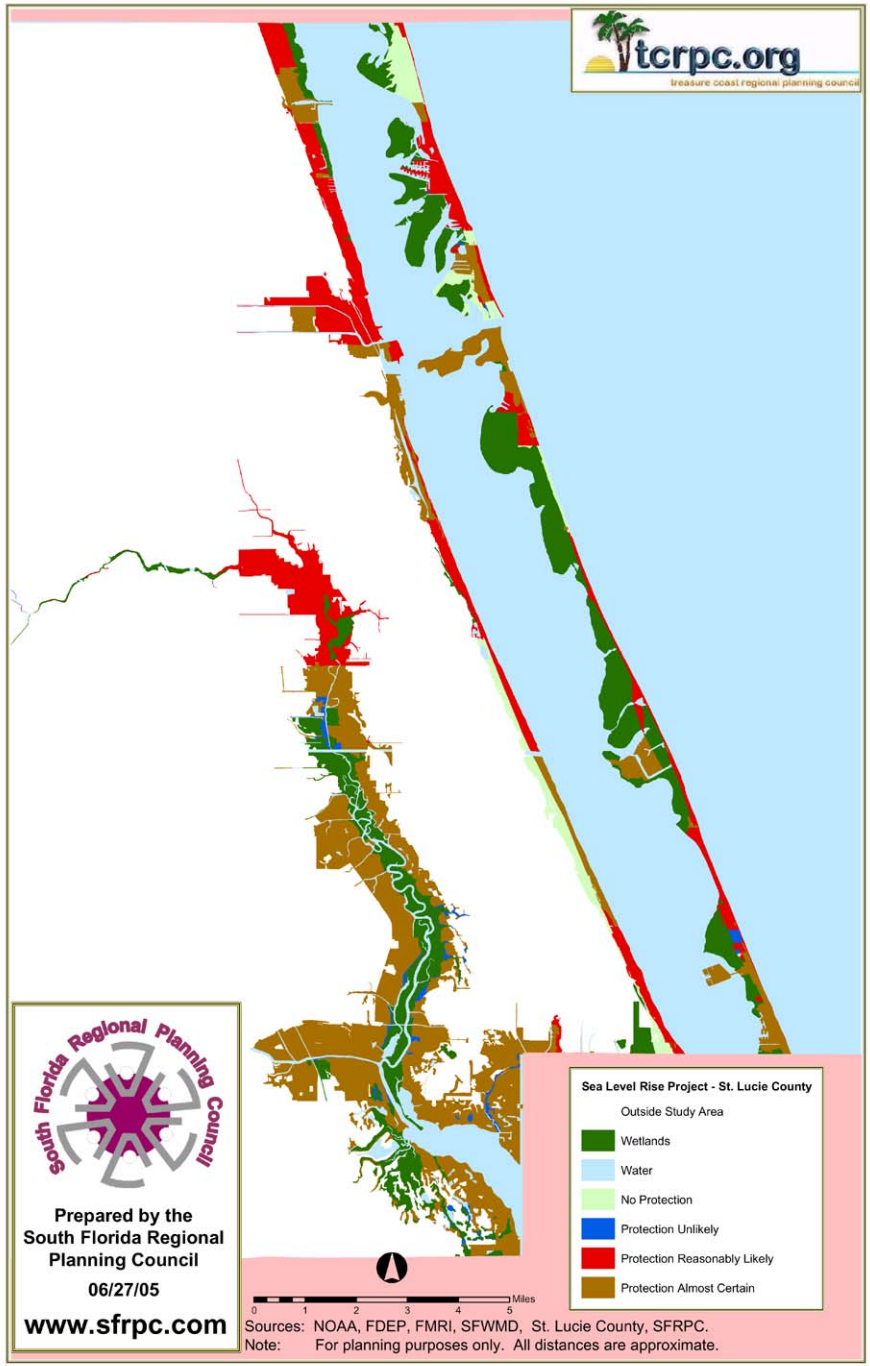
Map Legend

- Brown – Protection Almost Certain
- Red – Protection Reasonably Likely
- Dark Blue – Protection Unlikely
- Light Green – No Protection
- Dark Green – Wetlands

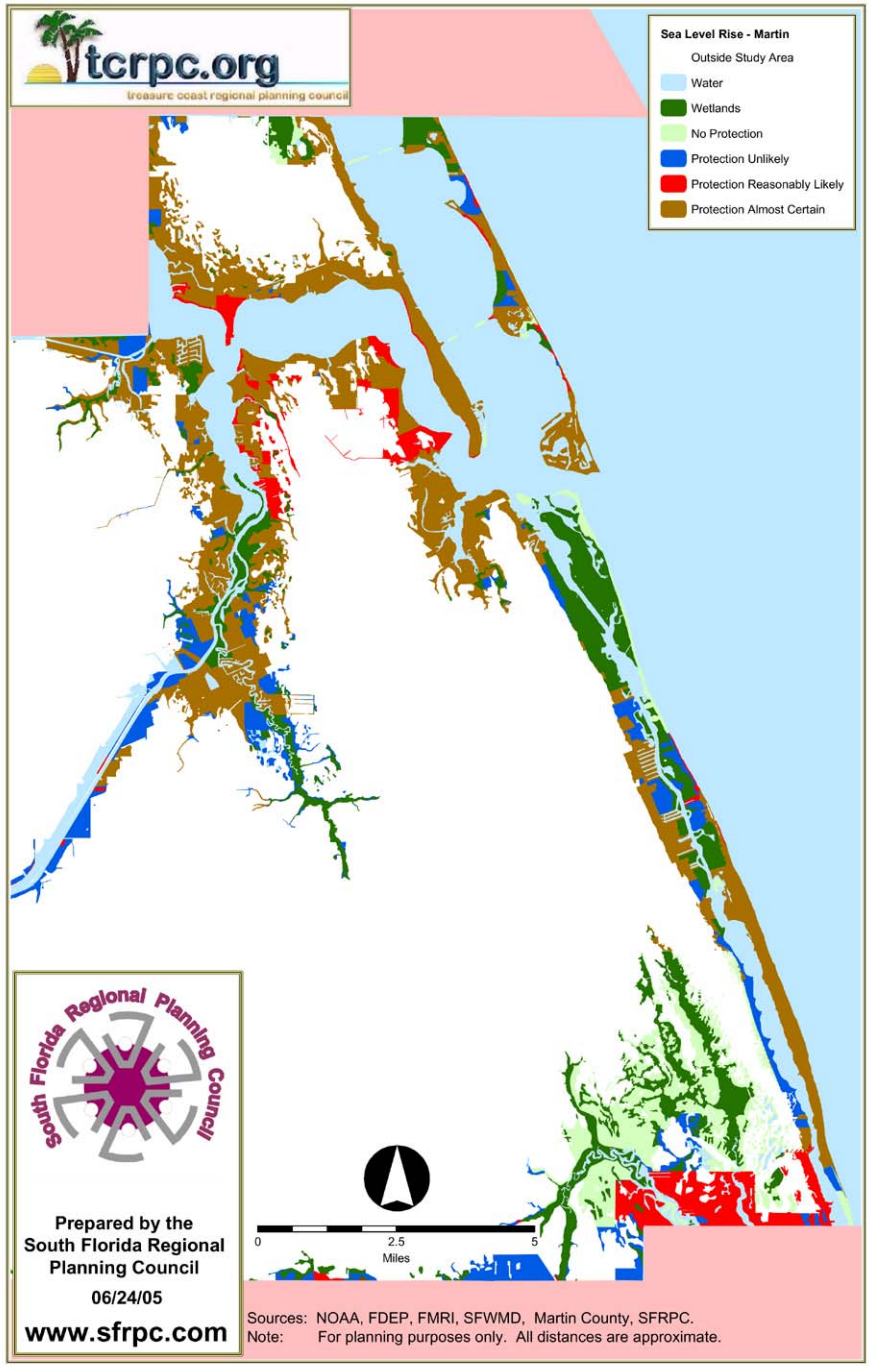
Indian River County



St. Lucie County



Martin County



Palm Beach County


Highly developed areas will be protected


Developed areas not on central water and
sewer may not be protected


Low density development on unbridged barrier islands will not be protected


Public lands will not be protected

Solutions to sea level rise impacts are land use planning and management programs

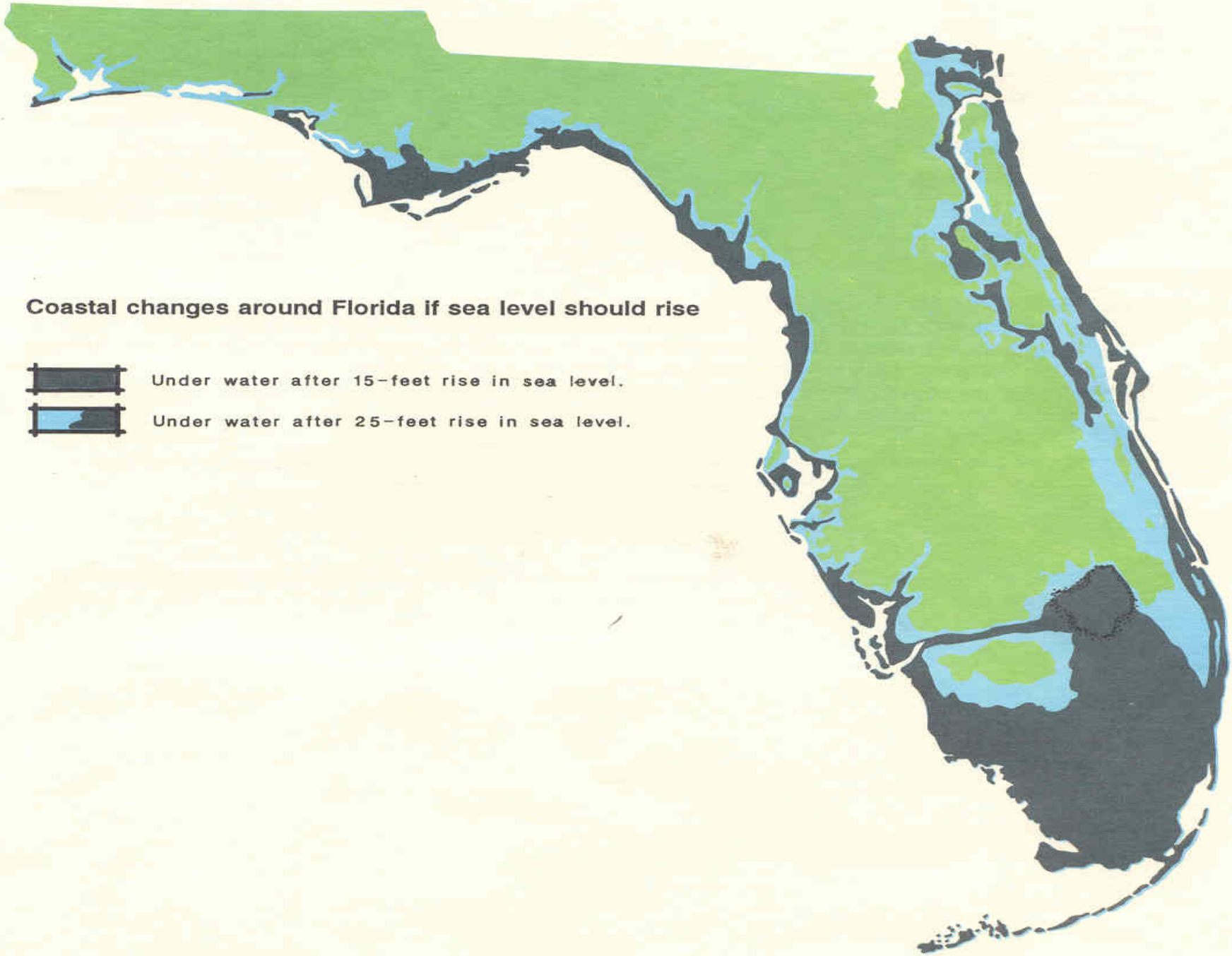
Rolling Easements (R)
Beach Renourishment (P)
Building Code changes for elevation (P)
Zoning Regulations (R & P)
Subdivision Regulations (R & P)
Planned Unit Development Regs. (R & P)
Location of Public Facilities (R & P)
Open Space Controls (R & P)
Preferential Taxation (R)
Transfer Development Rights (R)
Public Acquisition (R)
Relocation of Existing Structures (R)
Seawalls and Dikes (P)
Sand Dune Regulations (P)
Septic Tank Regulations (P)
National Flood Insurance Program (R & P)
Comprehensive Planning (R & P)
Public Information on sea level rise (R & P)
Developments of Regional Impact (R & P)
Areas of Critical State Concern (R & P)
Coastal Zone Management (R & P)
Conservation (R & P)
Stormwater Management (R & P)
Land Registration (R)
Coastal Construction Control Line (R & P)

CRITICAL FACILITIES

Correctional Facility
Clinic
Communication
Emergency Operation Center
Electrical
Emergency Medical Services
Fire Station
Hospital
Florida Highway Patrol
Landfill – Active
Landfill – Inactive
Military Base
Police Department
Potable Water
Radioactive Site
Red Cross
Refuge of Last Resort
School
Shelter
Sheriff Department
Sewage Treatment Facility
Transportation Facility
Water Treatment Facility

Conclusions

- All coastal communities in Florida are likely to be impacted by SLR
- Local governments are encouraged to begin addressing SLR in the Coastal Management Elements of their Comprehensive Plans
- More detailed topographic data is needed to improve SLR planning


Coastal changes around Florida if sea level should rise
Under water after 15-feet rise in sea level.
Under water after 25-feet rise in sea level.