2.0 General Recommendations

The City of Stuart has evaluated the Comprehensive Plan as specific Elements and the document in its entirety. Provided below are general recommendations pertaining to the Comprehensive Plan as whole.

2.1 Recommendations

1. Make Comprehensive Plan more graphic to improve readability and ease of understanding.
2. Reorganize optional and required Elements into the following "Pillars": Environment, Neighborhoods, Infrastructure, Community and Economic Development, and Government and Implementation.
3. Simplify language to improve readability.
4. Revise Comprehensive Plan to have planning horizons of 5 and 10 years to encourage quick action by the City.
5. Delete policies that have been implemented or no longer relevant.
6. Required: Adopt statutory definition changes in Appendix A.
7. Required: Adopt removal of references to Rule 9J-5, which is no longer applicable, in Appendix B.
8. Incorporate sustainability, resiliency, and CRA information/sections into each Element, as-needed. Note: CRA may need sections in Transportation and Infrastructure.

2.2 Recommended Reorganization

Note to be removed from EAR: [brackets] indicate how the Element is referenced in the Statutes for reference. Elements to be organized into "Pillars" or a term the City likes.

Environment Pillar
1. Coastal Management (ix.) [required as Coastal Management Element]
2. Conservation (v.) [required as Conservation Element]

Neighborhoods Pillar
1. FLU (I.) [required as FLU Element]
2. Housing (iii.) [required as Housing Element]
3. Recreation and public space (vi) [required as Recreation and Open Space Element]
4. Historic Preservation and Neighborhood Vibrancy [or something similar - optional element to be added]

Infrastructure Pillar
1. Mobility (old Transportation Element ii.) [required as Transportation Element]
2. Capital Improvements and Concurrency Management System (viii) [required as Capital Improvement Element] break out? Is it working together?
3. Public Services (old Infrastructure Element iv.; required as General Facilities Element)
4. Public Schools Facilities Element (x.) [optional element, formerly required]

Community & Economic Development Pillar
1. Economic Development (xi) [optional element]
2. CRA [optional element]

Government and Implementation Pillar
1. Intergovernmental Coordination Element (vii.) [required as Intergovernmental Coordination Element]
2. Administration and Implementation [optional element]

3.0 Environment

Minimizing the impact of climate change, improving water quality and using renewable energy and resiliency planning for a sustainable future, has emerged as a paramount concern both globally and for the City of Stuart. While global efforts are taking place, ultimately climate adaption and efforts to improve water quality and promote renewable energy use must be planned for and implemented at the local level. The City's Comprehensive Plan has been evaluated in terms of the three primary components: water quality and natural resources, renewable and alternative energy, and resiliency planning.

The City established a multi-departmental committee to identify opportunities for incorporating sustainability and resiliency concepts into decision-making and policy goals for the future, which will evolve into a sustainability and resilience plan.

3.1 Description of Issue

a) **Water Quality and Natural Resources:** According to input from the public, one of the greatest major issues facing the City of Stuart is water quality. Comprehensive Plan Objectives encourage low impact development (LID) strategies and better-defined wetland policies to improve the quality of natural resources and minimize environmental impacts. CIP infrastructure goals such as RO plants and non-mandatory septic-to-sewer programs as well as planning requirements for irrigation strategies and approved landscape materials help promote sustainable water supply. The City and community agree these programs have been successful; however, currently there is no baseline of acceptable water quality, no established system of measurement, nor a water quality action plan in place.

b) **Renewable and Alternative Energy and Resource Use:** The previous objectives to provide sustainable and smart growth principles, green-house gas reduction strategies, increased use of renewable energy alternatives, and to formalize a mandatory Green Development review section, have been identified through the community outreach process as the highest ranked issues to address in the comprehensive plan update. The City supports the Solar Energy Loan Fund and the Florida Green Energy Works program, continues to implement solar projects, and is considering a required sustainability matrix for development. With both successes and shortcomings in the previous plan, updates must focus on mandatory policy with measurable outcomes.

c) **Resiliency Planning:** Resiliency is the ability of the built and natural environment to resist, adjust to and recover from the effects of a hazard. Current goals promote protection of the coastal/shoreline from erosion, human and capital assets from destructive forces, and provide for emergency evacuation and procedures for post-disaster redevelopment. While the City understands potential impacts of climate change, sea level rise, intense storm events and shoreline exposure, an effective disaster management plan that incorporates resiliency and sustainability strategies is not in place. The City organized a multi-department sustainable committee in October of 2019 with a goal of completing a resilience plan outline by April 2020. Hiring a consultant who specializes in resiliency planning to help guide this new effort will help lead the City's sustainable committee in their focus, and provide an education and training resource for community engagement.



3.2 Potential Social, Economic and Environmental Impact

The City of Stuart seeks to provide its residents a high quality of life and attract tourists and businesses that will contribute to the economic vitality of the City. Implementing policy, planning and CIP guidelines which encourage pedestrian and transit friendly development, reduce negative impacts on the natural environment and non-renewable resources, and identify strategies for a resilient and sustainable future, will help create the kind of

community where families want to work, live and play. Redevelopment in areas of adequate infrastructure and services reduces impact on natural areas and green-house gas emissions. Policies to support a smart and resilient City, will shift the social behavior of the community towards a more efficient and sustainable use of City resources, resulting in an increased quality of life for the residents and visitors of the City of Stuart.

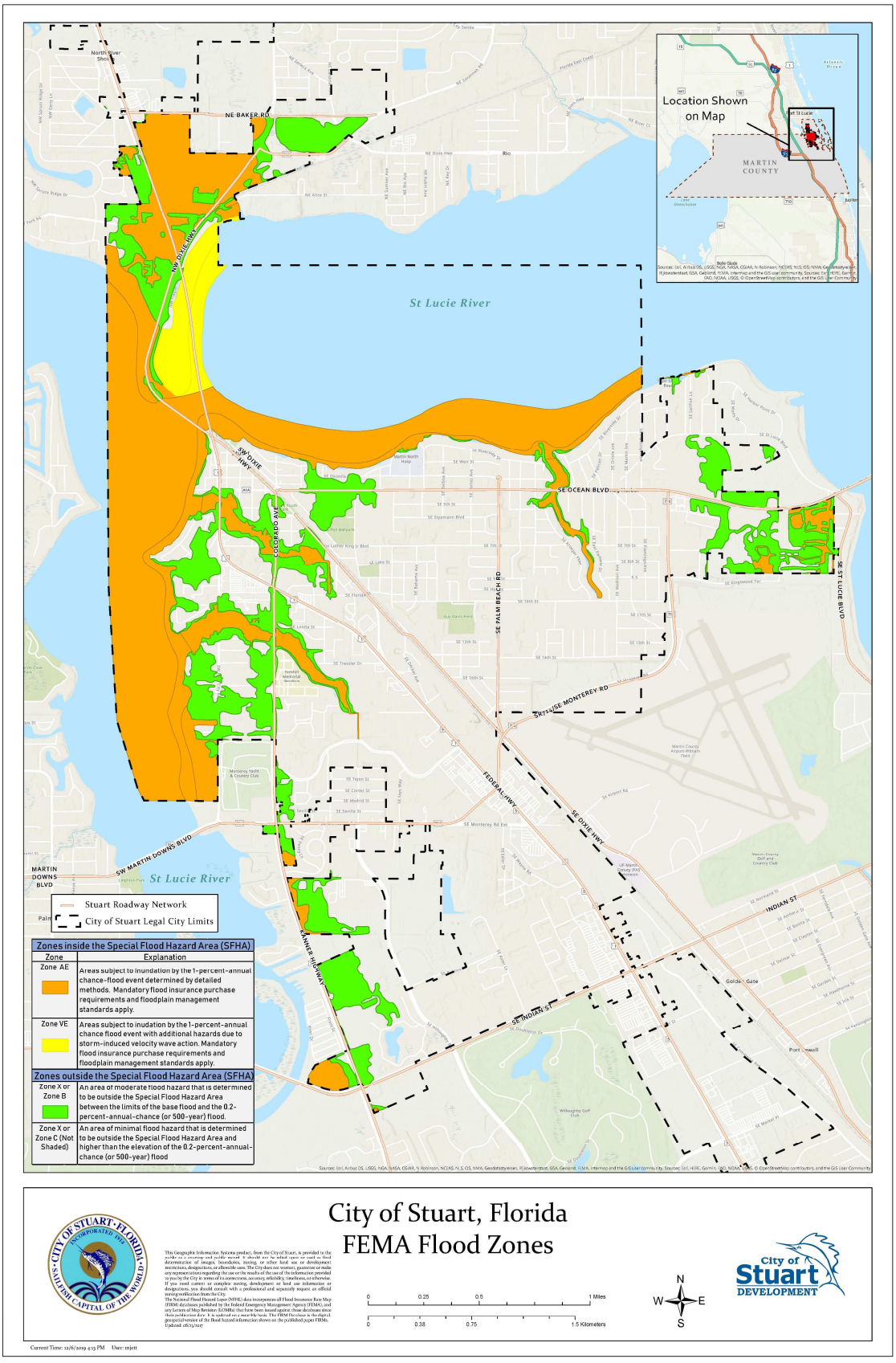
a) **Water Quality and Natural Resources:** The City is currently reviewing proposed water distribution system improvements, and their economic, social and environmental impact. While the septic to sewer program is currently not mandatory, the City is offering financial incentives for residential and commercial users to connect online so that the program can be completed in 10 years. Once the City can quantify the benefits and show improvements, it can implement policy that will further encourage the commercial and multi-family developments to go online from septic to sewer. The Floridian Aquifer RO project will generate 1 million gallons of alternative potable water. Continued investment in CIP projects which directly support efficient use of resources and improving water quality will help the new sustainable committee identify water quality baseline goals. Continued use of reclaimed water for irrigation and implementing policy to mandate smart irrigation as part of the City's site plan requirements can further encourage the overall water quality goals.

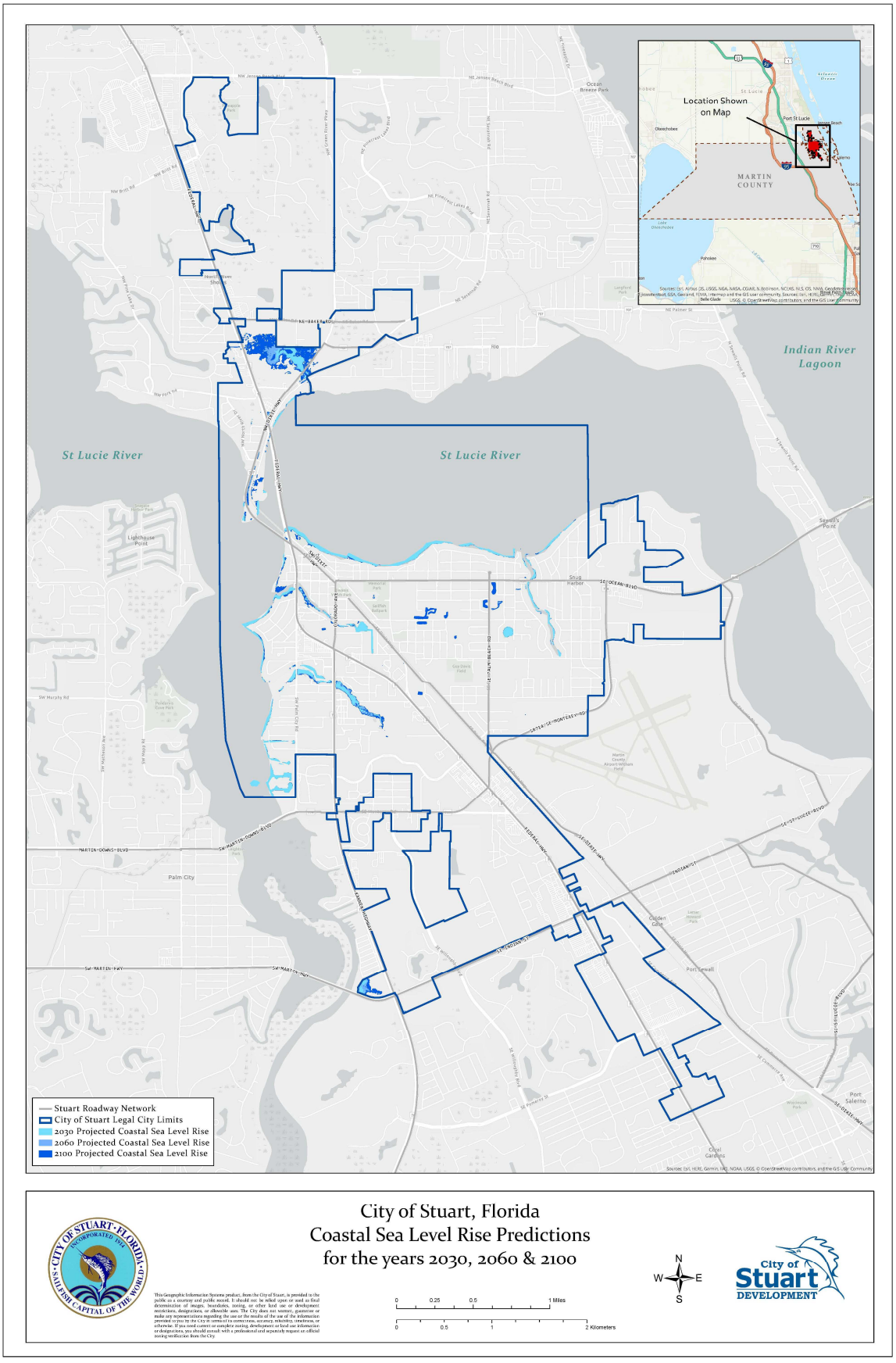
b) **Renewable and Alternative Energy and Resource Use:** By quantifying the energy realized by the solar panels projects, the new sustainable committee can set baseline goals by which to measure proposed projects. By educating and communicating this information to the public, the City can encourage individuals and developers to support renewable energy elements in their community and projects. Implementing policy that includes measureable standards for development review, requiring alternative energy credits, providing a matrix of choices for developers, (such as incentives for electric charging stations or quantifying solar requirements for appropriate projects) are all efforts the City can take and outline in their sustainability plan.





c) **Resiliency Planning:** The interdependence of social, economic and environmental systems is a keystone of sustainability. While the City appears to be exceeding their goals for providing conservation and open space, coastal risk areas need to be addressed. Other coastal communities are finding that the cost of sea level rise and storm impact have forced them to develop practices and policy that can increase climate change resilience. Practice and policy that should be considered by the City include: requiring increased minimum floor elevations for new development and redevelopment; retrofitting buildings for increased flood risk; designing infrastructure that can withstand higher water levels, such as raising seawalls and installing tidal valves; implementing natural drainage features such as bioswales and stormwater buffers; reducing the heat island effect through increased landscaping, shading, and green building practices; and adopting building practices that reduce vulnerability to increased storm events. According to the South Florida Regional Climate Change Compact, unified sea level rise projections for South Florida project sea levels will rise by three to seven inches by 2030 and nine to 24 inches by 2060. Figure X shows the new FEMA flood zones and Figure XX shows the City's vulnerable areas, most at risk from sea level flooding and storm impacts.


Location Shown on Map
MARTIN COUNTY
St Lucie River
NE BAKER RD
SW DIXIE HWY
SE OCEAN BLVD
COLORADO AVE
SE PALM BEACH RD
SE ST LUCIE BLVD
SE MONTEREY RD
FEDERAL HWY
SE DIXIE HWY
SW MARTIN DOWNS BLVD
MARTIN DOWNS BLVD
SE INDIAN ST
Stuart Roadway Network
City of Stuart Legal City Limits
Zones inside the Special Flood Hazard Area (SFHA)
Zone
Explanation
Zone AE
Areas subject to inundation by the 1-percent-annual chance-flood event determined by detailed methods. Mandatory flood insurance purchase requirements and floodplain management standards apply.
Zone VE
Areas subject to inudation by the 1-percent-annual chance flood event with additional hazards due to storm-induced velocity wave action. Mandatory flood insurance purchase requirements and floodplain management standards apply.
Zones outside the Special Flood Hazard Area (SFHA)
Zone X or Zone B
An area of moderate flood hazard that is determined to be outside the Special Flood Hazard Area between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood.
Zone X or Zone C (Not Shaded)
An area of minimal flood hazard that is determined to be outside the Special Flood Hazard Area and higher than the elevation of the 0.2-percent-annual-chance (or 500-year) flood
City of Stuart, Florida
FEMA Flood Zones
0 0.25 0.5 1 Miles
0 0.38 0.75 1.5 Kilometers
N
W E
S
City of Stuart
DEVELOPMENT


Location Shown on Map
MARTIN COUNTY
Indian River Lagoon
St Lucie River
St Lucie River
Stuart Roadway Network
City of Stuart Legal City Limits
2030 Projected Coastal Sea Level Rise
2060 Projected Coastal Sea Level Rise
2100 Projected Coastal Sea Level Rise
City of Stuart, Florida
Coastal Sea Level Rise Predictions
for the years 2030, 2060 & 2100
N
W
E
S
0 0.25 0.5 1 Miles
0 0.5 1 2 Kilometers
City of Stuart
DEVELOPMENT

3.3 Comprehensive Plan Evaluation

a) **Water Quality and Natural Resources:** In order to show its commitment to improving and protecting water quality, the City must enforce implementation of its established policies. Previous objectives to protect the quality of all surface waters within the City and Watersheds, especially the St. Lucie Estuary, wetlands, coastal, shoreline and marine resources, including the use of LID systems are not specific or measurable. The objectives should be revised to ensure the City and community can evaluate progress.
Objective A6 requires the site plan process to be used to identify species of special concern. Protection and enhancement of the wildlife populations will be achieved through buffering and density bonuses for developers that set aside land for habitat. Recommending revision?

b) **Renewable and Alternative Energy and Resource Use**: The Conservation Element Goal Statement promotes the use of renewable resources when appropriate, but the goal is not specific or measurable. Established polices other than FLUE A6.5, which specifically promote and encourage use of renewable and alternative energy, should be updated to provide incentives for their use and quantify the requirements.

c) **Resiliency Planning:** The coastal management goal protects the coastal and natural resources with programs and procedures that balance coastal development activities with the preservation of natural resources. Based on the new FEMA flood map and review of vulnerable areas, building restrictions, evacuation routes and shelters need to be re-assessed. Additionally, the Coastal Management Element must evaluate the potential affected area of sea level rise, identify sea wall replacement areas, and create development restrictive zones for vulnerable areas.

3.4 Recommendations

Resilience and Sustainability

1. Incorporate climate change narrative and identify best available information on weather and climate change phenomena that are current and potential future threats to the area, and outline a general framework for adaption, mitigation, and resilience.
2. Add an objective to develop a resilience strategy as part of standalone Sustainability Plan, recognizing the risks of Stuart's geographic location and outlining the City's commitment to resilience-building efforts. City wants to lead by example. LED lights, parking, solar panels, LID, ebikes
3. Add goal, objectives, and policy to become designated as a SolSmart Community.
4. Add goal to become leader and champion of climate change resilience in the Treasure Coast.
5. Add objective to develop Treasure Coast Climate Change Compact.
6. Encourage new development in higher elevations and less vulnerable areas.
7. Consider resilience design guidelines and/or area-based/targeted form-based codes that mandate resilient design in vulnerable areas. Note: Outline planning.
8. Recommend action to develop a Comprehensive Emergency Management Plan (note: does Martin County have one?) to establish policies and procedures for preparedness, response, mitigation and recovery activities that address local hazards and comply with the criteria established in the Florida Administrative Code. Note: Building official has Debris Management Plan.
9. Consider sea level rise in government infrastructure and stormwater infrastructure projects
10. Add policy to replace City fleet vehicles with hybrid or electric cars, when possible.

Coastal Management

11. Required: Amend the Coastal Management Element to add new policies pertaining to the adoption and implementation of strategies to protect property and infrastructure from the impacts of climate change and coastal flooding. Chapter 163.3178. (Peril of Floods)
12. Add policy to reduce the flood risk in coastal areas that result from high tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea level rise.
13. Add Objective to encourage removal of coastal real property from FEMA flood zone designations.

14. Add policy for development to be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44 C.F.R. part 60.
15. Add policy to require construction seaward of the coastal construction control line to be consistent with chapter 161, Florida Statutes
16. Consider policy to encourage engineering and natural (living shoreline) techniques along the shoreline to reduce wave impacts during normal and extreme storm events.
17. Add objective/policy of limiting public expenditures and development in coastal high-hazard areas.

Conservation

1. Adopt sustainability objectives throughout Elements.
2. Incorporate climate change, resiliency, and sustainability into Elements.
3. Incorporate Transit-Oriented Design (TOD) principals to reduce transportation related impacts, increase density where appropriate, and reduce greenfield development (also under Mobility)
4. Encourage low-emission transportation options (pedestrian, bicycle, e-bikes, etc.).
5. Modify objective that encourages Low-Impact Development to reduce impacts of stormwater runoff to require integration of site-specific Low Impact Development (LID) best management practices for all new development.
6. Support and incorporate policy for green and sustainable design guidelines
7. Update Landscape Code to remove inconsistencies and encourage use of Florida Friendly and native plants.
8. Support reduction of the heat island effect and encourage implementation of shade structures through Landscape and Development Codes. Strategies to create more shade in the urban environment include increased tree coverage, use of green roofs and parking shade structures with solar panels, and roof lines to cover sidewalks.
9. Establish tree canopy baseline and implement policy to encourage expanding tree coverage (how would the City respond to tree loss after a major storm event?; need to maintain flexibility) 50% overall, how would developers get benefit – address tree canopy in CRA separately from
10. Update City's ordinances to encourage and remove barriers to renewable energy.
11. Enhance solid waste reduction by increasing recycling goals and strengthen the public education program.
12. Develop baseline of renewable energy usage within the City to allow for measuring future successes.
13. Add goal, objectives, and policy to reduce City's dependence on Surficial Aquifer.
14. Add policy to support tree mitigation for PUDs and new development that replaces plant/tree-life within City limits, including living shoreline projects.
15. Add policy to allow City's tree replacement fund to be used for living shorelines and stormwater projects.
16. Add objective to increase pervious areas.
17. Add goal, objectives, and policy to promote brownfield redevelopment.

