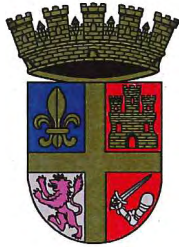


AGENDA

Planning and Zoning Board



Comprehensive Plan Citizen Board Workshop
City of St. Augustine, Florida

Tuesday, August 20, 2019
1:00 pm - 5:00 pm

Alcazar Room
City Hall

-
- 1. Roll Call**
 - 2. General Public Comments for Items Not on the Agenda**
 - 3. Discussion and Public Comment Related to “Perils of Flood” Planning (Sea Level Rise) and the Conservation and Coastal Management Element of the Comprehensive Plan including Draft Goals, Objectives and Policies - continued**
 - Introduction to the Conservation and Coastal Management Element
 - Key Issues and Assumptions
 - Introduction of Goals, Objectives and Policies
 - 4. Discussion and Public Comment Related to the Draft Recreation and Open Space Element of the Comprehensive Plan including Draft Goals, Objectives and Policies**
 - Introduction to the Recreation and Open Space Element
 - Key Issues and Assumptions
 - Introduction of Goals, Objectives and Policies
 - 5. Discussion and Public Comment Related to the Infrastructure Element of the Comprehensive Plan including the Water Supply Plan**
 - Introduction to the Infrastructure Element
 - Key Issues and Assumptions
 - Introduction of Goals, Objectives and Policies

6. Adjournment

Notices: In accordance with Florida Statute 286.0105: "If any person decides to appeal any decision made by the Planning and Zoning Board with respect to any matter considered at this scheduled meeting or hearing, the person will need a record of the proceedings, and for such purpose the person may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based."

In accordance with the Americans with Disabilities Act, persons needing a special accommodation to participate in this proceeding should contact the individual or agency sending notice not later than seven days prior to the proceeding at the address given on the notice. Telephone: (904) 825-1007; 1-800-955-8771 (TDD) or 1-800-955-8770 (V), via Florida Relay Service.

CITY OF ST. AUGUSTINE

MEMORANDUM

TO: Planning and Zoning Board

DATE: August 20, 2019

RE: **Item 3**
Discussion and Public Comment Related to “Perils of Flood” Planning (Sea Level Rise) and the Conservation and Coastal Management Element of the Comprehensive Plan

Based on 2015 State legislation the City of St. Augustine is required to include information and language that addresses the potential impacts of sea level rise on the City, and its implications for the future.

The City was picked as one (1) of three jurisdictions as a Pilot Program to begin to understand and address the implications of rising water on the current and future development of the City.

Please find attached presentation material, and a guide developed to address this issue, draft Data and Analysis, and draft Goals, Objectives and Policies proposed for the elements of the Comprehensive Plan.

This element is the chapter of the Comprehensive Plan that establishes the overall plan and framework to identify natural resources, associated conservation issues, protecting coastal zone areas, the local ecology, preparing for natural disasters, and adapting to sea level rise and flooding for the City. It is the element that outlines all of the important issues impacting the environment, and recognizes the potential impact of development on environmentally sensitive areas.

The Evaluation and Appraisal process in 2018 identified several issues outlined below related to the Conservation and Coastal Management Element. The update is an attempt to address these issues, as well as, update the element through 2040.

- Incorporate “perils of flood” language as required
- Research armoring issues related to conservation zone development
- Research alternative practices, such as, impervious surface ratios
- Research tree canopy implications related to filling
- Address extreme events and infrastructure impacts
- Relate conservation issues to the future land use plan

As noted in the Evaluation Summary there are crossover issues with other Elements and the land development code. Staff is still evaluating the implications of armoring, establishing impervious surface ratios in the Future Land Use Plan, implications of filling, and infrastructure impacts.

Several surrounding jurisdictions are currently working on the sea level rise and perils of flood issue. These include Cocoa Beach, Satellite Beach, and the City of Titusville. Staff is currently evaluating options that these jurisdictions are discussing along with help from the Coastal Planning Specialist from the University of Florida.

These are important issues as we continue to understand, and grapple with the City's experience and recovery from Hurricanes Matthew and Irma.

If you have any questions or require additional information please contact myself or David Birchim at our office by calling (904) 825-1065 or by email at either askinner@citystaug.com or dbirchim@citystaug.com.

Amy McClure Skinner, AICP
Deputy Director
Planning and Building Department

Conservation and Coastal Management Element

Introduction to the Conservation Element

As potential development pressures increase, the need for protection and management of the City's natural, and historic resources will increase. The identification of the types of resources, their location, and their significance to the residents of the City is necessary to outline goals, objectives, and policies intended to guide future growth, create protection incentives, and establish conservation guidelines for the use of natural resources in the area.

This environmental planning process is a continuously evolving one that responds not only to new discoveries about the importance of upland and aquatic habitats, but also to the changing needs and priorities of the citizens who share those areas.

The role of the Conservation Element is to maintain or improve the quality of the City's environmental and natural resources and its citizens' quality of life in the face of potential population and development growth. The Conservation Element must work in harmony with the Future Land Use, Coastal Management, Transportation and Mobility, Recreation and Open Space, and the other elements of the Comprehensive Plan in ensuring environmental protection while fostering responsible economic growth. The updated Conservation Element provides an inventory and analysis of the City's natural resources, and establishes policies that provide long-term protection and management of these resources.

Key Issues and Assumptions

The updated Data and Analysis follows the statutory requirements.

Water resources require attention if the intention is to maintain quality of life. The ecosystems within the city are all connected.

Conservation of resources needs to be taken seriously, including drinking water.

These issues are also related to mobility and transportation issues, infrastructure, community resiliency and sustainability.

Introduction to the Coastal Management Element

Since 2011 the perspective on the environment and the impacts of human development have both expanded and changed.

As potential development pressures increase, the need for protection and management of the City's natural, and historic resources will increase. The identification of the types of resources, their location, and their significance to the residents of the City is necessary to outline goals, objectives, and policies intended to guide future growth, create protection incentives, and establish conservation guidelines for the use of natural resources in the area.

A community's natural resources are among its greatest assets. They warrant protection and enhancement not only for their ecological importance, but also for protecting against natural disasters, and rising waters in low lying coastal zones, including addressing the impacts of sea level rise.

Key Issues and Assumptions

Coastal management includes species preservation, ecological planning and updating the land development code. The code may need to be updated related to conservation overlay zones, tree preservation, and replanting to maintain a tree canopy in all stages.

The implications of sea level rise, and the perils of flood are real, and need to be addressed to sustain our community.

Conservation and Coastal Management Element

Draft

Goals, Objectives and Policies

Note: Editing text underline indicates new text and ~~strikethrough~~ indicates deleted text

Conservation and Coastal Management Element Goals, Objectives and Policies

Conservation Summary

As potential development pressures increase, the need for protection and management of the City's natural, and historic resources will increase. The identification of the types of resources, their location, and their significance to the residents of the City is necessary to outline goals, objectives, and policies intended to guide future growth, create protection incentives, and establish conservation guidelines for the use of natural resources in the area.

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Order of Issues and Page References

Natural Resources **4-12**

- Air Quality
- Surface Water
- Floodplain Protection
- Hazardous Waste
- Soils and Minerals
- Environmentally Sensitive Areas
- Wetlands

Conservation of Groundwater Resources **12-17**

- Wellfield Protection
- Coordination with Land Use Plan
- Regional Water Supply Planning
- Conserve and Appropriately Use Energy

Coastal Management Summary

Since 2011 the perspective on the environment and the impacts of human development have both expanded and changed.

As potential development pressures increase, the need for protection and management of the City's natural, and historic resources will increase. The identification of the types of resources, their location, and their significance to the residents of the City is necessary to outline goals, objectives, and policies intended to guide future growth, create protection incentives, and establish conservation guidelines for the use of natural resources in the area.

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Order of Issues and Page References

Maintain, Restore, Enhance, Coastal Quality	18-27
Ecological Planning Principles	27-28
Development in Coastal High Hazard Area (CHHA)	28-31
Protect Against Natural Disasters	31-34
Ports	34
Preservation	34
Perils of Flood and Sea Level Rise	35-38

Overall Conservation and Coastal Management Goal

Overall Goal

Conserve, protect and appropriately manage the natural resources of the City of St. Augustine to ensure the highest environmental quality possible.

Conservation Goal

Chapter 163.3177(6)(d) F.S.

Protect and conserve natural areas, environmentally sensitive areas, natural vegetative communities, wildlife habitats, marine resources, federal and state listed species, and other renewable and non-renewable natural resources.

Natural Resources

Air Quality

CCM Objective 5 1.1

The City shall ~~Meet~~ or exceed the minimum air quality standards established by the Florida Department of Environmental Protection (~~DEP~~). The measurable target for this objective is continuing to meet the DEP air quality standards.

CCM Policy ~~5.1~~ 1.1.1

The City shall continue to allow the Department of Environmental Protection (DEP) to maintain an air quality monitoring station at the City Public Works Complex ~~in the West Sector~~ or other locations if deemed appropriate by the DEP. Should this monitoring show that air quality standards are not being met, the City will take appropriate action through the direction of DEP to resolve the air quality deficiency.

CCM Policy 1.1.2

The City of St. Augustine shall cooperate with any local, state or federal agency programs, which monitor or otherwise contribute to maintenance of air quality.

CCM Policy 1.1.3

The City shall promote the reduction of fossil fuel emissions by considering adoption of the following concepts

- a. Encourage developments such as infill, redevelopment, clustered and mixed-use developments;
- b. Require vegetative and landscape buffers, and where appropriate, street trees along

- transportation corridors to buffer land uses;
- c. Encourage non-motorized, and alternative forms of transportation by establishing and maintaining a multi-modal Mobility Plan including bicycle paths, trails, sidewalks and pedestrian ways, and alternative forms of transportation where feasible; and
 - d. Establish policies that promote interconnectivity via safe pedestrian crossings, bicycle and walkable complete streets, including encouraging grid patterns, multi-use paths and trails in existing and new development.

CCM Policy 1.1.4

The City shall report suspected air quality violations to DEP.

CCM Policy 1.1.5

The City of St. Augustine shall require that industrial and commercial businesses in the City meet or exceed applicable federal and state air quality standards.

Surface Water

CCM Objective 1.2

The City shall endeavor to protect the quality of all surface waters by conducting or cooperating with monitoring evaluations and study efforts.

CCM Policy 1.2.1

The City shall continue to ensure the protection and enhancement of surface water quality.

CCM Policy 1.2.2

The City shall work towards the enhancement of the Department of Environmental Protection (DEP) and the St. Johns River Water Management District (SJRWMD) surface water quality testing program results by aiming for the development, operation and maintenance of cost effective and efficient potable water and wastewater systems that promote timely, orderly and efficient land development patterns while protecting the public health and environment.

CCM Policy ~~2.2~~ 1.2.3

The City will ~~C~~ontinue to cooperate with the Florida Department of Environmental Protection (DEP) and any other government agency or adjacent local jurisdictions which monitors water quality in the City's estuaries.

CCM Policy 1.2.4

The City shall update its Stormwater Master Plan (stormwater management system) within three (3) years of adoption of this comprehensive plan. The design of the Stormwater Master Plan (stormwater management system) shall meet the rules and criteria established by the City of St. Augustine, the SJRWMD, the Florida Department of Transportation (FDOT), if applicable, and the Northeast Florida Regional Council (NEFRC).

CCM Policy 1.2.4.1

After completion of the Stormwater Master Plan update, the City shall identify those components of the stormwater management system that may be contributing to the degradation of surface water quality, and develop a priority listing for mitigating those elements on an annual basis.

CCM Policy 1.2.4.2

The City shall prohibit any point source pollution discharges into surface waters, including, but not limited to, lakes, ponds, rivers, streams, creeks, and wetlands.

Floodplain Protection

CCM Objective 1.3

The City shall ensure long range protection of the functionality of the City's floodplains.

CCM Policy 1.3.1

The City shall protect the natural functions of the 1% annual chance flood zone (100-year flood zone) so that the flood-carrying and flood storage capacity are maintained by implementing and enforcing floodplain regulations and reviewing development proposals for the presence of impacts on floodplains.

CCM Policy 1.3.2

The City shall enforce land development regulations and amend the land development code (LDC) as necessary to specify regulations for development within the floodplains and any floodways.

CCM Policy 1.3.3

The 1% annual chance flood zone (100-year flood zone) shall be delineated within the Future Land Use Map series, and its demarcation shall be determined by the most recent flood insurance rate maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA).

CCM Policy 1.3.4

The City shall endeavor to reserve the floodplain as undisturbed, intended for conservation, open space and/or passive recreational uses to preserve the natural flow of runoff, as feasible and unless such reservation denies all reasonable use of the property.

Hazardous Waste

CCM Objective 1.4

The City shall coordinate with the appropriate agencies that ensure that sources of hazardous wastes are identified and monitored.

CCM Policy 1.4.1

The City shall continue to utilize the City and the County's fire and emergency management services and the state emergency response commission for hazardous materials for monitoring of any hazardous waste generators within the City.

CCM Policy 1.4.2

The City shall coordinate with St. Johns County to provide and promote citizen education programs and materials regarding hazardous waste and the proper method of disposal of common household hazardous waste materials.

CCM Policy ~~2.1~~ 1.4.3

The City shall ~~E~~coordinate with St. Johns County to identify and eliminate point and nonpoint discharges outside the city limits that impact city waterways.

Soils and Minerals

CCM Objective 1.5

The City shall appropriately manage soils data and protect against soil erosion and uses inconsistent with the soils of the city.

CCM Policy 1.5.1

The City shall require that an erosion and sediment control plan be submitted prior to commencement of any development activities; that erosion and sedimentation control devices shall be properly installed and maintained throughout all development activities; and that all disturbed soil areas shall be permanently stabilized upon completion of development activities to reduce soil erosion.

CCM Policy 1.8 1.5.2

The City shall require the use of silt curtains, grass swales and other techniques during construction to prevent soil erosion and sedimentation of area waterways.

CCM Policy 1.5.3

The City shall notify the local office of the U.S. Soil Conservation Service of any major soil erosion problems that may occur within the City's jurisdiction.

CCM Policy 1.5.4

Whenever possible, native trees, shrubs and ground cover will be maintained on development sites to prevent soil erosion.

CCM Objective 3 1.6

Protect and conserve minerals and soils by continuing enforcement of the development regulations.

CCM Policy 3.1 1.6.1

The City shall continue to implement the Future Land Use Plan and enforce the City Code which prohibits all mining activities.

Environmentally Sensitive Areas

CCM Objective 1.7

The City shall conserve, protect and appropriately use native wildlife habitat and environmentally sensitive areas.

CCM Policy 1.7.1

The City shall seek to increase its conservation areas, through land acquisition, when possible, incentives for protective easements, and other appropriate permanent protective mechanisms to ensure the preservation of natural communities and listed animal species habitat.

CCM Policy 1.7.2

The City shall work closely with the Florida Fish and Wildlife Conservation Commission (FFWCC) and private landowners to increase the public's knowledge of habitat protection and best management practices to protect endangered and threatened species, as well as, species of special concern.

CCM Policy 1.7.3

The City shall notify the FFWCC of the presence of any roosting, nesting or frequented habitat areas for endangered or threatened wildlife occurring within its jurisdiction.

CCM Policy 1.7.4

The City's Land Development Code (LDC) shall establish regulations to ensure the protection of areas of native vegetation, wildlife habitat and endangered and threatened species, including the following:

- Developers shall be required to identify wildlife habitat and endangered and threatened species as part of the development review process, and they shall be required to submit mitigation measures for review as part of the City's development review process, if necessary.
- The City shall require proposed development to utilize and preserve existing topographic contours to the maximum extent feasible in project design.
- The City shall require proposed development to assess the potential of creating or adding to greenway corridors or trails within their project to adjacent land or adjacent jurisdictions in an effort to incrementally build protected corridors.

CCM Policy 1.7.5

The City shall monitor the following activities in areas identified as being environmentally sensitive and in areas containing endangered and/or threatened wildlife:

- The removal, excavation or dredging of soil, sand, gravel, minerals, organic matter or materials of any kind;
- The changing of existing drainage characteristics, sedimentation patterns, flow patterns or flood retention characteristics;
- The disturbance of the environmentally sensitive area's water level or water table by drainage, impoundment or other means;
- The dumping or discharging of material, or the filling of an environmentally sensitive area with material;
- The placing of fill or the grading or removal of material that would alter topography;
- The destruction or removal of plant life that would alter the character of an environmentally sensitive area or wildlife habitat; and
- The undertaking of an activity that results in a significant change of water temperature, a significant change of physical or chemical characteristics of environmentally sensitive area water sources, or the introduction of pollutants.

CCM Policy 1.7.6

The City shall encourage new developments to protect existing native vegetation in common areas and buffer zones and shall encourage additional planting of native plant species to enhance sparse vegetation in common areas and buffer zones.

CCM Policy 1.7.7

During the statutory Evaluation and Appraisal Report process, the City shall obtain updated maps from FFWCC showing the locations of unique natural areas and of habitat for endangered and threatened species and species of special concern.

CCM Policy 1.7.8

The City shall strive to coordinate with St. Johns County to encourage the protection of environmentally sensitive areas that cross jurisdictional boundaries.

CCM Policy 1.7.9

The City will encourage the restoration of degraded natural areas through the restoration of natural communities, restoration of natural hydrology and removal of non-native vegetation through the development review process.

CCM Policy 1.7.10

The City shall protect any natural preservation property if identified in the recreation and open space element.

CCM Policy 4.4 1.7.11

Since there are no existing natural reservations in the City, none are identified in the Recreation and Open Space Element. If, in the future, there are natural reservations in the city, then the City shall develop policies to protect those natural reservations.

Wetlands

CCM Objective 1.8

The City of St. Augustine will protect and manage wetlands and the natural functions of wetlands in accordance with Section 163.3177(6)(d).F.S. by implementing the following policies:

CCM Policy 1.8.1

No development will be allowed in areas assigned the Open Land (Conservation) land use category as created by this 2040 Comprehensive Plan, except the following uses:

1. Existing uses within wetland areas may continue, but shall not be allowed to expand except as provided for elsewhere in this Comprehensive Plan and the City Land Development Regulations, and in accordance with any other applicable jurisdiction.
2. Activities designated for the purpose of conserving or protecting natural resources or environmental quality, including areas designated for such purposes as flood control, protection of quality or quantity of groundwater or surface water; floodplain management, commercially or recreationally valuable fish and shellfish, or protection of vegetative communities or wildlife habitats.
3. New development and redevelopment that shall have no significant impact on the wetlands such as passive recreation, trails, wooded boardwalks, construction of wildlife management shelters, discharge structures from upland developments,

- utility crossings; footbridges; observation decks and similar structures not requiring dredging and/or filling for their placement or maintenance.
4. Allow for Insect Control Structures, stormwater management structures, as well as utility installation with temporary impacts to the wetlands.
 5. Setbacks shall be 25 feet. Setbacks of less than 25 feet must be consistent with the Conservation Overlay Zone development section of the Comprehensive Plan.

CCM Policy 1.8.2

The fragmentation of large wetland community associations shall be discouraged by allowing for density transfers, conservation easements, transfer of development rights, fee simple acquisition, and encouraging development clustering away from the wetlands and other land development tools to enhance conservation, as implemented by the land development code or other legal instrument.

CCM Policy 1.8.3

All wetlands on any proposed development site must be identified as part of the City's application process prior to the issuance of development orders which permit site alteration.

CCM Policy 1.8.4

The City shall adopt a Map as part of the Future land Use Map Series designating wetlands. Wetland areas will be delineated based on the procedures outlined by standard industry practice. The precise delineation of these areas shall be determined through site specific studies and field determination through the permitting and review process.

CCM Policy 1.8.5

The City of St. Augustine shall coordinate with the FDEP and SJRWMD to identify and regulate wetland areas under their respective jurisdiction.

CCM Policy 1.8.6

Removal, encroachment and alteration of wetlands pursuant to the "no net loss" requirements of the City Comprehensive Plan, requirements of SJRWMD or FDEP, and shall be in compliance with the following:

1. Appropriate justification for the proposed alteration is provided to the City;
2. Such activity complies with the requirements of all Federal, State and regional agencies claiming jurisdiction over wetland alteration;
3. Adequate mitigation of any adverse hydrological and physical alterations is provided in accordance with the requirements of the agencies claiming jurisdiction over the wetland;
4. Setbacks shall be 25 feet. Setbacks of less than 25 feet must be consistent with the Conservation Overlay Zone development section of the Comprehensive Plan;

5. The following activities are permitted in wetland setback areas provided:

- Construction of boardwalks/catwalks, docks, for direct access to water bodies; construction of wildlife management shelters; discharge structures from upland developments; utility crossings; foot bridges; observation decks and similar structures not requiring dredging and/or filling for their placement and maintenance;
- The City shall include in its land development regulations provisions for mandatory site plan review for all development proposed in State jurisdictional wetlands. The regulations include appropriate standards for mitigation of adverse impacts to wetlands values and the provision that reasonable use of property, restoration of the disturbed wetlands and/or creation of new wetlands will be required in accordance with the rules and criteria of FDEP and SJRWMD.

CCM Policy 1.8.7

The purpose of mitigation is to offset environmental impacts for the public good. Mitigation activities approved by federal, state or regional agencies are supported by the City. Mitigation shall be as permitted by the SJRWMD. Prioritization of mitigation shall be as determined by SJRWMD current policies or as amended.

CCM Objective 1.9

The City will work towards establishing an education and outreach program related to the City's resources.

CCM Policy 1.9.1

Through education and outreach the City will encourage public participation, possible land acquisition opportunities and intergovernmental coordination.

Water Conservation

Conservation of Groundwater Resources

CCM Objective 6 1.10

Protect the quality and quantity of St. Augustine's ground water resources through the participation in the Florida WaterStar program and the use of waterwise and Florida-Friendly Landscaping practices. The measurable target for this objective is water quality and quantity measured by the monitoring well at the City's wellfield. This monitoring well is required by the St. Johns River Water Management District's Consumptive Use Permit.

CCM Policy ~~6.1~~ 1.10.1

The City will maintain the existing 1,500 feet protective easements around the potable water well fields.

CCM Policy ~~6.2~~ 1.10.2

The City will ~~Co~~operate with St. Johns County and Putnam County to protect water recharge areas.

CCM Policy ~~6.3~~ 1.10.3

The Consumptive Use Permit issued to the City by the St. Johns River Water Management District requires the City to comply with District directives for conservation during times of water emergency. In the event that the District declares a water emergency, the City shall follow directives issued by the District which may include customer water restrictions, bans on outdoor water use and system wide pressure reduction.

CCM Policy ~~6.4~~ 1.10.4

The City shall continue to use effluent for irrigation and process water at both ~~the~~ the Waste Water Treatment Plants to conserve potable water.

CCM Objective 1.11

The City shall conserve and protect future and existing groundwater resources for potable water usage.

CCM Policy 1.11.1

The City shall, in cooperation with the St. Johns County, DEP and SJRWMD, continue to ensure the protection of groundwater quality and quantity.

CCM Policy 1.11.1.1

The City shall cooperate with designated programs of St. Johns County, SJRWMD and other such applicable agencies in the identification and protection of water recharge areas to ensure aquifer depletion and contamination does not occur.

CCM Policy 1.11.2

The City shall notify the SJRWMD of the presence of any abandoned free-flowing artesian wells identified within its jurisdiction and record their existence.

CCM Policy 1.11.3

The City shall support, assist and cooperate with St. Johns County and the SJRWMD in order to conduct water conservation programs.

CCM Policy 1.11.4

The City shall continue to expand and explore water conservation efforts in conjunction with the DEO, SJRWMD, and any other regional or local entities to maintain a low per capita consumption of potable water.

Wellfield Protection

CCM Objective 1.12

Protect and conserve the quality and quantity of groundwater resources to ensure long-term public health and safety of potable water supplies.

CCM Policy 1.12.1

The City shall continue enforcing a comprehensive wellhead protection program to protect current and future public water supply needs from potential adverse effects from incompatible land uses and activities.

CCM Policy 1.12.2

The City shall continue to maintain the groundwater monitoring wells adjacent to the wellfields

Coordination with Land Use Plan

CCM Objective 1.13

The City shall maintain and enforce the future land use plan adopted in the Comprehensive Plan, and land development code that include performance criteria designed to protect and conserve surface waters, floodplains, groundwater resources and wetlands from physical and hydrologic alterations and direct incompatible land uses away from these resources.

CCM Policy 1.13.1

The City shall include in its Land Development Code a requirement that any development that contains land meeting the definition of a wetland, as defined by the Comprehensive Plan shall conduct wetland delineation. A delineation of the upland wetland boundary shall be established by a professional biologist or similar profession or registered engineer that, through a comprehensive planning process, identifies the types, values, functions, size, conditions and specific locations of the wetlands on the site.

CCM Policy 1.13.2

Future land uses which are incompatible with the protection and conservation of surface waters, floodplains, groundwater resources and wetlands and their functions shall be directed away from these resources.

CCM Policy 1.13.3

The type, intensity or density, extent, distribution and location of allowable land uses and the types, values, functions, sizes, conditions and locations of the City's resources are land use factors which shall be considered when directing incompatible land uses away from wetlands.

CCM Policy 1.13.4

The policies of the Conservation and Coastal Management Element shall not be construed to prevent timbering operations so long as timbering operations utilize best management practices specified in the most recent Silviculture Best Practices Handbook published by the Florida Department of Agriculture and Consumer Sciences, Division of Forestry to minimize the effects of the wetlands.

Regional Water Supply Planning

CCM Objective 1.14

The City shall explore the development of alternative water supplies to meet future needs.

CCM Policy 1.14.1

The City shall continue to explore opportunities to expand water conservation efforts in conjunction with wastewater improvements and/or expansions.

CCM Policy 1.14.2

When improving or expanding the City's water systems the City shall evaluate feasible alternative water supply sources.

CCM Policy 1.14.3

The Water Supply Work Plan shall identify long-term water supply strategies consistent with programs relating to the City's consumptive use permit, as modified from time-to-time, the SJRWMD Water Supply Plan, and the Five-year schedule of Capital Improvements Plan.

CCM Policy 1.14.4

The City shall develop and adopt a water conservation program consistent with any Consumptive Use Permit (CUP) stipulations and requirements to decrease demand placed on groundwater resources.

CCM Policy 1.14.5

The City's land development regulations shall encourage all new development to be designed in accordance with the limitations of the natural environment and the conservation of water resources including the use of infill, redevelopment, clustered development, attached dwelling units and other innovative land development techniques to decrease water use. These techniques may include, but not be limited to the following:

- a. preservation of native vegetation on site;
- b. use of xeriscaping and/or drought resistant plant materials (including preservation of existing native vegetation) for new development and redevelopment;
- c. limitation of the amount of impervious surface (such as paving and parking areas);
- d. using shallow wells or recycling for irrigation purposes;
- e. use of water saving devices and plumbing fixtures including encouraging retrofitting of water saving devices and ultra-low flow fixtures within existing structures;
- f. implementation of water loss prevention programs;
- g. encourage the use of lower quality sources of water first including recycled water and stormwater, if feasible; and,
- h. maintain a base rate for water usage, as well as, a conservation billing rate structure.

CCM Policy 1.14.6

The City shall develop a billing rate structure which benefits users whose demand on the groundwater resources is below the per capita average.

CCM Policy 1.14.7

The City shall encourage low water use landscape for both residential and commercial development.

CCM Policy 1.14.8

The City shall routinely conduct water audits to determine water loss, and enforce the SJRWMD's applicable landscape irrigation rule, as amended from time to time.

Conserve and Appropriately Use Energy

CCM Objective 1.15

The City shall increase its efforts toward sustainable development by developing strategies to reduce greenhouse gas (GHGs) emissions and to implement energy-efficiency measures, where feasible.

CCM Policy 1.15.1

The City shall promote awareness of environmental issues related to the built environment by developing environmental education content for the City's website, including making available environmental GIS data and other data such as aerial photography, air quality index and water quality testing results from natural water bodies. The website shall also include "Green Building" benefits and highlight sustainable initiatives of the local government.

CCM Policy 1.15.2

The City shall encourage the development community to obtain green certifications under the United States Green Building Council, Florida Green Building Coalition, Florida Yards and Neighborhoods Program, Energy Star and Florida Water StarTM programs by providing incentives that make these certifications advantageous.

CCM Policy 1.15.3

The City will encourage new facilities to be designed and built according to the principles promoted by the Leadership in Energy and Environmental Design (LEED), Energy Star and Florida Water StarTM programs, as appropriate and financially feasible.

CCM Policy 1.15.4

The City shall conduct audits of City facilities at least once every five (5) years to determine electric power usage and the potential for energy and cost savings in lighting, heating and cooling of air and water, equipment power usage, and potential alternative/renewable electric power generation sources. The City may create a central database, or other appropriate system, to track electric and other utility costs.

CCM Policy 1.15.5

The City will encourage redevelopment throughout the city to retrofit buildings to be more energy efficient, and to encourage new development and infill development to be compact and walkable, as per the future land use plan, goals, objectives and policies and future land use map series.

CCM Policy 1.15.6

The City has established all the wetland areas as the carbon sequestration areas and established policies to encourage energy conservation throughout the City.

Coastal Management Goal

Chapter 163.3177(6)(g) F.S.

To prevent loss of life and damage to property in the coastal areas from the effects of natural disasters, including sea level rise and intense rain events, while encouraging appropriate public access to and use of coastal areas.

Maintain, Restore, Enhance Coastal Quality

CCM Objective ~~1~~ 2.1

As Salt Run and Robinson Creek have has been designated as Class II Waters by the Department of Environmental Protection, the City will insure that these water bodies remain open for shellfish propagation and harvesting. The measurable target for this objective is whether Salt Run and Robinson Creek remains open for shellfish propagation and harvesting.

CCM Policy ~~1.1~~ 2.1.1

The City maintains three (3) "Conservation Overlay Zones. The boundaries of the Conservation Overlay Zones, generally indicated on the Conservation Overlay Zone Map adopted as part of the Future Land Use Map series, shall be determined on a site specific basis during site plan review of each development proposal.

Conservation Overlay Zone 1 Passive recreation, wildlife preservation and conservation areas, green space, and fishing piers and other water dependent uses, including boat ramps and marinas, shall be the primary uses within this Conservation Overlay Zone. ~~Locally, these uses are more fully governed by other elements of the Comprehensive Plan and the City's land development regulations.~~

Conservation Overlay Zone 2 This Conservation Overlay Zone allows for all of the uses within Zone 1, as well as specialized, scenic or linear parks and boardwalks, off street parking areas ~~providing that they are constructed with pervious materials except as may otherwise be required by the ADA Standards for Accessible Design and Florida statutes s.553.5041 Parking Spaces for Persons Who Have Disabilities;~~ and residential development, providing that they are (1) located so as to minimize impacts to Conservation Overlay Zone 1 vistas and scenic areas, and (2) densities are limited to those defined by the underlying Future Land Use Category.

Conservation Overlay Zone 3 The restrictions on uses and other development and performance standard requirements within this zone including tree canopy and tree removal are governed by the City's Comprehensive Plan, including the underlying Future Land Use Category, and the City's land development regulations.

CCM Policy 1.5 2.1.2

The City shall continue to implement the adopted Comprehensive Plan by including all land development regulations governing the use of land in the City Code. All applications for development shall be subject to site plan review by the City. ~~In addition, applications for building permits for development in Conservation Overlay Zones 1, 2 and 3 shall be accompanied by a copy of any permits required by the U. S. Army Corps of Engineers, the St. Johns River Water Management District and the Florida Department of Environmental Protection.~~ Permits for structures and uses located within Conservation Overlay Zone 1 shall be issued only ~~for such structures and uses which have received permits under provisions of applicable federal and state regulations and, will be issued only~~ for those structures and related uses such as fishing piers and catwalks, boardwalks, boat docks, boathouses, boat ramps, marinas and marine railways, as well as dredging and filling, which are determined to be to the benefit of the public as a whole and which are determined as having no significant negative impact on natural systems, by either individual or cumulative effect.

The planning and zoning board is authorized to impose limitations in the nature and manner of construction or use so as to: avoid damage to adjacent salt marshes and the associated vegetative communities; eliminate any harm to the animal, fish or shellfish contained therein; avoid blocking or disrupting vistas and scenic opportunities and to enhance those vistas and scenic opportunities which are determined to benefit the public as a whole. Only water dependent structures and uses shall be permitted in Conservation Overlay Zone 1; all other structures and uses shall be prohibited.

Permits for structures and uses located within Conservation Overlay Zone 2 shall be issued only for those structures and uses which are determined as having no significant negative impact on adjacent natural systems by either individual or cumulative effect. The planning and zoning board is authorized to impose limitations in the nature and manner of construction and use so as to: avoid damage to adjacent salt marshes and the associated vegetative communities; eliminate any harm to any animal, fish or shellfish life contained therein; avoid blocking Conservation Overlay Zone 1 vistas and scenic opportunities, and to enhance those vistas and scenic opportunities which are determined to benefit the public as a whole. In those cases where proposed development will occur near an altered shoreline or will be within 150 feet of existing development (development landward of the most restrictive jurisdictional line and along the existing shoreline but not more than 150 feet away), development may not occur waterward of the existing line of development or the most restrictive jurisdictional line, whichever is more landward. In those cases where proposed development will occur near a natural shoreline and there is no existing development within 150 feet, development must occur at least ~~20~~ 25 feet landward of the most restrictive jurisdictional line. ~~High density development such as residential development in excess of thirteen (13) units per acre shall be prohibited in Conservation Overlay Zone 2 (100 feet landward of the most restrictive jurisdictional line) when there exists a natural shoreline.~~

Permits for structures and uses located within Conservation Overlay Zone 3 shall be issued only for those structures and uses which do not significantly alter the surface water hydrology or tree canopy cover, or cause the removal of preserved or protected trees. The planning and zoning board is authorized to impose limitations on the nature and manner of construction and use so as to avoid alteration of surface water hydrology which would increase the flood hazard potential and to minimize the impact on existing trees and native vegetation.

Development in Conservation Overlay Zone 3 must retain either: (1) at least twenty five (25) percent of the trees on the site and all healthy trees larger than twelve (12) inches diameter breast height (dbh); or (2) fifty (50) percent of the trees on the site, unless approved via a public hearing.

CCM Policy 2.1.3

Development in Conservation Overlay Zones shall conform to all requirement of the Federal Emergency Management Agency (FEMA) relating to flood control and prevention. Finish floors must be constructed at or above the ~~base~~ **design** flood elevation established by FEMA. Prior to a Certificate of Occupancy being issued for the structure, the City shall continue to require an Elevation Certificate signed by a licensed engineer or surveyor certifying that the lowest floor of the structure has been constructed at or above the established ~~base~~ **design** flood elevation.

The City shall continue to maintain three (3) conservation overlay zones: Conservation Overlay Zone 1 for the protection of habitat waterward of the most restrictive jurisdictional line; Conservation Overlay Zone 2 for the protection of natural habitat one hundred feet (100') landward of the most restrictive jurisdictional line; and Conservation Overlay Zone 3 for the protection of natural habitat beyond one hundred feet (100') landward of the most restrictive jurisdictional line.

Applications for development in any of the Conservation Overlay Zones shall be evaluated according to the following criteria:

- (1) Site specific conditions.
- (2) The relationship of the site to adjacent properties, bodies of water and surrounding conservation zones.
- (3) Natural and proposed drainage patterns.
- (4) Effect of point and nonpoint discharge in the marine environment.
- (5) Proposed soil stabilization and erosion control methods.
- (6) Impact on floodplain.
- (7) Impact of development on vegetative and animal communities.
- (8) Potential for contaminated drainage, storage of pollutants and the use of poisonous chemicals and materials.
- (9) Effect of shade on vegetation and shellfish.
- (10) Effect of boat wake and boat traffic on manatees, vegetation, shellfish and wildlife, as well as shoreline erosion.
- (11) Impact of development on shoreline by linear feet and percent of site.

- (12) Impact of development on vistas and scenic opportunities by linear feet, height, mass and percent of site.
- (13) Existing amounts of native plants and proposed retention and use of native plants for landscape and open space purposes.
- (14) Impact of development on plant and animal habitat and potential loss in acres and percent of site.
- (15) Impact of development on water quality.
- (16) Impact of development on shellfish and on commercial and sport fish and waterfowl.
- (17) The City shall pursue no net loss in wetlands by both amount and type of community.
- (18) Require a wildlife habitat survey for large developments for the purpose of restricting activities known to adversely affect the survival of endangered and threatened species, and protecting native vegetative communities from destruction by development activities. ~~This policy implements CCM Objectives 1.3, 1.4, 1.7 and 3.4.~~

CCM Policy ~~1.6~~ 2.1.4

No landfills or dumps shall be permitted in Conservation Overlay Zones 1 or 2.

CCM Policy ~~1.7~~ 2.1.5

The City shall continue to enforce the City Code which prohibits the discharge of any sewage or other polluted waters except where suitable treatment has been provided by the City. Tertiary treatment shall be considered a suitable treatment.

CCM Policy ~~1.8~~ 2.1.6

Require the use of silt curtains, grass swales and other techniques during construction to prevent soil erosion and sedimentation of area waterways.

CCM Policy ~~1.9~~ 2.1.7

No additional waterways shall be impounded or altered to restrict or interfere with the natural tidal flow.

CCM Policy ~~1.10~~ 2.1.8

The City will continue to enforce the City Code which requires development to connect to the city's sanitary sewer system if available if sewer is not available to the property, and cannot be made available in conjunction with construction, septic tank permits may be issued by St. Johns County Health Department as a temporary on-site sewage disposal system.

CCM Policy ~~1.11~~ 2.1.9

Continue to enforce City Code which prohibits the discharge of any seafood viscera into any city waterway.

CCM Objective ~~2.1~~ 2.2

Maintain or improve the quality of the water in the city's estuaries. ~~The measurable target for this objective is~~ The City will continue to monitor water quality in the city's estuaries as reported in the Florida Water Quality Assessment 305b Technical Report published by the the Florida Department of Environmental Protection.

CCM Policy ~~2.1~~ 2.1

Coordinate with St. Johns County to identify and eliminate point and nonpoint discharges outside the city limits that impact city waterways.

CCM Policy 2.2

Continue to cooperate with the Florida Department of Environmental Protection (DEP) and any other government agency or adjacent local jurisdictions which monitors water quality in the City's estuaries.

CCM Objective ~~3~~ 2.3

Protect and conserve minerals and soils by continuing enforcement of the land development regulations.

CCM Policy ~~3.1~~ 2.3.1

The City shall continue to implement the Future Land Use Plan and enforce the City Code which prohibits all mining activities.

CCM Objective 4 2.4

Protect coastal wetlands, coastal barriers, estuaries, tidal marshes, wildlife habitat, marine habitat and living marine resources. ~~The measurable target for this objective is the continued enforcement of~~ The City will continue to enforce all City development regulations related to development in or adjacent to environmentally sensitive areas.

CCM ~~Objective 4.1~~ Policy 2.4.1

The City shall continue to protect wetlands, ~~as defined in Rule 9J-5.002(149), Florida Administrative Code (1999),~~ by adopting land development regulations which establish minimum setbacks, identify minimum buffers in which no development would be permitted, and eliminate direct discharges. The City shall pursue no net loss of wetlands. The measurable target for this policy is the number of wetlands at the time of adoption minus the number of wetlands at the time of the next Evaluation and Appraisal Report, based on information provided by the St. Johns River Water Management District.

CCM ~~Objective 4.2~~ Policy 2.4.2

The City shall protect native vegetation and wildlife habitat by adopting land development regulations which establish measures for the protection of native vegetation (trees, shrubs and grasses) and wildlife habitat. The City shall pursue retaining 50% of the native vegetation on

development sites. ~~The measurable target for this policy is the amount of native vegetation and wildlife habitat at the time of adoption minus the amount of native vegetation and wildlife habitat at the time of the next Evaluation and Appraisal Report, based on information provided by the St. Johns River Water Management District.~~ As implemented in the land development code.

CCM Policy 4.2 2.4.3

The City shall take any action specifically requested by the State Division of Parks and Recreation and the Florida Fish and Wildlife Conservation Commission to protect sea turtles and their nests in the Anastasia State Recreation Area during the nesting season.

CCM Policy 4.3 2.4.4

The City shall take any action specifically requested by the U. S. Army Corps of Engineers to support their periodic beach renourishments in the Anastasia State Recreation Area during the winter and spring to protect sea turtle nesting areas. The City shall also take any action specifically requested by the U.S. Army Corps of Engineers to support their practice of placing beach grade sand from the periodic maintenance dredging of St. Augustine Inlet directly on the beaches of Anastasia State Recreation Area to reverse the effects of erosion.

CCM Policy 4.4 2.4.5

Since there are no existing natural reservations in the City, none are identified in the Recreation and Open Space Element. If, in the future, there are natural reservations in the city, then the City shall develop policies to protect those natural reservations.

CCM Policy 4.5 2.4.6

The City will continue to encourage the retention and installation of native vegetation through the incentives and credits outlined in the City Code. ~~The City shall consider elimination of the requirement for a public hearing in Conservation Overlay Zone 3 if 100% waterwise and Florida-Friendly Landscaping is used for landscaping and replacement trees.~~

CCM Policy 4.6 2.4.7

Encourage Florida East Coast Railway officials and other property owners not to renew leases for the billboards which are located along Ponce de Leon Boulevard (U. S. 1) and State Road 16 near the marsh when those leases are considered for renewal.

CCM Policy 4.7 2.4.8

The City shall continue to support the established practice of the Anastasia Mosquito Control District not to do aerial spraying within the City limits, and to avoid truck spraying during the mating season in the areas known to be inhabited by the Sweadner's Hairstreak Butterfly.

CCM Policy 4.8 2.4.9

As an additional means of protection, the City shall consider public acquisition of lands that contain significant natural resources including environmentally sensitive areas, natural vegetative communities, and wildlife habitats. Such lands, should they be acquired, shall be managed as open space and for passive outdoor recreation in a manner that furthers the protection of the resources occurring on site.

CCM Policy 4.9 2.4.10

The City shall take efforts to enhance degraded natural resources by means such as the removal of non-native and invasive plant species that occur within native vegetative communities, restoration of natural hydrology, and landscaping with indigenous, drought tolerant plant species.

CCM Objective 8 Policy 2.4.11

As the only beaches and dunes within the city limits are in the Anastasia State Recreation Area, over which the City has no regulatory jurisdiction, the City will continue to support the efforts of the State Division of Parks and Recreation to protect the beaches and dunes, and restore the altered or degraded beaches and dunes.

Preserve Wildlife

CCM Objective 2.5

The City shall encourage development and management of resources in a manner which sustains local wildlife, their habitat and the ecological services of the land, and shall protect significant habitats of populations of threatened or endangered species in accordance with the provisions of the Endangered Species Act (ESA) 16 USC 1531, and Florida Administrative Code Division 68A.

CCM Policy 2.5.1

When reviewing development proposals for public or private development, the City shall take into account the following strategies:

- a. When planning for a larger parcel or contiguous smaller parcels, emphasize a compact, clustered development pattern over a sprawling one;
- b. Preserve water body and riverine green edges in order to conserve an upland buffer that links the water to larger habitat areas;
- c. Where possible do not subdivide properties in a manner that creates multiple lots to the water's edge; instead, maintain a common community shoreline corridor with an upland component that links to larger habitat areas;
- d. Preserve native vegetation and habitat types;
- e. Preserve forested areas, the understory and native soil associations; and
- f. Avoid activities that dehydrate landscape features or alter the seasonal water flows or duration of inundation to wetlands, hammocks or water bodies.

CCM Policy 2.5.2

The City shall protect significant habitats for native wildlife and vegetation in areas of known environmentally sensitive habitats, including habitats of endangered species. The Land Development Code shall be updated with regulations to ensure that prior to the issuance of development permits in such areas, detailed inventories and assessments of impacts of development shall be conducted. The City shall seek assistance from the Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission in assessing identification of habitat, and any needed relocation or mitigation.

CCM Policy 2.5.3

The City shall plan for the provision of wildlife corridors (greenway corridors) to allow for survival of species, prevent isolation of natural communities, and decrease fragmentation of habitat. In planning for wildlife corridors (greenway corridors), the City should take into account maintaining large, connected area of natural vegetation, wide vegetation corridors along major water courses, and connectivity for movement of key species among the large area.

CCM Policy 2.5.4

The City shall evaluate the presence of native upland habitats and their linkages to contiguous or related lowland and wetland habitats, and consider implementation of regulations to protect these native upland habitats including strategies such as retaining native vegetation, providing for undeveloped habitat buffers around waterways, protecting areas of temporary or seasonal wetlands and ponds, and identifying opportunities for linking open space, stormwater facilities and buffers to create separation from human and wildlife communities.

CCM Policy 2.5.5

The City shall seek assistance from the Florida Fish and Wildlife Conservation Commission, the Florida Department of Environmental Protection, the U.S. Fish and Wildlife Service, and any other appropriate entity for the identification and protection of species of special concern, or threatened and endangered species. These agencies shall also be requested to assist in updates to and the development of the City's land development regulations and future ordinances for the protection of these resources, especially the manatee, sea turtle, gopher tortoise, shorebirds, and other identified species of special concern or threatened or endangered species within the City.

CCM Objective 2.6

The City shall commit to preservation of community trees and the urban forest to improve air quality, community health, quality of life, aesthetics, and energy conservation.

CCM Policy 2.6.1

The City shall implement recommendations from the Street Tree Management Plan, including updating the existing inventory of street trees.

CCM Policy 2.6.2

The City shall establish a tree planting and replacement strategy for street and public trees, including goals for maintenance trimming and pruning and use of a Tree Fund to facilitate planting efforts. Where feasible, any maintenance should follow arborist-approved tree pruning practices.

CCM Policy 2.6.3

The City shall exclude invasive vegetation from plant materials permitted in public or private landscape plans. The City shall make a commitment to removal of invasive vegetation from rights-of-way and public property, and inform private property owners of the benefits of removing invasive vegetation.

CCM Policy 2.6.4

In order to prevent catastrophic loss to the City's public trees due to insect or disease, the City shall diversify public tree species when planting new or replacement trees.

CCM Policy 2.6.5

The City shall consider implementing tree and landscaping plans for specific public areas and rights-of-way.

CCM Policy 2.6.6

The City shall continue to seek Tree City USA designation on an annual basis and participate in Arbor Day commemoration.

CCM Policy 2.6.7

The City shall consider implementing the heritage tree program through the Land Development Code and encourage private property owners to apply for heritage tree designation.

CCM Policy 2.6.8

The City shall regularly monitor the Land Development Code requirements regarding tree and landscaping requirements in order to assess their ability to best protect the City's existing trees.

CCM Policy 2.6.9

The City shall conduct community outreach and education encouraging property owners to maintain existing trees and plant new trees.

Ecological Planning Principles

CCM Objective ~~7~~ 2.7

Permitted uses for shoreline and waterfront property will continue to give priority to water-dependent uses and increase safe public access to Salt Run, the Matanzas River, the San Sebastian River and the beaches contained in the Anastasia State Recreation Area. ~~The measurable target for this objective is that t~~The City Code will continue to allow water-dependent uses as permitted uses in all of the zoning districts associated with the land use classifications in the coastal planning area adjacent to the riverine environments.

CCM Policy ~~7.1~~ 2.7.1

New marinas must meet all applicable requirements of state and federal permitting agencies, including the manatee protection guidelines established by the Department of Environmental Protection. In addition:

1. marinas must be located within one statute mile of passes or inlets;
2. marinas must be located in areas designated for such use by the Future Land Use Plan;
3. all marina basins shall be designated idle speed zones;
4. marinas must be constructed in naturally deep water to minimize dredging, and basins should be of sufficient depth to prevent stirring up of bottom sediments by boat propellers;
5. marinas should be constructed adjacent to upland high bluffs or in areas where the salt marsh has been subject to extensive past disturbance;
6. marina entrances should be located such that maximum tidal flushing and circulation occurs;
7. marina construction should include linear development, and docking space should be designed to minimize or avoid impacts on salt marsh or other native vegetation; and marinas should be served by municipal waste water systems and should have adequate solid waste collection facilities with frequent collection.

CCM Policy ~~7.2~~ 2.7.2

The following performance standards shall apply to development of water dependent and water-related uses:

- (1) compliance with all of the conditions of any regulatory agency permits required for the development;
- (2) compliance with any conditions established by the Planning and Zoning Board for development in a Conservation Overlay Zone discussed in ~~Policy 5~~ of this element; and
- (3) compliance with the Future Land Use Plan and all of the implementing development regulations contained in the City Code. Priorities for shoreline land uses and siting for water-

dependent and water-related uses are as established by the Future Land Use Plan and implemented by the City Code. Water-dependent and water-related uses shall continue to be permitted uses or permissible uses by exception in all of the zoning districts in the city.

CCM Objective ~~12~~ 2.8

Within the City there are two public access, permitted marine navigation channels: the San Sebastian River Channel and the Salt Run Navigation Channel. The San Sebastian Channel serves the City's "Working Waterfront". The Salt Run Channel serves the City's only public boat ramp and it serves one of the City's public mooring fields. Both the San Sebastian Channel and the Salt Run Channel provide both commercial and recreational boater access to the Atlantic Intracoastal Waterway and the Atlantic Ocean. The City, in partnership with other governmental agencies will work to maintain these public navigation channels as permitted by State and Federal agencies.

CCM Policy ~~12.1~~ 2.8.1

The St Augustine Inlet Navigation Channel provides the City marine access to the Atlantic Ocean. The US Army Corps of Engineers with their local sponsor the St Augustine Port Waterway & Beach District are responsible for maintaining the inlet navigation channel. This ocean access navigation channel is an important economic asset to the City's marine and tourist industries. The City will support the efforts of the USACOE and the SAPW&BD to maintain this ocean access navigation channel.

Development in CHHA

CCM Objective ~~11~~ 2.9

The City shall limit population densities in coastal high hazard areas as depicted in the Coastal High Hazard Areas Map adopted as part of the Future Land Use Map series. The coastal high hazard area for the City shall be considered the evacuation zone for a category 1 hurricane.

CCM Objective ~~10~~ 2.9.1

In the event that public or private property in the City is damaged by a natural disaster, the post disaster redevelopment will reduce or eliminate the risk of human life and property damage by natural hazards which includes sea level rise and intense rain events. The measurable target for this objective is that, in the event property is damaged or destroyed by a natural disaster, post disaster redevelopment will be in accordance with: (1) the densities and intensities of land use established by the Future Land Use Plan; (2) the criteria for developing in the Conservation Overlay Zones implemented by the City Code; and (3) requirements of the Building Code.

CCM Policy ~~10.1~~ 2.9.2

New development, alterations to existing structures and repairs to existing structures that sustain damage greater than 50% of their structural value located in the coastal high hazard areas as depicted in the Coastal High Hazard Area Map adopted as part of the Future Land Use Map series shall be constructed or repaired to comply with the current building code of the City, as required by the State of Florida. Seawalls located in the coastal high hazard areas as depicted in the Coastal High Hazard Area Map that sustain damage greater than 50% of the seawall area due to a tropical storm or hurricane shall be rebuilt as revetments or rip-rap, or be replaced with native vegetation. The City will prepare, ~~by the year 2012,~~ and maintain a post-disaster redevelopment plan. The post-disaster redevelopment plan shall differentiate between post-disaster redevelopment and post-disaster repair. The City shall continue to enforce and adopt land development regulations that incorporate:

1. building practices, to include structural integrity requirements and use of hazard protection devices;
2. floodplain management, to assure maximum drainage of floodwaters;
3. beach and dune preservation, to maintain protection from velocity waters;
4. stormwater management;
5. sanitary sewer construction and location, including backflow prevention and minimum elevations; and
6. land use, including location of institutions, docks, and buildings and distribution of densities and intensities.

CCM Objective 2.10

The City shall protect property, residents, and visitors within the Coastal High Hazard Area. Protection shall be provided through appropriate designations on the Future Land Use Map to ensure that population is directed away from the coastal high hazard area, limitations on construction of infrastructure in the Coastal High Hazard Area, and coordination with hazard mitigation and post-disaster plans.

CCM Policy 2.10.1

The City shall designate Coastal High Hazard Areas (CHHA) on the Future Land Use Map (FLUM) series and ensure the criteria for mitigation found in a coastal high-hazard area is met, as defined in F.S. 163.3178(9). The CHHA is the area below the elevation of the Category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.

CCM Policy 2.10.2

The City shall not allow public expenditures for infrastructure improvements which subsidize increases in development in the CHHA. An increase in development means a change in land use to a more dense or intense category or a redevelopment activity which increases density or intensity. Improvements to a public facility which are necessary to address a deficiency, necessary to serve the existing population, and constructed in a manner that minimizes impacts from storm events may be allowable.

CCM Policy 2.10.3

Prior to the development of public facilities in the CHHA, it shall be determined that no other feasible sites exist outside that area. Where public facilities are proposed for renovation or expansion, relocation shall be considered as an option. If construction of public facilities in the CHHA occurs, all facilities must be flood proofed to ensure minimum damage from storms and hurricanes.

CCM Policy 2.10.4

The City shall maintain a list of infrastructure facilities located in the CHHA which could be relocated, mitigated or replaced should state or federal funding become available for such activities. It is the City's intent to relocate, replace, or mitigate impacts to listed infrastructure facilities as funds become available.

CCM Policy 2.10.5

All new permanent building construction shall meet the standards of the National Flood Insurance Program (NFIP) and the City's floodplain protection regulations, including nonresidential construction within the coastal high hazard area meeting storm and flood proofing standards exceeding those required for a 100-year storm.

CCM Policy 2.10.6

The City shall continue to allow development within the CHHA; however, the City shall direct population concentrations, including nonresidential development, away from the CHHA. Development and/or redevelopment in the CHHA shall not increase the intensity currently allowed by the Comprehensive Plan.

CCM Policy 2.10.7

The City shall prohibit the location of new assisted living facilities, nursing homes, hospitals, or other similar facilities that provide critical health services or serve special needs populations within the CHHA.

CCM Policy 2.10.8

The City recognizes sea-level rise as a potential coastal hazard, and shall work with St. Johns County and state and regional entities as appropriate to develop strategies for responding to sea-level rise, including:

- a. Analysis of the estimated sea-level rise and its effects on estuaries, wetlands, beaches, and uplands;
- b. Identification of structures and areas of possible risk;
- c. Determination of additional data and research needed;
- d. Assistance from state and federal agencies;
- e. Analysis of City and County buffer requirements and whether additional buffering should be required;
- f. Evaluation of locating public facilities in areas projected to be affected by rising sea level;
- g. Consideration of the effects of sea-level rise on potable water sources, saltwater intrusion, septic systems, wastewater treatment facilities, and the water table; and
- h. Creation of Adaptation Action Areas, as permitted by state statute.

Protect Against Natural Disasters

CCM Objective 9 2.11

Ensure that a total evacuation of the city in the event of a Category 3 2 storm can be accomplished in a time period determined to be safe as provided for in the St. Johns County Comprehensive Emergency Management Plan. ~~The measurable target for this objective is a safe evacuation of the City in the event of a natural disaster.~~

CCM Policy ~~9.1~~ 2.11.1

The St. Johns County Comprehensive Emergency Management Plan addresses County action before, during and after any natural disaster (including hurricanes); and County interaction with other governmental and non-governmental agencies related to disaster preparation and response. The decision to activate the Emergency Operations Center is made by St. Johns County. The decision to evacuate all or part of the City shall be coordinated with the County Emergency Operations Center. Residents living in areas to be evacuated shall be notified to evacuate via radio and television, and by the police and fire departments. Notice to evacuate shall be given as soon as the expected time and location of landfall is known, and shall not be less than 12 hours prior to the expected landfall. When the evacuation order is issued, the locations of open evacuation shelters will be publicized. The decision to evacuate the Florida School for the Deaf and the Blind is made by school officials. The decision to evacuate county-operated nursing homes is made by St. Johns County.

CCM Policy 9.2 2.11.2

The City shall maintain a current list of all evacuation shelters in St. Johns County, including the location and capacity of each shelter. ~~This list shall be included in the St. Johns County Comprehensive Emergency Management Plan.~~ This list shall be updated as necessary to reflect current conditions.

CCM Objective 2.12

The City shall protect the safety of residents and visitors through limitations on development within the Coastal High Hazard Area, preparation of a post-disaster plan, and through maintaining evacuation routes and standards for evacuation times.

CCM Policy 2.12.1

The City shall coordinate with St. Johns County for the safe evacuation of the coastal population in accordance with St. Johns County's hurricane evacuation plan.

CCM Policy 2.12.2

The City shall prioritize the improvement of City transportation facilities to give special consideration to routes for hurricane evacuation, and shall coordinate with the State and St. Johns County to prioritize improvement of State and County transportation facilities necessary for hurricane evacuation.

CCM Policy 2.12.3

The City shall coordinate with the County's Emergency Management Director whenever the County updates its hurricane evacuation plan, disaster preparedness plan, Local Mitigation Strategy, and Post-Disaster Redevelopment Plan. An analysis of the existing plans shall include the following:

- a. Road carrying capacities as compared to the needs of the main evacuation routes, based upon population to be evacuated;
- b. Number and adequacy of shelters to serve the City's population;
- c. Methods of issuing evacuation orders to ensure all residents are adequately notified and, if necessary, assisted during evacuation;
- d. Adequacy of educational information available and reaching the public regarding shelters, evacuation routes, emergency assistance, and enforcement of evacuation orders; and
- e. Current information on the number and location of special needs population.

CCM Policy 2.12.4

The City shall help distribute a hurricane guide, updated annually, showing evacuation routes, hurricane hazards, safety procedures, shelters, and other pertinent information for its citizens, including special needs populations.

CCM Policy 2.12.5

The City shall develop and maintain a post-disaster redevelopment plan to address strategic actions necessary to establish order, communication, and basic service delivery systems necessary for health, safety, and welfare following a hurricane or other natural disaster. This plan shall be reviewed with the County for compliance with the local Comprehensive Emergency Management Plan. The post-disaster redevelopment plan should provide a basis for executing the following activities during times of natural disaster:

- a. Establishing a temporary moratorium on building activity;
- b. Reviewing and deciding upon emergency building permits;
- c. Coordinating with State and federal officials to prepare disaster assistance applications;
- d. Analyzing and recommending to the City Commission hazard mitigation options, including reconstruction or relocation of damaged public facilities;
- e. Developing a redevelopment plan including limitations on redevelopment in areas which have historically experienced destruction or severe damage from storm surge, waves, erosion, or other manifestations of storm-driven waters;
- f. Discouraging the rebuilding and redevelopment of facilities which encourage growth in hazardous areas, except for necessary services for existing development
- g. Ensuring that land acquisition programs include provisions for the possible redirection of funds to acquire estuarine properties which should not be redeveloped following a major disaster;
- h. Recommending amendments to the local emergency plan and other appropriate policies and procedures;
- i. Distinguishing between immediate repair and cleanup action needed to protect public health and safety and long-term repair and redevelopment activities;
- j. Eliminating unsafe conditions and inappropriate uses;
- k. Incorporating applicable recommendations of interagency hazard mitigation reports;
- l. Identifying mechanisms for the removal, relocation, or structural modification of damaged and unsafe structures;
- m. Considering development credits or transfer of development rights for use as incentives to reduce rebuilding damaged structures in the coastal high hazard area;
- n. Identifying areas needing redevelopment; and
- o. Providing for strategies to address historic and cultural resources.

CCM Policy 2.12.6

The City shall require the redevelopment of any structure that received storm damage in excess of fifty (50) percent of the structure's appraised value, as determined from the County property appraiser to meet all current laws and ordinances, including those enacted since construction of the subject structure. The City shall address potential exemptions for historic structures in relation to this policy.

CCM Policy 2.12.7

The City shall coordinate coastal area population densities with hurricane evacuation plans. The City shall enforce land development regulations which ensure that land use decisions impacting population density within the Level A evacuation zone, and the category 1 and 2 storm surge inundation zones are coordinated with the County's hurricane evacuation plan and applicable regional or State hurricane evacuation study.

CCM Policy 2.12.8

Disaster preparedness plans shall address the needs of special needs populations, including evacuation and specific shelter requirements. The City will assist the County and support County efforts to identify and maintain data on special needs populations.

CCM Policy 2.12.9

The City shall continually coordinate with the County's Emergency Management Department to develop a plan for reducing the hurricane evacuation time within the County.

CCM Policy 2.12.10

The City shall continually coordinate with the County's Emergency Management Department to ensure that adequate hurricane shelters are available to serve the City's residents and visitors.

CCM Policy 2.12.11

Construction in floodplains shall adhere to local development standards in keeping with the requirements of the National Flood Insurance Program (NFIP). The City shall maintain maps of existing development and densities within the floodplain.

Ports

CCM Policy 4-1 2.13.1

New marinas must incorporate the manatee protection recommendations of the Department of Environmental Protection (DEP). The City shall support the establishment of no wake zones and posted manatee areas that are not within a new marina's boundaries. New marinas shall be required to have pumpout facilities.

Preservation

CCM Policy 2.14.1

The City will encourage the protection of recreational and historic resources.

Perils of Flood and Sea Level Rise

CCM Objective 2.15

The City will reduce natural hazard impacts through compliance with FEMA regulations, participation in the NFIP's Community Rating system (CRS), and by targeting vulnerable properties for mitigation.

CCM Policy 2.15.1

The City shall continue to participate in the Federal Emergency Management Agency's National Flood Insurance Program and Community Rating System in order to achieve higher flood insurance premium discounts.

CCM Policy 2.15.2

Development and redevelopment in the City will be consistent with or more stringent than the flood-resistant constructions in the Florida Building Code and applicable floodplain management regulations set forth in 44 C.F.R part 60.

CCM Objective 2.16

The City will promote the development of adaptation strategies and engineering solutions for areas vulnerable to coastal flooding, tidal events, storm surge, flash floods, stormwater runoff, salt water intrusion and other impacts related to climate change or exacerbated by sea level rise, with the intent to increase the City's comprehensive adaptability and resiliency capacities.

CCM Policy 2.16.1

To assess the impacts of sea level rise and increased rainfall, at a minimum, the City will draw upon the Coastal Vulnerability Assessment: City of St. Augustine and Strategic Adaptation Plan for St. Augustine, Florida, or similar detailed vulnerability assessment. The City's basis for measuring sea level rise may be revised from time-to-time in acknowledgement of evolving data and associated vulnerabilities.

CCM Policy 2.16.2

Strategies for preparing for sea-level rise, such as increasing road surface elevation standards, subsurface stabilization, stormwater management and drainage, and adjustment of bridge heights to allow for navigation, should be collectively assessed and implemented where appropriate.

Adaptation strategies may apply to the following:

- a. Public infrastructure planning, siting, construction, replacement, operation, and maintenance;
- b. Emergency management;
- c. Stormwater management;
- d. Land development regulations;
- e. Building codes;
- f. Comprehensive planning; and
- g. Other functions

CCM Policy 2.16.3

Any construction activities seaward of the coastal construction control lines (CCCL) established pursuant to s. 161.053 will be consistent with Chapter 161: Beach and Shore Preservation. Infrastructure and roadway improvements within already developed public rights-of-way will be maintained as required to meet minimum level of service standards.

CCM Policy 2.16.4

Armoring or other shoreline stabilization efforts by property owners shall not disrupt or harm adjacent or nearby properties.

CCM Policy 2.16.5

The City shall engage stakeholders, St. Johns County and other agencies to increase planning and implementation of natural erosion prevention and hazard mitigation.

CCM Policy 2.16.6

The City shall promote the installation of low impact development (LID) or green infrastructure (GI) on public property and encourage its installation on private property. Potential types of LID/GI include but are not limited to:

- a. Bioretention cells and rain gardens;
- b. Permeable pavements;
- c. Cisterns and detention basins;
- d. Bioswales; and
- e. Green roofs

CCM Policy 2.16.7

The City shall discourage the disturbance of natural shorelines to improve and continue the shoreline stabilization, protection and habitat benefits natural shorelines provide.

CCM Policy 2.16.8

In the next update of the stormwater master plan, the City shall incorporate an increase in green infrastructure strategies to reduce run off, and provide additional opportunities for water capture and filtration.

CCM Policy 2.16.9

Any established Adaptation Action Area in accordance with Sections 163.3164(1) and 163.3177(6)(g)10 F.S. is with the purpose to increase grant and other funding opportunities and identify creative solutions to achieve the following goals:

1. Protect the health, safety and welfare of residents;
2. Prevent damage to public and private property;
3. Reduce National Flood Insurance Program premiums to property owners; and
4. Prioritize projects and funding that aim to increase the resilience of the City to natural hazards, sea level rise, and flooding.

CCM Policy 2.16.10

The City shall continue to use public input, subject matter experts, and best available science/data to refine the identification of any Adaptation Action Area(s).

CCM Policy 2.16.11

The City shall consider and utilize, but not be limited to, the following tools, site development techniques and strategies for use within any Adaptation Action Area to implement in order to mitigate flooding and effects of sea level rise and storm surge in order to protect property, to the greatest physical and financial extent possible:

1. Green street techniques to divert, capture or absorb water in a way to reduce flood impacts on private property, including, but not limited to street trees, landscaped areas and vegetative curb extensions, bioswales, vernacular streetscapes, and roadway re-design;
2. Hybrid stormwater master plan to integrate a combination of green and gray infrastructure, including but not limited to bioretention, increasing pipe capacity, stormwater parks, rain garden/bioswales, pumps, and water flow diversion strategies;
3. Underground utilities in vulnerable and feasible areas;
4. Assess parking standards and redesign parking lots with greater water capture techniques;
5. Comprehensive planning;
6. Land development regulations;
7. Increases of setback lines;
8. Natural shoreline restoration;
9. Permeable pavement;

10. Dry and wet flood proofing of structures; and
11. Green/open space.

CCM Policy 2.16.12

The City will work to institute the practice of adapting and mitigating the built environment to address natural hazards, flooding, and impacts from sea level rise across all plans, policies, procedures, and in coordination with partner agencies.

CCM Policy 2.16.12.1

The anticipated impacts of storm surge and sea level rise shall be a consideration in the implementation and administration of the City's Comprehensive Plan, building and life-safety codes, capital improvement plans, emergency management plans, land development codes, water resource and stormwater management plans, any coastal management plans, and economic development programs.

CCM Objective 2.17

The reestablishment of businesses after a disaster is critical to the redevelopment of the impacted area.

CCM Policy 2.17.1

The City will cooperate with local businesses and organizations to aid in disaster planning and recovery for businesses located in the impacted area.

CCM Policy 2.17.2

The City will cooperate with the local business community to develop an informational program about hurricane preparedness for local businesses.

Conservation and Coastal Management Element Draft Data & Analysis

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Conservation and Coastal Management Conservation Element

Chapter 163.3177(6)(d) F.S.

Introduction

The City of St. Augustine's population has remained relatively stable over the years. This is a range between approximately 11,500 people to 14,000 people. However, this cannot be said for St. Johns County. The County surrounding the City has experienced rapid and intense growth. According to Census populations the highest rates of growth in the County occurred between 1970 and 2010. This is an average of 58% growth for each 10 year period. After 2010 the projected population for St. Johns County is expected to grow at approximately 12% through 2040.

By comparison the City of St. Augustine is projected to grow an average of 7% between 2010 and 2040. Most of this population is expected to be from infill and redevelopment in existing developed areas within the city. However, there are also several new subdivisions beginning to build out north of the core area along North US 1 and southeast of the core area along the SR 312 corridor.

As potential development pressures increase, the need for protection and management of the City's natural, and historic resources will intensify. The identification of the types of resources, their location, and their significance to the residents of the City is necessary to outline goals, objectives, and policies intended to guide future growth, create protection incentives, and establish conservation guidelines for the use of natural resources in the area.

This environmental planning process is a continuously evolving one that responds not only to new discoveries about the importance of upland and aquatic habitats, but also to the changing needs and priorities of the citizens who share those areas.

Purpose

The role of the Conservation Element is to maintain or improve the quality of the City's environmental and natural resources and its citizens' quality of life in the face of potential population and development growth. The Conservation Element must work in harmony with the Future Land Use, Coastal Management, Transportation and Mobility, Recreation and Open Space, and the other elements of the Comprehensive Plan in ensuring environmental protection while fostering responsible economic growth. The updated Conservation Element provides an inventory and analysis of the City's natural resources, and establishes policies that provide long-term protection and management of these resources, including the required Water Supply Plan.

A community's natural resources are among its greatest assets. They warrant protection and enhancement not only for their ecological importance, but also for the aesthetic and recreational values they provide.

Only recently have we learned that these resources are not boundless. The growing popularity of coastal areas as places to live, work, and vacation has strained the environmental integrity of these fragile lands. As growth continues to focus on these highly desirable areas, proper planning to insure their survival becomes crucial.

Background

When the Spanish landed on these shores over 450 years ago they were met by native people. The natural, ocean, riverine, and canopy forested resources had attracted and provided for human populations for thousands of years. Since then the impacts are almost beyond measure.

The Conservation Element, as a required element of the Comprehensive Plan, addresses long range planning for the conservation and protection of the City of St. Augustine's natural resources. The general location, extent, and status of the City's resources are identified, including:

- Water resources (surface waters, wetlands, floodplains, and natural groundwater recharge areas);
- Air resources;
- Land resources (soils and geological resources); and
- Ecosystems (vegetative communities, wildlife and wildlife habitats).

This Element also identifies potential impacts of tourism, and recreation demands on these resources. These include the volume of tourists, development pressures, and mobility issues on vulnerable natural and historic resources. Implementation of the City's conservation policies may include a broad array of strategies that could relate to education and outreach, public participation, regulations, incentives, acquisition, intergovernmental coordination, and other appropriate mechanisms.

Visioning

The City initiated a visioning process that began in 2014 where volunteers worked together to garner input and provide feedback to develop a vision plan. The *Vision 2014 & Beyond* document was adopted in June 2015 including a set of governing principles that encourage a livable and vital community. Maintaining a healthy, resilient and sustainable environment was recognized by the vision document.

Inventory and Analysis of Natural Resources

The City of St. Augustine's natural resources are presented in four (4) major topic areas: water, air, land, and ecosystems. Several maps from the Future Land Use Map Series are included along with figures, as well as inventory lists of features, plants, and animals found in the City. The Florida Department of Environmental Protection (FDEP) data on resource quality has also been included when available.

Water Resources

Water resources are a critical component of St. Augustine's natural resource base. The City's ecology, economy, and its residents' quality of life are all connected to its water resources. St. Augustine's water resources include areas of tidal wetlands and floodplains, and rivers associated with them. Economic support from water includes ocean access, rivers, and tidal wetlands providing boating, swimming, fishing, and other forms of commercial and recreational uses. Groundwater from the Surficial and Floridan Aquifers supplies the City's drinking water.

Florida's water resources are subject to a variety of regulations and programs from federal, state, regional, and local agencies. St. Augustine will continue to work with these organizations, as appropriate, to ensure continued protection, restoration, and/or improvement of the City's water resources. Table 1 is a summary of water management agencies and programs in Florida.

Table 1: Agencies Responsible for Water Management in Florida

FEDERAL
Department of Commerce National Oceanic and Atmospheric Administration • Weather forecasting and climate change • Coastal ecosystems • Fisheries Environmental Protection Agency • Implementation of programs under the Clean Water Act and the Safe Drinking Water Act, Superfund, and the Resource Conservation and Recovery Act
Department of the Interior U.S. Geological Survey • Assess quantity and quality of the nation's water resources • Biological Resources Division • Endangered species, migratory birds, certain marine mammals, and freshwater and anadromous fish
U.S. Army Corps of Engineers • River and harbor navigation • Flood control • Hydroelectric power • Environmental restoration • Wetland permitting
Department of Agriculture Natural Resources Conservation Service • Programs to reduce erosion and to conserve and protect water • National Resources Inventory

• Wetlands Reserve Program
Federal Emergency Management Agency • Flood zone mapping • National Flood Insurance Program • Disaster relief
STATE
Executive Office of the Governor • Coordination of interagency review of development projects and grant applications • Review of water management district budgets • Appointment of water management district Governing Board members
Department of Environmental Protection • Water Resources Implementation Rule • Florida Water Plan • Pollution control permitting and monitoring • Ecosystem management and restoration • Water quality standards • Solid and hazardous waste management • Aquatic weed control • Administration of SWIM and Preservation 2000 funds • Mine reclamation management • Marine resources
Department of Economic Opportunity • Areas of Critical State Concern • Developments of Regional Impact review • Coastal management • Emergency management coordination and disaster relief
Florida Fish and Wildlife Conservation Commission • Research and manage habitats to maintain the long-term well-being of fish and wildlife • Assess development impacts on habitats
Department of Health • Protect public health, related to solid waste disposal, septic tanks, and drinking water
Public Service Commission • Private water and sewage utility rate structures and approval
Department of Agriculture and Consumer Services • Development of agricultural and silvicultural BMPs for protection of water resources • Regulation of pesticide and fertilizer use
REGIONAL
Water Management Districts (SJRWMD) • District water management plans • Regional water supply plans • Water resources development • Water supply assistance to local governments • Flood protection and emergency response • Stormwater management • Natural system protection and restoration • Consumptive use permitting • Water well construction • Environmental Resource Permitting (ERP) Program • SWIM plans • Land acquisition for conservation and recreation

• Water shortage orders
Regional Planning Councils (NEFRC) • Developments of Regional Impact review • Growth management coordination • Surface water quality planning and studies • Development of regional policy plans that provide guidelines for local comprehensive plans • Hurricane evacuation planning and mapping
Water Supply Authorities • Water distribution • Development of regional sources
LOCAL
City and County Governments • Water supply development • Local environmental controls and monitoring • Building codes, zoning, and land use • Drinking water and wastewater services • Growth management and comprehensive planning • Land acquisition and management • Emergency preparedness • Public utility protection (water, sewer, solid waste) • Stormwater management • Water conservation programs • Emergency water restrictions
Special Districts • Operation, maintenance of local surface water management systems (chapter 298 districts, others)

Sources: Water Resources Atlas of Florida, 1998; SJRWMD Lower St. Johns River SWIM Plan Update, August 2008, City of St. Augustine, Planning and Building Department, 2019.

Surface Waters

Inventory and Analysis

The City of St. Augustine is located in the Northern Coastal Basin, which includes the Matanzas River, Tolomato River, San Sebastian River, Salt Run, St. Augustine Inlet and their associated tributaries. The Guana River converges with the Tolomato River, the Matanzas River, and Salt Run from the south before flowing into the Atlantic Ocean at the St. Augustine Inlet. Tidal effects are observed throughout these waterways, converging between the two northern inlets to a tidal minimum just north of the Palm Valley Bridge.

Additionally, “major freshwater drainage to the Matanzas River estuary comes from the San Sebastian River, Moultrie Creek, and Moses Creek, as well as inflow from overland urban runoff, and Pellicer Creek contributes with flows east to the Matanzas River lagoon. Both the St. Augustine Inlet in the north and the Matanzas Inlet, located 14 miles south, tidally influence the estuary. The Matanzas Inlet is a natural tidal inlet that, with the exception of the State Road A1A bridge over the inlet, has been unaltered and is not actively maintained for navigation (Northern Coastal Basin Surface Water Improvement and Management Plan).”

St. Augustine's surface waters include rivers, creeks, and lakes. There are six (6) named creeks adjacent and contributing to the riverine environment within the City of St. Augustine. There are two (2) perennial lakes, Oyster Creek Lake, and Maria Sanchez Lake also located within the City. The general location and extent of surface water resources are derived from the 2005 1:24,000 detailed rivers and detailed waterbodies data created by the United States Geologic Survey (USGS) in cooperation with the Environmental Protection Agency (EPA). Figure X and Map X (which is also included as part of the Future Land Use Map Series as Map X) shows the approximate location of these features.

The rivers, creeks and lakes in the City total approximately 1,536 acres or 2.4 square miles. These water features help to define the quality of life and character of the city. Table 2 lists all the named rivers and creeks in the City of St. Augustine.

Table 2: Named Rivers and Creeks in the City of St. Augustine

Name	Flows
Matanzas River	From the St. Augustine Inlet into Flagler County
San Sebastian River	From Red House Branch Creek, and creek north of City limits to the Matanzas River
Tolomato River	From St. Johns River at Mayport to the Matanzas River at the St. Augustine Inlet
Red House Branch Creek	From West of Woodlawn Road to the San Sebastian River
Oyster Creek	From West King Street to the San Sebastian River
Robinson Creek	Tolomato River Marshlands
Hospital Creek	Matanzas River east of Abbott Tract
Salt Run	South of the St. Augustine Inlet to St. Augustine Beach
Quarry Creek	Matanzas River marsh near South Davis Shores

Sources: Planning and Building Department, 2019

Water Quality

"The Tolomato River north of St. Augustine has good but degrading water quality, and urban runoff and other sources of sediment load impact the Tolomato/Matanzas River. The system as a whole has high average total suspended solids and somewhat elevated turbidity. Overall development in the planning unit and the corresponding increase in human-related activities may be the causes of increased fecal coliform bacteria levels and other water quality parameters in the receiving waters (Northern Coastal Basin Surface Water Improvement and Management Plan)."

Water quality is periodically assessed by the Florida Department of Environmental Protection (FDEP). FDEP undertakes water quality assessments of water bodies in response to Section 305 (b) of the Federal Clean Water Act. The latest available DEP water quality assessment information appears in the 2008 Florida Water Quality Assessment 305 (b) Technical Appendix.

Surface water bodies are classified by FDEP based upon the intended uses of these bodies. The waters surrounding St. Augustine are classified as Class II and Class III waters by the FDEP. Class II waters are suitable for shellfish harvesting and Class III waters are suitable for recreation and fish and wildlife maintenance and propagation.

Class II waters are located in Salt Run. This is the only area in which shellfish harvesting can still occur in the City. The southern bed has been designated as conditionally restricted which means that “periodically, relay and controlled purification activity is temporarily suspended based on pollution events, such as rain or increased river flow (Aquaculture Shellfish Harvesting Program, Division of Aquaculture).”

The northern bed in Salt Run has been designated as conditionally approved. The Aquaculture Shellfish Harvesting Program defines this as “periodically closed to shellfish harvesting based on pollution events, such as rainfall or increased river flow.” All other areas located in St. Augustine are prohibited.

Surface water quality is monitored by the Florida Department of Environmental Protection (FDEP). There are several factors that determine the FDEP evaluation of water quality in a given basin. The surface water quality criteria set forth in Chapter 62-302, Florida Administrative Code, and the Impaired Surface Waters Rule (IWR), Chapter 62-303, Florida Administrative Code, differentiates waterbodies by chloride concentrations, designated uses, and waterbody type (lake, stream, or estuary). Many water quality criteria for marine waters are different from those for fresh water.

Existing Uses

The predominant existing uses relate to recreational uses in the adjacent water bodies including boating, swimming, observing nature, fishing and tourism. The tourism industry includes all of the above, and charter fishing. Commercial fishing includes shellfish harvesting, and the remaining commercial fleet.

Known Pollution

Point source pollution from domestic and industrial wastewater facilities are regulated through the National Pollutant Discharge Elimination System (NPDES) program. The Clean Water Act requires permits to be obtained by wastewater discharges that establish pollution limits, monitoring and reporting requirements. Florida was delegated the power of running this program from the EPA in 1995. The Florida Department of Environmental Protection does not list any discharge facilities operating in St. Augustine without a permit.

The City of St. Augustine wastewater treatment plant (WWTP #1) provides sanitary sewer services to all the property owners located within the city limits (10.7 square miles) and along the U.S. 1 corridor in areas immediately North and South of the city limits.

Non-Point Source Pollution:

The most common source of non-point source pollution for the City of St. Augustine is from stormwater/overland runoff. The 1995, Stormwater Master Plan discussed urban pollutant loadings and reductions.

“The City’s ongoing street sweeping program reduces gross loads by about 3%. Removals are highest in the downtown commercial/historic district where streets are swept three times per week. In this area, street sweeping reduces annual TSS loads by 28%.

In addition, treatment provided by Oyster Creek Lake and Maria Sanchez Lake significantly reduces gross loadings to the San Sebastian and Matanzas River, respectfully. These two lakes remove from 92% to 97% of the TSS load entering the lakes. The lakes remove 14% of the annual TSS load generated by the entire urban area.

In the future, urban runoff pollutant loadings from the St. Augustine urban area are likely to decrease as land within the City is redeveloped. The SJRWMD and the City of St. Augustine require redeveloped areas to provide onsite stormwater management facilities (1995 Stormwater Master Plan).”

The Stormwater Master Plan was updated in 2013. It noted that the City had worked since 1995 to reduce the severity of flooding and increase the LOS citywide. The 2013 Plan developed a citywide hydrologic model, then developed a detailed hydrologic and hydraulic (H&H) model for three (3) specific areas and used the model to propose potential improvements for each area.

Based on this analysis the 2013 Plan discusses a level of service (LOS) for stormwater and roadways, and a separate set of goals for the historic downtown area. Two (2) pilot projects were also identified in the Oyster Creek area, and a third related to drainage around Maria Sanchez Lake.

Potential for Conservation, Use, or Protection

The City’s surface waters are recognized as a major resource that needs constant care and protecting. In addition to existing protections afforded by FDEP and the SJRWMD, the City has designated surface waters as one of its conservation targets, and important relationships, to not only conserve, but respect in an effort to protect the City’s sustainability.

The following section will be completed with the update to the Infrastructure Element and Water Supply Plan.

Wetlands

Inventory and Analysis

Wetlands include all marshes and swamps, whether they are permanent, intermittent, or perennial. State statutes define wetlands in Section 373.019(25) as follows:

Those areas that are inundated or saturated by surface water or groundwater at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils.

There are extensive wetland features stretching across the City generally associated with the riverine environments. The general location and extent of the wetlands is derived from the St. Johns County Geographic Information System (GIS) for reference as the 2014 Land Cover Map showing the approximate location of these features. The Land Cover information is derived from the St. Johns River Water Management District (SJRWMD) dataset.

The City's Existing Land Use Categories as described in the Future Land Use Element indicates that approximately 1,657 acres are described as Rivers/Lakes/Submerged lands or 20.2% of the City's total land area. The Existing Land Use Categories also indicate approximately 2,230 acres of Open Land land use category or an additional 27.3% of the City's total land area, which may include upland area, as well as, some submerged land/jurisdictional wetlands.

This confusion of potentially jurisdictional wetlands designated Open Land on the future land use map will be clarified as part of this 2040 update. The City intends to establish a second Open Land (Conservation) land use category, separate from an uplands and presumably developable Open Land category for areas specifically waterward of the most restrictive jurisdictional line, owned by a governmental or environmental entity or delineated by some legal instrument as undevelopable in perpetuity.

Existing Uses

Saltwater marsh is the dominant wetland habitat in St. Augustine. This community is considered a non-forested wetland and includes tidal flats and brackish areas dominated by cordgrass and needlebrush. Saltwater marsh is located throughout the City, and forms natural barriers around the City's major waterways.

Saltwater marshes, like all wetlands, serve a variety of useful functions. They provide a buffer between higher lands and the open water, and are important fish nurseries. They also serve as filters that cleanse the water of many pollutants and are important for flood control.

Known Pollution

There are no documented instances of pollution associated with the City's wetlands.

Potential for Conservation, Use, or Protection

St. Augustine's wetlands are currently regulated and protected by one or all of the following agencies: the United States Army Corps of Engineers (USACOE), FDEP, and the SJRWMD. The City is beginning to understand the important relationship with its wetland areas beyond recognizing the important role the wetlands play as habitat areas. These areas also play an important role toward the City's resiliency and sustainability as we look towards sea level rise, and buffering the city from its affects.

Groundwater

Inventory and Analysis

Both the Floridan and the Surficial Aquifers provide potable water for the City of St. Augustine. The City currently draws on both aquifers for potable water through the use of wells. The City's Annual Water Quality Report for 2009 identifies five wells, one that withdraws from the Surficial Aquifer and four that withdraw from the Floridan Aquifer.

Based on the sampling results in the report, there are several contaminants present in the City's potable water source. Contaminants identified are microbiological, radiological, inorganic, synthetic organic, disinfectants, and lead and copper. Although the above contaminants are present, none exceed levels that would render the water as unsafe. Likely sources of contamination are related to sources found in the natural environment, discharge from industrial manufacturing/uses, corrosion of plumbing, and products used to disinfect water.

The groundwater system is the principal source of water for domestic, commercial, and industrial uses in the City. There are two aquifer systems present in St. Augustine: the Floridan Aquifer System and the Surficial Aquifer System. The Floridan Aquifer underlies the entire state of Florida and supplies water to many utilities, municipalities, and permitted wells. The Surficial Aquifer in Florida includes any otherwise undefined aquifers that are present at land surface and is mainly used for domestic, commercial, or small municipal supplies. The City of St. Augustine operates five (5) wells and draws potable water from the Floridan Aquifer and a confined region of the Surficial Aquifer. There are also 91 permitted wells drawing from the Floridan Aquifer and an additional 17 proposed wells. The majority of these wells are private consumptive use permits (CUPs) for agricultural uses.

The St. Johns River Water Management District (SJRWMD) is currently studying future water supply sources. Several options are being considered such as fresh groundwater, seawater, surface water and brackish groundwater due to salt intrusion. In addition to the identification of new water sources, preservation techniques are also being considered to protect current water resources. Techniques that could protect water resources are conservation and reuse, interconnection of the water supply system, artificial recharge, mitigation of adverse impacts of ground water withdrawal and aquifer storage recharge.

Another issue the City of St. Augustine must consider for the future is the designation of a Priority Water Resource Caution Area (PWRCA) by the St. Johns River Water Management District. The City has been recently included in this caution area. With the designation of a PWRCA come specific constraints such as statutory requirements “to identify alternative water supply sources and strategies in a water supply work plan. Local governments will be able to choose among alternative water supply options that will be listed in the District Water Supply Plan (DWSP) 2010 or they may submit additional projects for consideration. The DWSP will include more projects than are necessary to meet water needs so local governments have options (SJRWMD).”

Aquifers

The Floridan Aquifer is one of the highest producing aquifers in the world. It is found throughout Florida and extends into the southern portions of Alabama, Georgia, and South Carolina. This aquifer system is comprised of a sequence of limestone and dolomite, which thickens from about 250 feet in Georgia to about 3,000 feet in south Florida. The Floridan Aquifer system has been divided into an upper and lower aquifer separated by a unit of lower permeability. The upper Floridan Aquifer is the principal source of water supply in most of north and central Florida. Groundwater flow is generally from highs near the center of the state towards the coast.

The Surficial Aquifer is generally unconfined and is made up of mostly unconsolidated sand, shelly sand, and shell. The aquifer thickness is typically less than 50 feet. Groundwater in the Surficial Aquifer generally flows from areas of higher elevation towards the coast or streams where it can discharge as baseflow. Water enters the aquifer from rainfall and exits as baseflow to streams, discharge to the coast, evapotranspiration, and downward recharge to deeper aquifers. Figure X and Map X (which is also included as part of the Future Land Use Map Series as Map X) shows the approximate Aquifer Recharge areas in the City of St. Augustine.

The following section will be completed with the update to the Infrastructure Element.

Existing Uses

Potable Water

Known Pollution

Potential for Conservation, Use, or Protection

Priority Water Resource Caution Areas

The SJRWMD identified priority water resource caution areas (PWRCA) based on a comparison of water resource constraints to the results of assessments of hydrologic impacts due to projected 2030 demands. Priority water resource caution areas are areas where existing and reasonably anticipated sources of water and conservation efforts may not be adequate (1) to supply water for all existing legal uses and reasonably anticipated future needs and (2) to sustain the water resources and related natural systems. The SJRWMD identified PWRCA based on the water

resource constraints and the results of water use, groundwater, and surface water assessments. St. Augustine, as well as all of St. Johns County, is located in the PWRCA (Figure X, and Map X, which is also included as part of the Future Land Use Map Series as Map X). As part of the PWRCA, St. Augustine must adopt a Water Supply Plan with this Comprehensive Plan 2040 update and is participating in regional water supply planning.

Water Quality and Quantity

The groundwater system supplies the potable water for all residents connected to the City's utility system. St. Augustine's potable water supply is discussed in detail in the Water Conservation section of this document and Water Supply Plan, included as Appendix A of the Infrastructure Element. The City is considering updating its 2013 Stormwater Master Plan to address additional issues.

Flood Prone Areas/Floodplains

St. Augustine's location along the Atlantic Ocean and the Matanzas and San Sebastian Rivers periodically subject the City to partial coastal flooding which is mostly tide related. Additionally, the City has special flood hazard areas which may become inundated during 100-year flood events. The Flood Insurance Rate Maps (FIRM) are periodically updated by the Federal Emergency Management Agency (FEMA). The most recent map was made using FEMA's updated Digital Flood Insurance Rate Map from December of 2018.

Floodplains are areas inundated by a 100-year flood event or identified by the National Flood Insurance Program of the Federal Emergency Management Agency as an "AE" zone or a "VE" (Velocity) zone on the City's Flood Hazard Areas Maps. Additionally, the map includes areas anticipated to be affected by a 500-Year flood event, as well as areas outside of the 100 year floodplain (denoted by X). The 100-Year floodplain makes up a majority of the lands located in the City of St. Augustine. Locations near the western fringe of the city limits and southwest of Anastasia State Recreation Area, as well as, some areas scattered through the city that are areas outside of the 100-Year floodplain and zones that may only be affected by a 500-Year flood event.

City Code provides regulations for development within special flood hazard areas regulated by the floodplain management ordinance. When located in a special flood hazard area, all finished floors of commercial and residential buildings must be constructed at or above established design flood elevations. Buildings constructed below the required design flood elevation are required to be flood-proofed in accordance with acceptable construction standards which have been approved by FEMA.

Development shall conform to all requirements of FEMA relating to flood control and prevention. Prior to a Certificate of Occupancy being issued for the structure, the City shall continue to require an Elevation Certificate signed by a licensed engineer or surveyor certifying that the lowest floor of the structure has been constructed at or above the established design flood elevation, and per city code.

The national agency responsible for measuring sea level changes is the National Ocean Survey, a part of the National Geodetic Survey, within the National Oceanic and Atmospheric Administration (NOAA). As reported in *Mean Sea Level Trends for Stations in Florida*, (<http://tidesandcurrents.noaa.gov/>) the trend of relative sea level rise in our region is on the order of 2.4 mm per year. The risks associated with a substantial rise should not be disregarded.

Vegetative Cover:

St. Augustine has extensive marshlands and a few natural upland areas relatively intact even though it is our nation's oldest city. The natural communities remaining can be divided into two major categories: uplands and wetlands.

Uplands:

Upland areas are comprised of 5 primary habitats: herbaceous upland nonforested, shrub and brushland, pine flatwoods, upland hardwood forests and upland mixed coniferous/hardwoods. Data obtained by measuring the surface area occupied by upland communities indicate that approximately XXX acres remain within city limits.

Table 1: Upland Vegetative Cover in St. Augustine

<i>Upland Vegetative Cover</i>	<i>Acres</i>
Herbaceous Upland Non-forested	147.2
Shrub and Brushland	180.7
Pine Flatwoods	52.4
Upland Hardwood Forests	307.2
Upland Mixed Coniferous/Hardwood	274.7
Total	962.2

Sources: Land Use/Land Cover 2004, St. Johns River Water Management District

Herbaceous uplands are located in small patches throughout the City, with primary locations south of Anastasia State Recreation Area and in the northern portion of the city, adjacent to U.S. 1. Shrub and brushland areas are located in the southern portions of the City, with the largest portions adjacent to S.R. 312.

Pine flatwood habitat is only located along and to the west of the San Sebastian River. Flatwoods typically thrive on poorly drained, flat land and are dominated by slash or longleaf pine. These areas are characterized by thick underbrush of saw palmetto and gallberry.

Upland hardwood forests make up the largest upland habitat within St. Augustine. Approximately 32% of upland habitat is upland hardwood, most of which is one large contiguous area. The primary location of this habitat is south of Anastasia State Recreation Area. The hardwood forest is composed mainly of hardwood species such as oak.

Upland mixed coniferous/hardwood habitat is scattered throughout the City, with the largest concentration in the north, and southern portions to the east of the Matanzas River. The coniferous forest is dominated by trees, primarily pines, which remain green throughout the year.

Inventory and Analysis

There are floodplains stretching across the City, mostly associated with surface waters and/or wetlands. Although normally dry, these areas can become inundated with water during hurricane and severe storm conditions. The general location and extent of floodplains is derived from the 1996 Federal Emergency Management Agency (FEMA) GIS data. Figure X and Map X (which is also included as part of the Future Land Use Map Series as Map X) shows the approximate location of the City's floodplain features.

Floodplains include all lands located inside the special flood hazard area (SFHA) as designated by the FEMA and the National Flood Insurance Program (NFIP). The SFHA is the area where the NFIP's floodplain management regulations must be enforced and where the mandatory purchase of flood insurance applies. FEMA works closely with State and local officials to identify flood hazard areas and flood risks. The floodplain management requirements within the SFHA are designed to prevent new development from increasing the flood threat and to protect new and existing buildings from anticipated flood events.

In order for new development in the SFHA to qualify for insurance through the NFIP, St. Augustine must require permits for all development in the SFHA and ensure that construction materials and methods used will minimize future flood damage. Permit files must contain documentation to substantiate how buildings were actually constructed. In return, the Federal Government will make flood insurance available buildings and its contents within the community. The City must ensure that the adopted floodplain management ordinance and enforcement procedures meet the government's program requirements. St. Augustine must also continue to update its floodplain regulations as additional data is provided by FEMA or when Federal or State standards are revised.

Existing Uses

There are approximately 72 acres of floodplains located on portions of land proposed for an urban land use. The City's future land use and conservation policies will provide guidelines for development in the presence of floodplains in accordance with NFIP and FEMA regulations.

Known Pollution

There are no documented instances of pollution associated with the City's floodplains.

Potential for Conservation, Use, or Protection

The regulation of floodplains is directly linked to the function and management of surface waters, wetlands, and stormwater treatment facilities. In addition to existing local policies, the City's floodplains are regulated by the following agencies: FEMA, FDEP (62-40, F.A.C.), and SJRWMD (40C-4, F.A.C.). St. Augustine, in conjunction with these regulatory agencies, will develop a comprehensive system of coordinated planning, management, and preservation to protect and, where feasible, enhance floodplain functions and associated natural systems in floodplains. This system shall include implementation of policies and programs to preserve and maintain valuable natural systems in floodplains, protect the natural water storage and water conveyance capabilities of floodplains, and, where feasible, enhance or restore natural flow regimes of rivers and watercourses that have been altered for water control purposes.

It will be a goal of the City to minimize incompatible activities in floodplains. The City will build on existing regulations and create policies that:

- Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards;
- Restrict or prohibit uses which result in damaging increases in erosion or flood heights or velocities;
- Require that uses vulnerable to floods, including facilities which serve those uses, be protected against flood damage at the time of construction;
- Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in accommodating floodwaters;
- Control filling, grading, dredging and other development activities that may increase erosion or flood damage; and
- Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or that may increase flood hazards to other lands.

Floodplains can be a valuable resource for vegetation, wildlife, and groundwater recharge.

Air Resources

Air Quality

The concept of energy efficiency and greenhouse gas reduction was new concept to the City and Region as whole in 2011. With little data pertinent to the City, monitoring greenhouse gases requires the City to coordinate efforts with landowners, developers and other agencies and begin to establish the data and analyses.

As the City addresses new developments, there is close coordination with the Planning and Building Department, developers, landowners and other agencies to maximize the number of new construction projects which practice energy efficient techniques.

Effective greenhouse gas emissions reduction measures aren't City specific and they are not best implemented by a project by project approach. The City is part of the North Florida TPO and a portion of the City is included in the Northeast Regional Planning Model (NERPM). The NERPM provides only regional carbon emission data and does not include the emissions for the entire City. The City will continue to encourage efficient land use patterns from a transportation perspective, including encouraging infill, redevelopment, additional, density in proximity to jobs, mixed use developments and alternative modes of transportation where feasible. The results of such measures are expected to reduce gas emission during the planning horizon.

Inventory and Analysis

St. Augustine has a limited amount of air pollution originating in or being transported into the City. According to the FDEP's Air Resources Management System (ARMS) there are several facilities with permitted emissions sources located in or near to the city limits. Table X identifies those facilities and indicates their ownership and current status.

Table X: Permitted Air Resource Management Systems (ARMS) Facilities

Facility Name	Owner	Status
St. Augustine Marine Center	WJ Development Corporation	Active
Luhrs Corporation	Luhrs Corporation	Inactive
St. Augustine site-Main Complex	Northrup Grumman Systems Co.	Active
Flagler Hospital, Inc.	Flagler Hospital, Inc	Inactive
VJ Usina Contracting, Inc.	VJ Usina Contracting, Inc.	Inactive
Craig Memorial Park-Human Cremation	Craig Funeral Home, Inc.	Active
St. Augustine site-North Complex	Northrup Grumman Systems Co.	Active
St. Johns Family Funeral Home & Cremation	Kotrady-Hudgins Funeral Service	Active
Florida School for the Deaf and the Blind	Florida School for the Deaf and the Blind	Inactive
St. Augustine Plant	EZFlow, LP	Inactive

Sources: FDEP, ARMS Table, May 2019

Overall, air quality is considered good in St. Augustine; however there are no air quality monitoring sites located in the City or in St. Johns County. According to the FDEP the nearest monitoring sites are in Jacksonville Beach, Mandarin, and at the Palatka Barge Port.

Known Pollution

The EPA identifies transportation emissions as a leading cause of air pollution responsible for over 93% of carbon monoxide (CO) emissions, 52% of all nitrogen (NOx) emissions, and 90% of all hydrocarbon emissions (HC). The Florida Department of Environmental Protection (FDEP) 2018 reporting indicates, on the website that, emission pollution rates were found to be decreasing.

Potential for Conservation, Use, or Protection

Vehicles are the largest contributor to air pollution in St. Augustine. By continuing to follow state guidance regarding transportation planning and air quality monitoring, vehicle emissions should decrease over time. The proposed future land use plan and the Transportation and Mobility Element will contribute to continued good air quality by reducing the need for vehicle travel and promoting infill and redevelopment, walkability and alternative modes of transportation.

Commercial Resources

Minerals

No commercially valuable minerals are presently mined in St. Augustine, although limestone and coquina quarries were once active on Anastasia Island, and a sand mine formerly operated in the north city area. The quarries on Anastasia Island were excavated by early Spanish settlers for building materials for many of the original structures in the City (including the Castillo de San Marcos) and are designated historic sites.

Land Resources

Soils

Topography:

Most of St. Augustine's population is located to the west of the Matanzas River. A smaller section of the city extends to a barrier island known as Anastasia Island, where Anastasia State Recreation Area is located. All of this area is considered part of the physiographic region known as the Atlantic Coastal Lagoons. The Atlantic Coastal Lagoons consist of the Matanzas River, San Sebastian River, Guana River and Tolomato River. This region consists of open water and flat grassy marshes that are subject to daily flooding by normal high tides. Most of the soils are mineral soils that are high in clay and silt content, while some are organic in nature. The vegetation of this region is mostly halophytic grasses and some mangrove trees.

According to U.S. Geological Survey maps, elevations throughout the city range from mean sea level (MSL) at some locations along the shoreline of the San Sebastian and Matanzas Rivers, as well as coastal areas. Some sections near the western boundary, as well as locations south and west of Anastasia State Recreation Area reach an elevation of 25 feet above MSL.

The topography of the City is determined by the surface geology, which is composed mainly of two ancient marine terraces formed during the Paleocene period as the ocean receded. These terraces are now called the Pamlico and Silver Bluff.

The Pamlico Terrace is characterized by elevations between ten and twenty-five feet above MSL, and can be found near Anastasia Island. The Silver Bluff Terrace, with elevations of zero to ten feet above MSL, is more prevalent and is found in the remainder of the city.

Both terraces form a relatively flat plain that slopes gently eastward, at a rate of four to five feet per mile, toward the Atlantic Ocean.

A third marine terrace, the Talbot Terrace, with elevations of twenty-five to forty feet above MSL, may be found in a very small area in the southwest portion of the City.

Soils:

The Soil Conservation Service *Soil Survey of St. Johns County* identifies four (4) soil associations within the city limits of St. Augustine. They are the Fripp-Satellite-Paola Association, the Astatula-Tavares Association, the Myakka-Immokalee-St. Johns Association and Pellicer-Tisonia Association.

The Fripp-Satellite-Paola Association is found in sand ridge and coastal dune areas. This soil association comprises all of the eastern section of Anastasia Island. Soil types that accompany this soil association are Pampona, Satellite, Fripp and Moultrie. These soils are sandy throughout and are excessively to somewhat poorly drained. Land areas containing these soils vary in topography from nearly level to moderately steep.

Astatula-Tavares soils can also be found in sand ridges and coastal dunes. However, these soils are typically found further inland. In St. Augustine, these soils are found in the northwest section of the City. They are sandy soils classified as excessively to moderately well drained, typical of nearly level to gently sloping lands.

The Myakka-Immokalee-St. Johns Association are typical soils of flatwood communities. These soils run in a strip down the middle of Anastasia Island and also comprise most of the central city and southern areas. Portions of the City containing these soils are nearly level and poorly drained, sand soils that have dark subsoil stained by organic matter comprise this association. Soils types that accompany this association are St. Augustine and Myakka.

The Pellicer-Tisonia Association is typically located in coastal wetlands and inland areas. For the City of St. Augustine, these soils are found in the tidal marshes of the Matanzas and San Sebastian Rivers. Pellicer-Tisonia soils are in nearly level areas which are poorly drained and subject to frequent tidal flooding. Some of the soils in this association are loamy; others are organic and underlain by clay materials. The soil type in the association is predominantly Pellicer.

Inventory

The Natural Resources Conservation Service (NRCS), a division of the U.S. Department of Agriculture (USDA), is responsible for issuing soil surveys. The survey identifies soil types throughout the entire county. Map X (which is also included as part of the Future Land Use Map Series as Map X) shows the location and general extent of the four (4) soil series present in St. Augustine. The soil survey is one factor that can be used to evaluate the suitability of specific land uses in a given area. The information provided by the soil survey is not site specific and does not eliminate the need for onsite investigation or testing by professional soil scientists. Table X provides a summary of St. Augustine's soils with respect to drainage, and development limitations.

Table X: NRCS Soil Summary

Map Unit Name	Drainage Class	Typical Location	City Area	Development Rating
Astatula-Taveres	Excessively to moderately well drained, nearly level gently sloping	Inland Sand ridges, coastal dunes	Northwest section of the City	Not limited
Myakka Fine Sand	Poorly Drained, nearly level	Flatwood communities	Middle of Anastasia Island, central city, and southern areas	Very Limited
Immokalee Fine Sand-St. Johns Association	Poorly Drained, nearly level	Flatwood communities	Middle of Anastasia Island, central city, and southern areas	Very Limited
Fripp-Satellite-Paola Association	Sandy throughout, excessively to somewhat poorly drained	Sand ridge, coastal dunes	Eastern section of Anastasia Island	Not Limited
Pellicer-Tisonia Association	Very Poorly Drained, frequent tidal flooding, can be loamy, organic and underlain by clay materials	Coastal wetlands, and inland areas, tidal marshes	Coastal wetlands, tidal marshes of the Matanzas and San Sebastian Rivers	Very Limited

Source: City of St. Augustine 2011 Conservation and Coastal Management Element, summarized by the Planning and Building Department, 2019

Analysis

In St. Augustine, the majority of soils are somewhat limited for most types of building and site development.

Existing Uses

The City of St. Augustine is an urban area. Most of the developable area of the city has been developed or disturbed. However, there are environmentally sensitive areas along the riverine environments that warrant protection and review.

Known Erosion Issues

There are no known instances of significant erosion related to the City's soil.

Historic and Cultural Resources

This section will be updated as part of the Historic Preservation Element.

Ecosystems

The concept of ecosystems is used to describe the various species of plants, animals, and microorganisms that surround us everyday. However, ecosystems are more than just the number and diversity of species. The concept also includes the genetic variation within a given species of plant or animal. At a higher level, it includes the natural communities, and landscapes of which species are a part. The concept of biodiversity within ecosystems includes both the variety of these things and the variability found within and among them. Biodiversity also encompasses the processes that allow life on Earth to continue adapting and evolving.

Critical Habitat

Protecting the full range of biological diversity requires a sound understanding of St. Augustine's ecological systems including where they are found and how they are faring. The term "ecological community" refers to an integrated association of plants and animals adapted to and dependent upon a particular environment. In general terms, the natural systems of the City may be divided into three (3) categories: estuary saltmarsh, wetland, and coastal hammock forest (coastal scrub is also found in Anastasia State Park). Each of these categories consists of, and provides habitat for, a wide variety of plants and animals. The natural upland and wetland systems that occur in St. Augustine are described below.

Estuary Saltmarsh/Wetland Communities

The marine and estuarine vegetated wetlands dominate the eastern portion and eastern facing areas along the rivers adjacent to St. Augustine. The intertidal zone or supratidal zone is dominated by herbaceous or woody halophytic vascular plants. The salinity is greater than 0.5ppt.

The Salt Marsh is considered estuarine wetland on muck/sand/or limestone substrate; inundated with saltwater by daily tides; statewide; occasional or rare fire; treeless, dense herb layer with few shrubs; saltmarsh cordgrass, needle rush, saltgrass, saltwort, perennial glasswort, seaside oxeye. A salt flat of salt marsh with much exposed bare soil on slightly higher areas within marsh; high salinity and dry conditions; sparse and stunted cover of succulents and/or shoregrass can also be associated with this area.

Coastal Hammock Forest

In the coastal uplands area the mesic or xeric communities are restricted to barrier islands and near shore; woody or herbaceous vegetation; other communities may also occur in coastal environments. The maritime Hammock is described as stabilized coastal dune with sand substrate; xeric-mesic; statewide but rare in the Panhandle and keys; rare or no fire; marine influence; evergreen closed canopy; live oak, cabbage palm, red bay, red cedar in temperate maritime hammock; gumbo limbo, seagrape, and white or Spanish stopper in tropical maritime hammock.

Listed Species

The Florida Natural Areas Inventory (FNAI) biodiversity matrix lists many documented occurrences of rare plant and animal species in St. Johns County. Table X shows the individual species and their state and federal ranking information.

Table X: Listed Species Occurrence in St. Johns County

Plants and Lichens				EXPLANATION			
Scientific Name		Common Name		Global Rank	State Rank	Federal Status	State Status
<i>Asclepias viridula</i>			southern milkweed	G2	S2		T
<i>Baptisia calycosa</i> var. <i>calycosa</i>			Canby's wild indigo	G3T1	S1		E
<i>Calydorea coelestina</i>			Bartram's ixia	G2G3	S2S3		E
<i>Carex chapmannii</i>			Chapman's sedge	G3	S3		T
<i>Chamaesyce cumulicola</i>			sand-dune spurge	G2	S2		E
<i>Coreopsis integrifolia</i>			ciliate-leaf tickseed	G1G2	S1		E
<i>Ctenium floridanum</i>			Florida toothache grass	G2	S2		E
<i>Glandularia maritima</i>			coastal vervain	G3	S3		E
<i>Helianthus carnosus</i>			lake-side sunflower	G1G2	S1S2		E

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<i>Litsea aestivalis</i>		pondspice	G3?	S2		E
<i>Lythrum curtissii</i>		Curtiss' loosestrife	G1	S1		E
<i>Matelea floridana</i>		Florida spiny-pod	G2	S2		E
<i>Monotropis reynoldsiae</i>		pygmy pipes	G1	S1		E
<i>Nemastylis floridana</i>		celestial lily	G2	S2		E
<i>Nolina atopocarpa</i>		Florida beargrass	G3	S3		T
<i>Pavonia spinifex</i>		yellow hibiscus	G4G5	S2		N
<i>Pecluma plumula</i>		plume polypody	G5	S2		E
<i>Pteroglossaspis ecristata</i>		giant orchid	G2G3	S2		T
<i>Pycnanthemum floridanum</i>		Florida mountain-mint	G3	S3		T
<i>Rhynchospora punctata</i>		dotted beaksedge	G1?	SH		N
<i>Rhynchospora thornei</i>		Thorne's beaksedge	G3	S1S2		N
<i>Rudbeckia nitida</i>		St. John's blackeyed susan	G3	S2		E
<i>Ruellia noctiflora</i>		nightflowering wild petunia	G3?	S2		E
<i>Verbesina heterophylla</i>		variable-leaf crownbeard	G2	S2		E

Clams and Mussels				EXPLANATION			
Scientific Name		Common Name		Global Rank	State Rank	Federal Status	State Status
Panopea bitruncata			Atlantic Geoduck	G3G4	S2S3		N

Snails and Allies			EXPLANATION			
Scientific Name		Common Name	Global Rank	State Rank	Federal Status	State Status
<i>Amnicola rhombostoma</i>		Squaremouth Amnicola Snail	GH	SH		N
<i>Floridobia fraterna</i>		Creek Siltsnail	G2	S2		N

Mayflies		EXPLANATION				
Scientific Name	Common Name		Global Rank	State Rank	Federal Status	State Status
<i>Stenacron floridense</i>	 	A Mayfly	G3G4	S3S4		N

Dragonflies and Damselflies				EXPLANATION			
Scientific Name		Common Name		Global Rank	State Rank	Federal Status	State Status
<i>Gomphaeschna antilope</i>		Taper-tailed Darner		G4	S4		N
<i>Neurocordulia obsoleta</i>		Umber Shadowfly		G5	S2		N

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Beetles		EXPLANATION			
Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
<i>Aphodius aegrotus</i>	 Small Pocket Gopher Aphodius Beetle	G3G4	S3?		N
<i>Aphodius dyspistus</i>	 Surprising Pocket Gopher Aphodius Beetle	G3G4	S3?		N
<i>Aphodius laevigatus</i>	 Large Pocket Gopher Aphodius Beetle	G3G4	S3?		N
<i>Bolbocerosoma hamatum</i>	 Bicolored Burrowing Scarab Beetle	G3G4	S3		N
<i>Chelyoxenus xerobatis</i>	 Gopher Tortoise Hister Beetle	G2G3	S2		N
<i>Cicindela hirticollis</i>	 Hairy-necked Tiger Beetle	G5	S1		N
<i>Hypotrachia spissipes</i>	 Florida Hypotrachia Scarab Beetle	G3G4	S3S4		N
<i>Peltotrupes profundus</i>	 Florida Deepdigger Scarab Beetle	G3	S3		N
<i>Ptomaphagus schwarzi</i>	 Schwarz' Pocket Gopher Ptomaphagus Beetle	G3	S3		N

Butterflies and Moths		EXPLANATION			
Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
<i>Euphyes dion</i>	 Dion Skipper	G4	S2S3		N
<i>Nymphalis antiopa</i>	 Mourning Cloak	G5	S2		N

Ants, Bees, and Wasps		EXPLANATION			
Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
<i>Bombus fraternus</i>	 Southern Plains Bumble Bee	G2G4	S1S2		N

Fishes		EXPLANATION			
Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
<i>Acipenser brevirostrum</i>	 Shortnose Sturgeon	G3	S1	E	FE
<i>Acipenser oxyrinchus oxyrinchus</i>	 Atlantic Sturgeon	G3T3	S1	E	FE
<i>Ameiurus brunneus</i>	 Snail Bullhead	G4	S4?		N
<i>Microphis brachyurus</i>	 Opossum Pipefish	G4G5	S2	SC	N

Amphibians		EXPLANATION			
Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
<i>Notophthalmus perstriatus</i>	 Striped Newt	G2G3	S2		N

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Reptiles		EXPLANATION					
Scientific Name		Common Name	Global Rank	State Rank	Federal Status	State Status	
<i>Alligator mississippiensis</i>		American Alligator	G5	S4	SAT	FT(S/A)	
<i>Caretta caretta</i>		Loggerhead Sea Turtle	G3	S3	T	FT	
<i>Chelonia mydas</i>		Green Sea Turtle	G3	S2S3	T	FT	
<i>Clemmys guttata</i>		Spotted Turtle	G5	S2S3		N	
<i>Crotalus adamanteus</i>		Eastern Diamondback Rattlesnake	G4	S3		N	
<i>Dermochelys coriacea</i>		Leatherback Sea Turtle	G2	S2	E	FE	
<i>Drymarchon couperi</i>		Eastern Indigo Snake	G3	S3	T	FT	
<i>Gopherus polyphemus</i>		Gopher Tortoise	G3	S3	C	ST	
<i>Lampropeltis getula</i>		Common Kingsnake	G5	S2S3		N	
<i>Pituophis melanoleucus</i>		Pine Snake	G4	S3		ST	

Birds		EXPLANATION					
Scientific Name		Common Name	Global Rank	State Rank	Federal Status	State Status	
<i>Charadrius melodus</i>		Piping Plover	G3	S2	T	FT	
<i>Egretta caerulea</i>		Little Blue Heron	G5	S4		ST	
<i>Egretta thula</i>		Snowy Egret	G5	S3		N	
<i>Egretta tricolor</i>		Tricolored Heron	G5	S4		ST	
<i>Elanoides forficatus</i>		Swallow-tailed Kite	G5	S2		N	
<i>Eudocimus albus</i>		White Ibis	G5	S4		N	
<i>Haematopus palliatus</i>		American Oystercatcher	G5	S2		ST	
<i>Haliaeetus leucocephalus</i>		Bald Eagle	G5	S3		N	
<i>Hydroprogne caspia</i>		Caspian Tern	G5	S2		N	
<i>Mycteria americana</i>		Wood Stork	G4	S2	T	FT	
<i>Pandion haliaetus</i>		Osprey	G5	S3S4		N	
<i>Platalea ajaja</i>		Roseate Spoonbill	G5	S2		ST	
<i>Rynchops niger</i>		Black Skimmer	G5	S3		ST	
<i>Sterna antillarum</i>		Least Tern	G4	S3	N	ST	
<i>Thalasseus maximus</i>		Royal Tern	G5	S3		N	
<i>Thalasseus sandvicensis</i>		Sandwich Tern	G5	S2		N	

Mammals		EXPLANATION			
Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
<i>Eubalaena glacialis</i>	North Atlantic Right Whale	G1	S1	E	FE
<i>Neovison vison lutensis</i>	Atlantic Salt Marsh Mink	G5T3	S3		N
<i>Peromyscus polionotus phasma</i>	Anastasia Island Beach Mouse	G5T1	S1	E	FE
<i>Podomys floridanus</i>	Florida Mouse	G3	S3		N
<i>Trichechus manatus</i>	West Indian Manatee	G2	S2	T	FT
<i>Ursus americanus floridanus</i>	Florida Black Bear	G5T4	S4		N

Other Elements		EXPLANATION			
Scientific Name	Common Name	Global Rank	State Rank	Federal Status	State Status
<i>Bird Rookery</i>		G5	SNR		N

Source: FNAI Biodiversity Matrix, www.fnai.org

The list in the above Table is a comprehensive list from the FNAI for St. Johns County not all of these species will occur within the city limits of St. Augustine, but several species are likely to occur in St. Augustine. The abundance of observed and potential species within the city limits indicates a need for listed species policies in the Conservation and Coastal Management Element that specifically address the presence of listed species within the City.

Water Conservation, Use, and Protection

Infrastructure

The U.S. Environmental Protection Agency (USEPA) establishes three levels of water conservation guidelines (Table X). Each level includes several categories for conservation strategies and each category has several specific measures. The City utilizes a variety of strategies in its utility infrastructure and water conservation practices. The City implements required conservation strategies as outlined in the City's Water Supply Plan and required by the City's Consumptive Use Permit (CUP).

This section will be updated with the Infrastructure Element.

Table X: USEPA Water Conservation Measures

Level	Description
1	- Universal metering - Water accounting and loss control - Costing and pricing - Information and education
2	- Water-use audits - Retrofits - Pressure management - Landscape efficiency
3	- Replacements and promotions - Reuse and recycling - Water-use regulations - Integrated resource management

Source: USEPA Water Conservation Guidelines, 1998.

Table X: Water Supply Conservation

Level	Measure	Description	Status
1	Universal Metering	Install flowmeters at each well	Active
1	Water Accounting and Loss Control	Monitor unmetered uses such as sewer flushing, fire fighting	Planned
1	Universal Metering	Eliminate master meters	Planned
1	Costing and Pricing	Continue to charge a base rate for water use	Active
1	Costing and Pricing	Implement an inclined rate structure	Planned
1	Information and Education	Include educational information in water bills	Active
1	Universal Metering	Monitoring of all production wells and discharges	Planned
1	Water Accounting and Loss Control	Routine water audits	Active
2	Landscape Efficiency	Promote landscape efficiency	Active
3	Reuse and Recycling	Promote reuse	Planned
3	Water Use Regulations	Use lower quality water first	Active
3	Water Use Regulations	Encourage others to use lower quality water first	Active
3	Integrated Resource Management	Quarterly monitoring for saltwater intrusion, etc.	Active
3	Integrated Resource Management	Monitor wetlands associated with the potable water supply	Active
3	Water Use Regulations	Enforce state low-flow requirements for new construction	Active
3	Water Use Regulations	Enforce regional irrigation restrictions	Active

Source: USEPA Water Conservation Guidelines, 1998; City of St. Augustine Water Supply Plan, 20XX.

The controlled and limited amount of water consumed minimizes the drawdown in the potentiometric surface of the underlying Floridan Aquifer. The confined nature of the Floridan Aquifer produces artesian conditions, but no ill effects have been noted to date. St. Augustine desires to grow in a compact and orderly fashion and provide centralized water services as necessary. The City will continue to sensibly plan for expanded needs of the existing water plant to provide adequate utilities.

Current and Projected Water Needs

This section will be updated with the Infrastructure Element.

Background

Current Demand

Water Quality

Regional Water Supply Policies

The City of St. Augustine participates in the regional water supply planning process led by the SJRWMD. In 2005, the SJRWMD adopted its first water supply plan. The current version specifically calls for increased efficiency in water use and strict regulation to ensure that Florida's water supply will adequately serve the anticipated population. St. Augustine will participate in regional water supply planning by partnering with the SJRWMD and other agencies to ensure the quality and quantity of water is available to future Florida residents. Several of the City's water conservation measures are directly related to the SJRWMD Water Supply Plan.

In addition to regulation, the SJRWMD has developed models for landscape ordinances and public awareness campaigns that can be adopted by its constituent jurisdictions. St. Augustine already has policies in place to encourage water wise and Florida friendly landscaping. When the City's Land Development Regulations are revised, the model landscape ordinance may be incorporated to provide a more robust and comprehensive approach to water conservation through landscaping.

Another regional issue of particular concern to St. Augustine is the designation of St. Johns County as a PWRCA. These are areas where existing and reasonably anticipated sources of water and water conservation efforts may not be adequate to supply water for all existing legal uses and anticipated future needs and/or to sustain the water resources and related natural systems. The SJRWMD will continue to address the issue of Florida's water supply from both the conservation and alternative source perspectives. The City will coordinate with the SJRWMD, St. Johns County, and other regional partners and will adopt updated water conservation policies and programs as appropriate.

Conservation Strategies

Rivers and adjacent marshlands and open space help shape the form of the City through scenic vistas, and the protection of environmentally sensitive areas for aesthetic, public safety, ecological and economic purposes is important. Historic preservation and recreation and open space complement urban development by meeting the community's need for active and passive recreation, as well as protecting valuable natural resources, and reinforcing a preservation mindset for the built and natural environment.

The largest section of recreation and open space can be attributed to Anastasia State Recreation Area. The Recreation Area consists of 1,533 acres, of which approximately 547 acres are within the city limits. The park provides 139 camp sites, 3 designated picnic facilities, 3 playground areas, a nature trail, bicycle paths and over four miles of beaches. Popular activities include fishing, swimming, surfing and hiking. Outstanding natural features include a wide beach and sand dune area, a lagoon bordered by tidal marshes and a hardwood forest of oak trees.

Boating and fishing are the major recreational uses of St. Augustine waterways. Thus, facilities that cater to those interests, such as boat ramps and marinas, will remain an important component of the City's recreational options.

Natural Resources

The citizens of St. Augustine have included protection of natural resources as part of their vision for the future. Awareness of environmental issues affecting the City are even more important, specifically through previous comprehensive planning and visioning processes. As a result, there is a greater understanding of the delicate balance between economic development and environmental stewardship and the ecological impacts of land uses. Policies and regulations that appropriately preserve or conserve valuable natural resources, while allowing for orderly economic growth should continue to be implemented. In addition, complementing these strategies with a strong commitment to maintaining working partnerships with citizens, agencies and organizations, will add important new dimensions to an increasingly comprehensive approach to environmental conservation in St. Augustine. The City's perspective on resiliency and sustainability help to raise awareness for environmental protection and impacts of development on environmentally sensitive areas.

Information and Technology

Effective conservation requires that we know what resources exist, where they are found, and in what condition. The identity and geographical distribution of water resources, natural communities and species, important open spaces, become among the most important information needed for preservation efforts to succeed. Historically, St. Augustine has not had the resources to perform detailed surveys of the City's natural resources. However, in recent years St. Augustine has started to accumulate this information. In addition, St. Augustine is utilizing Geographic Information System (GIS) technology when practicable. The goals, objectives, and

policies call for continued data acquisition and mapping of important environmental resources in the City. This information will help citizens, planners, and state and local government officials understand the impacts of growth management decisions on natural resources.

Education and Outreach

Education and outreach is the most important natural resource protection strategy. Local officials cannot make informed decisions about land uses in natural resource areas if they do not understand the relationship between land uses within resource areas and environmental quality. Education can nurture appreciation of St. Augustine's natural resources and bring about cooperation and voluntary actions to protect the environment. Therefore, it is a goal to inform citizens and local leaders about the values, function, and protection needs of natural resources.

As part of the commitment to environmental stewardship, the City must provide St. Augustine's landowners the tools to protect natural resources while still maintaining their economic viability. This includes disseminating and providing technical assistance on the implementation of best management practices (BMP) for topics such as natural landscape, landscape fertilization, impacts on adjacent marsh areas, and stormwater management. BMP, when properly implemented, may provide effective protection without the need to implement new regulations.

Intergovernmental Coordination

To ensure that the City's resources are protected and managed appropriately, it is imperative that the appropriate state, regional and local land planning agencies, environmental agencies and service providers coordinate and provide accurate information and recommendations to decision makers so that full consideration is given to environmental issues when making land use decisions.

Incentives and Land Acquisition

Land acquisition is currently recognized as one of the best ways to protect natural resources from land use practices that reduce environmental quality. In order to be effective, acquisition must be accompanied by proper management that preserves and, where necessary, restores the natural functions and conditions of the land.

Energy

In 2008, the Florida House of Representatives passed H.B. 697, which added green components to building code standards. H.B. 697 revised provisions authorizing the use of solar collectors & other energy devices, requirements for the future land use element of the local comprehensive plan to include energy-efficient land use patterns and greenhouse gas reduction strategies, revised eligibility requirements for rebates under Solar Energy System Incentives Program, and expanded required codes to be included in Florida Building Code updates.

Additionally, H.B. 697 set forth that the future land use element of a local comprehensive plan shall include energy-efficient land use patterns and greenhouse gas reduction strategies. The Energy Conservation map depicts three forms of energy conservation/greenhouse gas reduction strategies: *carbon sequestration, public transportation, including alternative modes of transportation and bicycle/pedestrian pathways.*

Vegetation, soils and wetlands are widely recognized as terrestrial carbon sinks. Carbon sinks facilitate either the net removal of carbon net emissions from the atmosphere or the prevention of carbon net emissions from the terrestrial ecosystem into the atmosphere. As a result, all wetlands are identified as carbon sequestration areas, and should help to alleviate concentrations of greenhouse gas emissions.

Public transportation, alternative modes of transportation and bicycle/pedestrian routes fall under alternative transportation methods. By using an alternative method of transportation, residents can reduce carbon emissions. Reductions in carbon emissions are realized through reduced traffic congestion and energy consumption.

Other programs that help to reduce energy consumption and protect limited resources are the Florida Residential Retrofit program, the Florida Water Star program, the U.S. Environmental Protection Agency's Energy Star program, and the St. Johns River Water Management District's Waterwise Landscaping program.

The Florida Residential Retrofit program is currently being undertaken by the State. This program focuses on the retrofitting of older homes to become more energy efficient to reduce energy use. The program will offer incentives for homeowners that have an energy audit and make sufficient improvements to capture at least a 20% improvement in their home energy efficiency.

Like many other cities and counties in Florida, St. Augustine understands the need to consider energy conservation as it plans for the future. There are many options for energy conservation including site selection criteria, performance standards, infrastructure design, open space requirements, and building codes. St. Augustine will evaluate these options as the Land Development Code is revised and implement the strategies with the best opportunities.

As discussed in the Future Land Use Element. The City's strategies related to the reduction of energy use and green house gas production relate to addressing the historic downtown, new development and preserving the wetland areas. Through downtown rehabilitation and revitalization strategies the City will encourage retrofitting older buildings with updated and more energy efficient options, reusing these older buildings and providing opportunities for "infill" development to encourage compact development. The City will also encourage the reuse and redevelopment of outlying commercial areas to promote connectivity and compact development. Additionally, the City will consider addressing required parking for old and new development. This can be accomplished as the City revises its land development code after the revised Comprehensive Plan is adopted, and may include increased and Florida friendly landscaping requirements.

New construction and development will be required to meet where feasible, any new energy efficient construction techniques, or green building techniques, and the City will promote “renewable ready” buildings and sites. Mixed-use and cluster developments will help to control land use issues by increasing densities, proximity, and diversity of land uses. The City’s future land use map series also illustrates the potential open spaces by the extent of Open Land (Conservation), floodplains and wetlands and surface waters within the City. The City has not quantified its production of green house gases or level of existing green house gases. Given the City’s wetland areas, and current population, the City assumes its level of green house gases is relatively low; however the City will participate in appropriate baseline, or general data gathering efforts to establish measurable objectives. This will help to determine the best approaches to maintain or reduce development impacts.

Land Use:

This section will be updated with the Future Land Use Element.

Existing Land Use:

Existing Shoreline Uses:

Existing land use within the Coastal High Hazard Area (CHHA) of St. Augustine is predominantly vegetative cover. The built environment is primarily composed of land uses designated as commercial or residential.

The majority of commercial land uses located on existing shoreline is located along the San Sebastian and Matanzas Rivers. Parcels line Ponce de Leon Boulevard, San Marco Avenue and Anastasia Boulevard.

Existing residential land use on shorelines are scattered throughout the City. The largest contiguous portion is adjacent to the commercial districts on Anastasia Boulevard, east of the Matanzas River. Other residential areas are on the west side of the San Sebastian River and north of King Street.

Port Authority:

The City of St. Augustine is within the boundaries of the St. Augustine Port, Waterway and Beach District, governed by the St. Augustine Port, Waterway and Beach Commission. The Commission has the authority to acquire property, construct facilities, maintain waterways, charge fees, borrow money, issue bonds, levy taxes and promote the Port.

St. Augustine separates the northern and southern portions of the Guana Tolomato Matanzas National Estuarine Research Reserve. Vessels using the Intracoastal Waterway are in direct contact with over 60,000 acres of publicly opened uplands, tidal wetlands, as well as lagoons’ and offshore seas.

Until the early 1990s, major issues revolved around the maintenance of the St. Augustine Inlet. A Master Plan was completed in 1993 and was subsequently revised and updated in 2004. The plan identified a number of other areas in which the District should be involved, such as, becoming a funding source for a number of important projects, among them: the removal of derelict boats, boat ramp feasibility studies, offshore artificial reefs, navigational guides to St. Augustine Waterways, installation and maintaining channel markers in Salt Run, harbor patrol in cooperation with the City of St. Augustine Police Department, development of a comprehensive Inlet Management Plan, boat mooring issues, and identifying problems and rebuilding the Matanzas Bay seawall.

Demand for Future Shoreline Uses:

The demand for future shoreline uses will be limited because a vast majority of space that can accommodate future growth is limited to undeveloped upland areas, many of which do not have direct access to the water. The City has two (2) undeveloped upland areas that are expected to build up according to the Future Land Use Map.

Upland areas adjacent to SR 312, to the east of the Matanzas River are expected to become a commercial corridor with residential uses adjacent to this corridor. Other shoreline areas that are subject to future development are upland areas along the San Sebastian River. Although most upland areas have already been developed, sections of infill and redevelopment provide an opportunity for increased residential and commercial development. Existing wetlands will remain intact throughout the City.

Swimming Beaches:

According to the Florida Land Use and Cover Classification System from 2004, the City of St. Augustine has approximately 1.6 miles of swimming beaches within city limits. All of the available swimming beaches are located in annexed lands from Anastasia State Recreation Area along the Atlantic Ocean.

Although the City has 1.6 miles of swimming beaches, residents have the ability to access several additional miles in the Bird Island Sector of Anastasia State Recreation Area, which runs north to the St. Augustine Inlet. Other swimming beaches that residents can access are located in the Vilano Beach area. Swimming beaches start at the St. Augustine Inlet and run north along S.R. A1A through St. Johns County, as well as, south through St. Augustine Beach proper, to the southern boundary of the County.

The City of St. Augustine does not have any plans for the future development or acquisition of addition swimming beaches.

Harbor:

The City has developed a Harbor Management Plan, released in December of 2009, which aims at providing residents and visitors with shore side amenities to accommodate the needs of as many responsible, considerate boaters as possible while protecting environmental resources, navigational access and the property of others. The Harbor Management Plan specifies rules and regulations, current facilities, communication procedures, and guidelines to protect the environment. Additionally, the City has a municipal marina fund that is discussed in further detail in the Capital Improvements Element.

The City currently manages and operates three mooring fields (Menendez, San Marcos and Salt Run) with a total of 165 moorings sites. Mooring Fields have been sited in the deepest parts of the Harbor. At this time, the Harbor Management Plan does not discuss anticipated future needs. This section will need to be updated by the City of St. Augustine as the Harbor Management Plan is revised in the future.

Marinas:

Just south of the Historic Bridge of Lions in the City's historic district, is the St. Augustine Municipal Marina. The Marina currently has 96 slips for vessels up to 200 feet, and provides several amenities that are outlined in the St. Augustine Harbor Management Plan. There are also 110 moorings available with tender service daily.

The Harbor Management Plan states that the City of St. Augustine Marina shall provide the following amenities to the Vessels using the City of St. Augustine Marina as part of the User License Agreement: sewage pump-out, limited launch service (for long term renters), dinghy docks, water, trash disposal, showers and bathrooms. The Marina also offers the following services at their published rates: fuel, laundry, oil and a ship's store.

The St. Augustine Municipal Marina participates in the Florida Department of Environmental Protection's Florida Clean Marina Program. "The Florida *Clean Marina* Program is a voluntary designation program with a proactive approach to environmental stewardship. Participants receive assistance in implementing Best Management Practices through on-site and distance technical assistance, mentoring by other Clean Marinas and continuing education. To become designated as a Clean Marina, facilities must implement a set of environmental Best Management Practices (BMP) designed to protect Florida's waterways. These BMP's address critical environmental issues such as sensitive habitat, waste management, storm water control, spill prevention and emergency preparedness. Designated facilities and those facilities seeking designation receive ongoing technical support from the Florida Clean Marina Program and the Clean Boating Partnership (FDEP, Clean Marina Program)."

In 2013 the marina expansion through the use of a breakwater or wave attenuator north of the marina was completed. This allows for the addition of several boat slips. An additional concern is that the City's relatively shallow and narrow waterways and its extensive network of salt marshes severely limit its capacity for new marinas.

There are several private marinas located within the city limits. Two (2) near the downtown, one (1) directly across from the City marina, and another in Salt Run. Additionally, there are approximately eight (8) other marinas, and other marine uses along the San Sebastian River within the City that are also considered to be within the City's Working Waterfronts area.

Boat Ramps:

The City of St. Augustine has two public saltwater boat ramps; one sited at Vilano Boat Basin just west of the St. Augustine Inlet and one sited at Lighthouse Park on the west side of Salt Run, south of the Inlet.

The Vilano Boat Basin is located west of the Bridge on S.R. A1A. This boat ramp location allows for direct access to the confluence of the Matanzas and Tolomato Rivers, as well as to the Atlantic Ocean through the St. Augustine Inlet to the east. Amenities at the Vilano Boat Basin are 3 boat ramps, 2 docks with accompanying floating docks, parking, a restroom and concessions building, and a picnic pavilion.

The Lighthouse Park Boat Ramp is located at Old Beach Road and Lew Boulevard, on the west side of Salt Run. This boat ramp provides direct access to shellfish beds in the southern extent of Salt Run and to the confluence of the Matanzas/Tolomato River and St. Augustine Inlet to the north. Amenities at Lighthouse Boat Ramp are 2 boat ramps, tables, grills, a floating dock, parking, and adjacent park facilities.

In addition to the boat ramps located in St. Augustine, local residents have the opportunity to access county and private boat ramps along the Intercoastal waterways adjacent to the City. There are several public and private boat ramps located along the Tolomato River to the north and Matanzas River to the south.

Commercial Fisheries Facilities:

City officials adopted Ordinance 84-45 prohibiting additional seafood processing plants in the City, therefore no future sites are warranted for such facilities.

Boat building and boat repair businesses have had a rich and varied history in the City. Historically most of the boat building has been for fishing vessels. Since the abundance of fisheries resources is cyclical, local facilities have prospered and declined accordingly. Commercial fisheries facilities are currently in a moderate to low period of activity, but are an established industry. No major new commercial fishing facilities are anticipated, the recreational boat builders have also closed. The former Luhrs plant on the west side of the San Sebastian River is now developing as a mixed use project, including a range of water dependent and commercial uses.

Pollution Sources:

Pollution is an undesirable by-product of mankind's use of the environment. Activities such as heavy manufacturing, waste disposal, and automobile usage are generally thought of as major polluters. Many other uses create both point and non-point sources of pollution as well. There are several agencies at all levels of government that regulate and oversee activities for the specific reason of mitigating the harmful effects of pollution.

Conclusion

The City's updated data and analysis will help conservation efforts related to the entire spectrum of land use and environmental needs within the City.

Coastal Management Element

Chapter 163.3177(6)(g) F.S.

Introduction

Since 2011 the perspective on the environment and the impacts of human development have both expanded and changed.

As potential development pressures increase, the need for protection and management of the City's natural, and historic resources will increase. The identification of the types of resources, their location, and their significance to the residents of the City is necessary to outline goals, objectives, and policies intended to guide future growth, create protection incentives, and establish conservation guidelines for the use of natural resources in the area.

This environmental planning process is a continuously evolving one that responds not only to new discoveries about the importance of upland and aquatic habitats, but also to the changing needs and priorities of the citizens who share those areas.

Purpose

The role of the Coastal Management Element is to set forth principles, guidelines, standards and strategies to maintain, protect or improve coastal resources, wildlife, ecology, and adapt to new environmental realities in the face of potential population and development growth. The Coastal Management Element must work in harmony with the Future Land Use, Conservation, Transportation and Mobility, Recreation and Open Space, and the other elements of the Comprehensive Plan in ensuring environmental protection, limiting public expenditures in hazardous areas, and protecting against natural disasters, rising seas and the perils of flood. The updated Coastal Management Element provides an analysis of the City's coastal resources, and establishes policies that provide long-term protection and management of these resources, including the required perils of flood, and adaptation planning for sea level rise.

A community's natural resources are among its greatest assets. They warrant protection and enhancement not only for their ecological importance, but also for protecting against natural disasters, and rising waters in low lying coastal zones.

Background

The Coastal Management Element, is a required element of the Comprehensive Plan for the City because the city is in a low-lying coastal zone area. It addresses long range planning for the protection of St. Augustine's built and natural environments. The general quality, species, coastal zone resources and development protection of the City's resources are identified.

Quality of Coastal Zone Environment

St. Augustine includes high quality coastal areas. Anastasia State Recreation Area has many amenities that encourage interaction with the environment and the history of the area. One of the City's greatest assets are the scenic views of the rivers, the adjacent marsh areas, and the inlet.

Species Preservation

The Florida Fish and Wildlife Conservation Commission (FWC) created a 10 year management plan in 2016. This Plan, *Florida's Imperiled Species Management Plan 2016-2026*, as amended December, 2018, establishes a comprehensive, integrated approach for the conservation of state-listed species. It is a Plan that focuses more broadly on systems to protect more holistically the range of species listed.

Wildlife:

A variety of wildlife species including those associated with wetlands (saltwater marshes), uplands, estuaries and rivers can be expected to occur in habitats throughout the City. Mature undisturbed upland forests provide important habitat to forest birds. Coastal upland forests are particularly important to both spring and fall migration, as well as wetland habitats. Major undisturbed wildlife areas exist primarily within the Anastasia State Recreation Area and the area referred to as Fish Island and the few large tracts of undeveloped land in the north. However, the vast saltwater marshes surrounding the City also harbor significant wildlife populations, especially waterfowl and wading birds.

Endangered and Threatened Species:

St. Augustine harbors several species considered endangered or threatened by the U.S. Fish and Wildlife Service and the Florida Fish and Wildlife Conservation Commission. The reasons for the decline of these species vary, but generally all may be attributed to some degree of human interference or exploitation. The listed species in St. Augustine include: the Anastasia Beach Mouse, Gopher tortoise, Indigo snake, American Oyster Catcher, Least Tern, Little Blue Heron, Reddish Egret, Roseate Spoonbill, Tricolored Heron, Florida Pine Snake, Manatee, Right Whale, Sea turtles, and Bald Eagle.

In the case of the gopher tortoise, development of sandy uplands that typically contain their burrows has drastically reduced its ability to survive. The listing process for consideration of the gopher tortoise was initiated in May 2002 when Florida Fish and Wildlife Conservation Commission (FWC) staff introduced a petition to reclassify the gopher tortoise from a "species of special concern" to a "threatened" species. A 5-member biological review panel found that the species meets criteria (population size reduction) for classification as a threatened species. In June 2006, the Commission determined that listing the gopher tortoise as a candidate for threatened designation was warranted. The FWC's Gopher Tortoise Management Plan was

approved in September 2007. The overall goal of the management plan is to restore and maintain secure, viable populations of gopher tortoises throughout the species' current range in Florida (St. Johns County EAR)."

The Anastasia Island beach mouse is found along the coastal beaches in grass and sea oat habitat. Although a viable population has not been found within the city limits, there are two viable populations located near its eastern boundary, which are found on Anastasia Island, in the south at the Ft. Matanzas National Monument area and in the north at Anastasia State Recreation Area. Although there has not been a documented population in the city limits, the potential for the mouse still exists along the coastal dunes south of Anastasia State Recreation Area.

The manatee is not a permanent resident of the coastal waters of St. Augustine, but frequently passes through the area on its way north or south. State and Federal employees have reported seeing manatees entering or exiting the Intercoastal Waterway through the St. Augustine Inlet.

There are three (3) species of marine turtles that visit the beaches of St. Augustine for nesting purposes. The most common nesting turtle is the Atlantic Loggerhead, and less common are the Atlantic green and Leatherback turtle. The Florida Fish and Wildlife Conservation Commission "assesses nesting abundance and reproductive output by coordinating a network of state, federal and volunteer permit holders who monitor sea turtle reproduction on Florida's beaches. FWC establishes scientifically sound monitoring designs, provides training, resolves data collection problems, assesses data collection error rates, analyzes data trends, and serves as a clearinghouse for information on marine turtle populations and habitats (Endangered and Threatened Species Management and Conservation Plan FY 2008-2009 Progress Report)."

The Northern Atlantic Right Whale is the most endangered sea mammal that uses the coastal waters adjacent to the City of St. Augustine. The only known calving grounds are the waters off the coast of northeast Florida between December and March. The biggest threat to the whale is human induced in the form of vessel strikes and entanglement in fishing gear.

Unique Species:

A unique species present in St. Augustine is the little-known Sweadner's Hairstreak Butterfly. The Sweadner's Hairstreak, also known as the St. Augustine Hairstreak, was the subject of research by the University of Florida biologist Dr. Ted Emmel starting in the 1970's. The butterfly host tree is the southern red cedar (*juniperus silicicola*), which is often confused with the eastern red cedar (*juniperus virginiana*). Contrary to other reports, there are no naturally occurring eastern red cedar forests in the St. Augustine area.

The Sweadner's Hairstreak is considered very rare and local. The only known remaining populations occur in Jacksonville and St. Augustine. The butterfly feeds on the southern red cedar in the larvae stage, while the adults feed on nectar from flowers around the cedar. Research has shown that a mature cedar tree and surrounding vegetation will support three to four individual adults. The only known population in St. Augustine occurred near Lighthouse Park.

In 1986, City officials adopted Ordinance 86-61 to protect the butterfly habitat. The ordinance requires the planting of two southern red cedars for each southern red cedar cut down or destroyed.

Wildlife and Marine Areas of Special Concern:

Wetlands, primarily salt marshes and tidal flats, exist throughout the City and constitute the City's most important natural resource. Wetlands have several benefits but the two (2) most common are habitat for aquatic and terrestrial species, and flood prevention. Wetlands serve as important incubators for young aquatic life and as a substantial food source for migratory and wading birds.

The Anastasia Island area has the City's most diverse habitat. The area contains salt marshes of the Matanzas River system, as well as other special resources. This includes the City's only sea turtle nesting beach, the southern red cedar habitat of the St. Augustine Hairstreak butterfly, and approved shellfish harvesting area within Salt Run.

The presence of manatees in St. Augustine waters provides several challenges, particularly dealing with conflicts between boating activities and migratory paths of these protected species. Today, they are protected by the Florida Manatee Sanctuary Act (379.2431(2), F.S.) and are federally protected by both the Marine Mammal Protection Act and the Endangered Species Act.

In an effort to protect the species while still meeting the demands of the boating community, the Florida Fish and Wildlife Conservation Commission (FWWCC) has developed the Florida Manatee Program. Counties are encouraged to develop and implement Manatee Protection Plans. St. Johns County has a plan that was approved in September 2005. The City of St. Augustine is encouraged to work with St. Johns County in maintaining a Manatee Protection Plan that is approved by FFWCC.

The City has addressed manatee protection within the coastal waters through the Harbor Management Plan of 2009. Guidelines in the Plan require that all vessels shall observe the idle speed/no wake zone in and around the City of St. Augustine. Additionally, St. Augustine renters and guests shall acquaint themselves with the publications and warnings available from the Harbormaster regarding safe operation in waters frequented by manatees and to abide by all laws, ordinances, rules, and regulations governing the operation of watercraft in the presence of manatees.

Ecological Planning Principles

Coastal and Shore Protection Areas:

The City of St. Augustine does have shore protection structures such as revetments, groins, breakwaters, bulkheads, seawalls protecting certain areas of the city. However, major portions of the City are protected by natural barriers such as tidal marshlands, which can better absorb the impacts of standard tidal fluctuations and minor flooding events.

The St. Augustine Inlet has two jetties that protect its waters. The U.S. Army Corps of Engineers constructed the north jetty in 1941 and the south jetty in 1957. The north jetty is 1,500 feet long and constructed of timber piles, wakefield piling and rock. This north jetty is meant to act like a sand-trap groin. The south jetty is 3,044 feet long and is constructed entirely of rock. The south jetty is meant to deter shoaling within the inlet.

Beach and Dune Conditions:

The City of St. Augustine has approximately 1.6 miles of Atlantic Ocean beach frontage located to the south of Anastasia State Recreation Area. This area suffers from short-term erosion. FDEP's 2003 report on critical beach erosion classified four areas within the District as critical or noncritical erosion areas. "According to FDEP, for erosion problems to be critical there must exist a threat to or loss of one of four specific interests – upland development, recreation, wildlife habitat, or important cultural resources (St. Augustine Port, Waterways and Beach 2005 Master Plan). "The City of St. Augustine does not reside in one of these areas.

The north and south jetties protecting the St. Augustine Inlet are the major shore protection structures that shield St. Augustine.

Conservation Overlay Zones:

Generally, the City's environmental communities can be divided into three (3) areas: marsh and other environmentally sensitive areas waterward of the most restrictive jurisdictional line; transition zones (e.g., riverine to upland, edges of tidal creeks to upland); and upland areas with significant tree canopies. To address the special environmental needs or challenges within each of these generalized communities, the City has created three (3) "Conservation Overlay Zones."

Conservation Overlay Zones were originally established in the Comprehensive Plan for the City of St. Augustine to protect environmentally sensitive areas from development that could have a detrimental effect on the environment. The protection afforded by these zones is broad, extending from the conservation of water bodies and natural drainage features to the preservation of habitat for species that are endangered, threatened or of special concern.

The Conservation Overlay Zones have been established based on local environmental values, habitat sensitivity, intensity of development desired and federal, state and local laws. Constraints placed on the zones vary according to the types of effects that may result from development, free services that will be lost and loss of other natural values such as unique or endangered species habitat.

Conservation Overlay Zone 1:

It includes all beaches, shores and dunes seaward of the State's Coastal Construction Control Line, wetlands, brackish water and some habitat areas for species recognized as endangered, threatened, of special concern, or unique by federal state and local agencies. This zone includes the estuarine/riverine environments created by the San Sebastian and Matanzas Rivers and their tributaries.

Habitats in Zone 1 include tidal marshes; littoral zones along the rivers and tidal creeks; mud flats and sandbars; beaches and dunes; aquatic nursery areas; reefs; shellfish areas and other benthic habitat; tidal creeks; sea turtle nesting areas; and manatee use areas.

Environmental factors in Zone 1 include usually or periodically wet; protected by state, federal or local laws; wildlife nursery areas; fisheries resource areas; natural surge and storm buffer areas; significant recreational values; panoramas and vistas; brackish water, saltwater or salt spray adapted; and protected species.

Conservation Overlay Zone 2:

Zone 2 is the transition zone or buffer area adjacent to Zone 1 and sometimes between Zone 1 and Zone 3. The primary purpose of Zone 2 is to protect the functional integrity of Zone 1 and to protect Zone 3 from flooding due to extreme high water conditions.

Representative habitats in Zone 2 are transition zones from riverine to upland edges or tidal creeks to upland; transitions from marsh to upland transition; and transitions from beaches and dunes to uplands.

Environmental factors in Zone 2 include wet under extreme conditions; mixed high marsh to uplands species; mixed riverine to uplands species; and mixed beaches.

Conservation Overlay Zone 3:

Conservation Overlay Zone 3 is comprised of uplands and urban areas containing significant tree canopy and/or special flood hazard areas.

Limiting Development in CHHA

This section will be updated with the perils of flood section.

Natural Disasters

Add conversation related to recent storm experience.

Disaster Planning:

Disaster Planning encompasses both natural and man-made disasters. To address these concerns Florida Statute 252 orders the development and management of a County Comprehensive Emergency Management Plan (CEMP), which is required to be updated every two years.

“One of the primary responsibilities of the St. Johns County Department of Emergency Management is to develop a local emergency management plan. This plan addresses, as much as possible, all emergency response functions of local governmental departments and agencies, public officials, and other public and private organizations, during emergencies or disasters. The Department of Emergency Management in cooperation and coordination with local municipalities has achieved that objective by developing the St. Johns County Comprehensive Emergency Management Plan. This plan is designed to ensure that jurisdictions in St. Johns County can effectively prepare for, respond to and recover from emergencies and disasters. This plan was developed with input from all local government departments and agencies that play a pivotal and functional role in emergencies or disasters (St. Johns County Comprehensive Emergency Management Plan 2008).” Although this statement was written in 2008, it is still applicable today.

Hurricane Vulnerability Zones:

In 2006, the Florida Legislature approved House Bill 1359 (HB 1359). The bill defines the coastal high-hazard area as the area below the elevation of the category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.

Portions of the City of St. Augustine are located in the Coastal High Hazard Area (CHHA). Areas that are particularly vulnerable to a Category 1 storm surge are located along the San Sebastian and Matanzas Rivers, as well as coastal areas south of Anastasia State Recreation Area. Although there are substantial tidal marshes and wetlands that protect much of the City from standard flooding, land identified in the CHHA will be inundated by water from a Category 1 storm surge (Map X CHHA).

All areas outside of the designated CHHA in the City of St. Augustine are still vulnerable to storm surges produced by hurricanes larger than a Category 1. Because of the potential loss of life and property that accompany such storm surges, residents are advised to pay attention to storm advisories, watches and warnings. Additionally, all residents should evacuate the area when directed by emergency personnel.

Number of People Who Require Evacuation:

Evacuation is described as a process to withdraw from a place in an organized way especially for protection. Evacuation zones are based on the Northeast Florida Hurricane Atlas Series 1998 produced by the Northeast Florida Regional Council (NEFRC).

Most evacuations will be local in scope and an emergency response incident commander will initiate actions following a decision. In such cases, the actions will be coordinated and administered by emergency response officials using local resources in accordance with operational procedures.

Every resident in the City of St. Augustine is at risk from storm surge. Any resident that lives in the CHHA will be required to evacuate prior to a Category 1 storm landfall or when directed by designated emergency personnel. The remainder of residents outside of the CHHA will need to evacuate prior to a Category 2 storm landfall or when directed by designated emergency personnel.

Current and future population projections are provided in the table below.

Table X: Permanent Population Estimates and Projections

Year	City of St. Augustine Population	St. Johns County Population
2000	11,592	123,135
2010	12,975	190,039
Projected 2015	13,590	213,566
Projected 2018	14,021	238,742
Projected 2020	14,042	255,300
Projected 2025	14,790	295,800
Projected 2030	16,480	329,600
Projected 2035	17,980	359,600
Projected 2040	19,330	386,600

Source: Shimberg Center for Housing Studies; Bureau of Business and Economic Research, Projections including and after 2025 are based on a steady rate of 5% of the projected St. Johns County population

Number of People Who Require Evacuation Shelter:

Vulnerable populations that may require shelter during an evacuation are those people located in assisted living facilities (ALF) and hospitals. These facilities should already have special evacuation plans in place.

There are a total of 226 beds available in St. Augustine ALF facilities and 316 beds available at Flagler Hospital, and a new hospice facility. This includes approximately 662 people who may require special needs evacuation space.

Table X: HealthCare Facilities in the City of St. Augustine

Name of Facility	Address	Number of Beds
Assisted Living Facilities (ALF)		
Buckingham Smith Assisted Living Facility	169 Martin Luther King Avenue	36
Loving Care Living Facility	76 Bruen Street	8
Pavilion At Bayview	161 B Marine Street	69
Grafton House	168 Marine Street	20
The Allegro	1101 Plantation Island Drive S	46
Silver Treasures	3552 N Ponce de Leon Boulevard	47
Nursing Homes		
Samantha Wilson Care Center	161 A Marine Street	120
Hospital		
Flagler Hospital	400 Health Park Boulevard	316+hospice facility
Total		662

Source: Florida Agency for Health Care Administration, St. Johns County, 2016, City Planning and Building Department, 2019

Individuals in private homes and who need special assistance are asked to voluntarily register with the County and plans will be made to assist them. Special Needs Registration is coordinated and consolidated through the St. Johns County Department of Emergency Management. Special Needs Registration Forms are received from the St. Johns County Council on Aging, the St. Johns County Health Department, various Health Care and Home Health Agencies and other sources available.

The St. Johns County Special Needs Registration Program was created to preidentify and preplan for the needs of persons requiring assistance through registration and prior triage based on information provided by the client and the home health agency. All Special Needs Client information is on file with the Department of Emergency Management.

Upon receiving Registration Forms, each applicant is carefully triaged, taking various health issues into consideration, to insure proper placement and categorized into one of three groups.

- Low: Citizens requiring transportation to Public Shelters
- Medium: Citizens with special medical needs who are capable of transporting themselves to the Special Needs Shelter
- High: Citizens with special medical needs that need transportation to the Special Needs Shelter.

Each Citizen is then input into the St. Johns County Evacuation Assistance Database, which allows for easy reference of our Special Needs Registrants. Each client's registration form is also labeled / input with their Fire and Evacuation Zone to insure accuracy when specified areas are called to evacuate. After registration is complete, each client is notified by mail of their registration, shelter placement and a list of supplies necessary when evacuating to a shelter.

Hurricane Shelter Space Available:

Shelter space available in St. Johns County is identified in the County Comprehensive Emergency Management Plan (CEMP). Shelter space available to St. Augustine residents, as well as residents of St. Johns County is highlighted in the table below.

St. Johns County has a total of 7,500 primary shelter spaces; 1,000 pet shelter spaces, 5,204 secondary shelter spaces, and 500 special needs shelter spaces. This brings the total potential shelter spaces available in St. Johns County to 14,204.

Table X: Available Shelter Space in St. Johns County

Shelter Name	Shelter Address	City	Shelter Capacity	Shelter Retrofit Complete	Shelter Elevation	Shelter Category	Preferred Shelter
Primary Shelters							
Bartram Trail High	7399 Longleaf Pine Pkwy	St. Johns	500	Yes		5	Yes
Cunningham Creek Elem	1205 Roberts Road	St. Augustine	800	Yes	33.4	5	Yes
Creekside High School	100 Knights Lane	St. Johns	500	Yes			Yes
Durbin Creek Elem	4100 Race Track Road	St. Augustine	500	Yes		5	Yes
Fruit Cove Middle	3180 Race Track Road	St. Augustine	500	Yes		5	Yes
Hickory Creek Elem	235 Hickory Creek Trail	Jacksonville	500	Yes		5	Yes
Mill Creek Elementary	3750 International Golf Pkwy	St. Augustine	800	Yes	28	5	Yes
Osceola Elementary	1605 Osceola Elementary Rd	St. Augustine	800	Yes	40	3	Yes
Otis Mason Elementary	207 Mason Manatee Way	St. Augustine	800	Yes	41	3	Yes
Patriot Oaks Academy	475 Longleaf Pine Pkwy	St. Johns	500	Yes			Yes
Pedro Menendez High	600 SR 206 West	St. Augustine	500	Yes		4	Yes
Pet Shelters							
South Woods Elem	4750 SR 206 West	Elkton	500	Yes		5	Yes
Timberlin Creek Elem	555 Pine Tree Lane	St. Augustine	500	Yes		5	Yes
Secondary Shelters							
Allen Nease High	10550 Ray Road	St. Augustine	800	No	25	T/S	No
Gamble Rogers Middle	6250 US 1 South	St. Augustine	800	Yes		2	Yes

City of St. Augustine Conservation and Coastal Management Element
Draft Data and Analysis **August 20, 2019**

Hartley Elementary	260 Cacique Drive	St. Augustine	335	No	30	T/S	No
Julington Creek Elem	2316 Race Track Road	St. Augustine	600	Yes	10	T/S	No
Murray Middle	150 N Holmes Blvd	St. Augustine	189	Yes	35	3	No
Sebastian Middle	2955 Lewis Speedway	St. Augustine	800	Yes	9	T/S	No
St. Augustine High	3205 Varella Avenue	St. Augustine	800	Yes	28	2	No
Switzerland Middle	777 Greenbriar Road	Switzerland	800	Yes	30	5	No
Webster Elementary	420 N Orange Street	St. Augustine	80	Yes	25	3	No
Special Needs Shelters							
Freedom Crossing Academy	1365 Shetland Drive	St. Johns	200	Yes			Yes
Pacetti Bay Middle School	245 Meadowlark Lane	St. Augustine	300	Yes	19	5	Yes

Source: St. Johns County Comprehensive Emergency Management Plan 2016, City Planning and Building Department 2019

Evacuation Routes:

Evacuation routes, as defined by the Statewide Regional Evacuation Study Program (SRESP), includes roadways designated by county emergency management officials, in coordination with FDOT and NEFRC as official regional evacuation routes: roadways and roadway segments identified by the SRESP as routes used to interconnect the City designated evacuations routes; or routes used to interconnect evacuation routes between study regions. This includes major highways that are part of the regional and statewide network including primary (interstates and turnpikes), secondary (major arterials), and certain local roadways (minor arterials) which provide significant evacuation transportation capacity to move vulnerable populations to “points of safety”.

In the event of an evacuation, a significant portion of the coastal area will be ordered to evacuate. The ensuing effect on the County roadway network can be expected; several roadways will experience a high level of traffic congestion in the event of a Category 1 hurricane evacuation. In the event of a Category 4 or 5 hurricane, the entire area of the County east of I-95 would be in an evacuation area. As will be expected, the number of roadways experiencing congestion in the event of such an evacuation also increases.

Evacuation Times:

The Statewide Regional Evacuation Study used two distinct sets of analysis; one set of analysis for growth management purposes and one set of analysis for emergency management purposes.

Base Scenarios: these scenarios assume 100% of the vulnerable population evacuates and includes impacts from counties outside of the Regional Planning Council area. Base scenarios were designed for growth management purposes, in order to ensure that all residents that choose to evacuate during an event are able to do so.

Operational Scenario: Operational scenarios were designed to provide important information to emergency management personnel to plan for different storm events. These scenarios are different from region to region and vary for each evacuation level.

Clearance times were developed to include the time required for evacuees to secure their homes and prepare to leave, the time they spent by vehicle traveling along the evacuation route network, and the additional time spent on the road caused by traffic and road congestion. The four clearance times that were calculated as part of the evacuation transportation analysis include the following:

- *Clearance Time to Shelter:* The time necessary to safely evacuate vulnerable residents and visitor's to a "point of safety" within the county based on a specific hazard, behavioral assumptions and evacuation scenarios. Calculated from the point in time when the evacuation order is given to the point in time when the last vehicle reaches a point of safety within the county. Key points to remember for clearance time to shelter include:
 - All in-county trips reach their destination within the county
 - This definition does not include any out of county trips
- *In-County Clearance Time:* The time required from the point an evacuation order is given until the last evacuee can either leave the evacuation zone or arrive at safe shelter within the county. This does not include evacuees leaving the county of their own free will. Key points to remember for incountry clearance time include:
 - All in-county trips reach their destination within the county
 - All out of county trips exit the evacuation zone, but still may be located in the county.
 - This definition does not include out-of-county pass-through trips from adjacent counties, unless they evacuate through the evacuation zone.
- *Out of County Clearance Time:* The time necessary to safely evacuate vulnerable residents and visitors to a "point of safety" within the county based on a specific hazard, behavioral assumptions and evacuation scenario. Calculated from the point an evacuation order is given to the point when the last vehicle assigned an external destination exits the county. Key points to remember for out of county clearance time include:
 - The roadway network within the county is clear
 - All out of county trips exit the county, including out of county pass-through trips from adjacent counties
 - All in-county trips reach their destination
- *Regional Clearance Time:* The time necessary to safely evacuate vulnerable residents and visitors to a "point of safety" within the northeast Florida region based on specific hazard, behavioral assumptions and evacuation scenario. Calculated from the last vehicle assigned an external destination exits the region. Key points to remember for regional clearance time include:
 - The roadway network within the region is clear

- All out of county trips exit the region, including out of county pass-through trips for adjacent counties
- All in-county trips reach their destination
- Regional clearance time is equal to the largest out of county clearance time for a given scenario for any of the counties within the northeast Florida region

Post Disaster Redevelopment:

Existing and Proposed Land Use in CHHA:

Existing land use within the Coastal High Hazard Area (CHHA) of St. Augustine is predominantly vegetative cover. Wetlands and conserved open space buffer much of the developed land from intrusion of St. Augustine's many water bodies. The built environment is primarily composed of land uses designated as commercial, institutional or residential.

Major commercial land uses are located along Anastasia Boulevard, San Marco Avenue, and U.S. 1 in the western portion of the City. The largest institutional land uses are located in the central part of the City, with smaller parcels north of the Vilano Causeway. Residential developments are located throughout the CHHA. The largest contiguous residential land use is located adjacent to the commercial land uses on Anastasia Boulevard, with smaller residential neighborhoods being developed in upland areas to the south. There are several other St. Augustine neighborhoods in the CHHA located near the historic district of downtown and along the Tolomato/Matanzas, San Sebastian riverfronts.

Future land use in the CHHA remains relatively the same as existing land use. Anticipated development will take place in the remaining undeveloped upland areas. The largest portion of upland area that is anticipated to be developed is located near SR 312, east of the Matanzas River. A commercial corridor will line SR 312 and have residential developments that are adjacent to the commercial corridor.

Another area ripe for development are the subdivisions north of the city along the US 1 corridor and Lewis Speedway.

Structures with Repeated Storm Damage:

As of 2019 the City of St. Augustine has approximately 500 structures that have suffered repeated damage due to storm surge or a weather related event. This is documented by a submitted claim or claims to the National Flood Insurance Program (NFIP). All properties with filed insurance claims exceed 2,000 structures. It is assumed that there are additional structures that have been impacted by storms without filing an insurance claim. The number of additional structures impacted by recent storm activity may be as many as an additional 1,000 structures.

Ports

There is a Port and Waterway Authority. The city has an important proximity to the inlet, and the intercoastal waterway, but it is not an active port in the sense for shipping and commerce. Access to the ocean and the city marina is important for tourism, and some commercial fishing related to the City's remaining working waterfront.

Preserve Historic and Archaeological Resources

This item will be updated with the Historic Preservation Element.

Historic Preservation:

A small city by virtually any standard, St. Augustine nevertheless enjoys a national and even international reputation as the oldest continuously occupied community in the United States dating back to 1565. As a result, cultural resources such as buildings, sites, and districts and structures constitute a valuable part of the community.

Although many of these cultural resources are scattered throughout the City, the Future Land Use Map depicts specific area designated Historic Preservation. The Historic Preservation district is located in the central part of the City between the San Sebastian and Matanzas Rivers. Sections of the district run north and south of King Street with ample shoreline access to the east along the Matanzas River.

The Historic Preservation district is intended to provide primarily residential uses that will encourage the preservation and restoration of historic structures. This district is also intended to provide a mix of residential uses and compatible nonresidential uses that will maintain the historic ambiance and pedestrian scale of the district.

Much of the land depicted as Historic Preservation on the Future Land Use Map is currently residential, recreational, commercial or institutional. These existing land uses coincide with the anticipated land uses of the Historic Preservation district. Therefore, development impacts within the district should remain relatively low in the future

Resilience and Sea level Rise

This item will be updated in conjunction with the Conservation, Future Land Use, Infrastructure, and Intergovernmental Coordination Elements.

Conclusion



PERIL OF FLOOD WORKSHOP

OPPORTUNITIES TO IMPROVE COMMUNITY RESILIENCE THROUGH IMPLEMENTATION

JERRY MURPHY, I.D., ACP, CFM
RESEARCH ASSOCIATE

UNIVERSITY OF FLORIDA RESILIENT COMMUNITIES INITIATIVE

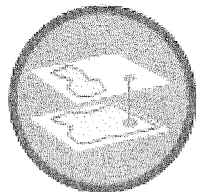
SESSION 3, JUNE 14, 2019

TAMPA BAY REGIONAL PLANNING COUNCIL

21st Century Adaptation Planning in Florida

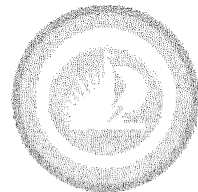
Southeast Florida Climate Leadership Summit and resulting regional compact (Palm Beach County, Broward County, Miami Dade County, Monroe County)

2009



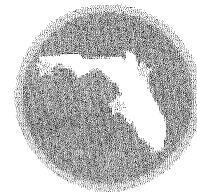
NOAA approved Florida Coastal Management Program's Section 309 Strategy; DEO led Community Resilience Initiative (CRI): Planning for Sea Level Rise

2013

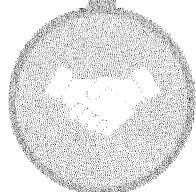


Peril of Flood Statute signed by Governor Rick Scott; local governments are required to incorporate sea level rise planning into redevelopment policies (6 ways)

2015

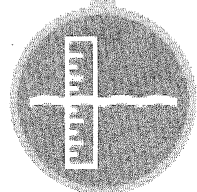


2011



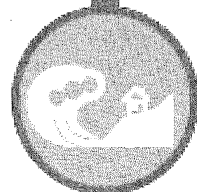
Florida Legislature passes the Community Planning Act (CPA); local governments first given the option of developing an Adaptation Action Area (AAA)

2013



City of Fort Lauderdale selected by DEO as project of special merit pilot; City Commission approved Adaptation Action Areas and 14 policies in 2014

2016



CRI Pilot localities complete their AAA plans: Escambia County, City of Clearwater, City of St. Augustine incorporate Coastal Vulnerability Assessment and Workshop

COMPREHENSIVE PLAN:
COASTAL MANAGEMENT ELEMENT
FLORIDA STATUTES § 163.3178

(2)(f) A redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. **The component must:**

2015 PERIL OF FLOOD F.S. §163.3178(2)(F) (2018)

(f) A redevelopment component that ~~which~~ outlines the principles that must ~~which~~ be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The component must.

1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas . . . from . . . related impacts of sea-level rise.
2. Encourage . . . the removal of coastal real property from [FEMA] flood zone designations.
3. Site development techniques and best practices [to] reduce [flood] losses [and] flood insurance claims.
4. [C]onsistent with, or more stringent than, the Florida Building Code and [FEMA] flood regulations 44 C.F.R. part 60.
5. Construction seaward of the coastal construction control lines must be consistent with chapter 161.
6. Encourage local governments to participate in the NFIP CRS to achieve flood insurance premium discounts for their residents.

(f) . . . The component must:

1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.

2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.

3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.

4. Be consistent with, or more stringent than, the flood-resistant construction requirements in the Florida Building Code and applicable floodplain management regulations set forth in 44 C.F.R. part 60.

5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.
6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for their residents.

STATE OF FLORIDA PDRP FLORIDA PDRP GUIDE



2nd revised
Edition
recently
posted

<https://floridadep.gov/fco/florida-resilient-coastlines-program/documents/post-disaster-redevelopment-planning-guidebook>

FLORIDA ADAPTATION PLANNING GUIDEBOOK

<https://floridadep.gov/fco/florida-resilient-coastlines-program/documents/adaptation-planning-guidebook>



Florida Adaptation
Planning Guidebook



Provides framework to develop or update an existing adaptation plan based on current Florida law, requirements and recommendations.

Appendix contains specialty topics, (cultural and natural resources), sample vulnerability assessments and adaptation plans.

VULNERABILITY ANALYSIS

Steps to Create Adaptation Plans

CONTEXT

- Assemble a steering committee
- Set guiding principles and motivations
- Establish planning area and describe geographic context
- Define public outreach approach and opportunities for community participation

ADAPTATION STRATEGIES

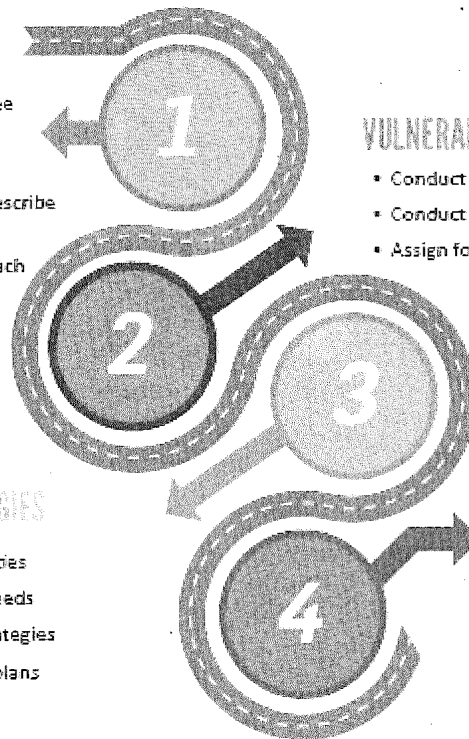
- Assess adaptive capacities
- Prioritize adaptation needs
- Identify adaptation strategies
- Integrate into existing plans

VULNERABILITY ASSESSMENT

- Conduct an exposure analysis
- Conduct a sensitivity analysis
- Assign focus areas

IMPLEMENTATION STRATEGIES

- Assess implementation capabilities
- Create a schedule of activities, actions, and actors
- Monitor and evaluate



Adaptation Planning: Road to Implementation

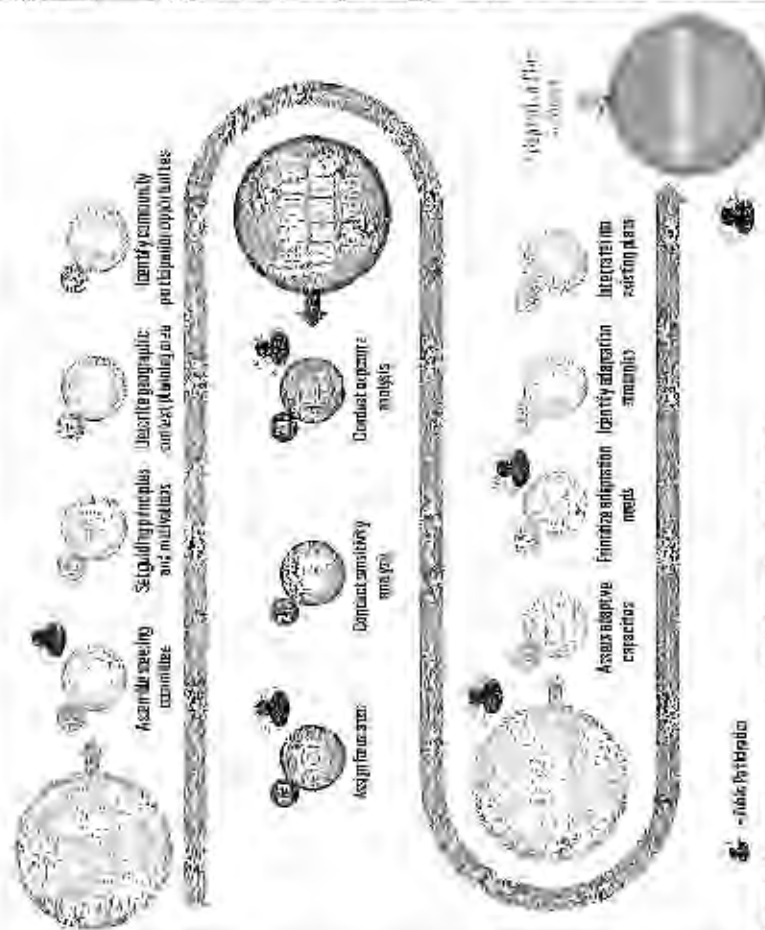


Figure 11. Public participation outcomes during the Adaptation Planning Process.

VULNERABILITY ANALYSIS

Sensitivity Analysis Elements	
Land	Sewage Plants
Property Value	Water Plants
Homes	Hospitals
Population	Evacuation Routes
High Social Vulnerability Population	Public Schools
Population of Color	Houses of Worship
EPA Listed Sites	Marinas
Roads	Ports and Airports
Railroads	Emergency Shelters
Passenger Stations	Acres of Future Land Use
Power Plants	Habitat Type

OUTLINE OF PDRP COMPONENTS: CAPACITY ASSESSMENT, VULNERABILITY ANALYSIS, AND FACILITATING INPUTS

- **Capacity Assessment**—a review that provides a basis for assessing the community's ability to implement the PDRP and identify any potential gaps in capacity.
- **Vulnerability Analysis**—provides estimates of disasters by creating scenarios of different impacts. These estimates guide long-term redevelopment strategies.
- **Facilitating Inputs**—address issues, develop strategies and actions, plan implementation, and pre-disaster public participation.

WHAT IS A VULNERABILITY ANALYSIS/ASSESSMENT?

The vulnerability analysis is meant to provide estimations of disaster scenario impacts that would affect long-term redevelopment so that actions to address those impacts can be anticipated and included in the Post-Disaster Redevelopment Plan (PDRP).

VULNERABILITY ANALYSIS

- to provide estimates of disasters by creating different scenarios that show impacts to long-term redevelopment in different areas.
- These impacts can then be anticipated and planned for in the PDRP.
- an overall assessment of every area or aspect that will be significantly impacted by a natural or manmade disaster. This is done using GIS to analyze how vulnerable each area is to such disasters, based on past trends. The vulnerability assessment is used as a guideline to create the tasks in the Action Plan.
- The HVA team should first use brainstorming to determine the potential disasters that the community as a whole may encounter. Disasters can be generally classified as either natural disasters or manmade disasters. The vulnerability assessment is different for every community, since some are more susceptible to disasters than others.

VULNERABILITY ANALYSIS/ASSESSMENT

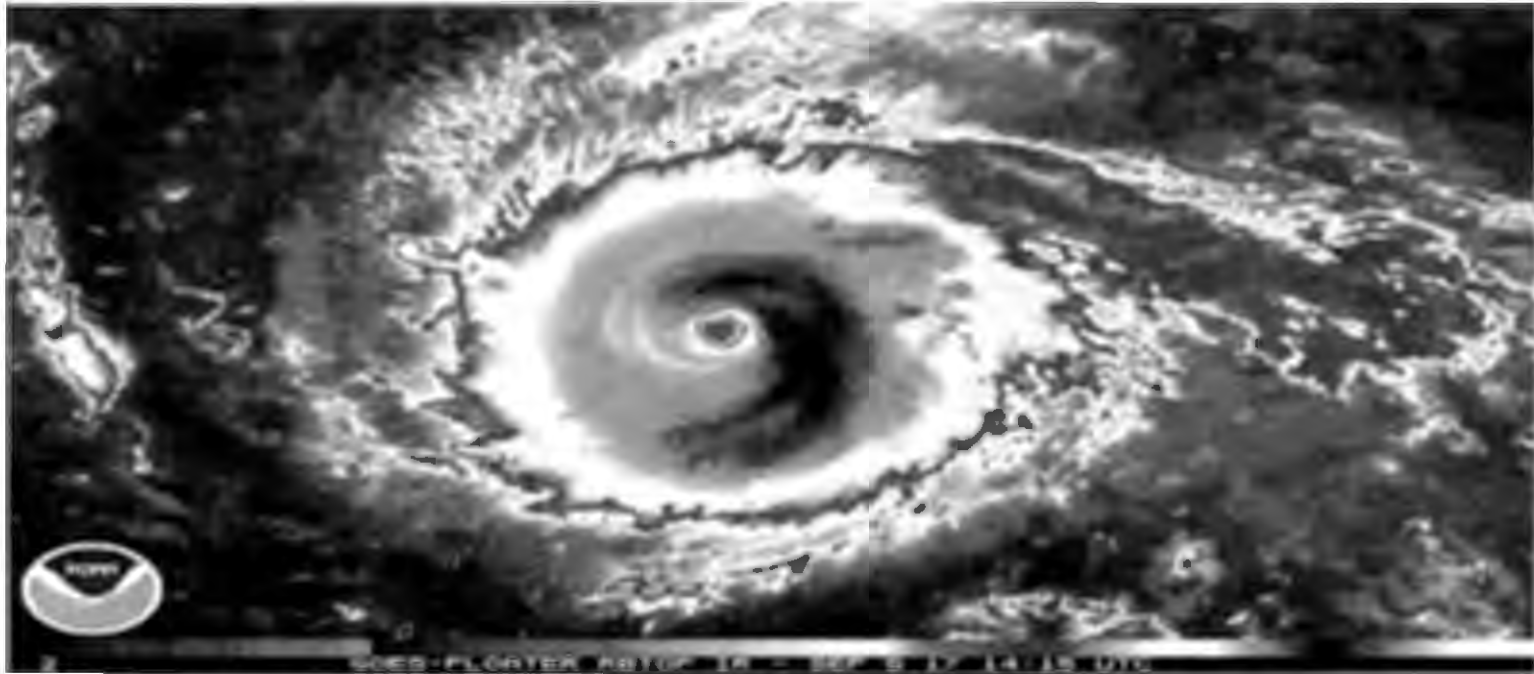
- Include information gathered from existing data sources: the Local Mitigation Strategy (LMS), Comprehensive Emergency Management Plan (CEMP), and the Comprehensive Plan. The LMS identifies the hazards to which communities are most vulnerable.
- Stakeholder expertise to develop the strategies.
- Develop hazard risk scenarios that include long-term impacts.
 - educate the public
 - create tasks to address these problems

VULNERABILITY ANALYSIS/ASSESSMENT

- Some of the most comprehensive PDRP's, include effective data about:
 - economic redevelopment initiatives,
 - financial impact analysis,
 - environmental or habitat impact analysis,
 - historical preservation assessment,
 - sea level rise inundation and increased storm surge analysis.
- Knowing when and how disaster will strike is still a highly uncertain science. Communities that have developed recovery plans in advance of a disaster can be well-positioned, whenever that inevitable time comes, to more quickly organize for recovery, engage knowledgeably with state and federal partners as well as citizens about the likely recovery needs and challenges, and ultimately achieve a more successful recovery for the entire community.

PLAN AMENDMENTS:

- Focus on vulnerable areas
- Monitor pumping stations
- Line waste water pipes
- Monitor/retrofit stormwater facilities
- Utilize parks for attenuation
- Work to address roads and public uses at risk



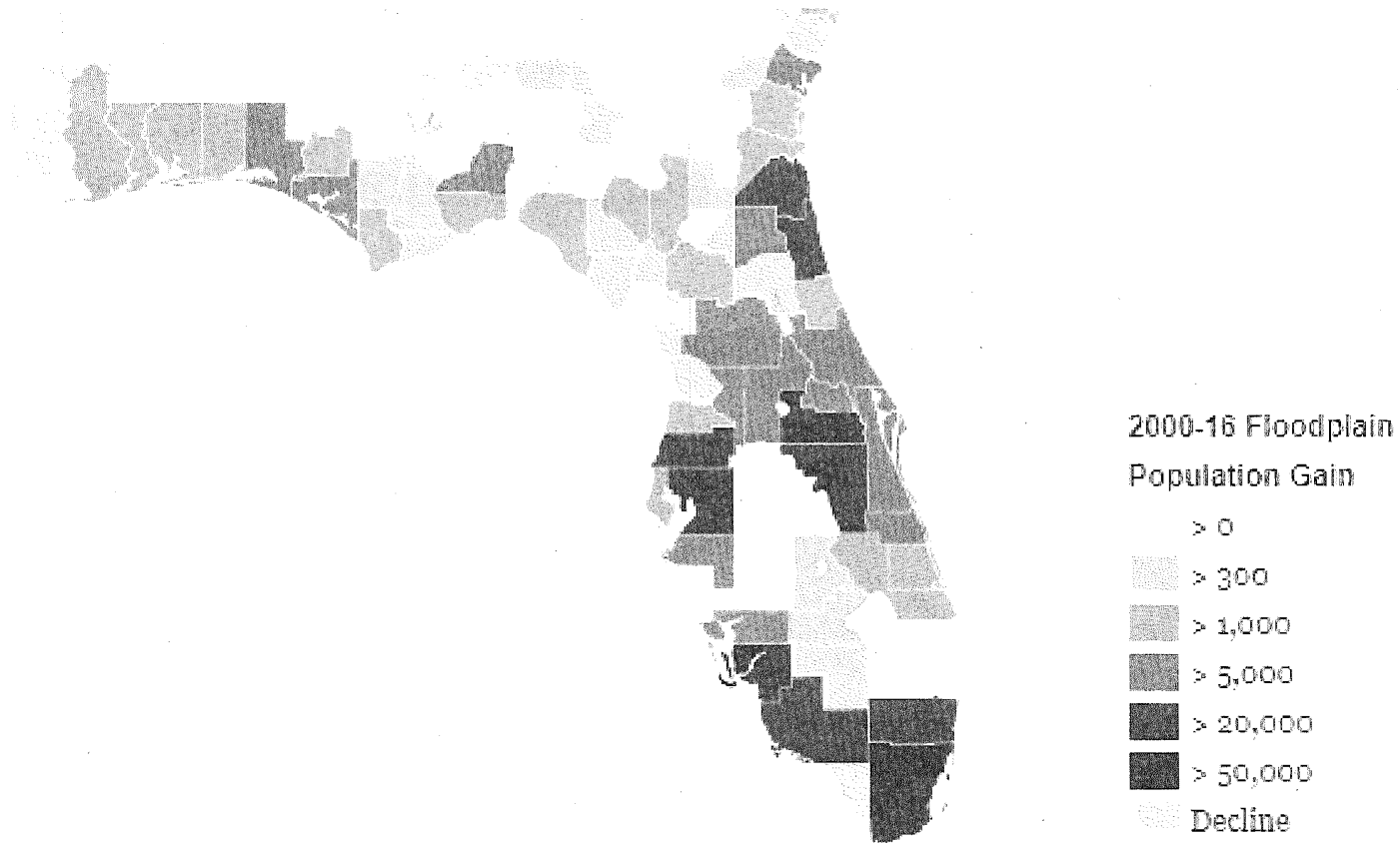
Comprehensive Planning for the Peril of Flood

*Dan Pennington and Dan Evans, Bureau of Community Planning
and Growth*

September 14, 2018



Florida's 2000-2016 Floodplain Population Gains



SOURCE: Governing analysis of standardized Census tract data from IPUMS NHGIS, University of Minnesota; FEMA NFHL data. From an article in *Governing The States and Localities*, *Risky Waters*, *Everyone knows it's a bad idea to build new development on flood-prone land. So why do we keep doing it?*, August, 2018

Use the Comprehensive Plan

Chapter 163, F.S., "Peril of Flood" community planning requirements.

The 2015 legislative requirements direct jurisdictions that have a Coastal Management Element as a part of their comprehensive plan to develop a redevelopment component with principles that must be used to eliminate inappropriate and unsafe development in the coastal areas - when opportunities arise.

DEO reviews these plan updates for compliance with the legislative requirements.

Use the Comprehensive Plan (continued)

The “Peril of Flood” requirements group into two parts. The first part is outlined below:

1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff and the related impacts of sea-level rise.

2. Encourage the use of best practices development and redevelopment principles, strategies and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency (FEMA).

3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.



The strategies for implementing a redevelopment component.

Programs, activities and land development regulations.

Use the Comprehensive Plan (continued)

The second part includes the following:

4. 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.
5. Require that any construction activities seaward of the coastal construction control lines established pursuant to section 161.053, F.S., be consistent with chapter 161.
6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by FEMA to achieve flood insurance premium discounts for their residents.

Easily adoptable
as policies that
reiterates these
requirements

Use the Comprehensive Plan (continued)

Incorporate a redevelopment component that:

- Provides direction through its principles, strategies and actionable steps and processes via adopted goals, objectives and policies (GOPs) and maps.
- Establish meaningful and predictable standards and provide meaningful guidelines for the content of more detailed land development and use regulations.
- Is based on relevant data and analysis.

Peril of Flood: Relevant Data and Analysis

A redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas - when opportunities arise. The component must:

- Include development and redevelopment principles, strategies and engineering solutions that reduce the flood risk in coastal areas that are the results of :

- High-tide events
- Storm surge
- Flash floods
- Stormwater runoff
- Related impacts of sea-level rise

Data Driven

Know where your vulnerabilities are

Due diligence data and analysis

Peril of Flood Data and Analysis

MAP SERIES: FLOOD HAZARD

Coastal Management Area

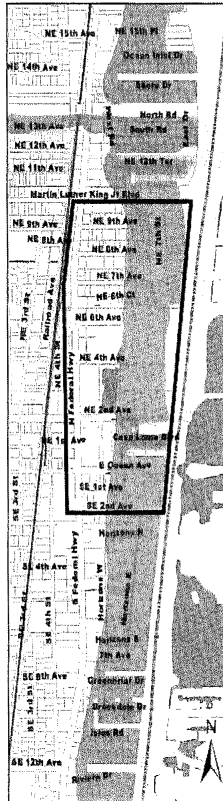
MAP 6: Top Flood Risk Area

Legend

- SFHA (A5) FEMA Flood Zone
- SFHA (A7) FEMA Flood Zone
- Coastal High Hazard Area
- Projected Inundation
Sea Level Rise at 1 foot
- City Boundary



0 400 800 1,200 1,600 Feet



MAP SERIES: FLOOD HAZARD

Coastal Management Area North

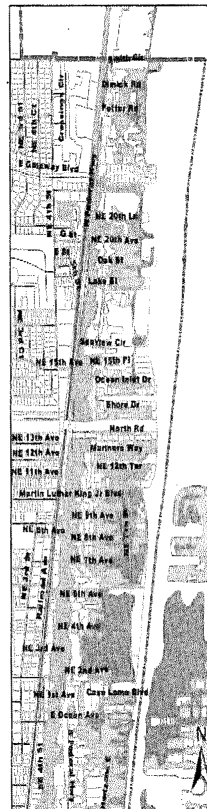
MAP 1A: Storm Surge Categories

Legend

- Storm Surge Zones
- 1 Coastal High Hazard Areas
- 2
- 3
- 4
- 5
- City Boundary



0 400 800 1,200 1,600 Feet



MAP SERIES: FLOOD HAZARD

Coastal Management Area

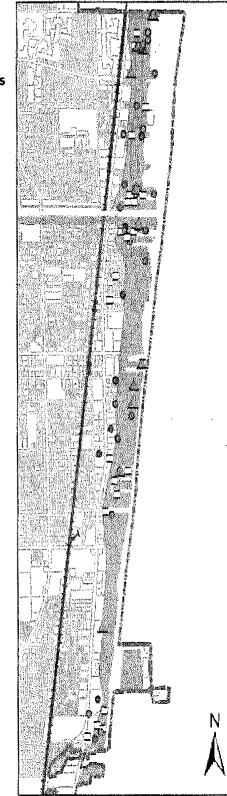
MAP 4: Historical Flood Insurance Claims

Legend

- Claims by Decade
- 1970's (10)
- 1980's (9)
- 1990's (27)
- 2000's (25)
- ▲ 2010-2015 (14)
- Special Flood Hazard Areas (SFHA)



0 1,000 2,000 3,000 4,000 Feet



Multiple data sets, when used together provide useful information for identifying the jurisdiction's vulnerable areas, locations and facilities.

Peril of Flood Data and Analysis (continued)

Available Data Resources

Mapping tools provided by the National Oceanic and Atmospheric Administration (NOAA), the University of Florida's (UF) GeoPlan Center and Florida Division of Emergency Management (DEM) are available on these web links:

- NOAA Coastal Flood Exposure Mapper <https://coast.noaa.gov/digitalcoast/tools/flood-exposure>
- NOAA, Sea Level Rise Viewer <https://coast.noaa.gov/digitalcoast/tools/slr>
- NOAA Sea Level Rise Data Download <https://coast.noaa.gov/slrdata/>
- UF GeoPlan Center, Sea Level Scenario Sketch Planning Tool <http://sls.geoplan.ufl.edu>
- Climate Central <http://www.climatecentral.org/>
- Florida Division of Emergency Management (DEM) Regional Evacuation Studies <https://www.floridadisaster.org/res>
- Florida DEM Storm Surge Zone Atlases <https://www.floridadisaster.org/planprepare/disaster-preparedness-maps/>

Peril of Flood Data and Analysis (continued)

Use Data and Analysis to Define Vulnerable Areas

Example: Titusville

Objective 2.1: The coastal storm area shall include the following areas:

- The Coastal High Hazard Area (CHHA), and
- Areas of the city projected to be inundated by sea-level rise as early as the year 2040 and through 2100 based on maps developed by the city using the University of Florida GeoPlan Center Sea Level Scenario Sketch Planning Tool.

The city used specific data taken from professionally accepted sources to define areas of concern.

A Redevelopment Component

The redevelopment component must:

- Encourage the use of best practices development and redevelopment principles, strategies and engineering solutions that will result in the removal of coastal real property from flood zone designations established by FEMA.
- Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.

A Redevelopment Component

Goals, Objectives, Policies (GOPs) and Maps

In developing community flood protection planning strategies, GOPs and maps often fit into one of these five approaches:

1. Procedural - Outreach and education, real estate disclosure.
2. Protection - "Hard" and "soft" structurally defensive measures.
3. Accommodation - Altering the design and use of structures to handle flooding.
4. Strategic Relocation -Incremental relocation development to safer areas.
5. Avoidance - Directing new development away from vulnerable areas.

A Redevelopment Component

GOPs and mapping can direct the elimination of inappropriate and unsafe development when opportunities arise. For instance, opportunities may include:

- The Local Planning Agency and land development code review committees.
- Comprehensive plan amendments.
- Comprehensive plan, evaluation and Appraisal Report updates.
- Infrastructure project proposals and capital improvement budgeting.
- Grant proposals and mitigative funding sources (e.g., BP funds).
- Post-disaster redevelopment funding and actions.
- The Local Mitigation Strategy (LMS) plan participation and plan updates.



A Redevelopment Component

Example: Boynton Beach

Policy 7.7.3 “The floodplain administrator/building official shall review all permit applications to determine whether proposed development sites will be reasonably safe from flooding. If a proposed development site is in a flood hazard area, all site development activities, ... all new construction and substantial improvements shall be designed and constructed with methods, practices and materials that minimize flood damage and that are in accordance with the city Flood Prevention Code.”

A Redevelopment Component

Example: Titusville

Policy 2.1.2: “The City shall prohibit the location of new hospitals, nursing homes and assisted living facilities in the Coastal Storm Area and the area inundated by a Category 2 hurricane as depicted by the SLOSH model, as reflected in the Sea Level Rise Vulnerability Assessment prepared by the East Central Florida Regional 1 Planning Council.”

Development Techniques and Best Practices

Objective and Policy Set: Titusville Example

Objective 3.2: The city's shoreline includes natural resources which shall be preserved from encroachment and development.

Policy 3.2.2: The city shall minimize the disturbance of natural shorelines which provide stabilization and protect landward areas from storm impacts, where feasible.

Policy 3.2.4: The city will maintain shoreline protection and erosion control by:

- Facilitating the installation and maintenance of native shoreline vegetation along appropriate areas of beach; and
- Considering hard structures, such as seawalls, only when alternative options are unavailable.

Note: The city is identifying the preferred use of natural system components to form a defense against storm impacts.

City of Port Orange

Post Disaster Opportunity - Strategic Relocation

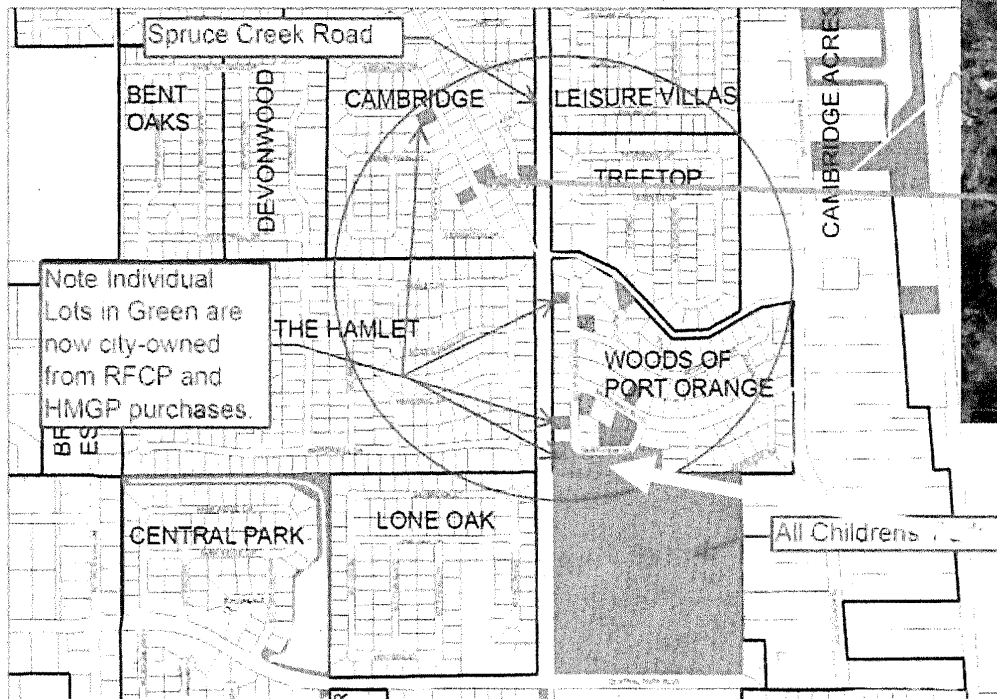


Figure 1: Various properties that were purchased



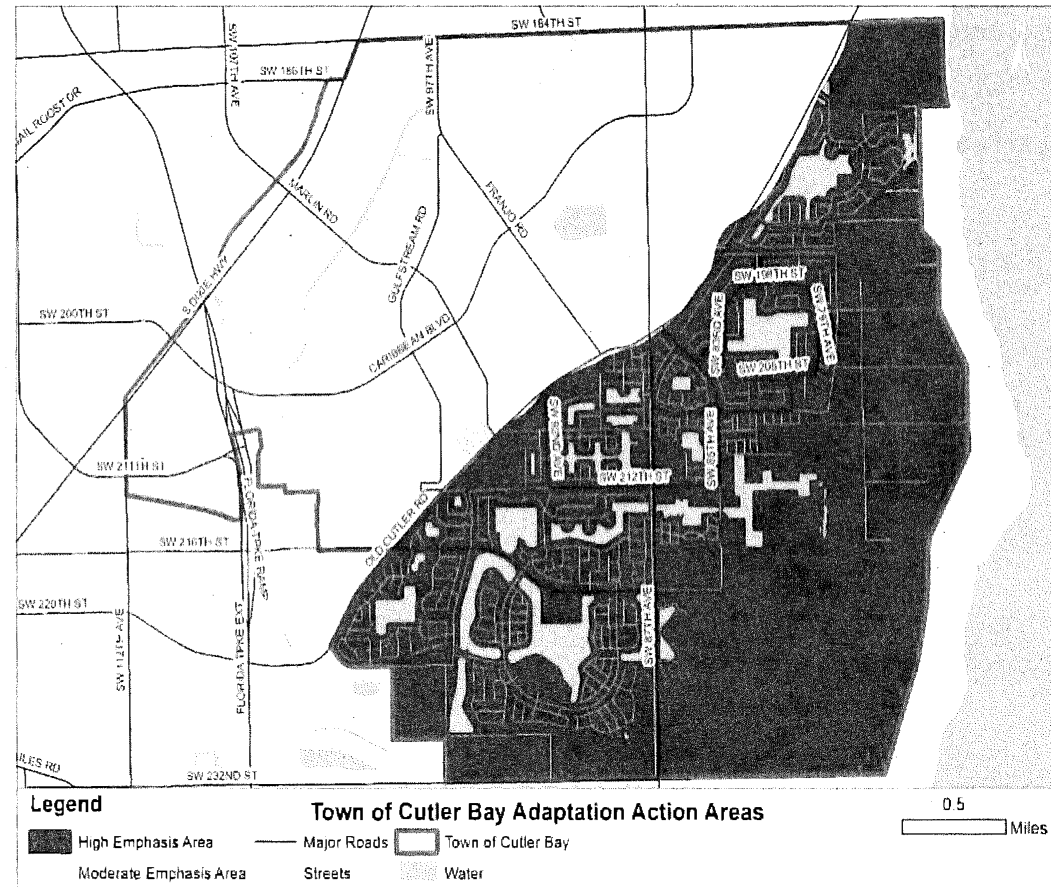
The community used FEMA funds for buyouts.

Adaption Action Area(s) (AAAs)

Exhibit CC-1. Adaptation Action Areas

A designation which identifies an area that experiences coastal flooding due to extreme high tides and storm surge and that is vulnerable to the related impacts of rising sea levels.

AAAs are for prioritizing funding for infrastructure needs and adaptation planning.



Accommodation and Protection



A green infrastructure approach turns a floodable area into a community asset.

Photo source: City of Tallahassee

Accommodation and Protection (cont.)

Cascade Park



Middle portion of the Cascades Park and Trail project which includes a public amphitheater.

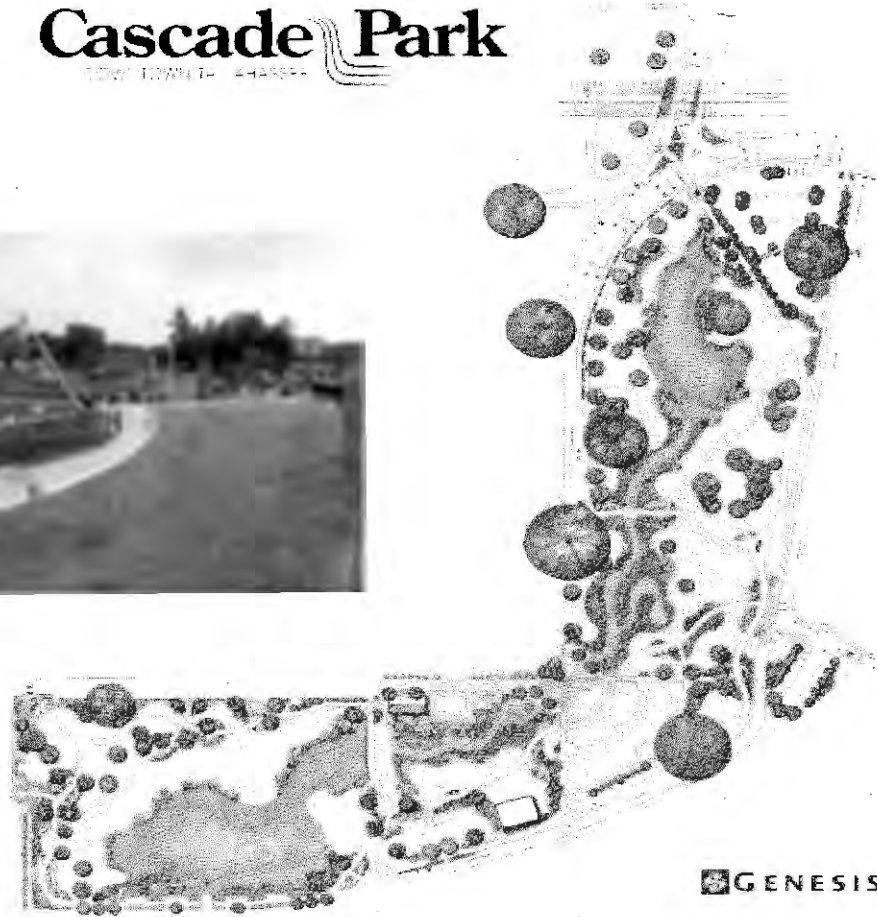
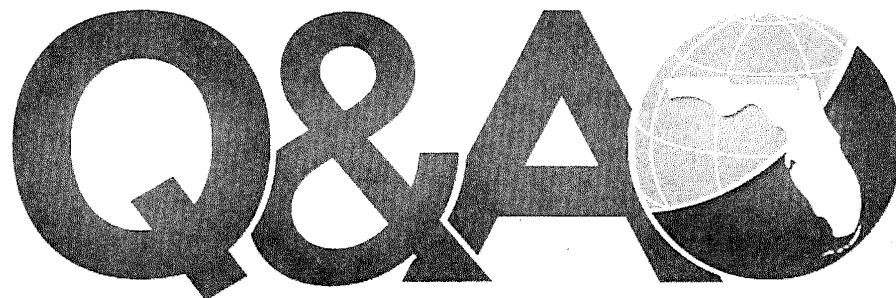


Photo and graphic source: City of Tallahassee

QUESTIONS



CONTACT



Thank You.

If you have questions or comments about this presentation or need to discuss a future project, please contact Dan Pennington.

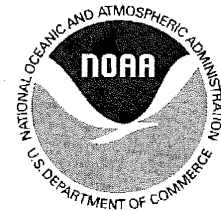
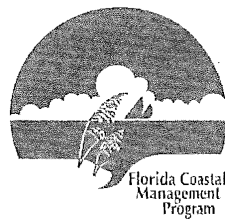
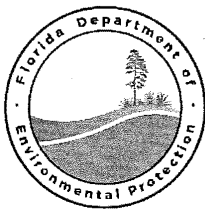


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Local Government Guide to Understanding the 2015 Florida Peril of Flood Act

Tampa Bay Regional Planning Council

June 2017



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The 2015 Florida Peril of Flood Act

On May 21, 2015, Governor Rick Scott approved the Committee Substitute for Committee Substitute for Senate Bill Number 1094, an act related to the peril of flood. The bill, introduced by State Senator Jeff Brandes of St. Petersburg, passed overwhelmingly in both chambers of the Florida legislature, with a unanimous 39-0 tally in the Florida Senate and an 89-26 vote in favor of passage in the Florida House of Representatives. The governor's signature enshrined the 2015 Florida Peril of Flood Act (CS/CS/CS/SB 1094 [2015]) into law (Laws of Florida 2015-69), effective July 1, 2015.

The 2015 Florida Peril of Flood Act covers three main topic areas. Generally, the Act:

1. Compels municipalities and counties in Florida's coastal areas to adopt goals, objectives, policies, and strategies into the coastal management element of the local government's comprehensive plan related to flood risks to real property and the built environment.
2. Requires surveyors and mappers to submit completed elevation certificates to the Florida Division of Emergency Management
3. Addresses several issues related to flood insurance, including flood insurance products offered by private insurers.

This report focuses solely on Item Number 1 above, which is the requirement for coastal communities in Florida to address flood risks related to high-tide events, storm surge, flash floods, stormwater runoff, and sea-level rise in the coastal management element of the local government comprehensive plan. Specifically, the 2015 Florida Peril of Flood Act outlines six (6) provisions related to flood risks that local governments must address in a redevelopment component that shall be included in the coastal management element of the comprehensive plan. The Act applies only to the jurisdictions in Florida that, pursuant to Section 380.24, Florida

Statutes, are required to have a coastal management element. The six comprehensive planning provisions are listed in Section 163.3178(2)(f), Florida Statutes as follows:

A redevelopment component that outlines the principles that must be used to eliminate inappropriate and unsafe development in the coastal areas when opportunities arise. The component must:

1. Include development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.
2. Encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property from flood zone designations established by the Federal Emergency Management Agency.
3. Identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.
4. 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.
5. Require that any construction activities seaward of the coastal construction control lines established pursuant to s. 161.053 be consistent with chapter 161.
6. Encourage local governments to participate in the National Flood Insurance Program Community Rating System administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for their residents.

The 2015 Florida Peril of Flood Act addresses flood risks to real property and the built environment. Flood-related human health and safety issues are not directly addressed in the 2015 Florida Peril of Flood Act. Mitigation of flood risks to human health and safety are covered in other sections of Florida statutes, particularly in those sections that outline the roles and requirements of local and state emergency management agencies and other public safety organizations. In contrast, the 2015 Florida Peril of Flood Act's requirements for local government comprehensive plans provide an increased awareness of the potential economic

impacts of flooding (loss of real property, losses related to structural damage, etc.), especially among local government planning and development services personnel that are charged with managing and regulating growth and land use within Florida's cities and counties.

Scenarios or Opportunities Where Inappropriate or Unsafe Development can be

Eliminated or Coastal Flood Risk Reduction Measures can be Implemented

Adoption of comprehensive plan goals, objectives, and/or policies that help to eliminate inappropriate or unsafe development or reduce coastal flood risks can help a local government to meet the requirements of the 2015 Florida Peril of Flood Act. Some example of these types of scenarios and opportunities are provided in this section.

Post-disaster Acquisition of Repetitive Loss Properties

Comprehensive plan policies may be developed that encourage local government acquisition of properties that the Federal Emergency Management Agency (FEMA) has identified as repetitive flood loss properties. Local governments may look to federal grant programs, such as the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) grants, or Community Development Block Grants (CDBG) as potential funding sources to help contribute to the costs of property acquisition for repetitive loss properties.

Post Disaster Redevelopment Plans (PDRP)

Post disaster redevelopment plans may identify target areas for development or redevelopment following a disaster such as a major flood or storm surge event. By identifying these areas in advance, the local government may direct development away from flood hazard areas and into areas that are less vulnerable to flood events.

Public Information and Outreach

The local government may encourage education and outreach to its residents and businesses, and to future potential residents and businesses, about the risks and costs involved with owning or leasing a structure in flood vulnerable locations. By doing so, the public may make informed decisions about where they live or the location where they have a business. By understanding the threat to public safety and the increased costs associated with locating in flood-vulnerable areas.

Principles, Strategies, and Engineering Solutions that Reduce Flood Risks in Coastal Areas

There are six requirements mandated by the 2015 Florida Peril of Flood Act for the redevelopment component of the coastal management element of the local government comprehensive plan. The first requirement listed in the Act, and now enshrined in Florida Statutes in Section 163.3178(2)(f), is the inclusion of “development and redevelopment principles, strategies, and engineering solutions that reduce the flood risk in coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.” This section of this report will outline the types of flood risk reduction principles, strategies, and engineering solutions that could fulfill this requirement.

Protect and Maintain Natural Flood Features

Natural resources provide flood protection, and it is important to preserve this type of protection to mitigate the impacts of flooding on an area. The Federal Emergency Management Agency (FEMA) has identified several natural resource protection measures that can be incorporated into coastal management element policies that would likely qualify as principles and strategies that reduce flood risks (FEMA, 2013) . These include:

- Protecting and enhancing landforms that serve as natural mitigation features (i.e., riverbanks, wetlands, dunes, etc.).
- Using vegetative management, such as vegetative buffers, around streams and water sources.
- Protecting and preserving wetlands to help prevent flooding in other areas.
- Establishing and managing riparian buffers along rivers and streams.
- Retaining natural vegetative beds in stormwater channels.
- Retaining thick vegetative cover on public lands flanking rivers

Preserve Floodplains as Open Space

The preservation of natural areas provides habitat and ecosystem benefits. In addition, open space preservation helps to mitigate flood risks. Some principles and strategies that can be incorporated as goals, objectives, and/or policies in the local government comprehensive plan include (FEMA, 2013):

- Developing an open space acquisition, reuse, and preservation plan targeting hazard areas.
- Developing a land banking program for the preservation of the natural and beneficial functions of flood hazard areas.
- Using transfer of development rights to allow a developer to increase densities on another parcel that is not at risk in return for keeping floodplain areas vacant.
- Compensating an owner for partial rights, such as easement or development rights, to prevent a property from being developed.

Limit or Restrict Development in Floodplain Areas

In areas where it is practical, limiting or restricting development in identified floodplains has the effect of reducing future flood losses (FEMA, 2013). The following are examples of

principles and strategies may be incorporated into the coastal management element of the local government comprehensive plan to help meet the requirements of the 2015 Florida Peril of Flood

Act. They include:

- Prohibiting or limiting floodplain development through regulatory and/or incentive-based measures.
- Limiting the density of developments in the floodplain.
- Requiring that floodplains be kept as open space.
- Limiting the percentage of allowable impervious surface within developed parcels.
- Developing a stream buffer ordinance to protect water resources and limit flood impacts.
- Prohibiting any fill in floodplain areas.

Adopt Policies to Reduce Stormwater Runoff

Reducing potential stormwater runoff mitigates flood losses (FEMA, 2013). Adoption of policies related to stormwater reduction principles and strategies will help the local government to comply with the 2015 Florida Peril of Flood Act. These include:

- Designing a “natural runoff” or “zero discharge” policy for stormwater in subdivision design.
- Requiring more trees be preserved and planted in landscape designs to reduce the amount of stormwater runoff.
- Requiring developers to plan for on-site sediment retention.
- Requiring developers to construct on-site retention basins for excessive stormwater and as a firefighting water source.
- Encouraging the use of porous pavement, vegetative buffers, and islands in large parking areas.

- Conforming pavement to land contours so as not to provide easier avenues for stormwater.
- Encouraging the use of permeable driveways and surfaces to reduce runoff and increase groundwater recharge.
- Adopting policies related to erosion and sedimentation control for construction and farming.

Flood Resistant Design and Construction Engineering Solutions as Identified in ASCE 24-14

Buildings and structures designed according to the standards identified by the American Society of Civil Engineers (ASCE) in the publication *ASCE 24-14: Flood Resistant Design and Construction* are better able to resist flood loads and flood damage (FEMA, 2015). Comprehensive plan policies based on these engineering solutions may be developed to meet the requirements of the 2015 Florida Peril of Flood Act. There are many engineering standards in ASCE 24-14 that apply to structures in Special Flood Hazard Areas. For buildings in FEMA-designated Flood Zone V and in Coastal A zones, some of these specific engineering solutions include:

- Buildings must be supported on piles, drilled shafts, caissons, or other deep foundations (including columns, and shear walls) and foundation depth must take into account erosion and local scour.
- Stem walls supporting floors and backfilled with soil or gravel are allowed in Coastal A Zones if designs provide for the effects of local scour and erosion.
- Walls designed to break away must not produce debris that is capable of damaging structures.

- Erosion control structures (bulkheads, seawalls, revetments) must not be attached to buildings or direct floodwater into or increase flood forces or erosion impacts on structures.
- Pools must be elevated, or designed to breakaway without producing damaging debris, or designed to remain in the ground without obstructing flow that causes damage. Pools must be structurally independent of buildings and structures unless pools are located in or on elevated floors or roofs that are above the design flood elevation.

The complete publication *ASCE 24-14: Flood Resistant Design and Construction* is available for purchase from the American Society of Civil Engineers website:

<http://www.asce.org/templates/publications-book-detail.aspx?id=6963>. Highlights of ASCE 24-14 may be accessed online through FEMA's website: https://www.fema.gov/media-library-data/1436288616344-93e90f72a5e4ba75bac2c5bb0c92d251/ASCE24-14_Highlights_Jan2015_revise2.pdf.

Site Development Techniques that may Reduce Losses to the Local Government and Property Owners Due to Coastal Flooding

The third requirement for the coastal management element of the local government comprehensive plan listed in the 2015 Florida Peril of Flood Act (Section 163.3178(2)(f), Florida Statutes) is to “identify site development techniques and best practices that may reduce losses due to flooding and claims made under flood insurance policies issued in this state.” The following are some examples of site development techniques that may be included in Peril of Flood Act-related comprehensive plan amendments. All of the techniques noted below are forms

of low impact development (LID), which utilize vegetation and natural features to minimize surface runoff and reduce flood risks.

Open Space Preservation

As stated previously in this report, open space preservation may help to mitigate flood losses. The Town of Longboat Key's Zoning/Land Development Code contains a section that requires preservation of open space in all residential planned unit developments (§158.069 - Open Space). This section of the Town's code states:

All residential planned unit developments shall preserve a minimum of 50 percent of the gross land area as open space. Of the required 50 percent open space, only a maximum of 60 percent of the total required open space acreage may be comprised of a golf course. Relative to nonresidential planned unit developments, all such developments consisting of tourist resort/commercial facilities shall provide a minimum of 50 percent of the gross land area as open space. Wetland and landlocked waterbodies may be used in calculating open space, as long as a minimum of 40 percent of the upland property is comprised of open space. In other types of nonresidential planned unit developments a minimum of 20 percent of the gross land area shall be preserved as open space. Wetlands and landlocked waterbodies may be used in calculating open space, as long as a minimum of 15 percent of the upland property is comprised of open space. For all mixed use planned unit developments, a minimum of 50 percent of the residential and 20 percent of the nonresidential gross land area shall be preserved as open space. In all of the above cases, parking areas and vehicle access facilities shall not be considered in calculating open space.

Setbacks and Buffers

Setbacks and buffers are commonly used by local governments to protect the long-term viability of natural protective features, such as floodplains, wetlands, and dunes (Florida Department of Community Affairs, 2005). These specified areas provide undisturbed land cover and reduce the impacts of construction and subsequent use of developed lands adjacent to natural protective features. Flood losses may be reduced by minimizing impacts to floodplains, wetlands, dunes, and other natural protective features within a community.

Landscape Retention Areas

Stormwater retention areas that are integrated into a site's landscaping provides the dual benefits of reducing flood risks and reducing the amount of harmful stormwater pollutants making their way into creeks, streams, rivers, bays, and other waterways (Florida Department of Environmental Protection and Florida Department of Community Affairs, 2002). This type of retention area maintains a site's hydrology while allowing stormwater to infiltrate into the soil or evaporate. Landscape retention areas in parking lot medians, along the edges of impervious surfaces, and at the base of buildings can be effective in reducing flood risks by reducing surface runoff while maintaining an aesthetically-pleasing look for the developed site.

Pervious Pavement/Porous Concrete

Pervious (porous) concrete pavement is a paving material containing void spaces that allows stormwater run through it and seep into the soils beneath the paved surface (National Ready Mix Concrete Association, 2011). Because stormwater flows through the pavement, surface runoff is reduced. Pervious pavement is generally not as strong as other concrete and asphalt paving materials, so it may not be suitable for all site applications. However, the risk of localized flooding may be reduced in those sites where the use of pervious pavement is applicable (Florida Department of Environmental Protection and Florida Department of Community Affairs, 2002).

Examples of Communities that have Implemented Flood Risk Reduction Policies and Measures

Broward County

Adopted into its comprehensive plan in 2013, the Broward County Climate Change Element identifies flood- and sea level rise-vulnerable areas and develops adaptation strategies for the built environment, natural systems, and green infrastructure. The climate change element contains policies that:

- Protect coastal investments and infrastructure.
- Maintain shoreline protection and erosion control.
- Works to make sea level rise-vulnerable areas more climate resilient by discouraging density increases and encouraging the use of adaptation and mitigation strategies.
- Calls for the designation of Adaptation Action Areas
- Encourages municipalities within Broward County to develop policies to improve resilience to coastal and inland flooding, salt water intrusion, and other related impacts of climate change and sea level rise.

The complete Broward County Climate Change Element may be accessed online here:

<http://www.broward.org/Planning/FormsPublications/Documents/Climate-Change-Element.pdf>.

City of Miami Beach

Miami Beach is often singled out in media reports and other information sources as a community that is already having to deal with the effects of sea level rise. “Blue sky” flooding during astronomical high tides is a somewhat regular occurrence in Miami Beach, necessitating the use of pumps to remove sea water from parts of the city.

In addition to other adaptation measures, the City of Miami Beach has adopted a Peril of Flood Act-related comprehensive plan amendment that adds objectives and policies to the coastal management element of the City's comprehensive plan related to flooding and the related effects of sea level rise. The adopted amendment contained one objectives and eleven policies related to implementation of the City's adaptation action areas (AAAs). Another new policy gives preference to "highly water absorbent, native, and Florida friendly plants" over other planting materials in the design review process.

City of Satellite Beach

In May 2016, the City of Satellite Beach adopted a comprehensive plan amendment to meet the requirements of the 2015 Florida Peril of Flood Act and to form a unified strategy to address the City's vulnerabilities in reference to coastal erosion, flooding, storm surge, and sea level rise. The new and updated policies to the City's coastal management element:

- Identifies the lands to be included in the City's Inland Flooding Adaptation Action Area (IFAA) and Erosion Adaptation Action Area (EAAA).
- Directs the City to develop a strategic plan to address recurring flooding issues within the IFAAA.
- Identifies potential tools and adaptation measures the City may use to address flooding issues within the IFAAA and the EAAA.

The same comprehensive plan amendment, identified by the state land planning agency as DEO #16-1ESR, also adds policies to the infrastructure element of the City's comprehensive plan that: Establishes a 2070 planning horizon and the U.S. Army Corps of Engineers High scenario for sea level rise for consideration of new infrastructure projects with a life span of 50 years or more.

- Directs the City to develop a standard process for evaluating and recommending new design development standards for new infrastructure projects proposed to be located in the IFAAA and the EAAA.
- Establishes that sea level rise shall be considered for all infrastructure projects located in the IFAAA and considered among design standards for all stormwater management projects in the City.
- Prohibits the construction of public infrastructure or public buildings, with the exception of minor structures, seaward of the Coastal Construction Control Line (CCCL).

The City of Satellite Beach Peril of Flood Act-related amendment may be accessed online using the following link:

[http://www.satellitebeach.org/Departments/City%20Clerk/City%20Council%20Documents/2016%20Packets/CC%2005-04-6%20Packet%20-%20Workshop%20&%20Regular%20\(Items%201-8\).pdf#page=17](http://www.satellitebeach.org/Departments/City%20Clerk/City%20Council%20Documents/2016%20Packets/CC%2005-04-6%20Packet%20-%20Workshop%20&%20Regular%20(Items%201-8).pdf#page=17).

Key Lessons and Findings

In the period March through May 2017, the Tampa Bay Regional Planning Council (TBRPC) conducted a series of four (4) workshops on the requirements of the 2015 Florida Peril of Flood Act for local government comprehensive plans. Through the course of conducting these workshops, and in developing this report, TBRPC staff identified several key lessons and findings related to local government implementation of the Peril of Flood Act's requirements. These include:

- Nearly two years after the 2015 Florida Peril of Flood Act took effect, only a handful of Florida's local governments have adopted comprehensive plan amendments related to the Act, and even fewer have adopted amendments that completely comply with the updated Florida Statutes (Section 163.3178(2)(f), Florida Statutes).

- Many local government planners in the Tampa Bay region are looking for clear guidance on the provisions and policy language to include in their coastal management element to bring their comprehensive plan into compliance with Section 163.3178(2)(f), Florida Statutes.
- Many of the requirements for local government comprehensive plans listed in the 2015 Florida Peril of Flood Act are typically not found in the high-level direction-setting goals, objectives and policies of local government comprehensive plans. Instead, many of the required provisions of the Peril of Flood Act are normally found in other local government regulations, such as building codes, land development regulations, zoning codes, and/or floodplain management ordinances. However, coastal management element policies related to the Peril of Flood Act can be written in such a way that both meets the Peril of Flood Act requirement and is also appropriate for the local government comprehensive plan.
- There is a general lack of awareness among local government planners that hazard vulnerability assessments are a necessary part in providing the supporting data and analysis for the development of Peril of Flood Act-related comprehensive plan amendments.
- There are several sources of flood vulnerability analysis information that have already been developed for local governments. Key among these are multijurisdictional Local Mitigation Strategies, which provide a wealth of information about flood and storm surge vulnerability, typically at the both the county and municipal level.

- Information on the potential areas to be affected by sea level rise are readily available. However, analyses of the potential impacts of sea level rise inundation for individual local government jurisdictions will likely have to be developed by the local government.
- In addition to being an excellent source of flood vulnerability data, the Local Mitigation Strategy also contains policies that may be integrated into the local government comprehensive plan to meet Peril of Flood Act requirements. In this way, the 2015 Florida Peril of Flood Act provides an important role in integrating hazard mitigation policies into the comprehensive plan.
- Many local governments have already adopted regulations in their land development code, zoning code, and other plans and ordinances that meet one or more provisions of the 2015 Florida Peril of Flood Act. By developing policies for the coastal management element that are based on these adopted regulations, local governments will find they do not have to “start from scratch” to comply with the provisions of the Peril of Flood Act.
- Not all local governments that are required to have a coastal management element pursuant to Section 380.24, Florida Statutes are also subject to Coastal Construction Control Lines (CCCLs).

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CITY OF ST. AUGUSTINE

MEMORANDUM

TO: Planning and Zoning Board

DATE: August 20, 2019

RE: **Item 4**
Discussion and Public Comment Related to the Draft Recreation and Open Space Element of the Comprehensive Plan including Draft Goals, Objectives and Policies

The Recreation and Open Space Element of the Comprehensive Plan is a required element. The element is the chapter of the Comprehensive Plan that establishes the overall plan and framework to include standards for recreation needs and recognize open space as an important aspect to quality of life for the City. It is the element that recognizes the important issues of encouraging recreation, appreciating the environment, and establishing the importance of open space and environmentally sensitive areas.

Attached is a **Draft** updated Data and Analysis for the Recreation and Open Space Element, and draft Goals, Objectives and Policies related to the element.

The Evaluation and Appraisal process in 2018 identified several issues outlined below related to the Recreation and Open Space Element. The update is an attempt to address these issues, as well as, update the element through 2040.

- Encourage public/private partnerships, for example the City Marina
- Include discussion related to the larger context of impacts from tourism and growth in the County on the City park assets and resources
- Address safety related to parks including access, and safe entrances to and from recreational sites
- Encourage pocket parks in all neighborhoods and areas of the City

As noted in the Evaluation Summary there are crossover issues with other Elements and the land development code.

If you have any questions or require additional information please contact myself or David Birchim at our office by calling (904) 825-1065 or by email at either askinner@citystaug.com or dbirchim@citystaug.com.

Amy McClure Skinner, AICP
Deputy Director

Recreation and Open Space Element

Introduction to the Recreation and Open Space Element

Providing recreational opportunities and open space is a foundation of strong neighborhoods, communities, and regions. The Recreation and Open Space Element identifies the recreation sites within the City that are available to the public and discusses private resources as well. The City of St. Augustine currently includes approximately 757 acres of parkland. In addition, St. Augustine is fortunate to have significant riverine and marsh environments associated with the Tolomato, San Sebastian and Matanzas rivers, Salt Run and Anastasia State Park. These areas border the uplands of the City and contribute to the unique character of the city. The surrounding area including the city also provides recreational and economic opportunities for tourism, fishing, sailing, boating and enjoying the outdoors.

As a tourist destination the city is unique in its appeal to visitors, regional and county residents, and its own citizen quality of life.

The Recreation and Open Space Element must indicate a comprehensive system of public and private sites for recreation. This may include natural reservations, parks, playgrounds, parkways, open spaces, waterways, and other recreational facilities. The Recreation and Open Space Element must also include level of service standards for the amount of recreation available as development occurs. The Recreation and Open Space Element serves as a guide for the development and use of public land within the City of St. Augustine and recognizes private resources. This includes creating an efficient pattern and location of recreational opportunities designed to serve all sectors of the population. The Recreation and Open Space Element contains goals, objectives and policies to maintain and expand the existing recreation network.

Key Issues and Assumptions

The updated Data and Analysis follows the statutory requirements.

The City has an abundance of parks and recreation opportunities, including environmentally sensitive areas.

The City is a tourist destination that contributes to its appeal as a recreation destination.

These issues are also related to conservation and coastal management, mobility and transportation issues, community resiliency and sustainability.

Recreation & Open Space Element **Draft Goals, Objectives and Policies**

Note: Editing text underline indicates new text and ~~strike through~~ indicates deleted text

Recreation and Open Space Element

Goals, Objectives and Policies

Summary

Providing recreational opportunities and open space is a foundation of strong neighborhoods, communities, and regions. The Recreation and Open Space Element identifies the recreation sites within the City that are available to the public and discusses private resources as well. The City of St. Augustine currently includes approximately 768 acres of parkland. In addition, St. Augustine is fortunate to have significant riverine and marsh environments associated with the Tolomato, San Sebastian and Matanzas rivers, Salt Run and Anastasia State Park. These areas border the uplands of the City and contribute to the unique character of the city. The surrounding area including the city also provides recreational and economic opportunities for tourism, fishing, sailing, boating and enjoying the outdoors.

As a tourist destination the city is unique in its appeal to visitors, regional and county residents, and its own citizen quality of life.

The Recreation and Open Space Element is a required comprehensive plan element under Florida's Local Government Comprehensive Planning and Land Development Regulation Act (Chapter 163, Florida Statutes). The Recreation and Open Space Element must indicate a comprehensive system of public and private sites for recreation. This may include natural reservations, parks, playgrounds, parkways, open spaces, waterways, and other recreational facilities. The Recreation and Open Space Element must also include level of service standards for the amount of recreation available as development occurs. The Recreation and Open Space Element serves as a guide for the development and use of public land within the City of St. Augustine and recognizes private resources. This includes creating an efficient pattern and location of recreational opportunities designed to serve all sectors of the population. The Recreation and Open Space Element contains goals, objectives and policies to maintain and expand the existing recreation network.

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Recreation & Open Space Element Goals, Objectives and Policies

Chapter 163.3177(6)(e) F.S.

ROS Overall Goal

To provide open space, recreation sites and recreation facilities which meet the needs of residents and visitors, support City conservation efforts and provide a healthy and aesthetically pleasing environment.

Level of Service Standards for Parks

ROS Objective 1.1

Coordinate private and public resources to adequately provide recreation sites and facilities at the adopted level of service standards.

ROS Policy 1.1.1

To ensure that park facilities keep pace with the impacts of sustained growth and to plan for future parks and open space facilities, the City adopts the following level of service standards (LOS):

- Neighborhood Parks: LOS standard 0.80 acres per 1,000 people
- Community Parks: LOS standard 1 acre per 1,000 people
- Regional Parks: LOS standard of 5 acres per 1,000 people

ROS Policy ~~1.2~~ 1.1.2

The City shall make an effort to incorporate documented historic and archaeological sites into park areas whenever possible to address both recreation and preservation needs.

ROS Policy ~~1.3~~ 1.1.3

The City will coordinate the development of the projects which are listed in the Capital Improvements Element as projects secured with private funding.

ROS Objective ~~2~~ 1.2

The City shall ensure safe public access to the recreation sites and facilities. The measurable target for this objective is public access to the identified recreation sites and facilities.

ROS Policy ~~2.1~~ 1.2.1

Although the only beaches in the City are in the Anastasia State Recreation Area and are therefore not subject to the City's development regulations, the City shall continue to support the policy of the State Division of Parks and Recreation in permitting public access to those beaches. The City shall continue to provide access to shores and waterways depicted on the Future Land Use Map by: (1) continuing to enforce the Future Land Use Plan which allows water-dependent or water related uses as permitted uses in every land use classification; and (2) continuing to operate the municipal marina.

ROS Policy ~~2.2~~ 1.2.2

The City shall correct park and recreation facility deficiencies and provide future parks and recreation facilities according to the following priorities:

1. maintenance, repair and replacement of existing facilities located on existing recreation sites.
2. development of new facilities, located on existing recreation sites, to correct existing deficiencies.
3. acquisition of new recreation sites to correct existing deficiencies.
4. development of new facilities, to be located on new recreation sites, to correct existing deficiencies.
5. development of new facilities, located on existing recreation sites, to provide for future needs.
6. acquisition of new recreation sites to provide for future needs.
7. development of new facilities, located on new recreation sites, to provide for future needs.

ROS Policy 1.2.3

The City of St. Augustine shall utilize the National Recreation and Parks Association (NRPA) guidelines outlined in the Data and Analysis to determine the type and location of parklands.

ROS Policy 1.2.4

The Land Development Code shall address standards for park development and improvements, which shall include buffering, landscaping, parking and siting facilities.

ROS Policy 1.2.5

The City shall utilize the State Comprehensive Outdoor Recreation Plan (SCORP) as a guideline to assist in the evaluation of existing facilities and siting new parks and improvements.

Natural Areas and Open Space

ROS Objective 4 **2.1**

Public agencies and private developments shall provide open space as defined in this element.

~~ROS Policy 4.1~~

~~The following Level of Service Standards shall be provided for all development: Regional Parks 5.0 acres per 1,000 persons Community Parks 1.0 acre per 1,000 persons Neighborhood Parks 0.8 acres per 1,000 persons All residential development of twenty five (25) units or more must provide, at a minimum, contiguous parkland or open space meeting the level of service standard for neighborhood parks for the projected number of residents based on the average household size from the most recent census. For development of twenty five (25) to ninety nine (99) units, this parkland or open space must provide at least passive recreational activity. For development of one hundred (100) or more units, this parkland or open space must provide at least one (1) active recreational facility (preferably one determined to be deficient in the particular planning sector) and one (1) passive recreational facility, per one hundred (100) units. Level of Service standards for Regional Parks shall be continually coordinated with the State Division of Parks and Recreation. The Level of Service standards for Community and Neighborhood Parks not located inside the City limits, but providing services to City residents shall be continually coordinated with St. Johns County. This policy implements ROS Objectives 1 and 4.~~

ROS Policy 4.2 **2.1.1**

The City shall continue to enforce the Future Land Use Plan and the development regulations contained in the City Code to preserve open space.

ROS Policy 4.2 **2.1.2**

The Recreation and Open Space classification is intended to designate parks, natural reservations and active recreation sites.

ROS Policy 4.2 **2.1.3**

The **newly created** Open Land (**Conservation**) classification is intended to designate open space. Additionally, open space is determined on a site specific basis during site plan review and through the conservation overlay zone development process. Open space so determined is defined as being marshland, swamp, natural or manmade bodies of water, and environmentally sensitive lands where local, state or federal regulations prohibit development **including land under conservation easement, conservatorship or other permanent protection.**

ROS Policy 4.2 2.1.4

The City shall continue to investigate and utilize local, state and federal funding programs to enhance, acquire and expand recreation and open space facilities and natural reservations.

ROS Policy 4.3 2.1.5

The City Code shall continue to contain and implement open space definitions and standards established in the Future Land Use Plan and in the Conservation Overlay Zone Development section of the Conservation and Coastal Management Element, which includes the definition of “undeveloped conservation parklands”.

ROS Policy 4.4 2.1.6

The City shall coordinate with the county and adjacent jurisdictions to acquire lands to be used as conservation and open space for the purpose of creating a system of resource based recreational trails, greenways, and greenway corridors. To enhance such a trail system, priority shall be given to lands that are adjacent to or by some other means are connected to other lands dedicated for such purposes, especially where such acquisitions create new or enhanced access to water bodies and shorelines, which may encourage paddling.

ROS Policy 2.1.7

The City shall encourage greenways and a recreational trail system that provide extensions or connections to existing adjacent municipality, county and state trails. This can include paddling, biking, walking, running and hiking.

Natural Areas, Open Space and Sustainability

insert

Park Maintenance and Joint Use of Facilities

ROS Objective 3.1

The City shall maintain and improve all City parks in a manner that is consistent with the recreation needs of City residents and shall maximize the potential of the individual facilities.

ROS Policy 3.1.1

The City's parks and recreational facilities shall be renovated and/or upgraded consistent with the Capital Improvements Plan (CIP) to provide improved recreational opportunities.

ROS Policy 3.1.2

The City shall maintain an inventory of the location, size, condition, and amenities available at each public park.

ROS Objective 3.2

The City shall continue to coordinate with the public and private sector to avoid duplication of recreation facilities. This shall include provisions for joint use of school board or other public agencies' recreation facilities to meet the recreation demands of the City's citizens.

ROS Policy 3.2.1

The City shall coordinate with private developers to provide public recreation facilities within their development.

ROS Policy 3.2.2

The City shall utilize the LOS standards to recommend recreation improvements located within private developments.

Accessibility

ROS Objective 4.1

Within the planning timeframe, all recreation and open space areas shall be evaluated as to their accessibility to all St. Augustine residents regardless of physical condition, age or economic condition as outlined in the uniform federal accessibility standards.

ROS Policy 4.1.1

All City parks and open space shall provide unobstructed access, when reasonably possible, through the following procedures:

- Existing facilities shall be evaluated and improved, if necessary, within the planning timeframe.
- Any new roadway or sidewalk construction required to access future sites shall be improved to engineering standards established in the Land Development Code.
- Appropriate safety improvements for the safe ingress and egress to and from recreational sites shall be considered.

ROS Policy 4.1.2

Any park undergoing renovation shall incorporate wheelchair and bicycle access.

ROS Policy 4.1.3

Within the planning timeframe, bicycle racks and park benches shall be provided at all recreational sites.

Historic Preservation and Tourism

insert

Recreation & Open Space Element **Draft Data & Analysis**

Prepared by:

**Planning and Building Department
City of St. Augustine
75 King Street
St. Augustine, Florida 32084**

August 20, 2019

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Recreation & Open Space Element

Chapter 163.3177(6)(e) F.S.

Introduction

Providing recreational opportunities and open space is a foundation of strong neighborhoods, communities, and regions. The Recreation and Open Space Element identifies the recreation sites within the City that are available to the public and discusses private resources as well. The City of St. Augustine currently includes approximately 768 acres of parkland. In addition, St. Augustine is fortunate to have significant riverine and marsh environments associated with the Tolomato, San Sebastian and Matanzas rivers, Salt Run and Anastasia State Park. These areas border the uplands of the City and contribute to the unique character of the city. The surrounding area including the city also provides recreational and economic opportunities for tourism, fishing, sailing, boating and enjoying the outdoors.

As a tourist destination the city is unique in its appeal to visitors, regional and county residents, and its own citizen quality of life.

Purpose

The Recreation and Open Space Element is a required comprehensive plan element under Florida's Local Government Comprehensive Planning and Land Development Regulation Act (Chapter 163, Florida Statutes). The Recreation and Open Space Element must indicate a comprehensive system of public and private sites for recreation. This may include natural reservations, parks, playgrounds, parkways, open spaces, waterways, and other recreational facilities. The Recreation and Open Space Element must also include level of service standards for the amount of recreation available as development occurs. The Recreation and Open Space Element serves as a guide for the development and use of public land within the City of St. Augustine and recognizes private resources. This includes creating an efficient pattern and location of recreational opportunities designed to serve all sectors of the population. The Recreation and Open Space Element contains goals, objectives and policies to maintain and expand the existing recreation network.

Inventory of Existing Recreation & Open Space Facilities

Park Classifications

Parks can be classified in a number of ways and serve a variety of functions, from providing open space in urban areas to large athletic complexes. The size of the park, the population served, the service area, and the types of activities within the park generally determine its classification. Park activities can be active, such as soccer fields and basketball courts; or passive, such as picnicking or birdwatching. In addition to the type of activity, parks can be classified as resource-based and activity-based. A resource-based park is located near a specific

natural feature, such as a river, forest or lake, or a cultural resource such as a historic building. Activity-based parks rely less on the natural landscape and more on improvements for specific uses such as baseball fields, tennis courts, or pools. Active and passive recreational activities can occur in both resource- and activity-based parks.

Parks can be further classified by park type. In general, these designations are neighborhood, community, and regional. A neighborhood park is intended to serve a small area, typically within walking distance. A community park might serve several neighborhoods. Visitors to a community park might walk, bike, or drive. A regional park will serve an entire city or county and requires significantly more parking, as most guests must drive to visit the park.

Overview of Recreation Standards & Guidelines

The National Recreation and Parks Association (NRPA) establishes general standards for parks by type. Standards relate primarily to size, service area, and improvements. The following is an outline of NRPA guidelines.

Neighborhood Parks

Neighborhood parks are generally used by the immediate community and are not designed for extensive programmed activities. They could be next to a public school and may incorporate practice areas, green spaces, and multi-purpose courts. In more urbanized areas these parks should ideally be accessible by foot or bicycle. In suburban areas neighborhood parks should be accessible by bicycle or a short drive. Some characteristics of neighborhood parks are:

- 1 to 10 acres
- 1 acre per 1,000 people
- ¼ to ½ mile service area
- Located in or adjacent to neighborhoods
- Compatible with the character of the surrounding area
- Accessible by walking, bicycling, or driving
- Casual atmosphere with very few organized activities
- Balance of open areas and improvements such as playgrounds, multi-purpose courts, picnic areas, walkways, and benches/pavilions

Community Parks

A community park serves a broader area and provides a wide range of athletic opportunities, organized team sports, and cultural programs. It is the primary location for typical recreation programs and activities in a larger community context. A community park could be located next to a public school or other municipal complex. These parks are intended to provide a community gathering place and should be designed with enough flexibility to accommodate a variety of recreation and cultural services. Identifying characteristics of community parks are:

- 5 to 20 acres
- 3 acres per 1,000 people
- Up to 3 mile service radius in urban areas
- Up to 6 mile service radius in rural areas
- Accessible by walking, bicycling, or driving; most often driving
- Usually located near a major collector or arterial road
- Developed more intensely than neighborhood parks
- Primarily activity-based
- Serves the needs of several neighborhoods
- May include more significant improvements such as sport-specific fields, swimming pools, and indoor recreation centers
- Natural areas will be incorporated into overall activity-based design
- May be home to other community services such as law enforcement substations or libraries

Regional Parks

A regional park is generally resource-based and focused around a lake, river, or other naturally occurring feature. These parks are usually very large and provide activities such as camping, canoeing, fishing, or equestrian activities. Regional parks are often coupled with other environmentally sensitive land for enhanced protection. Generally, regional parks serve all or part of several counties. The following characteristics are common to regional parks:

- Greater than 50 acres
- 30 acres per 1,000 people
- Improvements and programs similar to a community park, but on a larger scale
- Service area up to a 60 minute drive
- Access is primarily by car, public transportation, or bicycle trails

Open Space

Open space is a key component of a community's recreation system. Open space is usually defined as undeveloped land used for passive recreation and/or conservation areas. There are three classifications for open space: utilitarian, environmentally sensitive, and corridors/greenways. Utilitarian open space provides resource, based recreation and protects natural resources and/or aesthetic features. Environmentally sensitive open space is usually not suitable for development due to ecological value. Recreation in environmentally sensitive open space is usually limited to activities that will preserve the land and result in little to no impact on the resource. Greenways are linear open spaces located along natural corridors including rivers, creeks, shorelines, or scenic roads. Greenways are often used to connect other parks or open space areas.

Inventory of Federal, State, County & Municipal Parks Serving St. Augustine

The following Table X outlines the City's parks by type. There are 10 neighborhood parks, 20 community parks, 1 regional and nine (9) specialty type parks within the city limits. This is a total of 768 acres of designated parkland within the city. The inventory also includes very, unique tourist attractions including the Plaza de la Constitucion, Spanish colonial redoubt reconstruction, Fort Mose, the Castillo de San Marcos, and the Lighthouse, and the Lighthouse Keepers restored residential structure. These resources are historic, and unique features attracting tourists and visitors to the city.

Table X: City of St. Augustine Parks

	Acreage	City	St. Johns County	State	Federal	Facilities
Neighborhood Parks (10)						
Davenport Park	0.74	X				Playground, picnic, carousel
Oglethorpe Park	0.64	X				Marker, benches
Twine Park	0.15	X				Benches
Hamilton Upchurch	2.29	X				Scateboard, benches
Nelmar Terrace	0.13	X				Marker, benches
Railway Park	0.49	X				Passive
Gary Lee Park	0.09	X				Passive
Maria Sanchez Lake	10.00	X				Passive, benches
Fullerwood Park	0.54	X				Playground, community garden
RB Hunt School fields	3.75		X			Soccer, multiuse fields
Neighborhood sub-total	15.07					
Community Parks (20)						
Plaza	1.21	X				Passive, Gazebo/bandshell
Government yard	0.42	X				Passive, benches
Anderson Circle	0.44	X				Passive
Santo Domingo redoubt	0.17	X				Historic
Redoubt Wall Park	0.48	X				Historic reconstruction

Parque de Menendez	0.89	X				Historic
Joe Pomar Jr Park	51.09	X				Ballfields, dog park, conservation access, restrooms, concessions
Eddie Vickers Park	12.30	X				Playground, ballfields, walking path, restrooms
Galimore Center	2.26	X				Community Center, pool
Swing Park	0.57	X				Playground, picnic tables
St. Augustine Carpet Golf	0.41	X				Historic, carpet golf
Gibbs Park	1.24	X				Passive
Zora Neale Hurston Memorial Park	0.36	X				Passive
Dr. Robert B. Hayling Freedom Park	13.54	X				Passive, walking trail
Inlet Park	0.30	X				Passive, open space
Davis Shores Park	0.41	X				Passive
230 Charlotte Street	0.07	X				Passive
Cordova Street	0.11	X				Passive
Madeira	10.00	X				undeveloped
Fullerwood Park	0.60		X			Playground, Community Garden, basketball half court
Community sub-total	96.87					
Regional Parks (1)						

Anastasia State	566 within the city, 1,499 total			X		Regional recreation beach (approximately 5,314 linear feet within the city), picnic, camping, pavilions, concession, boardwalk, water access
Regional sub-total	566					
Water Access (3)						
Vilano Boat Ramp	6.18		X			Boat ramp, pavilion, bait shop, parking
Municipal Marina	4.22	X				Full marina services
J Edward "Red" Cox Recreation Area	6.55	X				Boat ramp, playground, parking
Water Access sub- total	16.95					
Special Purpose (5)						
Ketterlinus Gym	0.63		X			Indoor gym, weight room, outdoor basketball courts
Fort Mose State Park	43.42			X		Historic, nature trail, pavilion, restrooms, museum
Castillo de San Marcos	17.72				X	Historic
Francis Field	7.17	X				All, purpose event field, tennis courts
Lighthouse Park	0.51					Historic, museum, concession, tennis courts
Fish Island						
Special Purpose sub-total	69.45					
Grand Total	768.09	(31)	(4)	(2)	(1)	

Source: City of St. Augustine, 2019

In addition, facilities that could be listed include the City Gates, Hispanic Gardens, San Augustin Government House, Doctor Peck House Museum, Lightner Museum, the Mission Nombre de Dios Museum, St. Augustine Historical Society, and Ximenez Fatio House Museum, and many other historic nonprofit attractions.

The city, limits, includes approximately 168,574 acres of water as part of the environmental landscape attracting tourists, visitors, and outdoor sports enthusiasts to the area. The St. Augustine Inlet provides direct access to the Atlantic Ocean beyond the beaches and barrier islands.

Recreation & Open Space Standards & Guidelines

Park Acreage Standards

The following standards are adopted as the level of service guidelines for parks and recreation for the City of St. Augustine.

Table X: Park Acreage Standards

Park Type	Area per 1,000 people
Regional Park	5 acres
Community Park	1 acres
Neighborhood Park	0.80 acres

Source: City of St. Augustine Comprehensive Plan

Guidelines for Resources & Facilities

The State of Florida establishes service standards for common recreation facilities as part of the Statewide Comprehensive Outdoor Recreation Plan (SCORP). The guidelines assist the City in evaluating existing facilities and siting new parks and improvements. The SCORP standards are not intended to be binding and instead should be used to locate deficiencies and opportunities.

Table X: Resource and Facility Guidelines

Activity	Resource/Facility	Population Served
Camping (tent)	1 acre of camp area	6,750
Fishing	800 feet of dock/jetty	5,000
Hiking	One mile of trail	6,750
Baseball	1 field	6,000
Softball	1 field	3,500
Basketball	1 court	5,000
Football/Soccer/Rugby	1 field	6,000
General play	1 play area	15,000
Golf	1 public course	70,000
Racquetball/handball	1 court	10,000
Tennis	1 court	2,500
Volleyball	1 court	6,000

Source: State of Florida 2005 Statewide Comprehensive Outdoor Recreation Plan

Park Acreage & Population

By 2040, St. Augustine's population is projected to reach 19,330 people. This is based on the methodology used in the Future Land Use Element of the Comprehensive Plan. Table X extrapolates the projected population over the planning horizon using the Bureau of Economic and Business Research (BEBR) 2015 medium projections.

Table X: City of St. Augustine Population Projections, 2015-2040

	Census 2010	2015	2020	2025	2030	2040
St. Augustine	12,975	13,590	14,042	14,790	16,480	19,330
St. Johns County	190,039	213,566	255,300	295,800	329,600	386,600

Sources: 2015 BEBR Statistical Abstract, Florida Department of Economic Opportunity (DEO)

Table X shows the level of service for available recreation facilities based on these accepted populations projections.

Table X: Level of Service Analysis

Park Type	Area per 1,000 people	Needed Acres (2010-2040 Horizon)	Existing Acres
Regional Park	5 acres	96.65	566.00
Community Park	1 acres	19.33	96.87
Neighborhood Parks	0.80 acres	15.46	18.82
Water access facilities			16.95
Special purpose			69.45
Total park acres			768.09
Total wetland acres			3857.78

Source: State of Florida 2013 Statewide Comprehensive Outdoor Recreation Plan, FDEP Florida Recreation and Parks Inventory, St. Johns River Water Management District (SJRWMD) 2014 Land Cover and City of St. Augustine GIS, 2019

Based on the adopted Level of Service analysis, the City demonstrates an abundance of recreational acreage.

Recreational Programs & Facilities

Strategies for Improvements & Expansions

St. Augustine is adequately served based on current level of service standards for recreation. However, the City recognizes the potential need for neighborhood parks within the planning timeframe and will explore options for creating new opportunities within the city limits in order to maintain and expand the existing recreation facilities. One strategy the City may implement is to require new developments to provide recreational facilities as part of their overall site plan. The category and amount of recreational area provided would correlate to the type and intensity of development. For instance, a residential development may be required to dedicate acreage to serve as a neighborhood or community park. The park may have more improvements and program related facilities. Alternately, it may be more appropriate for a commercial or industrial development to dedicate an area for a community or regional park focusing on natural features or conservation.

For example, as part of the Madeira development, 10 acres have been dedicated as recreation, and designated as Recreation and Open Space on the Future Land Use Map.

St. Augustine will also continue to work with adjacent jurisdictions and state agencies to encourage the preservation of open land and accessibility to parkland resources near or adjacent to the city. The Future Land Use and Conservation and Coastal Management Elements will encourage the preservation of environmentally sensitive lands through a mix of land development policies and incentives. These lands may be used for recreational purposes, although their ultimate use could be determined by the terms of the easement or protection mechanism and the agency responsible for management of the site. This may also include the creation or extension of trails, greenways and/or greenway corridors.

Funding Sources

Funding for park improvements and acquisitions will most likely come from grants. The City has used FRDAP grants in the past for the Joe Pomar Jr. Park, Eddie Vickers, and the Lighthouse Park and J Edward "Red" Cox Recreation facilities.

Intergovernmental Coordination

The city regularly coordinates with the National Park Service, the State, and the County regarding needs related to providing and maintaining park facilities within the City. The City anticipates continued coordination with any proposed trail system, bicycle or pedestrian improvements and associated events in and through the city. A greenway and trail system including paddling can be utilized to encourage connections between recreational sites, open spaces, historic sites, and the beaches.

Protect, Enhance & Expand Open Spaces

The City continues to protect open spaces through its conservation overlay zone development process. This process limits development in environmentally sensitive areas and requires development waterward of the most restrictive jurisdictional line or in environmentally sensitive areas to be reviewed by the City Planning and Zoning Board. Proposed development landward and within 100 feet of a jurisdictional line requires additional development considerations and/or review by the Planning and Zoning Board. Lastly, there are also detailed requirements and considerations for removing trees and potentially impacting tree canopy within the city as part of the three (3) types of conservation overlay zone development review.

Additionally, as part of the update to the Comprehensive Plan the city is creating an Open Land (Conservation) land use category to designate and recognize undevelopable marshlands as a conservation type category separate from uplands designated as Open Land which are potentially developable. This new category would designate the approximately 3,858 acres of wetlands in the city, and any other areas deemed undevelopable by legal instrument for permanent protection as conservation area.

The city has also created a definition and assigned property as “undeveloped conservation parklands”. The adopted definition refers to property that shall remain in a natural, undeveloped state in order to preserve and protect the natural resources of the property for the benefits of wildlife, the ecosystem and for future generations to appreciate and study.

It is difficult to expand open spaces in an area that is mostly built out, but the city’s recognition and emphasis on protecting open spaces, view sheds, environmentally sensitive lands, trees and tree canopy, as well as, potential corridors and greenways linking these areas is a long-standing priority.

Historic Resources

As the oldest continuously occupied European settlement in the United States, St Augustine is a unique blend of old, world charm, history, Florida land boom, post war, and mid-century Florida beach tourism. It appeals to all types of tourists, international, as well as, from across the States, region and local areas. The Colonial Town Plan, on the National Register creates a pedestrian friendly area adjacent to the Old Fort.

There are several private and nonprofit potential destinations that are listed in the State Florida Outdoor Recreation Inventory that contribute to recreation options as well. They include: the Conch House Marina Resort, Oyster Creek, Florida School for the Deaf and the Blind, St. Augustine Alligator Farm, Fountain of Youth Museum and Park, Ripley’s Believe-it-or-not Museum, Zorayda Castle Museum, Oldest Store Museum, Oasis Marine Services, State Park Campground, Old Sugar Mill Museum, Old Jail Museum, Oldest Wooden School House Museum, St. Augustine YMCA, and Flagler College.

These entities contribute to the character of the city and work to maintain these older structures through adaptive reuse and allowing the public access to these resources and properties.

Availability of Recreational Programs & Facilities

Existing Programs

As discussed, there are several recreational and open space facilities of all sizes available to the citizens of St. Augustine. In addition to local parks and natural areas, St. Johns County Parks and Recreation Department, as well as, other organizations offer an extensive array of organized sports programs. These programs are offered for all age groups throughout the year and include:

- Soccer
- Volleyball
- Wrestling
- Basketball
- Baseball/Little League
- Flag Football
- Track and field
- Lacrosse
- Cheerleading
- Softball
- Tennis
- Swimming

The County offers several youth programs that are partnerships with other local and/or non-profit agencies such as the Boys and Girls Club, the YMCA or the Police Athletic League (PAL), Ancient City Soccer, St. Johns Little League, Pop Warner and other providers.

Opportunities for Improvements

Pedestrian and Bicycle Access

Through its Mobility Planning the city is encouraging safer pedestrian and bicycle opportunities and options. If the City can continue to encourage the use of alternative forms of transportation, and a “park once” experience the stress and pressures of visiting St. Augustine should be reduced. This may also reduce the stress on the City’s infrastructure, as well as, the residents.

Expansion and Improvements to Existing Facilities

The City will continue to pursue function and maintenance improvements regarding existing recreation facilities, as well as potential expansion opportunities for the City and County residents to utilize. This includes encouraging and improving access to facilities and providing safe entrances and exits to and from recreational sites.

Tourism

Improving the tourist experience, which is a large part of the local economy will help to sustain that aspect, but it may also reduce the impacts of tourism on the city itself, and the residents who live here.

According to the St. Johns County Tourist Development Council (TDC) over 6 million visitors came to St. Johns County to visit the area. Almost 96% said they walked the City's downtown historic district. In 2017 almost 877,000 visitors toured the Old Fort, an average of 73,000 people per month.

The entire city is impacted by tourism, site seeing and recreation.

Conclusion

The City of St. Augustine has ample recreation opportunities available to its citizens and functions as a major attraction to the area as a whole. The continued maintenance, and the City's ability to offer the maximum recreational opportunities for existing facilities, as well as, requiring new developments to preserve, protect and provide recreation and open space provide the citizens a valuable, asset.

Figures

CITY OF ST. AUGUSTINE

MEMORANDUM

TO: Planning and Zoning Board

DATE: August 20, 2019

RE: **Item 5**
Discussion and Public Comment Related to the Infrastructure Element of the Comprehensive Plan including the Water Supply Plan

This item will be discussed at a future date.

If you have any questions or require additional information please contact myself or David Birchim at our office by calling (904) 825-1065 or by email at either askinner@citystaug.com or dbirchim@citystaug.com.



Amy McClure Skinner, AICP
Deputy Director

Infrastructure Element

Introduction

Purpose

Analysis of Existing Conditions

Current Level of Service

Description of Changes since the Previous Plan

Population

Tourism

Surrounding Areas

Analysis of Projections

Identify demand

Level of Service demand/deficiencies

Capital improvements programming

Relationship to Land Use Plan

Conclusion

Each subject area must be addressed: Potable Water, Sanitary Sewer, Stormwater Management, Solid Waste, Aquifer recharge, and Water Supply planning

Identified Local Infrastructure Issues

- Water Supply Planning
- Resiliency issues – armoring/protecting infrastructure investment
- Levels of Service – impacts of volume