CITY OF ST. AUGUSTINE

MEMORANDUM

TO: David Birchim, AICP
City Manager

DATE: July 31, 2025

RE: Ordinance 2025-21 – Amending Chapter 28 the Zoning Code to Include a New Section in Supplementary Regulations related to Lot Grading, Amending Definitions and Amending Chapter 11 Conservation Overlay Zone Development to be Consistent with the New Section – Second Reading and Public Hearing

The City Commission has directed staff to work with the city's Citizen Boards to examine concerns related to development in low-lying and/or flood prone areas. This issue has become more of a concern recently with more frequent development applications proposing significant amounts of fill, higher than minimum finished floor elevations, and building techniques or design, such as on slab construction that minimizes the options to control drainage, runoff and water for residential development.

You may recall that several years ago the city did have an initiative with a "Building Code Task Force" that looked at this issue. This group recommended the adoption of a maximum impervious surface ratio (70% of the lot) in addition to the preexisting lot coverage limits, and the requirement for lot grading plans for new single-family development. These recommendations were adopted and are enforced through the city's building permit process.

However, the Planning and Zoning Board (PZB) has recognized that these issues impact proposed development which includes infill development in older areas, redevelopment as properties are demolished and redeveloped with new proposals, and character defining features in our historic districts, historic neighborhoods and our entry corridors. As well as, on specific historic structures as property owners and others work to protect their "investment" in the city.

The city held a joint meeting with all three (3) citizen boards in December 2024 to give the Boards an opportunity to discuss these issues as an introduction to the topic. Subsequently, the PZB held its own workshops in February and April 2025 to specifically discuss this issue. At the February meeting staff was able to review current city projects, review current floodplain, CRS and building requirements, and discuss potential enforcement options with the Board.

Additionally, the PZB requested that staff hold a Public Workshop specifically so that the public can provide feedback and input on this issue. This Workshop was held in March. Those that attended included a mix of contractors as well as property owners. This workshop presentation is attached for your information.

Based on feedback from the Public Workshop, the several PZB meetings and internal staff review, the PZB made a positive recommendation on the proposed changes to the LDC to include a provision that addresses the need for fill for garages. The PZB also determined that the proposed changes were not more burdensome, and specifically determined that clarifying requirements, and providing development options is a relief to property owners.

City staff have worked diligently on drafting potential land development code language. Including holding another PZB Special Meeting on April 30th. The staff draft language focuses on the lot grading issue, which relates to fill and construction techniques and stormwater and master drainage plans.

The draft Chapter 28 language includes:

- Specific lot grading requirements and clarification that this would apply to 1 and 2 family dwellings that are exempt from the Stormwater code.
- Recognition that buildable lots are in different areas that may have different levels of existing conditions in the area or neighborhood related to stormwater controls. This creates a table that refers an applicant to certain standards based on the specific situation of a stormwater system in the specific subdivision.
- Establishing guidelines and clarifying grading plans, and
- Recognizing the importance of erosion control and low impact design.
- Workflow graphics are attached to help explain the process.

The draft Chapter 11 language includes:

- Includes changes to clarify certain conditions consistent with the proposed lot grading section.
- Workflow graphics are attached to help explain the process.

Additionally, the proposed Ordinance:

- provides the benefit of Incentivizing Low Impact Development (LID) Stormwater Techniques (i.e. rain barrels, living roofs, bio-swales, rain gardens and pervious pavement) by allowing applicants to surpass fill limitations on lots without a Master Grading Plan if they are willing to demonstrate a net benefit of storm water retention with engineered plans reviewed through the Civil Plan process within the Public Works/ Utilities using LID techniques.
- relieves applicants from Planning and Zoning Board review when a 25-buffer is retained or restored when a lot drains into jurisdictional wetlands.
- incentivizes shoreline modifications (i.e. bulkheads and seawalls) to be of compatible scale to adjacent shoreline modifications by relieving applicants from Planning and Zoning Board review when modifying or constructing a bulkhead that is of reasonable scale.
- incentivizes commercial and multi-family development with an approved storm water management system to create vibrant public spaces for pedestrian access to scenic vistas

and the waterfront by allowing the 25-buffer along jurisdictional wetlands to be reduced to provide such public spaces.

The City Commission reviewed and passed this ordinance on first reading at their July 28, 2025, meeting. The City Commission did discuss a spelling error and the need to clarify the definition of a "protective swale" these items have been addressed in the ordinance and are indicated in blue on pages 7 and 8.

Please place Ordinance 2025-21 on the City Commission August 11, 2025, agenda for second reading and public hearing. Also attached is the required Business Impact Statement for the ordinance, and a series of maps illustrating the low-lying areas around the city.

If you have any questions or require additional information, please do not hesitate to call me at (904) 209-4320 or email at askinner@citystaug.com. Or contact other staff members, Sarah Daugherty, Jessica Beach, Buddy Schauland or Ray Deschler.

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Amy McClure Skinner, AICP
Director
Planning and Building Department

Ordinance 2025-21

Workflow Charts

Proposed Lot Grading Conditions Chart

Category	Condition of Subdivision or Lot	Resulting Design Solution
1	Development on piers, pilings, or crawl space with no fill over six (6) inches regardless of lot condition. Allowing for fill for a garage up to a maximum of 500 sq ft. or garage space no larger than equal to 25% of the sf home lot coverage whichever is greater	No lot grading plan required.
2	Master planned with approved master drainage plan and master lot & block grading plan and/or part of a permitted stormwater management system	Show compliance with approved master plan(s) and/or permitted system. Grading must conform to any applicable drainage plan as part of the master plan and/or permitted stormwater management system.
3	Not Category 2 (not part of a common plan of development with an approved master drainage and/or lot grading plan or permitted drainage system). This could include some surface drainage with an outfall system and/or paved roadway access.	1. Direct drainage to an existing stormwater system, or roadside swale via drainage swales along lot lines or through gutters. 2. If no roadside swale or stormwater system exists, then direct drainage to the road via lot line swales or gutters. In either case, positive drainage and no impacts to adjacent lots must be demonstrated. 3. For cases where drainage to the street is not feasible, i.e. lots with no stormwater system access that partially or fully drain to the back of the lots (drainage types B and C), use of retention systems, swales and other Low Impact Development (LID) or Best Management Practices should be incorporated as appropriate. 4. Lot grading should demonstrate a positive outfall and identify the receiving waters, stormwater system or outfall.
4	Not Category 2 (not part of a common plan of development with an approved master drainage and/or lot grading plan or permitted drainage system) and adjacent to natural wetland systems, waterways, canals, or bulkheads.	Grade lots based on guidelines, factoring in condition for abutting lots and using positive lot grading; direct drainage via side lot lines and roadway swales; drainage directed to surface waters shall be through a maintained or restored 25-buffer. Confirm no apparent downstream stormwater runoff impacts. Lots within Conservation Overlay Zones will also be reviewed by the requirements found in Chapter 11.

Example Higher Regulatory Standards and Graphics

March 19, 2025, Public Workshop PowerPoint

City Maps Illustrating Low Lying Areas

CITY OF ST AUGUSTINE. EST. 1565
NATION'S OLDEST CITY

Business Impact Estimate Form

This Business Impact Estimate Form is provided to document compliance with and exemption from the requirements of section 166.041(4), Florida Statutes. If one or more boxes are checked below under "Applicable Exemptions", this indicates that the City has determined that Sec. 166.041(4), Fla. Stat., does not apply to the proposed ordinance and that a business impact estimate is not required by law. If no exemption is identified, a business impact estimate required by section 166.041(4), Florida Statute will be provided in the "Business Impact Estimate" section below.

Proposed Ordinance Title/Reference:

Ordinance No.

ORDINANCE NO. 2025-21

AN ORDINANCE OF THE CITY OF ST. AUGUSTINE, FLORIDA, AMENDING AND UPDATING THE CODE OF ORDINANCES CHAPTER 28, ARTICLE I IN GENERAL, DEFINITIONS; ARTICLE IV SUPPLEMENTARY REGULATIONS, DIVISION I GENERALLY; CREATING SECTION 28-357 RESIDENTIAL LOT GRADING; AND AMENDING CHAPTER 11 ENVIRONMENTAL PROTECTION; PROVIDING FOR REPEAL OF CONFLICTING ORDINANCES; PROVIDING FOR SEVERANCE OF INVALID PROVISIONS; AND PROVIDING AN EFFECTIVE DATE.

Applicable Exemptions:

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant, or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☐ The proposed ordinance is enacted to implement the following:
  - ☐ Development orders and development permits, as those terms are defined in s. 163.3164, and, development agreements, as authorized by the Florida Local Government Development Agreement Act under ss. 163.3220-163.3243, Florida Statutes;
  - ☐ Comprehensive plan amendments and land development regulation amendments initiated by an application by a private party other than the municipality;
  - ☐ Sections 190.005 and 190.046, relating to statutory Community Development Districts;
  - ☐ Section 553.73, relating to the Florida Building Code; or
  - ☐ Section 633.202, relating to the Florida Fire Prevention Code.

Note: The City's provision of information in the Business Impact Estimate section below, notwithstanding an applicable exemption, shall not constitute a waiver of the exemption or an admission that a business impact estimate is required by law for the proposed ordinance. The City's failure to check one or more exemptions above shall not constitute a waiver of the omitted exemption or an admission that the omitted exemption does not apply to the proposed ordinance under Section 166.041(4), Florida Statute, Sec. 166.0411, Fla. Stat., or any other relevant provision of law.

Business Impact Estimate:

1. **Summary of the proposed ordinance (must include a statement of the public purpose, such as serving the public health, safety, morals and welfare):**

   This ordinance adds a section to supplementary regulations clarifying and providing options for single family and duplex development related to lot grading and fill requirements. Amends definitions and environmental protection chapter of the land development code. The ordinance serves to help protect property owners as they develop in a more resilient manner.

2. **An estimate of the direct economic impact of the proposed ordinance on private, for-profit businesses in the City of St. Augustine, if any:**
   - **(a) An estimate of direct compliance costs that businesses may reasonably incur;**
   - **(b) Any new charge or fee imposed by the proposed ordinance or for which businesses will be financially responsible; and**
   - **(c) An estimate of the City's regulatory costs, including estimated revenues from any new charges or fees to cover such costs.**

   This ordinance provides potential relief to business owners along the waterfront by allowing a reduction in a required 25-foot natural buffer or the potential restoration of a 25-foot natural buffer if they provide public access to view sheds and the waterfront.

3. **Good faith estimate of the number of businesses likely to be impacted by the proposed ordinance:**

   It is estimated that less than 10 business owners will be impacted by this ordinance.

4. **Additional information the governing body determines may be useful (if any):**

   This ordinance addresses lot grading and fill requirements for single family and duplex development currently exempted from stormwater requirements. It clarifies requirements and options providing direction and relief from review by staff and the Planning and Zoning Board for certain types of applications meeting certain criteria.

ORDINANCE NO. 2025-21

AN ORDINANCE OF THE CITY OF ST. AUGUSTINE, FLORIDA, AMENDING AND UPDATING THE CODE OF ORDINANCES CHAPTER 28, ARTICLE I IN GENERAL, DEFINITIONS; ARTICLE IV SUPPLEMENTARY REGULATIONS, DIVISION I GENERALLY; CREATING SECTION 28-357 RESIDENTIAL LOT GRADING; AND AMENDING CHAPTER 11 ENVIRONMENTAL PROTECTION; PROVIDING FOR REPEAL OF CONFLICTING ORDINANCES; PROVIDING FOR SEVERANCE OF INVALID PROVISIONS; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the Municipal Home Rule Powers Act, Chapter 166, Florida Statutes, secures for municipalities the broad exercise of home rule powers granted by Article VIII, Section 2 of the Florida Constitution, including the exercise of any power for municipal purposes not expressly prohibited by law; and

WHEREAS, Sections 163.3167 and 163.3177(1), Florida Statutes, requires the City of St. Augustine to maintain a Comprehensive Plan to guide the future development and growth of the city by providing the principles, guidelines, standards, and strategies for the orderly and balanced future economic, social, physical, environmental, and fiscal development of the area that reflects community commitments to implement the plan and its elements; and

WHEREAS, the City in its Conservation and Coastal Management Element sets out goals, objectives and policies to maintain and protect its environmental, historic and natural resources which: recognizes present need, reflects the Future Land Use Plan, and provides for identification, protection, restoration and enhancement of these resources; and

WHEREAS, the City is experiencing growth and new development activity that necessitates the recognition of the impacts of this activity on environmental, historic and natural resources as well as on adjacent properties as property owners strive to protect their investment and develop in a more resilient manner; and

WHEREAS, the City of St. Augustine is required by Section 163.3202, Florida Statutes, to adopt or amend and enforce land development regulations that are consistent with and implement the Comprehensive Plan, and that are combined and compiled into a single land

development code for the city (the City of St. Augustine's Zoning Code is Chapter 28 of the Code of Ordinances including land development regulations for the provision of Supplementary Regulations and Chapter 11 Environmental Protection); and

WHEREAS, Section 166.041, Florida Statutes, provides for procedures for the adoption of ordinances and resolutions by municipalities; and

WHEREAS, a sustainable built environment that both preserves the City of St. Augustine's resources and is resilient to extreme weather events such as hurricanes, floods, and heatwaves is a priority of St. Augustine; and

WHEREAS, after review, the Planning and Zoning Board recommended approval of these amendments and updates and determined that these changes are no more burdensome or restrictive. The Planning and Zoning Board acting as the land planning agency for the city of St. Augustine determined at its July 16, 2025, special meeting that these changes provide clarity and additional options to property owners that are beneficial; and

WHEREAS, the City in amending the Land Development Code (LDC) provides the benefit of design solutions through the creation of a drainage hierarchy and associated solutions based on existing conditions and the sensitivity for floodplain and drainage impacts.

WHEREAS, the City in amending the Land Development Code (LDC) provides the benefit of incentivizing development techniques that are least impactful to the floodplain, (i.e. Piers/Pilings, or crawl spaces) by relieving single-family/duplex development of Lot Grading Plan review when these development techniques are employed.

WHEREAS, the City in amending the Land Development Code (LDC) provides a path for relief when unique circumstances make it so that following the Lot Grading requirements prevent the reasonable use of property through a variance process.

WHEREAS, the City Commission for the City of Saint Augustine finds that it is in the best interest of public health, safety and general welfare that the following amendments be adopted.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION FOR THE CITY OF ST. AUGUSTINE, FLORIDA, AS FOLLOWS:

SECTION 1. Chapter 28, Article I In General. Chapter 28, Article I In General of the Code of the City of St. Augustine is amended as follows: [Note: ~~strikethrough~~ language deleted, underline language added]:

Sec. 28-2. - Definitions.

"…

Impervious surface means those surfaces which do not absorb water. They consist of all buildings, parking areas, driveways, roads, sidewalks, any areas of concrete or asphalt and other surfaces not pervious to water. Including any hard surface that prevents or restricts the flow of water into the soil, including pools.

Impervious surface, on-lot, means the total amount of impervious surface which is present on a lot as opposed to lot coverage limitations which are related to roofed area only.

Impervious surface ratio means a measure of the intensity of land use which is determined by dividing the total area of all impervious surfaces on a site by that portion of the lot landward of the Mean High-Water Line (MHWL).

…"

SECTION 2. Amending Chapter 28, Article IV Supplementary Regulations, Creating Section 28-357. Chapter 28, Article IV Supplementary Regulations, Creating Section 28-357 of the Code of the City of St. Augustine is hereby added as follows: [Note: ~~strikethrough~~ language deleted, underline language added]

"Sec. 28-357. - Residential Lot Grading.

Introduction. The City of St. Augustine contains many platted lots that were recorded prior to local and state agencies requiring storm water management. In addition, the platting did not always take into consideration the natural geographic and drainage conditions affecting each lot. Typically, there was no master drainage infrastructure or master grading plan to guide the platting that occurred. As a result, applicants that wish to build homes now must deal with the existing topographic conditions on the lot and the drainage patterns, limitations or constraints that exist in

the vicinity of the lot. The City of St. Augustine Lot Grading section of the code attempts to provide builders with regulatory guidance in dealing with lot grading challenges and issues. More contemporary subdivisions and lots that have been permitted in compliance with current governmental drainage and grading regulations may have more specific considerations based on the specific subdivision plat or development plan.

(1) *Residential Lot Grading Submittal Procedure*

Purpose and Intent. The residential lot grading requirements ensure stormwater impact from applicable residential development is respectful of existing development. This requirement is for single-family development excluded by Sec. 29-26. - Standards and criteria (a.) of Chapter 29 Stormwater Management of the Land Development Code (LDC).

a. Residential Lot Grading Plan Requirements

To achieve these objectives, a residential lot grading plan shall be required to accompany any application for single-family or duplex residential structures constructed in subdivisions platted on or before July 22, 1991, and containing impervious area in excess of five hundred (500) square feet. The proposed grading plan shall be drawn to a legible conventional engineering scale (1-inch = 20 feet, smallest scale accepted) using the site plan and survey as a base map.

Lot Grading Plans should include the following information:

1. North arrow and bar scale.
2. Show proposed Lot Grading Type (A, B, C) as applicable [provided by the Federal Housing Administration (FHA)].
3. Spot elevations of the existing parcel in question—shown on a 25' grid.
4. Spot elevations on all adjacent properties - 10-feet from the boundaries of the subject property at approximately 25-foot intervals.
5. Spot elevations at the crown of any roadway abutting the property.
6. FEMA Flood Zones and BFE.
7. Limits of impervious surfaces (patios, pool decks, driveways, etc.).
8. Limits of fill.
9. Jurisdictional lines (wetlands or conservation easements) and 25-foot buffer as defined in Chapter 11 of the COSA Land Development Code (LDC).
10. Mean High Water
11. Proposed erosion and sediment control measures during construction and proposed weekly maintenance of silt fences and other erosion control measures during construction.
12. Necessary easements and rights of way,

13. Location and use of existing structure(s) and proposed structure(s) with Finish Floor Elevation (FFE) in NAVD88.
14. Swale locations with typical cross-sections of all proposed swales and of all significant slopes, including the continuation of such features on adjacent properties or right-of-way (exceeding 4:1).
15. Bulkhead/ retaining wall locations with Top of Wall (TOW) and Bottom of Wall (BOW) elevations in NAVD88 including cross-sections stamped and signed by an engineer.

b. A separate Right-of-Way Use Permit is required for any work on City right-of-way or property.

(2) General Lot Grading Conditions

Each lot located within the City will have existing conditions associated with it. There may be design and permitting activities that would also have an impact on the lot. A drainage hierarchy exists which will determine the extent to which an applicant will be required to gather survey, drainage and design information for a lot. Each applicant should consider this hierarchy and the implications that result from the actual field and permitted conditions for the lot. These guidelines and this hierarchy cannot cover all possible site conditions to be encountered in the City.

Each applicant must determine the condition and situation that a lot is subject to or the closest existing condition to a defined category for the subject lot in the below chart that would apply to the property, which shall be the basis for the lot grading application. This can be determined using the following Lot Grading Conditions chart:

Lot Grading Conditions Chart

Category	**Condition of Subdivision or Lot**	**Resulting Design Solution**
1	Development on piers, pilings, or crawl space with no fill over six (6) inches regardless of lot condition. Allowing for fill for a garage up to a maximum of 500 sq ft. or garage space no larger than equal to 25% of the sf home lot coverage whichever is greater	No lot grading plan required.
2	Master planned with approved master drainage plan and master lot & block grading plan and/or	Show compliance with approved master plan(s) and/or permitted system. Grading must conform to any applicable drainage plan as part of the

	part of a permitted stormwater management system	master plan and/or permitted stormwater management system.
3	Not Category 2 (not part of a common plan of development with an approved master drainage and/or lot grading plan or permitted drainage system). This could include some surface drainage with an outfall system and/or paved roadway access.	1. Direct drainage to an existing stormwater system, or roadside swale via drainage swales along lot lines or through gutters. 2. If no roadside swale or stormwater system exists, then direct drainage to the road via lot line swales or gutters. In either case, positive drainage and no impacts to adjacent lots must be demonstrated. 3. For cases where drainage to the street is not feasible, i.e. lots with no stormwater system access that partially or fully drain to the back of the lots (drainage types B and C), use of retention systems, swales and other Low Impact Development (LID) or Best Management Practices should be incorporated as appropriate. 4. Lot grading should demonstrate a positive outfall and identify the receiving waters, stormwater system or outfall.
4	Not Category 2 (not part of a common plan of development with an approved master drainage and/or lot grading plan or permitted drainage system) and adjacent to natural wetland systems, waterways, canals, or bulkheads.	Grade lots based on guidelines, factoring in condition for abutting lots and using positive lot grading; direct drainage via side lot lines and roadway swales; drainage directed to surface waters shall be through a maintained or restored 25-buffer. Confirm no apparent downstream stormwater runoff impacts. Lots within Conservation Overlay Zones will also be reviewed by the requirements found in Chapter 11.

(3) Lot Grading and Drainage Guidelines

a. Swales

Swale Types:

Conveyance Swales (those with a positive slope to an outfall or discharge point for drainage) shall be the preferred method for conveying stormwater runoff from residential lots to an appropriate outfall or discharge point such as public rights-of-way or a stormwater management area.

Retention swales (those that are essentially flat and do not provide drainage, they percolate runoff water) are only allowed when onsite storage of water is required.

Protective swales shall be installed on all lots where the existing drainage flow pattern ~~is directed~~ would flow toward the proposed dwelling. The protective swale should encourage water to flow around the new structure. The protective swale should generally function as a "conveyance swale" although some "retention" may be acceptable in limited areas.

Swales shall be constructed using the following guidelines:

1. The preferred side slopes should be at least 4:1 (horizontal: vertical), however under no circumstances be steeper than 3:1 and only with City approval
2. Minimum desired (when feasible) depth of 1 foot measured from the swale bottom to the minimum top of bank elevation.
3. Conveyance swales shall be placed alongside property lines.
4. Protective swales must be placed between the structure and the drainage flow pattern directed towards the structure.
5. Sod all swales from top of slope to top of slope. Maintain and water sod until root system is established.
6. When possible, the lot line will be the centerline of the protective side lot drainage swales.

b. Retaining walls/Bulkheads and related Wingwalls/Floodwalls

Definitions:

Bulkheads are structural in nature and their primary purpose is to provide shoreline protection from waves while retaining upland soil.

Wingwalls are structural elements that extend from a retaining wall or bulkhead. Its primary function is to retain earth and prevent erosion and/or to support the main structure.

Retaining walls are structural in nature and their primary purpose is to hold back earth that would otherwise be unstable and prone to failure. There may be a significant risk to public health, safety and welfare if a retaining wall is improperly constructed.

Floodwalls are structural in nature and their primary purpose is to prevent encroachment of floodwaters.

Landscape planters are decorative in nature and its primary purpose is to elevate a small amount of earth for a landscape planting bed. An elevated bed for a home vegetable garden (non-commercial) or a "tree well" is considered a Landscape Planter. A landscape planter cannot exceed 30 inches or will be considered a retaining wall.

Retaining walls/Bulkheads and related Wingwalls/Floodwalls shall be constructed using the following guidelines:

1. All bulkheads, retaining walls and flood walls shall be designed, signed and sealed by a registered design professional in the State of Florida.
2. All Bulkheads/Retaining walls/Flood walls placed within Conservation Overlay Zones 1 or 2 shall be reviewed per Section 11-28 to determine if Planning and Zoning Board approval is required.
3. Retaining walls will be no closer than three (3) feet from any property line and cannot impede the proposed drainage flow pattern.
4. Retaining walls are limited to a height of three (3) feet which is measured as the distance between the Top of Wall (TOW) and Bottom of Wall (BOW) elevations.
5. Floodwalls must be designed to allow a minimum of thirty (30) percent of the lot outside of the floodwall. Floodwall height and setbacks must meet fence requirements in Section 28-331.
6. Wingwalls are limited in length to what is required to support the function of the retaining wall or bulkhead by a registered design professional in the State of Florida.

Commented [SD1]: Possible wingwall language?

c. Driveways and other impervious materials must be a minimum of three (3) feet from any property line except for points of ingress/egress.

d. Maintenance of fill and erosion control measures

Erosion control associated with lot grading plans shall meet the minimum standards mandated by the State of Florida and the National Pollutant Discharge Elimination System within the City. Approved Best Management Practices (BMP) shall be employed during construction. Reference the Florida Department of Environmental Protection's Florida Development Manual, and Florida Erosion and Sediment Control Inspector's Manual or most recent equivalent. The Florida Erosion and Sediment Control Inspector's Manual is available online.

Maintenance of erosion control and fill shall be presumed to be in disrepair if exposed soil or fill are not contained onsite impacting adjacent properties, roadways, or waterways.

e. Low Impact Development (LID) Stormwater Techniques
Stormwater is recommended to be incorporated into the overall design of the project as amenities. The goal of encouraging the use of these mechanisms is to reduce stormwater runoff, capture contaminants closer to the source and reduce the use of

potable water for irrigation and grey water activities. The below list are options other options based on BMP may also be used as demonstrated in the required grading plan:

1. Raised pier construction for homes (allowing for movement of stormwater and additional infiltration area)
2. Rainwater harvesting (rain barrels, underground cisterns, and similar to assist in water conservation)
3. Green roofs (Living Roof)
4. Bio-swales
5. Rain gardens
6. Pervious pavement (pervious concrete, pervious pavers, and/or other pervious pavements)

*(4) Lots **With** an Approved Master Grading Plan*

The Proposed Lot Grading Plan shall be submitted for review. The engineering guidelines provide illustrations of the standard Federal Housing Administration (FHA) types A, B, and C drainage. A, B, and C drainage types should match approved stormwater plans in Category 2 of the Lot Grading Conditions Chart. The builder shall propose lot grading and a finished floor elevation consistent with the approved Master Lot Grading Plan. Variances may be requested for requirements of the Lot Grading Plan according to Section 28-29 that are outside of the scope of the Master Lot Grading Plan.

*(5) Lots **Without** an Approved Master Grading Plan*

a. Types of Lot Drainage

In Category 3-4 of the Lot Grading Conditions Chart, FHA A, B, and C drainage types should match the historic or natural drainage pattern except for the below exemption.

1. FHA Type C drainage is discouraged on lots in Category 3 of the Lot Grading Conditions Chart when the rear of the lot does not have sufficient outfall or discharge points. This is because many of these lots trap water and exacerbate existing nuisance conditions. Type "C" lot with no drainage outfall or discharge point will require stem wall, pier, pile, walkout or similar construction, and shall have grading and drainage plans prepared by a registered design professional in the State of Florida, demonstrating no impacts to neighboring properties or can provide a "Modified Type B" as an exemption from keeping the historic or natural drainage pattern.
2. A "Modified Type B" drainage type with gutters directing roof drainage to the front of the lot, and ultimately to the roadside swale, is the preferred method of dealing with lots that slope away from a street where a standard FHA Type "B" lot is not

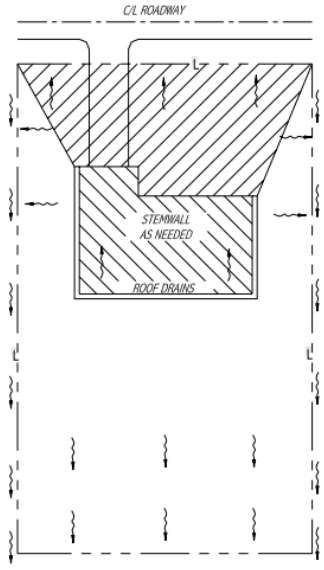
practical. A modified Type “B” lot with no drainage outfall or discharge point will require stem wall, pier, pile, walkout or similar construction.

(a) The modified "B" grading shall have at least the impervious roof area of the house, driveway and immediate front yard brought forward to the public right-of-way.

(b) The grading transitions by forming a wedge from the foundation of the home to the corners of the lot.

(c) In order to ensure that the entire impervious portion of the house drains to the front, roof drains are required over the entire house, manifolded to collection pipes that drain forward with positive outfall to the public right-of-way.

Federal Housing Administration (FHA) Modified “B” Drainage Illustration



MODIFIED "B"

BRINGS MOST IMPERVIOUS SURFACES FORWARD

b. Fill requirements:

1. The maximum elevation of the fill on any lot shall be the lesser of a maximum of one (1) foot above the highest adjacent grade or 0.5 feet above the current base flood elevation of the property based on the current FEMA Flood Insurance Rate Map.

2. Fill within stem-wall foundations shall be allowed to exceed the base flood elevation as necessary.
3. The grade shall fall to a minimum of 6 inches above existing or historic grade within the first 10 feet. The final grade along the property boundaries shall match that of the adjacent lot.
4. Lots shall be graded with a minimum slope of 1% (1 ft/ 100ft) in accordance with FHA Type A, B, or C grading pattern.

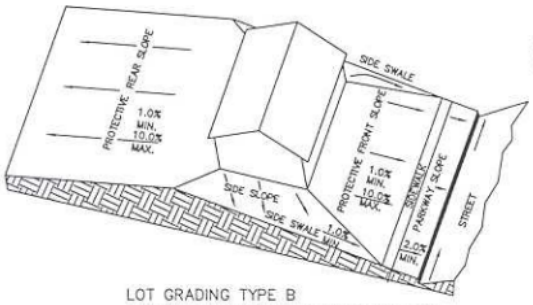
c. Maximum Impervious Surface Ratio (ISR):
There shall be a maximum impervious surface ratio (ISR) of seventy (70) percent of the lot size for all single-family residential dwelling and duplex development regardless of the zoning district, except as established within the historic preservation districts and not within any master planned communities.

d. For development not in an approved master grading plan that does not meet the above a-c requirements, engineered plans would need to submitted through the Utilities/Public Works Civil Site Plan review that demonstrates that the use of Low Impact Development (LID) Stormwater Techniques with a net benefit in storm water retention.

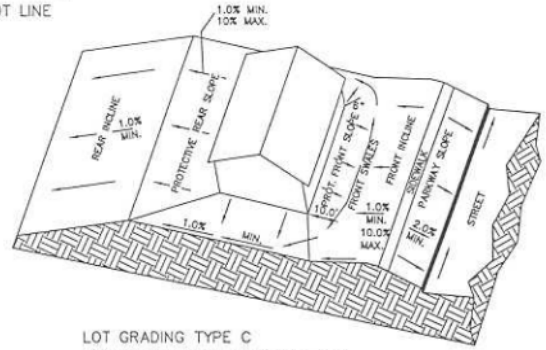
e. Variances may be requested according to Section 28-29.

Federal Housing Administration (FHA) Drainage Illustrations Types "A", "B", and "C"

LOT GRADING TYPE A
ALL DRAINAGE TO STREET



LOT GRADING TYPE B
DRAINAGE TO FRONT & REAR LOT LINE



LOT GRADING TYPE C
ALL DRAINAGE TO REAR LOT LINE

…

Secs. 28-~~357~~358—28-365. – Reserved"

SECTION 3. Amending Chapter 11, Article II Conservation Overlay Zone Development, Amending Sections 11-28 and 11-29. Chapter 11, Article II Conservation Overlay Zone Development, Amending Sections 11-28 and 11-29 of the Code of the City of St. Augustine is hereby amended as follows: [Note: ~~strikethrough~~ language deleted, underline language added]

"…

Sec. 11-28. Issuance of building permits.

(a) The planning and zoning board shall review all applications for development in Conservation Overlay Zone 1; all applications for development in Conservation Overlay Zone 2, except as specified in subsection (b); and all applications for development in Conservation Overlay Zone 3, except as specified in subsection (c). Such approval by the planning and zoning board shall be after a public hearing as required by chapter 28.

(b) The planning and building division may issue permits in Conservation Overlay Zone 2 for:

1. ~~a~~Additions to existing structures, for construction of new secondary structures, such as fences, driveways, decks, patios, greenhouses, garages and sheds, and use permits for uses otherwise permitted to be conducted in these structures located in Conservation Overlay Zone 2 when:
    a. ~~n~~No drainage into the ~~marsh~~ jurisdictional wetlands is proposed without a maintained or restored 25-foot buffer,
    b. ~~n~~No significant alteration of surface water hydrology will occur through the placement of fill, shoreline modification or otherwise, and
    c. ~~n~~Native plant materials are preserved or replaced.
2. ~~The planning and building division may issue permits t~~The construction of new primary structures located in Conservation Overlay Zone 2 when the above conditions are met and when:
    a. ~~t~~The subject property already contains a seawall, bulkhead or rip rap shoreline, or
    b. ~~i~~Is located within one hundred fifty (150) feet of existing development and the primary structure is located no closer to the marsh edge or to the mean high water line than are adjacent primary structures.
    c. In addition, such additions and new structures may not exceed the lesser of seventy-five (75) feet or seventy-five (75) percent of the lot width.

3. The construction or modification of a bulkhead in Conservation Overlay Zone 2 when all adjacent waterfront properties have an existing bulkhead and either of the following conditions are met:

    a. The Top of Wall (TOW) elevation of the new or modified bulkhead does not exceed seven (7) feet NAVD88, or

    b. The Top of Wall (TOW) elevation does not exceed the lowest TOW elevation of any adjacent bulkhead, with the highest allowable TOW elevation of ten (10) feet NAVD88.

(c) The planning and building division may issue permits for structures and uses otherwise permitted and located within Conservation Overlay Zone 3 provided that all healthy significant trees are retained on the site.

(d) Removal of a significant tree shall be approved by the planning and zoning board. All significant trees removed shall be replaced in accordance with the requirements of chapter 25.

…

Sec. 11-29. Standards for review.

(a) 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 and/or use so as to avoid damage to adjacent salt marshes and the vegetative communities contained therein, to avoid impacts to adjacent property, eliminate any harm to the animal, fish or shellfish contained therein, to 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.

(b) Permits for structures and uses located within Conservation Overlay Zone 2 shall be issued only for those structures and related uses which are determined as having no significant negative impact on adjacent properties or natural systems by either individual or cumulative effect and consistent with the purpose of Conservation Overlay Zone 2 to protect the functional integrity of Zone 1 and to protect Zone 3 from extreme high-water conditions. At no time shall the impervious area in Conservation Overlay Zone 2 exceed twenty-five (25) percent without that area receiving treatment equivalent to the St. Johns River Water Management District water quality treatment provisions required when new development is proposed along an unaltered shoreline. The first (landward of the most restrictive jurisdictional line, which may be the mean high-water line or wetlands jurisdictional line) twenty-five (25) feet, measured in width perpendicular to the most restrictive jurisdictional line, in Conservation Overlay Zone 2 shall remain undeveloped except as provided in

subsections (1)—(4) of this subsection. If the area is already disturbed, a restoration plan is required. The planning and zoning board is authorized to impose limitations in the following manner so as to avoid damage to adjacent properties, salt marshes and the vegetative communities contained therein, to eliminate any harm to any animal, fish or shellfish life contained therein, to 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. Rear or side lot drainage from grassed or altered areas of new development along an altered shoreline not directed to a water management system may be discharged to an adjacent water body/wetland; however, the area not treated must be compensated elsewhere in the system. This may be accomplished by providing additional water quality treatment in the system equivalent to that which will be discharged untreated. Water discharged shall be at non-erosive velocities. Rear or side lot drainage from grassed or altered areas of new development along an unaltered shoreline not directed to a water management system may be discharged to an adjacent water body/wetland through the twenty-five (25) feet buffer (water discharged shall be at non-erosive velocities), with the following permitted activities:

(1) Pruning vegetation to retain or create a reasonable view. Ground cover and shrub vegetation to a height of thirty-six (36) inches should be retained.

(2) A maximum of fifty (50) percent of the basal area of trees, and a maximum of fifty (50) percent of the total number of saplings, may be removed for any purpose in a twenty-year period. A healthy, well-distributed strand of trees, saplings, shrubs and ground covers and their living, undamaged root systems shall be left in place. Replacement planting with native, low maintenance vegetation is permitted to maintain the fifty (50) percent level.

(3) Dead, diseased, unsafe, or fallen trees may be removed.

(4) Bridges, paths, walkways, gazebos, docks and decks, bulkheads, seawalls, and retaining walls, and accessways to such amenities are permitted across the buffer provided such activities have minimal impact to the wetlands and are scaled to preserve the integrity of the buffer (less than ten (10) percent of the total area calculation of the buffer). These structures must demonstrate that they are of a reasonable, compatible scale to similar structures in the neighboring area. Structures in Conservation Overlay Zone 2 that are connected to adjacent structures in Zones 1 or 3 shall be sized relative to that adjacent structure and be designed so as to minimize off-site visual and environmental impacts. The applicant will present any mitigating design and environmental elements as part of the review of the structure in Conservation Overlay Zone 2.

(5) For commercial properties with an approved storm water management system, the required 25-foot buffer can be reduced to provide public access to vistas, scenic opportunities and the waterfront which are determined to benefit the public as a whole as articulated in the Comprehensive Plan to encourage access to the water.

Commented [SD2]: Should we beef this up with something from the vision plan or comp plan about vibrant communities or walkability or something to that effect?

Restoration plan(s) shall be developed to achieve the fifty (50) percent criteria above for those sites already disturbed. If the altered shoreline is bulk-headed, softening of this hardened shoreline with riprap, environmentally engineered materials or other techniques to soften wave energies and promote vegetation is encouraged. Should a softening effort be employed, a reduction in the twenty-five (25) feet buffer may be permitted.

(c) The following information shall be provided and ~~A~~applications for development in Conservation Overlay Zones shall be evaluated according to the following criteria:

(1) Site specific conditions.

(2) The site's relationship to adjacent properties including parcel and existing grade elevations which may include a lot grading plan, 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 including general impacts related to flood management or fill.

(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. Water quality objectives will be presumed to have been met if runoff water is routed to a surface water management system permitted by the St. Johns River Water Management District or to a treatment facility that is equivalent to the water quality treatment criteria (water retention/detention) of the water management district. (An engineer or landscape architect licensed in the State of Florida is required to certify that the treatment facility is equivalent to the district's criteria.)

(16) Impact of development on shellfish and on commercial and sport fish and waterfowl.

Commented [SD3]: Maybe add including the lot grading plan reviewed by staff?

(17) Specific conditions applicable to docks. In addition to the considerations listed in subsections (1) through (16) herein, no boathouse, roofed structure or wall shall be constructed on any dock. This section shall not prohibit the use of bumpers or similar structures built at or near the water line and below deck elevation to protect the dock from damage caused by moored vessels. The deck of any private boat dock shall not exceed eight (8) feet in height above mean high water. Boatlifts mounted on docks, or constructed on or adjacent to a dock, shall be limited to a capacity of twelve thousand (12,000) pounds or less. All boatlifts shall be low profile boatlifts or no profile boatlifts, and no boats in excess of thirty-two (32) feet in length shall be allowed on a boatlift. In addition, the maximum height, excluding masts, antennas and other non-occupiable features, of a boat suspended in a boatlift shall not exceed eight (8) feet above the gunwale (gunnel); whereby, the gunwale (gunnel) is defined as the upper edge of the side of the ship or boat. A low-profile boatlift is a boatlift for a single watercraft in which no part of the boatlift shall exceed three (3) feet above the deck. A no profile boatlift is a boatlift for a single watercraft in which no part of the boatlift shall protrude above the deck.

(d) 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 significant trees or impact adjacent parcels through the placement of fill. The planning and zoning board is authorized to impose limitations on the nature and manner of construction and/or 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. Limitations may also be imposed to protect against impacts to adjacent or nearby parcels related to the placement of fill.

(1) In determining whether or not a permit required by this section should be issued, the city planning and zoning board shall consider and base all decisions on the following:

a. The condition of the tree with respect to disease, insect attack, danger of falling, proximity to existing or proposed structures and interferences with utility services.

b. The necessity of removing a tree to construct proposed improvements in order to allow reasonable economic use of the property.

c. The relief of the land where the tree is located and the effect removal of the tree would have on erosion, soil moisture retention, diversion, increased or decreased flow of surface waters and the city master drainage plan or similar plan adopted by the city commission.

d. The number and density of trees existing in the neighborhood on improved or unimproved property. The planning and building division shall also be guided by the effect removal of a tree would have on property values in the neighborhood where the property is located and on other vegetation in the neighborhood.

e. Whether the tree has been designated a significant tree.

f. Impact upon the urban and natural environment, including:

1. Ground and surface water stabilization.
2. Water quality and aquifer recharge.
3. Ecological impacts.
4. Noise pollution.
5. Air movement.
6. Air quality.
7. Wildlife habitat.

g. The ease with which the property owner or agent can alter or revise the proposed development or improvements to accommodate existing trees, including the tree or trees proposed to be removed.

(e) Issuance of permit. The planning and building division shall issue the removal permit for trees not identified as significant trees under section 11-27 unless, upon consideration of the criteria set forth above, it finds any of the following will result:

(1) That the property owner or agent will not be unreasonably affected in shifting the location of the proposed structure, building or improvement, which shift will maintain the existence of the subject trees and still permit construction of such building or improvement on the site.

(2) That the property owner or agent will not be unreasonably affected in modifying the design of the proposed structure, building or other improvement, which modification will maintain the existence of the trees proposed to be removed and still permit construction substantially similar to that originally proposed.

(3) That the removal of the subject trees will have a substantial adverse impact on the urban and natural environment.

(4) That the subject trees are significant trees and removal must be reviewed by the planning and zoning board.

…"

SECTION 4. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

SECTION 5. If any section, subsection, sentence, clause, phrase or provision of this ordinance is held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not be so construed as to render invalid or unconstitutional the remaining provisions of this ordinance.

SECTION 6. This ordinance shall be effective ten (10) days after passage, pursuant to s. 166.041(5), Florida Statutes.

PASSED by the City Commission of the City of St. Augustine, Florida, this _____ day of _____, 2025.

ATTEST: _____
Nancy Sikes-Kline, Mayor-Commissioner

_____
Darlene Galambos, City Clerk
(SEAL)

March 19, 2025, Public Workshop PowerPoint

CITY OF ST AUGUSTINE
EST. 1565

RESILIENTSTAUG

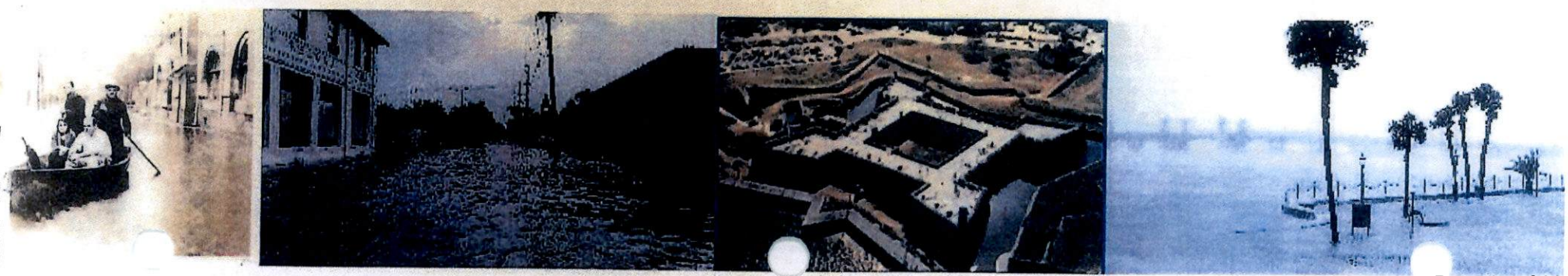
City of St. Augustine

Resiliency and Building Techniques

Public Workshop

March 19, 2025

Planning and Building Department



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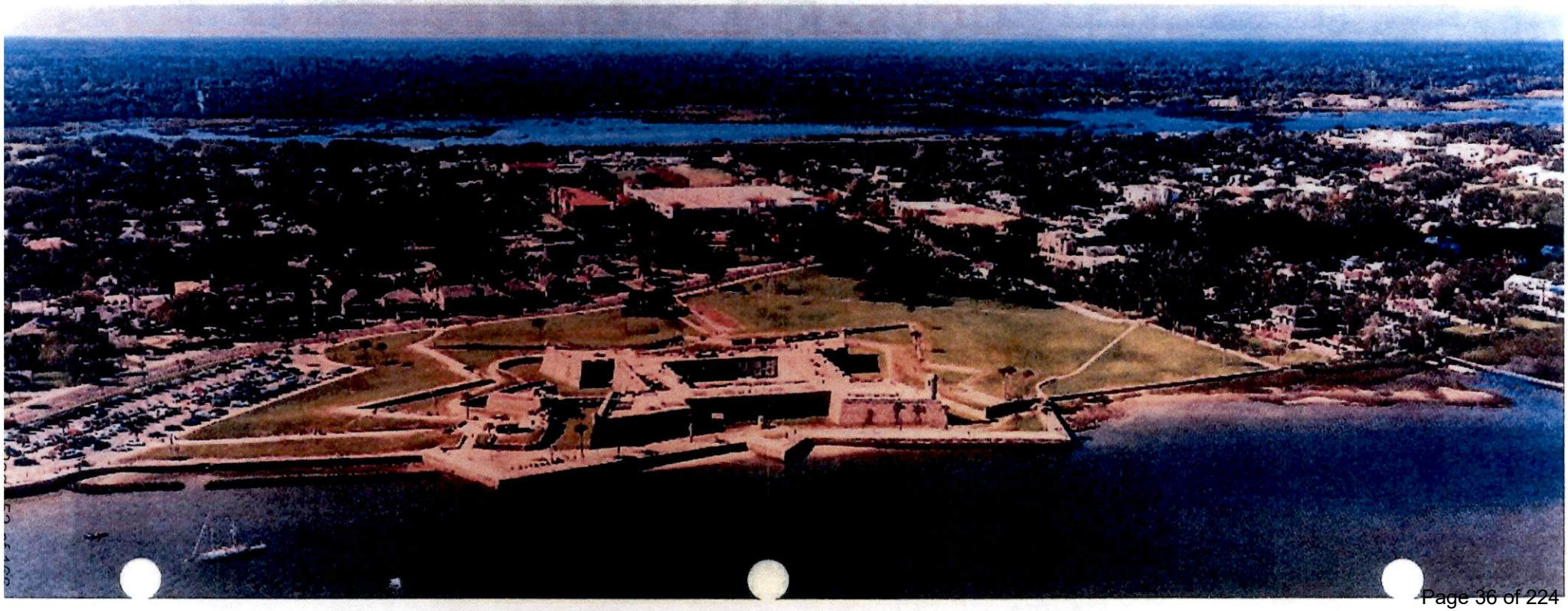
Presentation Outline

- Why do we flood? A look at our challenges…
- Building Techniques
- Policy Options
- Design Techniques



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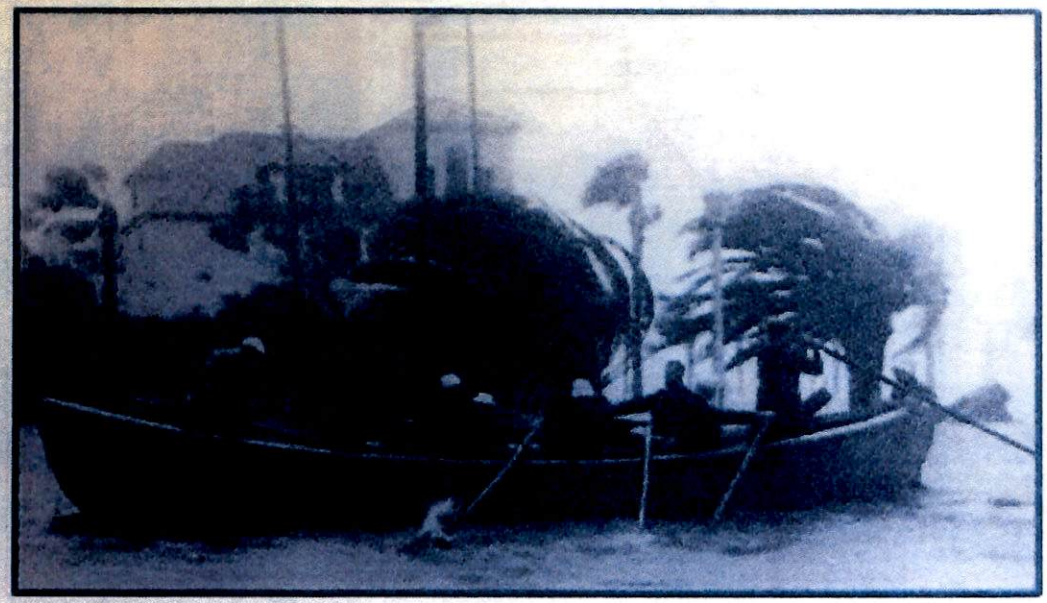
Why Do We Flood ?

Flooding is not new to the City



However, the frequency of "sunny day" flooding is on the rise

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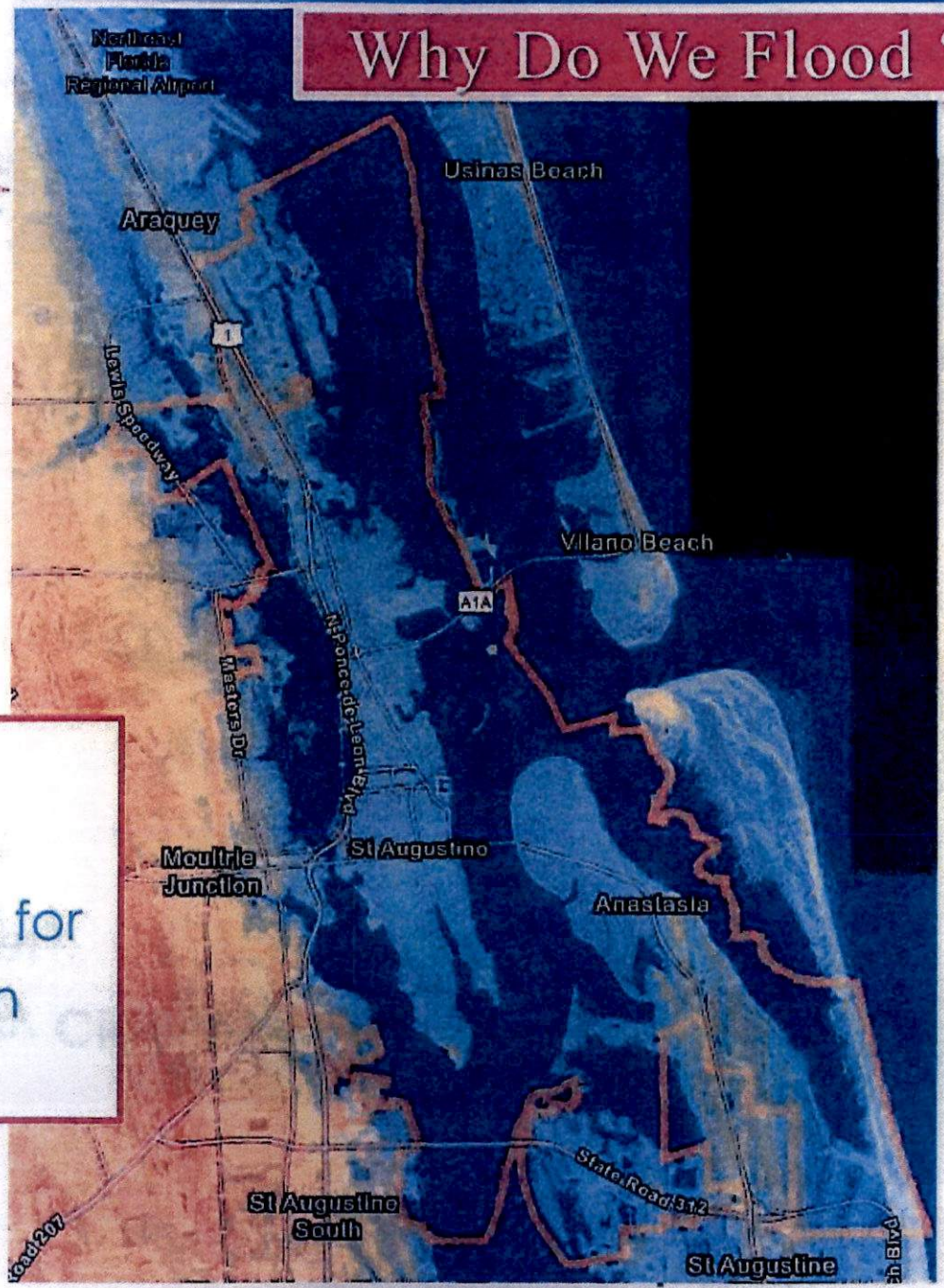
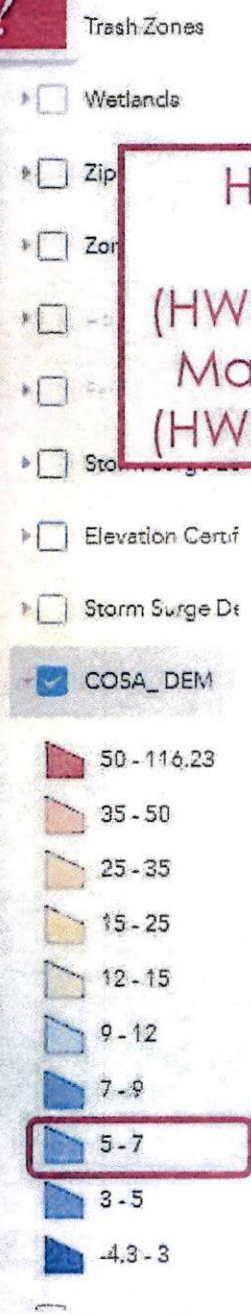
Why Do We Flood ?





Hurricane's Ian and Nicole (HWM ≈ 6.5 NAVD88) Matthew and Irma (HWM ≈ 7.5 NAVD88)

Digital Elevation Mapping for the City in NAVD88

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Why Do We Flood ?

Current City Challenges (Stormwater):

- Aging infrastructure
- Undersized collection system
- Low-lying and coastal location (90% of the City is within a flood zone)
- Highly developed (high impervious area)
- **Subject to flooding – both from rainfall and tidal/coastal influence (compound flooding)**

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Why Do We Flood ?

Current City Challenges (impacts on the floodplain):

- Low-lying and coastal location (90% of the City is within a flood zone)
- Impacts of altering drainage patterns (filling and grading)
- Meeting FEMA required Finished Floor Elevations and Planning for Future Resilience
- Highly developed sites on small lots (high impervious area)

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Types of Flooding

September 2020 - Flood Event (Compound Flooding)

"King Tides"

+

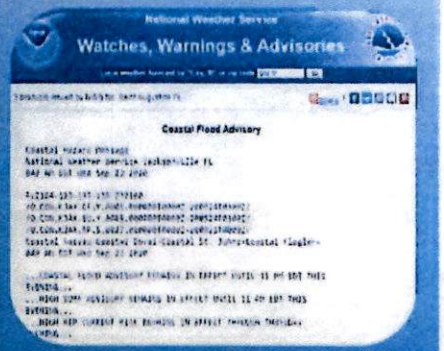
Nor'easter
> 20 mph (3 days)
10-15 mph (1 day)

+

Rainfall 2-3 inches

+

Multiple Flood Advisories Issued



= CITY WIDE FLOODING

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FEMA Flood Zones

- Flood zones correlate to elevations
- Most of the city is in an AE flood zone
- Flood Zone AE is an area designated as a high-risk flood zone by FEMA because of its proximity to floodplains, rivers, lakes, and other bodies of water. AE flood zone areas have a 1% risk of flooding annually with a 26% risk of flooding over the course of a 30-year mortgage.

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FEMA Flood Zones

In 2017 the city added required standards for building in the flood zone:

1. **Freeboard** - a one-foot freeboard for all residential structures which is now a state requirement in the Florida building code.
2. **Foundation protection** - requires construction documents to be prepared and sealed by a registered design professional that the design and methods of construction resist flood loads.
3. **Local drainage protection** – for new construction that is outside of the Special Flood Hazard Area (Zone X), the lowest habitable floor is elevated at least 12" above the crown of the road (predominantly Lighthouse Park and West City).

Community Rating System (CRS)

- The city participates in the Community Rating System (CRS).
- The purpose of the CRS is to lower the cost of flood insurance for property owners within that community.
- The CRS gives points to communities for different activities that they engage in that help with reducing flood claims.
- The points for our community reduces flood insurance rates.
- On a scale of 10-1 the city has gone from a 7 to a 4 in the last nine (9) years

The CRS actually gives points to communities that prohibit fill. Different points are given for the different ways of prohibiting fill, such as:

1. Prohibiting fill for all new construction,
2. Prohibiting fill for only residential structures,
3. Requiring compensatory storage,
4. Prohibiting fill but allowing for fill within stem walls.

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Feedback

- What do you see in your neighborhoods?
- Are you feeling impacts from new developments?
- What site development considerations are you making?
- Have you changed any site development recommendations for homeowners or clients?
- Should the city regulate fill? How much? Height?
- If so, how much is reasonable? How much is necessary to develop a site properly?

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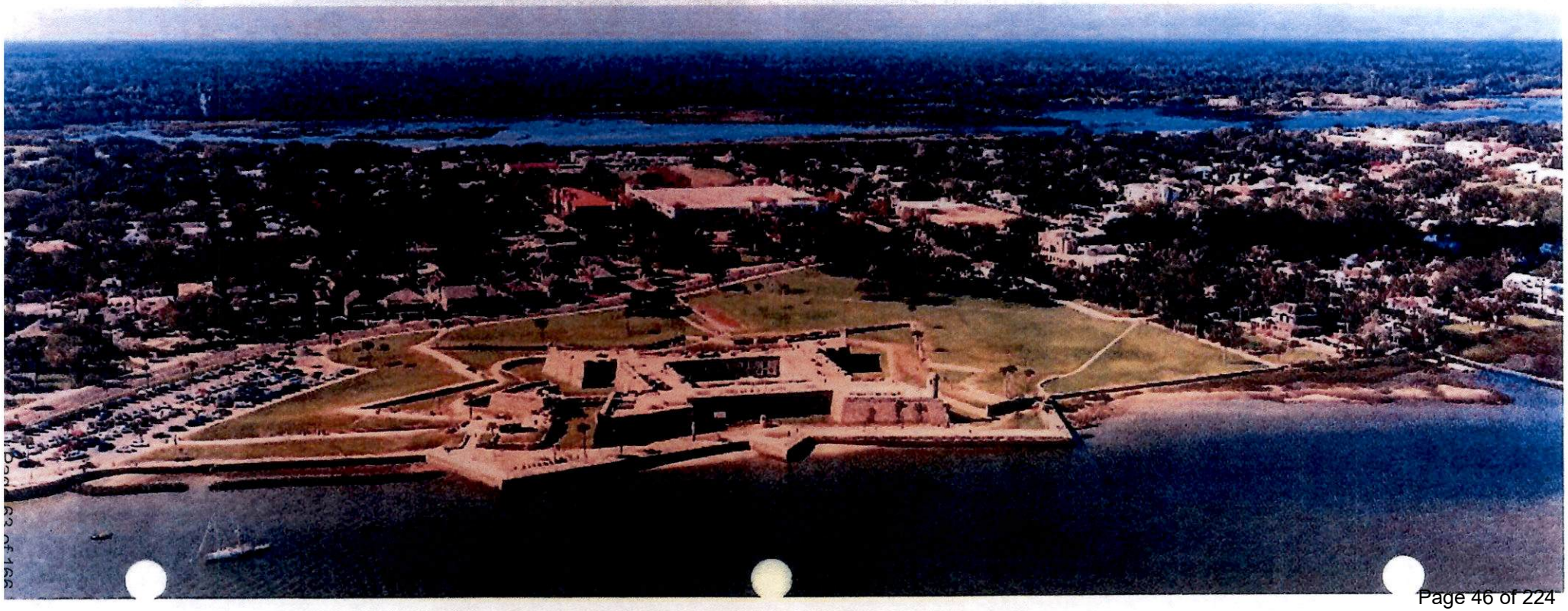

Resilient Building Options

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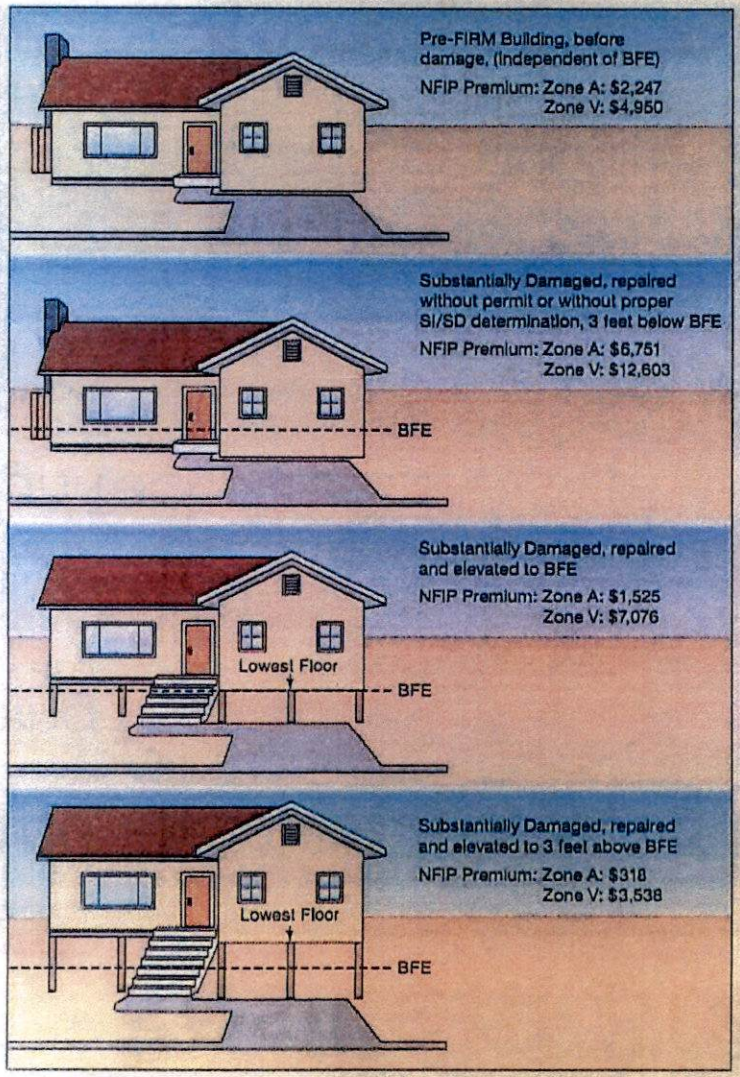
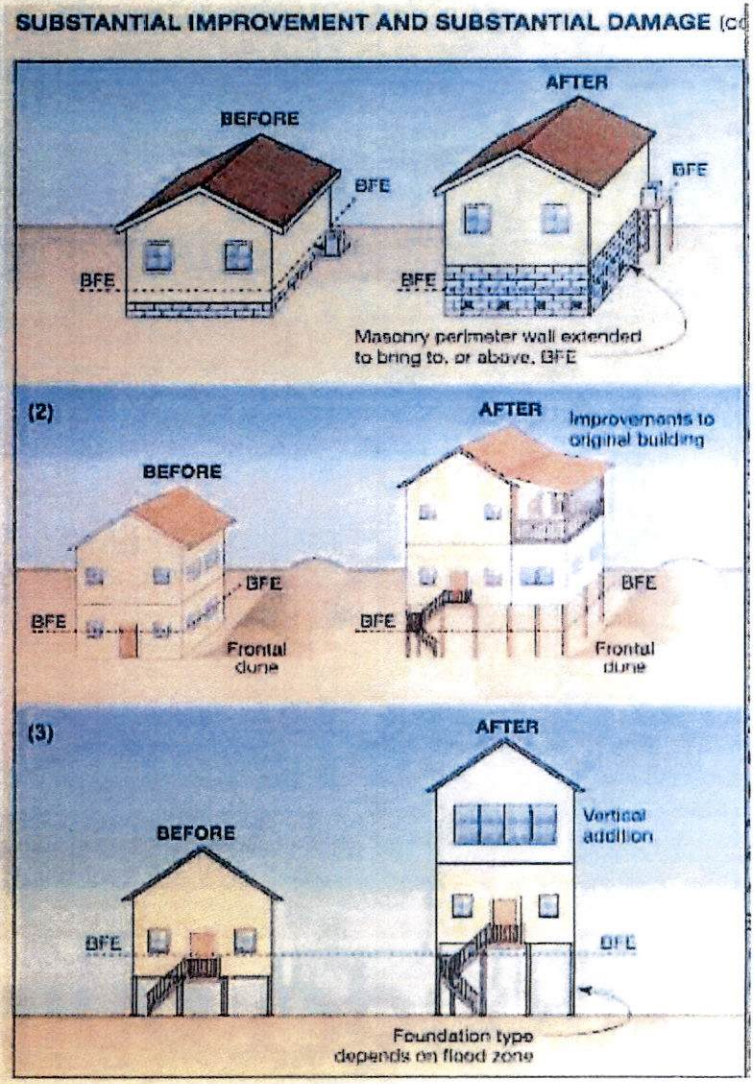
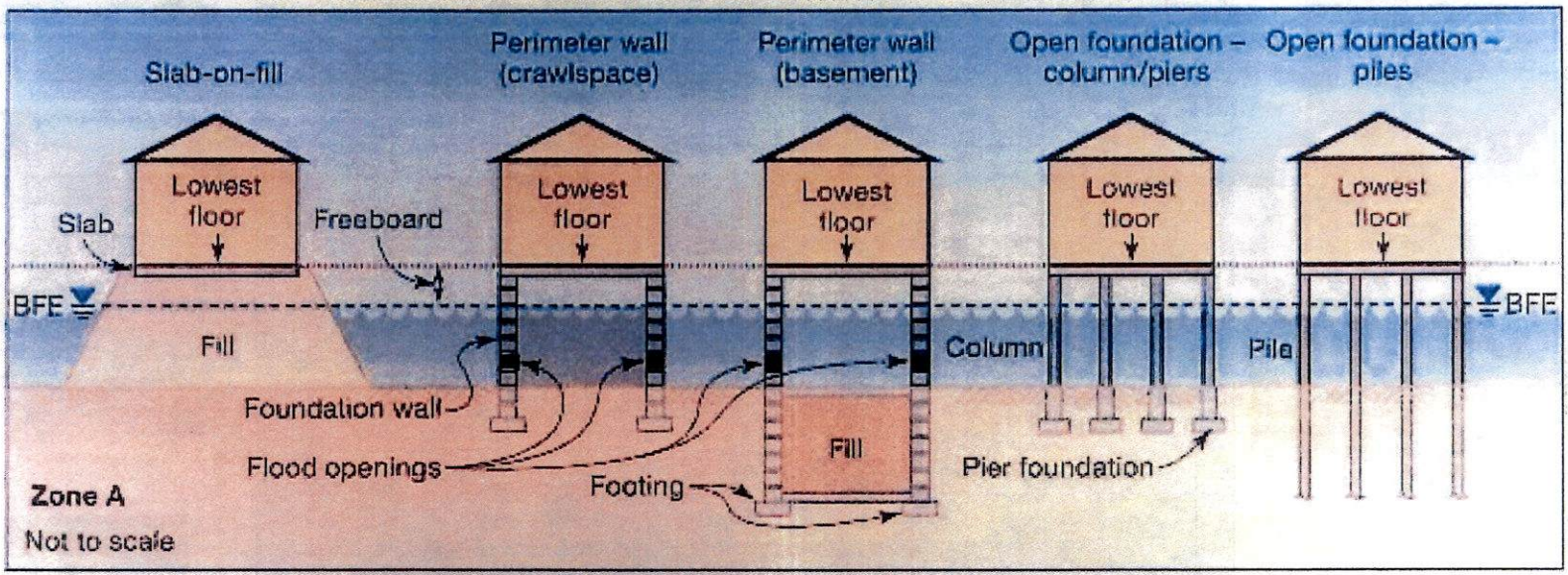
The cost of an NFIP flood insurance policy varies depending on how a substantially damaged building is repaired. The example illustrated is for a one-story, single-family home without basement or enclosure. Premiums shown are based on $250,000 building coverage with $2,000 deductible (rates as of April 2018), without fees and surcharges. This figure is for comparison purposes only.





Resilient Building Options



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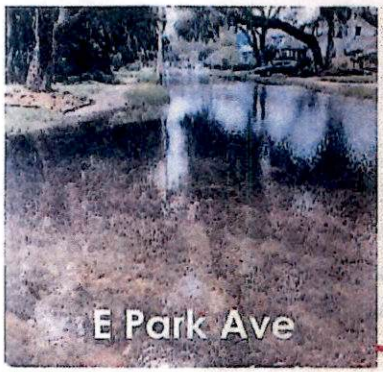
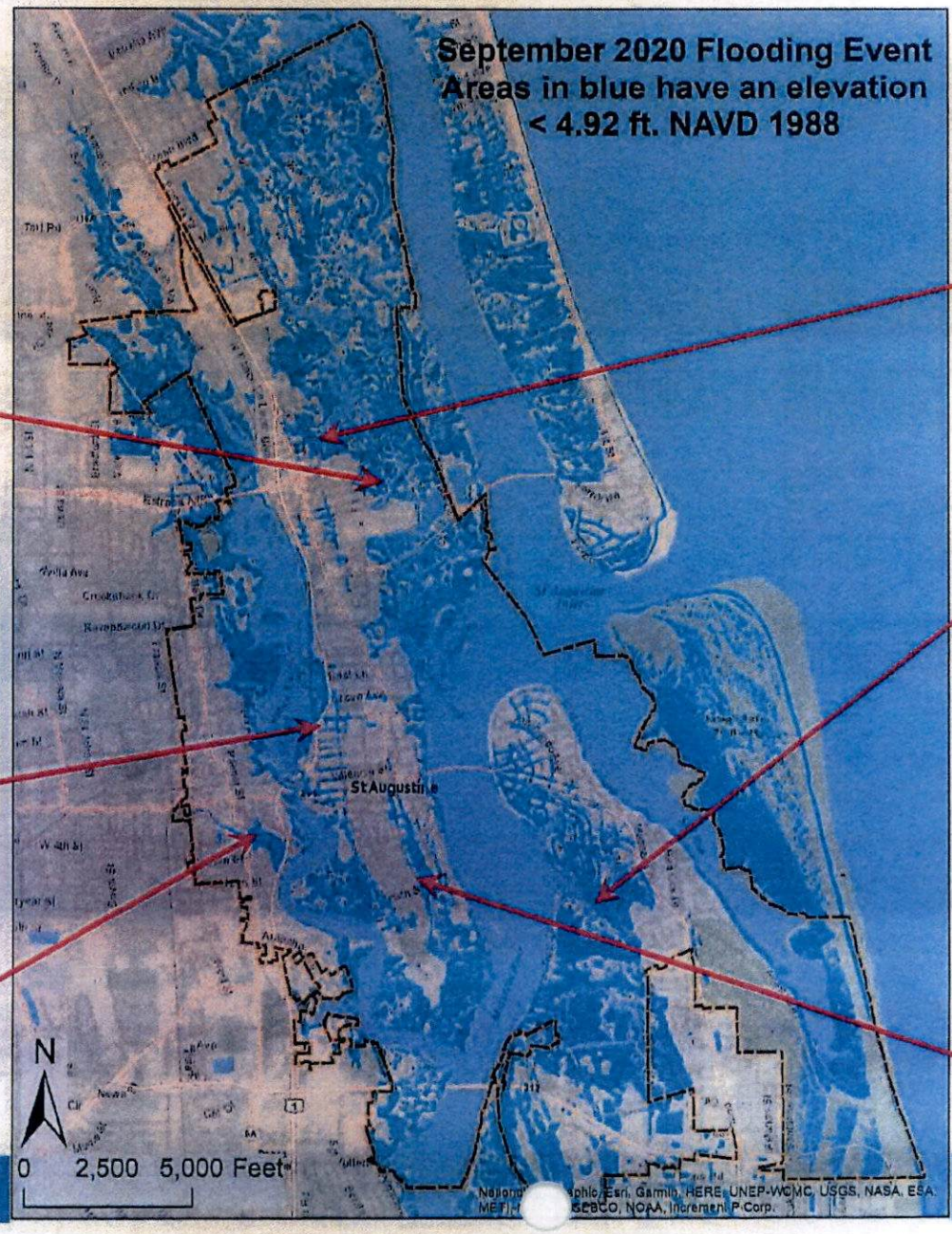
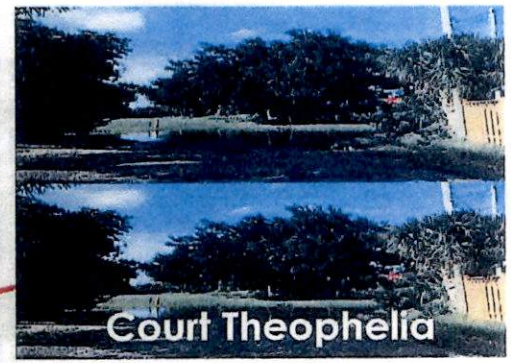
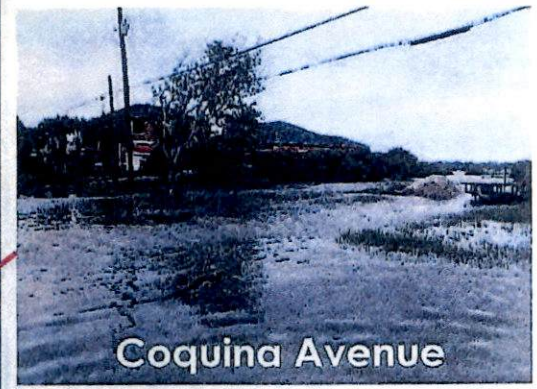
Where Do We Flood ?

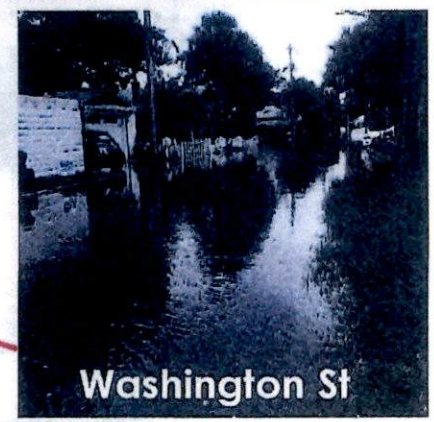
September 2020 - Flood Event (Compound Flooding)











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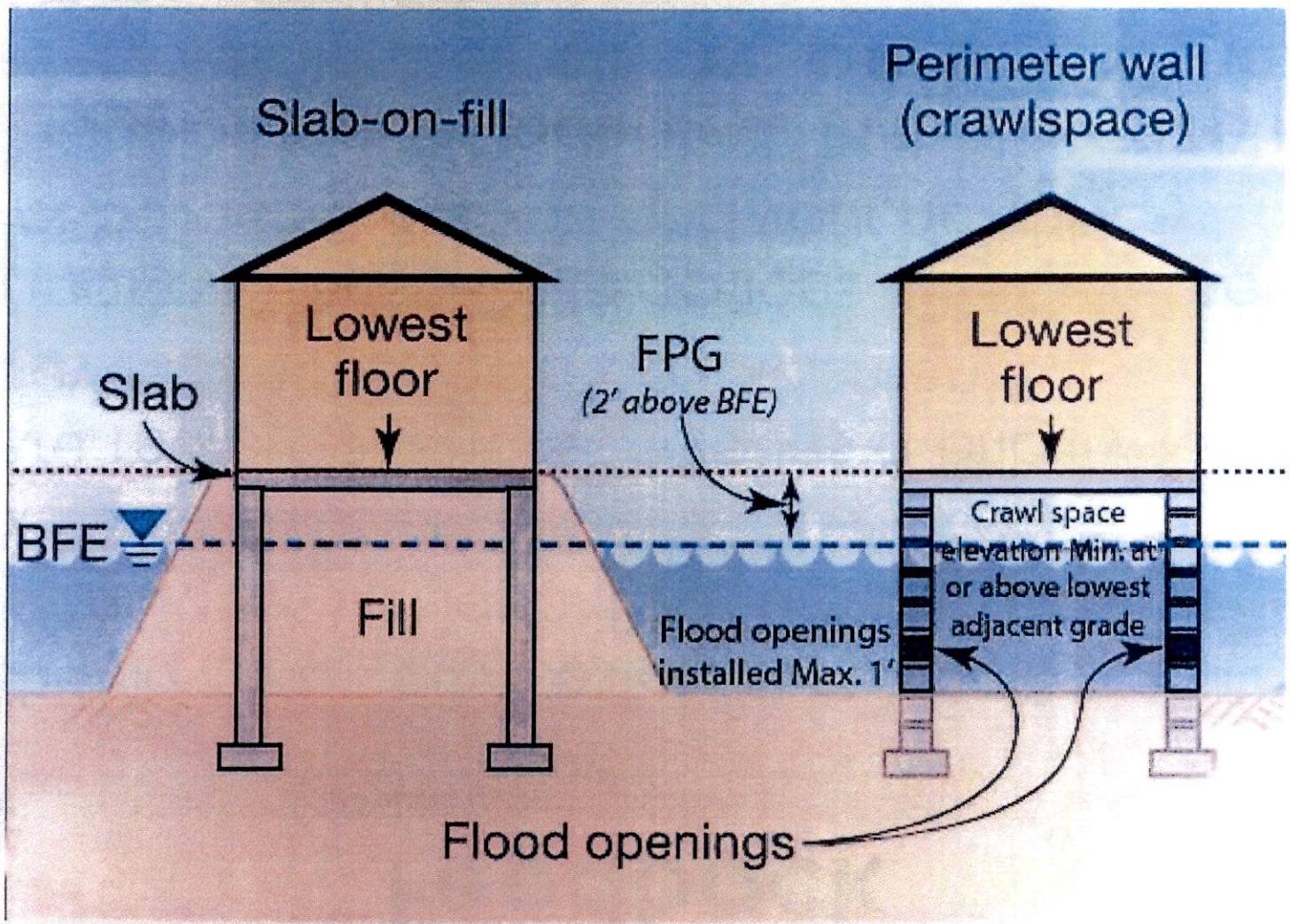
Resilient Building Options



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Feedback

- Should the city establish specific building techniques in identified areas, such as low-lying areas?
- Are more resilient techniques a priority for new development and redevelopment?
- What are reasonable options or requirements? For builders? For you and your neighbors?
- If regulations are adopted, then they apply to everyone in the city or just in designated areas?

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Presentation Outline

- ✓ Why do we flood? A look at our challenges…
- ✓ Building Techniques
- Policy Options
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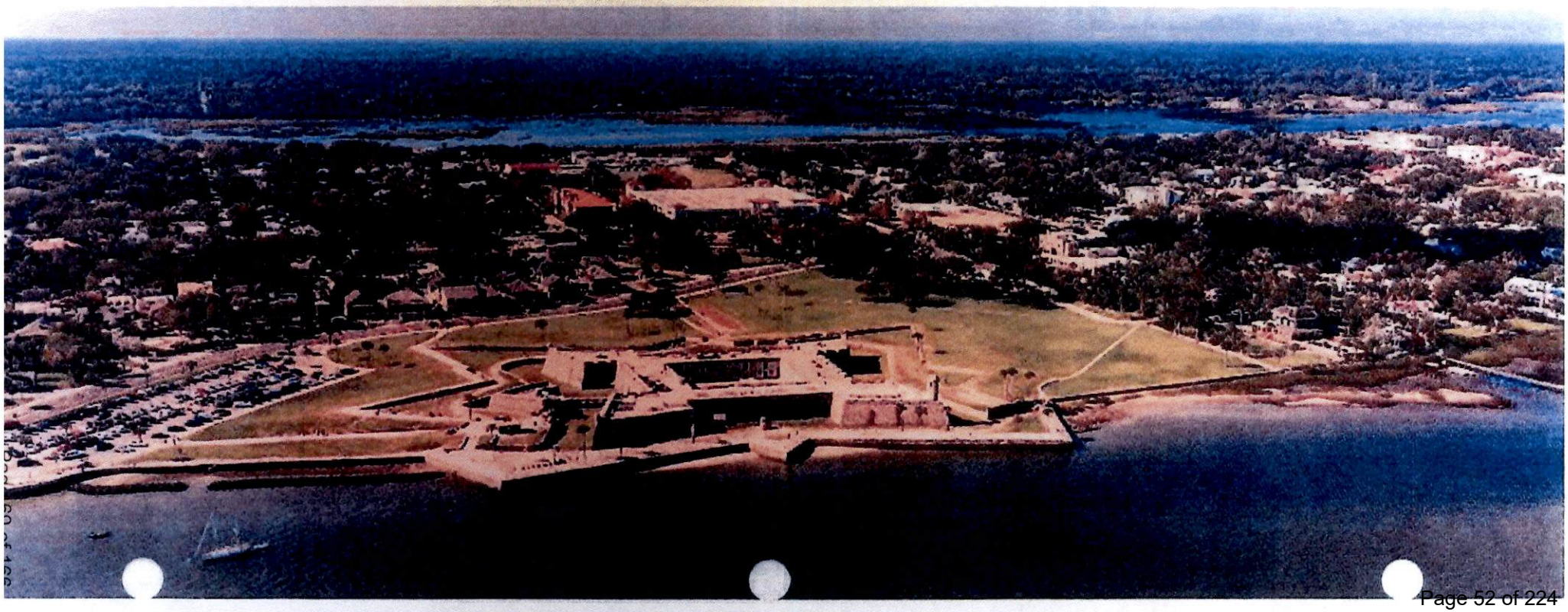
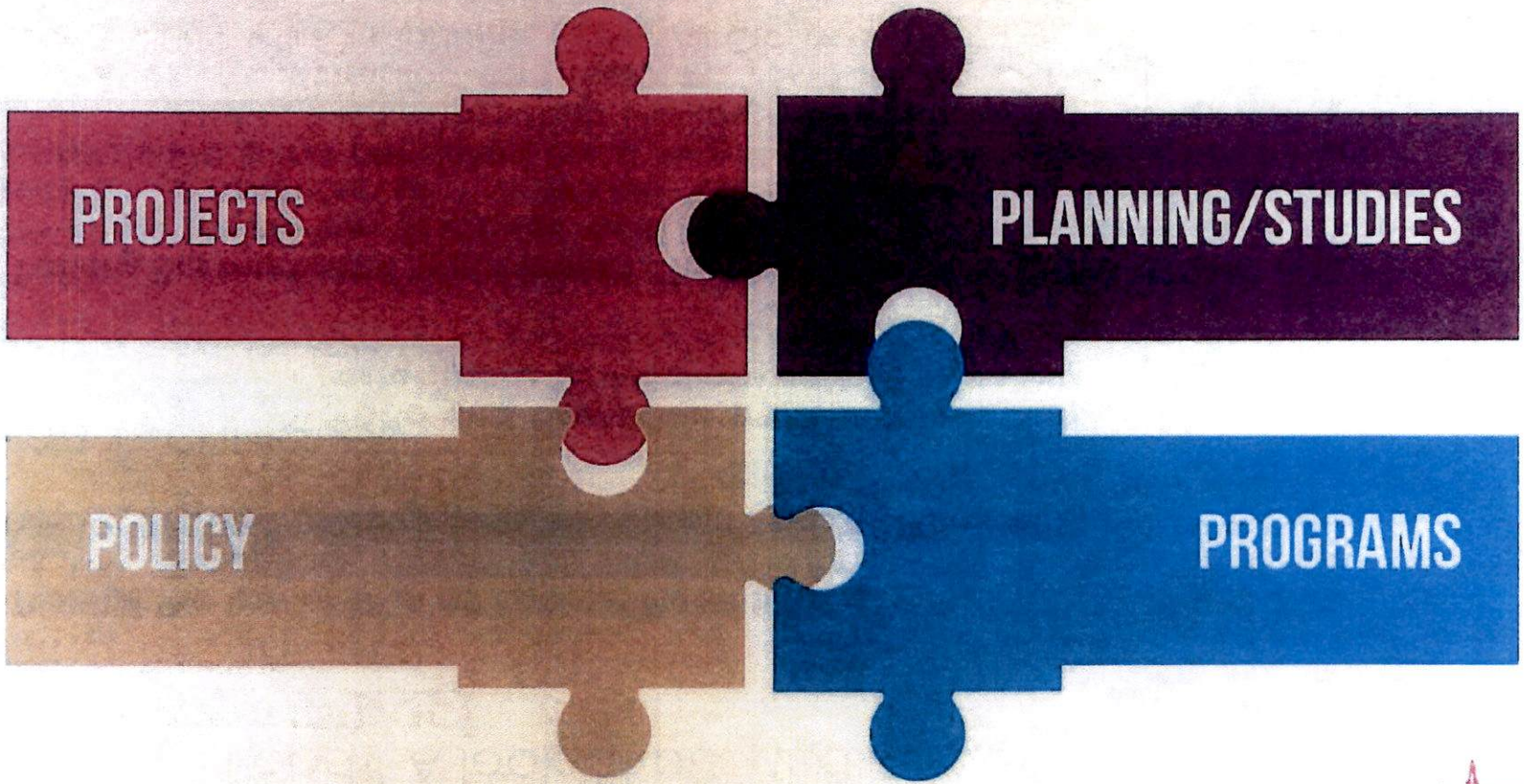


Overview of the Resilience Program and Strategy



www.citystaug.com/resiliency

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Potential Policy Options

Tier 1 – High Impact

1. Prohibit the use of fill in all Special Flood Hazard Areas (SFHA) (Flood Zones A, AE, V, and VE). Exceptions made for small amounts (6 in. or less) of fill dirt used for landscaping and grading purposes only. (Possible CRS points)

2. Prohibit slab-on-grade and backfilled stem-wall foundation types within the SFHA. This would allow for crawlspace foundations only (ie. piers or pilings) within the SFHA.

3. Raising the freeboard requirement. The City currently requires all new or substantially renovated residential structures built within the SFHA to have their finished floor elevation a minimum of 1 ft above the property's base flood elevation (BFE). A property's BFE is the predicted flood height during a %1 annual-chance-flood event. Further increasing the finished floor elevation height requirement (ex. BFE + 2ft) would provide added protection and reduced flood risk for all newly built or substantially renovated residential structures. (Possible CRS points)

Potential Policy Options

Tier 2 – Moderate Impact

1. **Limiting the use of fill to a "reasonable" amount.** Instead of completely prohibiting the use of fill, another option is setting a maximum allowable amount.

- Example 1 - A maximum of 2 feet of fill above the existing grade is permitted around the perimeter of a proposed structure only. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall a minimum of 6 inches within the first 10 feet.

- Example 2 – The amount of fill will not exceed the BFE of the property around the perimeter of the proposed structure. *Lots* shall be graded to drain surface water away from foundation walls. The *grade* shall fall a minimum of 6 inches within the first 10 feet.

CITY OF ST AUGUSTINE EST. 1565

Potential Policy Options

Tier 2 – Moderate Impact

2. Require a "Certification of No Adverse Impact" signed by a licensed engineer stating that "*the proposed development will not adversely affect flood risks for other properties and communities as measured by increased flood stages, flood velocities, or increased potential for erosion and sedimentation. or any other impact deemed important or as specified by the city of St. Augustine, unless the impact is mitigated as provided for in a community or watershed-based plan. This certification shall employ industry standards for hydraulic and hydrological analysis to determine no adverse impact and all data shall be provided in hard copy and digitally for review and corroboration by the city's engineer or any governmental review agency acceptable to the city of St. Augustine*"

A *certification of no adverse impact* could be applied widely, to say to all development related permits involving the use fill within the SFHA, or more narrowly, for unique permit specific circumstances or specific areas.

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Potential Policy Options

Tier 2 – Moderate Impact

3. Applying floodplain management regulations in the 0.2%-annual-flood-hazard area. This would mean flood zones "X", and "X – shaded" located within the City are treated as "A" zones in regard to floodplain regulations. In other words, the entire City would be treated as a part of the SFHA, and would be subject to all applicable higher regulatory standards and floodplain regulations. (Possible CRS points)

FEMA's classifies flood zones "X" and "X – shaded" as areas of minimal and moderate flood hazard, respectively. They are normally excluded from the SFHA, and unlike flood zones "A", "AE", and "V", are not subject to FEMA NFIP regulations.

Potential Policy Options

Tier 3 - Low Impact

1. **Limit Lot Coverage.** Consider reductions to allowed lot impervious coverage (e.g. 50%). Consider increasing allowed heights in exchange for smaller building footprints. Also consider prohibiting or limiting the footprint of accessory structures, such as storage structures or detached buildings.

2. **Low Impact Development / Green Infrastructure.** Consider requiring or incentivizing the installation of green infrastructure to store and infiltrate runoff onsite from new impervious surfaces.

Potential Policy Options

Tier 3 - Low Impact

3. Limit Impervious Surfaces (Private properties). Explore providing information and support to private property owners to reduce impervious services. Consider offering reductions to stormwater utility fees for reduction in impervious surfaces or other incentives. The previous Building Code Task Force recommended utilizing incentive programs to implement porous materials for driveways and patios, and to cap the maximum impervious surface ratio at 70%.

4. Enclosure Limitations. Consider prohibiting or limiting the size of enclosures below the lowest floor / lowest horizontal structure member. The construction method could also be limited to require breakaway walls in lieu of walls of enclosures with flood openings.

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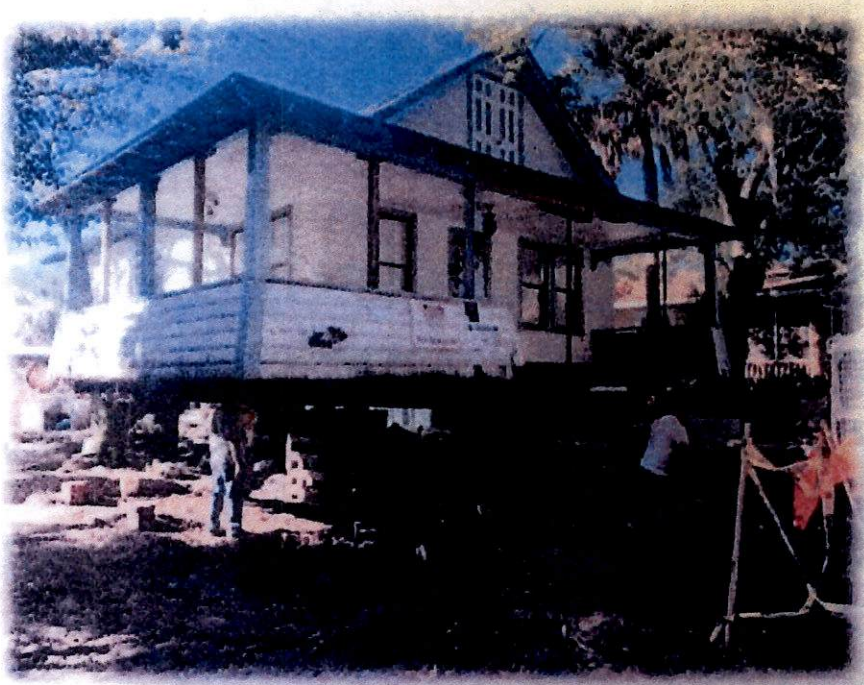
RESILIENT STAUG



Please visit www.citystaug.com/FMA for more info

- ❖ **Flood Mitigation Assistance (FMA) Program**
- ✓ **Cost share program with FEMA to elevate and/or reconstruct flood prone, at-risk structures**

- ✓ FY 22 – Application Cycle:
  - Over 80 properties interested in the program, **61 properties had complete applications that met the program requirements**
  - Eligible applications have been submitted to FEMA for consideration
  - Total funding request of **$12,353,474** submitted that would be cost shared with FEMA if selected
- ✓ FY 23 – Application Cycle:
  - Over 40 properties were interested in the program
  - 10 applications submitted to the State for consideration and have been selected "for further review"
- ✓ FY 24 – Application Cycle:
  - Pending application with the State

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Feedback

- Do any of these policy options sound reasonable? Worth exploring?
- The city already requires a grading plan and limits impervious surface for residential uses to 70% of the lot – should we change these standards and require more site design?
- Again, should the city establish certain building techniques in certain areas, such as low-lying areas?

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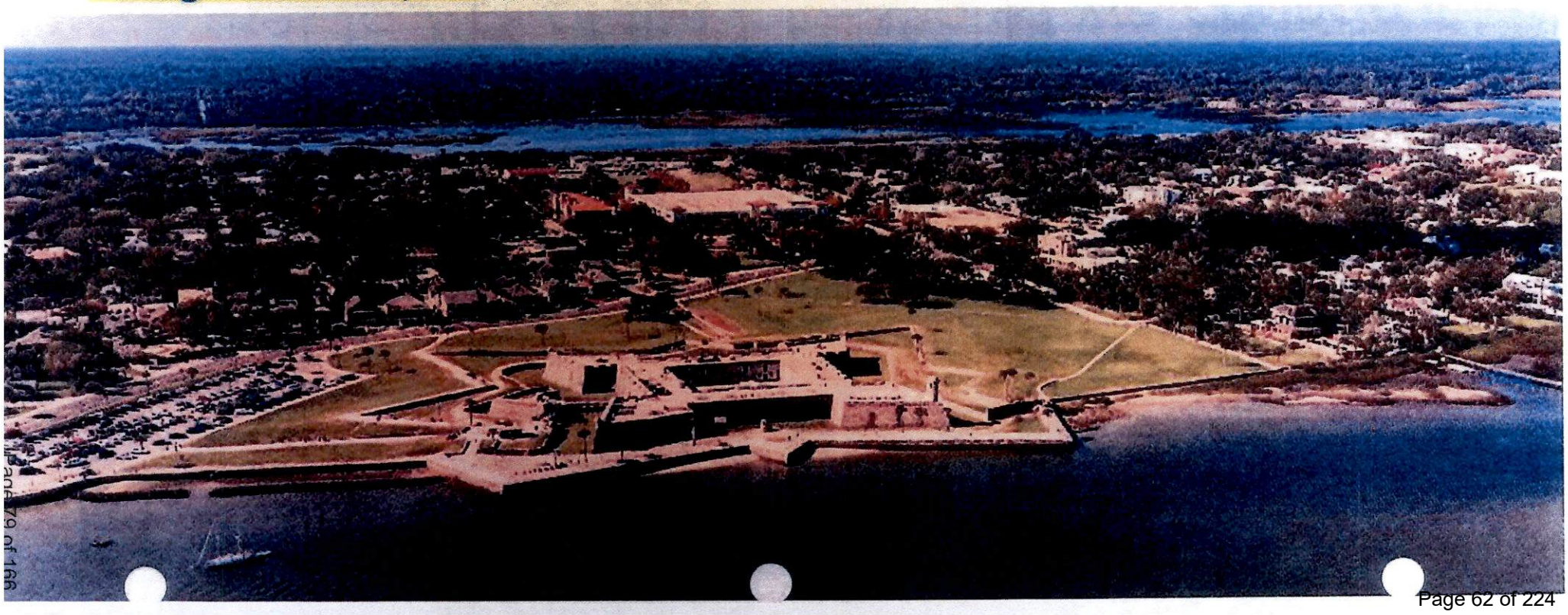
Presentation Outline

- ✓ Why do we flood? A look at our challenges…
- ✓ Building Techniques
- ✓ Policy Options
- Design Techniques



Low Impact Design (LID)

STORMWATER DESIGN OVERVIEW

- Stormwater is recommended to be incorporated into the overall design of the project as amenities.
- The goal of encouraging the use of these mechanisms is to reduce stormwater runoff, capture contaminants closer to the source and reduce the use of potable water for irrigation and grey water activities.

LOW IMPACT DEVELOPMENT (LID) STORMWATER TECHNIQUES

It is recommended that projects include at least two of the following low impact design concepts, which may be located anywhere on the project (including the front setback):

- Raised pier construction for homes (allowing for movement of stormwater and additional infiltration area)
- Rainwater harvesting (rain barrels, underground cisterns, and similar to assist in water conservation)
- Green roofs
- Bio-swales
- Rain gardens
- Pervious pavement (pervious concrete, pervious pavers, and/or other pervious pavements)

Low Impact Design (LID)

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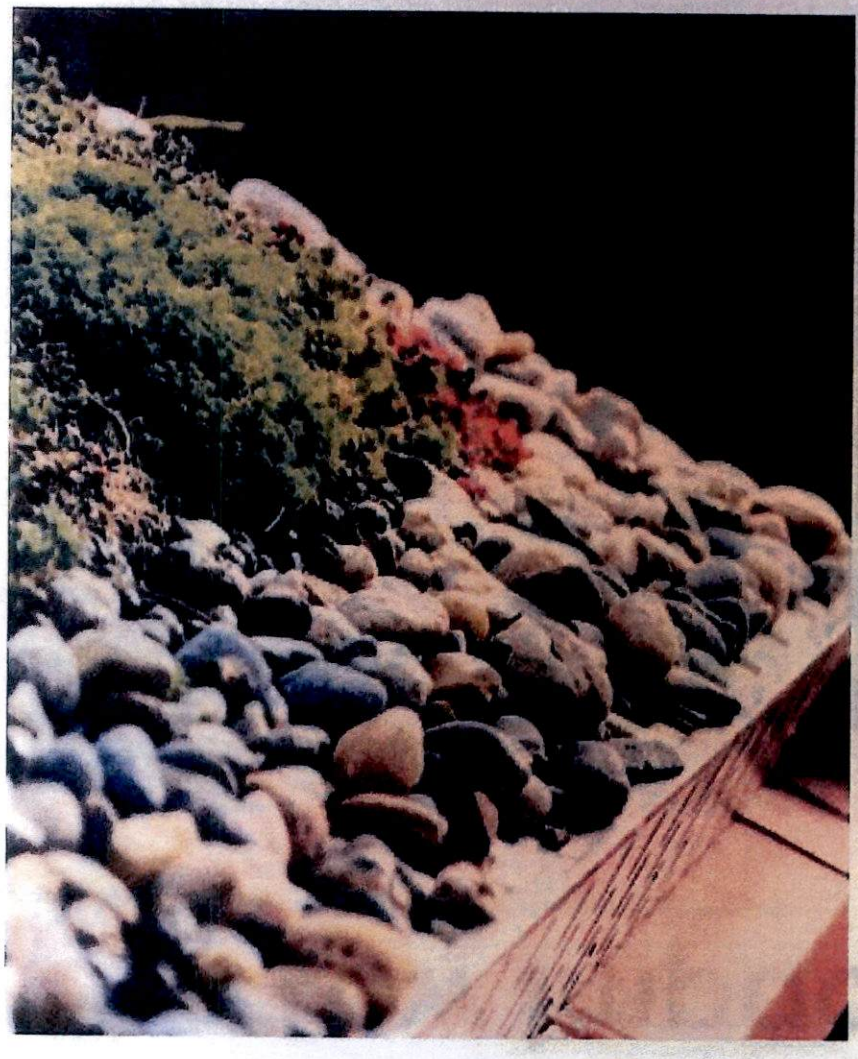
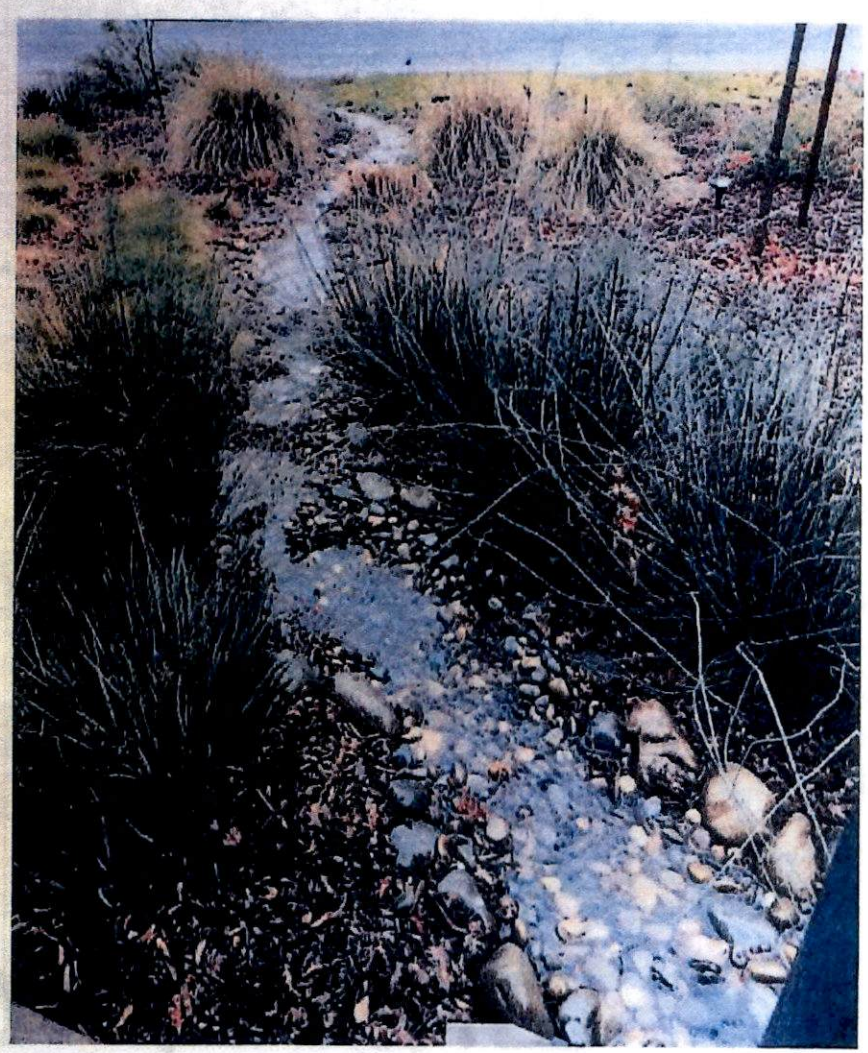
Low Impact Design (LID)





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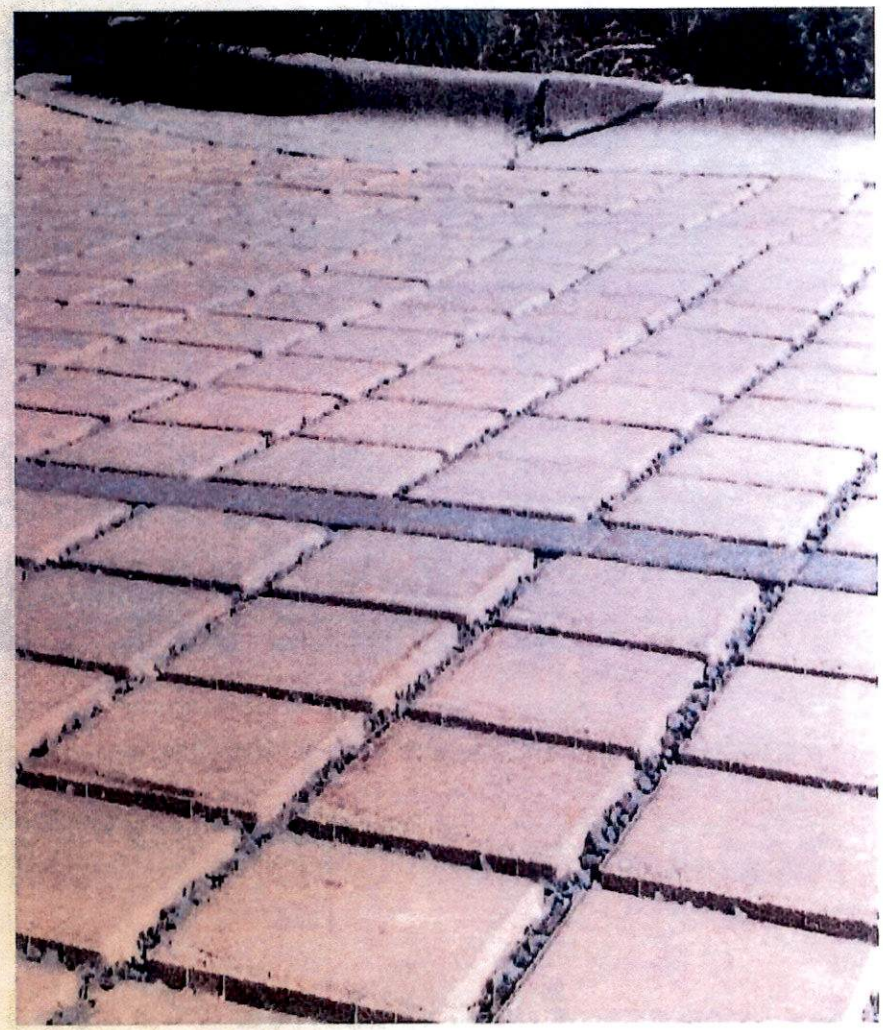
Low Impact Design (LID)



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Storm Resilient Design

STREET WALL AS FLOOD PROTECTION

- It is recommended that the street wall be considered as part of flood protection to the site. When used in conjunction with neighboring walls and earthen berms, it is possible to create an initial barrier to storm surge and flooding.

- Openings in the wall for pedestrian walkways and driveways can be closed during storm events by using temporary barriers.

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Storm Resilient Design

STREET WALLS

- Low block/masonry walls may be appropriate. Street walls are recommended to not exceed 36", but four (4) feet is the maximum per Code. Wall height should be measured from the lower elevation of the public sidewalk or final elevation of adjacent interior development.
- Portions of the wall above 3 feet should not be more than 50% solid.
- Street walls shall be constructed of brick or masonry. Fencing may be included.
- When landscaping is provided between the wall and the sidewalk, the landscaping strip is recommended to be a minimum of two (2) feet wide.

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Storm Resilient Design

FOUNDATION

- The relationship of the building floor height to the surrounding context of the neighborhood is important to consider.
- **Raised Pier Foundations:** There are multiple advantages to raising the foundation, including (a) opportunities for stormwater infiltration, (b) movement of storm surge through a site in hurricane events, and (c) cross ventilation.
- Design recommendations should consider:
- Brick, tabby or concrete block (with texture) piers.
- Spaces between piers left open.
- Lattice infill between piers is common.

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Storm Resilient Design

POTENTIAL FIRST FLOOR ELEVATIONS

- Homeowners may consider further elevating the first floor. General recommendations to keep the architectural context of the homes include:
- Take into consideration maximum heights of FEMA and City required minimum elevations of 35' (conforming lot) and 30' (nonconforming lot).
- Do not raise the home more than 4' from existing grade.
- When raising the home more than 4' from existing grade, consider bringing it up one floor by building a non-occupied space such as garages, storage, and similar under the structure. The inclusion of an exterior porch and first floor entry should be considered in lieu of open "stilt house" base.
- The City encourages sensitivity to the neighborhood character and sense of place created by the streetscape.

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Feedback

- Should these design techniques be suggestions or requirements?
- What are the opportunities? What are the limitations of these techniques?
- What are the potential positives? What are the potential negatives?
- What are your thoughts from a neighborhood and property owner perspective and from a builder and developer perspective?

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Presentation Outline

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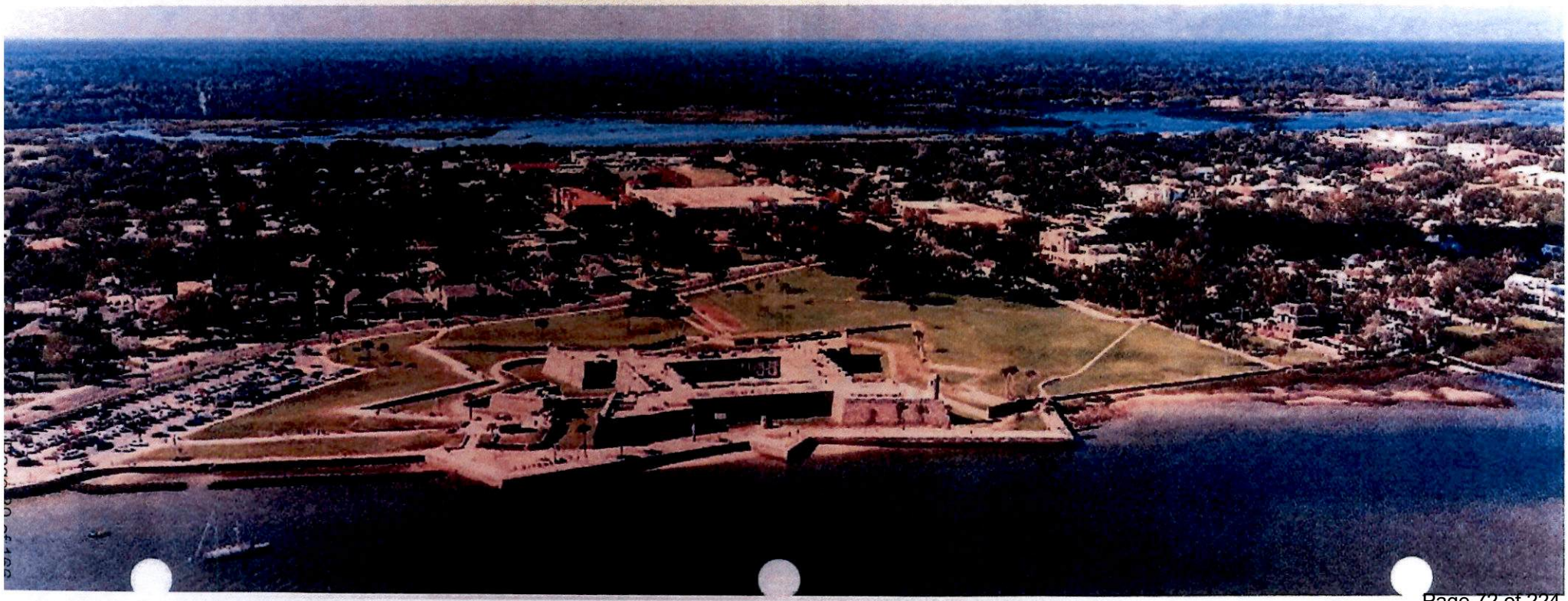

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Thank you for your time!

We appreciate your input!

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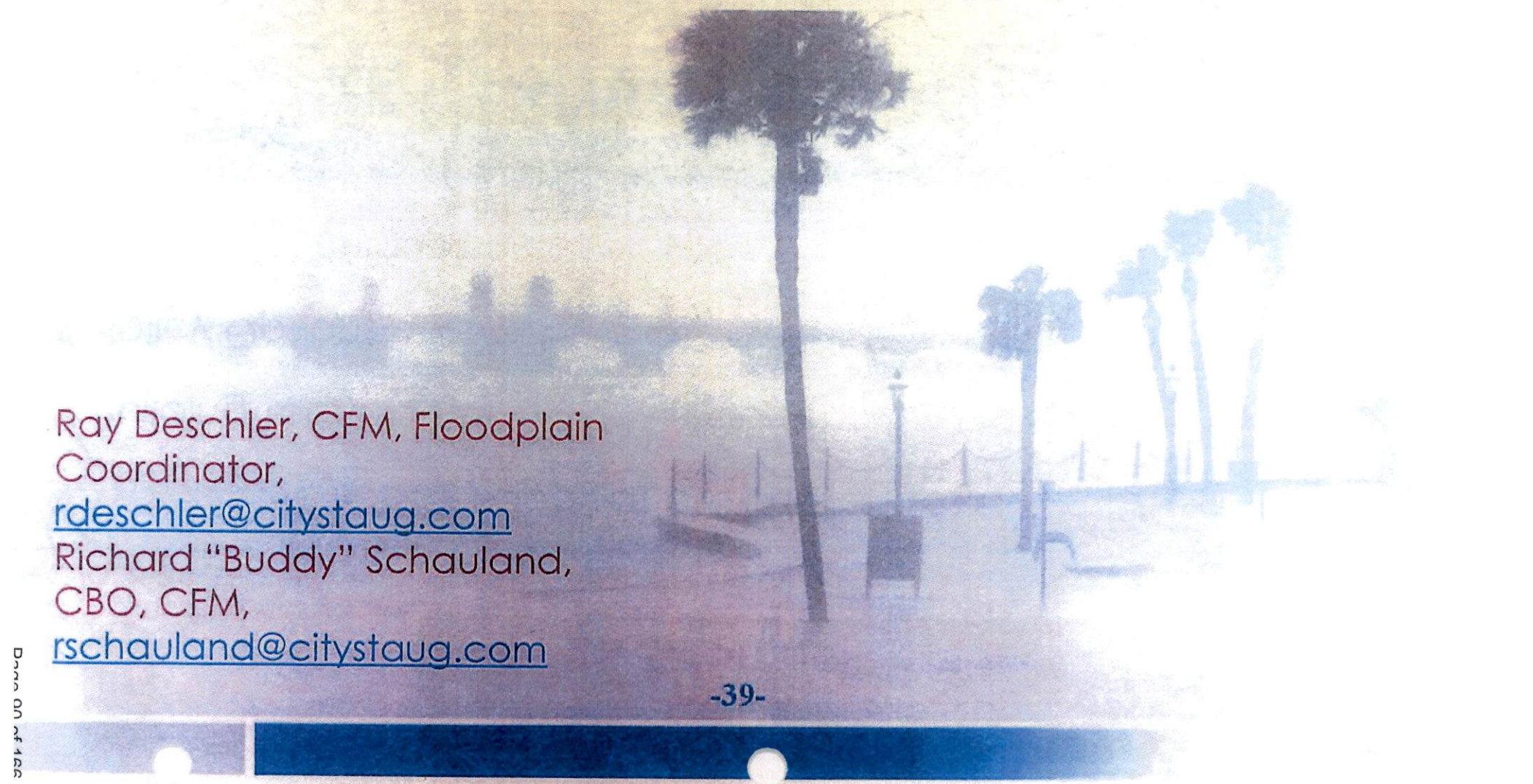

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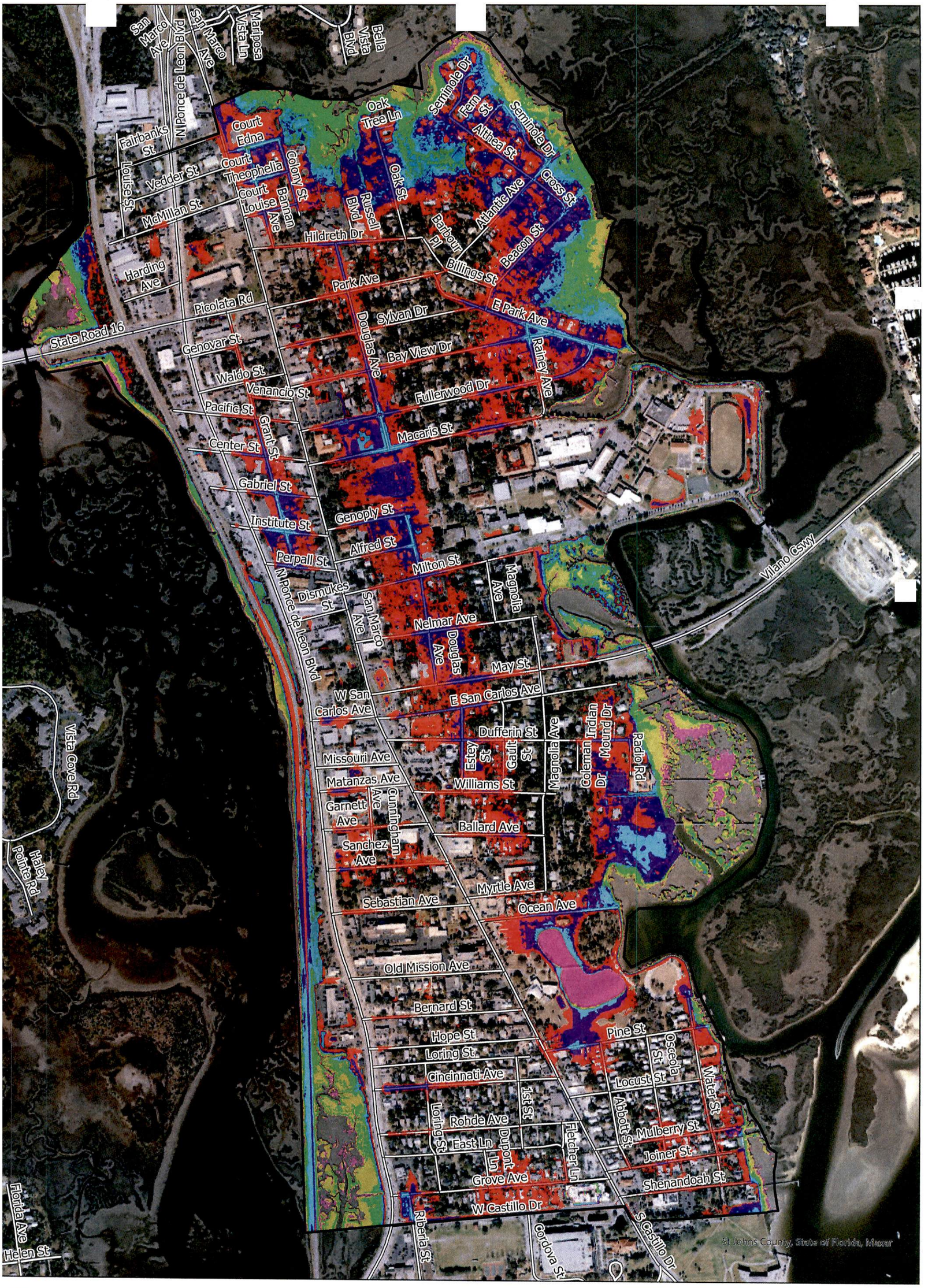
City Maps Illustrating Low Lying Areas



North Downtown St. Augustine: Low-lying Areas

Elevation Range: 0 to 6 ft NAVD88

Legend

- Area of Interest
- Road Centerline - City

Elevations (ft NAVD88)

- 0.001 - 1
- 1.001 - 2
- 2.001 - 3
- 3.001 - 4
- 4.001 - 5
- 5.001 - 6

1:7,500

N W E S

0 600 Feet

Low-lying Areas in Central and South Downtown St. Augustine

Elevation Range: 0 to 6 ft NAVD88

Legend

- Area of Interest
- Road Centerline - City

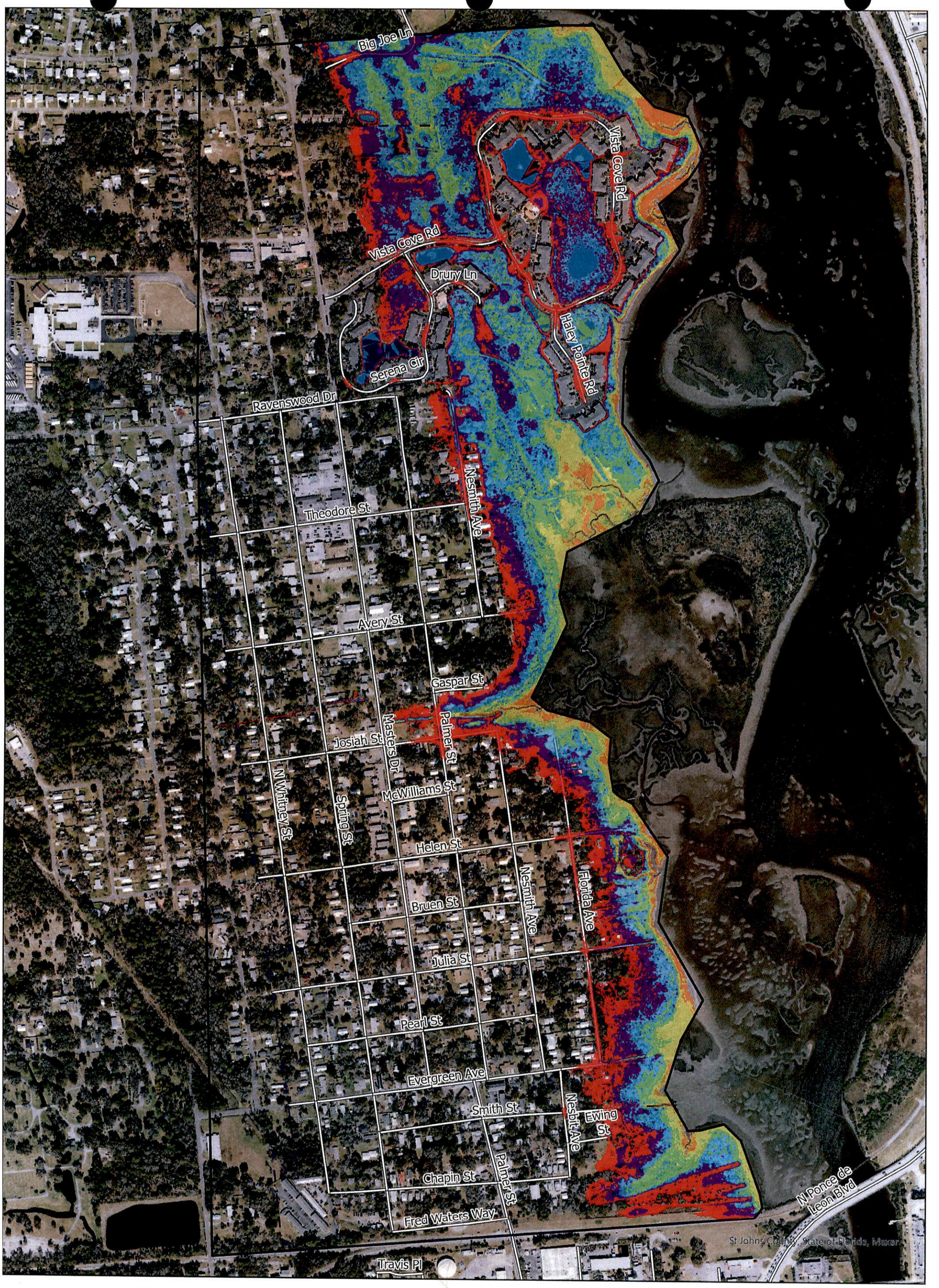
Elevations (ft NAVD88)

- 0.001 - 1
- 1.001 - 2
- 2.001 - 3
- 3.001 - 4
- 4.001 - 5
- 5.001 - 6

1:8,000

N W E S

0 600 Feet



Ravenswood: Low-lying Areas

Elevation Range: 0 to 7 ft NAVD88

Legend

- Area of Interest
- Municipal Boundary
- Road Centerline - City

Elevations (ft NAVD88)

- 0.001 - 1
- 1.001 - 2
- 2.001 - 3
- 3.001 - 4
- 4.001 - 5
- 5.001 - 6
- 6.001 - 7

1:6,000

N
W E
S

0 500 Feet

Low-lying Areas in Davis Shores

Elevation Range: 0 to 5 ft NAVD88

Legend

- Road Centerline - City
- Area of Interest
- Elevations (ft NAVD88)
  - 0.02 - 1.01
  - 1.02 - 2.01
  - 2.02 - 3
  - 3.01 - 4
  - 4.01 - 5

1:6,500

N W E S

0 500 Feet