



CITY OF ST. AUGUSTINE CITY COMMISSION SPECIAL MEETING AGENDA

MONDAY, MARCH 28, 2022

3:00 P.M.

ALCAZAR ROOM

-
1. Call to Order.
Roll Call.
 2. General Public Comments.
 3. Summary of the Resilience Workshop from October 25, 2021. (*J. Beach, Chief Resilience Officer*).
 4. USACOE – Back Bay Feasibility Study Presentation and Funding Update (*J. Harrah, US Army Corps of Engineers*)
 5. Project Priorities and Funding Discussion (*J. Beach, Chief Resilience Officer*).
 6. Additional General Public Comments Time Permitting.
 7. Adjourn.

NOTICES: In accordance with Florida Statute 286.0105: "If any person decides to appeal any decision made by the City Commission 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 (TDB) or 1-800-955-8770 (V), via Florida Relay Service. Please note that one or more members of the City Commission or its appointed boards or committees may attend this meeting and participate, however they may not engage in a discussion or debate amongst themselves on any issue that will likely come before their respective elected or appointed body. The materials prepared and presented are part of the City's ongoing Florida Public Records and Government in the Sunshine compliance and are not intended to be relied upon or to reach investors or the trading markets.



City Commission

Resilience Workshop

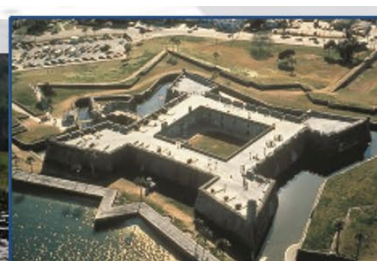
March 28, 2022

Jessica L. Beach, P.E.

Chief Resilience Officer

Reuben C. Franklin, Jr., P.E.

Director, Public Works





Resilience Workshop - Agenda



- ❖ **Funding Update and Presentation from the USACOE – St. Augustine’s Back Bay Feasibility Study**
- ❖ **Summary of the Resilience Workshop from October 25, 2021.**
 - ✓ Input received from the Commission
 - Program updates
- ❖ **Review of City’s Projects Priorities List and Funding for Commission Input and Discussion.**
 - ✓ Summary project list
 - ✓ Funding of projects
 - ✓ Estimated schedule



Resilience Workshop Summary – USACOE Funding and Presentation



❖ US Army Corps of Engineers (USACOE) Back Bay Feasibility Study for St. Augustine

- ✓ 3-year, \$3 Million comprehensive study to evaluate coastal storm risks
 - Identified solutions are eligible for Federal cost share funding for construction
- ✓ Letters of Intent submitted to USACOE each year since 2018
- ✓ Study Authority is authorized (House Resolution 2646)
- ✓ Funding is now available
 - Community Funding Program (CFP) reinstated by Congress in 2021
 - Congressman Rutherford's office advocated for the funding
 - Received notification on March 11th that \$200,000 is allocated for the study through the FY22 Work Plan



Resilience Workshop Summary – USACOE Funding and Presentation



❖ US Army Corps of Engineers (USACOE) Back Bay Feasibility Study for St. Augustine

- ✓ Opportunity for Commission input and discussion about the study with the USACOE
- ✓ Presentation by representatives from the USACOE

Resilience Workshop – Summary from October 25, 2021



Program Outline





Resilience Workshop – Summary from October 25, 2021



❖ **Need to update the Coastal Vulnerability Assessment and associated Strategic Adaptation Plan.**

- ✓ Use the latest data available, understand associated risks and timelines to make informed decisions

➤ **Stormwater Resilience Master Plan**

- Request to use ARPA Funds - \$2,000,000
- Careful and comprehensive consideration given to cost and benefits of projects in certain areas that are currently at risk and will continue to be at risk

➤ **USACE Back Bay Feasibility Study**

- Funding Update with Presentation on the Agenda



Resilience Workshop – Summary from October 25, 2021



❖ **Develop a seawall ordinance**

- ✓ Consideration for natural/nature-based solutions
- ✓ Establish minimum elevations and criteria
 - Initial project scoping meeting completed

❖ **Continue with Outreach and Education**

- ✓ Presentations/workshops/meetings for various stakeholders
- ✓ Consideration for the “non-computer” user
 - Develop a newsletter and/or flier to distribute
- ✓ Enhanced website/resources/tools available
 - Website updated for Resilience



Resilience Workshop Summary – Summary from October 25, 2021



www.CityStAug.com/Resiliency

- ❖ “One Stop Shop”:
- ✓ Programs
 - ✓ Projects
 - ✓ Planning / Studies
 - ✓ Payment / Funding
 - ✓ Policy
 - ✓ Resources for Residents

Planning and Studies

Projects

Programs

Policy

Resources

Payment/Funding

Home › Government › Resiliency

Flood Resilience

Resilience is the ability of individuals, communities, institutions, businesses, and system within St. Augustine to survive, adapt, and grow no matter what kinds of acute shocks (a sudden, sharp event that can threaten the city) and chronic stresses (stresses weaken the fabric of the city on a day-to-day basis) they experience.

The City of St. Augustine faces many challenges when it comes to both coastal and rain driven flooding, as a majority of the city is located in a flood plain. The City of St. Augustine is proactively identifying areas of risks as it relates to the inevitable effects of sea level rise.

Stormwater Updates

For the latest updates given to commission regarding the resilience program, [click here](#).

Programs

Projects

Planning / Studies

Policy

Payment / Funding

Resources

Contact Us

Jessica Beach, P.E.
Chief Resilience Officer
[Send an email](#)
[More Information](#)

FAQs

- What is flood resilience?
- What is the city doing about the flooding?
- What can I do to protect my home from flooding?

View All

Quick Links

- [St. John's County Emergency Operations Center](#)
- [St. John's County Flood Facts website](#)
- [St. John's County Evacuation Information](#)

View All



Resilience Workshop Summary – Summary from October 25, 2021



www.CityStAug.com/Resiliency

❖ Resources Page – Links

- ✓ NOAA
- ✓ SJC Flood Viewer
- ✓ FEMA Flood Maps
- ✓ Florida Climate Institute
- ✓ Florida Living Shorelines

❖ Other Links

- ✓ SJC EOC
- ✓ SJC Flood Facts
- ✓ SJC Evacuation Information

Resources

Helpful Links:

- Search for any property within the United States to look at potential flood risk indicators and ways to protect your property: www.floodfactor.com
- Provides outreach and education and a number of flood proofing type products for commercial and residential properties: www.floodproofing.com
- University of Florida – IFAS Extension office for St. Johns County: <https://sfyl.ifas.ufl.edu/stjohns/>
- University of Florida – a number of resources for Florida friendly plants/yards, green infrastructure etc.: <https://sfyl.ifas.ufl.edu/stjohns/lawn-and-garden/>
- St. Johns County Flood Viewer to search for any properties and determine which flood zone they are located in. You can access the link here: <https://www.gis.sjcfl.us/floodviewer/>
- Sea level rise tool accessible through National Oceanic and Atmospheric Administration (NOAA) that you can look at for properties for different types of scenarios, such as high tide flooding, sea level rise etc.: <https://coast.noaa.gov/slr/>
- FEMA flood maps: <https://www.fema.gov/flood-maps>
- The Florida Climate Institute is concerned with achieving a better understanding of climate variability and change, and has valuable articles for those interested in learning more: <https://floridacclimateinstitute.org/>
- Florida Living Shorelines information: <https://floridalivingshorelines.com/>



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Chief Resilience Officer

[Send an email](#)

[More Information](#)



Resilience Workshop Summary – Summary from October 25, 2021



❖ Flood Mitigation Assistance (FMA) Program

- ✓ FY21 – Application Cycle Completed
 - 50 individuals we reached out to with interest in the program
 - 25 applications submitted to the State (FDEM, Florida Division of Emergency Management) and submitted to FEMA
 - This summer application status update from FEMA
- ✓ FY22 – Project Team Kick Off Meeting Completed
- ✓ Contractor workshop(s) to be held in May or June
- ✓ Public workshops to be held in July
- ✓ Informational fliers to be mailed out to recurring flood property owners



Resilience Workshop Summary – Project Priorities and Funding



- ❖ **Resilient Florida** administered through the Florida Department of Environmental Protection (FDEP) – **new from the 2021 State Legislature – s. 380.093, F.S.**
 - ✓ 11 applications were submitted (4 planning, 7 projects)
 - ✓ \$100 M – FY2022-23 Statewide Flooding and Sea Level Rise Resilience Plan
 - 76 projects ranked State-wide
 - City applications were not selected
 - ✓ \$500 M – American Rescue Plan Act one time allocation for project implementation
 - **All 7 City implementation Projects were awarded funding, totaling \$26.5 M**
 - The term of the grant agreement will be from July 1, 2022 through December 31, 2026. All funds must be obligated (encumbered in an executed grant agreement) by December 31, 2024.
 - ✓ \$20M – planning applications are still under review
 - USACOE Back Bay Feasibility Study was identified as eligible for further evaluation



Resilience Workshop Summary – Project Priorities and Funding



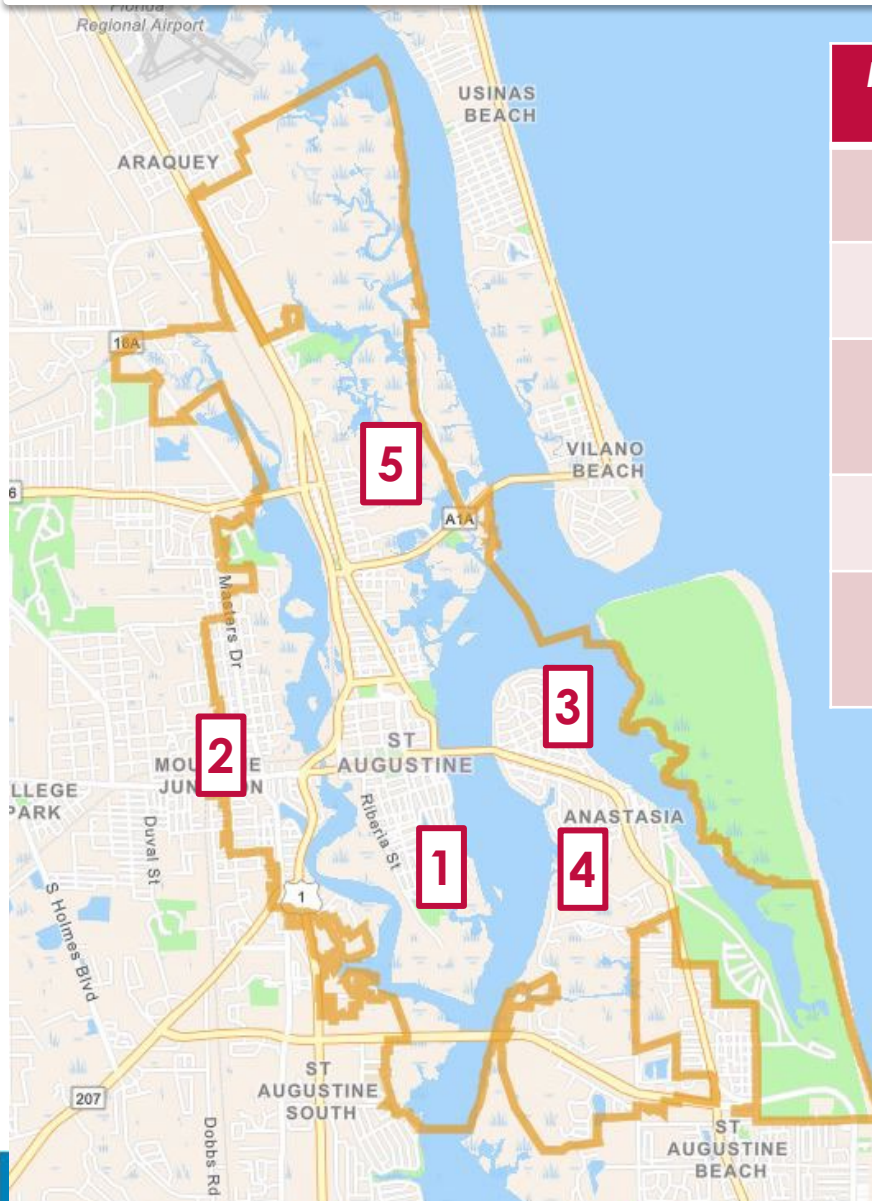
1. City Wide Tidal Backflow Prevention Improvements - **\$230,641**
2. Lake Maria Sanchez Flood Mitigation and Drainage Improvements - **\$18,793,012.14**
3. South Whitney and West King Street Flood Mitigation and Drainage Improvements - **\$1,202,916**
4. Groundwater Monitoring Network for SLR - **\$201,903**
5. Inlet Drive Shoreline Resiliency Improvements - **\$711,090**
6. South Davis Shores Flood Mitigation and Drainage Improvements - **\$2,797,000**
7. Flood Mitigation and Drainage Improvements for the Court Theophelia Neighborhood - **\$2,581,600**

Total Resilient Florida Funding for COSA - \$26,518,162.14



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Resilience Workshop Summary – Project Priorities and Funding



Map ID	Resilient Florida Project
1	Lake Maria Sanchez
2	South Whitney West King
3	Inlet Drive Neighborhood Project
4	South Davis Shores Project
5	Ct Theophelia Neighborhood Project

City Wide Projects
Tidal Backflow Prevention Program
Groundwater Monitoring Network
Stormwater Resilience Master Plan
USACE Back Bay Study



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Resilience Workshop Summary – Project Priorities and Funding



Current Capital Improvement Projects (Page 1 of 3)

Project Title	Project Status	Schedule				
		2022	2023	2024	2025	2026
Oyster Creek Force Main HDD	Construction Phase					
Automatic Meter Reading Phase 4	Construction Phase					
West Augustine Septic-to-Sewer Connections PKG 5	Construction Phase					
(SJC) South Orange Street Utility Adjustments	Construction Close Out					
(SJC) N. Rodriguez Street Utility Adjustments	Construction Phase					
I&I Clean & Inspect Sewer Basins 62, 68, 69, & 71	Construction Phase					
I&I Clean & Inspect Sewer Basins 60, 64, 66, & 70	Construction Phase					
I&I Manhole Rehab Basins 16, 17, 20, & 52	Bidding Construction Contract					
I&I Sanitary Sewer Main & Lateral Rehab FY 2022	Bidding Construction Contract					
I&I Prioritize Sanitary Sewer R&R Projects	Annual					
Hurricane Matthew FEMA 13 Lift Station Rehabilitation	Construction Phase					
Arricola Avenue force Main HDD Improvements	Construction Phase					
(SJC) S. Holmes Utility Adjustments	Design 90%					
(SJC) Santa Rosa Utility Adjustments	Final Design					
(FDOT) SR 312 from 207 to Holmes Blvd Utility Adjustments	Bidding Construction Contract					



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Resilience Workshop Summary – Project Priorities and Funding



Current Capital Improvement Projects (Page 2 of 3)

Project Title	Project Status	Schedule				
		2022	2023	2024	2025	2026
Lake Maria Sanchez	Preliminary Design - 90%					
WWTP Headworks Rehabilitation	Construction Phase					
WTP Motor Control Center Replacement	Construction Phase					
RO Concentrate Discharge	Bidding Construction Contract					
Water Treatment Plant Optimization	Study Completed					
Avenida Menendez Seawall (HMGP) (FIND?)	Final Design					
Pearl Street Gravity Sewer Improvements	Design 30%					
W 3rd Street Gravity Sewer Improvements	Design 60%					
West Augustine Gravity Sewer Master Plan	Planning					
Inspection Management Software	Analysis Completed					
Stormwater Master Plan	Conceptual Analysis & Studies					
St. Francis Street Utility Improvements	Conceptual Analysis & Studies					
King Street Ownership Takeover	Project Scope Development					
San Sebastian Water Main HDD King Street	Preliminary Design					
Ct Theophelia	Preliminary Design					
South Whitney West King	Bidding Construction Contract					
South Davis Shores	Preliminary Design					
Inlet Drive	Preliminary Design					



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Resilience Workshop Summary – Project Priorities and Funding



Current Capital Improvement Projects (Page 3 of 3)

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Downtown Improvement District Phase 2	Final Design					
Sevilla Street Roadway & Utility Improvements	Final Design					
Lighthouse Park Gravity Sewer Improvements	Project Scope Development					
SCADA Master Plan	Conceptual Analysis & Studies					
City Wide Tidal Backflow Improvements	Preliminary Design					
Back Bay Feasibility Study with Army Corp	Preliminary Design					
Duero & Cerro Utility and Storm Improvement	Final Design					
Circulator	Bidding Construction Contract					
Smart St. Augustine	Bidding Construction Contract					
(FDOT) King Street Drainage Outfall	Final Design					
Groundwater Monitoring System	Preliminary Design					
Parking Pay Station Flood Proofing	Project Scope Development					
Lift Station 8 Replacement	Conceptual Analysis & Studies					
Lift Station 14 Replacement	Conceptual Analysis & Studies					
Lift Station 41 Replacement	Conceptual Analysis & Studies					
South Tank Potable Water Fill Line	Project Scope Development					
Pearl Street Force Main Improvements	Project Scope Development					
Cast Iron Watermain/Forcemain Replacement (Riberia Street from King to Castillo)	Project Scope Development					

Resilience Workshop – Discussion



- ❖ **Staff Summary and Conclusions**
- ❖ **Input and Questions from the Commission**
- ❖ **Time permitting – allow for public comment**



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**Back up slides to main
presentation**



Resilience Workshop – Back Up Materials



- ❖ **Reference Packet - “Resilience Workshop 10-25-2021 – Summary of Commission Input” approved through the consent agenda at the 12-13-2021 Commission Meeting**
- ❖ **Reference Packet – “Project Information Sheets” for the listed projects**
- ❖ **Handout for “Overall Capital Improvement Projects List”**

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U.S. ARMY CORPS OF ENGINEERS FEASIBILITY STUDY PROCESS - (CONCEPT TO CONSTRUCTION)

City of St. Augustine, FL - Resilience Workshop Presentation

Presented by:
Jason Harrah, Senior Project Manager
Stacey Roth, Chief Plan Formulation
U.S. Army Corps of Engineers
Jacksonville District
March 28, 2022

***Trusted Partners Delivering Value
Today for a Better Tomorrow***





PRESENTATION OVERVIEW



BUILDING STRONG

- ☐ **Feasibility Study Process/Timeline**
- ☐ **Project Life Cycle (Concept to Construction)**
- ☐ **Current Status of St. Augustine Back Bay Feasibility Study**
- ☐ **Questions**

Trusted Partners Delivering Value Today for a Better Tomorrow



FEASIBILITY STUDIES



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- The Corps Feasibility Study is a formal **three-year process** used to **identify water resource problems, formulate and evaluate solutions, determine federal interest** and **prepare recommendations**. Process is initiated when a local sponsor asks USACE to address a particular issue **through a formal letter to the district commander (current Jacksonville District Commander, COL James Booth)**.
- Studies are **cost shared** with a Sponsor (i.e., State, Tribe county, city, town, etc.) that has the **legal and financial authority** and capability to **provide funding and real property requirements** needed for a study and future project.
- Before USACE becomes involved in a study, two types of Congressional actions are required:
 1. **Study Authority** (typically in Water Resource Development Act (WRDA))
 2. **Federal Appropriations** (Annual President's Budget, Work Plans, Supplementals)
- If no existing study authority exists, **community reps may contact their Congressional delegation to request a new study authority** and may also submit a proposal for Congressional consideration via the Assistant Secretary of the Army's Annual Report to Congress for Future Water Resources Development Acts.
- Once a study authority is available, the **Corps will request federal funding to initiate the study (no guarantees)**. Once federal funds are appropriated, **the study may begin after signing a Feasibility Cost Share Agreement (FCSA)**.



FEASIBILITY STUDIES (CONT.)



BUILDING STRONG

Study Authority for St. Augustine Back Bay

House Resolution 2646 (June 21, 2000): St. Johns County, Florida

Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That in accordance with Section 110 of the River and Harbor Act of 1962, the Secretary of the Army, acting through the Chief of Engineers, is ***requested to survey the shores of St. Johns County, Florida***, with particular reference to the advisability of providing beach erosion control works in the area north of St. Augustine Inlet, the shoreline in the vicinity of Matanzas Inlet, and adjacent shorelines, as may be necessary in the interest of ***hurricane protection, storm damage reduction, beach erosion control, and other related purposes.***



Study Appropriations \$\$

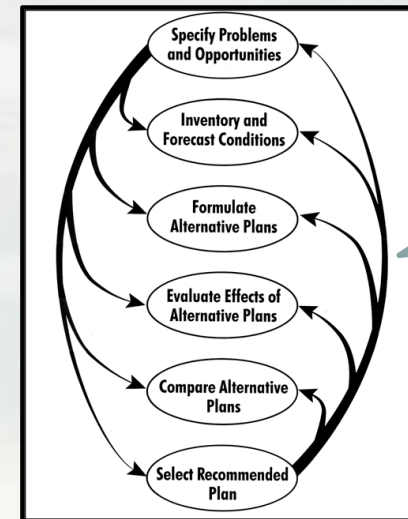
\$200k Federal received as part of FY22 Work Plan (March 11, 2022)



FEASIBILITY STUDIES (CONT.)

- Since 2012, USACE has implemented a new study process – **SMART** (Specific, Measurable, Attainable, Risk Informed, Timely) Planning – for conducting civil works feasibility studies.

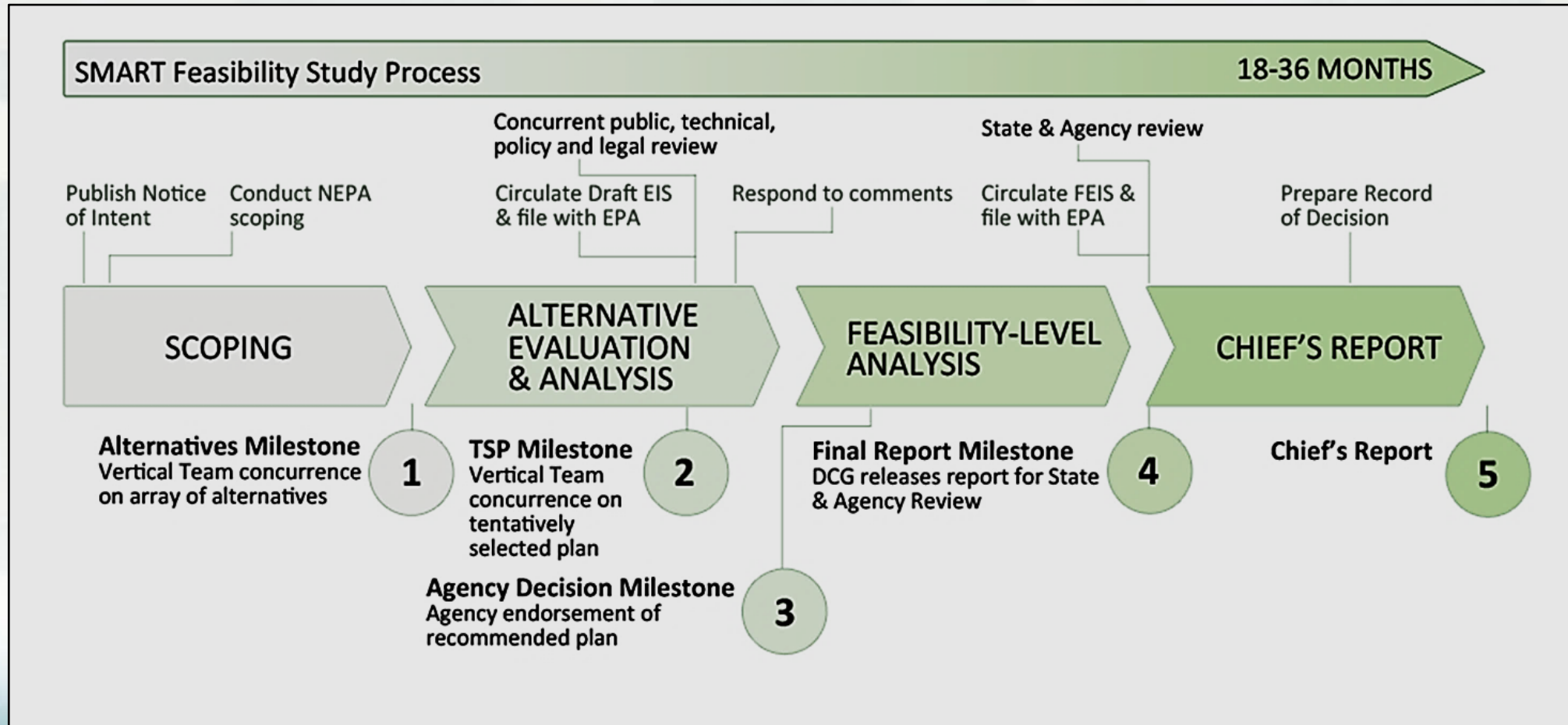
- The goal of this new process is to:
 - complete each study within **three years**
 - complete at a cost of no more than **\$3 million**
 - complete with **three levels of the Corps engagement**



Important to scope the study appropriately, additional scope during the study impacts budget/schedule

- Study **begins** when Corps and non-Fed sponsor sign a feasibility cost share agreement (FCSA). Funding is spread out over the 3-years.
- Study **ends** when the Chief of Engineers signs a “**Chiefs Report**” and transmits it to the Assistant Secretary of the Army for Civil Works (ASA-CW), then to the Office of Management and Budget (OMB), then to Congress for authorization to construct in a future WRDA Bill.

The study process includes **four separate phases** and **five key decision milestones**

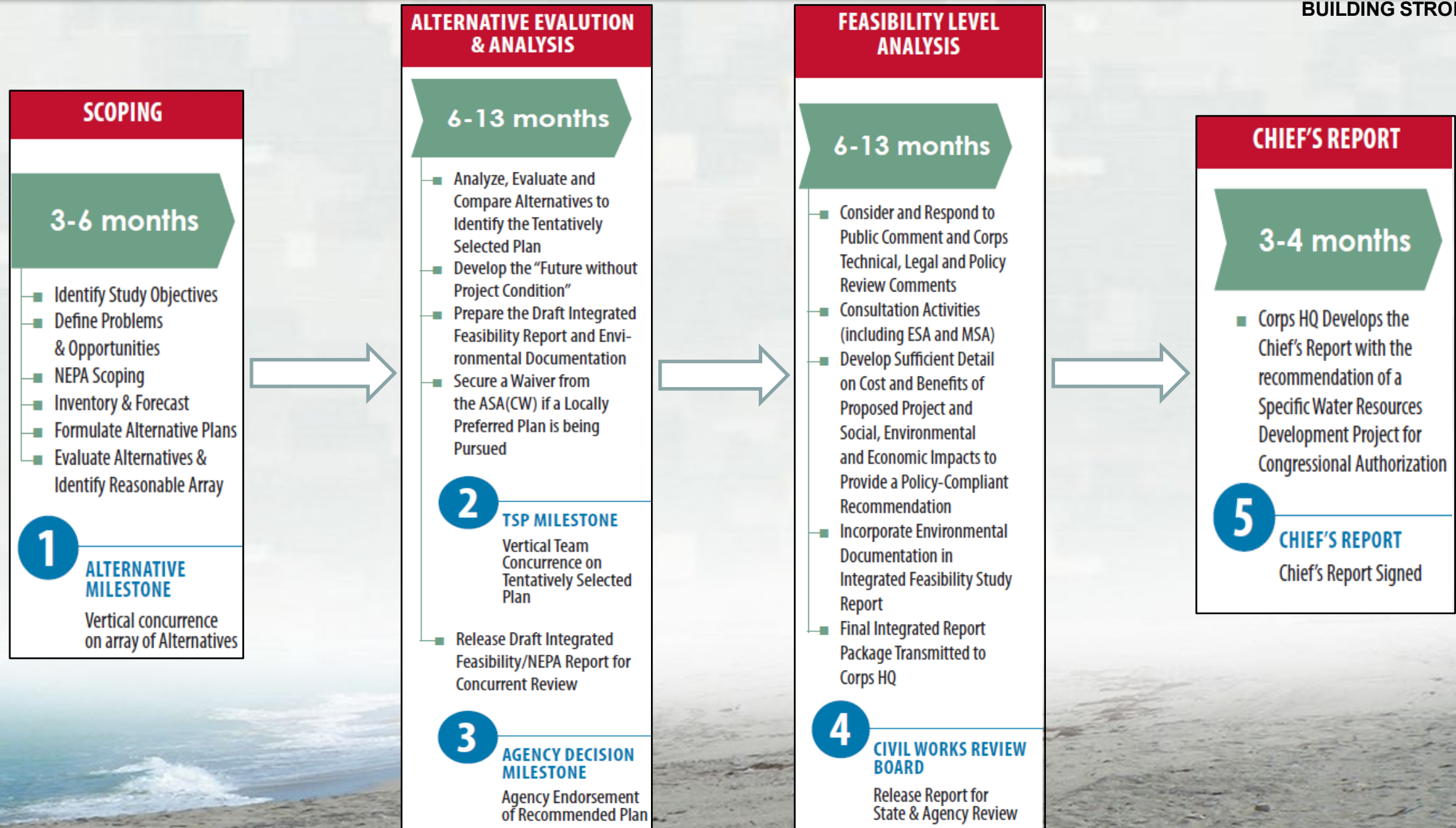




SMART PLANNING STUDY PROCESS AND MAJOR MILESTONES



BUILDING STRONG





ALTERNATIVES EVALUATION



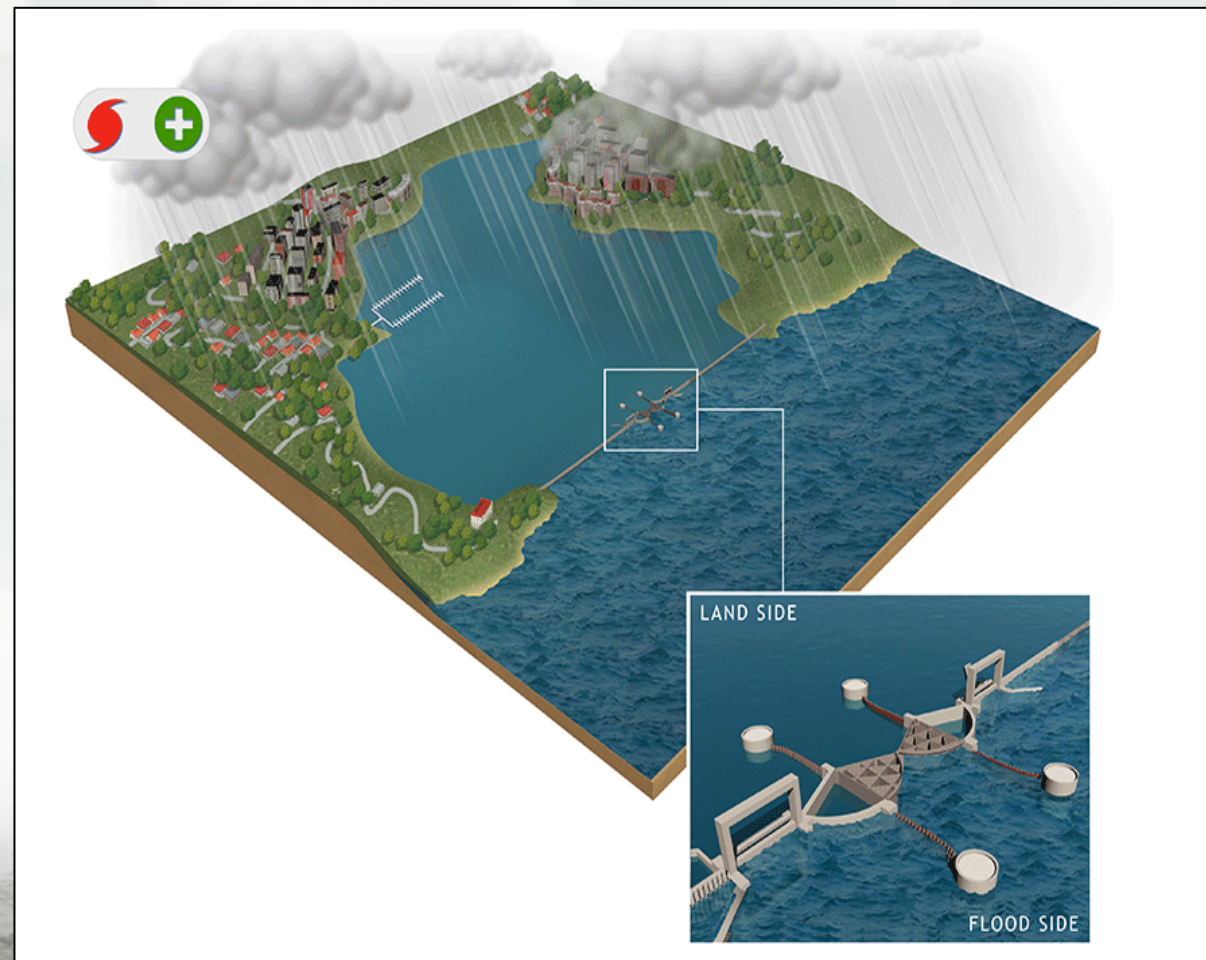
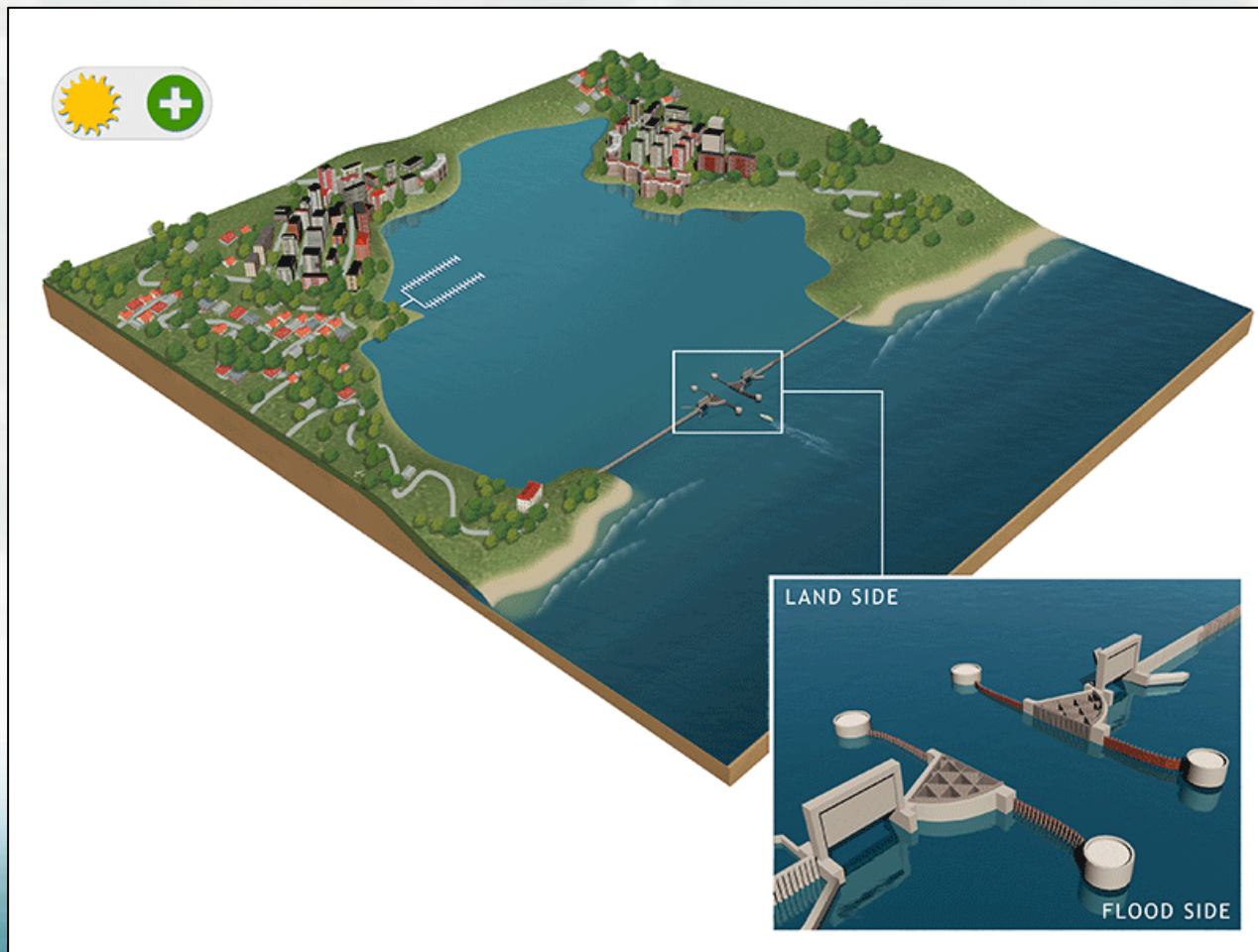
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During the study process, the Corps will consider many alternatives. Each of these alternatives will be evaluated based on:

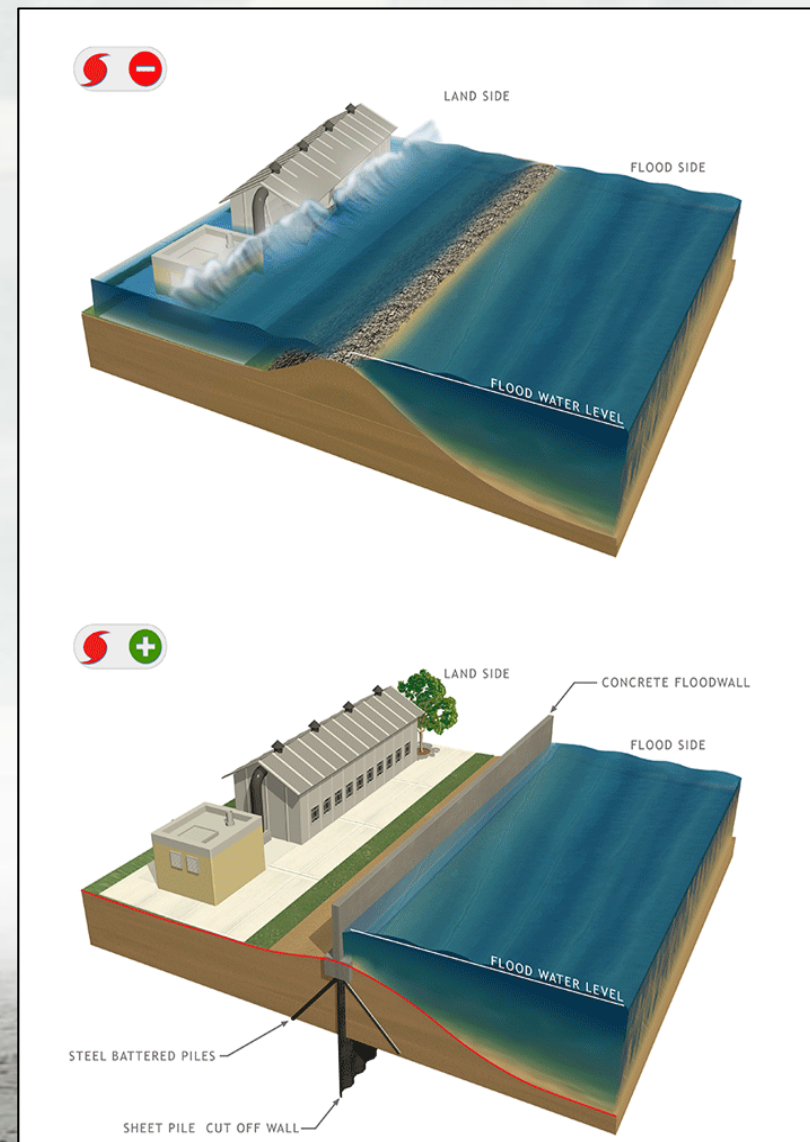
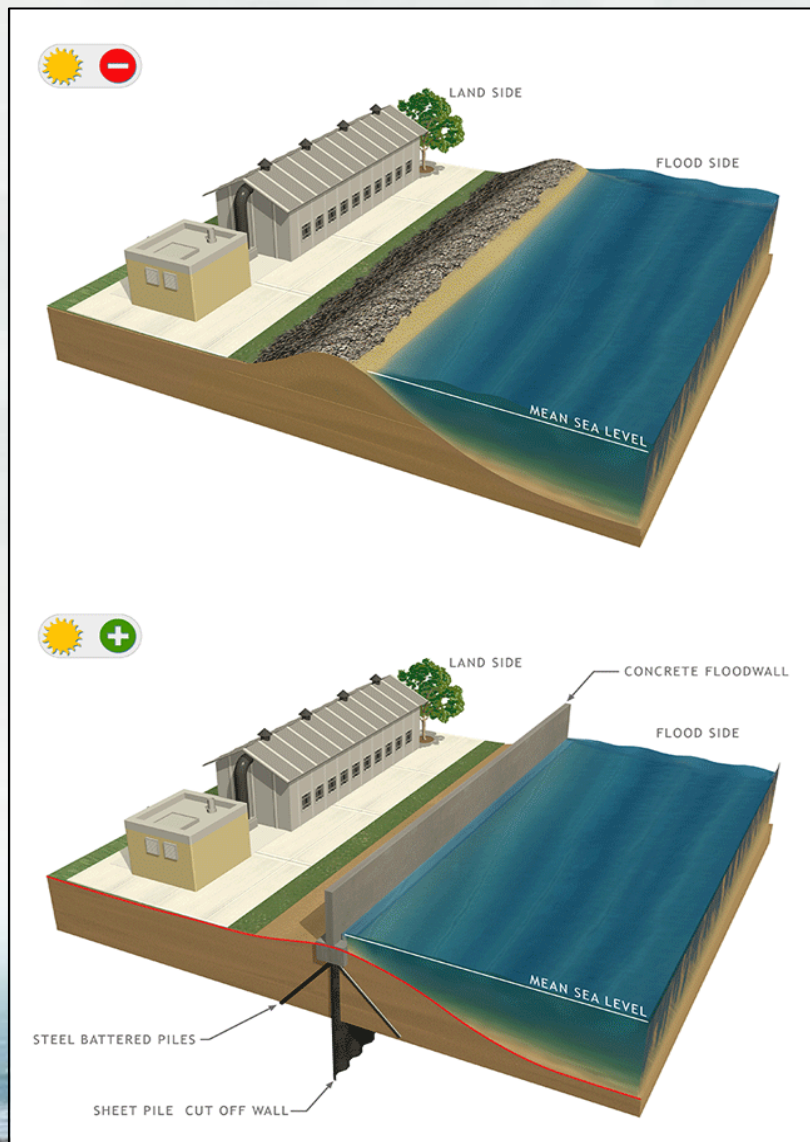
- Effectiveness
- Cost
- Environmental Impacts
- Public/Agency/Stakeholder Feedback
- Real estate
- Socioeconomic Considerations
- Adverse Impacts
- Risk Reduction
- Aesthetics

ALTERNATIVES EVALUATION

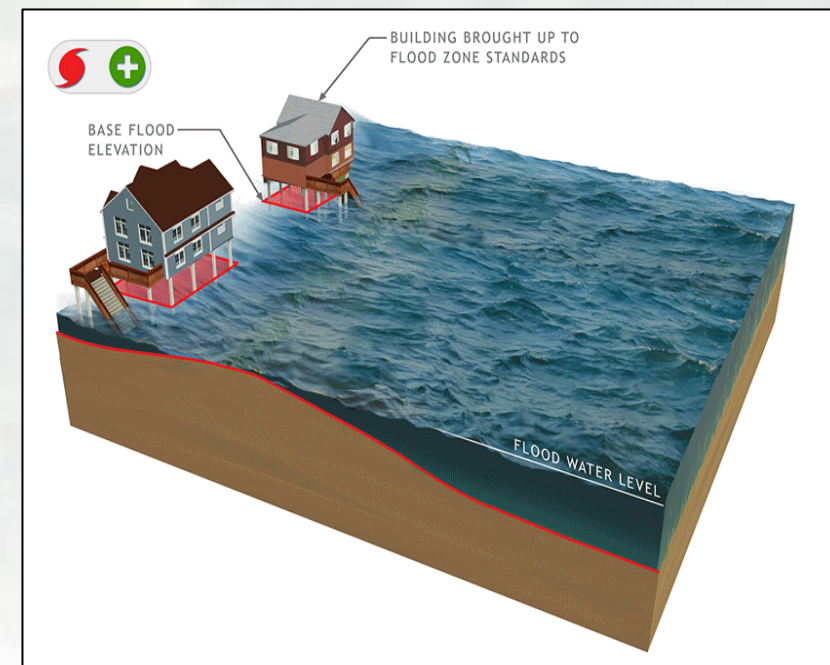
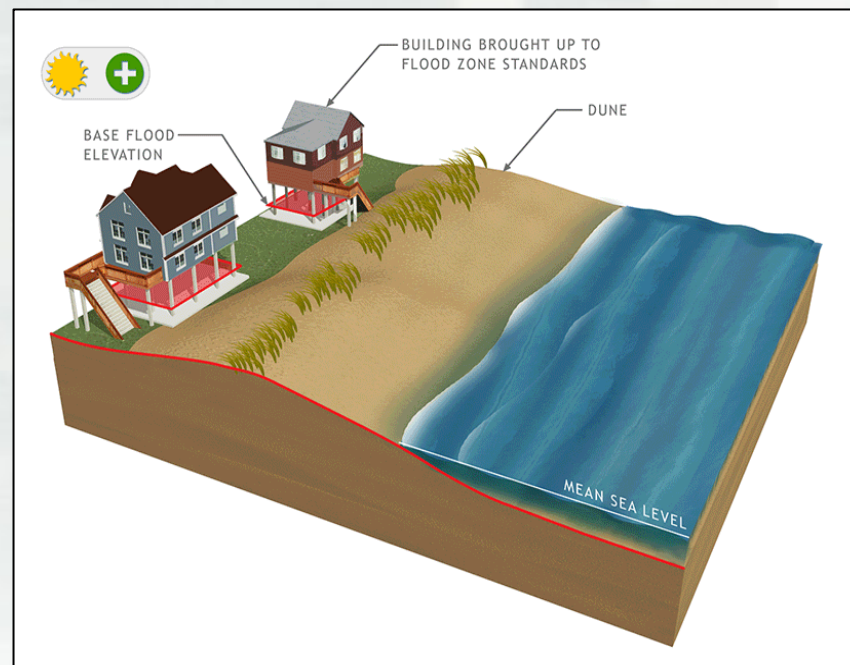
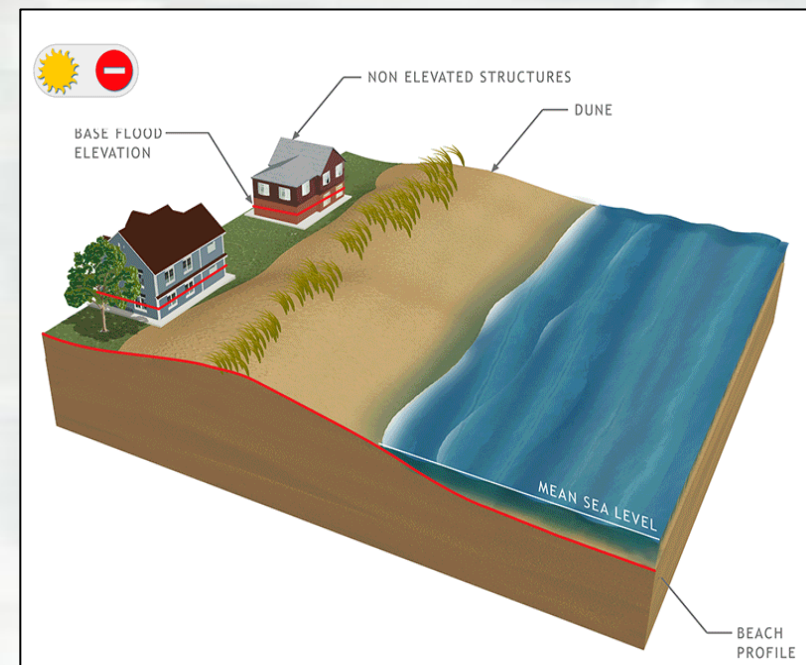
Alternative Example: **Storm Surge Barriers**



Alternative Example: Floodwalls

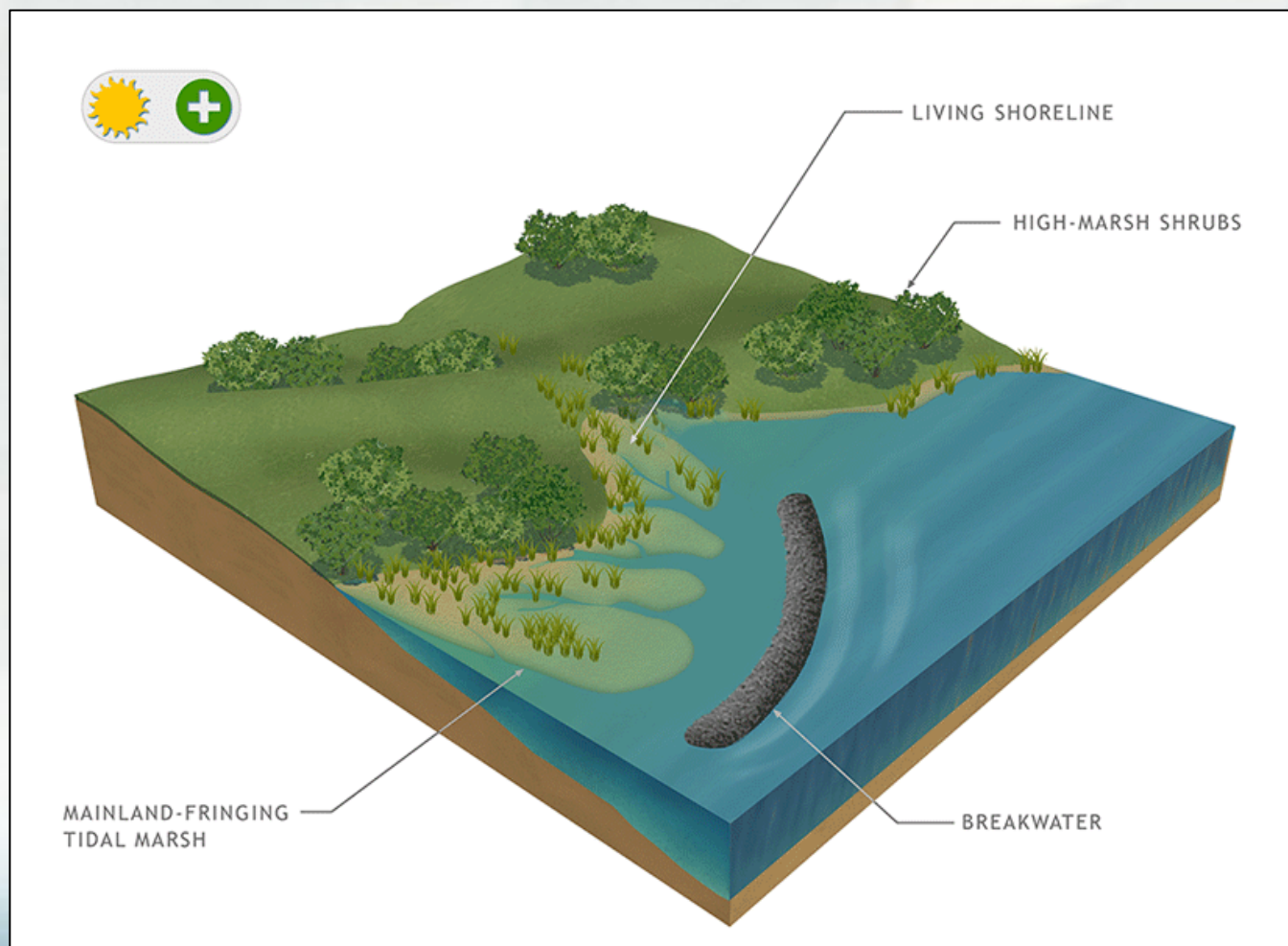


Alternative Example: **Non-Structural (Elevating Structures, Floodproofing, Ring Walls, Acquisition/Relocation)**



ALTERNATIVES EVALUATION

Alternative Example: **Natural & Nature-Based Features**



- **Analyze the Proposed Alternatives Effectiveness:**
 - Estimate coastal storm damages over the next 50 years if no action taken
 - Estimate coastal storm damages with proposed project in place
 - Compare damages reduced with project cost to measure justifiability
- Goal is to **Maximize the National Economic Development (NED) Benefits:**

$$\text{Benefit to Cost Ratio (BCR)} = \frac{\text{NED Benefit}}{\text{NED Costs}}$$

BCR > 1
required for
congressional
authorization

NED Benefits
(Damage Reduction)

- Structure Damages
- Content Damages
- Infrastructure Damages
- Vehicle Damages
- Land Value Losses
- Income Losses
- Emergency Costs
- Transportation Delays
- Recreation Losses

NED Costs

- Construction
- Real Estate
- Environmental Mitigation
- Operation and Maintenance
- Interest During Construction
- Additional Miscellaneous Costs





FEASIBILITY STUDY COST PROJECTION



BUILDING STRONG

Funding Strategy (50% Fed, 50% Non-Fed)

	Base Year (March 2022)	Year 2 2023	Year 3 2024
Federal	\$200,000	\$1,000,000	\$300,000
Non-Federal	\$200,000	\$1,000,000	\$300,000
Total	\$400,000	\$2,000,000	\$600,000

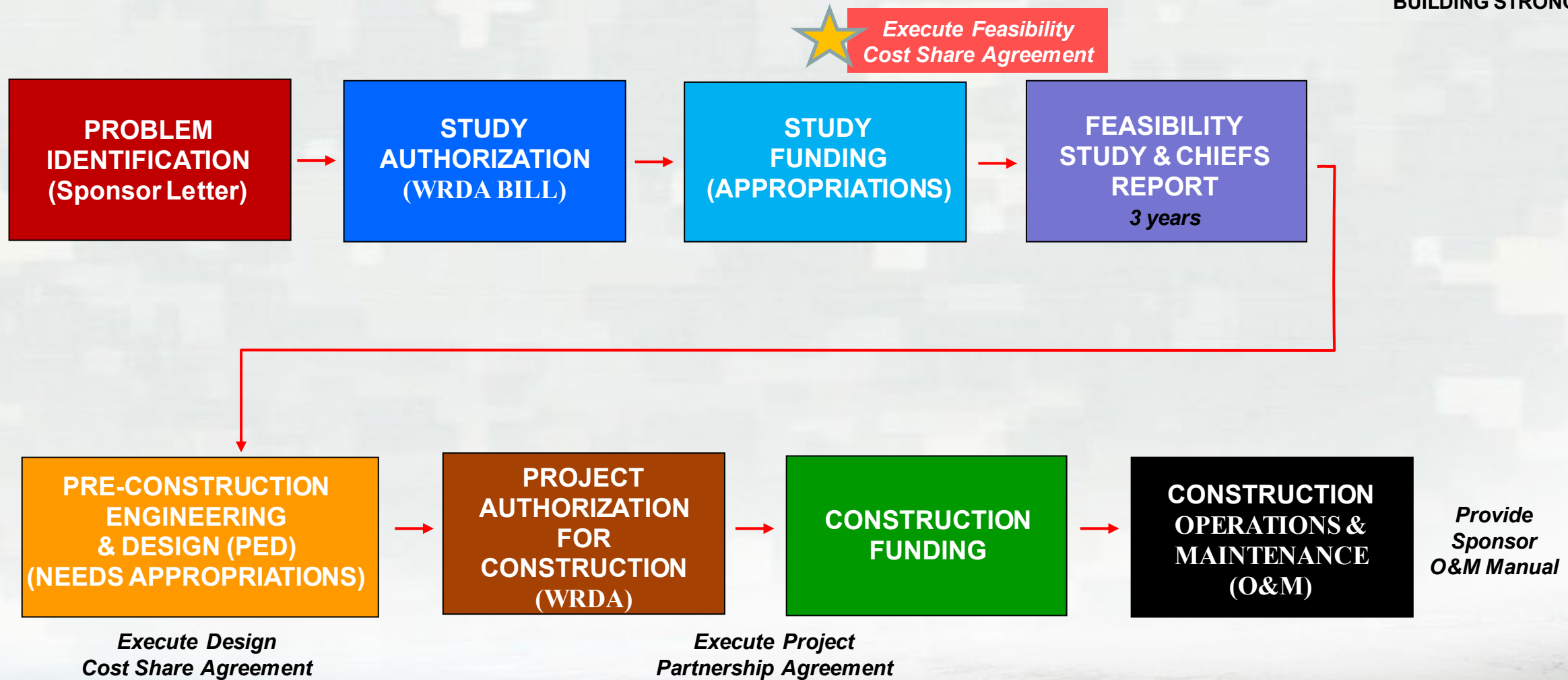
Note: The Base Year includes execution of the Feasibility Cost Share Agreement, development of the Project Delivery Team, Scoping Meeting, Study Schedule, etc.



LIFE CYCLE PROJECT DELIVERY PROCESS



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KEY FACTORS FOR A SUCCESSFUL STUDY



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- Sponsor, Agency and Public Involvement during ALL phases of the project!
- Develop an Environmentally Sound Project meeting policy regulations!
- Positive ***Benefit*** (reduction of future damages) to ***Cost*** (50-year project cost) Ratio (BCR) must be greater than 1.
- Study full array of alternatives to include:
 - ***Soft Structural*** (i.e., beach nourishment, dune construction, living shorelines, etc.)
 - ***Hard Structural*** (i.e., coastal armoring, groins, breakwaters, etc.)
 - ***Non-Structural*** (i.e., acquisition, relocation, elevating, floodproofing, etc.)



STATUS OF ST. AUGUSTINE BACK STUDY



BUILDING STRONG

1. **Study Authorization:** **Complete** – Study authorized by House Resolution 2646
2. **Federal Appropriations:** **Complete** - Fed funds received (\$200k as part of FY22 Work Plan Allocations)
3. **Sponsor Decision to move forward with Feasibility Study:** **Pending**
 - If **yes**, USACE meets w/sponsor to fully define project scope/goals/objectives of study
 - USACE prepares Feasibility Cost Share Agreement for Sponsor review/execution
 - Once FCSA is executed USACE will request sponsor matching funds for FY22 (\$200k) via wire transfer. Additional funds are not requested until additional federal appropriations are received annually!
 - Once funds are received USACE/Sponsor/Agencies will meet to discuss final scope/schedule/budget.
 - If **no**, funds will be reprogrammed to another project/study waiting on funds.



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THANK YOU!



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City of St. Augustine
Resilience Workshop – 10-25-2021
Summary of Commission Input

- The Chief Resilience Officer (CRO) provided a program outline for the City’s Resilience Program and Strategy.
- The first portion of the workshop included an overview of current relevant policies and planning efforts. The second portion of the workshop was focused on a list of project and planning needs, how some of these projects may be funded and moving forward.
- The objective of the workshop was to obtain feedback and input from the Commission on the extensive planning and project needs for the City in the area of Resilience. The City has limited resources to allocate for such planning and projects, therefore, staff wanted input and guidance from the Commission to better guide and prioritize these needs moving forward.
- Below is the program outline, summary of comments obtained from each Commissioner, items for action and/or follow-up and any outstanding questions or guidance that staff is seeking from the Commission.

Resilience Workshop – Program Outline



Resilience Workshop – Key Summary Points

Items with General Consensus

- Support for/look into developing a seawall ordinance with consideration to:
 - Option for natural/nature-based solutions to support the built environment
 - Option for an earthen berm in lieu of a vertical wall if site conditions allow
 - Establishing minimum cap elevations
- Update Coastal Vulnerability Assessment (CVA) and Strategic Adaptation Plan (SAP) with the latest data (i.e. IPCC, NOAA). We need to have a better understanding of how much time we have and the associated impacts to better make informed decisions.
- Careful and comprehensive consideration given to cost and benefits of projects in certain areas that are currently at risk and will continue to be at risk.
- Continue with the tide check valve retrofit program
- Enhanced website/resources/tools
 - We need to have more robust content/material/resources on our website dedicated to resiliency (expand on what is currently available)
 - This can serve as a “clearing house” and empower individuals to educate themselves and make their own individual decisions
 - Targeted information provided, not too much that becomes ineffective
 - Need to consider our non-website/computer users as well
- Continue with outreach and education efforts
 - Individual outreach
 - Workshops and/or neighborhood meetings as needed
- Support for groundwater monitoring network
 - Better determine sea level rise rates of change and how that may impact our community
 - Use this to make better decisions on these larger projects
 - Better determine rates of change in water levels that can better predict our planning and implementation horizons

Items of Additional Interest and/or Support

- The current FEMA FMA program does not meet/address the needs of the community, there is a greater need that is not being met. How can the City support that greater need?
- Topic of managed retreat, reality is that we cannot save everything, developing a threshold and look at managed retreat and timeline
 - Consider impacts of managed retreat and as we move to higher ground, what impact does that have on communities that may be disadvantaged socially, economically etc. (example of Miami) and the social and environmental justice considerations
 - How to protect our cultural and historical heritage as well
- USACOE Back Bay Feasibility Study –
 - These have large lead times to get the funding much less to do the study, and then implement and/or study more
 - As an alternative, we can learn from other entities on lessons learned who have participated
- Stormwater Utility Fee Credit –
 - The City currently has a credit process (30% reduction) but for commercial properties that have a permitted stormwater system, but it doesn’t incentivize LID
 - Look to revisit this, determine costs/benefits, impacts to the current stormwater utility fund and how to incentivize LID or similar best management practices

Resilience Workshop – Follow Up Items

- Staff will work to develop a seawall ordinance with consideration to:
 - Option for natural/nature-based solutions to support the built environment
 - Option for an earthen berm in lieu of a vertical wall if site conditions allow
 - Establishing minimum cap elevations
- Staff would suggest that the Stormwater Resilience Master Plan can potentially address many of the comments and input received during the workshop. Such as, but not limited to:
 - Update the Coastal Vulnerability Assessment and Strategic Adaptation Plan using the latest data, studies (that the City has completed) and SLR projections. This would be taken into consideration through the modeling that would need to be done to evaluate rainfall, surge and compound flooding conditions;
 - Careful consideration given to cost and benefits of projects in certain areas that are currently at risk and will continue to be at risk;
 - Identify tipping points for levels of service that could indicate where we need to consider managed retreat and/or other options;
 - Consideration needs to be given to the social, economic and environmental impacts potentially involved with managed retreat and/or other options;
 - The existing Stormwater Utility Fee Credit, can be revisited to determine options for encouraging and/or incentivizing low impact development, green infrastructure, reduction in impervious etc. What are the financial implications to the existing stormwater utility fee etc.
- Staff will work to enhance/improve the existing “Resiliency” section of the website to include additional resources and information.
- Staff will continue with the individual flood mitigation site visits, neighborhood meetings, workshops or similar as needed to address general outreach and education needs. Consideration will also be given to the “non-computer” user and/or other individuals with special needs or accommodations.
- The commission had a general consensus/interest in implementing a groundwater monitoring network –
 - Staff can get a better defined scope of work and cost proposal for this to determine costs.
 - This project was submitted to the State. The State is in the process of ranking projects to go before the next Legislative Session. We will likely know in the late Spring if this project will potentially get funded.
- General input from the Commission that the current FEMA FMA program does not meet/address the needs of the community, there is a greater need that is not being met. How can the City support that greater need?
 - Staff can look into options for other programs or funding mechanisms to determine if this is possible.
 - Staff can schedule a future workshop to review these options with the Commission.
- Does the Commission have any additional input or thoughts regarding the Army Corp of Engineers’ Back Bay Feasibility Study?
 - Staff could schedule a follow-up workshop to cover this more in-depth topic– this could include an overview of the process, what’s involved and lessons learned from other municipalities that have participated in it. There are pros and cons to participating in this study. If funding is allocated through Congress, we will need to make a decision about whether or not to participate in the study.
 - The alternative is for staff to review the current/similar studies that have been completed for this program and to provide an overview/summary of that information for Commission input. This would be focused on results and/or recommendations from similar studies that the City could consider as options. This could be handled as a memo format if a workshop is not desired.
- Does the Commission have any additional input on the list of planning and/or projects needs previously presented? A copy of the previous lists have been included in this packet.

Attachment 1 – Summary Comments from each Commissioner and Additional Workshop Comments

Attachment 2 - Resilience Planning & Study Needs List Presented at the 10-25-2021 Special Workshop

Attachment 3 – Resilience Projects Needs List Presented at the 10-25-2021 Special Workshop

See the following pages for the referenced attachments

Attachment 1 - Resilience Workshop – Summary Comments from each Commissioner

Mayor Upchurch

- Request for clarification on the maps shown in the presentation: existing conditions for nuisance flooding map (left hand side) compared to projected flooding conditions for nuisance flooding with 1.5 feet of Sea Level Rise (SLR)
 - The maps shown were from the 2016 Coastal Vulnerability Assessment (CVA), the definitions and comments below are also referenced in the CVA,
 - Existing conditions for nuisance flooding = minor flood event that occurs monthly, often resulting in the flooding of roads, the City's existing conditions for nuisance flooding can occur 12-17 times each year
 - Projected flooding with 1.5 feet of Sea Level Rise (SLR) = present day areas subject to nuisance flooding are expected to be flooded almost daily by tides with 1.5 feet of SLR, which could occur as early as the 2040's or after 2100
 - Of the three flood types evaluated, nuisance flooding has the largest potential to impact St. Augustine in the near term. An additional 500 acres of land are vulnerable to nuisance flooding with 1 foot of SLR. This scenario could occur as early as the 2030's or as late as 2100, depending on the degree of SLR acceleration
- FMA program and idea proposed by Vice Mayor Sikes – Kline – larger topic and need for further consideration, discussion and/or comment of the City looking into starting a similar type of program to supplement the FEMA FMA program to help with the greater need in the community
- USACOE Back Bay Feasibility Study – these have large lead times to get the funding much less to do the study, and then implement and/or study more
- Support for a seawall ordinance
- This topic has everyone's attention, requires a great deal of wisdom to try to determine at what level do we attempt to fight this problem
 - Government moves slowly, comment from Commissioner Valdes, do we go with a bigger project now that will protect us longer as opposed to more traditional approach
- Have a robust section of our website that provides info/tools etc., can be primary emphasis but will need to do neighborhoods/continue that as well
- Interested in learning more about a program to potentially help homeowners that don't qualify under FEMA FMA, but hesitancy, we can elevate but if not able to access homes (i.e. the Keys) how good is that, look at the cost benefit to the entire community, particularly when there is a federal program already in place
- Groundwater monitoring seems to be important for data that can help with planning
- We know individuals have started managed retreat, sold lower lying property and begun to move to higher ground, different calculation when what's at risk is your rental property and not your home, we have these long and short term rentals, property no longer owner occupied and the calculation is different for those properties, what is the return on investment before it impacts its value
- Local gov't – we are a player but individuals make their own decisions
- Increased pressure on West Augustine and continue the conversation
- St Johns County – County residents in many portions of the County may also have a deep seated interest in these issues
- Information – we need to be targeted and specific and helpful, not overload with information that doesn't help
- Stormwater Utility Fee Credit – look at it from a high level, is it financially feasible, what are the benefits, how does it impact the current fund etc.
- Memo to the Commission – summarize what has been discussed, identify additional questions staff may have, individual commissioners can address with the City Manager

Attachment 1 – Continued – Commissioner Comments

Vice Mayor Sikes-Kline

- Flood Mitigation Assistance Program (FMA) – had to have flood insurance and made claims, lots of folks that did not have flood insurance or did not make claims, the need is greater than what the applications reflect
 - Comment/thought proposed - There is nothing stopping the City from starting our own program with our own criteria to help out with this need
- Rely on staff on these issues, there is a lot of information to digest
- Support for a seawall ordinance, work with Commissioner Valdes as needed
- Take a look at a program that could provide direct assistance for those not meeting the FMA requirements
- Focus on homeowners
 - Look into program for direct assistance with homeowners that don't meet FEMA requirements (grants/buyouts/elevating)
 - Continue with the individual/personalized help and support to the community, workshops as needed
- Continue with outreach/education, support for more robust website and tools/tool box, but not all use the internet/computers

Commissioner Horvath

- Continue to consider future conditions in our current designs
- Interest in/support of seawall ordinance, can we consider a berm or earthen system in lieu of a vertical wall?
 - Site conditions would dictate because it will depend on space available to install/construct and interface with the marsh but we can look into it further
 - We've been discussing the issues for a while, target elevation for 7.0 feet, started with the Bayfront projects, Maria Sanchez Lake possibly going higher versus another system, step wise approach
- Request for hard copies of the Historic Structures guidebook

Commissioner Valdes

- We are working on older data and rate of climate change is accelerating, at what point in time do we accept that certain areas will be impacted to the point that they cannot continue to function and when do we consider managed retreat as an option, looking at costs for projects and should the money be spent to look at those future conditions, it's a moving target that is not moving in our favor.
- Support for a seawall ordinance,
 - We currently have no requirements/criteria for seawall construction
 - At least a minimum cap elevation for new construction
 - Can include/add living shoreline component
 - Limited access to construct from the lot/upland forced to construct from the marsh side which can affect permitting
- The reality for South Davis Shores is a floodwall with pump station or look at "buy back" options
- We're taking steps in the right direction but concern for putting \$5-6 million dollars into a project or system that may only be viable for 5-6 years, maybe take that money and build a wall now with a pump station and then with the stormwater upgrades, similar concept to the Lake Maria Sanchez project
- Support for a groundwater monitoring network –
 - least expensive on the list and can be beneficial
 - could help in determining the rate of change of sea level rise for our area and get local projection on how SLR is impacting us
 - without a good handle on the impact and rate of change, we cannot make some of these decisions without knowing better our time horizon and how that may impact and affect projects/design etc.

Attachment 1 – Continued – Commissioner Comments

Commissioner Valdes - continued

- Future conversation about finding the \$ now so we don't have to wait for the funding decisions
- Continue seeking low hanging fruit for funding and better determination of how much time do we have
- Lifting houses is good up to a point, but you can't lift yourself out of the problem, you can't lift an entire neighborhood (cost prohibitive, disruptive), look at low walls, retreat etc.
- We need better data to be able to make these decisions and determine where it is best to spend the limited funding as more coastal communities compete for the funding
- Analyze the different types of flooding and how important is it. We have rainfall flooding, nuisance flooding, hurricanes/tropical storms and climate change SLR. Three of those can come and go but the 4th stays and has different impacts. So looking at the types of flooding holistically can help to determine priorities of what we need to address now versus later. Our resources are limited to address such a huge problem, what is the priority.
- Historic structures – guidebook recently published, excellent example and product recently completed by the City

Commissioner Blonder

- CVA (2016) was based on NOAA SLR curves from the 2012 database and USACE for Mayport (same 2012 data), concern for data being outdated
- Revisit data being used – refer to Intergovernmental Panel on Climate Change (IPCC) recently released a report, projections and warming temperatures are happening faster than initially projected, as such, recommend that we update our CVA and revisit our Strategic Adaptation Plan (SAP) given this most recent data
- In support of seawall ordinance and incorporate an option for natural and/or nature-based solutions, such as living shorelines that could bolster the built environment
- Support for a groundwater monitoring network
- We need a robust section on our website, can act as a “clearing house” that houses this information and can help with limited staff time/resources that can empower residents to education themselves and make their own decisions
- City wide back flow prevention improvements – continue with that effort
- FEMA FMA program – cost share can be a major hurdle and getting the 3 quotes from contractors
- Groundwater monitoring network –
 - Suggest a threshold that we determine/implement because our freshwater could be impacted
 - Monitor for saltwater intrusion and have a plan in place
- Cost benefit analysis that is comprehensive and systematic to help better prioritize these needs, how do we filter through that selection of projects that need to start today and can wait
- Resource limitations – staff and funding, but doesn't meet the demand
 - Partnerships may be an option, sharing resources in a strategic way to more efficiently utilize the resources we have
 - Putting together a task force to pool our resources
 - Examples – GTMNERR, COSAB, NEFRC, academic institutions (students doing the work as interns)
- Stormwater Utility Fee Credit - creating SWU fee credit for green infrastructure and LID improvements as well as reduction of impervious surface and installation of detention basins (i.e. rain gardens), capturing the water and letting it infiltrate more slowly

Attachment 1 – Continued – Additional Comments

Public Comment

- Mr. Slavin:
 - Suggested regular meetings with the City, County and Beach on this topic with opportunity for public comment and input
 - This is the Nation's oldest city, need a national park and seashore, with that designation we can get the funding for the projects
 - Mangroves – natural shorelines, provide as an option for tree/arbor day, armour our coastlines with mangroves in lieu of the infrastructure/capital intensive projects that the Army Corps is notorious for, take a look at “Cadillac Desert”, he is not impressed with them
 - Maria Sanchez Lake – in favor of the dredging but need an environmental survey and baseline data about what is in the sediment in the bottom of the lake. He believed that when the St. Augustine Record was publishing from its original building that they had heavy metals contributed to the lake if the heavy metals are still there, we have a deep pocket who owns the Record, join one or more lawsuits or create our own with big oil companies and Florida East Coast railway for the environmental damages that they've done, look back at the flooding, traces back to Henry Flagler's efforts, look at litigation

Staff Comments

- Reuben Franklin – there currently is a stormwater utility fee credit program in place for a 30% credit reduction but it is specific for properties that also have installed/obtained permits from the State for stormwater management systems (typically applies to commercial properties). We could revisit this existing program to determine if it can include an option for residential properties and incentivize the low impact development/green infrastructure/or similar best management practices.
- Todd Grant - Clarification point – there is a groundwater monitoring network already in place to monitor for saltwater intrusion, we currently have no saltwater intrusion, monitored monthly and tied to drinking water supply which is 8-9 miles inland

Attachment 2 – Resilience Planning & Study Needs List Presented at the 10-25-2021 Special Workshop

Resilience Planning & Study Needs Presented to the City Commission		
Project Name	Project Description	Estimated Project Costs
Stormwater Resilience Master Plan	Update Stormwater Master Plan to incorporate Resilience citywide; phase 1 - expand upon South Davis Shores efforts then scale up to city wide	\$ 2,150,000
USACOE Backbay Feasibility Study	3 year study to evaluate flood mitigation options for the City, projects identified in the study would be eligible for Federal \$	\$ 3,000,000
Oyster Creek Resilience Plan Development -	Evaluate Oyster Creek Drainage Basin, multiple benefits/opportunities to address drainage/flooding, water quality issues, and incorporate mobility	\$ 150,000
Citywide Seawall Ordinance	Evaluate the feasibility of establishing a seawall ordinance to address the locations vulnerable to storm surge	\$ 50,000
Educate Prospective Home Buyers & Real Estate Professionals About Floodplains & Base Floor Elevations	Set up a program and/or workshop to educate targeted audience	\$ 50,000
Feasibility Study for Lake Maria Sanchez Dredging and Water Quality Improvements	Feasibility study to determine options for Lake	\$ 75,000
Planning Needs Subtotal		\$ 5,475,000

Attachment 3 – Resilience Projects Needs List Presented at the 10-25-2021 Special Workshop

Resilience Projects Needs Presented to the City Commission			
Project Name	Project Description	Project Status	Estimated Project Costs
Flood Mitigation Improvements to St. Augustine Santiary Sewer Pumping Stations - FEMA 13	Elevate, flood proof 13 lift stations	Started construction FEMA PA Funded	\$ 13,800,000
Lake Maria Sanchez (S0001) - FEMA HMGP	FEMA funded project for flood mitigation and drainage improvements	Design (60%) FEMA HMGP Funded Seeking Add'l Grants	\$ 30,000,000
South Whitney/West King Improvements (SWWK) - FEMA HMGP	FEMA funded project for flood mitigation and drainage improvements	Design Complete FEMA HMGP Funded Seeking Add'l Grants	\$ 2,020,000
Aven Men SeaWall - Flood Barrier (HMGP)	Complete elevation gap of existing wall, HMGP awarded for Phase 1 Design	Design (90%) FEMA HMGP Funded Seeking Add'l Grants	\$ 1,087,000
City Wide - Backflow Prevention Improvements (TIDE)	Retrofit existing storm pipes with tide check valves (remaining City outfalls)	In Progress Seeking Add'l Grants	\$ 2,640,000
Elevation of repetitive flood loss property through FEMA FMA Program	Elevate properties that have repetively flooded and/or damaged	In Progress FEMA FMA Funded	\$ -
South Davis Shores - Mitigation Alternative #1	Identified in SDS Resiliency Master Plan - Pilot Area - strategies required to meet a 5-year LOS - storm infrastructure improvements (increase capacity), re-grading Coquina Ditch, upsize Coquina Ditch culverts + check valves	Concept Analysis Seeking Add'l Grants	\$ 700,000
South Davis Shores - Mitigation Alternative #2	Identified in SDS Resiliency Master Plan - Pilot Area - strategies required to meet a 100-year LOS - Alt #1, plus expanded infrastructure improvements (increase capacity), expanding Coquina Ditch (depth + width)	Concept Analysis Seeking Add'l Grants	\$ 1,610,000
South Davis Shores - Additional Mitigation Strategies - Smart Valves	Identified in SDS Resiliency Master Plan - alternative to the permanent inline check valves in the culverts to maintain tidal flow, except during certain storms/events (Coquina, Hermosa, Old Quarry)	Concept Analysis Seeking Add'l Grants	\$ 600,000
South Davis Shores - Additional Mitigation Strategies - Pump Station	Identified in SDS Resiliency Master Plan - strategies required in addition to Alt Mit #1 and #2, to meet higher surge conditions and SLR, will require pumping	Concept Analysis Seeking Add'l Grants	\$ 2,400,000

Attachment 3 – Continued - Resilience Projects Needs List Presented at the 10-25-2021 Special Workshop

Project Name	Project Description	Project Status	Estimated Project Costs
South Davis Shores - Additional Mitigation Strategies - Seawalls	Identified in SDS Resiliency Master Plan - strategies required in addition to Alt Mit #1 and #2, to meet higher surge conditions and SLR, approximately 9,050 LF of shoreline, install flood barrier to elevation 7.0 NAVD88	Concept Analysis Seeking Add'l Grants	\$ 18,500,000
South Davis Shores - Additional Mitigation Strategies -Design	Design, survey, geotech and permitting estimated costs for Additional Mitigation Strategies. Design costs for Mit Alt #1 and #2 were included in those costs.	Concept Analysis Seeking Add'l Grants	\$ 6,450,000
Conversion of Septic to Sewer	Convert existing septic systems to sanitary sewer, program currently in place to plan and construct	On-going State Legislative Funding	\$ 1,500,000
Flood Mitigation on King St (a.k.a. King Street Drainage-KSDI)	FDOT King Street project to upgrade old/undersized storm system and COSA Cost Share (utility)	Design (90%)	\$ 258,000
Flood Mitigation and Drainage Improvements of the Plaza de la Constitucion	Project identified in Resilient Heritage Study - flood mitigation and drainage improvements for the Plaza	Concept Analysis Seeking Add'l Grants	\$ 4,645,000
South Dixie Highway Improvements (SDHI)	SDH roadway and drainage improvements, incorporate mobility	Conceptual Design (10%) Seeking Add'l Grants	\$ 10,000,000
Lincolnvile Drainage 3 (CDBG1)	Duero and Cerro Streets (utility + storm)	Design (60%)	\$ 1,500,000
Drainage Improvements and Flood Mitigation for the Ct. Theophelia/Edna Neighborhood (COURT)	Neighborhood utility and drainage improvements, could be further evaluated with SWMPU	Conceptual Design (10%) Seeking Add'l Grants	\$ 2,850,000
Flood Mitigation and Resiliency Improvements at Inlet Drive (a.k.a. Inlet Drive Shoreline Restoration)	Restore and/or elevate a portion of Inlet Dr shoreline	Conceptual Design (10%) Seeking Add'l Grants	\$ 534,800
Groundwater Monitoring Network for Rates of Change to Sea Level Rise	Establish groundwater monitoring network to determine rates of change due to SLR, would factor into design for other infrastructure projects	Concept Analysis Seeking Add'l Grants	\$ 150,000
Alcazar Hotel Floodproofing (flood wrap and flood gates) and landscaping (cisterns)	Project identified in Resilient Heritage Study - Install flood proofing and mitigation measures to protect historic building; will also benefit from Lake Maria project	Concept Analysis Seeking Add'l Grants	\$ 2,040,000
Llambias House Flood Mitigation and Resiliency	Project identified in Resilient Heritage Study - Install flood proofing and mitigation measures to protect historic building; will also benefit from Lake Maria project	Concept Analysis Seeking Add'l Grants	\$ 135,000
Project Needs Subtotal			\$ 103,419,800.00