

WELCOME

**WINTER STAKEHOLDER PARTNERING FORUM
U.S. ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT
FEBRUARY 15, 2023**



Partnering for a Sustainable Future

GOVERNMENT ETHICS IN THE WORKPLACE: GIFTS & CONFLICTS OF INTEREST



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Galveston District



US Army Corps
of Engineers®



Partnering for a Sustainable Future



PURPOSE

- **This training is similar to that used by Army personnel to satisfy their annual ethics training requirement.**
- **The intent of this module is to help Army personnel and stakeholders better understand their responsibilities to foster and encourage an ethical workplace.**
- **Specifically, you are encouraged to think about the ethical culture in your organization and your contributions towards that culture.**



PURPOSE

- **Focus Area: Relationships with Stakeholders**
 - **DoD and Army policy encourage employees to engage with industry to harness and protect the National Security Innovation Base as well as modernize key capabilities.**
 - **There is a broad range of opportunities for communications with industry in a fair, impartial and transparent manner that fall well within the parameters of the ethics and procurement laws.**
 - **This presentation focuses on the ethics provisions applicable to relationships with contractors.**



LEARNING OBJECTIVES

- **General Principles of Public Service**
- **Ethical Decision Making**
- **Gifts**
- **Widely-Attended Gatherings**
- **Conflicts of Interest**
- **Impartiality in Performing Official Duties**
- **Misuse of Position**
- **Use of Government Resources**
- **Outside Travel**
- **Post-Government Employment**



GENERAL PRINCIPLES OF PUBLIC SERVICE

DO

- Place loyalty to the Constitution, the laws, and ethical principles above private gain.
- Act impartially to all groups, persons, and organizations.
- Protect and conserve Federal property.
- Disclose waste, fraud, abuse, and corruption to appropriate authorities.
- Fulfill in good faith your obligations as a citizen, and pay your Federal, State, and local taxes.
- Comply with all laws providing equal opportunity to all persons, regardless of their race, color, religion, sex, national origin, age, or handicap.

DON'T

- Use public office for private gain.
- Use nonpublic information to benefit yourself or anyone else.
- Solicit or accept gifts from persons or parties that do business or seek official action from DoD (unless permitted by an exception).
- Make unauthorized commitments or promises that bind the Government.
- Use Federal property for other than authorized activities.
- Take jobs or hold financial interests that conflict with your Government responsibilities.
- Take actions that give the appearance that they are illegal or unethical.



ETHICAL DECISION MAKING

Always ask yourself these questions when making a decision:

- **Do the ethics rules permit me to take a proposed action?**
 - **May I proceed?**
 - **If yes, should I proceed? Just because a course of action is legal does not mean it is a good idea.**
- **What are the benefits to DoD if I take the proposed action and what are the RISKS?**



Contractor Ethics Provisions

- **Certain COI laws (e.g. bribery)**
- **False statement/false claims laws**
- **Procurement Integrity Act**
- **Federal Acquisition Regulation (FAR)**
 - **(3.104) Procurement integrity**
 - **(3.2) Contractor gratuities to govt personnel**
 - **(9.1) Responsible contractors**
 - **(9.4) Debarment/Suspension**
 - **(9.5) Organizational and Consultant COI**
 - **(37.104) Personal Services Contracts**



GIFTS

- **From Outside Sources**
 - **Exclusions**
 - **Exceptions**
- **Between Employees**





GIFTS: EXCLUSIONS

The following items are not considered gifts:

- Modest items of food & **non-alcoholic** refreshment, not part of a meal.
- Items of little intrinsic value (e.g. plaques, certificates, and trophies), intended primarily for presentation.
- Free attendance at an event on the day an employee is assigned to present official information.
- Discounts and favorable rates available to the public, all Federal personnel, or all military personnel.
- Rewards and prizes from contests open to the public.
- Anything paid for by the Government.
- Gifts accepted by the Government under statutory authority.
- Anything for which market value is paid by the employee.



GIFTS: FROM OUTSIDE SOURCES

- **Generally, an employee may not, directly or indirectly:**
 - **Solicit a gift from a prohibited source; or**
 - **Solicit a gift to be given because of the employee's official position.**
- **Generally, an employee may not, directly or indirectly:**
 - **Accept a gift from a prohibited source; or**
 - **Accept a gift given because of the employee's official position.**



GIFTS: EXCEPTIONS

- **Gifts with a value of \$20 or less, not to exceed \$50 from the same source in a single calendar year.**
- **Gifts based on a personal relationship.**
- **Discounts and similar benefits meeting certain requirements.**
- **Awards and honorary degrees.**
- **Gifts based on outside business or employment relationships.**



GIFTS: EXCEPTIONS

- **Gifts customarily offered by a prospective employer.**
- **Social invitations from other than prohibited sources.**
- **Meals, refreshments, and entertainment in foreign areas.**
- **Gifts accepted under specific statutory authority.**
- **Free attendance at widely-attended gatherings.**



- **Contractor employees are prohibited sources**
 - **General rule – no gifts solicited or accepted**
 - **No solicitation for retirement or other gift for govt employee – otherwise, total group gift must not exceed \$20.**



- **Exceptions:**
 - **Item not a gift – coffee, donuts**
 - **Gift up to \$20/occasion; \$50/year**
 - **BUT no cash may be accepted in any amount**
 - **Based on personal relationship**
 - **Widely attended gathering**



Gifts – The \$20 / \$50 Rule

- **You may accept gifts up to \$20 in value on one occasion (but not cash). [5 CFR 2635.204(a)]**
- **Gifts accepted from one source (e.g., one company) may not exceed \$50 in value in a calendar year.**
- **May not “buy down” gift to \$20, e.g., pay \$5 & accept a gift worth \$25.**
- **The \$20 limit is per occasion and per source (e.g., at a trade show you may accept gifts worth \$20 or less from several different DoD contractors on the same day).**



WIDELY-ATTENDED GATHERINGS

- **Generally, an employee may not accept a gift given by a prohibited source (e.g. a DoD contractor) or given because of the employee's official position.**
- **A common exception to this general prohibition is the widely-attended gathering (WAG) exception. The U.S. Office of Government Ethics (OGE) revised its regulations to require advance written approval to attend, effective 1 January 2017.**



WIDELY-ATTENDED GATHERINGS

The “Agency Designee” (generally supervisor) must determine, **in writing**, that:

1. A large number of attendees will be present.
2. Diverse views will be represented.
3. There will be an opportunity to exchange views.
4. There is an agency interest in the subordinate’s attendance.
5. The agency’s interest in the employee’s attendance outweighs the concern that the employee may appear to be improperly influenced in the performance of official duties.



GIFTS BETWEEN EMPLOYEES

General Rule: Employees shall not:

- 1. Give or donate toward a gift for a superior or ask another employee to donate towards a gift to either his own superior or that of another; or**
- 2. Accept a gift from a lower-paid employee *(unless the donor and recipient are personal friends who are not in an official superior-subordinate relationship).***



GIFTS BETWEEN EMPLOYEES

Exceptions:

1. **Unsolicited gifts on traditional gift giving occasions, such as holidays or birthdays, valued at \$10 or less (no cash).**
2. **Food and refreshments that will be consumed at the office.**
3. **Personal hospitality (e.g. meals) at someone's home.**
4. **Customary gift when you invite a subordinate to your home for a meal.**



GIFTS BETWEEN EMPLOYEES

More Exceptions:

- 4. Gifts in connection with the receipt of personal hospitality (e.g., dinner party invite).**
- 5. Unsolicited gifts on special infrequent occasions:**
 - a) Wedding, illness, birth of a child**
 - b) Occasion terminates the official superior – subordinate relationship (e.g., transfer, retirement, resignation), but not promotion.**



GIFTS BETWEEN EMPLOYEES

- **Rules: Gifts for “*special infrequent occasions*:”**
 - Gift must be “appropriate to the occasion.”
 - May not accept a gift on these occasions from a group that includes a subordinate if valued at over \$300.
 - Do not include cost of food, refreshments, and entertainment provided to mark the occasion.
 - Suggested voluntary donation may not exceed \$10 (although all may give as much as desired).
 - Gift to spouse to mark this occasion must be attributed to the employee.



CONFLICTS OF INTEREST

- **Statutory Provision**
- **Impartiality – Regulatory Provision**
- **Financial Disclosure**
- **Representation of others in Matters Affecting the U.S.**





CONFLICTS OF INTEREST

18 USC § 208

- **18 U.S.C. § 208 generally prohibits an employee from personally and substantially participating in a particular matter involving specific parties in which he (or anyone or any entity whose interests are imputed to him) has a financial interest, if the particular matter will have a direct and predictable effect on that interest.**





CONFLICTS OF INTEREST

18 USC § 208

The interests of the following entities are imputed to you for 18 U.S.C. § 208 purposes:

- **You**
 - **Your minor children**
 - **Your spouse**
-
- **REPORT THE SOURCE OF SPOUSAL NON-FEDERAL INCOME OVER \$1000 ON THE FINANCIAL DISCLOSURE REPORT!
(OGE 278e and OGE 450 filers only)**



CONFLICTS OF INTEREST

18 USC § 208

The interests of the following entities are imputed to you for 18 U.S.C. § 208 purposes:

- Your general partner (A "general partner" is a person who joins with at least one other person to form a business)**
- An organization with which you are negotiating an arrangement for future employment**
- An organization for which you serve as employee, officer, director, trustee, or general partner**



CONFLICTS OF INTEREST

18 USC § 208

What is a *particular matter*?

- Focused upon the interests of specific persons, or a discrete and identifiable class of persons.
- Does not extend to broad policy making or considerations directed toward the interest of a large and diverse group of persons or entities.
- Hint: Can you identify who is involved?



IMPARTIALITY IN PERFORMING OFFICIAL DUTIES

- **Appearances**
- **Covered Relationship**





IMPARTIALITY RULE

Absent supervisory notice and authorization, an employee should not participate in an official matter:

- **That is likely to have a direct and predictable effect on the financial interests of a member of the employee's household; or**
- **Where a person with whom the employee has a covered relationship is or represents a party to the matter**



IMPARTIALITY APPEARANCE STANDARD

Reasonable Person Test for Appearance of Impartiality

If a reasonable person with knowledge of the relevant facts would question the employee's impartiality, the employee should consult with his/her supervisor before participating in the matter.



IMPARTIALITY COVERED RELATIONSHIP

Covered Relationships Include:

- **A member of your household or a relative with whom you are close,**
- **Someone with whom you have or seek to have a business relationship other than a routine consumer transaction,**
- **An organization (other than political party) in which you actively participate,**
- **Someone with whom your spouse, parent, or dependent child has (or seeks to have) a close business relationship, such as partnership or employment.**



FINANCIAL DISCLOSURE REPORTS

The Primary Screening Tools for Potential Conflicts of Interest

OGE 450, Confidential Financial Disclosure Form - generally for certain non-senior employees (COLs/GS-15s/civilian equivalents and below) whose duties involve the exercise of discretion in sensitive areas. The Annual OGE 450 report is due 15 February.

OGE 278e, Public Financial Disclosure Form. For senior officials (for example GOs/SES members/political appointees). **The Annual OGE 278e report is due 15 May.**



MISUSE OF POSITION

- **An employee shall not use his public office for his own private gain, for the endorsement of any product, service or enterprise, or for the private gain of friends, relatives, or persons with whom the employee is affiliated in a nongovernmental capacity, including nonprofit organizations of which the employee is an officer or member, and persons with whom the employee has or seeks employment or business relations.**



MISUSE of POSITION AND ENDORSEMENTS

- **“Endorsement of a non-Federal entity, event, product, service, or enterprise may be neither stated nor implied by DoD or DoD employees in their official capacities...” [DoD 5500.07-R, para. 3-209]**
- **Example: You may not, in your official capacity, sign a letter endorsing a grant application of a non-Federal organization.**



MISUSE of POSITION and CONTRACTOR ISSUES

- **It is a misuse of position to endorse non-Federal entities (NFEs), to include contractors. 5 C.F.R. 2635.701-702**
 - *An employee shall not use his Government position or title in any manner that could reasonably be construed to imply the agency sanctions or endorses the employee's personal activities or those of another.*



MISUSE of POSITION and CONTRACTOR ISSUES

- *Letters of Recommendation:*
 - **Endorsement rules prohibit use of official position, title or authority, including official stationary and “star notes,” to commend the performance of a contractor or their employee.**



MISUSE of POSITION and CONTRACTOR ISSUES

- **More on Letters of Recommendation:**
 - **You may write a letter of recommendation or character reference in your personal capacity, i.e., if you don't use official stationery or your official title.**
 - **For non-DoD-contractors, you may write a letter of recommendation or character reference (and may use official stationery and your official title) if:**
 - **You receive a request for the letter or reference,**
 - **You have personal knowledge of the ability or character of the individual, and**
 - **You have dealt with the individual in the course of your Federal employment, or you are recommending the individual for Federal employment. [5 CFR 2635.702(b)]**



MISUSE of POSITION and CONTRACTOR ISSUES

- Revised DoDI 1400.25-V451, November 4, 2013, states:
 - *“Awards, award programs, ceremonies, or receptions to acknowledge contributions by organizations or companies having a commercial or profit-making relationship with DoD must not be established.” See paragraph 3(h).*
 - *“To avoid issues in connection with contractual relationships and obligations, actual or perceived conflicts of interest, and actual or perceived acts of favoritism, persons, organizations, or companies having a commercial or profit-making relationship with DoD or with a DoD Component will not be granted recognition. See Enclosure 3, paragraph 11(b)(2).*



MISUSE of POSITION and CONTRACTOR ISSUES

- **You can provide past performance feedback, positive or negative, coordinated with the Contracting Officer (CO) or the Contracting Officer's Representative (COR). You may also provide feedback on past performance questionnaires provided you clear your responses through the CO or COR.**
- **Bottom Line: It is the contractor's (and not your) responsibility to monitor contractor employee performance and award accordingly.**



MISUSE of POSITION and CONTRACTOR ISSUES

- If you are doing fundraising in your personal capacity (such as for a private organization), you may not personally solicit funds or other support from subordinates, DoD contractors or DoD contractor employees. [5 CFR 2635.808(c)(1)]
- Example: You may not ask subordinates or DoD contractor employees if they would like to buy the Girl Scout cookies your daughter is selling.



USE OF GOVERNMENT RESOURCES

- **Use Federal Government equipment and property, including communications systems, only for official purposes or authorized purposes as approved by your supervisor.**
- **Subject to supervisor approval, you may use Government resources for personal purposes IF the use:**
 - **Does not adversely affect the performance of official duties;**
 - **Is of reasonable duration and frequency;**
 - **Serves a legitimate public interest (such as keeping the employee at their desk);**
 - **Does not reflect adversely on DoD; and**
 - **Creates minimal or no significant additional cost to DoD.**

****WARNING: You should also check other regulations applicable to particular categories of resources (e.g. – JTR, IT regulations, etc.). Even though personal use may not violate the ethics rules, it may violate these.****



OUTSIDE EMPLOYMENT

- **DoD Financial Disclosure Filers (OGE 450 and 278e) must obtain written approval from supervisor before engaging in a business activity or compensated outside employment with a prohibited source.**
 - **This activity/outside employment could include:**
 - **Off-duty consulting for DoD Contractor.**
 - **Adjunct professor at local university.**
 - **Fiduciary position with private organization that conducts business with or seeks support from DoD (e.g., AUSA, AAAA, Signal Assn.; but not local school board, soccer club, or homeowners assn.)**
 - **Barista at Starbucks (Starbucks is a defense contractor).**
 - **Attach written approval to current financial disclosure report in FDM.**



POST-GOVERNMENT EMPLOYMENT (PGE)

- **Seeking
Employment**
- **Representational
Bans**





PGE: SEEKING EMPLOYMENT

- **If you are seeking non-Federal employment (sending resumes to select employers), you may not do Government work on a particular matter that will affect the financial interests of your prospective employer(s). You must provide your supervisor with a written disqualification statement.**
- **There are restrictions that will apply to your activities in the private sector in light of your specific duties and level of responsibility as a Government employee.**
- **Always consult your ethics counselor before separating from the Government.**



PGE: REPRESENTATIONAL BANS

18 U.S.C. § 207

After leaving the Federal Government, former employees are subject to additional CRIMINAL restrictions that may limit their interactions with the Federal Government when representing the interests of another person or entity.



- **Thank you for participating!**
- **The one-hour ethics briefing is now complete.**

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U.S. ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT
FEBRUARY 15, 2023**



Partnering for a Sustainable Future

WELCOME AND OPENING STATEMENT



Byron Williams
Deputy District Engineer
Programs and Project Management
U. S. Army Corps of Engineers
Galveston District



US Army Corps
of Engineers®



Partnering for a Sustainable Future

STAKEHOLDER WELCOME AND OPENING REMARKS



Col. Rhett A. Blackmon
District Commander
U. S. Army Corps of Engineers
Galveston District



US Army Corps
of Engineers®



Partnering for a Sustainable Future

LEVERAGING PUBLIC/PRIVATE PARTNERSHIP FOR GREATEST IMPACT: THE STORY OF BAYOU GREENWAYS



Beth White
President and CEO
Houston Parks Board



**US Army Corps
of Engineers®**



Partnering for a Sustainable Future



VISION

Thriving parks and communities
for everyone forever.

MISSION

Houston Parks Board creates, improves,
protects and advocates for parks for
everyone.





GODWIN PARK



BRAESWOOD PARK



TANGLEWOOD DOG PARK



CHERRYHURST PARK LIVING WALL



THE FIRST TEE OF HOUSTON JR. GOLF FACILITY AT F.M. LAW PARK



INGRANDO PARK FUTSAL COURT



DODSON LAKE WATER PLAYGROUND



LEE AND JOE JAMAIL SKATE PARK



WEST 11TH STREET PARK



E.R. AND ANN TAYLOR PARK

PLANS FOR DEVELOPMENT – 1912

Arthur Comey:

“The backbone of a park system for Houston will naturally be its bayou or creek valleys, which readily lend themselves to parks and cannot so advantageously be used for any other purpose.”







BAYOU GREENWAYS



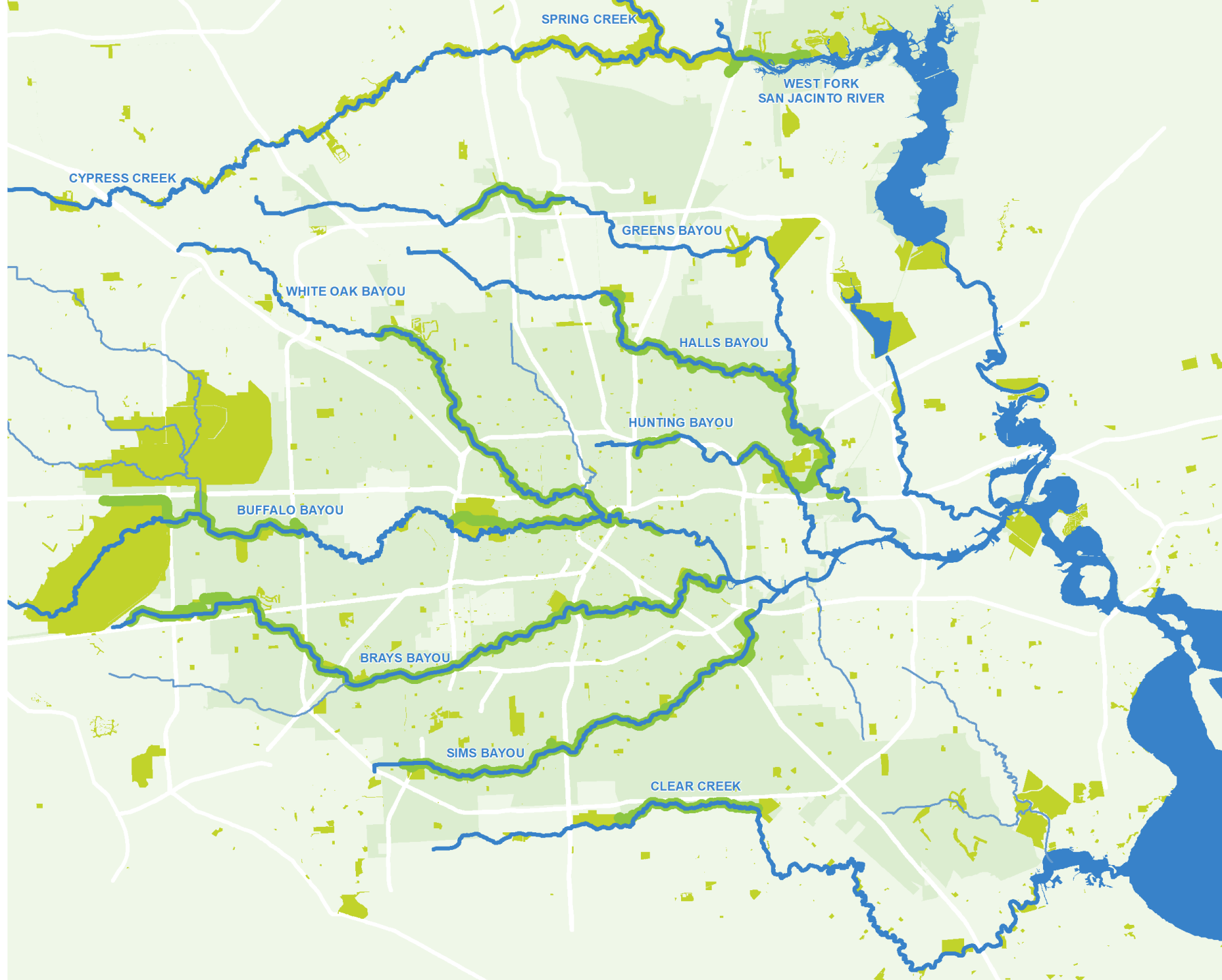
**3,000 ACRES OF
GREENSPACE**



**150+ MILES OF HIKE & BIKE
TRAILS**



**1.5 MILLION HOUSTONIANS
WITHIN 1.5 MILES OF A
BAYOU GREENWAY**

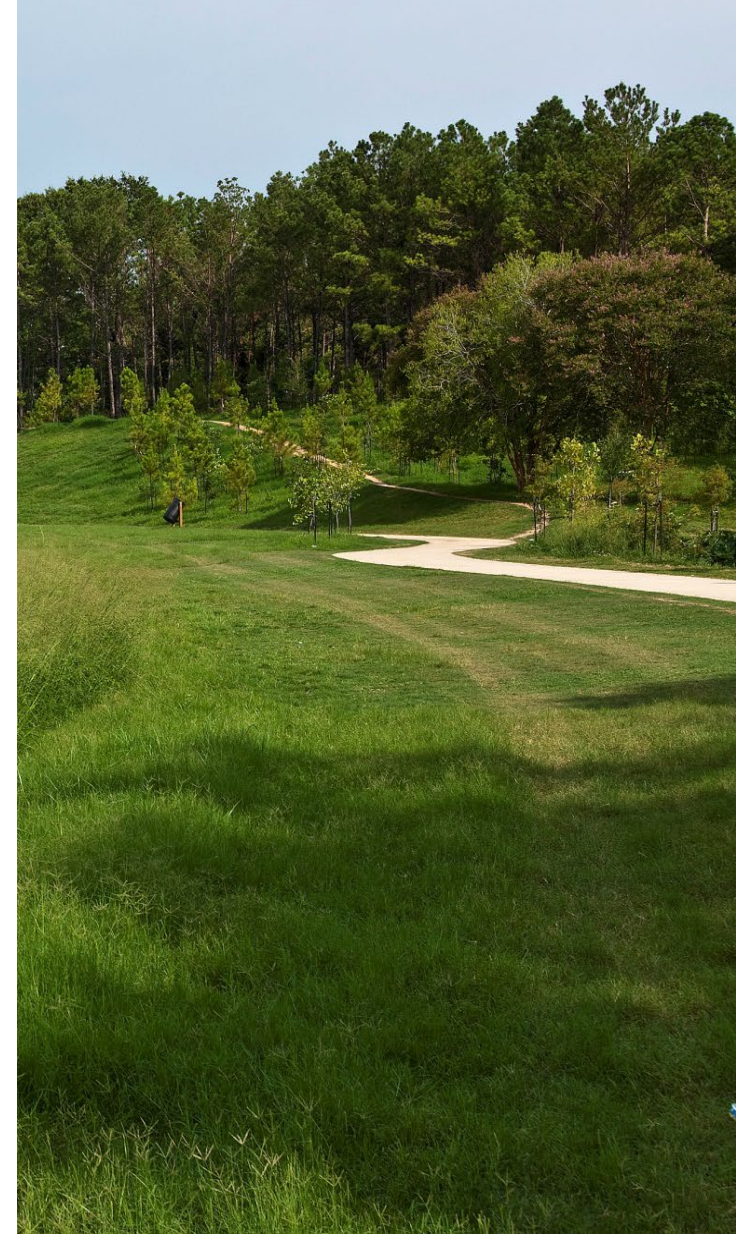




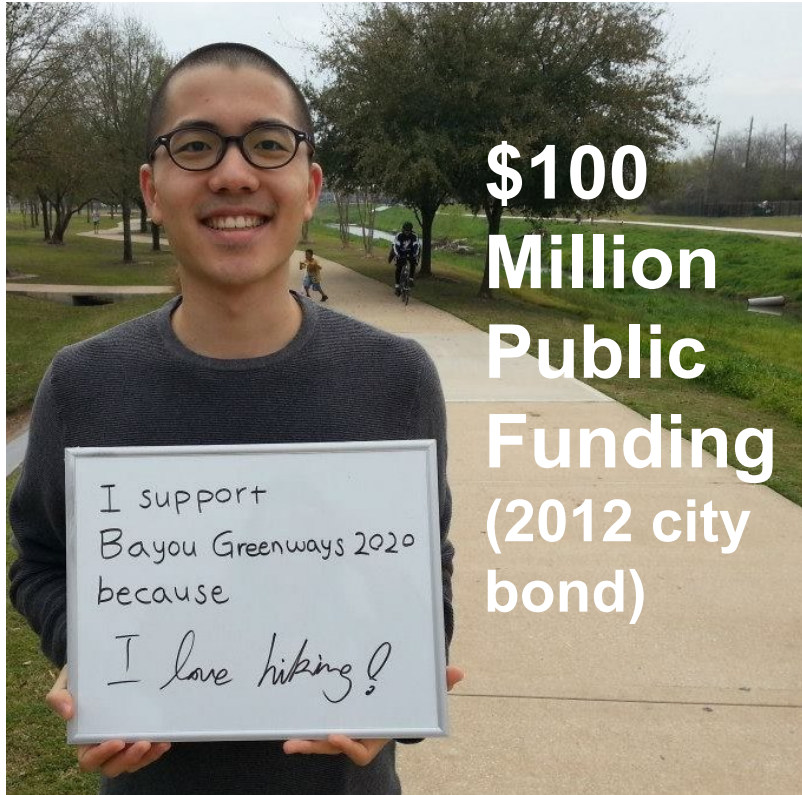
Bayou Greenways | Partners



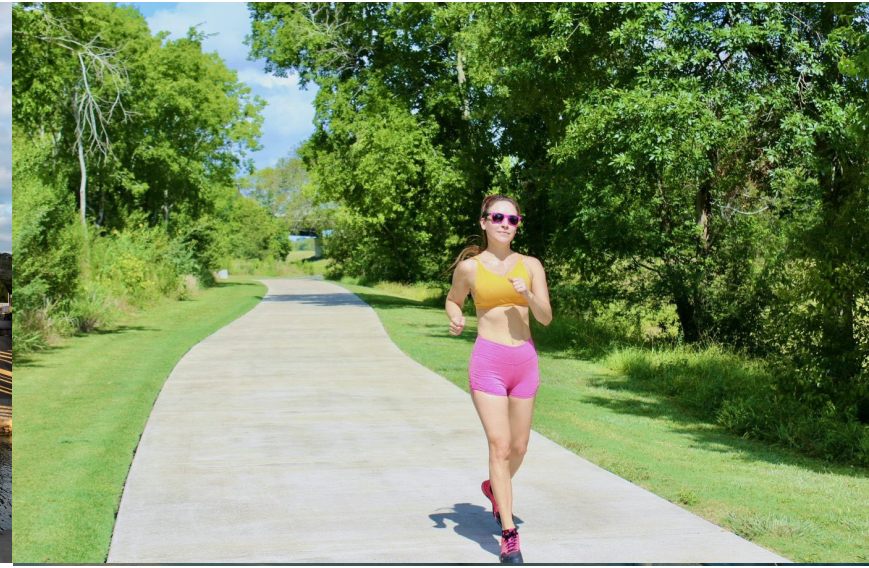
- City of Houston Parks and Recreation Department
- City of Houston Public Works and Engineering
- Houston Police Department and Harris County Constables
- City of Houston Department of Planning and Development
- Various Park Conservancies
- Harris County Flood Control District
- U.S. Army Corps of Engineers
- TxDOT
- U.S. DOT
- TIRZs
- Management Districts
- Railroads
- Texas Parks and Wildlife
- Private Conservation groups: TPL, Audubon, BPA
- Private Funders/Foundations (Kinder Foundation, Houston Endowment)
- Elected Officials (council members, county commissioners, and others)
- Community Groups (Super Neighborhoods, civic clubs, civic organizations, etc.)



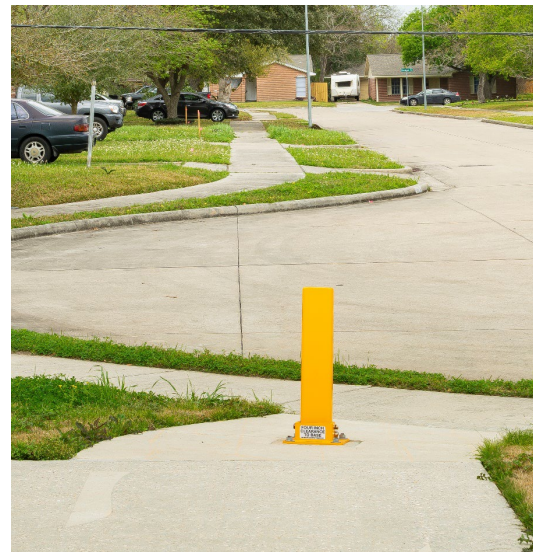
Bayou Greenways | Capital Campaign



Bayou Greenways | Linear Parks



Bayou Greenways | Wayfinding and Amenities



Bayou Greenways | A Sense of Place



Bayou Greenways | Benefits Study



\$220 MILLION PROJECT COST
\$90 MILLION/YEAR BENEFITS



PHYSICAL AND MENTAL HEALTH
\$50 MILLION/YEAR



ENVIRONMENTAL HEALTH
\$10 MILLION/YEAR



ECONOMIC HEALTH
\$30 MILLION/YEAR

Benefits Analysis, Dr. John Crompton
Texas A&M University, August 2011



**CREDIT: HOUSTON PUBLIC
LIBRARY, HMRC**

Bayou Greenways | Current Status



134 miles
Open to the Public

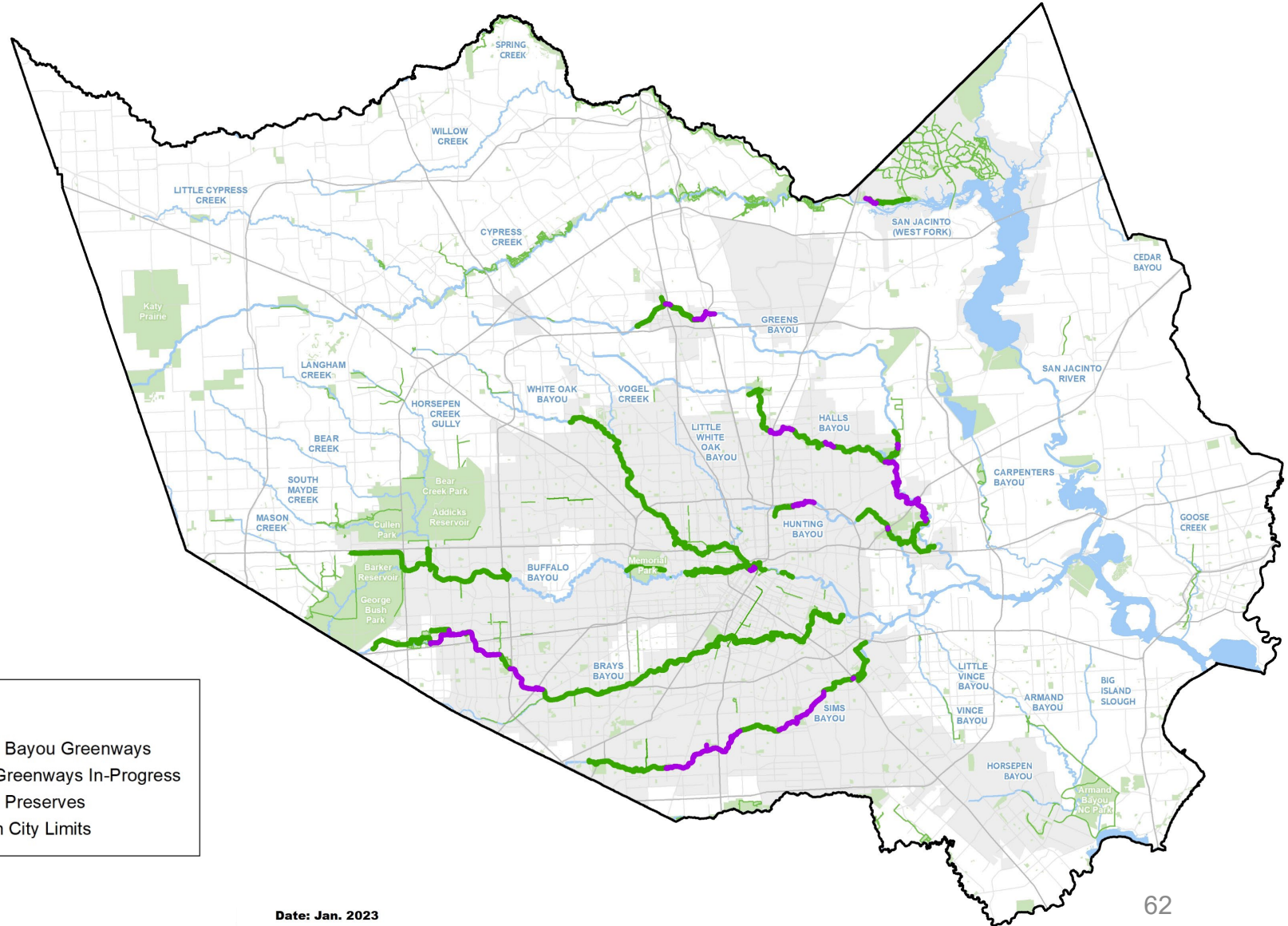
32 miles
In-Progress

23 miles
Under Construction

9 miles
Bidding or Design

LEGEND

- Existing Bayou Greenways
- Bayou Greenways In-Progress
- Parks & Preserves
- Houston City Limits



Bayou Greenways | Maintenance



Acres Currently

2,800+

Maintained

Litter and Debris
Removed Since 2014

2,235

Dump Truck Loads

Trail

92

Miles

Pedestrian

56

Bridges

Trees

25,350+

Inventoried



What's Next? Expanding Benefits

Expanding the System | Opportunities

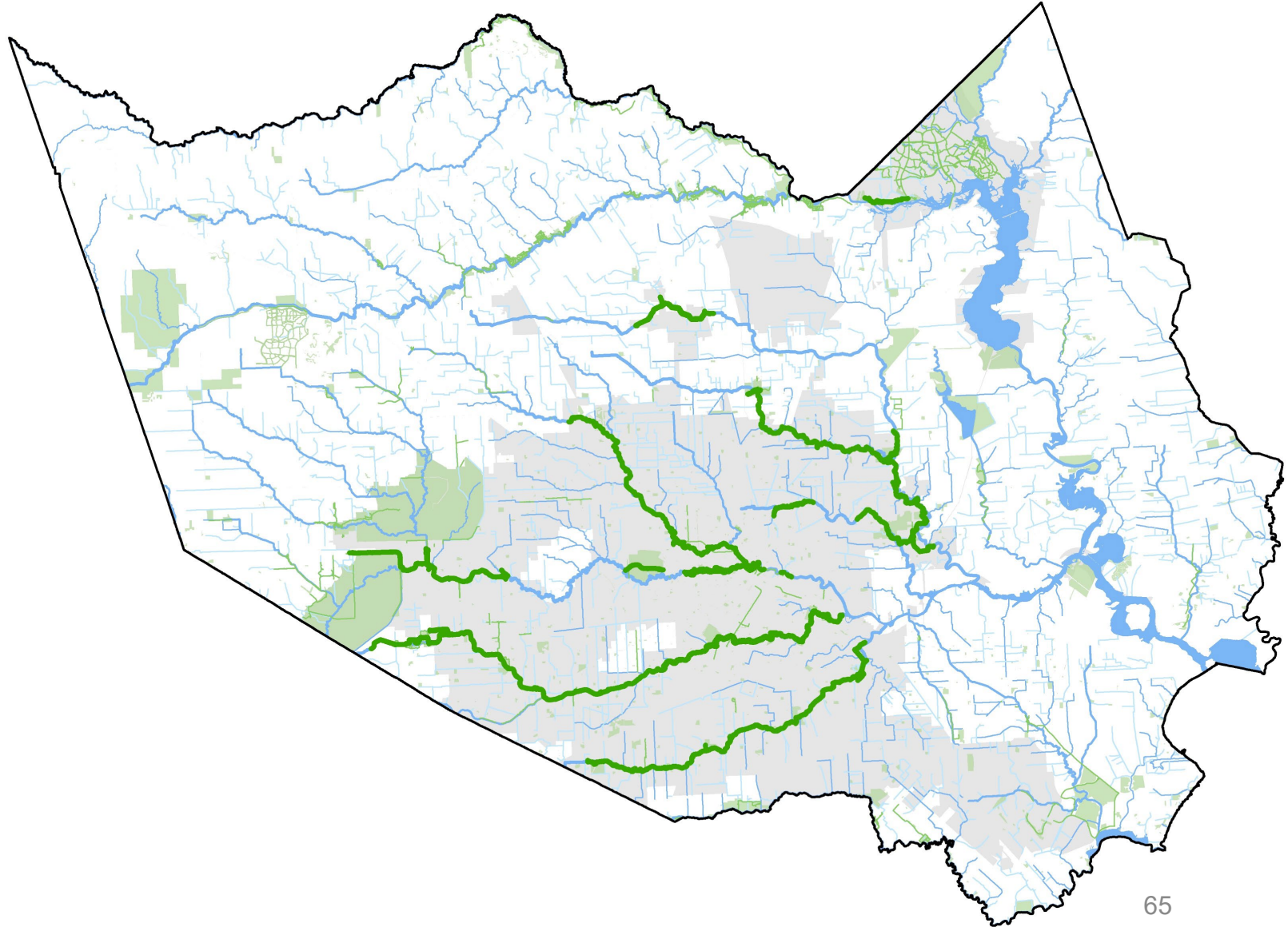


BAYOU GREENWAYS:

- 9 Major waterways
- 162 miles
- Mainly east/west orientation

POTENTIAL HARRIS COUNTY EXPANSION:

- 23 Major waterways
- 800 miles
- Powerline corridors travel north/south



Expanding the System | Prioritizing Projects



PROJECTS:

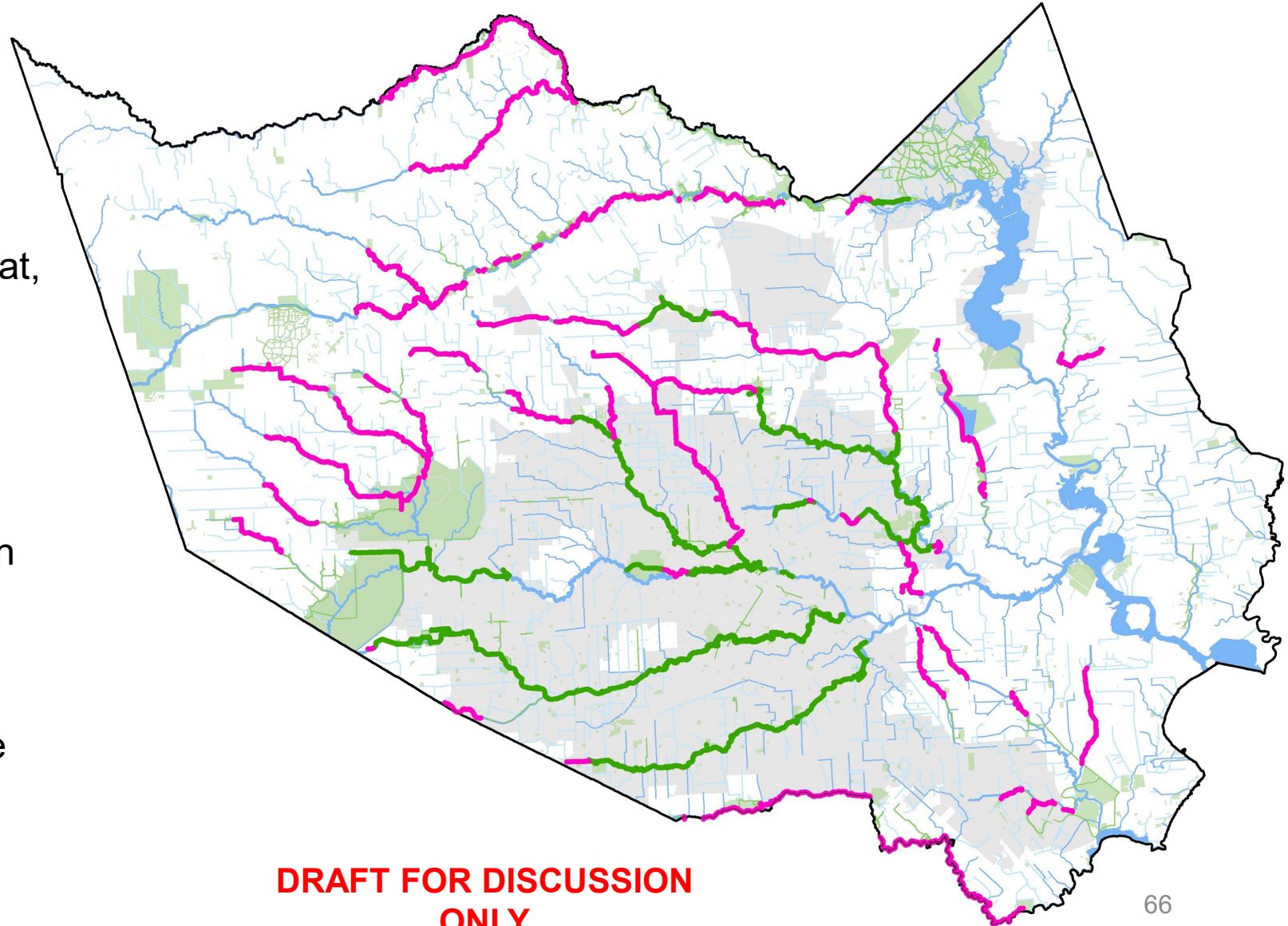
- **Access** - Regional connectivity and destinations
- **Ecology** - Potential to improve habitat, and increase water and air quality
- **Buildability** - Major challenges?

PEOPLE:

- # of people within 1.5 miles
- Social Vulnerability Index (SVI) within 1.5 miles

PARTNERSHIPS:

Implementation, Funding, Maintenance



**DRAFT FOR DISCUSSION
ONLY**

Expanding the System | Expand Bayou Greenways

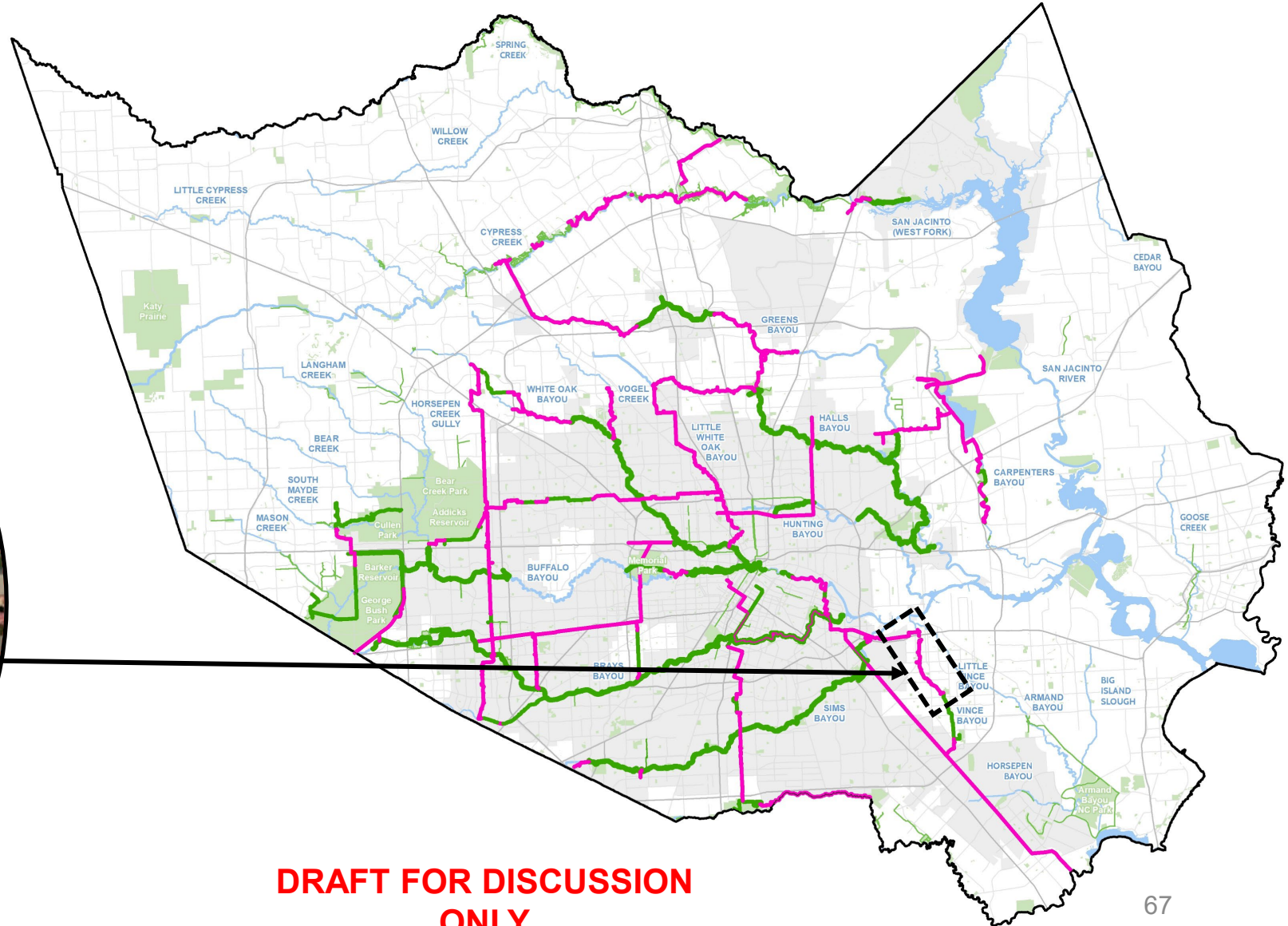


Vince Bayou Greenway

4 miles, \$13M

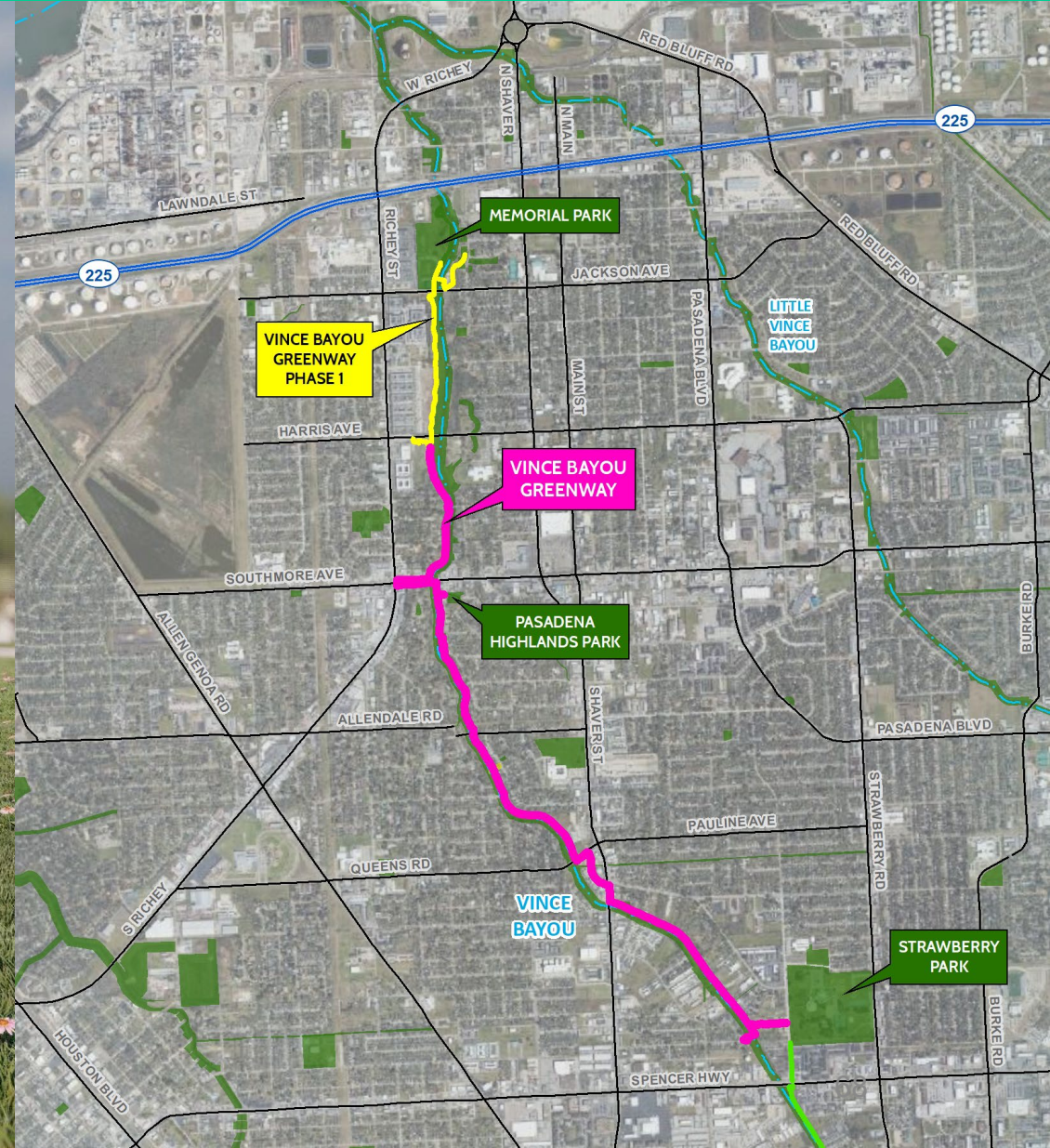
92,000 people within 1.5 miles

0.83 SVI (very high)



**DRAFT FOR DISCUSSION
ONLY**

Expanding the System | Vince Bayou Greenway



Expanding the System | Connector Trails

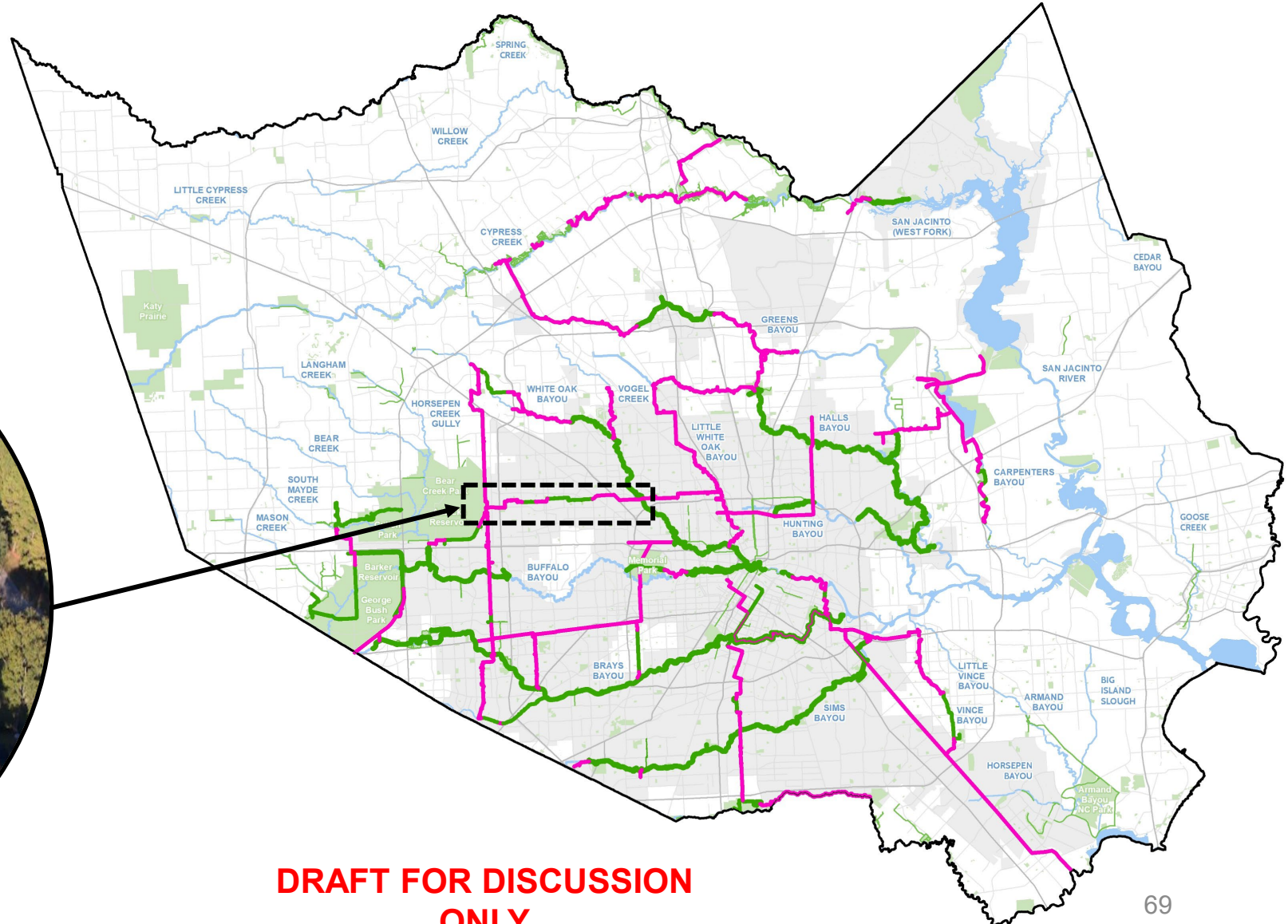


Spring Branch Trail

11 miles, \$20M

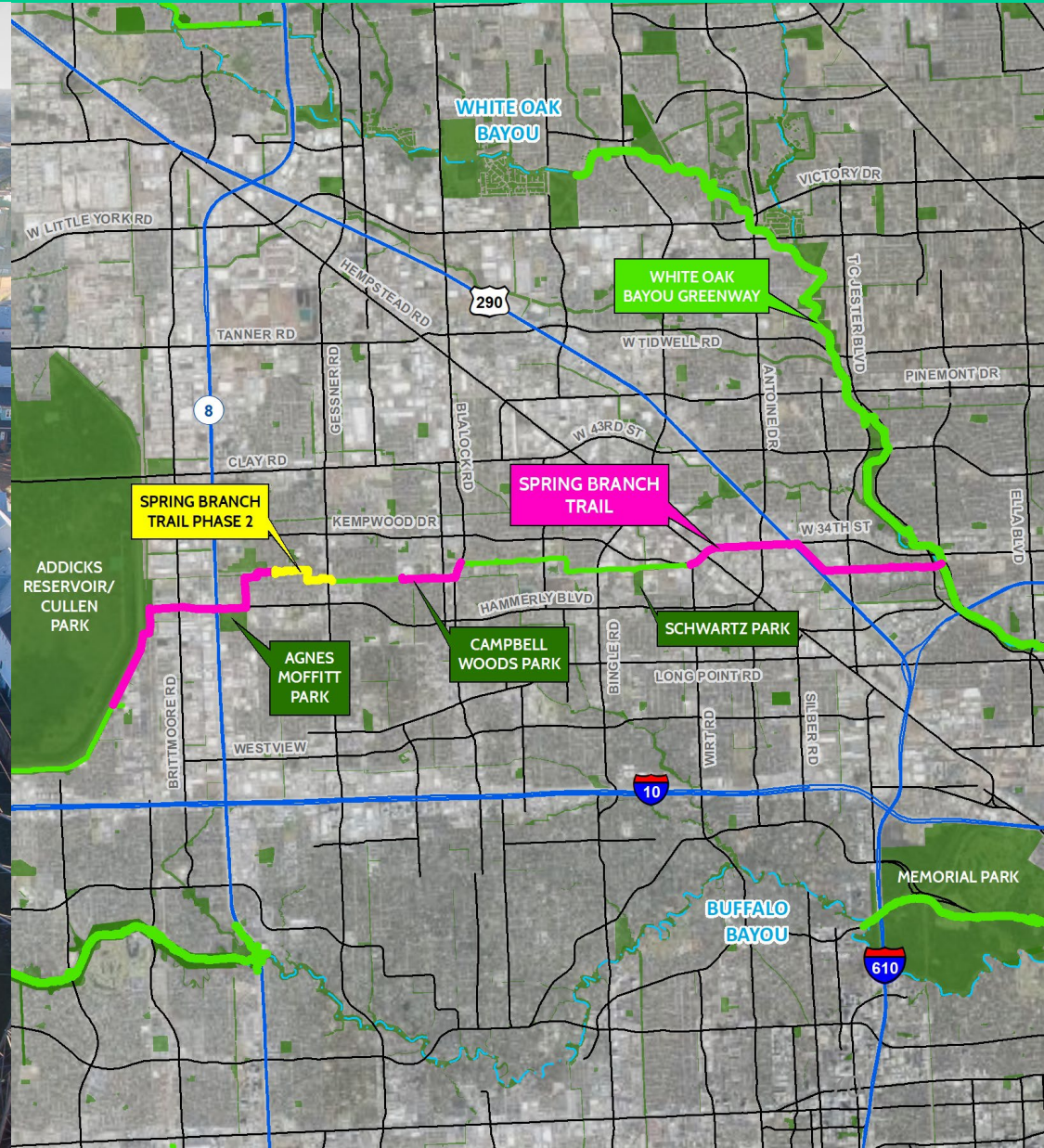
164,000 people within 1.5 miles

0.49 SVI (medium)



**DRAFT FOR DISCUSSION
ONLY**

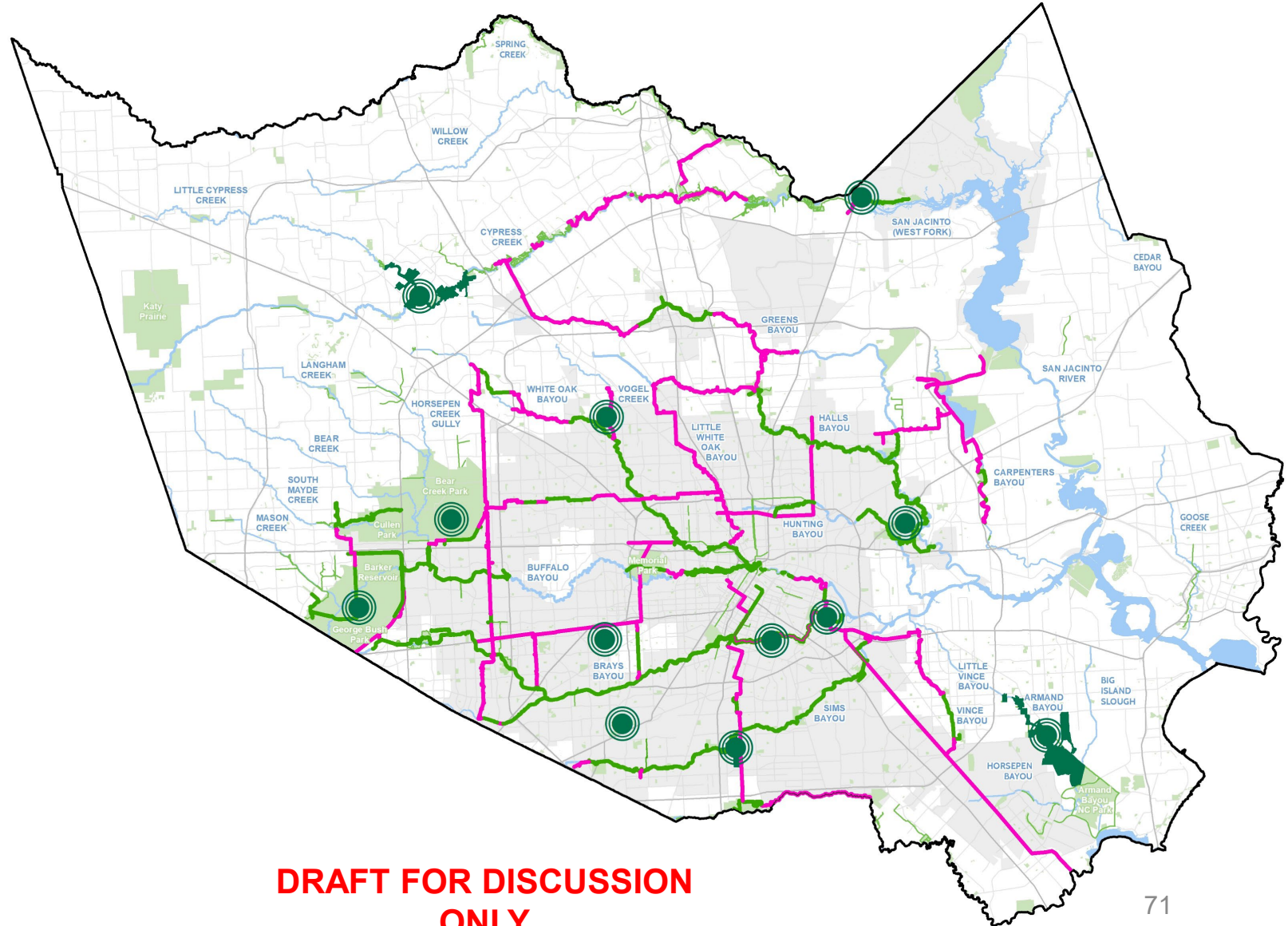
Expanding the System | Spring Branch Trail



Expanding the System | Detention Parks



Opportunity: Detention areas as parks



**DRAFT FOR DISCUSSION
ONLY**

Expanding the System | Hill at Sims

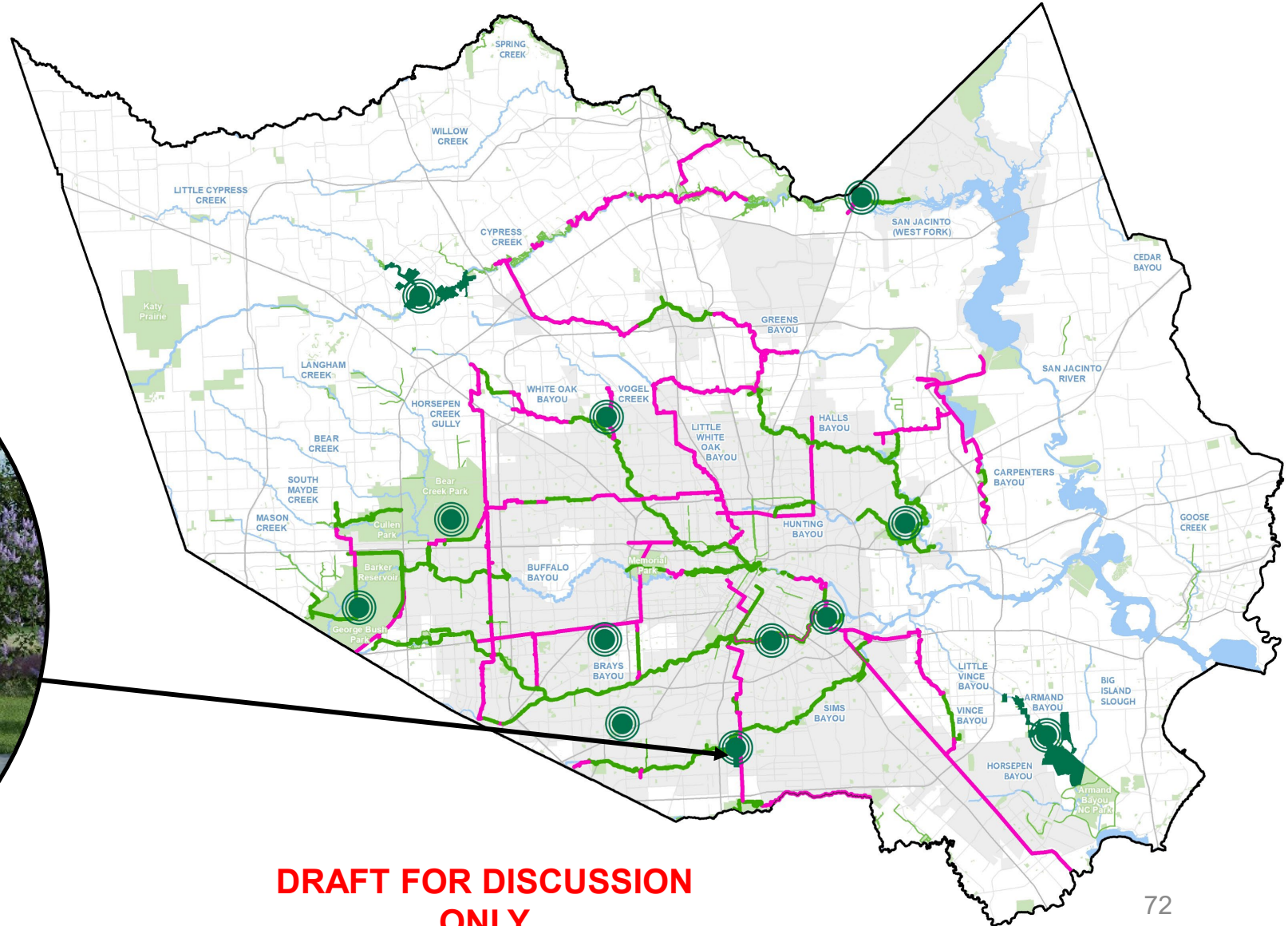


Hill at Sims

100 acres, \$28M

34,137 people within 1.5 miles

0.56 SVI (medium/high)



**DRAFT FOR DISCUSSION
ONLY**



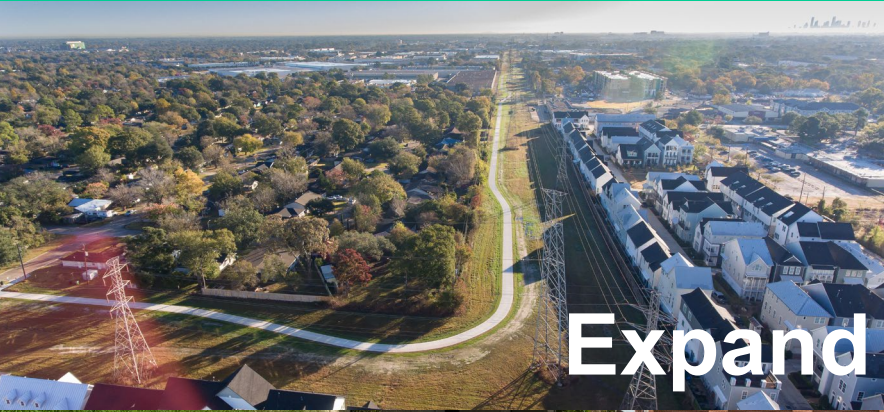
Expanding the System | Hill at Sims



PHOTO CREDIT: ANTHONY RATHBUN



Our Future Vision for a Resilient Harris County



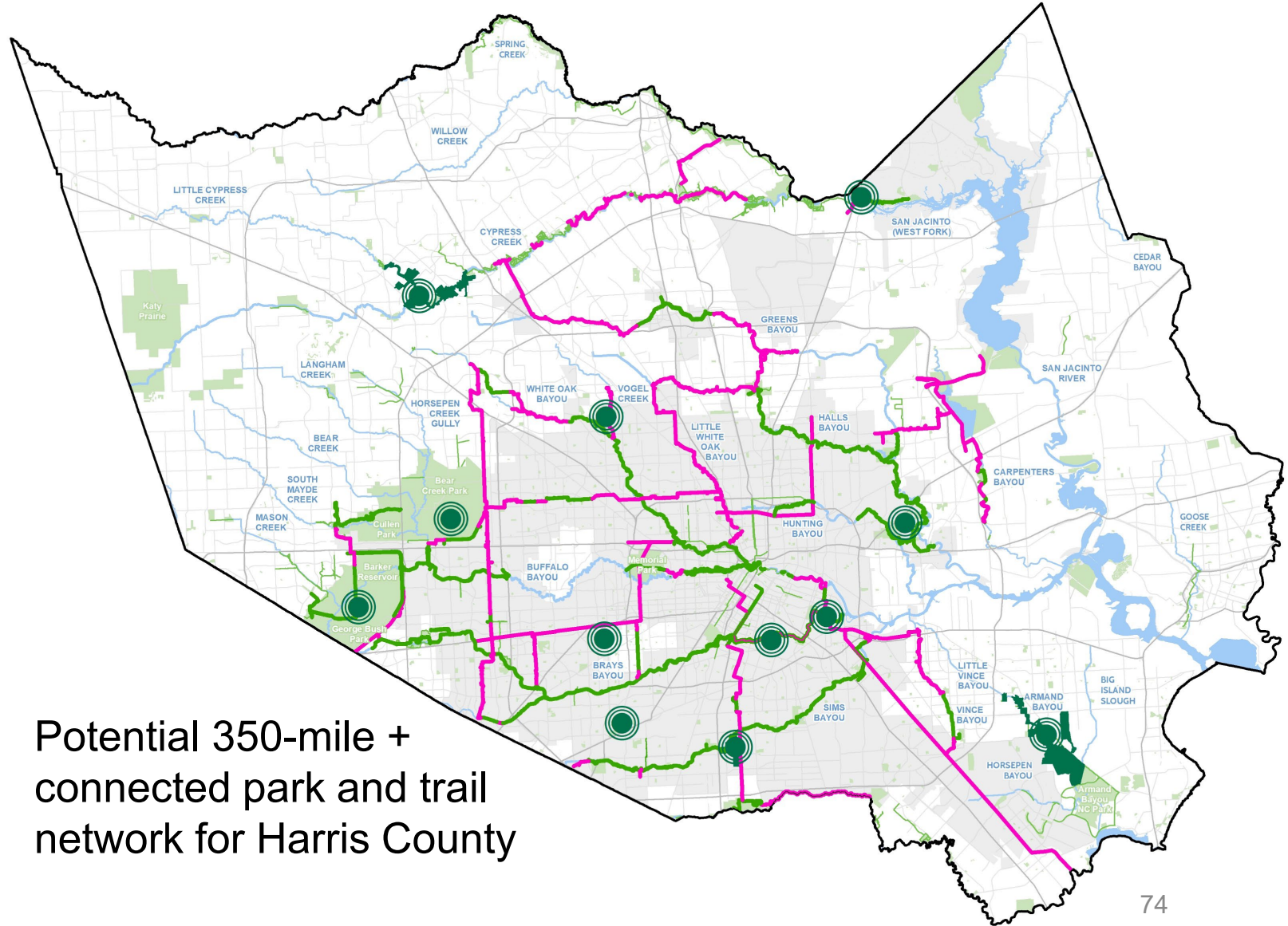
Expand



Enhance



Engage



Potential 350-mile +
connected park and trail
network for Harris County



Thank You!



HOUSTON
PARKS BOARD

www.houstonparksboard.org

#PARKSBYYOU

RESACAS: A CITYWIDE ECOSYSTEM RESTORATION PROJECT



**Reuben Trevino, CCP
Project Manager**
Continuing Authorities Program &
Planning Assistance to States Program Manager
U.S. Army Corps of Engineers
Galveston District



**US Army Corps
of Engineers®**



Partnering for a Sustainable Future



OUTLINE



- **Project Authorities**
- **Project Purpose**
- **Location and History**
 - **Changes that spurred regional growth**
 - **Impacts to environment from those changes**
- **Identified Problems & Alternative Solutions**
- **Recommended Plan: National Ecosystem Restoration (NER)**
- **Plan Implementation & Cost: 16 Contracts over 16 years**
- **Contract 1 Details**



AUTHORITIES



Study:

- Authorization for the study is the House Committee on Transportation and Infrastructure Resolution, 10 November 1999.
- Chief of Engineer's report dated September 6, 2018

Construction:

- Authorized under Section 1401 of the America's Water and Infrastructure Act of 2018, which authorized the project as described in the Chief of Engineer's report.
- PED for contract 1 initiated with remaining FEA funds MAR 2020
- Fed Govt allocated FY21 funding to complete PED phase.
- Construction appropriations still pending.



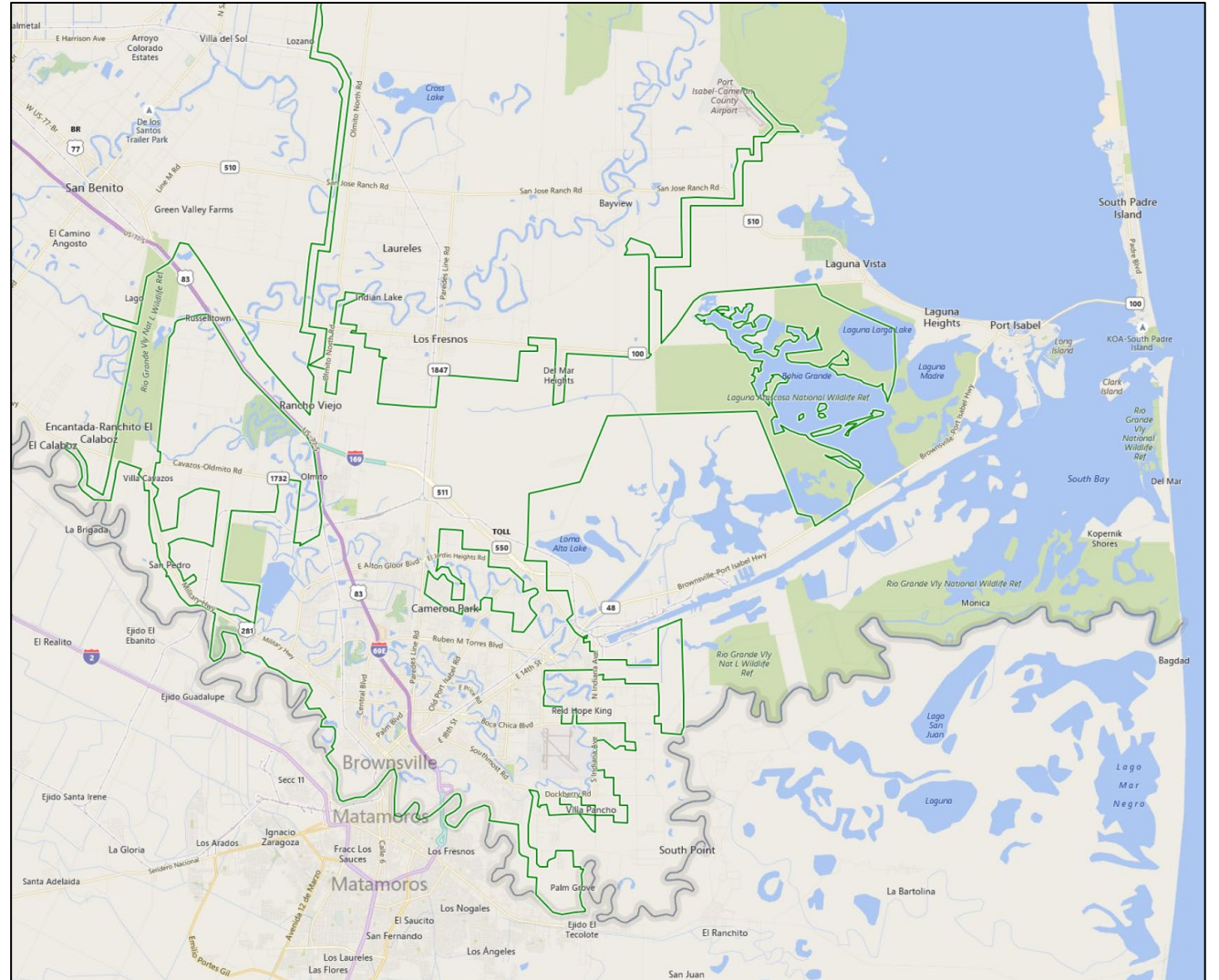
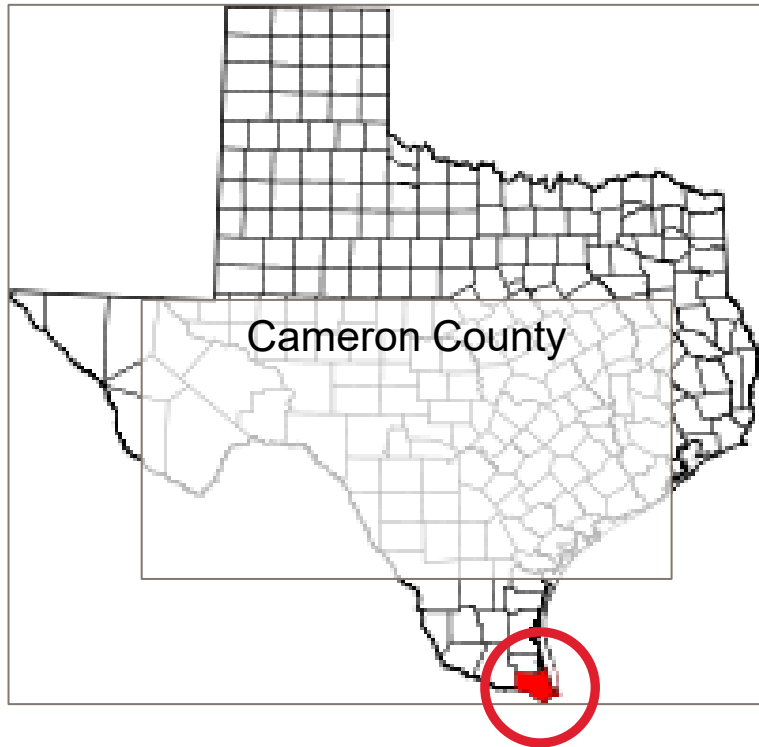
PURPOSE

- Restore impacted resaca aquatic and riparian complexes to functional and self-regulating systems
- Restore connectivity within:
 - the Brownsville resacas
 - the thornscrub and resaca habitats surrounding Brownsville
- Reduction or elimination of invasive and non-native species, and perpetual management





CITY OF BROWNSVILLE, TEXAS



FLOOD RISK MGMT. PROJECTS ALONG THE RIO GRANDE



Complete	Name	Owner
1907	Leasburg Diversion Dam	Bureau of Reclamation
1914	Rio Grande Dam and Reservoir	San Luis Valley Irrigation District
1916	Elephant Butte Dam and Reservoir	Bureau of Reclamation
1916	Mesilla Diversion Dam	Bureau of Reclamation
1918	Percha Diversion Dam	Bureau of Reclamation
1918	International Diversion Dam	International Boundary & Water Commission
1928	Riverside Diversion Dam	International Boundary & Water Commission
1934	Angostura Diversion Dam	Bureau of Reclamation
1934	Isleta Diversion Dam	Bureau of Reclamation
1934	San Acacia Diversion Dam	Bureau of Reclamation
1935	El Vado Dam and Reservoir	Bureau of Reclamation
1938	Caballo Dam and Reservoir	Bureau of Reclamation
1938	American Diversion Dam	International Boundary & Water Commission
1951	Platoro Dam and Reservoir	Bureau of Reclamation
1953	Jemez Canyon Dam and Reservoir	Corps of Engineers
1954	Falcon Dam	International Boundary & Water Commission
1963	Abiquiu Dam and Reservoir	Corps of Engineers
1968	Amistad Dam	International Boundary & Water Commission
1970	Galisteo Dam and Reservoir	Corps of Engineers
1971	Heron Dam and Reservoir	Bureau of Reclamation
1973	Cochiti Dam and Cochiti Lake	Corps of Engineers
early 1990s	Closed Basin Project	Bureau of Reclamation



FORMER RESACAS - THEN



Habitat that
once looked like
the images to
the left...



FORMER RESACAS - NOW

have been urbanized...

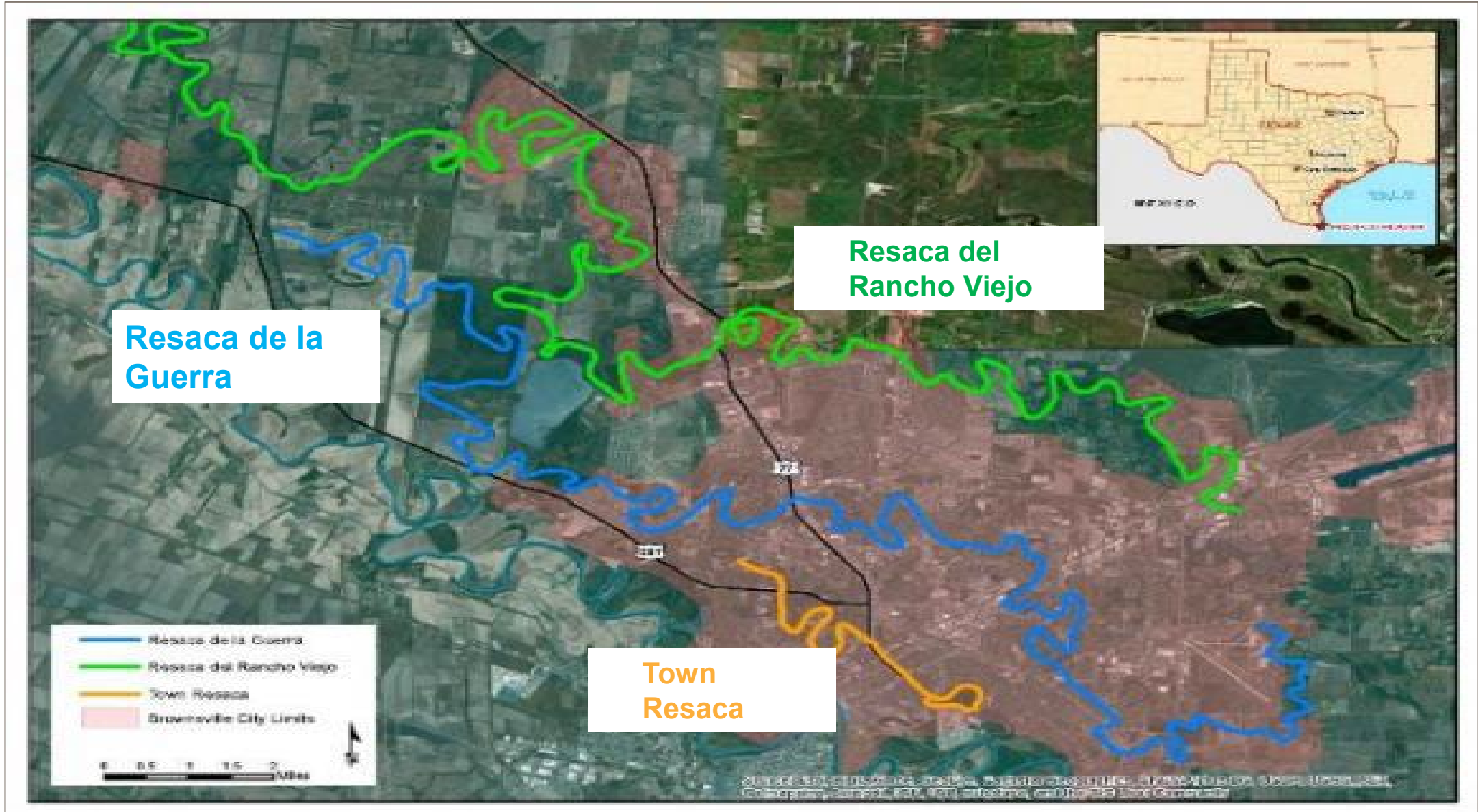


...are now agricultural areas...



...or are invasive monocultures.

STUDY SCOPE – 3 RESACAS





IDENTIFIED PROBLEMS



1. No New Resaca Habitat Will Be Created.

- The management of water in the Rio Grande Basin has effectively eliminated the potential for a major flood to cut a new course to the Gulf in the lower Rio Grande Valley.

2. Loss of Connectivity.

- The loss of resaca habitat due to urbanization has segmented the habitat and disrupted ecological connectivity along and among the three resacas, and more significantly has severed connectivity with high quality native thornscrub and resaca habitats of the surrounding ecosystem for most species.

3. Invasive (and non-native) Species.

- Both aquatic and terrestrial flora and fauna, exist in abundance in and around the resaca habitat. These species have significantly reduced the quality of habitat and because they tend to out-compete native species.



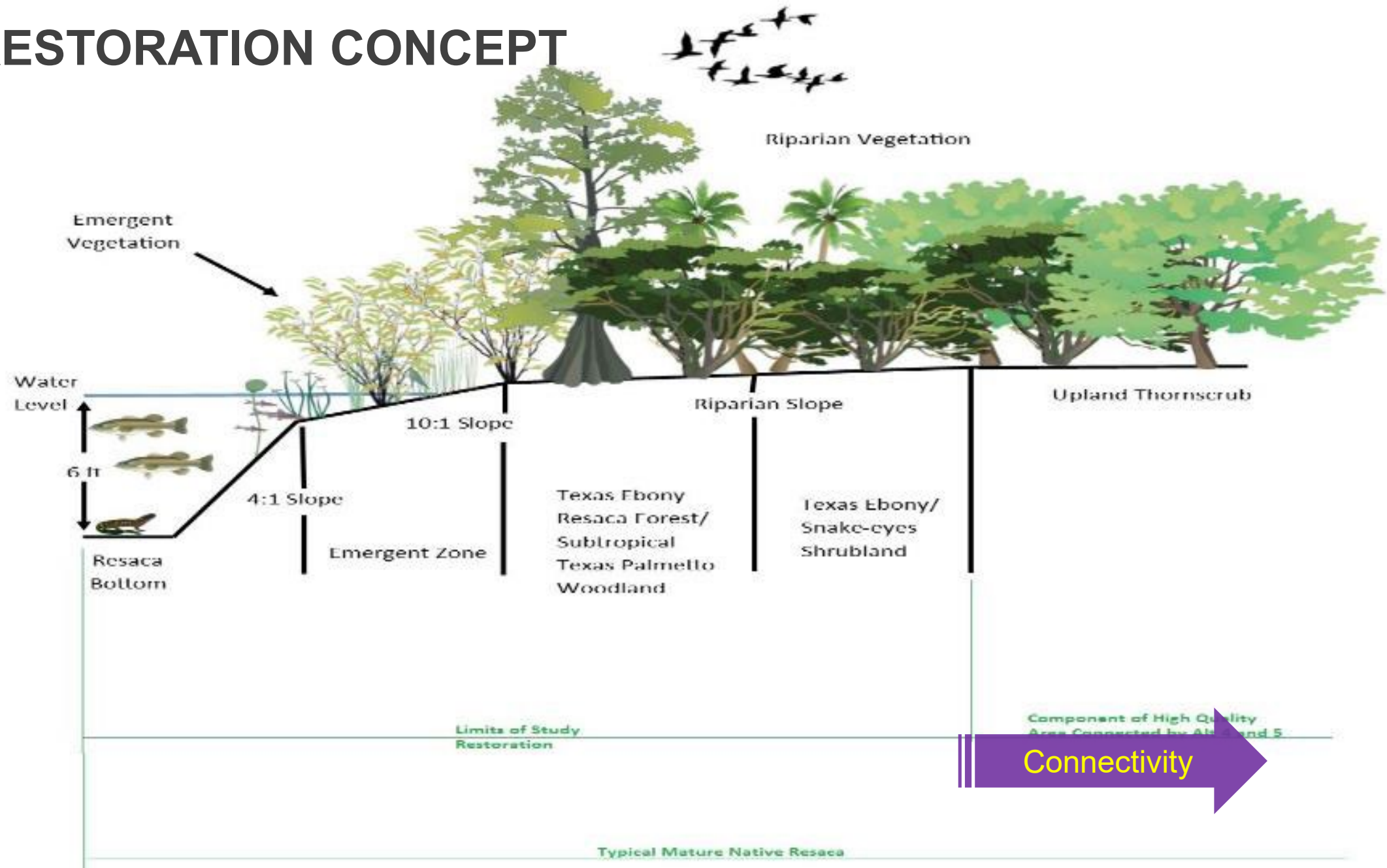
EIGHT MEASURES APPLIED



Eight measures were applied in the alternatives which would address either one or all identified problems. Measures have been used to restore similar habitat.

- Dredging and Excavation
- Riparian Soil Supplementation
- Riparian Planting
- Bank Slope Restoration
- Bank Stabilization
- Aquatic Planting
- Water Control
- Invasive Plant Management

RESTORATION CONCEPT





EVALUATION METHODOLOGY



The evaluation of alternatives involved two equally important and complementary assessments:

- 1) **Habitat restoration** and
- 2) **Connectivity restoration**: “Stepping Stone Strategy” was applied to assess the potential to restore connectivity:

- Along each of the three Resacas,
- Among the three Resacas, and
- Across the Resacas To the surrounding ecosystem.

There was an aquatic connectivity assessment and a terrestrial connectivity assessment based on professional opinion of the USACE and resource agency subject matter experts.



HABITAT RESTORATION MODEL



Ecological forecasts were developed from field investigations and was aided by a Resaca Reference Condition Model. The model was developed in cooperation with the USFWS, the TPWD, the National Parks Service, the Brownsville Public Utilities Board, and university biologists.

The ecological forecasts were evaluated using the USACE Institute of Water Resources (IWR) Planning Suite 2.0.6.1 tool (IWR Plan).



Forecast Connectivity

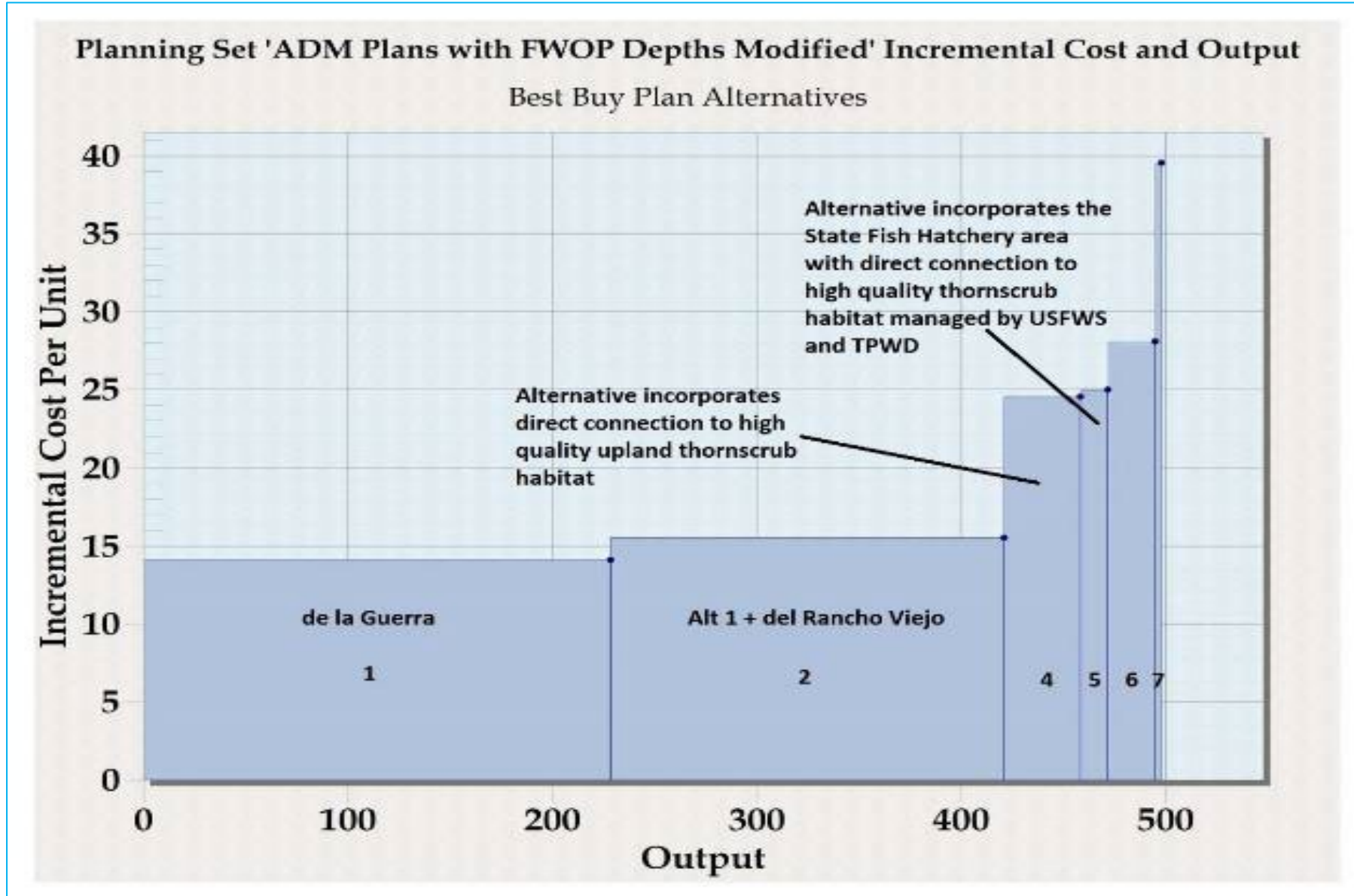
Distance (Miles)	Connected Habitat (Acres)
5	~20,000
10	~30,000
20	~110,000
30	~125,000

Legend:

- 5 Miles
- 10 Miles
- 20 Miles
- 30 Miles
- Recommended Plan
- High Quality Areas

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, Aero, GeoMapping, Aero 10, IGN, IGP, swisstopo, and the GIS User Community

SIX ALTERNATIVES - ICA





INCREMENTAL COST DATA

Cost and Benefit Category	Alternative					
	1	2	4	5	6	7
First Cost (\$1,000)	90,318	172,198	196,277	205,501	223,542	226,611
AAC (\$1,000)	3,273	6,232	7,103	7,428	8,050	8,157
Interest During Const (\$1,000)	652	1,258	1,444	1,515	1,654	1,678
OMRR&R (\$1,000)	248	506	573	593	618	624
Project Acres	448.7	826.2	884.2	914.5	963.0	968.6
FWP AAHU	393	762	815	846	883	888
FWOP AAHU	153	329	346	362	376	378
Net Benefit AAHU	240	433	470	483	507	510
Benefit/Acre AAHU	0.53	0.92	0.92	0.93	0.92	0.92
Incremental Benefit AAHU	240	193	37	13	23	3
AAC/AAHU (\$1,000)	13.6	14.4	15.1	15.4	15.9	16.0
Incremental AAC (\$1,000)	13.6	6.8	1.9	0.7	1.2	0.2
Incremental AAC/AAHU (\$1,000)	13.6	15.4	23.5	23.7	26.7	37.5
Total Cost./Acre (\$1,000)	201.28	208.42	221.93	224.71	232.13	233.96
AAC/Acre (\$1,000)	7.29	7.54	8.04	8.12	8.34	8.42



- 16-year construction schedule
- Restoration starts upstream and continues downstream for each construction group
- Average of \$17 M per year with an estimated TPC of \$272 mill



RECOMMENDED PLAN (NER PLAN)



The total restoration acreages of 845 acres in 44 “stepping stone” areas would consist of:

- 625 acres of terrestrial riparian habitat restoration,
- 220 acres of aquatic habitat restoration,
- 33 miles of shoreline aquatic planting.

The recommended plan lands:

- 763 acres of city and private lands;
- 28 acres of state TPWD lands, and
- 54 acres of federal USFWS lands.



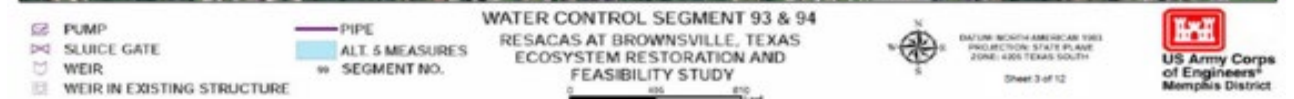
The USACE could not cost share in the implementation on the USFWS lands. That implementation would be further coordinated with the USFWS and the non-federal sponsor during the USACE PED phase.

CONTRACT 1 SEGMENTS 72, 93, 94

- Connection of 72 and 93 drainage under highway,
- Adding a pump at Resaca 72
- Improving the existing weir between Resacas 93 and 94,

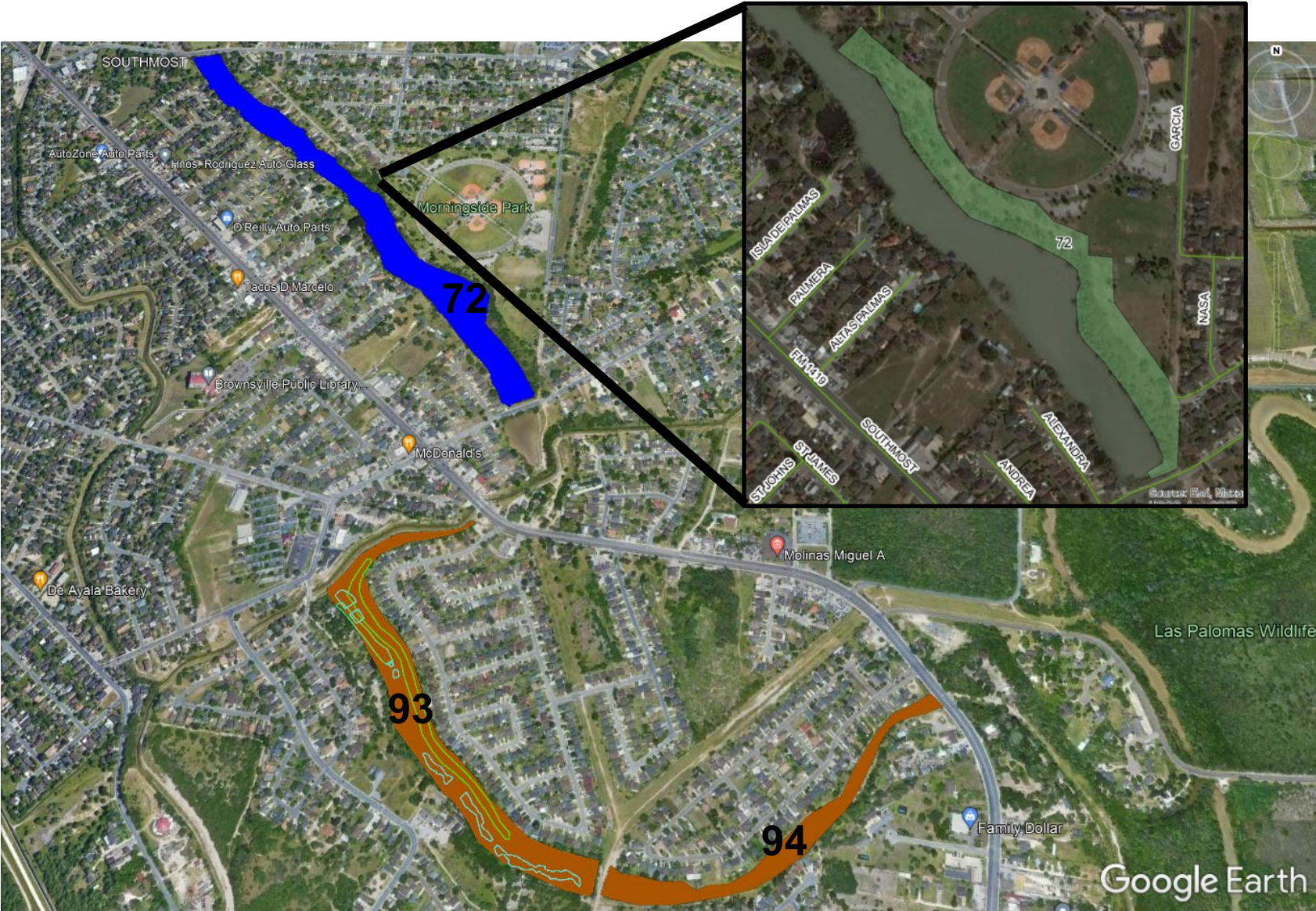


- Installing a weir in segment 94,
- Excavation & Scraping of the 93&94 in the “dry”
- Planting aquatic veg
- Invasive species removal





CONTRACT 1 SEGMENTS 72, 93, 94





CONTRACT 1 SEGMENTS 72, 93, 94





CONTRACT 1 SEGMENTS 72, 93, 94

99



JAGOU BRIDGE STILL STANDS

Soundness Is Tribute To Workmanship

BROWNSVILLE — A tribute to the skill and thoroughness of workmen of the last generation is contained in a brick bridge about a half mile off the Southmost Road on the property of L. A. Jagou, according to W. I. Gilam, well known Valley engineer.

The bridge stands as firm today as it did when constructed in 1893 although the need for it has long since passed, and its approaches are washed away.

The bridge crosses the Resaca de la Guerra, which borders the Jagou place. Mr. Jagou explained that formerly there was a nearly continuous flow of water through the resaca.

The bridge, he said, was built by his father to furnish an outlet for all ranchers living east of the resaca in what is now principally the El Jardin water district.

Several years ago the water was diverted through a drainage ditch, and the resaca is now dry.

A stone tablet in the side of the bridge indicates that it was built in 1893 by Francisco Pena. Ninety thousand brick, burned in a near-by kiln, went into the making of the bridge.

Publication from
Brownsville Herald dated:
May 9, 1939



CONTRACT 1 SEGMENTS 72, 93, 94

100





CONTRACT 1 SCHEDULE

Milestone Detail	<div>▼</div> Current Date
Agreement Execution	26-Mar-2021
Draft Plans & Specs Complete	30-Sep-2022
Draft Plans & Specs Complete	22-Feb-2023
Plans & Specs Approval	18-Jan-2024

Construction is contingent upon appropriations being included in the FY23 Work Plan

2023								2024							
M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A
CW330	CT			CG- FY23 WPLAN											

Contract 2

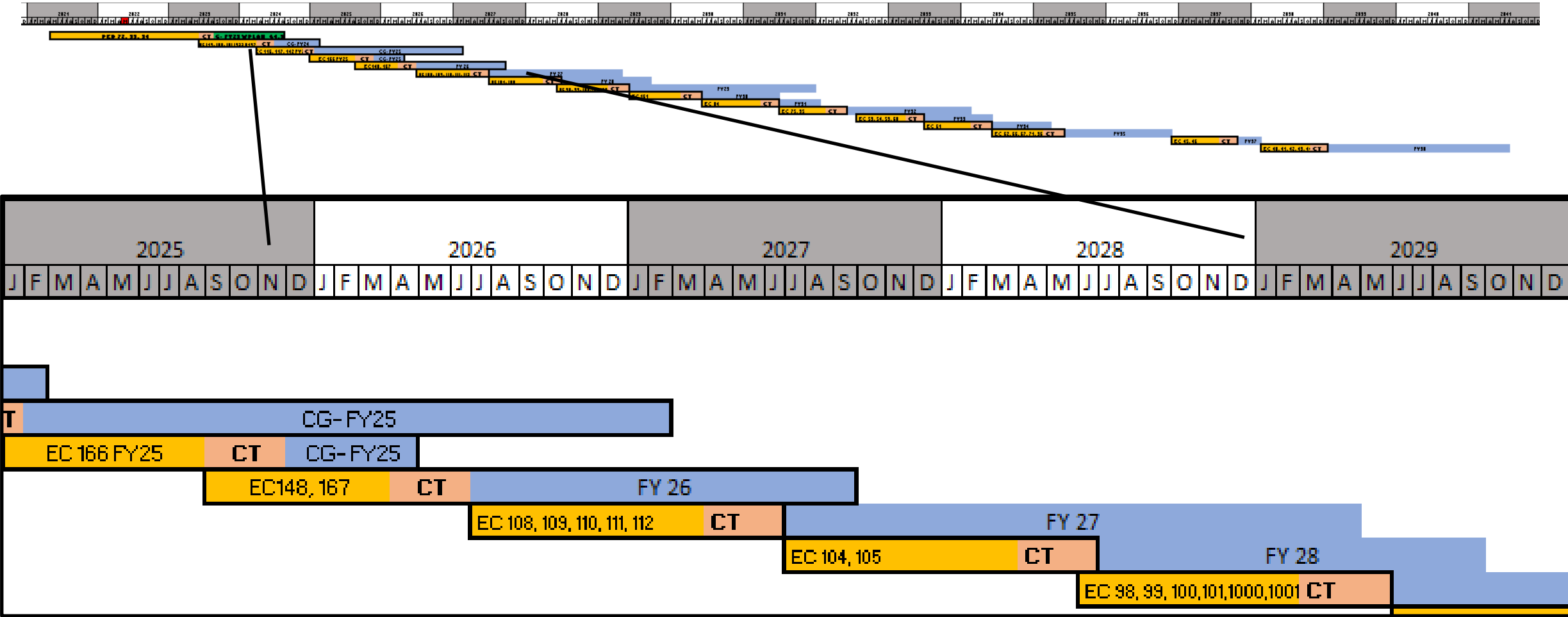
2023							2024														
J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	
CT		CG- FY23 WPLAN \$4.9M																			
EC 149, 150, 151 FY23 \$497k									CT		CG- FY24										



PROJECT DELIVERY

2023

2039





QUESTIONS



Reuben.Trevino2@usace.army.mil

ENGINEERING RESILIENT AND SUSTAINABLE COASTAL FLOOD RISK REDUCTION SYSTEMS A CLOSER LOOK AT HYBRID DUNE SOLUTIONS



Jens Figlus, Ph.D.
Associate Professor, Ocean Engineering
Department of Ocean Engineering
Texas A&M University



**US Army Corps
of Engineers®**



Partnering for a Sustainable Future

What is sustainability in the context of coastal flood risk reduction infrastructure?

- ❑ **Sustainable infrastructure** systems are those that are planned, designed, constructed, operated and decommissioned in a manner that ensures **economic and financial**, **social**, **environmental** (including climate resilience), and **institutional** sustainability over the entire infrastructure life cycle. Sustainable infrastructure can include built infrastructure, natural infrastructure or hybrid infrastructure that contains elements of both.

(United Nations Environment Programme)

What is sustainability in the context of coastal flood risk reduction infrastructure?

- ❑ “**Infrastructure investment** is a key tool for improving productivity, stimulating economic growth, generating decent jobs, addressing inequalities and building resilience. But infrastructure will only deliver on these objectives if sustainability is embedded at its core – increasing society’s resilience while reducing climate risk”

(UN Secretary-General António Guterres)

The International Institute for Sustainable Development (IISD) defines sustainable infrastructure assets as those which:

- ☐ Lower carbon and environmental footprints
- ☐ Protect natural ecosystems
- ☐ Prove resilient to changing climates
- ☐ Optimize the use of natural ecosystems and their “infrastructure services”
- ☐ Move beyond compliance on core labor standards and human rights
- ☐ Trigger technological and industrial innovation
- ☐ Increase investment in education and research and development (R&D)
- ☐ Increase employment
- ☐ Demonstrate financial viability
- ☐ Crowd-in domestic investors and businesses
- ☐ Increase foreign direct investment
- ☐ Bring value for money for taxpayers and investors

USACE Texas Coastal Study Feasibility Report

MULTIPLE LINES OF DEFENSE ON THE TEXAS COAST

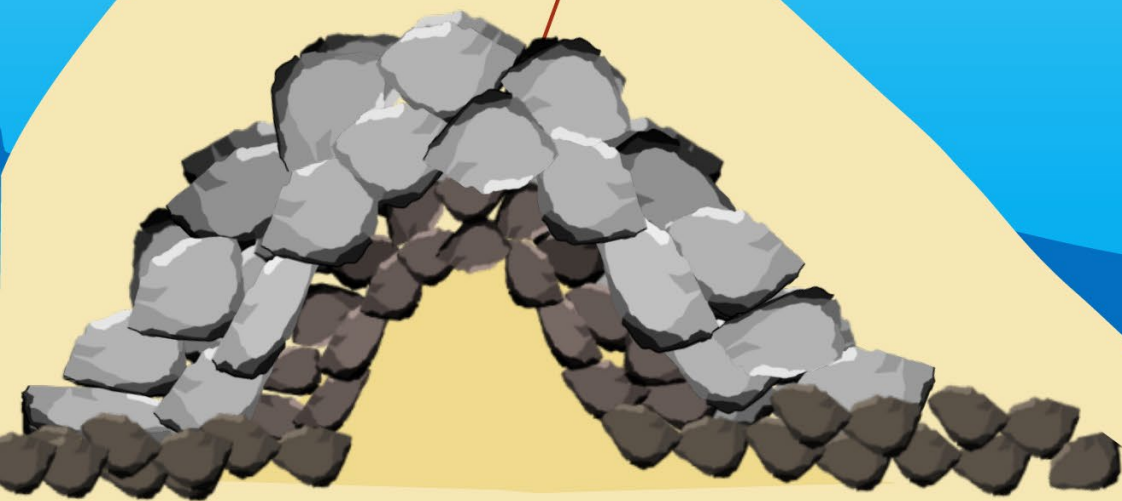
The Recommended Plan includes a combination of ER and CSRM features that function as a system to reduce the risk of coastal storm damages to natural and man-made infrastructure and to restore degraded coastal ecosystems through a comprehensive approach employing multiple lines of defense. Focused on redundancy and robustness, the proposed system provides increased resiliency along the Bay and is adaptable to future conditions.

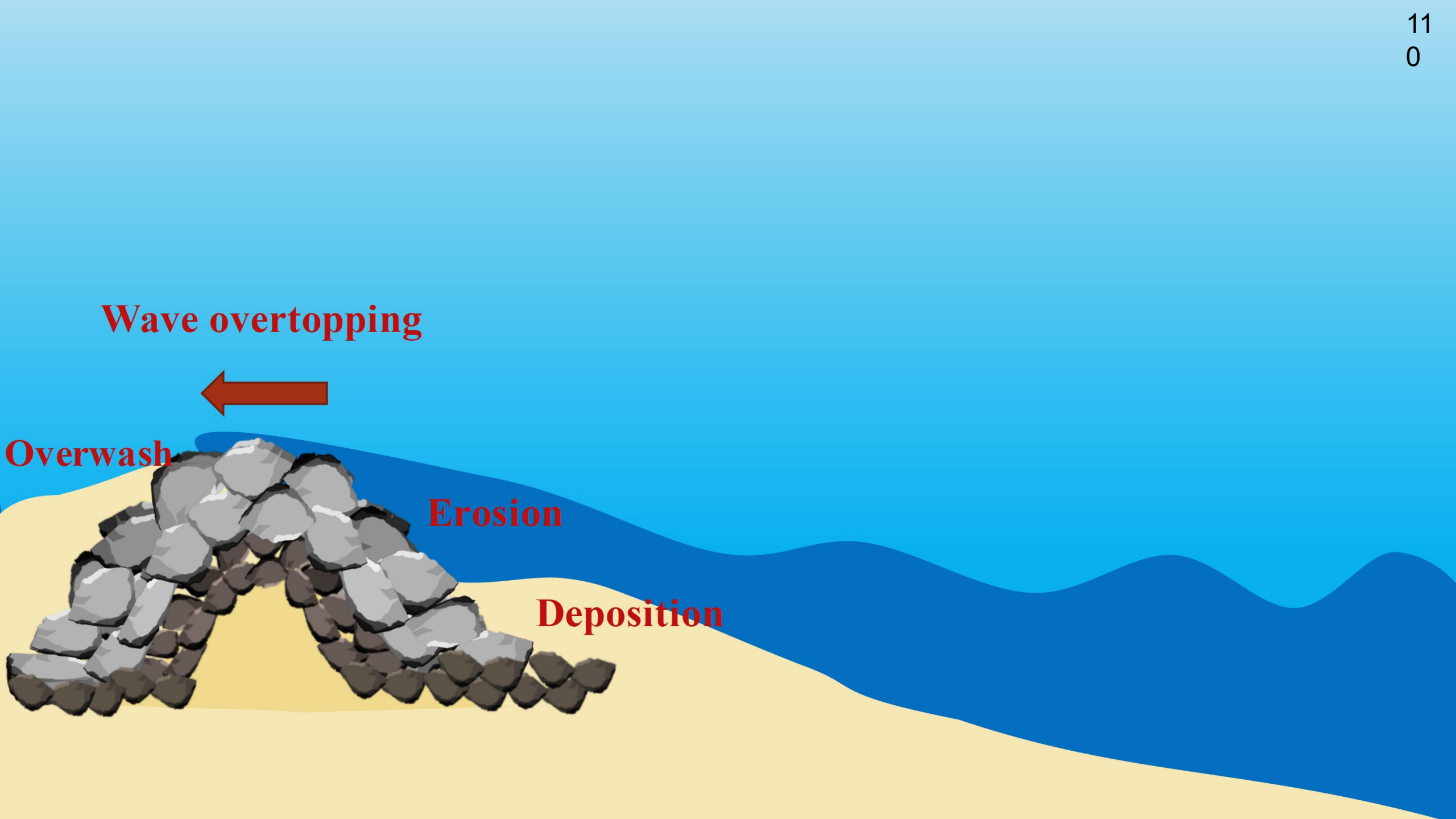


Engineered Sand dune

Rubble mound

Hybrid structure





Wave overtopping



Overwash

Erosion

Deposition

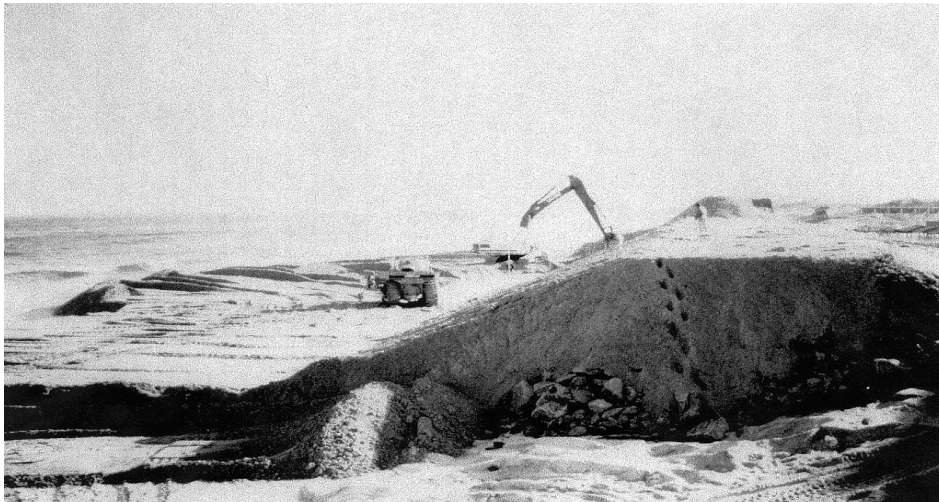
Existing Hybrid Structure Examples



Sand-covered rock wall, NJ



Hybrid dune construction, Hawaii

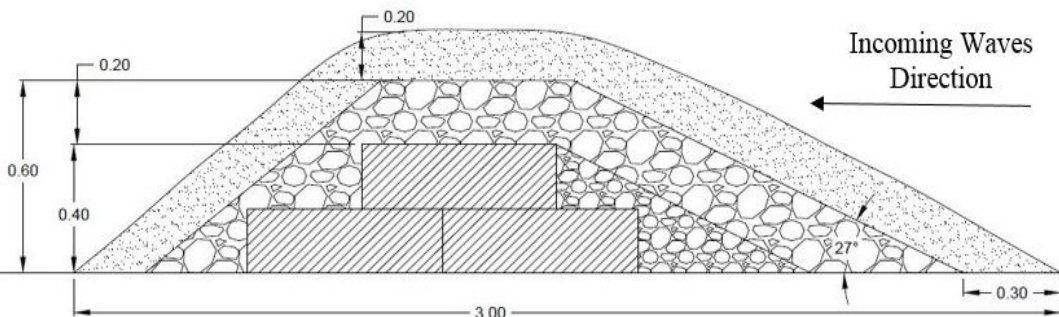


Core-enhanced dune construction, VA



Dike-in-dune construction, Netherlands

3D Wave Basin Physical Model Setup



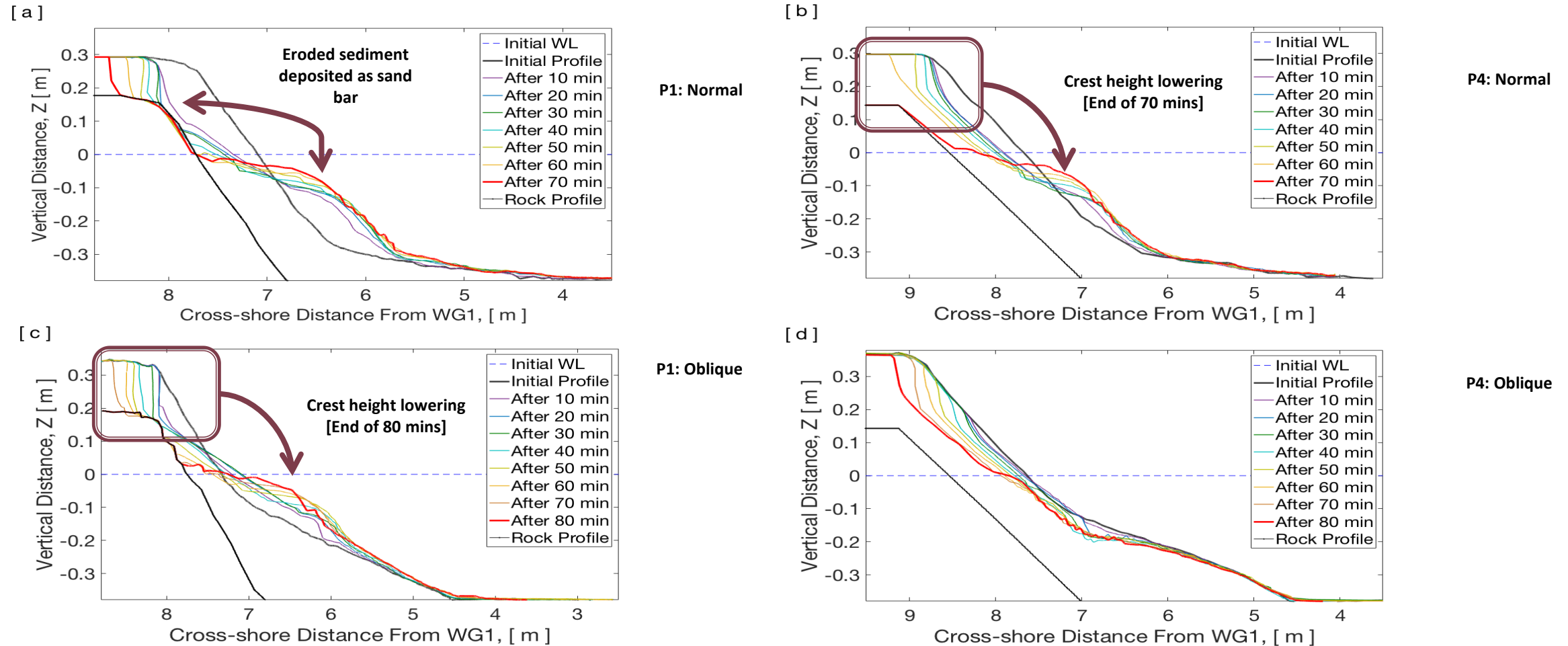
Objectives:

Test effect of core slopes and oblique irregular wave attack on sand-cover evolution and overtopping under increasing surge levels (collision and overwash regimes).

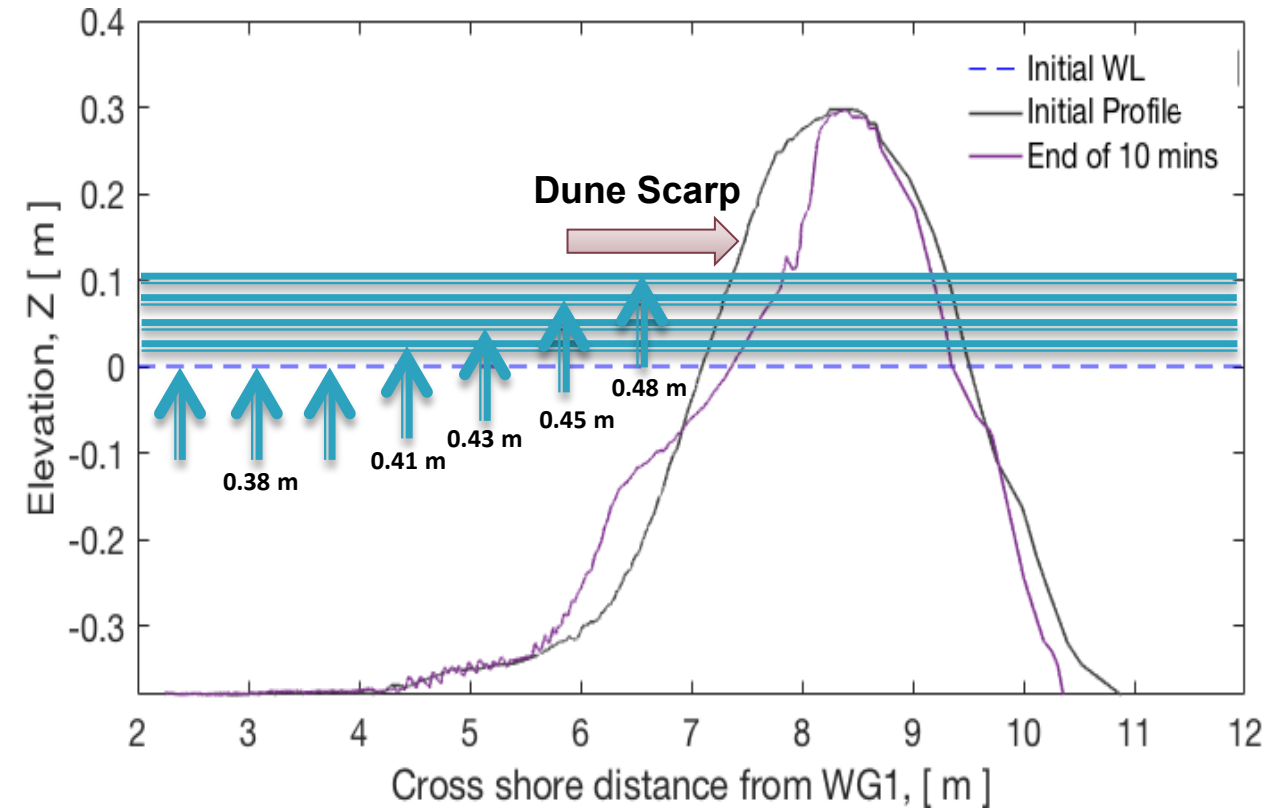
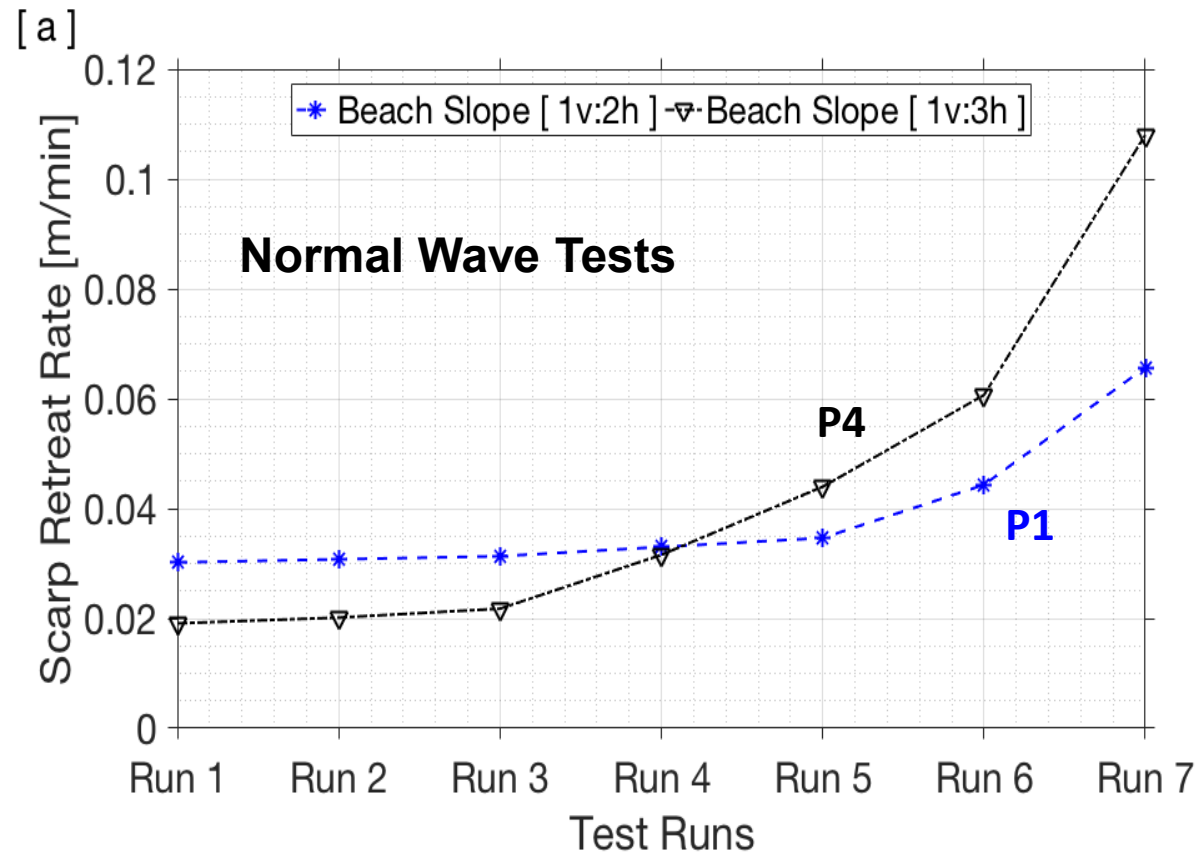
1:10 Froude scale model

17.5 cm sand cover thickness

Core-enhanced dune erosion evolution from 3D wave basin tests:



Dune scarp retreat rate from 3D wave basin tests:



Average Wave Overtopping from 2D Flume Tests:

Data set consisting of 207 points

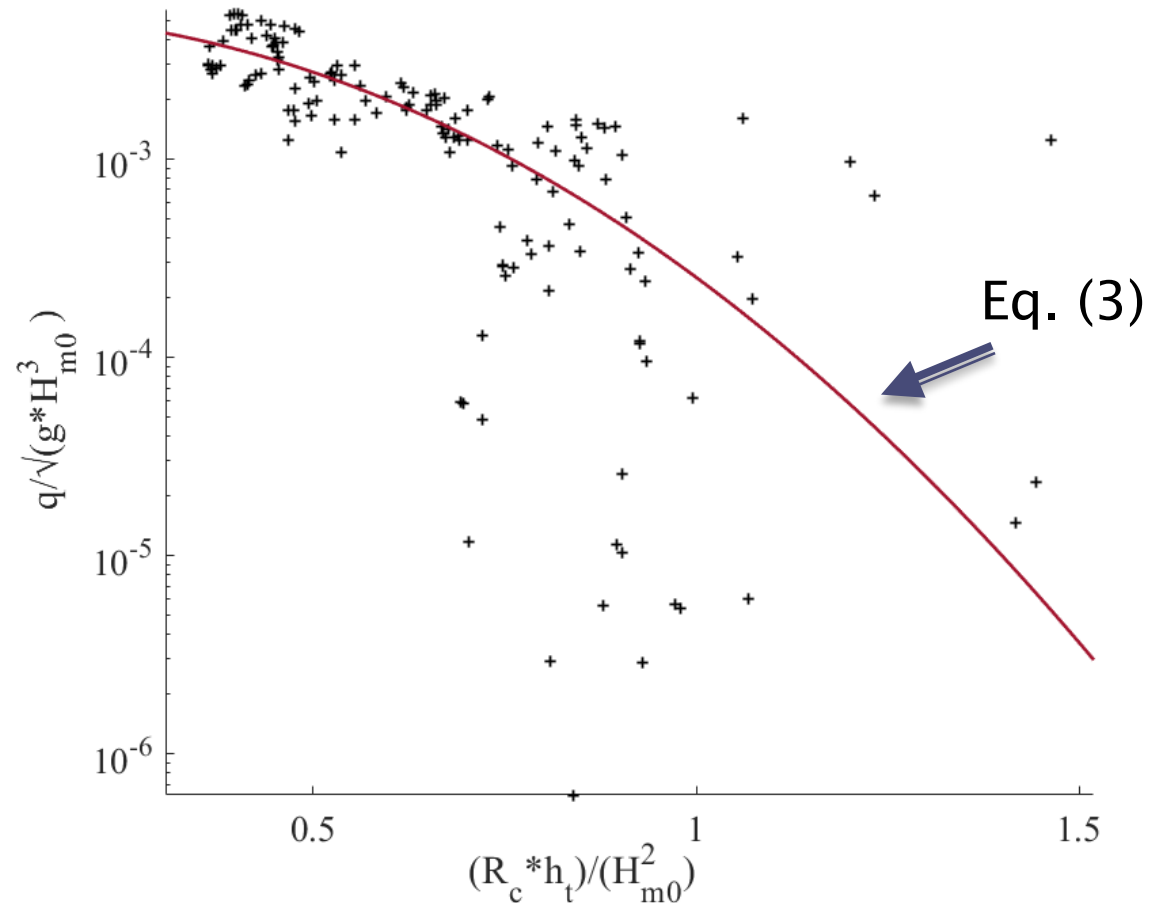
Dimensional analysis

$$\frac{q}{\sqrt{gH_{m0}^3}} = f\left(\frac{R_c}{H_{m0}}, \frac{h_t}{H_{m0}}, \frac{L_{m-1,0}}{H_{m0}}, \tan\alpha\right) \quad (1)$$

$$\frac{q}{\sqrt{gH_{m0}^3}} = f\left(\frac{R_c}{H_{m0}}, \frac{h_t}{H_{m0}}\right) \quad (2)$$

$$\frac{q}{\sqrt{gH_{m0}^3}} = a \times \exp\left[-b \left(\frac{R_c h_t}{H_{m0}^2}\right)^c\right] \quad (3)$$

$$a = 0.00553, b = 3.087, \text{ and } c = 2.133$$



Goodness of fit:

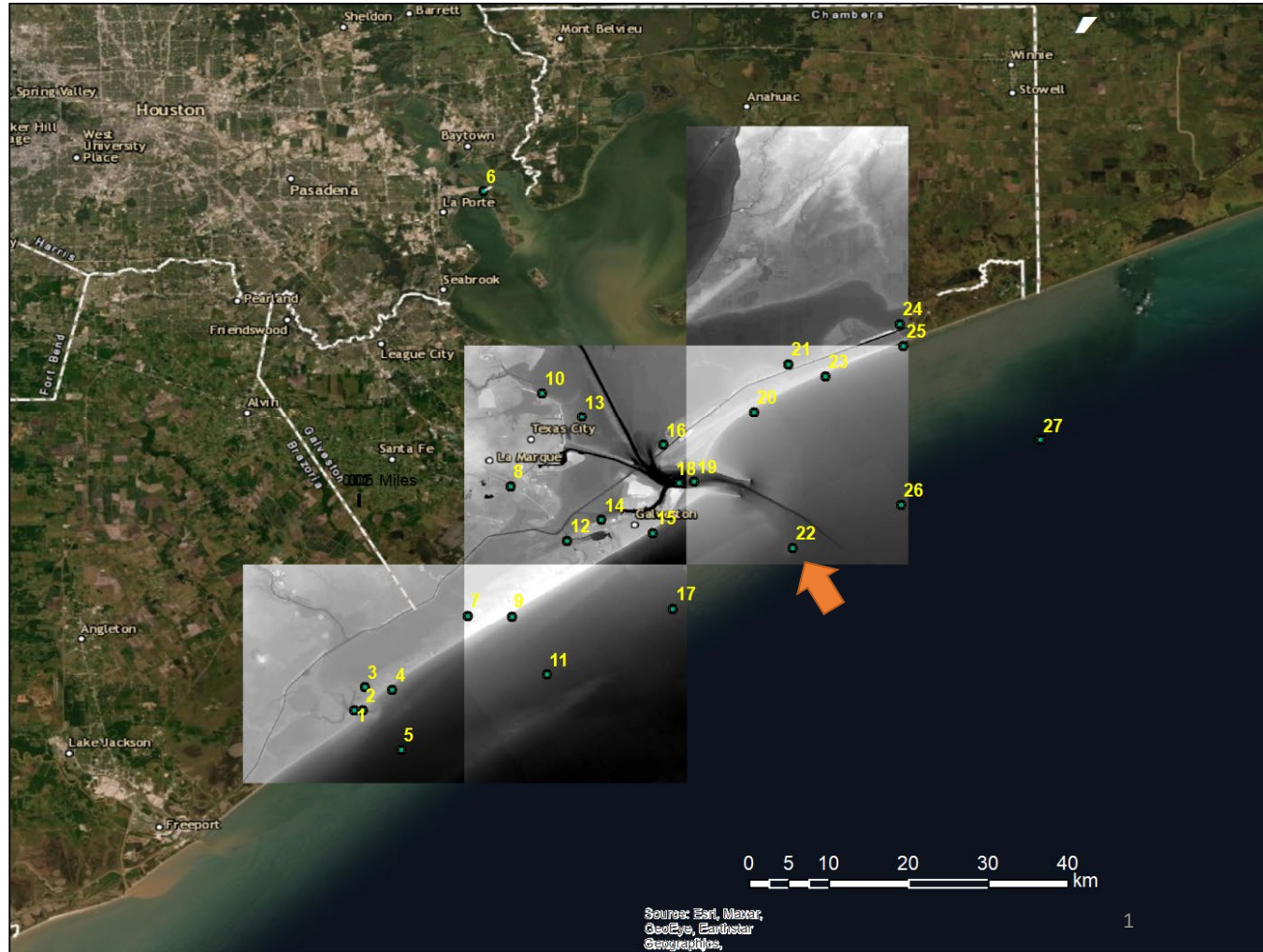
$$R^2 = 0.72$$

$$\text{RMSE} = 0.0007753$$

$$\text{SSE} = 8.956\text{E-}5$$



CSHORE numerical model results for Houston–Galveston land barrier concepts:



Save-points of hydrodynamic conditions computed with ADCIRC / SWAN from Ebersole et al (2018).

Example Movie of
CSHORE computation for
dual-dune with solid core
in the landward dune
(courtesy of Dr. Song)



Do hybrid dune systems fit with the idea of sustainable infrastructure?

Sustainable infrastructure assets are those which:

- ☐ Lower carbon and environmental footprints
- ☐ Protect natural ecosystems
- ☐ Prove resilient to changing climates
- ☐ Optimize the use of natural ecosystems and their “infrastructure services”
- ☐ Move beyond compliance on core labor standards and human rights
- ☐ Trigger technological and industrial innovation
- ☐ Increase investment in education and research and development (R&D)
- ☐ Increase employment
- ☐ Demonstrate financial viability
- ☐ Crowd-in domestic investors and businesses
- ☐ Increase foreign direct investment
- ☐ Bring value for money for taxpayers and investors

Funding and support
provided by:



The
Wortham
Foundation



CTBS
The Center for Texas Beaches and Shores

Thanks to:

Altaf Taqi (Ph.D. student)

Dr. Badreyah Almarshed

Dr. Youn-Kyung Song

Dr. Sam Brody

Dr. Bill Merrell



OCEAN ENGINEERING
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Coastal
Engineering
Laboratory

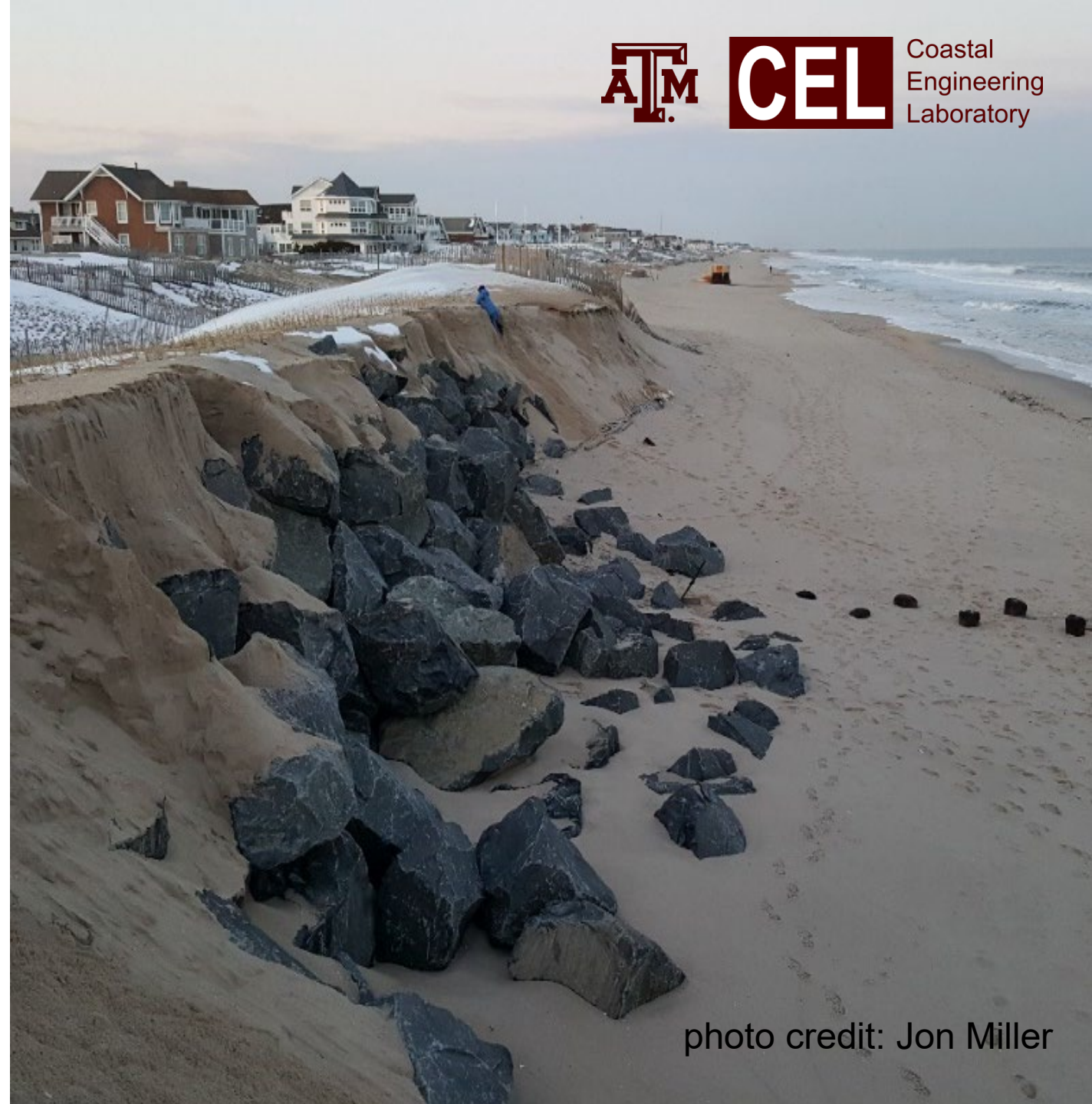


photo credit: Jon Miller

Thank you!

Any questions?

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<http://figluscoast.tamu.edu>



OCEAN ENGINEERING
TEXAS A&M UNIVERSITY



Coastal
Engineering
Laboratory



photo credit: Jon Miller

GALVESTON DISTRICT'S BENEFICIAL USE OF DREDGED MATERIAL



Chris Frabotta
Chief of Operations
U.S. Army Corps of Engineers
Galveston District



**US Army Corps
of Engineers®**



Partnering for a Sustainable Future

NAVIGATION MISSION

Provide safe, reliable, efficient and environmentally sustainable waterborne transportation systems (channels, harbors, and waterways) for movement of commerce, national security needs, and recreation.



GALVESTON DISTRICT NAVIGATION SYSTEM

LEADING U.S. PORTS

(2020 tonnage)

Houston #1 – 275.9 million tons

#1 Foreign Tonnage & Total Tonnage

Corpus Christi #3 – 150.8 m.tons

America's Energy Gateway

Beaumont #8 – 70.6 m.tons

#1 Military Port in World

Port Arthur #15 – 41.2 m.tons

Vital Break-Bulk Port

Freeport #16 – 38.7 m.tons

Connecting Global Services
Via Caribbean Relay Port

Texas City #20 – 33.7 m.tons

Serves Largest Petrochemical Complex

Galveston #46 – 11.9 m.tons

#1 Cruise Ship Port in gulf

Brownsville #66 – 6.8 m.tons

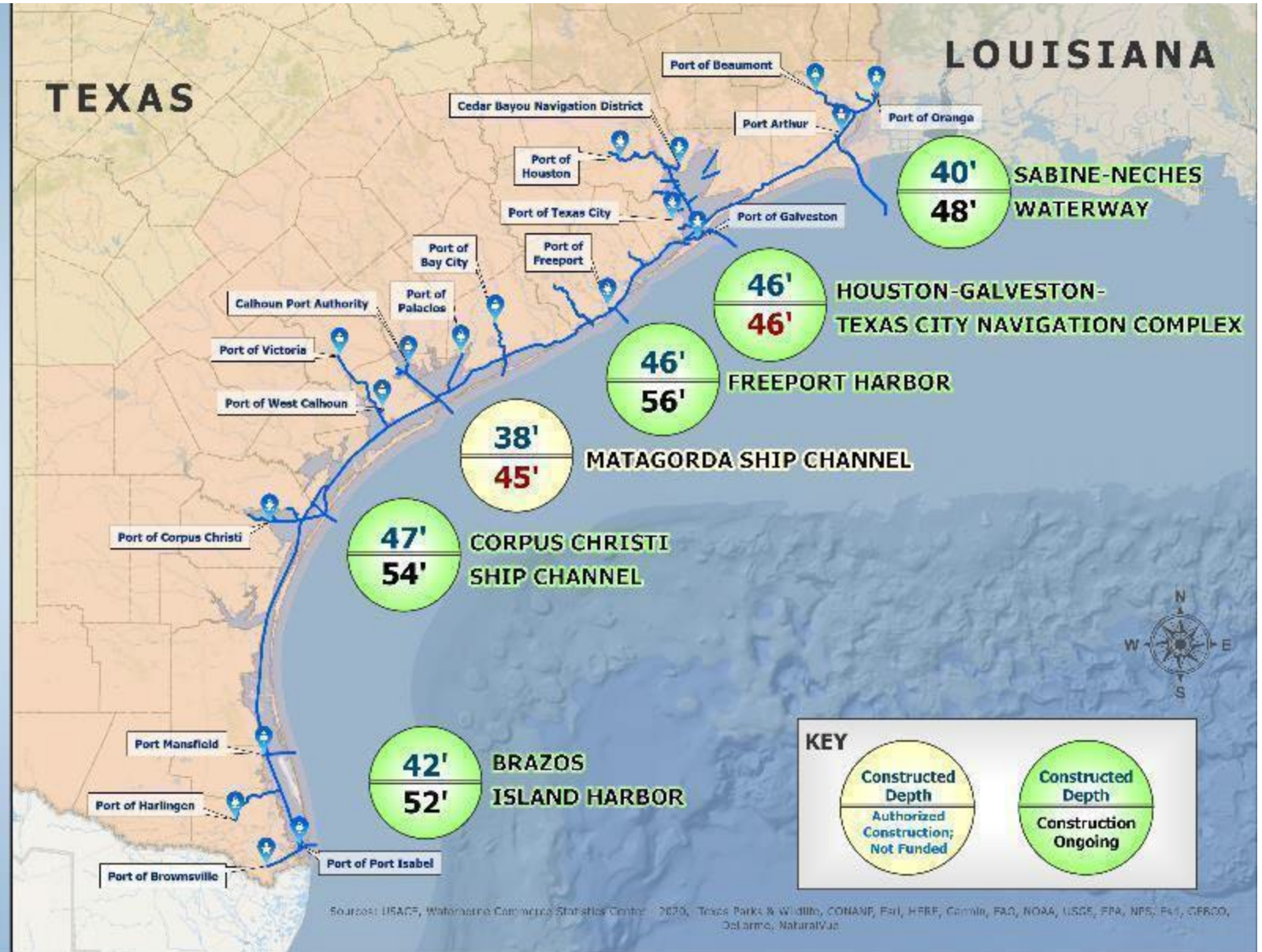
#1 Ship Recycling Port

Sabine Pass Port #73 – 5.5 m.tons

First in the U.S. with crude oil imports.

Calhoun County Port #77 - 4.8 m.tons

(Matagorda Ship Channel)

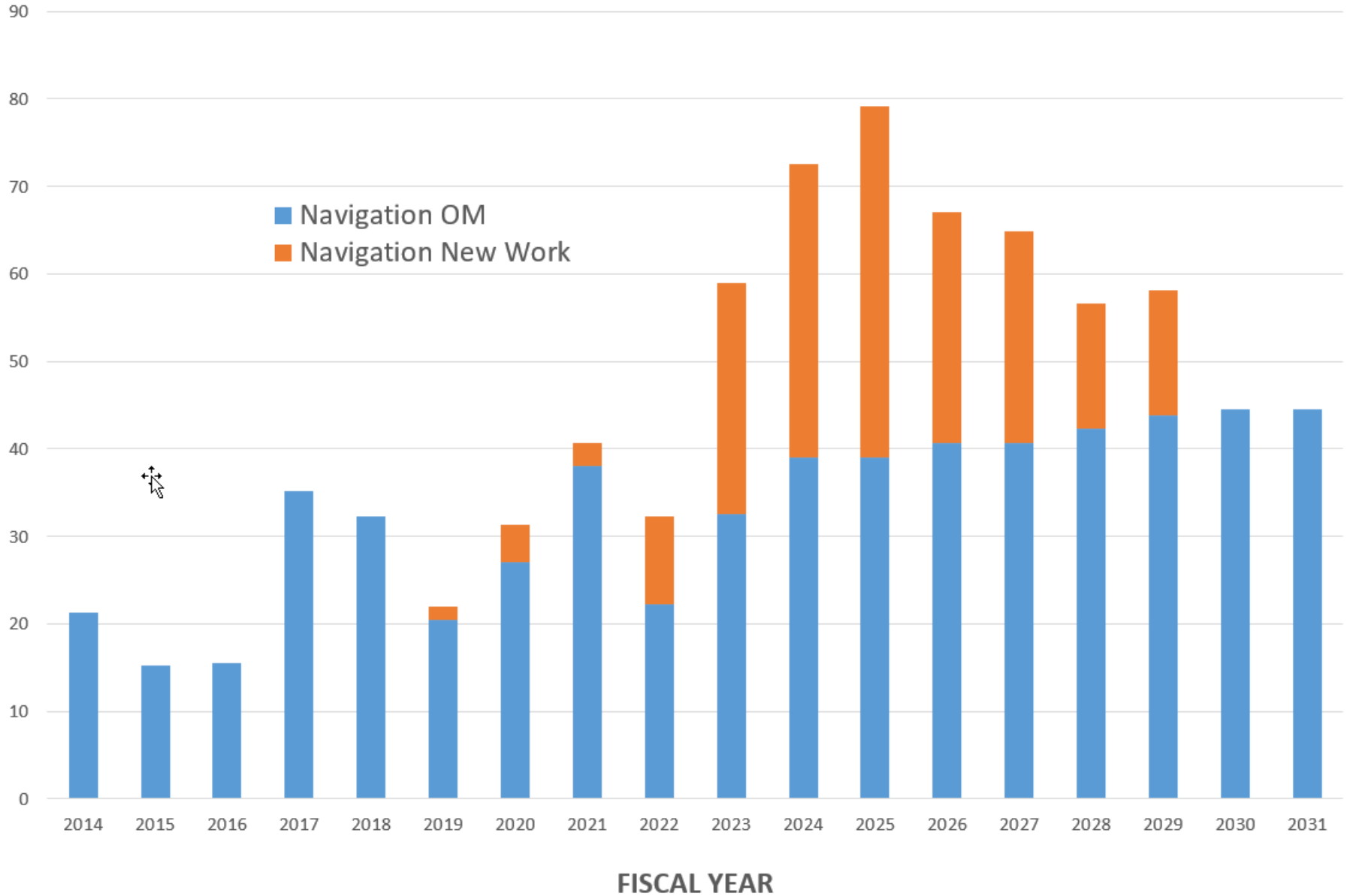




ACTUAL AND PROJECTED DREDGING QUANTITIES - THRU 2030

GALVESTON DISTRICT

CUBIC YARDS (MILLIONS)

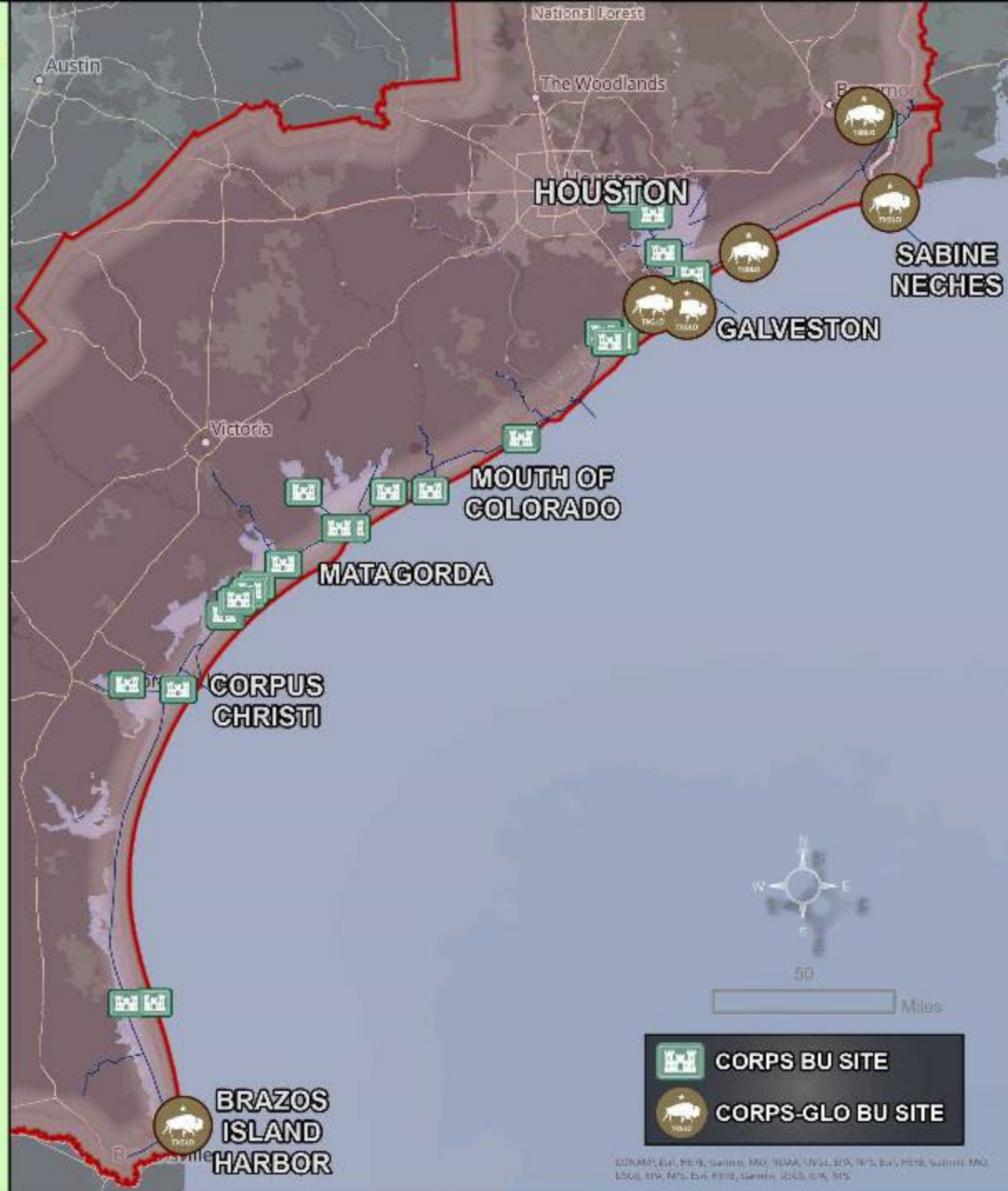


FISCAL YEAR 2022 - DREDGED MATERIAL

Total Federal	32.3 MCY
Dredged Material OM	22.2 MCY
Dredged Material New Work	10.1 MCY

FISCAL YEAR 2022 - DREDGED MATERIAL

Total Federal	32.3 MCY
Dredged Material OM	22.2 MCY
Dredged Material New Work	10.1 MCY
Percent Utilized Beneficially	51.6%



USACE SWG - TXGLO PARTNERSHIP BU

1. Bessie Heights Marsh:

Approximately 70-acres of marsh was constructed with **500,000 cubic yards** of dredged material; (5-7yr frequency).

2. Texas Point National Wildlife Refuge:

Restored approximately **40 acres** of coastal wetlands and mudflats.

3. Caplen Beach at Rollover Pass:

Approximately **100,000 and 200,000 cubic yards** of sand annually.

4. Pierce Marsh:

West Galveston Bay marsh restoration ongoing since 2015.

5. Galveston Island:

500,000 cubic yards of sand from the Galveston Entrance Channel to Galveston Beach; (2-year frequency).

6. South Padre Island and Cameron County:

Approximately **300,000 – 600,000 cubic yards** of dredged material originating from the Brazos Island Harbor Entrance & Jetty Channels; (1-2-year frequency).



GALVESTON DISTRICT: BENEFICIAL USE OF DREDGED MATERIAL

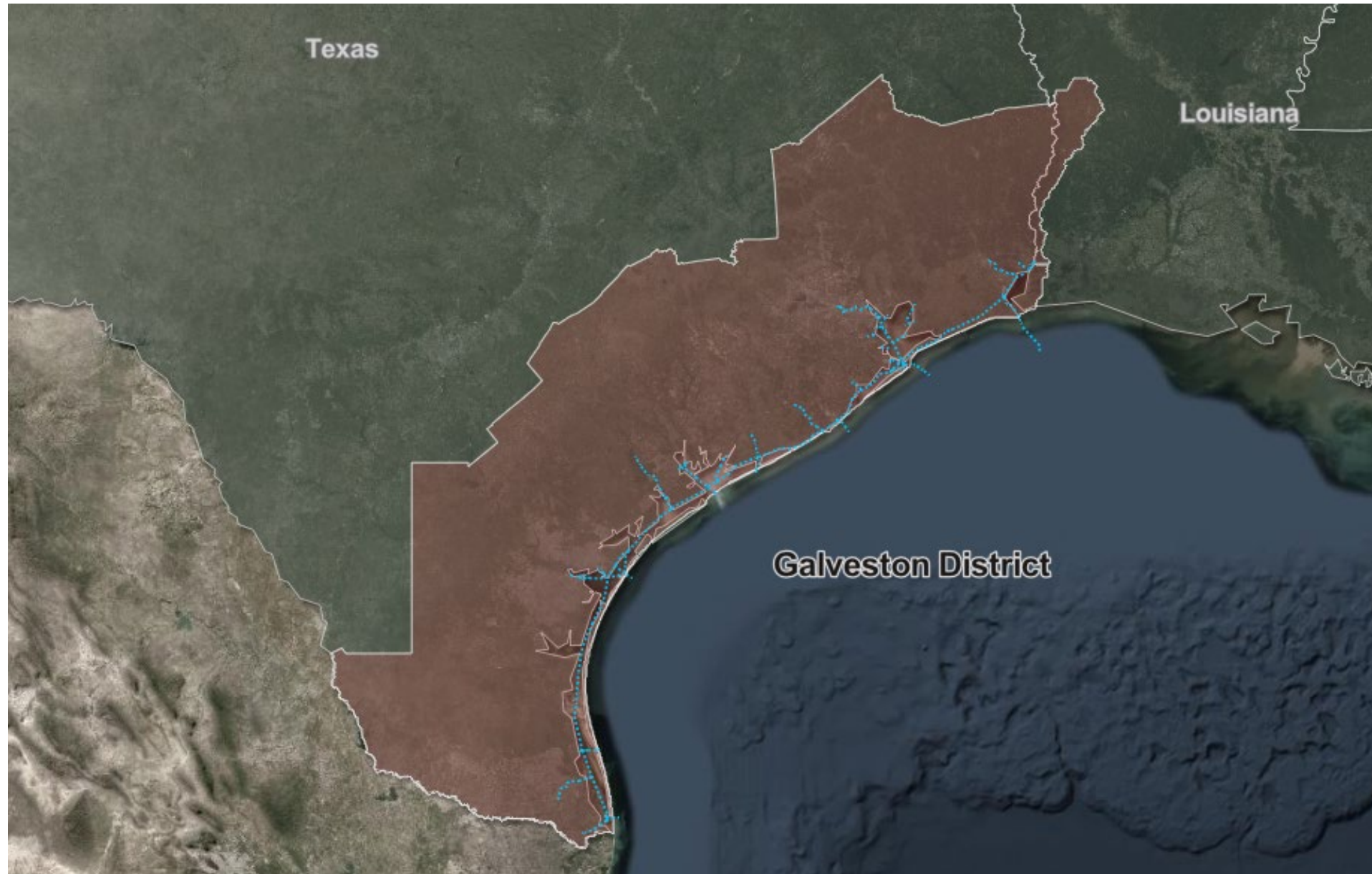


USACE SWG - PLACEMENT AREAS

- GIWW PLACEMENT AREAS**
PAs: 252
Acreage (total): 34,370
Acreage (mean): 136
- OPEN WATER PLACEMENT AREAS**
PAs: 224
Acreage (total): 20,438
Acreage (mean): 91
- LAGUNA MADRE PLACEMENT AREAS**
PAs: 53
Acreage (total): 6,902
Acreage (mean): 54



GALVESTON ISLAND – BABES BEACH

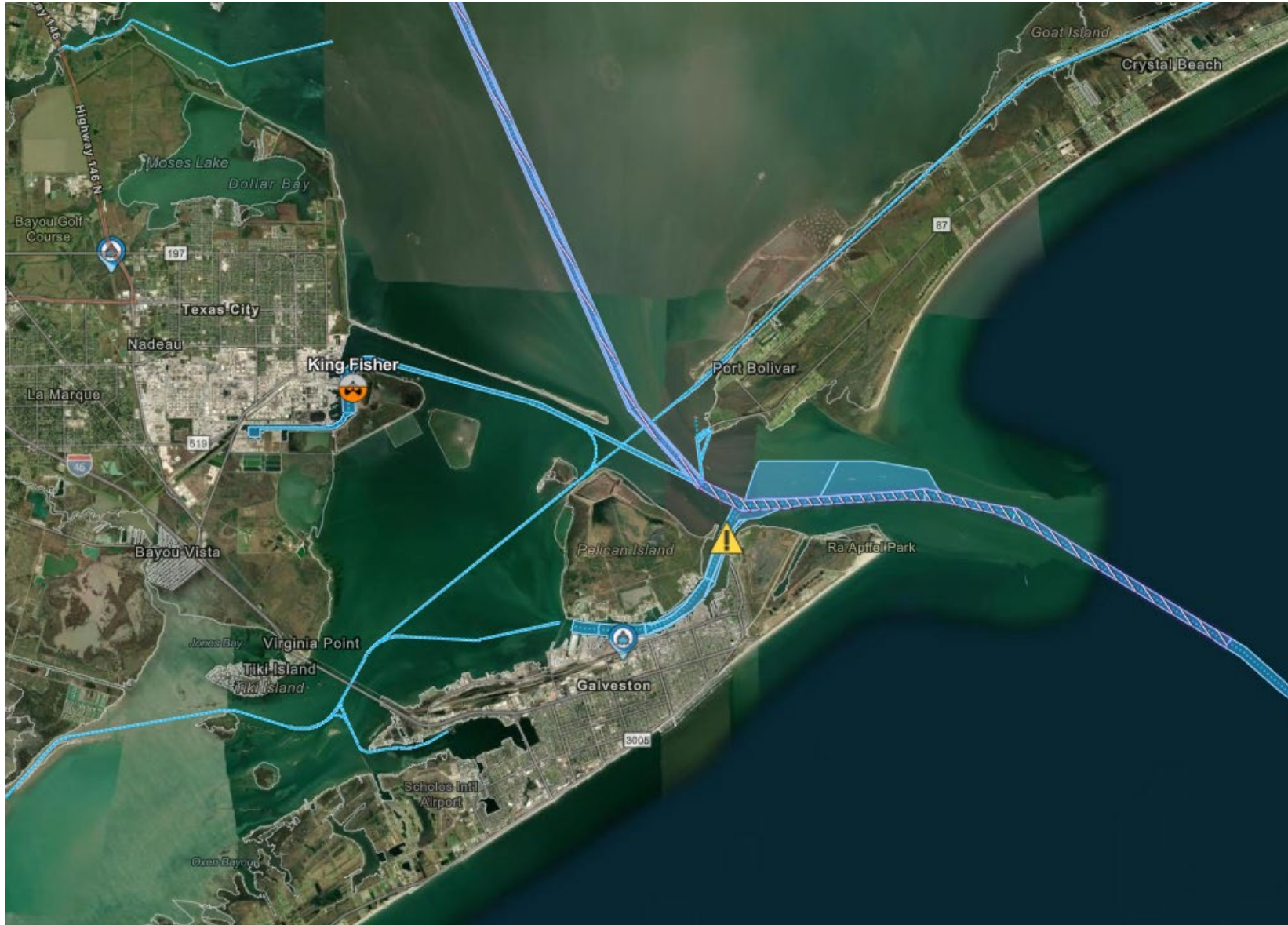




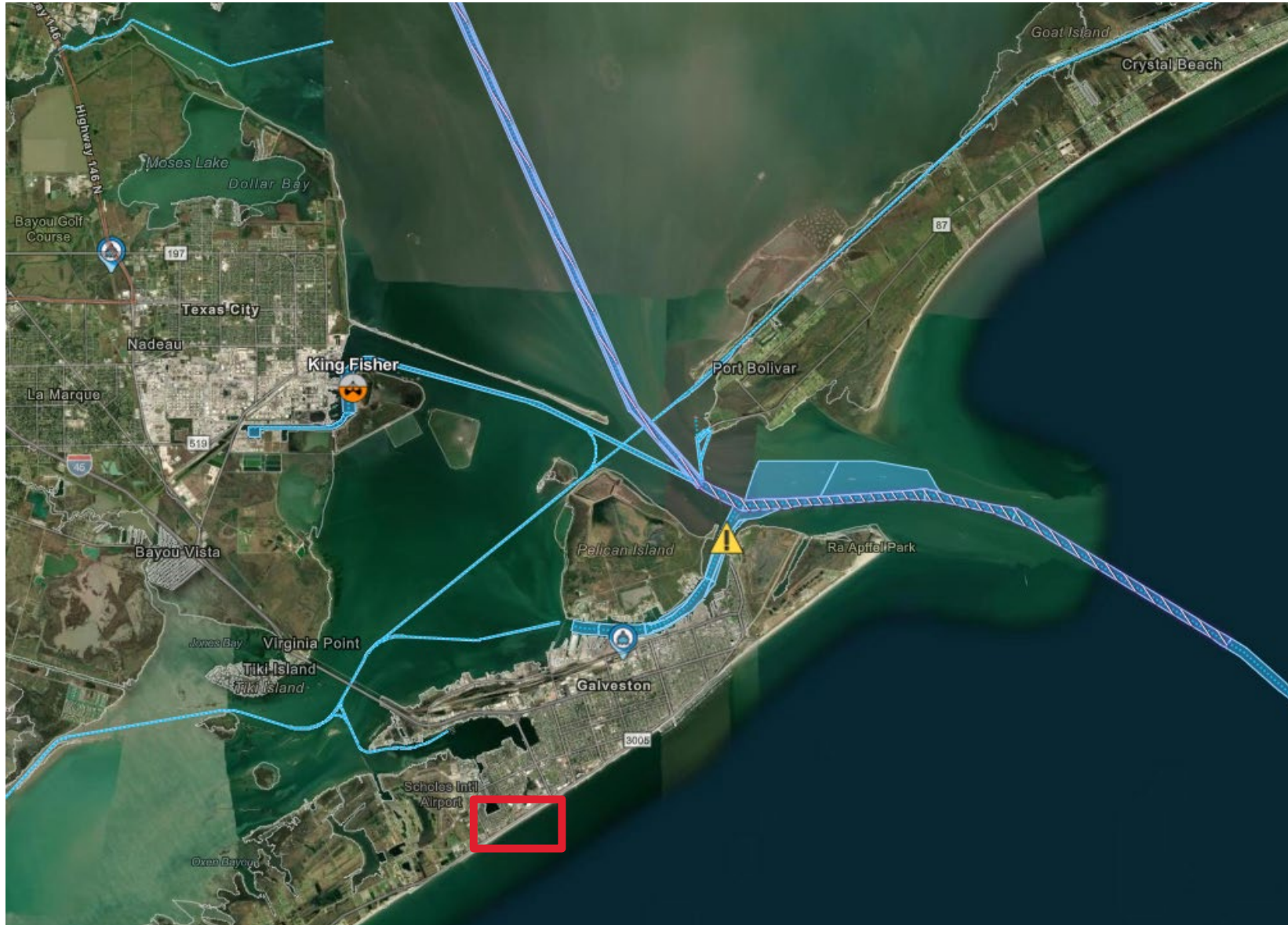
GALVESTON ISLAND – BABES BEACH



GALVESTON ISLAND – BABES BEACH



GALVESTON ISLAND – BABES BEACH

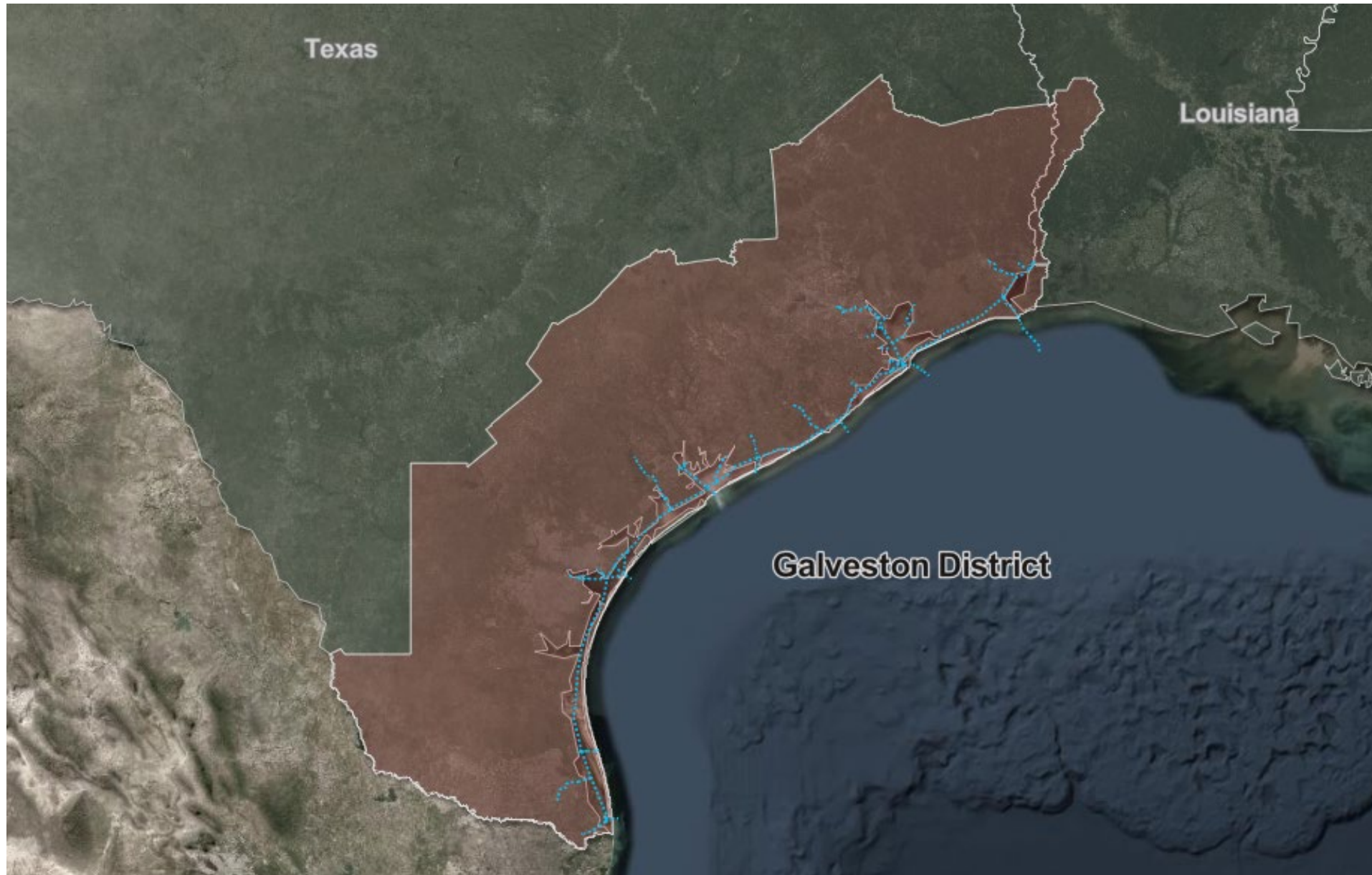


GALVESTON ISLAND – BABES BEACH



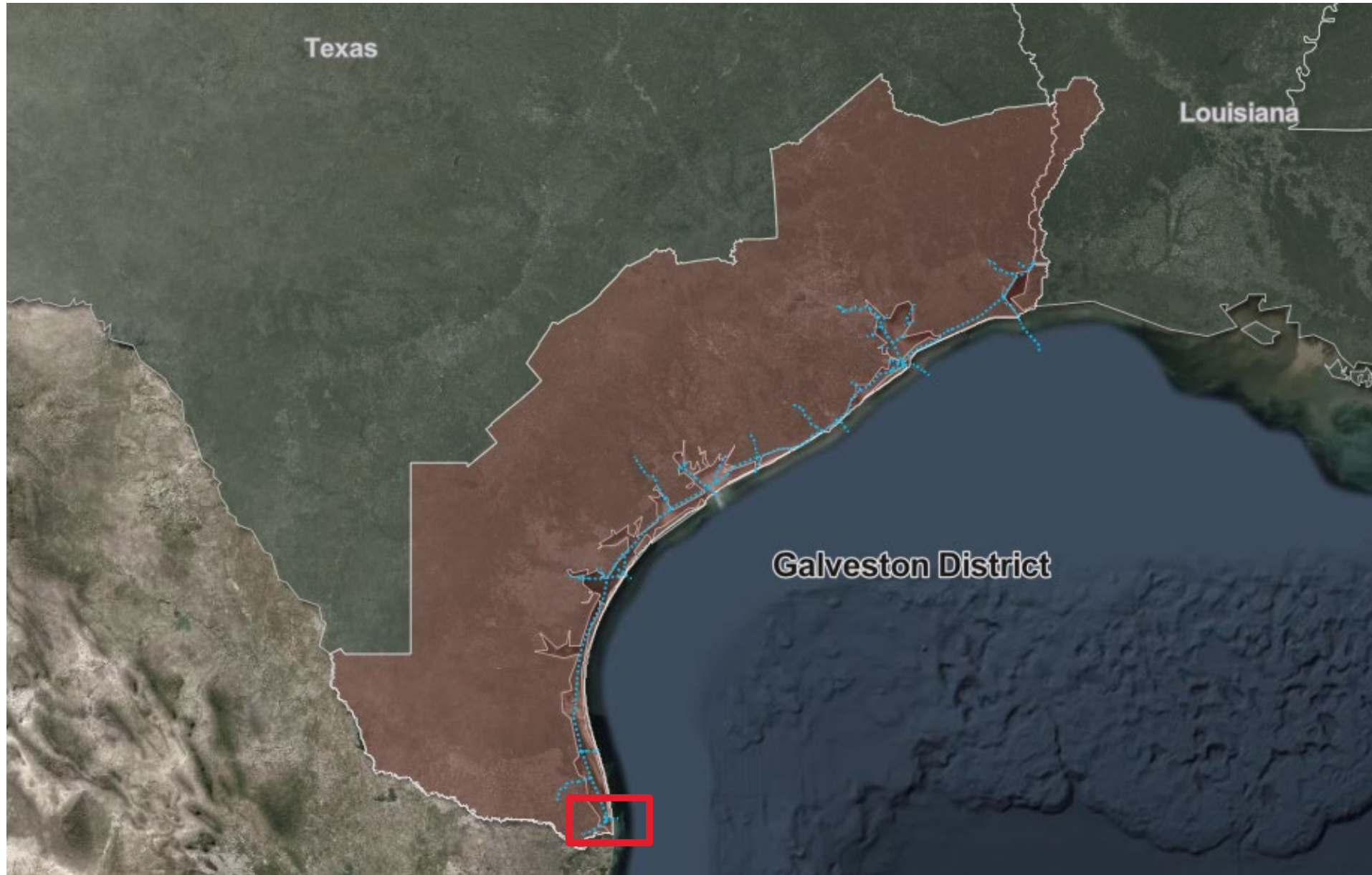


SOUTH PADRE ISLAND





SOUTH PADRE ISLAND



SOUTH PADRE ISLAND



SOUTH PADRE ISLAND

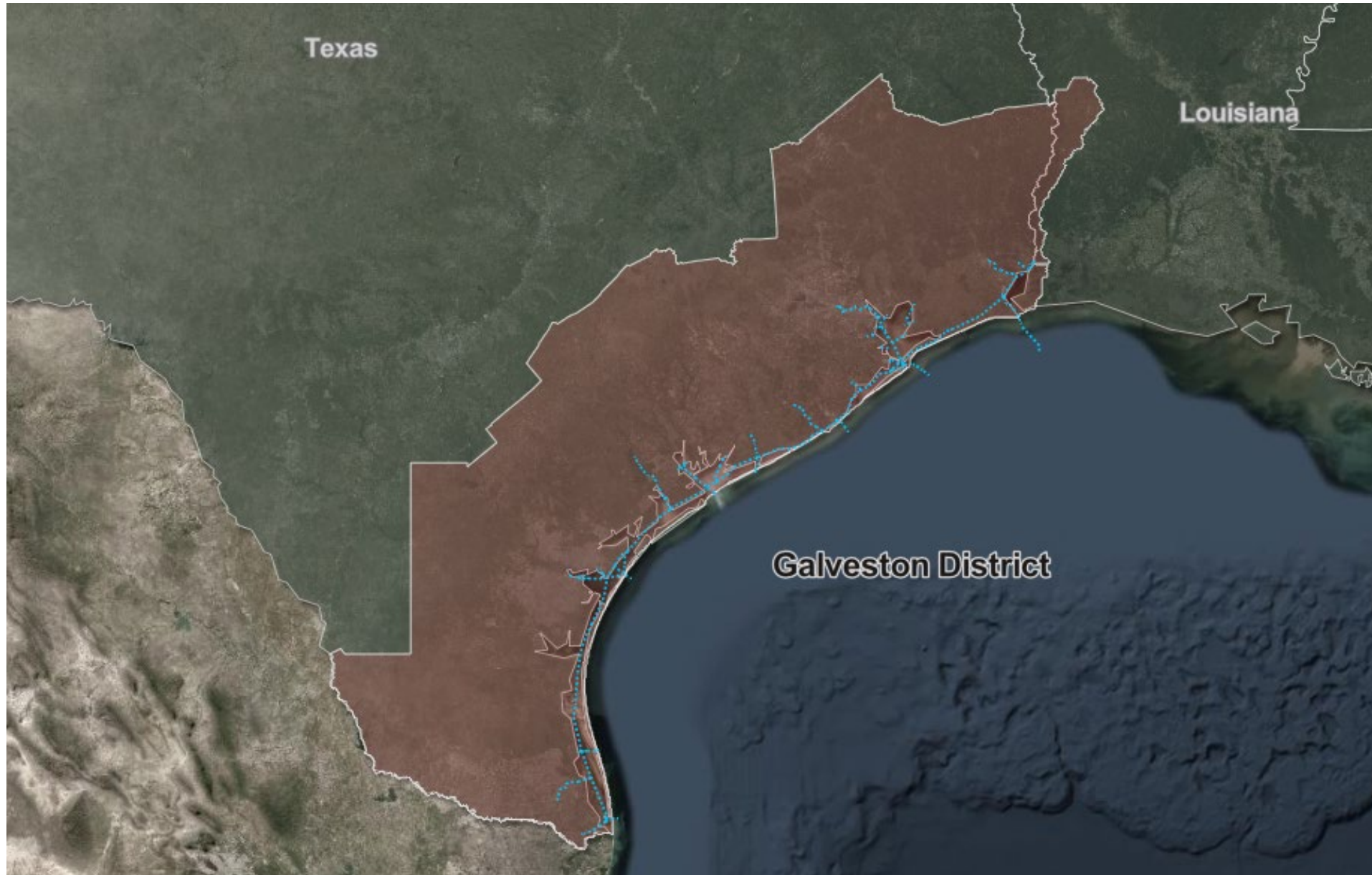


SOUTH PADRE ISLAND





CORPUS CHRISTI SHIP CHANNEL





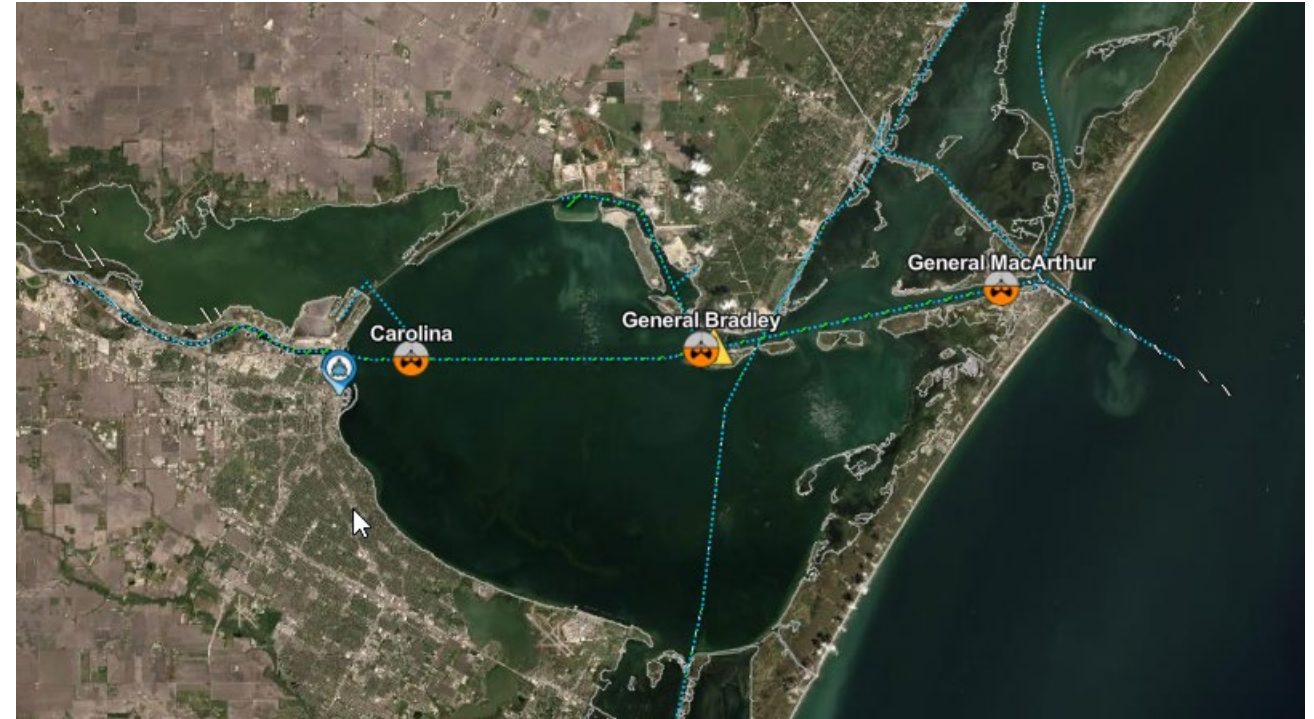
CORPUS CHRISTI SHIP CHANNEL



CORPUS CHRISTI SHIP CHANNEL

CHANNEL IMPROVEMENT (47-FT TO 54-FT)

- 610 ACRES OF MARSHES
- 440 ACRES OF NEARSHORE BERM
- 2,600 ACRES NOURISHMENT OF BAY SEDIMENT

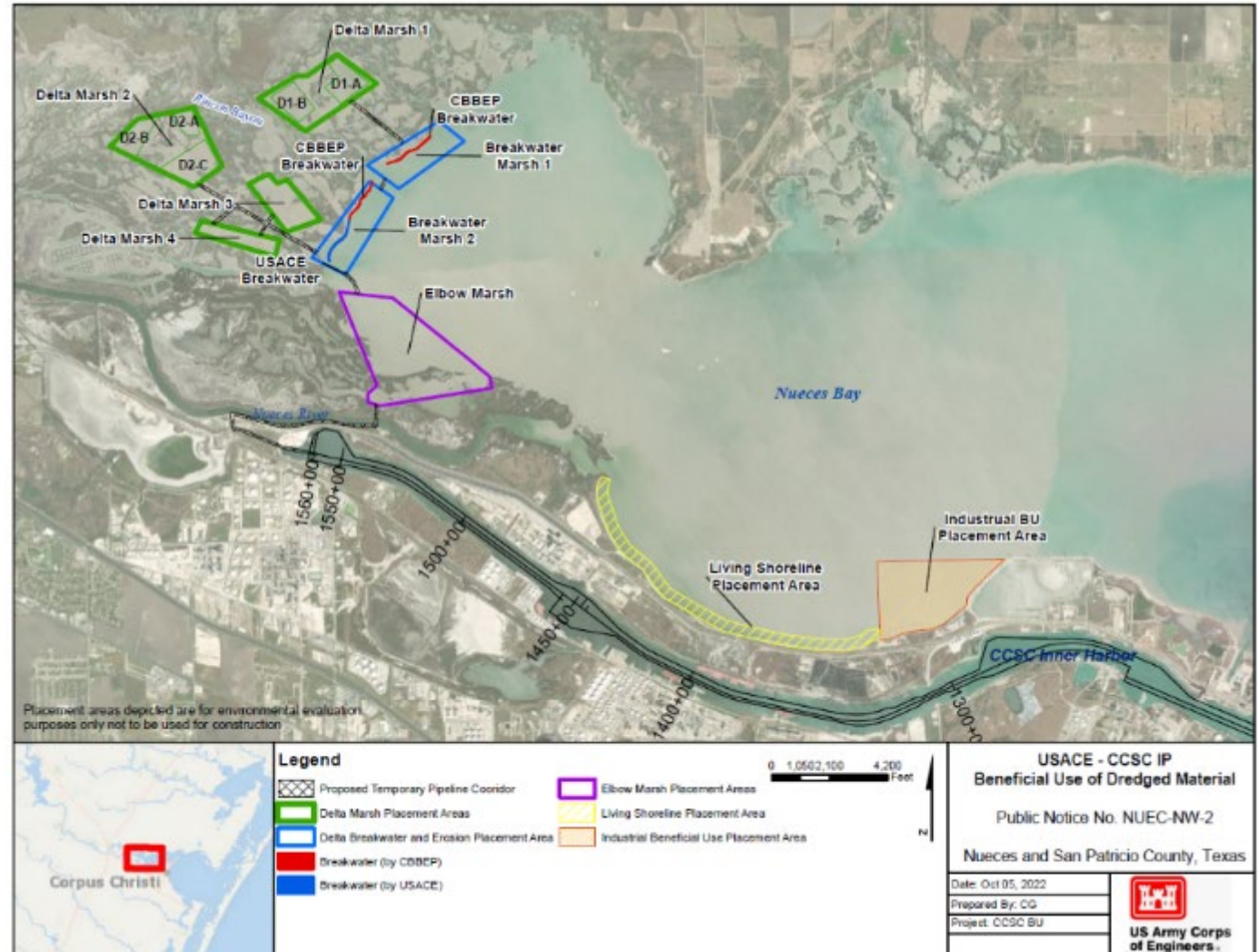


CORPUS CHRISTI SHIP CHANNEL

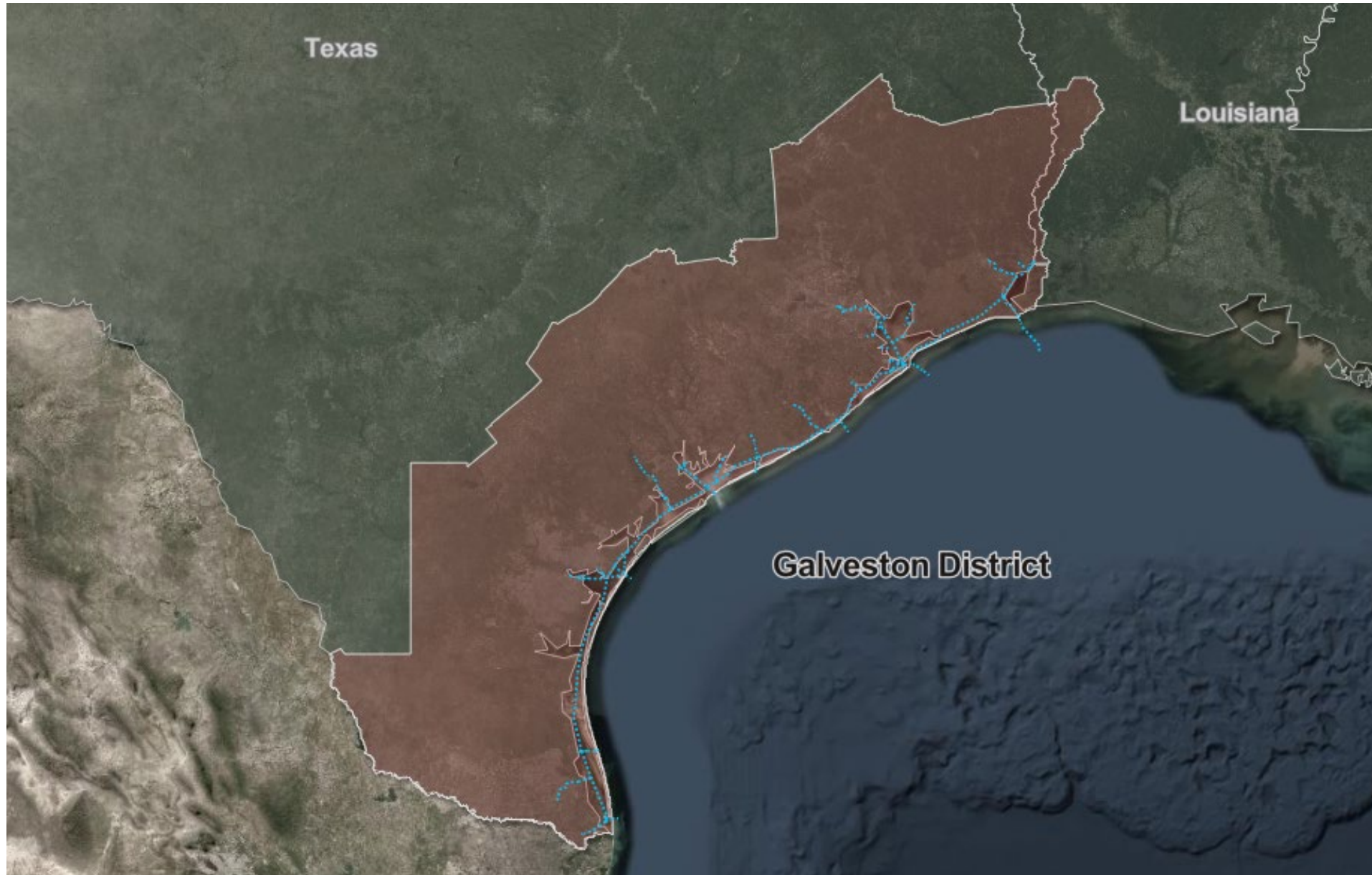


CORPUS CHRISTI SHIP CHANNEL IMPROVEMENT PROJECT – CT #4

- 600 ACRES MARSH
CREATE/ENHANCE
- ACRES OF LIVING SHORELINE
- 200 ACRES OF INDUSTRIAL
BENEFICIAL USE
- PRESERVING UPLAND CAPACITY



WEST GALVESTON BAY – BARRIER ISLAND RECONSTRUCTION

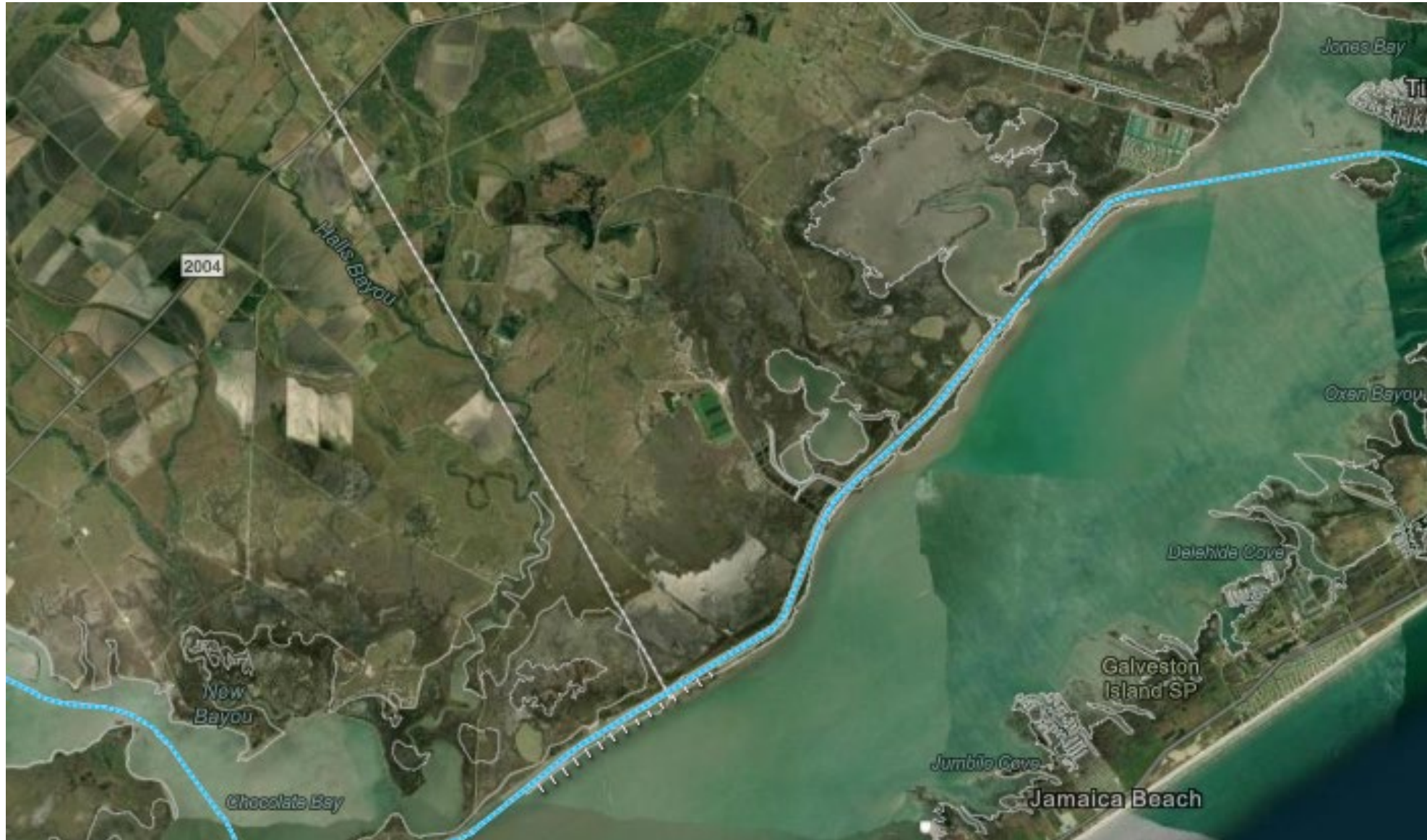




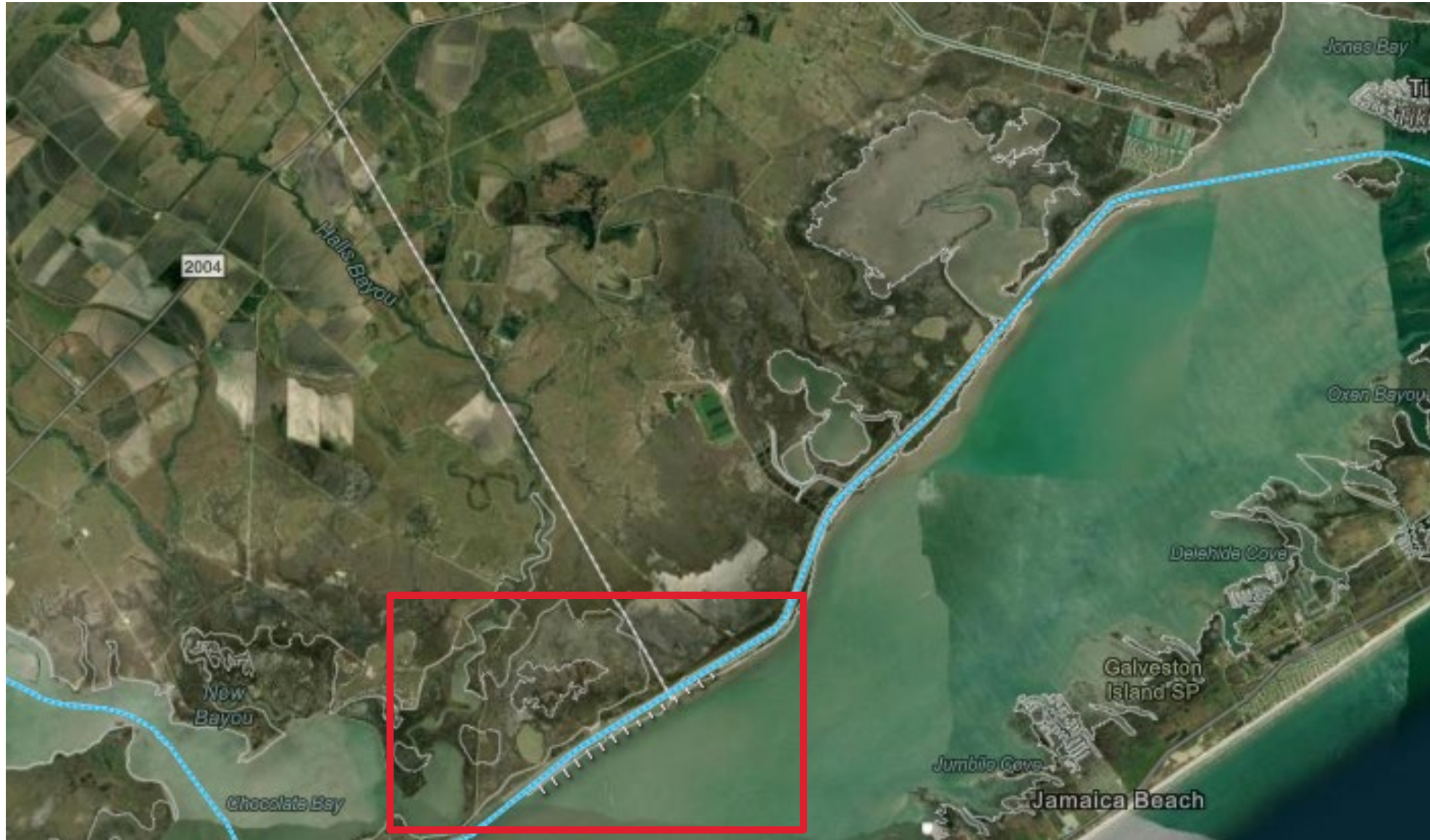
WEST GALVESTON BAY – BARRIER ISLAND RECONSTRUCTION



WEST GALVESTON BAY – BARRIER ISLAND RECONSTRUCTION



WEST GALVESTON BAY – BARRIER ISLAND RECONSTRUCTION



WEST GALVESTON BAY – BARRIER ISLAND RECONSTRUCTION



HOUSTON SHIP CHANNEL



HOUSTON SHIP CHANNEL – PROJECT 10

- 2,400 ACRES OF MARSHES
- 7 ACRE BIRD ISLAND
- REDFISH ISLAND RESTORATION
- BOLIVAR MARSH CREATION

HOUSTON SHIP CHANNEL – PROJECT 11

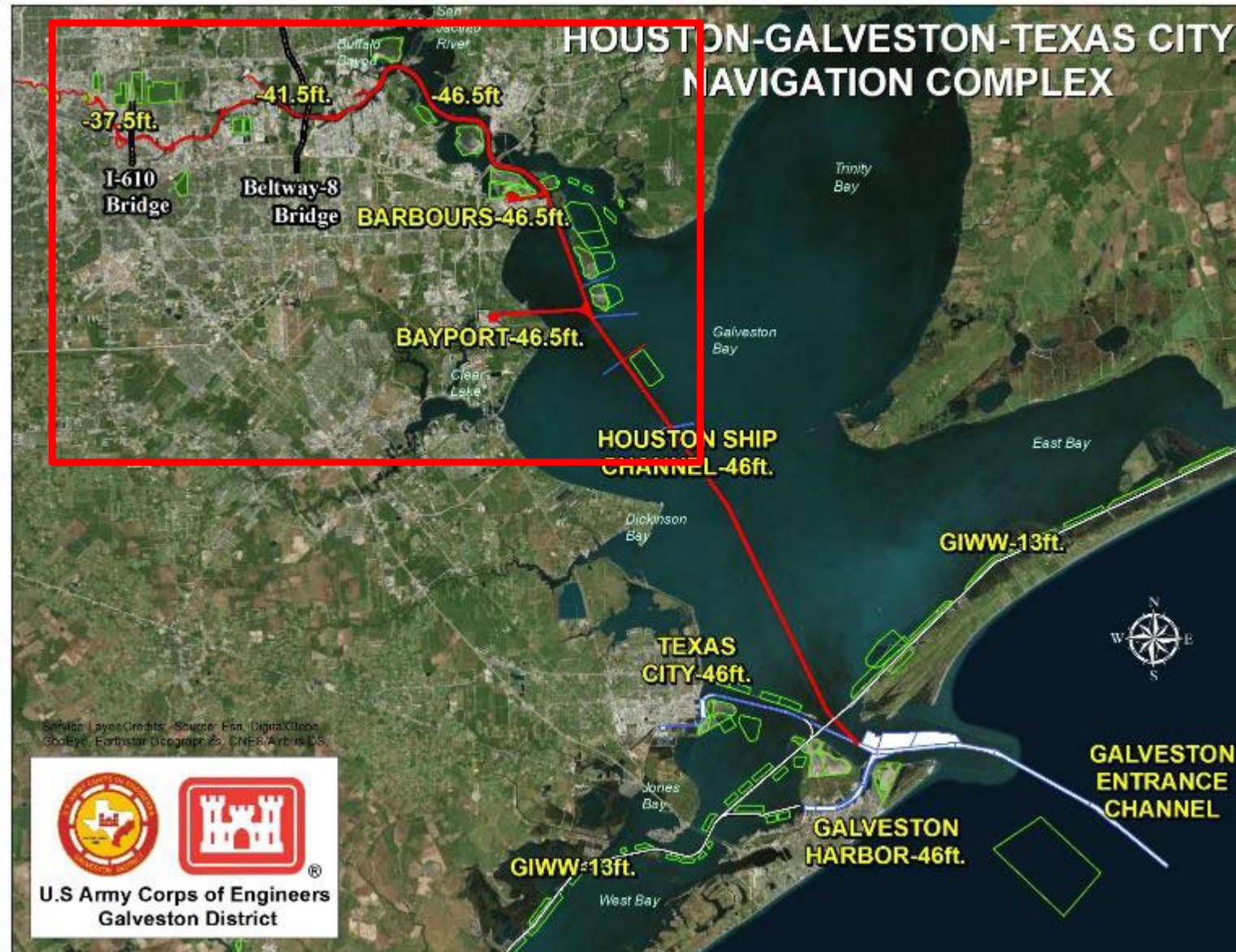
- 800 ACRES OF MARSHES
- 20 ACRES OF BIRD NESTING ISLANDS
- 375 ACRES OF OYSTER HABITAT



BAY AREA BENEFICIAL USE SITES (BABUS)



BAY AREA BENEFICIAL USE SITES (BABUS)



BAY AREA BENEFICIAL USE SITES (BABUS)



BAY AREA BENEFICIAL USE SITES (BABUS)



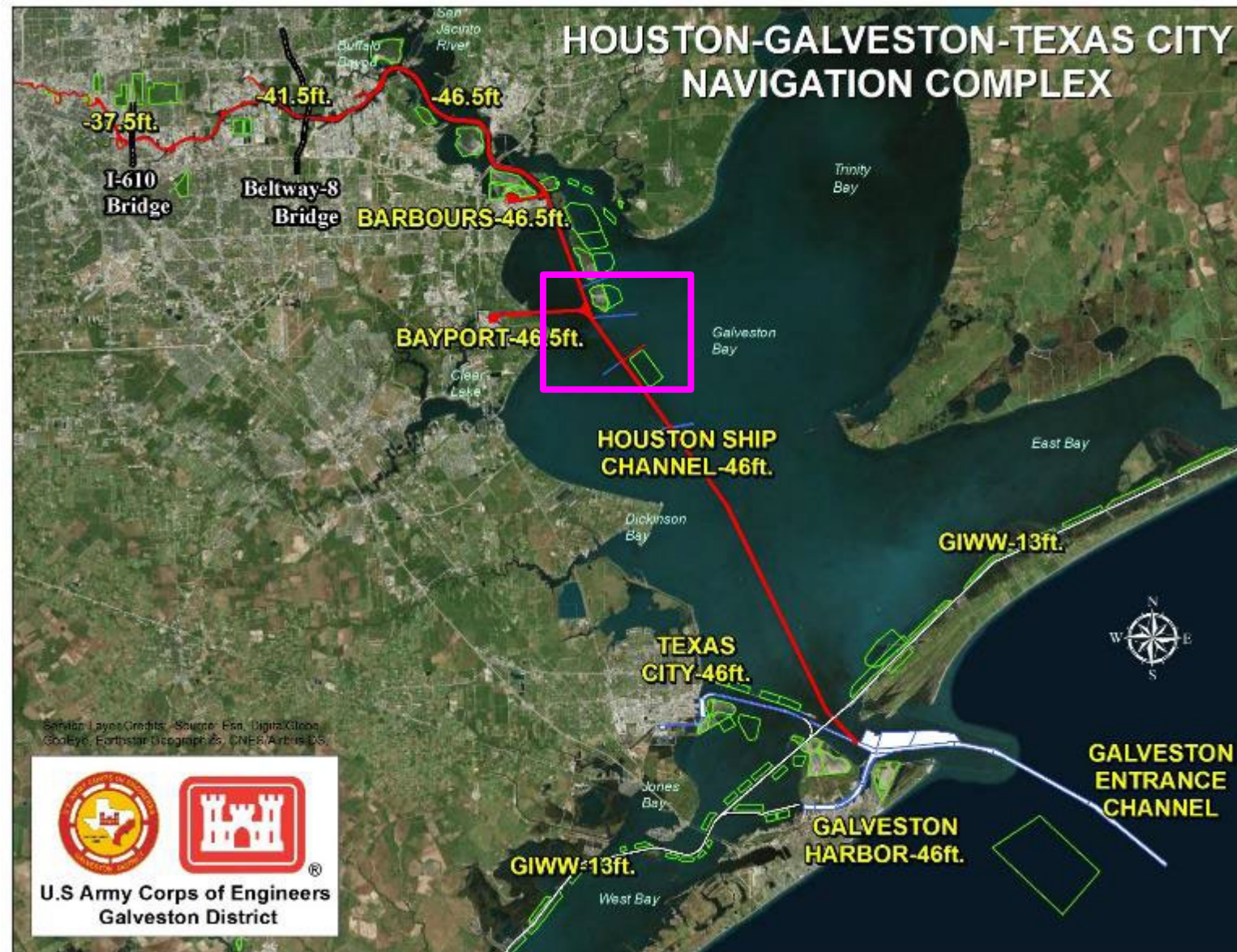
BAY AREA BENEFICIAL USE SITES (BABUS)



BAY AREA BENEFICIAL USE SITES (BABUS)



BAY AREA BENEFICIAL USE SITES (BABUS)



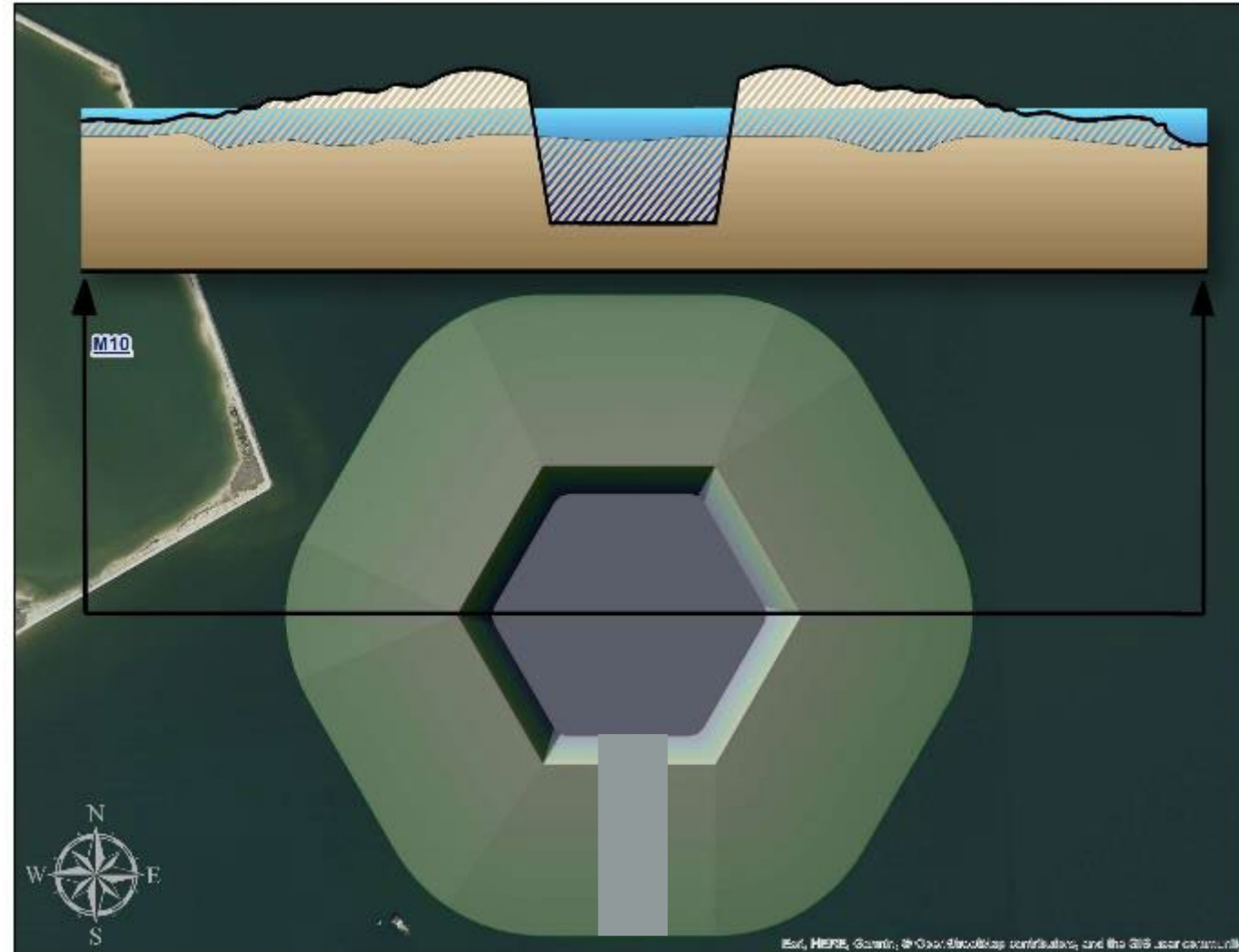
BAY AREA BENEFICIAL USE SITES (BABUS)



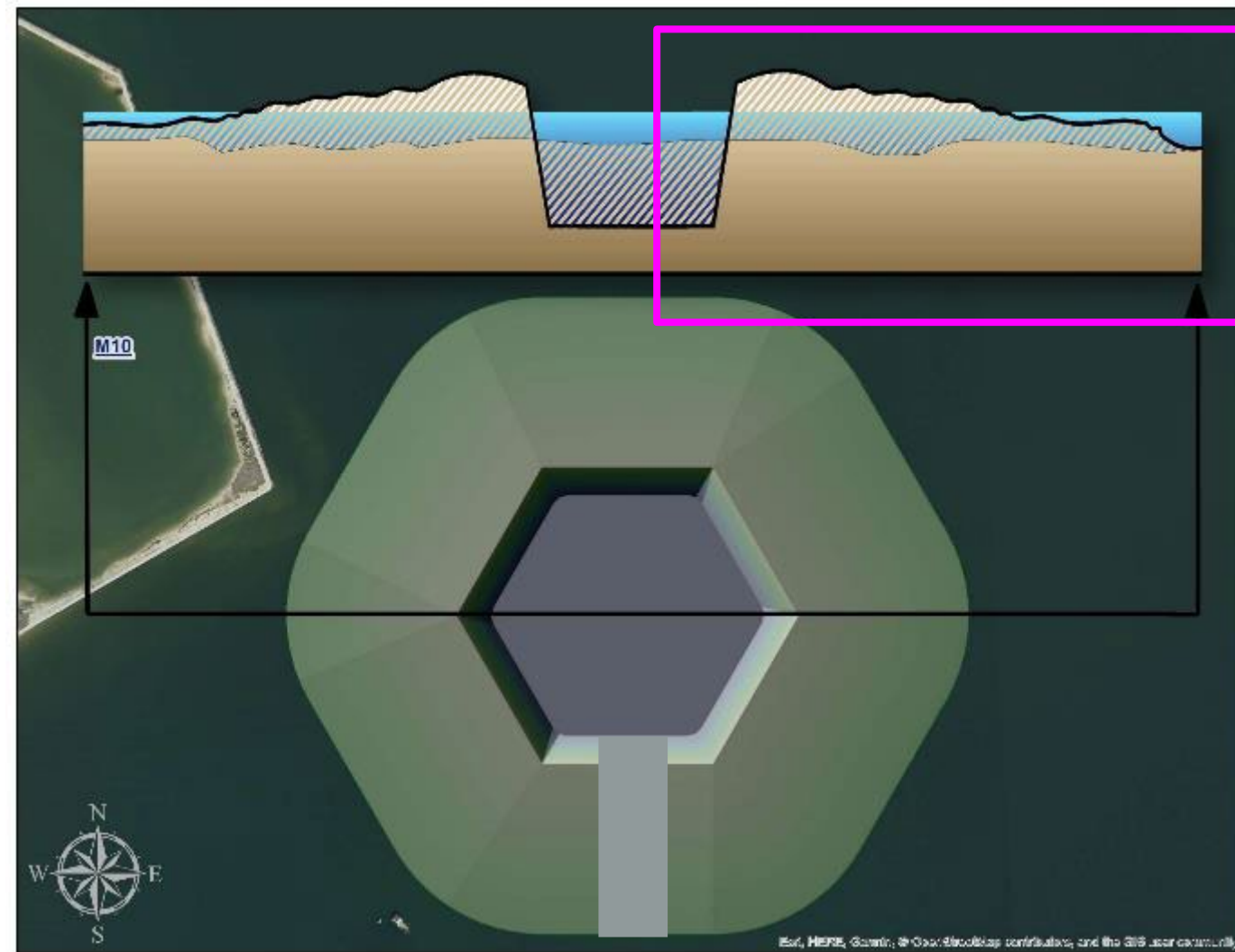
BAY AREA BENEFICIAL USE SITES (BABUS)



BAY AREA BENEFICIAL USE SITES (BABUS)

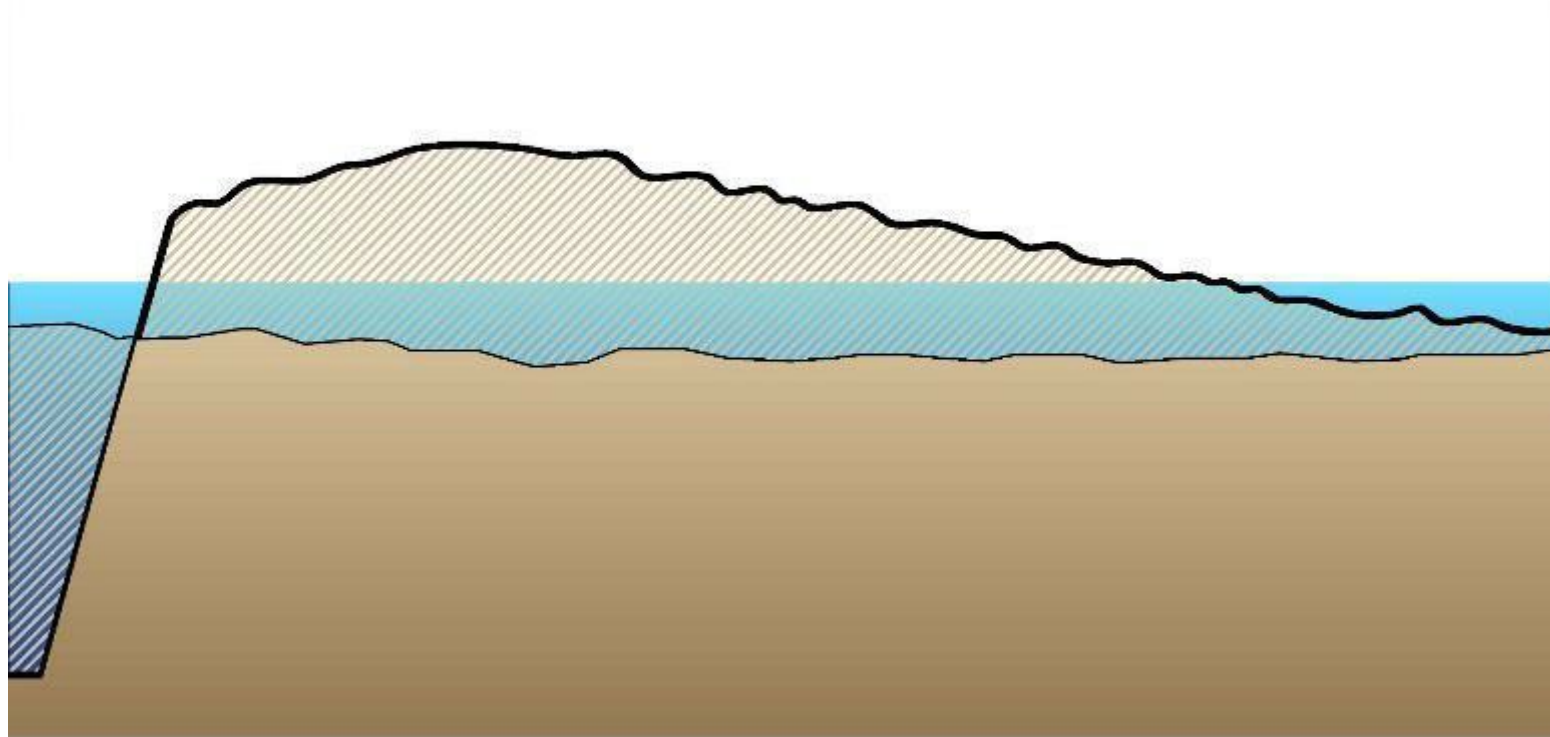


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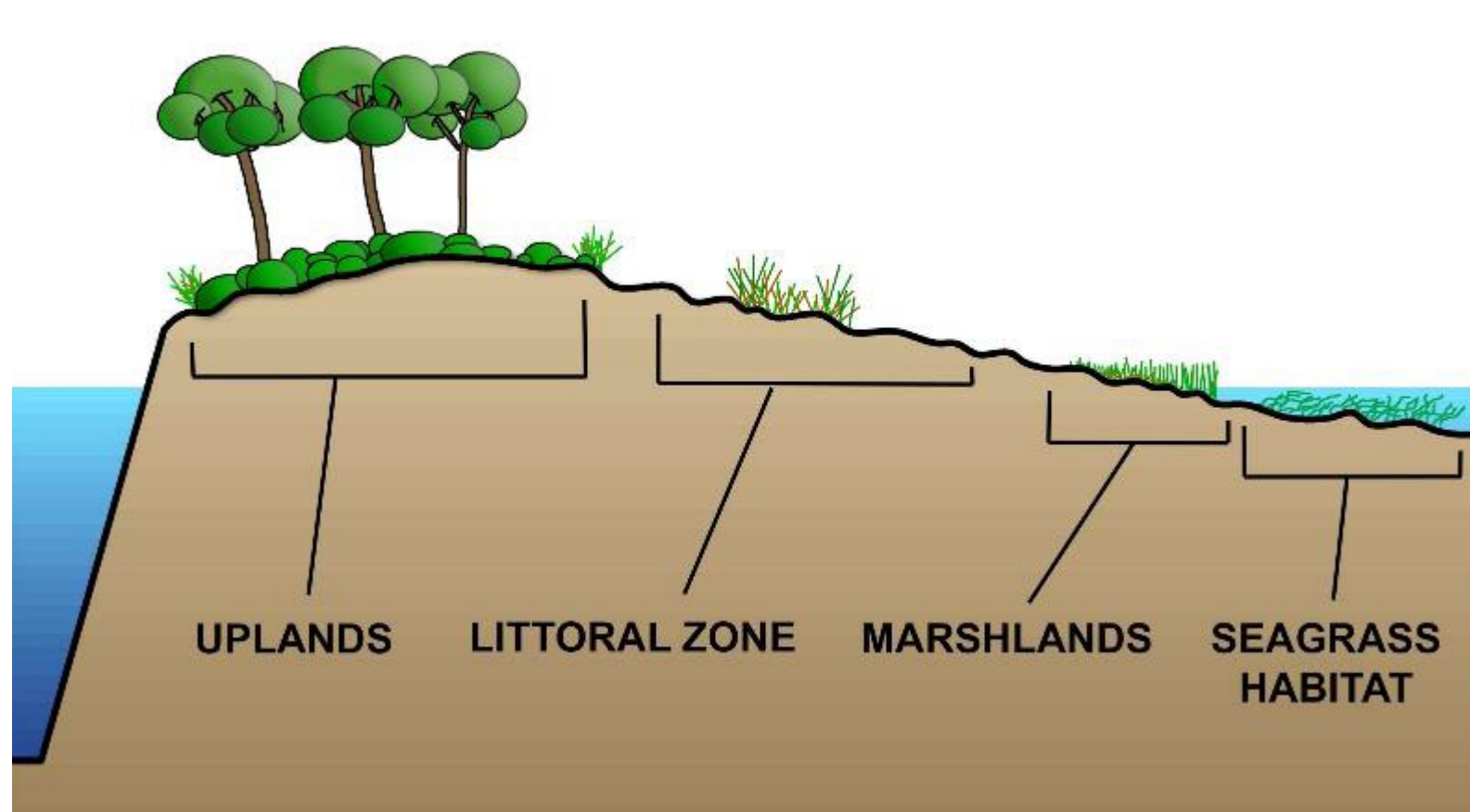




BAY AREA BENEFICIAL USE SITES (BABUS)



BAY AREA BENEFICIAL USE SITES (BABUS)



BAY AREA BENEFICIAL USE SITES (BABUS)





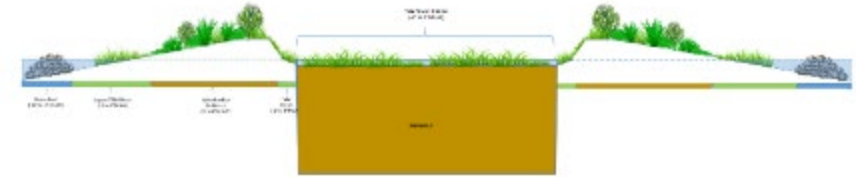
BAY AREA BENEFICIAL USE SITES (BABUS)

164



➤ BABUS:

New Work (Federal Channel & non-Federal Berths)
Future Maintenance (Federal Channel & non-Federal Berths)



- **All Environmental features constructed upfront (All mitigation upfront)**
- **Available for multiple simultaneous dredging operations**
- **Environmental features built with pristine new work material**
- **Preserves upland capacity**
- **Once constructed; quick and easy approvals for non-Federal material**
- **Keeps material in the system – BENEFICIAL USE!!**



COMMAND PHILOSOPHY NOTICE

- **Memo from Lieutenant General Scott A. Spellmon – USACE Chief of Engineers**
- **Dated: January 25, 2023**
- **Established “70/30 Goal”** **70% Beneficial Use by 2030 for USACE**
- **Leverage**
 - **Partnerships**
 - **Innovation**
- **Evaluate Total Life Cycle Costs**
- **Evaluate sediments from navigation channel for other Project purposes**



BENEFICIAL USE - HUB

[No Title] USACE Galveston District: Beneficial Use of Dredged Material

The U.S. Army Corps of Engineers Galveston District contributes to the well-being, economic success and quality of life of local communities through beneficial use of dredge material with the assistance of our non-federal partners.

While undertaking its mission of keeping America's waterways navigable, the Corps employs environmentally and economically responsible ways to utilize dredged materials to benefit local communities and improve eroded coastlines and environments through beach nourishment and beneficial use programs.



Beneficial Use Overview

The "Beneficial Use of Dredged Material Overview" site page of the Beneficial Use hub site...



Beneficial Use Process

The "Beneficial Use Process" site page of the Beneficial Use hub site product. Developed by th...



Beneficial Use Planning Map

The "Beneficial Use Planning Map" site page of the Beneficial Use hub site product....



[Backup] CESWG - Operations Dashboard

The previous iteration of the CESWG - Operations Dashboard; retained in case a...

[Learn more about the Galveston District's Operations Division](#)

The Galveston District Mission:

Deliver vital engineering solutions, in collaboration with our partners, to secure our Nation, energize our economy, and reduce





SWG Beneficial Use HUB Site



OVERVIEW

The SWG Beneficial Use (BU) site provides a platform for stakeholders to access SWG Operation's ongoing 5-year dredging plans and visualize contracts/plans on a web map.



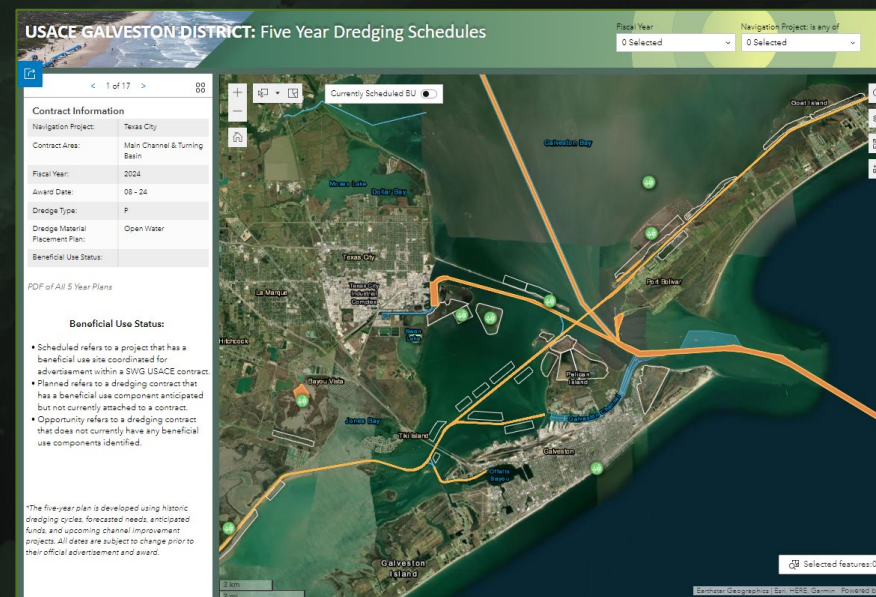
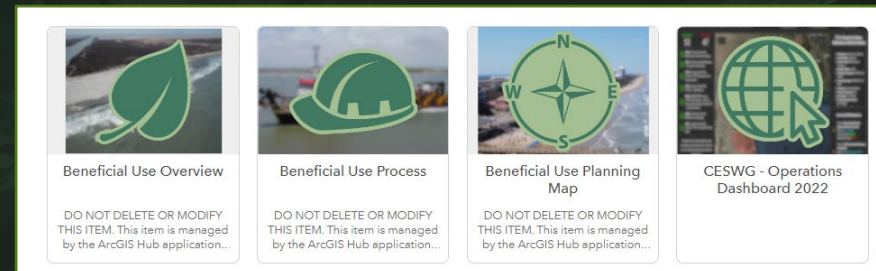
PURPOSE:

- ✓ Communicate the BU Process
- ✓ 5-year plans to be conveyed via documents and GIS services
- ✓ Intended to be updated quarterly, as 5-year plans are ongoing and subject to revisions



ACCESSIBILITY

Public - Users can access the [Beneficial Use Hub](#) through the Galveston District website under the [Beneficial Use](#) web page.





¿QUESTIONS?



US Army Corps
of Engineers.



PROJECT 11: PROJECT UPDATE AND ENVIRONMENTAL STEWARDSHIP COMMITMENT



Lori Brownell
Director, Channel Improvement
Port Houston



Jeff Pinsky
Chief of Environmental Branch
Regional Planning and Environmental Center



US Army Corps
of Engineers®



Partnering for a Sustainable Future

PROJECT 11

PROJECT OVERVIEW

1A

Bolivar Roads to Redfish

- Approximately 11.5 miles in length
- Widen Channel to 700 feet
- Bend easing
- Construct New Bird Island
- Mitigate for oyster habitat loss

1B

Redfish to Bayport Ship Channel

- Approximately 8.3 miles in length
- Widen Channel to a minimum of 700 feet
- Bend easing
- Construct Three Bird Island Marsh in Galveston Bay
- Mitigate for oyster habitat loss

1C

Bayport Ship Channel to Barbours Cut

- Approximately 5 miles in length
- Widen Channel to 700 feet
- Construct additional marshes on Atkinson Island
- Mitigate for oyster habitat loss

2

Bayport Ship Channel

- Approximately 4 miles in length
- Widen Channel to approximately 455 feet
- Construct Three Bird Island Marsh in Galveston Bay
- Mitigate for oyster habitat loss
- Modify channel entrance to reduce shoaling

3

Barbours Cut Ship Channel

- Widen Channel to approximately 455 feet
- Construct additional marshes on Atkinson Island
- Modify channel entrance

4

Boggy Bayou (BW 8) to Sims Bayou

- Widen Channel to approximately 530 feet through Greens Bayou confluence
- Deepen from existing 41 feet to 46.5 feet from Boggy Bayou to Hunting Bayou (last Turning Basin before reaching Washburn Tunnel)

5

Sims Bayou to IH 610

- Deepen from existing 37 feet to 41.5 feet

6

IH 610 to Turning Basin

- Deepen from existing up to 41.5 feet
- Increase Brady Island Turning Basin

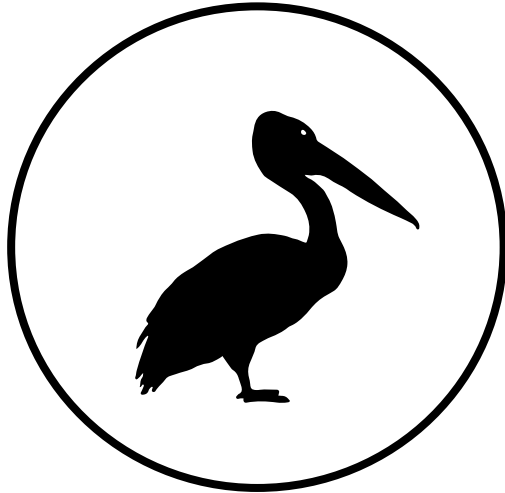


 No work planned in these areas



PROJECT 11

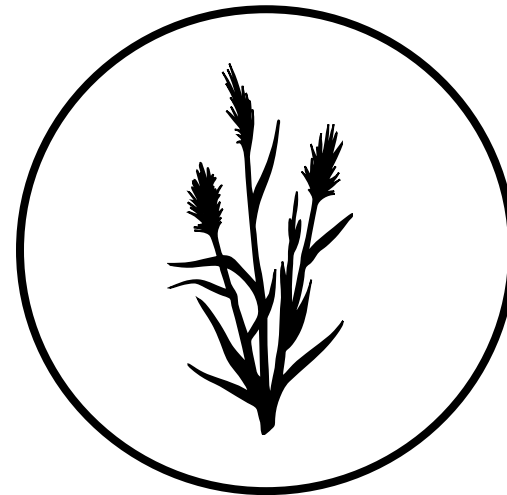
ENVIRONMENTAL FOCUS



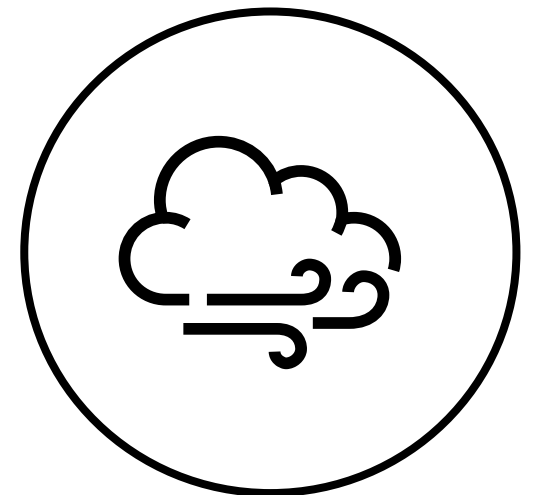
Bird Islands



Oyster Reefs



Marsh



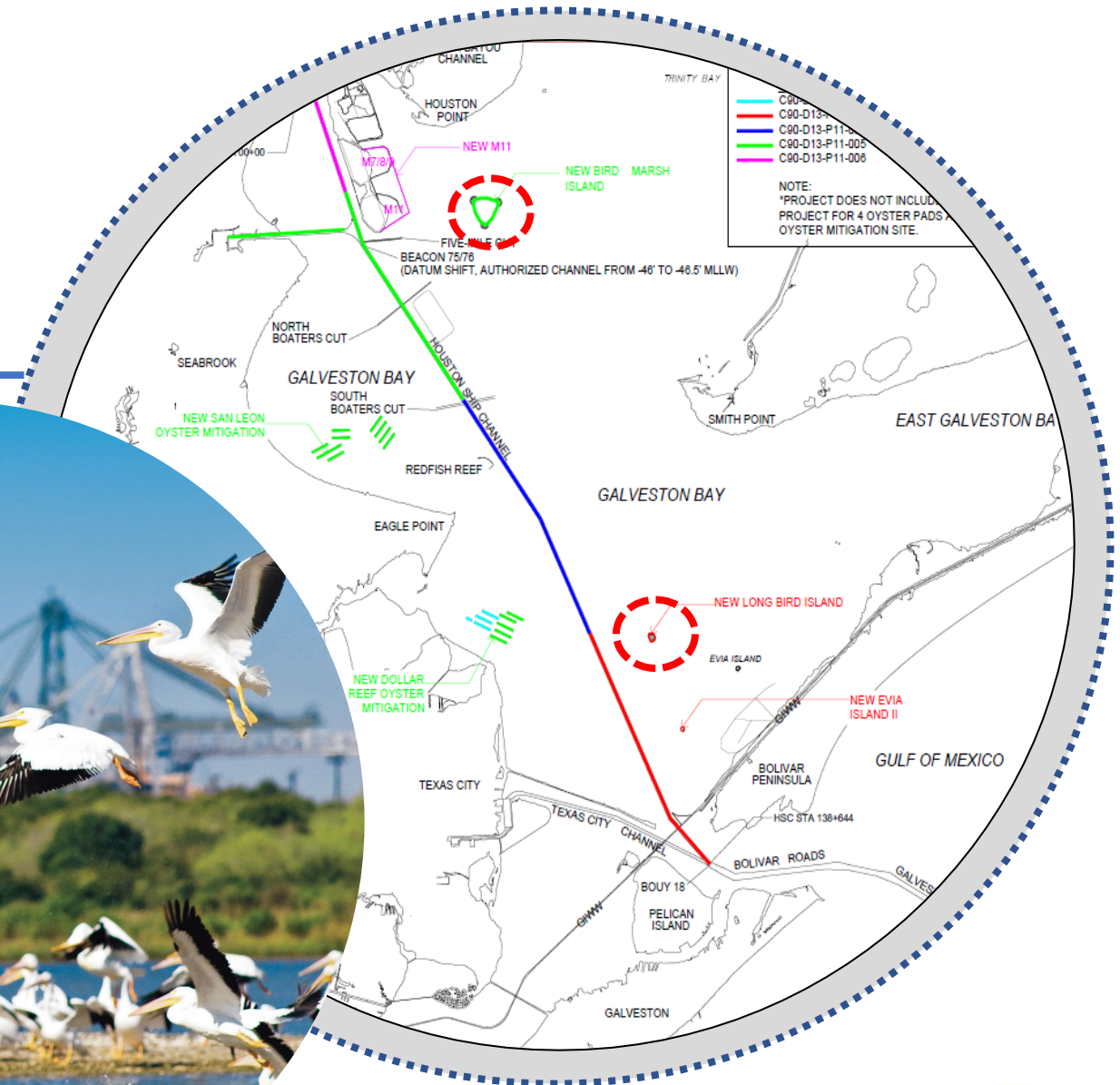
Air Quality



PROJECT 11

BIRD ISLANDS

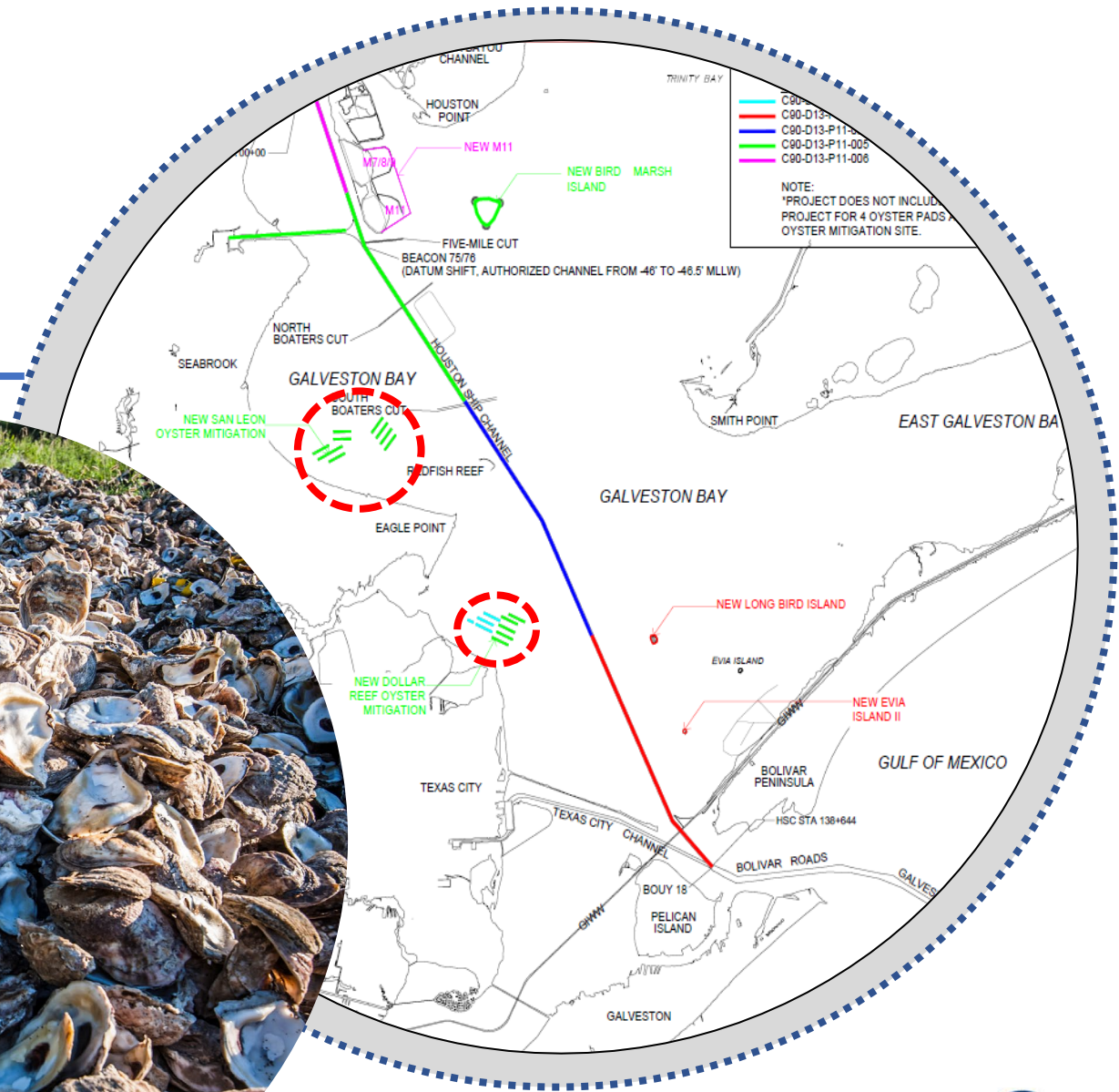
- Foraging and nesting habitat
- New Bird Islands
 - Three Bird Island Marsh Complex
 - New Long Bird Island



PROJECT 11

OYSTER REEFS

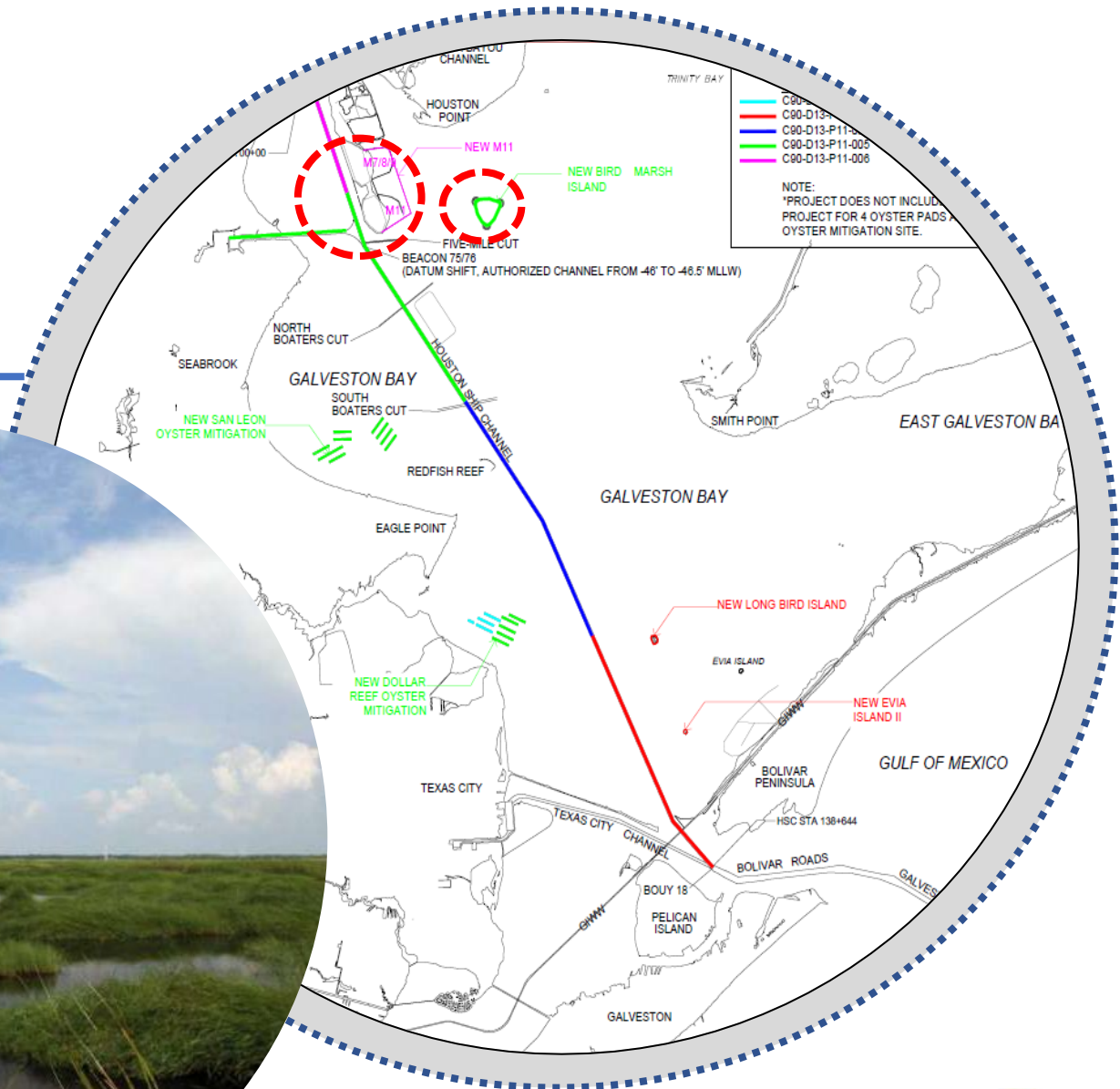
- Up to 350 acres of replacement oyster reef pads
- New Oyster Reef Areas
 - San Leon Reef
 - Dollar Reef



PROJECT 11

MARSHES

- Provide wetlands and shallow open-water habitat
- New Marsh Areas
 - Three Bird Island Marsh Complex
 - M11
 - M12



PROJECT 11

AIR QUALITY

- Initial 3% reduction of NO_x from vessel emissions
- Wider, deeper safer channel results in fewer transits, shorter wait times, and decreased turn-around distance
- Over the next 11 years – after project implementation – expect to incrementally reduce air emissions by 7% annually



Segment 1A – Package 1

DESIGN-CONSTRUCTION PACKAGE UPDATE

Advertisement	Construction		Contractor
AUG 2021	USACE	JAN – OCT 2022	Wiipica QRI JV



COMPLETE. Dollar Reef Oyster Mitigation



No work planned in these areas



DESIGN-CONSTRUCTION PACKAGE UPDATE



Segment 1A – Package 1

DESIGN-CONSTRUCTION PACKAGE UPDATE



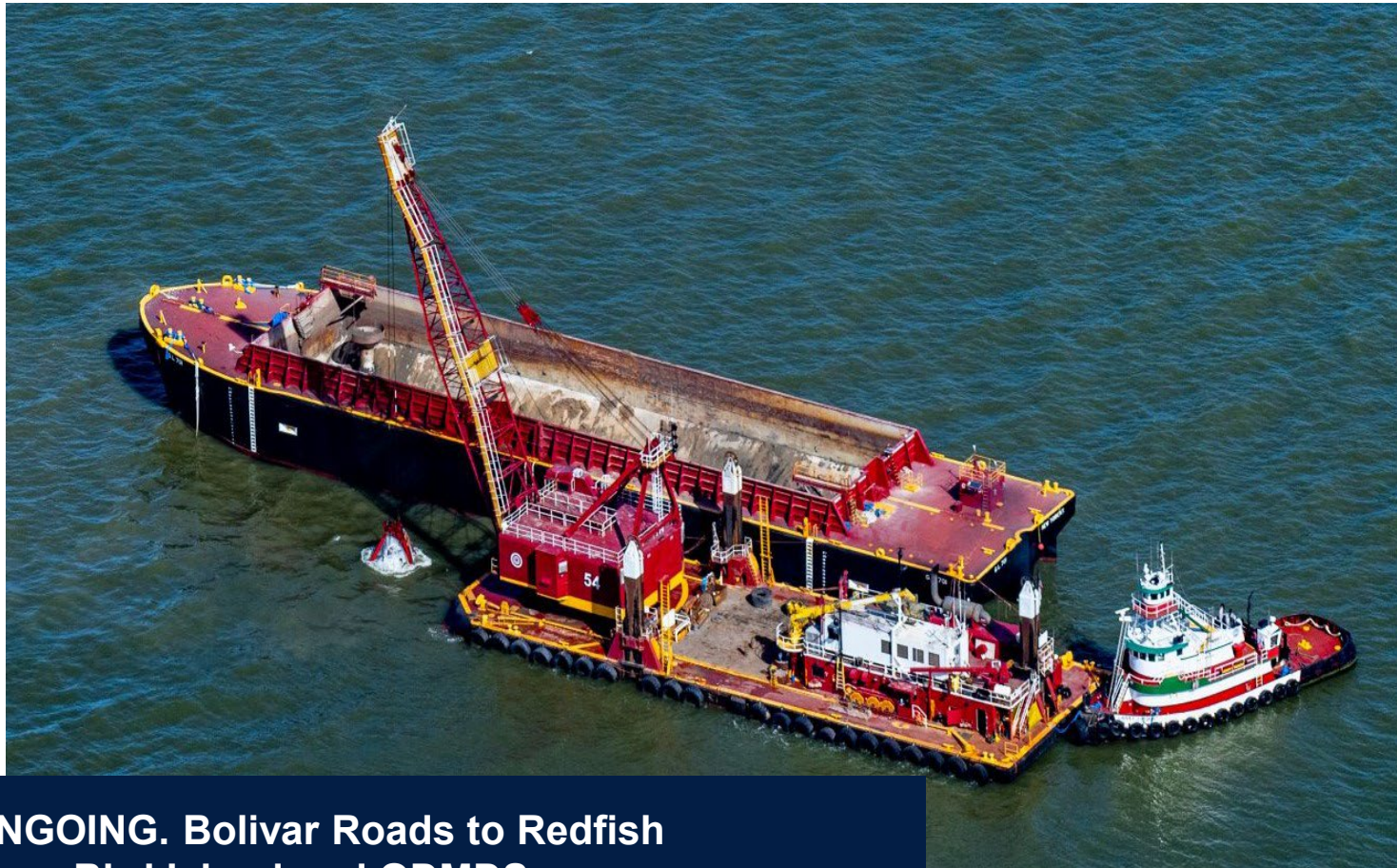
COMPLETE. Dollar Reef Oyster Mitigation



Segment 1A – Package 3/4A

DESIGN-CONSTRUCTION PACKAGE UPDATE

Advertisement	Construction	Contractor
JUL 2021	PHA	FEB 2022 – FEB 2023
		GLDD



ONGOING. Bolivar Roads to Redfish
Long Bird Island and ODMDS

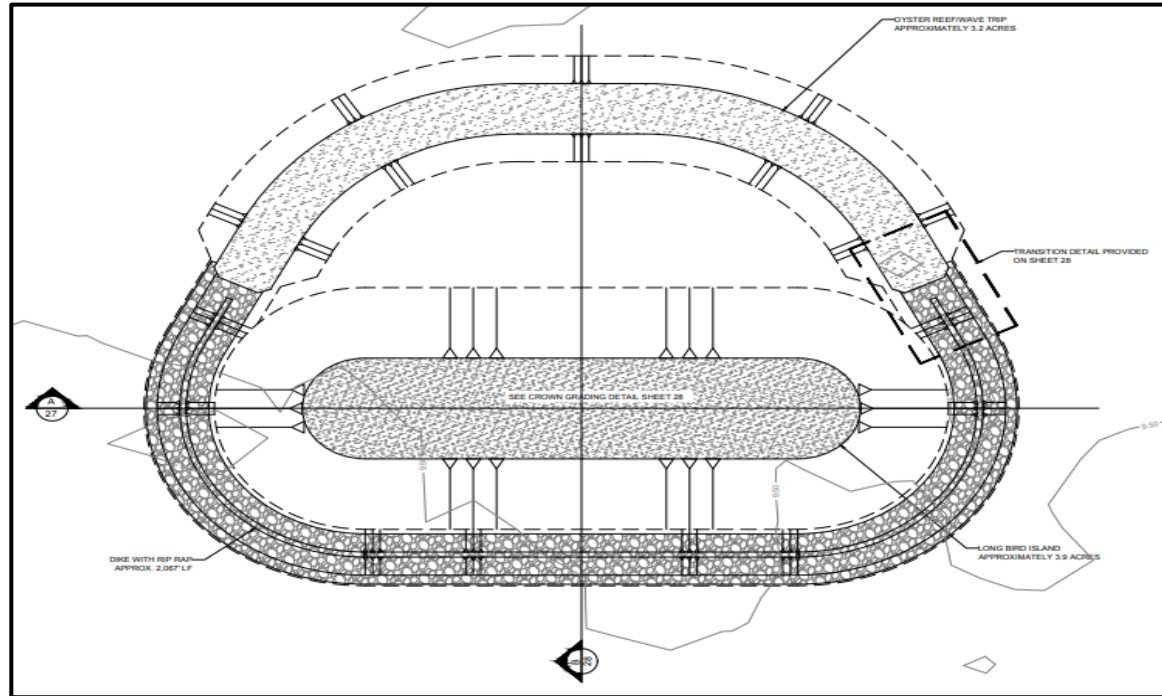


— No work planned in these areas

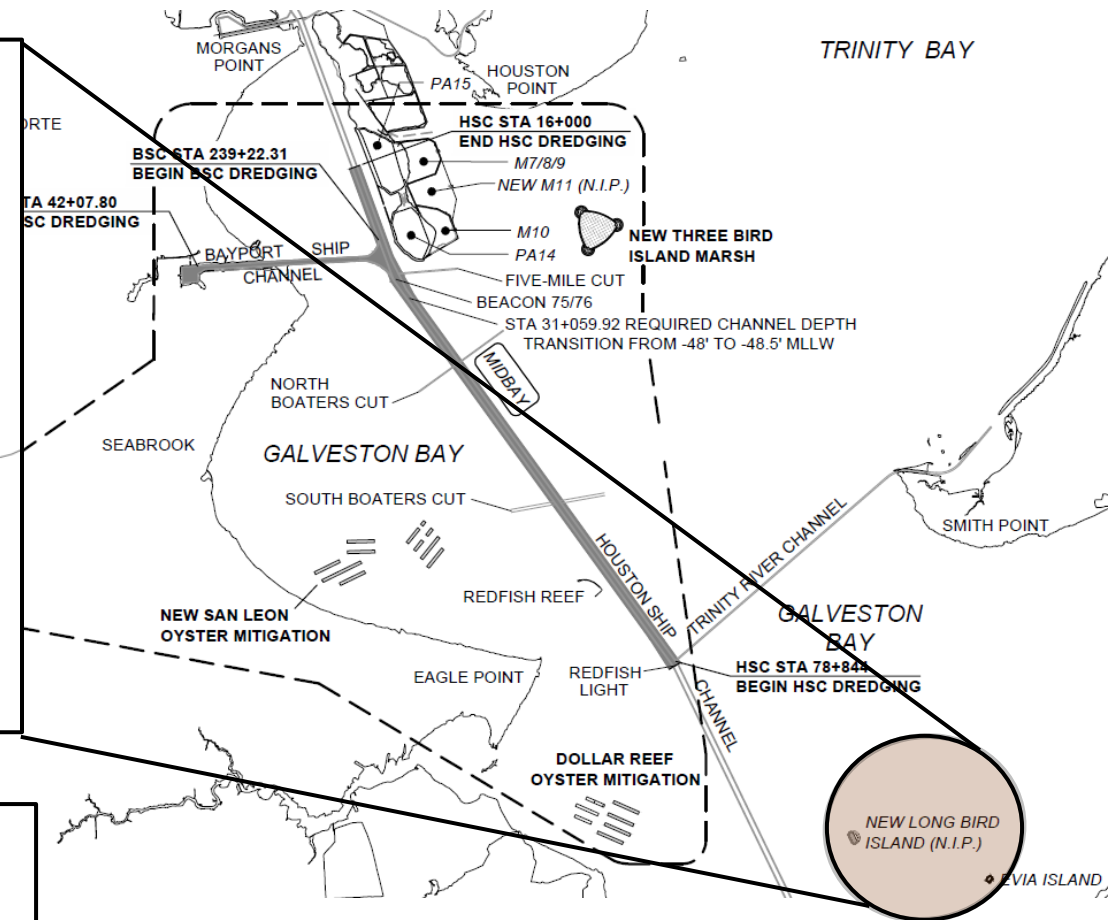
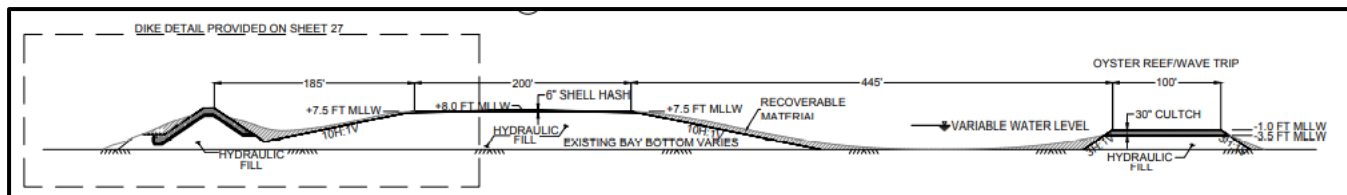


Segment 1A – Package 3/4A

DESIGN-CONSTRUCTION PACKAGE UPDATE



Completed dredge material placement, rock work ongoing



**ONGOING. Bolivar Roads to Redfish
Long Bird Island and ODMDs**



Segment 1A – Package 3/4A

DESIGN-CONSTRUCTION PACKAGE UPDATE



**ONGOING. Bolivar Roads to Redfish
Long Bird Island and ODMDS**



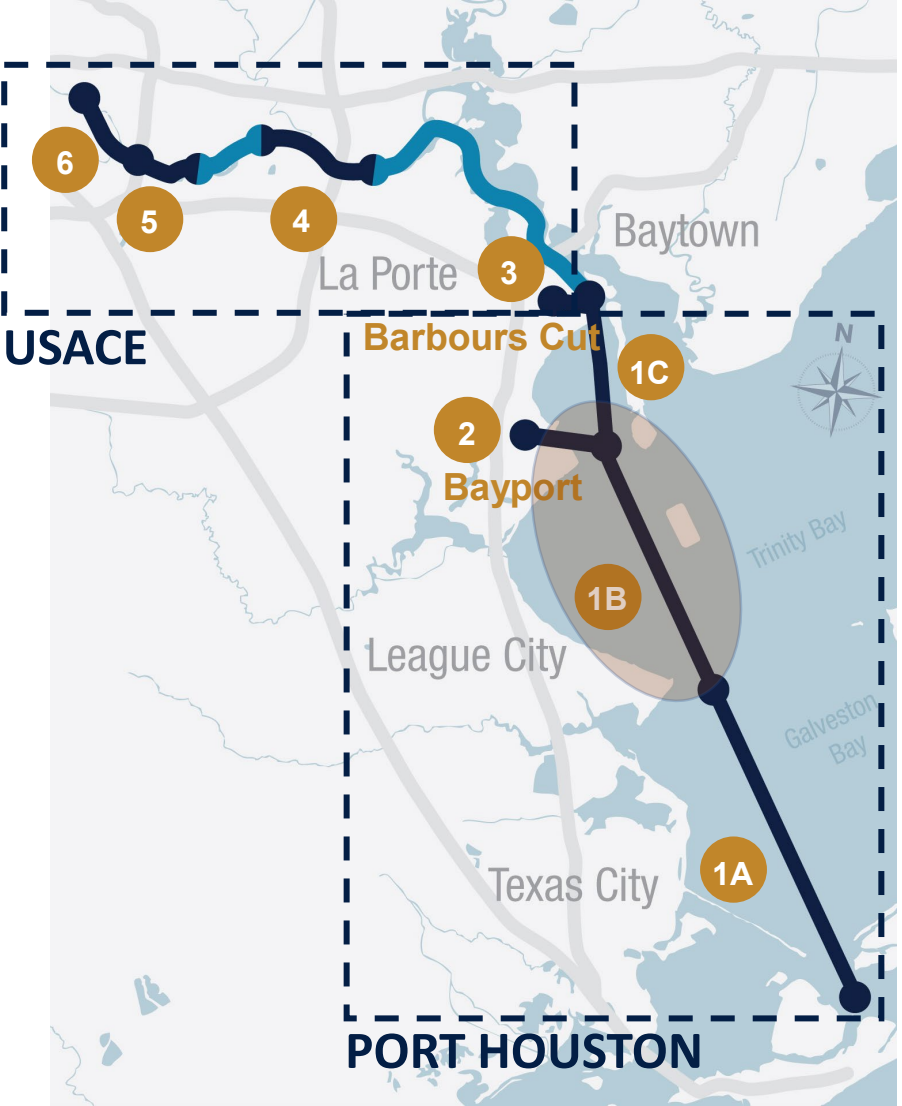
Segment 1B, 2, 1C – Package 4B/5 (Mechanical)

DESIGN-CONSTRUCTION PACKAGE UPDATE

Advertisement		Construction	Contractor
NOV 2021	PHA	OCT 2022 – NOV 2023	Curtin



ONGOING. Redfish to Bayport | San Leon & Dollar Reef Oyster Mitigation, ODMDS

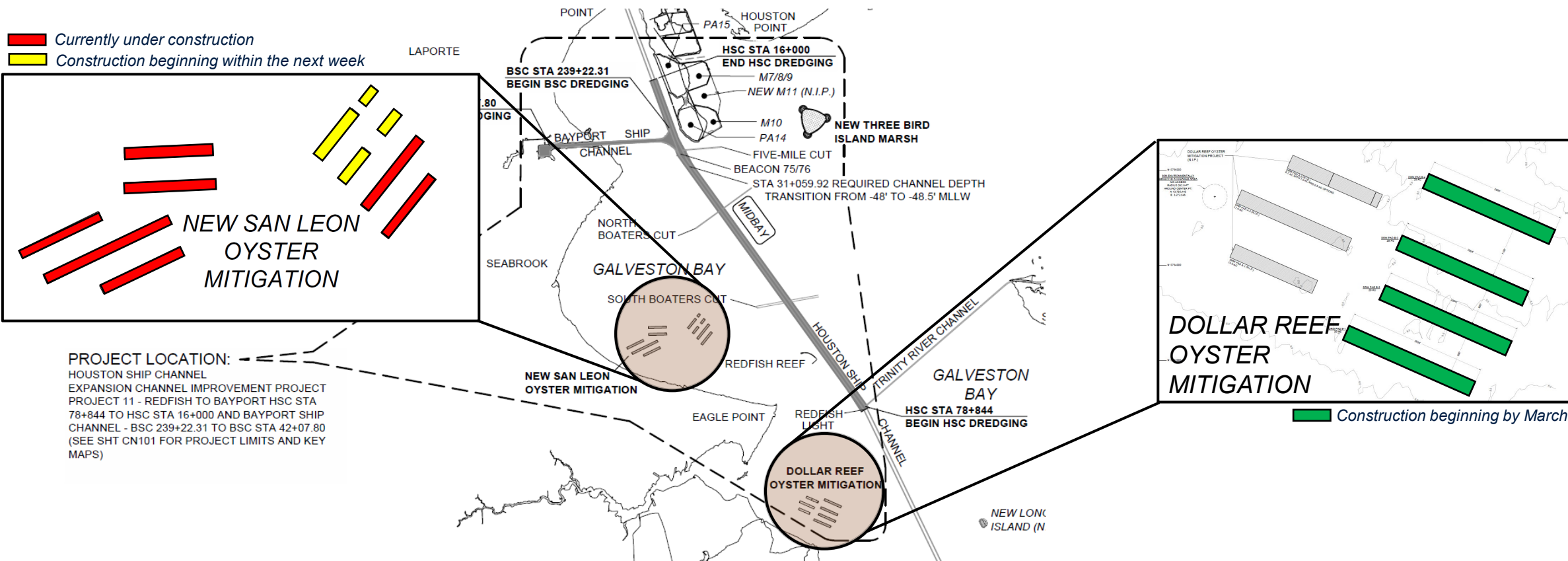


No work planned in these areas



Segment 1B, 2, 1C – Package 4B/5 (Mechanical)

DESIGN-CONSTRUCTION PACKAGE UPDATE

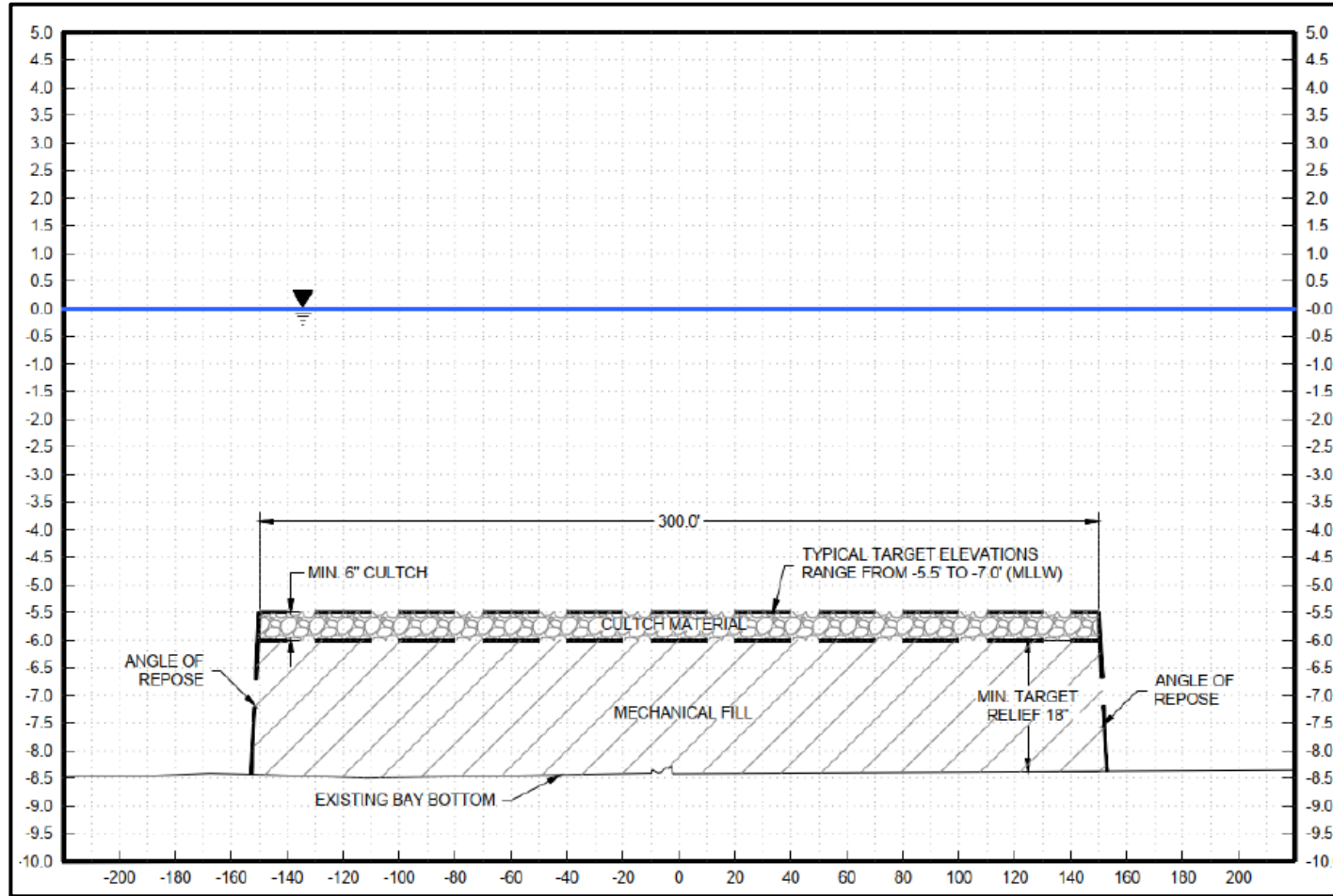


ONGOING. Redfish to Bayport | San Leon & Dollar Reef Oyster Mitigation, ODMDS



Segment 1B, 2, 1C – Package 4B/5 (Mechanical)

DESIGN-CONSTRUCTION PACKAGE UPDATE

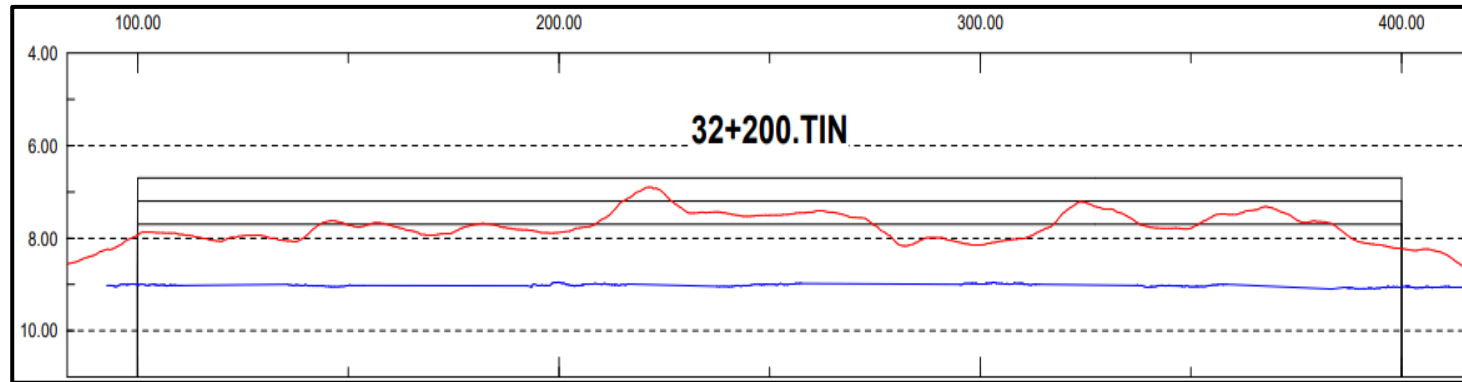
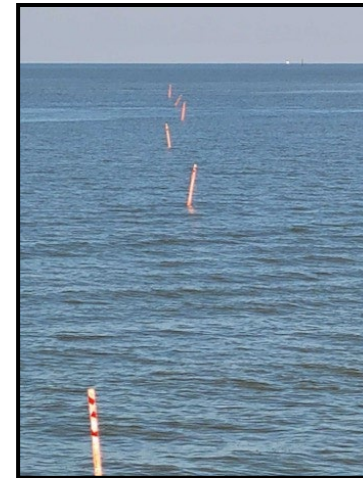


ONGOING. Redfish to Bayport | San Leon & Dollar Reef Oyster Mitigation, ODMDS



Segment 1B, 2, 1C – Package 4B/5 (Mechanical)

DESIGN-CONSTRUCTION PACKAGE UPDATE



ONGOING. Redfish to Bayport | San Leon & Dollar Reef Oyster Mitigation, ODMDS



Segment 1B, 2, 1C – Package 4B/5 (Weeks)

DESIGN-CONSTRUCTION PACKAGE UPDATE

Advertisement		Construction	Contractor
NOV 2021	PHA	JAN 2023 – AUG 2024	Weeks



**ONGOING. Redfish to Bayport
Three Bird Island Marsh Complex**

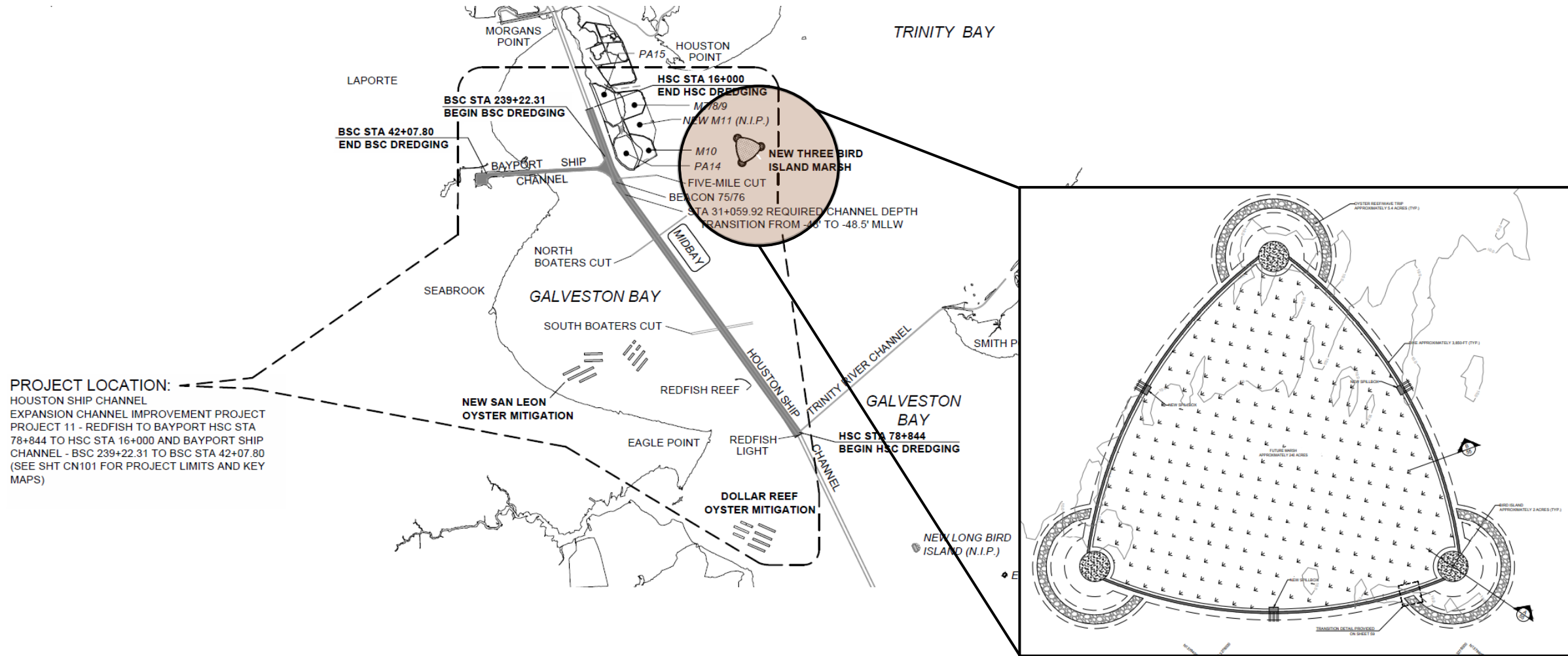


 No work planned in these areas



Segment 1B, 2, 1C – Package 4B/5 (Hydraulic)

DESIGN-CONSTRUCTION PACKAGE UPDATE

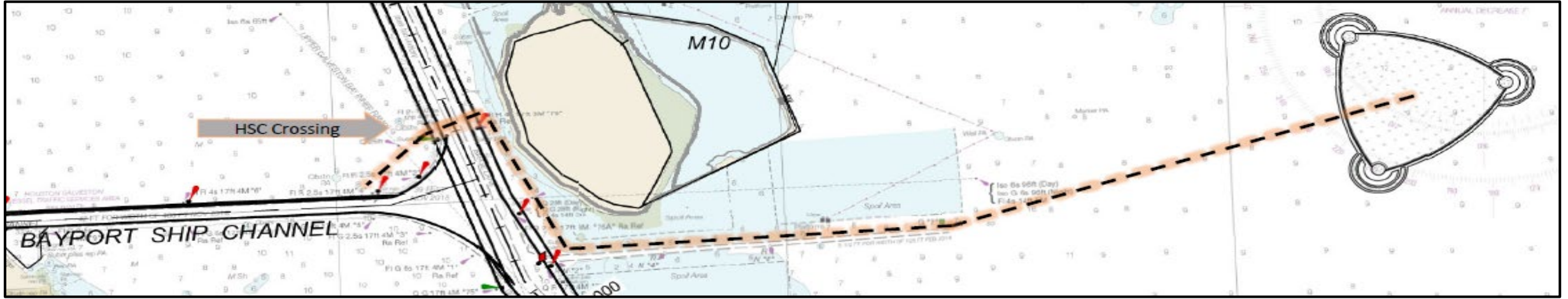


**ONGOING. Redfish to Bayport
Three Bird Island Marsh Complex**



Segment 1B, 2, 1C – Package 4B/5 (Hydraulic)

DESIGN-CONSTRUCTION PACKAGE UPDATE



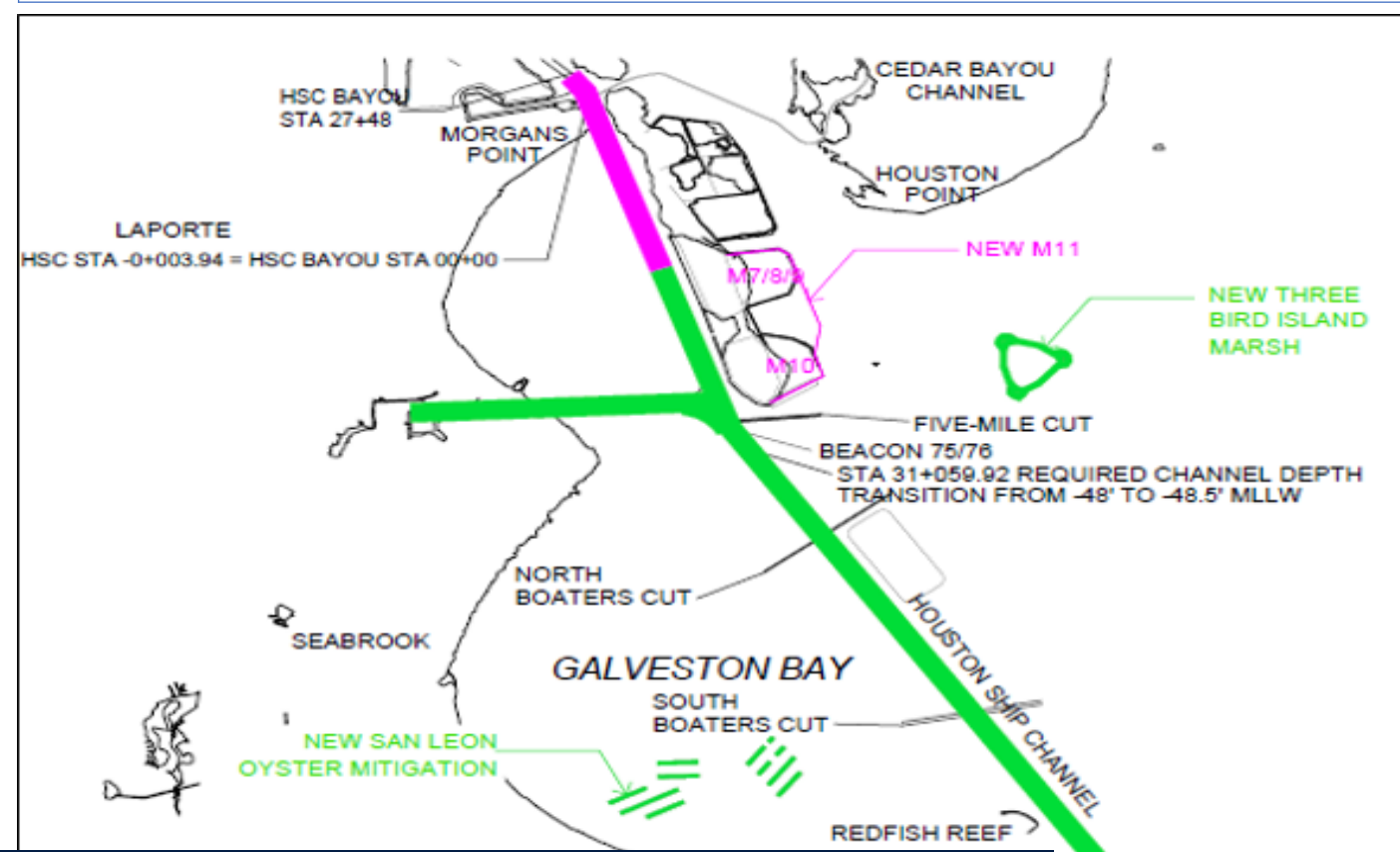
ONGOING. Redfish to Bayport
Three Bird Island Marsh Complex



Segment 1C – Package 6

DESIGN-CONSTRUCTION PACKAGE UPDATE

Advertisement		Construction	Contractor
JUN 2023	PHA	SEP 2023 – SEP 2024	TBD



**FUNDED. Bayport to Barbours
3.2 MCY M11 Beneficial Use Site**



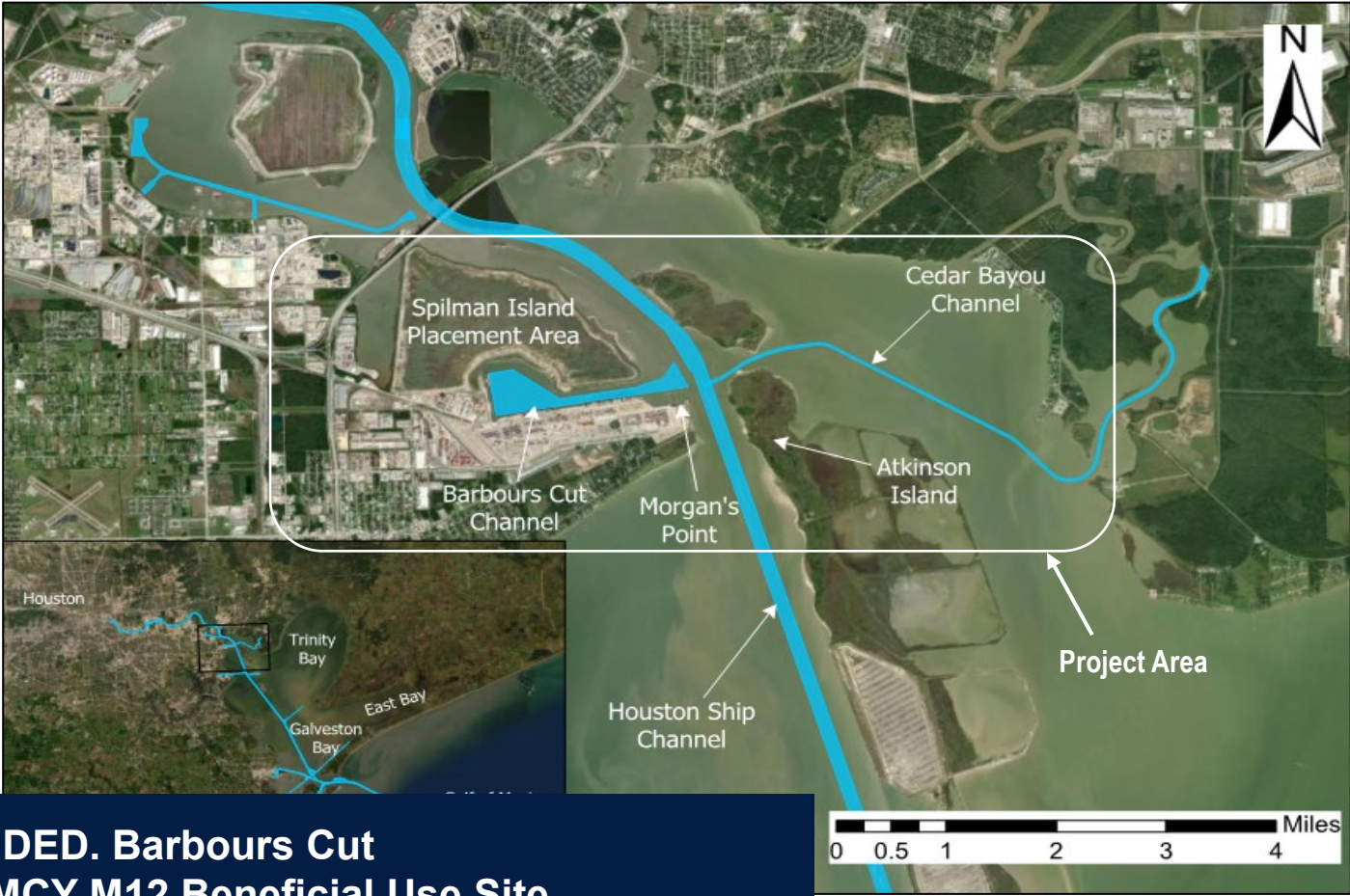
 No work planned in these areas



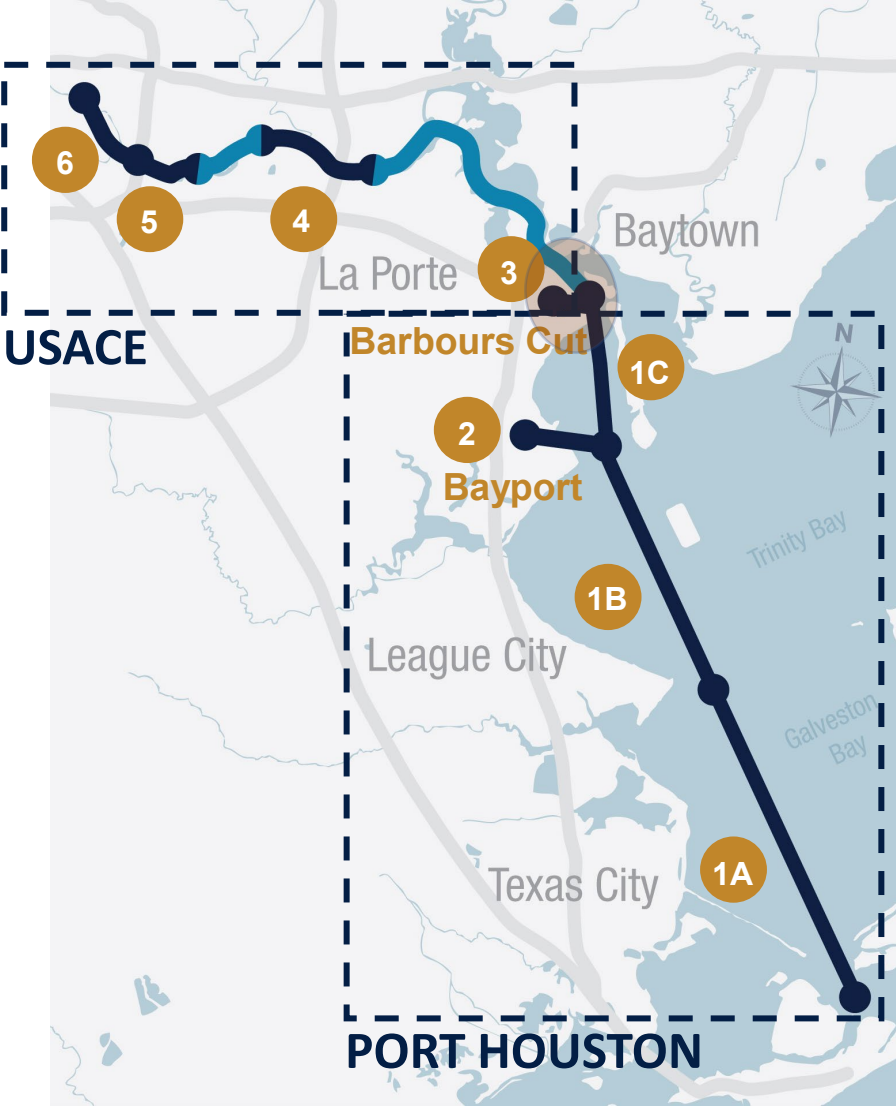
Segment 3 – Package 7

DESIGN-CONSTRUCTION PACKAGE UPDATE

Advertisement	Construction	Contractor
JUN 2023	USACE	OCT 2023 – OCT 2025
		TBD



FUNDED. Barbours Cut
2.8 MCY M12 Beneficial Use Site



 No work planned in these areas



HSC ECIP / PROJECT 11

TENTATIVE PROCUREMENT AND CONSTRUCTION SCHEDULE

Package		Segment	Advertise	Construction	
Completed	1	1A	Aug 2021	USACE	Jan - Oct 2022
	2	4	Feb 2021	Port	Jun 2021 - Jun 2022
	Abandoned Pipeline Removal	1A, 1B, 1C	Aug 2021	Port	Jan - Jul 2022
Under Contract	3/4A	1A	Jul 2021	Port	Feb 2022 - Feb 2023
	4B/5	1B, 1C, 2	Nov 2021	Port	Oct 2022 - Aug 2024
Funded	6	1C	Jun 2023	Port	Sep 2023 - Sep 2024
	7	3	Jun 2023	USACE	Oct 2023 - Oct 2025
Pending Federal Appropriations	8	4	Apr 2023	USACE	Jan 2024 - May 2025
	9	4	Jun 2024	USACE	Aug 2025 - Mar 2026
	10, 11	5, 6	Jul 2024	USACE	Nov 2024 - Sep 2025
	12	5, 6	Dec 2024	USACE	Feb 2025 - Jan 2026



— No work planned in these areas



QUESTIONS?

Visit the Project 11 Webpage

<https://www.expandthehoustonshipchannel.com/>

Email the Project 11 Team

Project11@PortHouston.com

Contact

Jeff Pinsky: Jeffrey.F.Pinsky@usace.army.mil

Carlos Tate: Carlos.D.Tate@usace.army.mil

Lori Brownell: LBrownell@PortHouston.com



AN INTEGRATED AND COMPREHENSIVE RESILIENCY STRATEGY FOR A SUSTAINABLE COAST



Tony Williams
Deputy Director of Coastal Field Operations
Texas General Land Office



Kelly A. Burks-Copes, PhD
Chief, Program Support Branch,
Mega Project Division
U.S. Army Corps of Engineers
Galveston District



**US Army Corps
of Engineers®**



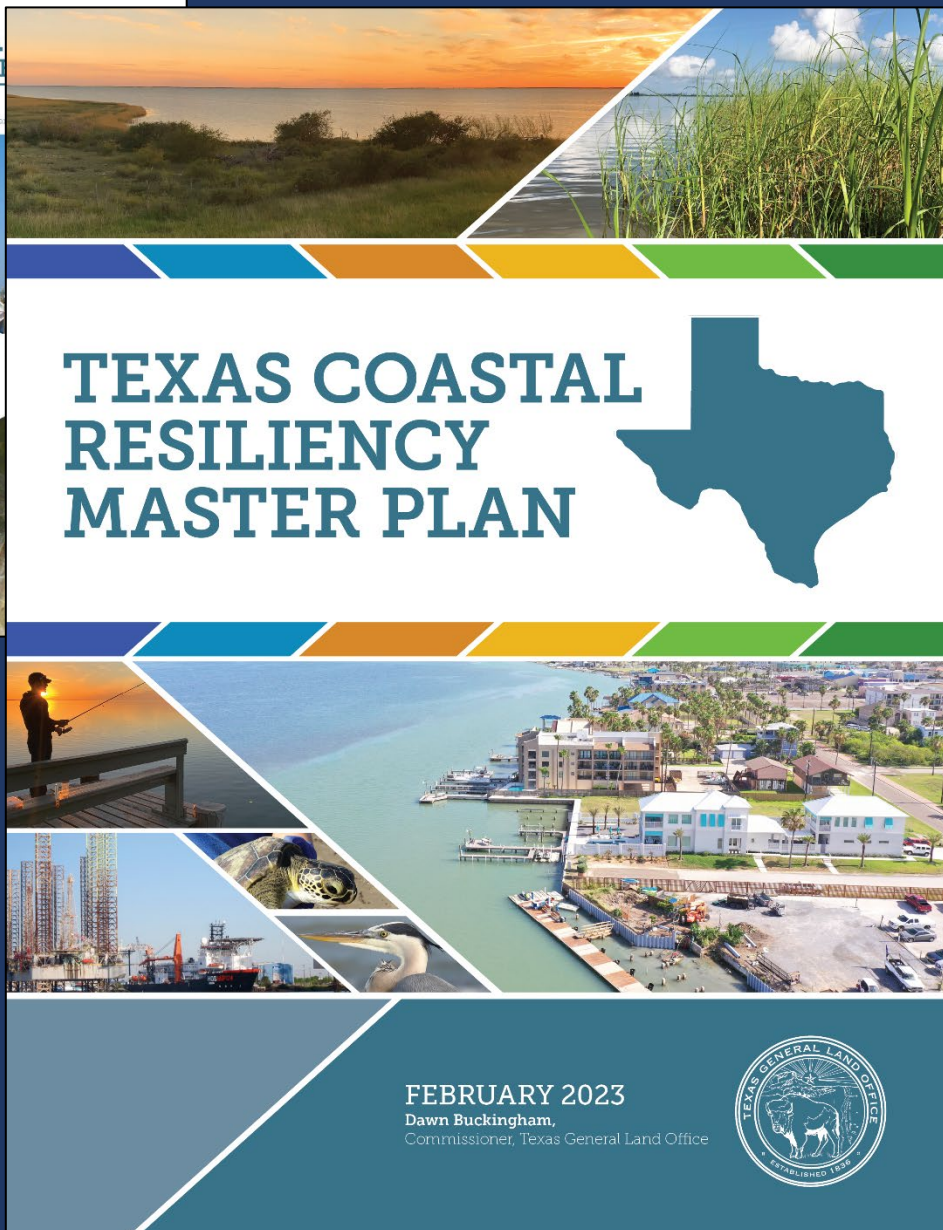
Partnering for a Sustainable Future



Coastal Texas Program



Texas General Land Office
Dawn Buckingham, Commissioner



Goals and Objectives

1. Identify, select, and fund projects that address the coastal vulnerabilities to restore, enhance, and protect the Texas coast
2. Adapt priorities to accommodate changing conditions through future iterations
3. Communicate the environmental and economic value of the Texas coast to state and national audiences

FEBRUARY 2023
Dawn Buckingham,
Commissioner, Texas General Land Office



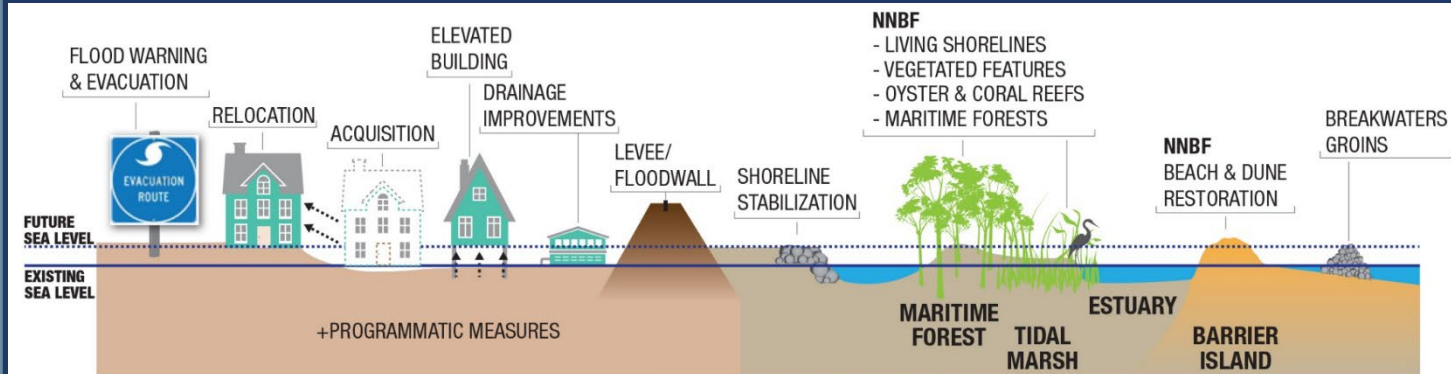
Texas General Land Office
Dawn Buckingham, Commissioner



Concurrent State and Federal Efforts on the Texas Coast



Multiple Lines of Defense



Vulnerabilities



Actions & Projects

Land Change



Degraded or Lost Habitat



Gulf Shoreline Change



Bay Shoreline Change

Flooding



Inland Flooding



Storm Surge



Tidal Flooding

Degraded Water Resources



Degraded Water Quality



Degraded Water Quantity



Managing Coastal Habitats



Growing Key Knowledge and Experience



Adapting to Changing Conditions



Enhancing Emergency Preparation and Response



Managing Gulf Shorelines



Managing Watersheds



Addressing Under-Represented Needs



Managing Bay Shorelines



Improving Community Resilience



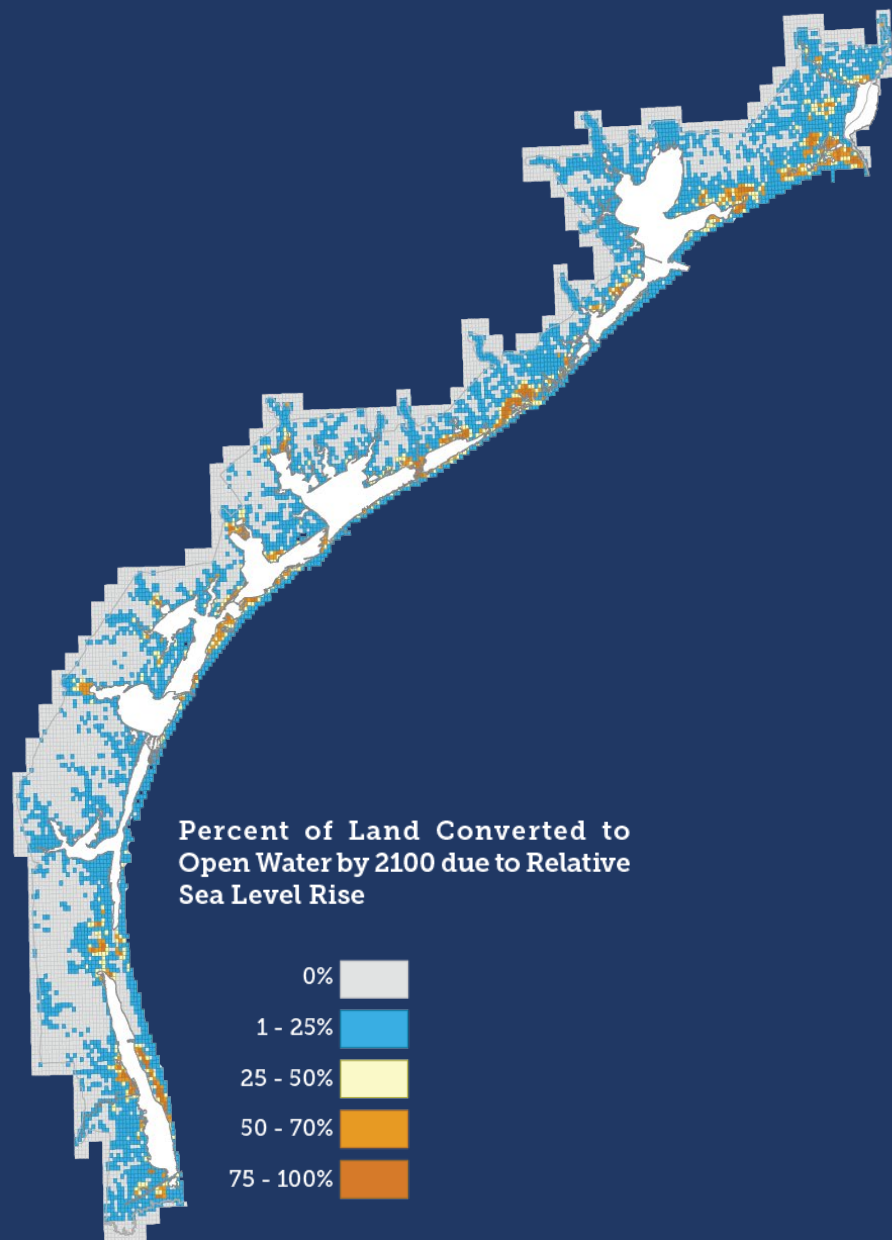
Maintaining Coastal Economic Growth

	Project Type	Project Subtypes
Nature-Based	Hydrologic Connectivity	<ul style="list-style-type: none"> Freshwater Inflow Hydrologic Restoration River Restoration
	Habitat Creation and Restoration	<ul style="list-style-type: none"> Estuarine Wetlands Freshwater Wetlands Oyster Reef Barrier Islands Coastal Uplands Coastal Prairies Rookery Islands Dredged Material Placement Islands Seagrasses Tidal Flats Fisheries
	Beach Nourishment	<ul style="list-style-type: none"> Bay Gulf
	Dune Restoration	<ul style="list-style-type: none"> Dune
Infrastructure-Based	Shoreline Stabilization	<ul style="list-style-type: none"> Living Shoreline Breakwater Misc. Wave Break Seawall Bulkhead Revetment Jetty Groin
	Land Acquisition	<ul style="list-style-type: none"> Acquisitions Conservation Easements Fee Simple
	Structure/Debris Removal	<ul style="list-style-type: none"> Structures on Public Easement Abandoned Oil and Gas Wells Abandoned Boats Dock Pilings Post Storm Cleanup
	Public Access & Improvements	<ul style="list-style-type: none"> ADA Accessibility Walkovers Piers, Boat Ramps
	Flood Risk Reduction	<ul style="list-style-type: none"> Levees Flood Wall Storm Surge Barrier
	Community Infrastructure	<ul style="list-style-type: none"> Drainage Utilities Roadway/Bridge Repair Roadway/Bridge Elevation Critical Facilities Structure Raising

Studies, Policies, and Programs



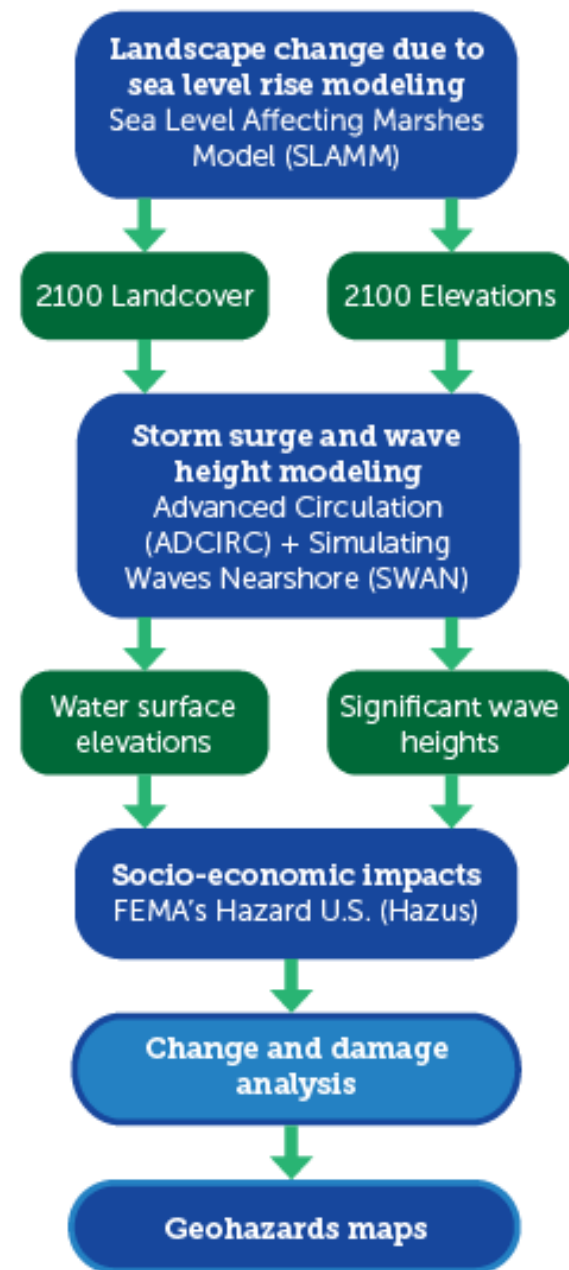
Landscape Change Modeling



2023 Modeling Enhancements

- ✓ Higher resolution
- ✓ Newer, better elevation information
- ✓ More sea level rise scenarios modeled
- ✓ More storms modeled
- ✓ More comprehensive project modeling
- ✓ Development of geohazards and storm surge vulnerability maps

MODELING FRAMEWORK



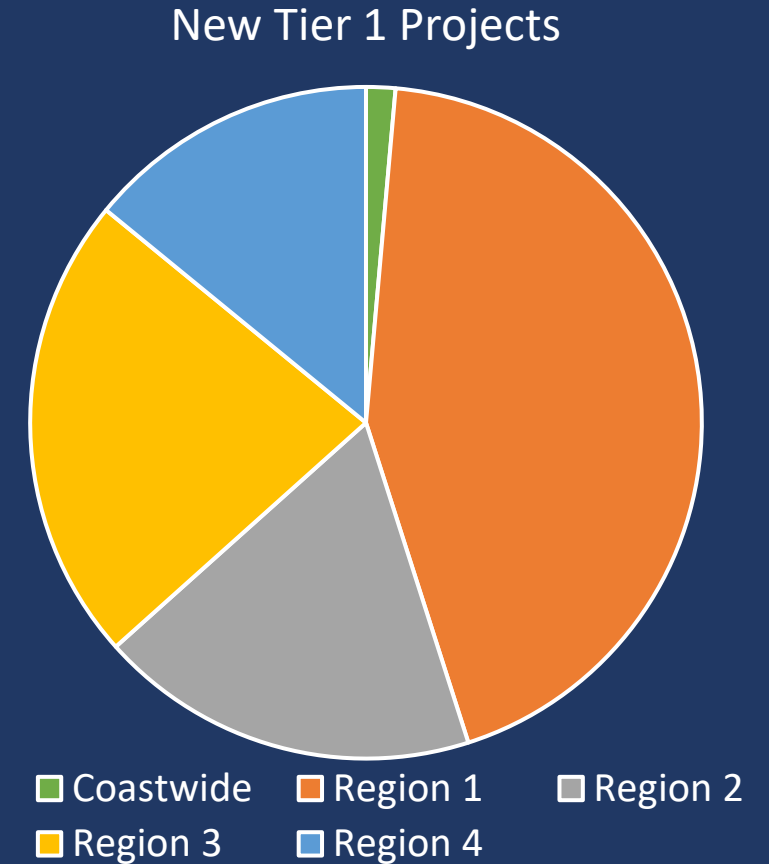
Stakeholder Input





TAC Evaluation Statistics (New)

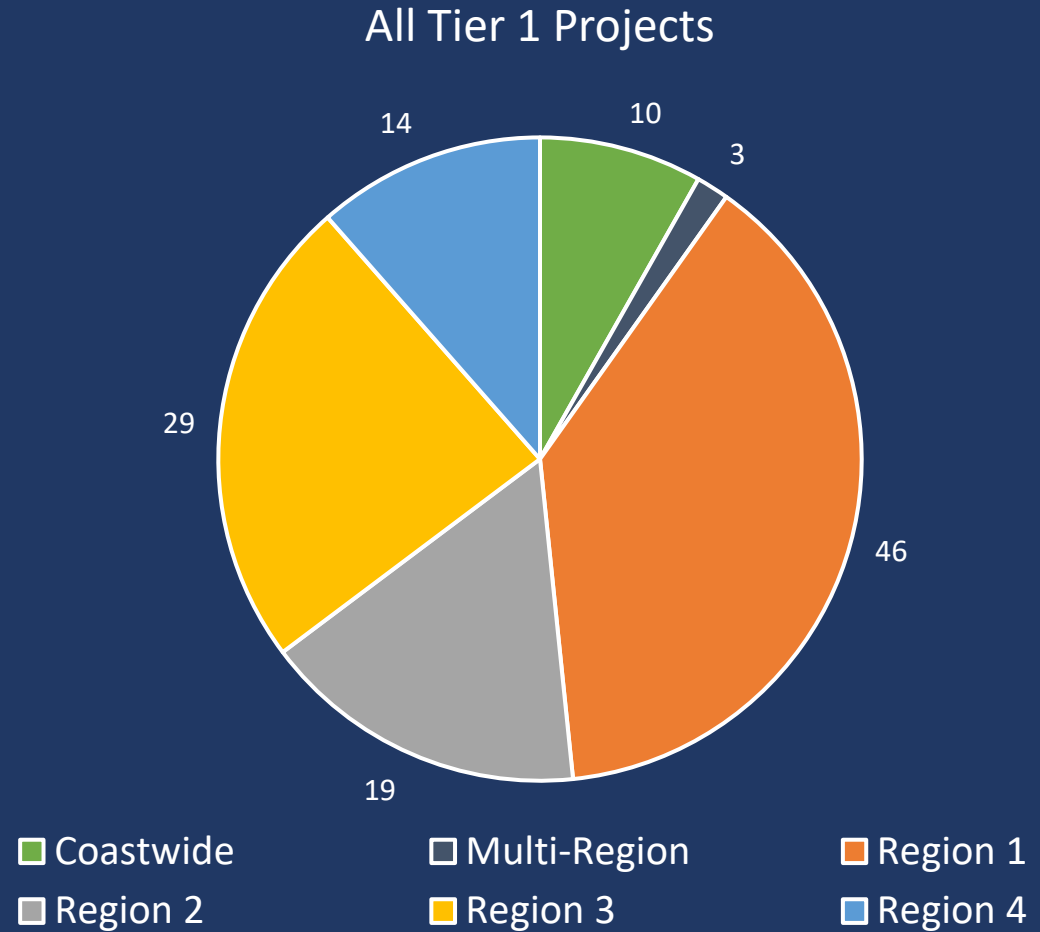
Region	Survey Participants	No. Evaluated Projects	No. T1 Projects (New)
Coastwide	107	11	1
1	66	52	31
2	45	38	13
3	63	50	16
4	32	17	10





TAC Evaluation Statistics (All Projects)

- 50 carryover projects from 2019
- 71 new projects from June 2022
- 121 Tier 1 projects for 2023



Example Projects

Region 1:

- Bolivar Peninsula Beach and Dune Restoration (Project ID 252)
- Brazos River and San Bernard River Restoration Strategy and Management Plan (9101)
- Lower Clear Creek and Dickinson Bayou Watershed Flood Risk Reduction Program (9192)
- Neches River Forested Floodplain (9279)
- O'Quinn I-45 Estuary Shoreline Protection and Marsh Restoration (346)
- Southeast Texas Flood Coordination Study - Regional Flood Sensor System (9257)

Region 2:

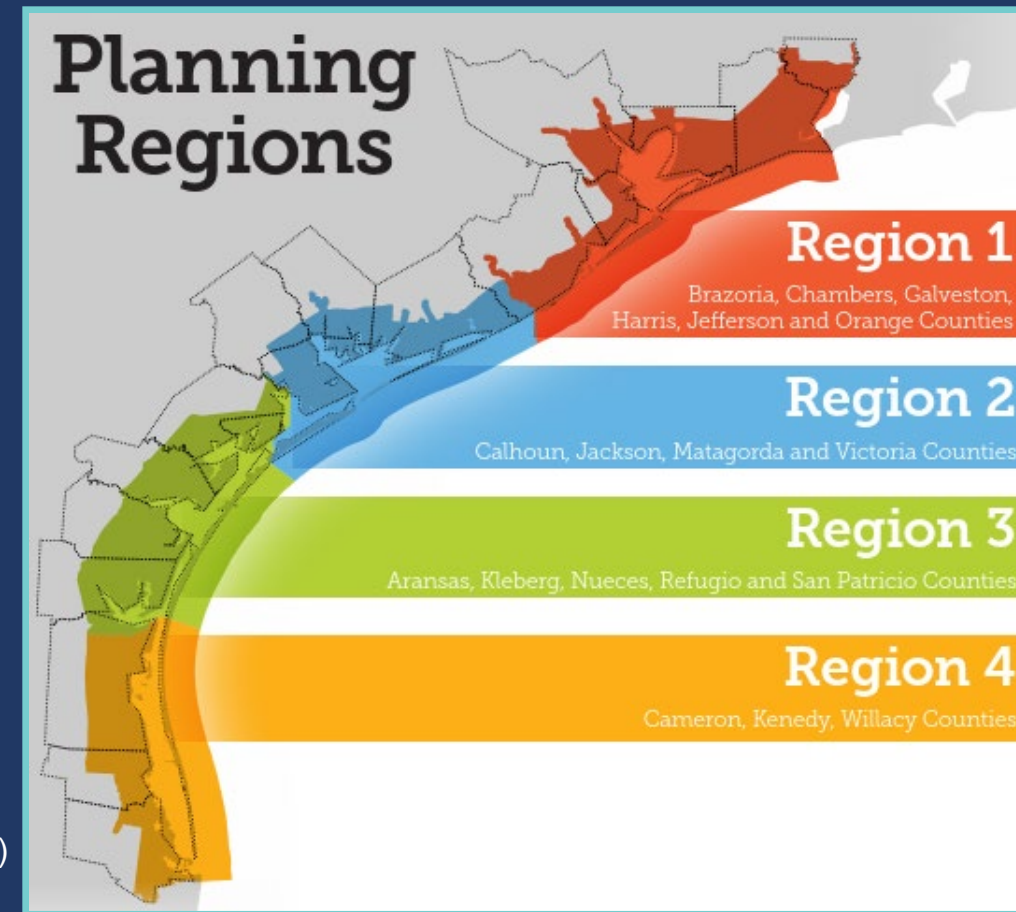
- Boggy Nature Park Shoreline Stabilization (9237)
- Carancahua Bay Habitat Preservation and Enhancement (430)
- Harbor of Refuge Protection and Restoration (9250)
- Sand Point Peninsula Living Shoreline (9245)

Region 3:

- Corpus Christi Bay Wastewater, Stormwater Quality, and Pollution Management Improvements (9136)
- Fulton Beach Road Protection (437)
- Indian Point Marsh Area Living Shoreline (9158)
- Newcomb Point Shoreline Stabilization (9139)
- Port Aransas Nature Preserve Stabilization and Restoration - Phase 2 (9134)
- Shoreline and Wetland Protection on Mustang Island – Phase 1: Cohn Preserve (10005)

Region 4:

- Beach and Dune System Monitoring Program for Willacy and Cameron Counties (9298)
- Resaca System Restoration Project - Phase 1 9235
- Restore Barrier Island Bayside Wetlands on South Padre Island (9063)
- South Padre Island Beach and Dune Management and Restoration (145)



Profile-View

Profile view showing wetland components and typical elevations relative to tidal datums.

HIGH WAVE ENERGY WETLAND (>2 FT WAVES)



LOW WAVE ENERGY WETLAND (<2 FT WAVES)

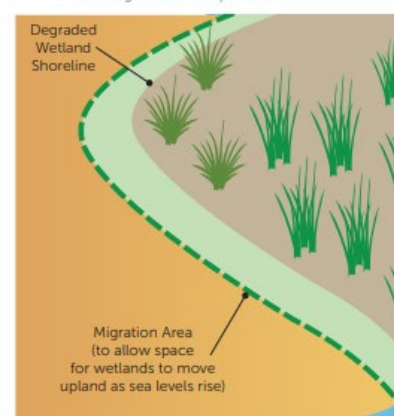


Wetland habitats are estimated to tolerate (by being able to migrate or withstand) a certain depth of RSLR. Estimated amounts of RSLR, in feet, that can be tolerated by Texas wetlands are shown in the table below. These values show the average change in water depth across the whole coast that generates a landcover change for the different wetland types, based on the Sea Level Affecting Marshes Model developed by the Harte Research Institute for the 2023 Texas Coastal Resiliency Master Plan. The model uses mean tide level as the tidal datum.

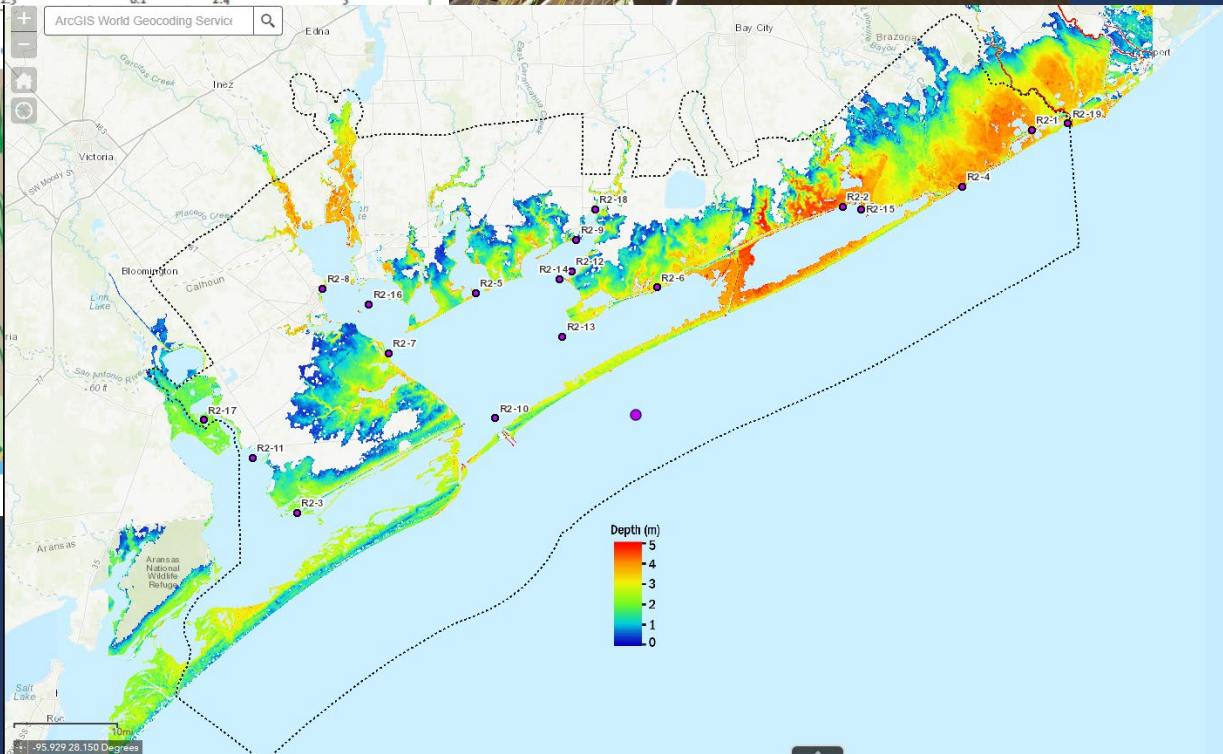
Wetland Type	Transitional Salt Marsh	Regularly Flooded Marsh	Mangrove	Tidal Flat	Irregularly Flooded Marsh
RSLR Depth (feet)	3.4	2.5	6.1	2.4	3

Plan-View

Plan view showing wetland components relative to shoreline



2 Wetland Protection Resilient Design Guide



Communication

- Story Maps
- Modeling Data Viewers
- Resiliency Design Guides
- Ecosystem Services for Hazard Mitigation Tool

www.glo.texas.gov/crmp





Thank you!

Tony Williams

Deputy Director

Coastal Planning and Field Operations

tony.williams@glo.texas.gov

Joshua Oyer

Coastal Resiliency Program Manager

joshua.oyer@glo.texas.gov

Panel Discussion: Environmental Considerations For Sustainability

Lead: **Jeff Pinsky**, Chief of Environmental Branch, Regional Planning and Environmental Center



Paul Kaspar

Environmental Engineer
Environmental Protection Agency
Region 6



Dr. Emma Clarkson

Ecosystem Resources Program Director
Coastal Fisheries-Habitat Assessment Team
Texas Parks and Wildlife Department



Charrish Stevens

Fisheries Biologist
National Oceanic and Atmospheric
Administration (NOAA)
National Marine Fisheries Service,
Galveston Laboratory



Dianna Ramirez

Regional Manager, Upper Coast Field Office
Texas General Land Office



**US Army Corps
of Engineers®**

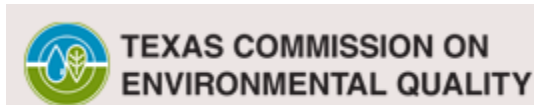


Partnering for a Sustainable Future



INTERAGENCY COORDINATION TEAM

- The Interagency Coordination Team (ICT) meets throughout USACE project life cycles to ensure designs avoid, minimize, and mitigate for adverse impacts to the environment. An additional goal is to optimize environmental benefits where possible.
- The ICT is comprised of Federal and State Agencies that provide USACE with expert advice on “trust resources” and compliance and permitting requirements.





USACE ENVIRONMENTAL OPERATING PRINCIPLES

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- USACE Environmental Operating Principles (EOP) encourages staff to “create mutually supporting economic and environmentally sustainable solutions.” USACE defines sustainable solutions as “solutions that balance environmental, economic, and social benefits and impacts to meet present needs without sacrificing the ability of future generations to meet their needs”
- Sustainability is an umbrella concept that encompasses energy, climate change and the environment to ensure today's actions do not negatively impact tomorrow. USACE is a steward for some of the nation's most valuable natural resources, and must ensure customers receive products and services that provide sustainable solutions that address short and long-term environmental, social, and economic considerations. (<https://www.usace.army.mil/Missions/Sustainability/>)



TOPICS

1. Agency programs and tools
2. Sustainability and Social Considerations
3. 404(b)(1) Guidelines
4. Habitat Assessments
5. NOAA Trust Resources and Divisions
6. Vulnerable habitats
7. Challenges with Ecological Modeling



AGENCY PROGRAMS AND TOOLS



Texas Parks and Wildlife Department (TPWD):

- TPWD Permit required to Introduce Aquatic Plants into Public Waters required prior to all plantings for wetland mitigation and restoration in Texas.
(<https://tpwd.texas.gov/business/permits/>)
- Texas Ecosystem Analytical Mapper
(<https://tpwd.texas.gov/landwater/land/programs/landscape-ecology/team/>)

Texas General Land Office TXGLO:

- Permit Service Center: This service is optional and provided at no charge to customers new to the coastal permitting process or who would like the convenience and benefits of working with the Permit Service Center (PSC) staff. The goal of the PSC is to streamline the permitting process for our applicants. (<https://www.glo.texas.gov/coast/coastal-management/permitting/index.html>)
- GIS Maps and Data: lots of great tools including the Land & Lease Mapping Viewer, Texas Beach Watch, Texas Coasts (fishing spots, boat ramps, camping), Raster Data and Community Development Block Grant Program information.
(<https://www.glo.texas.gov/land/land-management/gis/index.html>)



AGENCY PROGRAMS CONTINUED



NOAA Fisheries:

- Essential Fish Habitat Mapper - This one-of-a-kind tool allows users to discover where managed fish species spawn, grow, or live in a chosen location on the map.
(<https://www.habitat.noaa.gov/apps/efhmapper/>)

Environmental Protection Agency (EPA):

- EJScreen: Environmental Justice Screening and Mapping Tool - Provides a nationally consistent dataset and approach for combining environmental and demographic socioeconomic indicators. (<https://www.epa.gov/ejscreen>)

U.S. Fish and Wildlife Service (USFWS):

- Information for Planning and Consultation (IPaC) - USFWS Mapping tool that provides species and habitat information for USFWS trust resources (<https://ipac.ecosphere.fws.gov/>)



SUSTAINABILITY AND SOCIAL CONSIDERATIONS

- In March 2022, the Assistant Secretary of the Army (Civil Works) directed USACE to develop an outreach strategy that “should capitalize on a broad range of community meetings and other organized community-level opportunities and engage communities to truly listen to their needs (<https://www.usace.army.mil/Missions/Environmental-Justice/>).”
- USACE is a steward for some of the nation's most valuable natural resources and must ensure customers receive products and services that provide sustainable solutions that address short and long-term environmental, social, and economic considerations (<https://www.usace.army.mil/Missions/sustainability/>).
- Engaging communities meaningfully: Tailored communication strategies, more frequent community level engagements, use of new tools for planning – for example, the EPA’s Environmental Justice Screening and Mapping Tool (<https://www.epa.gov/ejscreen>)



404(B)(1) GUIDELINES



40 CFR 230

- **Special Aquatic Sites:** Sanctuaries and refuges, Wetlands, Mud flats, Vegetated shallows, Coral reefs, riffle and pool complexes
- **Water Dependent Projects:** “Those projects that require access or proximity to or siting within a special aquatic site to fulfill its basic project purpose.” Cranberry farming and special aquatic site restoration, that is pretty much it.
- **For projects that are “not water dependent,”** there is a rebuttable presumption that there is a better alternative that puts the burden of proof on the Lead Federal Agency or the Permit Applicant and requires an Alternatives Analysis to find the Least Environmentally Damaging Practicable Alternative (LEDPA).
- Questions:
 - What happens when the LEDPA isn’t the “Preferred Alternative?” NED/NER
 - How do you determine what’s “Practicable?”



HABITAT ASSESSMENTS

Example Scenario: A project wants to Beneficially Use Dredge Material to establish new bird rookery island but, they will directly impact other habitat like Submerged Aquatic Vegetation (sea grasses), oyster reef, or other benthic substrate.

- Avoidance, Minimization, Compensatory Mitigation
- Alternatives Analysis
- Relative Resource Availability
- Conversion: Functions and Values
- Ecological Modeling
- Direct vs Indirect Impacts

We All Have a Common Goal: Optimize Outcomes – Best End Result



NOAA TRUST RESOURCES AND DIVISIONS



- **Habitat Conservation Division:** Essential Fish Habitat (EFH) - Fish and other marine species depend on their habitat to survive and reproduce.
<https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper>
- **EFH Consultation:** A consultation with NOAA Fisheries is required whenever a federal agency, including the military, works in an area that will adversely affect essential fish habitat. Together, the agency and NOAA determine how best to conduct coastal development while supporting fish habitat and minimizing or avoiding environmental damage.
- **Protected Resources Division:** Consultations needed for NOAA trust resources protected by the Endangered Species Act of 1973
(<https://www.fisheries.noaa.gov/topic/endangered-species-conservation>) and Marine Mammal Protection Act (<https://www.fisheries.noaa.gov/topic/marine-mammal-protection>).



VULNERABLE HABITATS



- Drivers:
 - Climate Change - Drought/Floods
 - Sea Level Change – resilient designs, adaptability, out-year nourishment
 - Erosion
 - Subsidence
- Strategies:
 - Non-Structural
 - Engineering with Nature (definition) – Performance Info Dilemma
 - Innovative solution



ECOLOGICAL MODELING



Model limitations

How do you communicate modeling limitations with the general public (We were told there would be no math)

Imperfect Science

QUESTIONS?



Keynote Speaker



Justin R. Ehrenwerth
President and CEO
The Water Institute of the Gulf



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CLOSING REMARKS



Byron Williams
Deputy District Engineer
Programs and Project Management
U. S. Army Corps of Engineers
Galveston District



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Nexus of Communities and Flood Risk Management



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