

FINAL REPORT

Project Name: Improving Stormwater Management in Port Aransas

GLO Contract No.: 20-035-000B743

Submitted: March 15, 2021

Prepared by:



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Prepared for:



A Report funded by a Texas Coastal Management Program grant approved by the Texas Land Commissioner pursuant to National Oceanic and Atmospheric Administration award no. NA19NOS4190106.

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Project Description

On August 25, 2017, Hurricane Harvey made landfall on San Jose Island, a few miles northeast of Port Aransas, causing severe damage throughout the community and the local ecosystem. In the aftermath of Harvey, the City of Port Aransas (the City) has become committed to better management of stormwater, increased resiliency to flood events and reduced direct inputs of stormwater into the bay and Gulf of Mexico.

Tourism supports the businesses in Port Aransas with an economic impact of over \$200 million annually. The natural resources of the area, Gulf of Mexico beaches, recreational fisheries and bird watching are all major drivers of tourism in Port Aransas. This economy depends on clean water for recreation and a healthy fishery. Between 2006-2015, the City issued 1,112 new home permits, adding 128 acres of new development to a city that is 12.1 miles² in size. Despite this permitting boom, there are still areas of undeveloped land on the island, but it is rapidly being purchased by developers making this a critical time to improve stormwater management to reduce non-point source (NPS) pollution and protect vital fish habitat.

As of 2019, voluntary use of the “Guidance for Sustainable Drainage on the Texas Coast (GSD)” by Michael Barrett, et al. (2014, and revised in 2019) was strongly encouraged for new development but its use is inconsistent. The City has used CMP Cycle 24 funds to develop recommended sustainable drainage codification based on the GSD. The goal of the project is to reduce NPS pollution into local waters, reduce flooding from improper drainage and high tides, and inform local citizens of the value of coastal resources and their role in ensuring sound management and resiliency.

Project partners include the Coastal Bend Bays & Estuaries Program and the Mission Aransas National Estuarine Research Reserve (NERR) at the University of Texas Marine Science Institute (UTMSI). Success will be measured by the establishment of a Stormwater Advisory Group that meets regularly, completion of a data review report, completion of the Port Aransas Stormwater Management Plan and written ordinance for Stormwater Management ready to present to the Port Aransas City Council for approval.

Task 1: Data Review & Report

In January 2020, the City contracted stormwater planning services with the engineering team Freese & Nichols from San Marcos, TX. Their team was made up of an Urban Planning and Design group consisting of Chance Sparks, Kim Patak, Blaine Laechelin and Kristina McLaren. City Council approval, contract and Data Review Report are in Appendix 1A-C.

The engineering team completed a data review with information provided by City staff in May of 2020. The report summarized best management for



Figure 1. Cover of stormwater Management Report.

stormwater highlighting practices in other communities and identifying actions Port Aransas can take to improve stormwater management.

Task 2: Establish a Stormwater Advisory Group

The City hosted a kick-off Advisory Group meeting in City Hall in Feb. 2020 and invited project partners and community members including: developers, land owners, water district, city public works, City engineer, City Council members, and the Mission-Aransas NERR/UTMSI.

Primary outcomes of the meeting were refining the engineers' scope of work and inviting more participants to take part in future meetings. The group planned to meet regularly to discuss the data review report, evaluate the GSD document and provided feedback to formulate goals based on the report. A list of stakeholder and meeting attendance in Appendix 2.

Task 3: Engineer Presents Findings to Advisory Group & City Council

Freese & Nichols worked with the advisory group to communicate their findings and evaluate the GSD document and collected feedback on applicable sections for use in the City stormwater management plan on April 30, 2020. The presentation is in Appendix 3A. They incorporated feedback from the advisory group and then presented to City Council. The presentation is in Appendix 3B and meeting is available to view within the City's recorded Council Meeting it starts at about 15 minutes into the recording and runs for 20 minutes on YouTube: <https://www.youtube.com/watch?v=8SahjFG9mAY>



Figure 2. Presentation from Chance Sparks with Freese & Nichols to City Council via Zoom.

Takeaways from this meeting include opportunities for improvement with conceptual solutions like utilizing existing permitting systems, non-regulatory ideas, regulations, opportunities for redevelopment, protecting the existing environment, construction practices, development design. Engineers also recommended revising the comprehensive master plan and ordinances.

This laid a good foundation for the stormwater management plan and suggested changes to ordinances for Port Aransas and allowed the City Manager and Council to provide feedback. City Manager David Parsons requested providing a phased in approach “decision package” to tackle all the ideas identified. A table was developed to summarize what can be done and the impacts of each item as a reference for City Council and City staff.

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
BMP 1	Stamp Drainage Structures	(City) (Developer)	★ - ★★ (varies by pollutant type)	1 person icon	1 document icon	Design stamp to be placed on inlets and other drainage structures. Modify or create stormwater maintenance manhole cover as standard detail. Identify source(s) that can produce and supply stamps and manhole covers Identify funding needed for following two years to apply stamps to existing drainage structures.	Apply stamps to existing inlets Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Apply stamps to remaining existing inlets Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.
BMP 2	Protect Natural Conservation Areas	(City) (Developer)	★★	2 people icons	2 document icons	Identify areas that qualify for conservation easement on undeveloped properties and funding needed to obtain Define requirements of maintenance agreements that will be required for future developments	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval Create conservation easements for previously identified areas	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval
BMP 3	Create Green Sustainability Task Force	(City) (Developer)	★	3 people icons	1 document icon	Identify representative(s) from each City department	Define goals of task force Define extents of routine meetings and coordination	Reassess functionality of task force and adjust goals as needed based on experience from first full year	Continue to meet, share sustainability actions amongst departments, and achieve task force determined goals	Continue to meet, share sustainability actions amongst departments, and achieve task force determined goals
BMP 4	Education Workshops	(City) (Developer)	★ - ★★ (varies by pollutant type)	2 people icons	1 document icon	Identify workshops that would be beneficial based on new ordinance revisions and other City actions Identify staff member(s) responsible for organizing workshop Outline workshop(s) and identify expected audience(s)	Host initial workshop Request feedback from audience Use feedback to improve subsequent workshops	Host subsequent workshop	Continue to utilize workshop program as new ordinances, programs, or actions are put into effect	Continue to utilize workshop program as new ordinances, programs, or actions are put into effect

Figure 3. Table with Best Management Practice or Regulatory Approach and timeline of when the City should attempt to implement. This is one of eight pages. The entire table is available in Appendix 4B.

Task 4: Develop a Stormwater Management Plan

The Stormwater Management Plan is a 135 page guidance document that includes goals identified by the advisory group and engineers and identifies objectives to be implemented to reach these goals. Engineers provided technical guidance for new development and ideas to retrofit existing development to improve stormwater quality and reduce stormwater runoff into the Bay. This document an supporting materials will be used by City Staff to update the City’s comprehensive master plan. The City is in the process of hiring a new Assistant City Manager that will be tasked with this. Freese & Nichols Stormwater Plan is in Appendix 4A.

Task 5: Create City Ordinance

Engineers drafted City Ordinances with guidance from the Advisory Group after they met on September 29, 2020. This presentation is in Appendix 5A. They then presented to the City Council on February 25, 2021. Presentation is available in Appendix 5B.

Freese & Nichols presentation to City Council recorded here:

<https://www.youtube.com/watch?v=TO0bkDn0LJ8> (*The Stormwater agenda item comes in around the 30 minute mark*). The presentation has over 50 views at the time of this report and can continue to be used for staff in the future. One of the unintended products of this project taking place during a pandemic is that all the presentations are available for future staff and stakeholders.

Task 6: Education & Outreach

The City will hosted virtual stakeholder workshops for local decision makers, residents, and business owners focusing on the goals identified in the stormwater management plan. Stakeholder comment(s) were recorded. The engineers and advisory group were present and available for questions. The stakeholder comments were considered for the final stormwater management plan and draft ordinance.

The Mission Aransas Reserve and City of Port Aransas created an outreach campaign to communicate the engineers' report and stormwater management plan with the Community. See Appendix 6 for one-page summary of the management plan. This will be placed on the City's website and disseminated via email and social media. A technical article describing multi-stakeholder decision-making on resilience enhancing projects in a Post-Harvey setting has been written by Mission Aransas Reserve staff. The one page summary can be viewed in Appendix 6B and shared [with this link](#).

The screenshot shows a YouTube video player with the title "Stormwater Plan Actions – Impacts". The video content is a presentation slide with the following text:

- Potential Pollutant Reduction:**
 - ★ (slight reduction) – ★★ (significant reduction)
- Cost:**
 - 👤 (slight capital cost) – 👤👤👤 (Significant capital cost)
- Personnel Involved:**
 - 👤 (1 City staff) – 👤👤👤 (Many City staff)
- Bureaucracy:**
 - 📄 (Minimal additional bureaucratic involvement) – 📄📄📄 (significant additional bureaucratic involvement)

On the right side of the slide, there is a blue sidebar with a list of pollutants: Petroleum Products, Nutrients, Bacteria, and Suspended Solids. A blue arrow points from this list towards the "Potential Pollutant Reduction" section. At the bottom of the slide, the logo for "FREESE & NICHOLS" is visible. The video player interface shows "Special City Council Meeting" and "57 views • Streamed live on Feb 25, 2021".

Figure 4. Screenshot from second Zoom presentation to City Council via Zoom on proposed changes to City code from Chance Sparks with Freese & Nichols.

The image shows a one-page summary titled "STORMWATER MANAGEMENT IN PORT ARANSAS: CITIZEN'S GUIDE". The page is divided into several sections:

- ABOUT THE PROJECT:** The City of Port Aransas received grant funding to update its stormwater management plan with help from an outside engineering firm, Freese & Nichols. After looking at City drainage plans, historical data on flooding, and what other cities have done, the firm has provided the City with several recommendations and updates to its code.
- WHY IS IT IMPORTANT?:** Port Aransas is renowned for its excellent fishing, beautiful beaches, and migratory birds, all of which is thanks to good water quality. Coastal development can harm water quality by increasing pollution and removing wetlands, which naturally filter water. A high-quality stormwater plan will help maintain high-quality water.
- PROJECT OUTCOMES:**
 - UPDATES TO CODE:**
 - Stormwater management and drainage ordinances with requirements for new construction and development
 - Landscaping ordinance amended to streamline the current point system and incentivize low-impact design and preservation of natural areas
 - Illicit discharge ordinance to be added to City code
 - Zoning ordinance amended to adopt new green space incentive credits
 - BEST MANAGEMENT PRACTICES:** Thirty recommendations for the City to adopt regarding development practices and outreach strategies over the next five years.
 - STRATEGIC IMPLEMENTATION:** The list of Best Management Practices and Ordinances are ranked by cost and potential pollution reduction.

At the bottom of the page, there are logos for NOAA, the Texas Coastal Management Program, and the National Oceanic and Atmospheric Administration. A footer note states: "A PUBLICATION FUNDED BY A TEXAS COASTAL MANAGEMENT PROGRAM GRANT APPROVED BY THE TEXAS LAND COMMISSIONER PURSUANT TO NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AWARD NO. NA18N05419013S."

Figure 5. One Page summary of Stormwater Improvement Project.

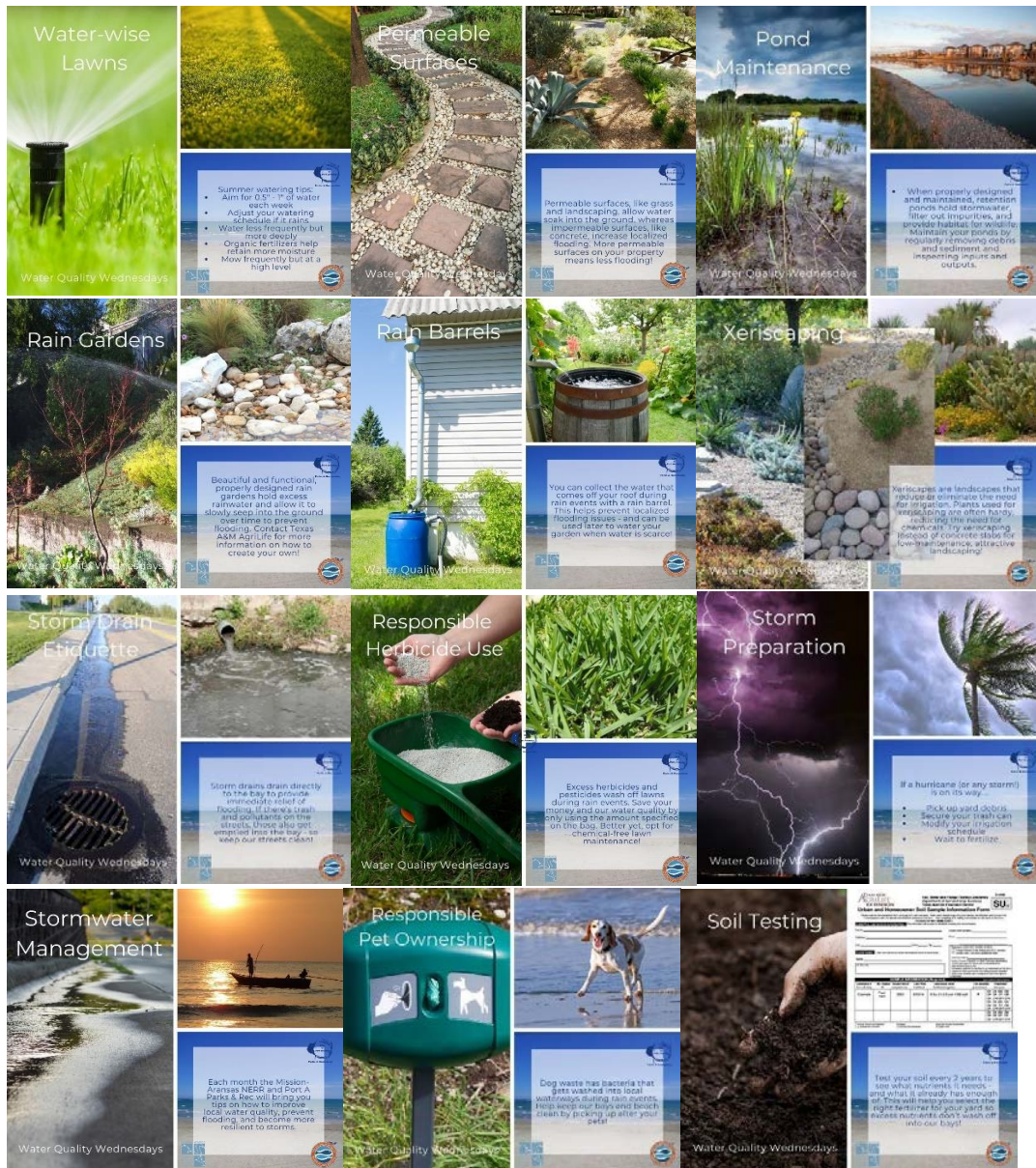


Figure 6. 12 months of social media posts on things the community can do to improve stormwater management.

Task 7: Project Reporting

The City of Port Aransas has prepared and submitted all reports, deliverables, and requests for reimbursement as required in the contract, to CMPreceipts@GLO.TEXAS.GOV. Monthly Progress reports were due to CMPreceipts@GLO.TEXAS.GOV on the 10th day of every month starting with January 10, 2020. Requests for reimbursement have been submitted.

Appendices

Appendix 1: Task 1 Deliverables

A. City Council Resolution – Engineering Contract

RESOLUTION NO. 2019 –R103

A RESOLUTION OF THE PORT ARANSAS CITY COUNCIL AWARDING REQUEST FOR QUALIFICATIONS (RFQ) FOR STORMWATER MANAGEMENT PLANNING SERVICES TO FREESE AND NICHOLS; FUNDING SERVICES FROM THE TEXAS GENERAL LAND OFFICE'S COASTAL MANAGEMENT PROGRAM GRANT; AND AUTHORIZING THE CITY MANAGER TO ACT AS THE EXECUTIVE OFFICER AND AUTHORIZED REPRESENTATIVE OF THE CITY IN ALL MATTERS PERTAINING TO SAID CONTRACT AGREEMENT.

WHEREAS, staff solicited proposals for professional services for planning services for the improvement of stormwater management. All proposals must be clearly marked "SEALED PROPOSAL – STORMWATER MANAGEMENT PLANNING SERVICES" to the City of Port Aransas City Secretary's office, 710 W. Avenue A, Port Aransas, Texas prior to Thursday, November 14, 2019 at 4:00 pm, at which time they were be publicly opened and acknowledged in the City Hall Council Chamber; and

WHEREAS, three (3) proposals were received from the following companies: Freese and Nichols, Civil Tech and Atkins; and

WHEREAS, Request for Qualifications (RFQ) were available on-line at www.cityofportaransas.org or at City Hall, 710 W. Avenue A, Port Aransas, Texas 78373

WHEREAS, notice was posted on October 28, 2019 on the bulletin board at Port Aransas City Hall, 710 W Avenue A, Port Aransas, Texas and on the webpage www.cityofportaransas.org. PUBLISHED in *The South Jetty* in the Thursday, November 3rd & 10th, 2019 editions.

NOW, THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS:

Section 1. That the Port Aransas City Council awards Request for Qualifications (RFQ) for Engineering professional services for planning services for the improvement of stormwater management to Freese and Nichols.

Section 2. That the Port Aransas City Council authorize the city manager to sign said contract documents.

Section 3. It is hereby officially found and determined that the meeting at which this resolution is passed is open to the public as required by law, and that public notice of the time, place and purpose of said meeting was given as required.

B. Engineering Contract

19-119

PROFESSIONAL SERVICES AGREEMENT

STATE OF TEXAS §

COUNTY OF TARRANT §

This Agreement is entered into by City of Port Aransas, Texas, hereinafter called "Client" and Freese and Nichols, Inc., hereinafter called "FNI." In consideration of the Agreements herein, the parties agree as follows:

- I. **EMPLOYMENT OF FNI:** In accordance with the terms of this Agreement, Client agrees to employ and compensate FNI to perform professional services in connection with the Project. The Project is described as Stormwater Management Program.
- II. **SCOPE OF SERVICES:** FNI shall render professional services in connection with Project as set forth in Attachment SC – Scope of Services and Responsibilities of Client which is attached to and made a part of this Agreement.
- III. **COMPENSATION:** Client agrees to pay FNI for all professional services rendered under this Agreement. FNI shall perform professional services as outlined in the "Scope of Services" for a lump sum fee of Ninety-six Thousand, Eight Hundred Seventy-five Dollars, \$96,875.00.

If FNI's services are delayed or suspended by Client, or if FNI's services are extended for more than 60 days through no fault of FNI, FNI shall be entitled to equitable adjustment of rates and amounts of compensation to reflect reasonable costs incurred by FNI in connection with such delay or suspension and reactivation and the fact that the time for performance under this Agreement has been revised.

- IV. **TERMS AND CONDITIONS OF AGREEMENT:** The Terms and Conditions of Agreement as set forth as Attachment TC – Terms and Conditions of Agreement shall govern the relationship between the Client and FNI.

Nothing under this Agreement shall be construed to give any rights or benefits in this Agreement to anyone other than Client and FNI, and all duties and responsibilities undertaken pursuant to this Agreement will be for the sole and exclusive benefit of Client and FNI and not for the benefit of any other party.

This Agreement constitutes the entire Agreement between Client and FNI and supersedes all prior written or oral understandings.

This contract is executed in two counterparts. IN TESTIMONY HEREOF, Agreement executed:

Freese and Nichols, Inc.
 By: Draw Haradin
Draw Haradin
 Print Name and Title
 Date: 2/17/2020
 ATTEST: _____

City of Port Aransas, Texas
 By: David Parsons
David Parsons City Manager
 Print Name and Title
 Date: 2/24/20
 ATTEST: _____

C. Data Review conducted by Freese & Nichols



City of Port Aransas Stormwater Management Report

June 30, 2020

A publication funded by a Texas Coastal Management Program grant approved by the Texas Land Commissioner pursuant to National Oceanic and Atmospheric Administration Award No. NA18NOS4190133



Appendix 2: Task 2 Deliverables

A. Stakeholder Advisory Group List and Attendance

Stakeholder Invites										
First Name	Last Name	Affiliation	Phone	Email	Agreed to Participat			9/29/20	1/20/21	
Mark	Grosse	Real-estate & Landowner	[REDACTED]	[REDACTED]						
Jana & Paul	Snow	Landowner, real estate, builder	[REDACTED]	[REDACTED]	0					
Brandon	Lafayette	Builder	[REDACTED]	[REDACTED]						
John	Morris	Port Aransas Conservancy	[REDACTED]	[REDACTED]	1					
Annetta	Adams	Resident	[REDACTED]	[REDACTED]						
Sharon	Odom	La Joya HOA		[REDACTED]						
Cherrie	Stunz	Island Moorings HOA	[REDACTED]	[REDACTED]	1					
Sandra	Clark	Family Business		[REDACTED]						
Brenda & Les	Porter	Garden Club		[REDACTED]	1			1		
Daniel	Mazoch	Cinnamon Shore Engineer	[REDACTED]	[REDACTED]	1					
Chad	Shimaitis	Builder	[REDACTED]	[REDACTED]						
Richard	Kay	Mustang Island Construction	[REDACTED]	[REDACTED]						
Marty	Karr	Resident	[REDACTED]	[REDACTED]						
Gail	Abernathy	Resident	[REDACTED]	[REDACTED]						
Mike	Parker	Resident, Beach Walk		[REDACTED]	1			1	1	
Mark	Bently	Garden Club	[REDACTED]	[REDACTED]	1					
Steve	Lanoux	Beachwalk I		[REDACTED]	1			1		
Keith	McMullin	Realtor/Sunflower	[REDACTED]	[REDACTED]						
Greg	Smith	Pioneer RV		[REDACTED]						
Gabe	Goodman	Port A RV		[REDACTED]						
Bill	Gavit	Marlin Court Apartments		[REDACTED]	1					
Kay	Culpepper	Resident		[REDACTED]	1				1	
Scot				[REDACTED]	1					
Stakeholder Total					10			3	2	

Advisory Group

<i>First Name</i>	<i>Last Name</i>	<i>Affiliation</i>	<i>Phone</i>	<i>Email</i>	<i>Agreed to Participat</i>	<i>2/4/2020</i>	<i>7/16/2020</i>	<i>9/29/2020</i>	<i>1/20/21</i>	<i>2/25/2021</i>
David	Parsons	City Manager	[REDACTED]	[REDACTED]	1	1	1	1		1
Colleen	Simpson	Parks Director	[REDACTED]	[REDACTED]	1	1	1	1	1	1
Joan	Holt	City Council	[REDACTED]	[REDACTED]	1	1		1	1	1
Rae	Mooney	Nature Preserve Manager	[REDACTED]	[REDACTED]	1	1	1	1	1	1
Sarah	Cunningham	Mission-Aransas NERR	[REDACTED]	[REDACTED]	1	1	1	1	1	
Beth	Owens	City Council	[REDACTED]	[REDACTED]	1			1		1
Chuck	Crawford	City Council	[REDACTED]	[REDACTED]	1		1	1	1	1
Frank	Morgan	Planning and Zoning	[REDACTED]	[REDACTED]	1	1	1	1		
Jim	Urban	City Engineer	[REDACTED]	[REDACTED]	1	1				
Mark	Young	Nueces County Water District	[REDACTED]	[REDACTED]						
Nicole	Boyer	Building Dept.	[REDACTED]	[REDACTED]	1			1		
Rick	Adams	Development Director	[REDACTED]	[REDACTED]	1			1		1
Garrett	Kypke	Builder	[REDACTED]	[REDACTED]	1	1				
Judy	Parker	Resident, Beach Walk, environmental expertise	[REDACTED]	[REDACTED]	1			1	1	
Cliff	Strain	Museum Director	[REDACTED]	[REDACTED]	1	1		1	1	
Adrien	Hilmy	CBBEP	[REDACTED]	[REDACTED]				1		
Advisory Total					14	9	6	13	7	7
Total Participants					24	9	6	16	9	7

Appendix 3: Task 3 Deliverables

A. Stormwater Management Presentation to Advisory Board on 4/30/2020



B. Stormwater Management Presentation to City Council on 7/16/2020

Port Aransas Stormwater Management Report

Acknowledgements

The City of Port Aransas would like to recognize the following for their contributions to the contents to this report:

- ❖ City of Port Aransas, Mayor and City Council
 - Charles R. Bujan, Mayor
 - Wendy Moore, Mayor Pro-Tem and City Council Place 1
 - Beverly Bolner, City Council Place 2
 - Beth Owens, City Council Place 3
 - Bruce Clark, City Council Place 4
 - Charles Crawford, Jr., City Council Place 5
 - Joan Holt, City Council Place 6
- ❖ City of Port Aransas, City Staff
 - David Parsons, City Manager
 - Colleen M. Simpson, M.S., Parks and Recreation Director
 - Rae Mooney, Nature Preserve Manager
- ❖ Mission-Aransas NERR of the UT Marine Science Institute
 - Sarah Cunningham, Coastal Training Program Coordinator
- ❖ Advisory Committee (in addition to the above)
 - Frank Morgan
 - Jim Urban, P.E.
 - Mark Young
 - Nicole Boyer
 - Rick Adams
 - Garrett Kypke
 - Judy Parker
 - Cliff Strain

Freese and Nichols, Inc.

Chance Sparks, AICP, CNU-A
Blaine Laechlein, P.E., CFM
Kristina McLaren, EIT, ENV SP



Appendix 4: Task 4 Deliverables

A. Stormwater Management Plan



Stormwater Management Plan and Recommended Ordinances

April 1, 2021

A publication funded by a Texas Coastal Management Program grant approved by the Texas Land Commissioner pursuant to National Oceanic and Atmospheric Administration Award No. NA18NOS4190153



B. Prioritized Recommendation Summary Table for City Staff

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
BMP 1	Stamp Drainage Structures	(City) (Developer)	★ - ★★ (varies by pollutant type)	1 person icon	1 person icon	Design stamp to be placed on inlets and other drainage structures. Modify or create stormwater maintenance manhole cover as standard detail. Identify source(s) that can produce and supply stamps and manhole covers Identify funding needed for following two years to apply stamps to existing drainage structures	Apply stamps to existing inlets Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Apply stamps to remaining existing inlets Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.
BMP 2	Protect Natural Conservation Areas	(City) (Developer)	★★	2 people icon	2 person icons	Identify areas that qualify for conservation easement on undeveloped properties and funding needed to obtain Define requirements of maintenance agreements that will be required for future developments Create conservation easements for previously identified areas	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval
BMP 3	Create Green Sustainability Task Force	(City) (Developer)	★	3 people icon	1 person icon	Identify representative(s) from each City department Define extents of routine meetings and coordination	Define goals of task force Reassess functionality of task force and adjust goals as needed based on experience from first full year	Reassess functionality of task force and adjust goals as needed based on experience from first full year	Continue to meet, share sustainability actions amongst departments, and achieve task force determined goals	Continue to meet, share sustainability actions amongst departments, and achieve task force determined goals
BMP 4	Education Workshops	(City) (Developer)	★ - ★★ (varies by pollutant type)	2 people icon	1 person icon	Identify workshops that would be beneficial based on new ordinance revisions and other City actions Identify staff member(s) responsible for organizing workshop Outline workshop(s) and identify expected audience(s)	Host initial workshop Request feedback from audience Use feedback to improve subsequent workshops	Host subsequent workshop	Continue to utilize workshop program as new ordinances, programs, or actions are put into effect	Continue to utilize workshop program as new ordinances, programs, or actions are put into effect

Appendix 5 Deliverables

A. Presentation to Stakeholders on 9/29/2020



B. Presentation to City Council on 2/25/20



Port Aransas Stormwater Management Program Development

City Council
February 25, 2021



C. Proposed Illicit Discharge Ordinance

ILLICIT DISCHARGE ORDINANCE

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 9 to establish an illicit discharge ordinance (entire ordinance)*
- *ORD 10 to establish construction monitoring*
- *ORD 12 to establish and enforce erosion and sedimentation controls*

- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 3 to incentivize reducing disturbance of natural land/systems*
- *ORD 6 to improve parking specifications related to landscape placement supporting improved stormwater runoff*
- *ORD 15 to incentivize implementation of green stormwater infrastructure for both new development and redevelopment*

ORDINANCE NO. _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH REGULATION OF ILLICIT DISCHARGES OF POLLUTANTS INTO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4); PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

D. Amended Landscape Ordinance

LANDSCAPE ORDINANCE AMENDMENT

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 3 to incentivize reducing disturbance of natural land/systems*
- *ORD 6 to improve parking specifications related to landscape placement supporting improved stormwater runoff*
- *ORD 15 to incentivize implementation of green stormwater infrastructure for both new development and redevelopment*

ORDINANCE NO. _____ - _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH LANDSCAPING REQUIREMENTS AND LANDSCAPE INCENTIVES AND CREDITS FOR THE IMPLEMENTATION OF LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT FACILITIES; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

E. Proposed Stormwater Management and Drainage Ordinance

STORMWATER MANAGEMENT AND DRAINAGE ORDINANCE

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- **ORD 1 – Section 5(c) adopts GSI criteria and makes a cross-reference to incentives**
- **ORD 3 – Section 6(c)(2) establishes that clearing and grubbing should not take place without required permits, and erosion and sedimentation controls.**
- **ORD 4 – Section 1(f) provides drawdown requirements by adopting the manuals, specifying drawdown for enhanced detention wet ponds and bioretention design, and Section 5(b) reiterates this.**
- **ORD 10 – Section 6 addresses construction monitoring**
- **ORD 11 – Section 7 addresses post-construction maintenance of stormwater controls**
- **ORD 12 – Section 6 includes construction monitoring and enforcement provisions, including erosion and sedimentation controls**
- **ORD 13 – Section 5(d) Option 2 and Option 3 creates mitigation of impervious area through green stormwater infrastructure controls**
- **ORD 15 – Section 1(f), ordinance in general establishes GSI criteria**

ORDINANCE NO. _____ - _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH REQUIREMENTS FOR STORMWATER MANAGEMENT AND DRAINAGE; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

F. Amended Zoning Ordinance

ZONING ORDINANCE AMENDMENT

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 6 to improve parking specifications by requiring permeable surfaces when the parking provided exceeds the required minimum by more than 25 percent.*
- *ORD 14 to regulate cut and fill practices for a broader range of project types.*
- *ORD 16 to establish Green Stormwater Infrastructure criteria and incentivize implementation of green stormwater infrastructure for both new development and redevelopment*
- *ORD 17 to broaden applicability of development permit to capture a broader range of project types*

ORDINANCE NO. ____ - ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH ENVIRONMENTAL CONTROLS AND SURFACING STANDARDS IN THE ZONING ORDINANCE; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Appendix 6: Task 6 Deliverables

A. One Page Summary Document



STORMWATER MANAGEMENT IN PORT ARANSAS: CITIZEN'S GUIDE

ABOUT THE PROJECT

The City of Port Aransas received grant funding to update its stormwater management plan with help from an outside engineering firm, Freese & Nichols. After looking at City drainage plans, historical data on flooding, and what other cities have done, the firm has provided the City with several recommendations and updates to its code.

WHY IS IT IMPORTANT?

Port Aransas is renowned for its excellent fishing, beautiful beaches, and migratory birds, all of which is thanks to good water quality. Coastal development can harm water quality by increasing pollution and removing wetlands, which naturally filter water. A high-quality stormwater plan will help maintain high-quality water.

PROJECT OUTCOMES

UPDATES TO CODE

- Stormwater management and drainage ordinance with requirements for new construction and development
- Landscaping ordinance amended to streamline the current point system and incentivize low-impact design and preservation of natural areas
- Illicit discharge ordinance to be added to City code
- Zoning ordinance amended to adopt new green space incentive credits

BEST MANAGEMENT PRACTICES

Thirty recommendations for the City to adopt regarding development practices and outreach strategies over the next five years.

STRATEGIC IMPLEMENTATION

The list of Best Management Practices and Ordinances are ranked by cost and potential pollution reduction.



A PUBLICATION FUNDED BY A TEXAS COASTAL MANAGEMENT PROGRAM GRANT APPROVED BY THE TEXAS LAND COMMISSIONER PURSUANT TO NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AWARD NO. NA18NCS4190153.

B. Technical Report

**Post-Hurricane Harvey multi-stakeholder decision-making on stormwater
resilience enhancing projects**

By Sarah Cunningham
Coastal Training Program Coordinator
Mission-Aransas NERR
for the City of Port Aransas and Coastal Bend Bays and Estuaries Program
as a project within the
Coastal Management Program of the Texas General Land Office

March 31, 2021



A PUBLICATION FUNDED BY A TEXAS COASTAL MANAGEMENT PROGRAM GRANT
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City of Port Aransas Stormwater Management Report

June 30, 2020

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 - Sarah Cunningham, Coastal Training Program Coordinator

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 - Frank Morgan
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Article I. Introduction

Section 1. Purpose

The City of Port Aransas (City), in conjunction with the Coastal Bend Bays & Estuaries Program and the Mission-Aransas National Estuarine Research Reserve (NERR) at the University of Texas Marine Science Institute (UTMSI), engaged Freese and Nichols, Inc. (FNI) to assist in sustainable drainage codification. Currently, the City of Port Aransas relies on voluntary use of the *Guidance for Sustainable Drainage on the Texas Coast* (GSD) by Michael Barrett, et al. (2014, and revised in 2019). However, its use has been inconsistent and lacks voluntary incentive. Port Aransas has experienced substantial increases in development permitting and land development, prompting interest in improving stormwater management to reduce non-point source (NPS) pollution and protect vital coastal ecology.

The work is in association with the Texas General Land Office (GLO) Coastal Management Program (CMP) Cycle 24 program funds awarded to the City under GLO Contract No. 20-035-000-B743. The goal of the project is to reduce NPS pollution into local waters, reduce flooding from improper drainage and high tides, and inform local citizens of the value of coastal resources and their role in ensuring sound management and resiliency.

Section 2. Methodology

Preparation of this report involved four key elements:

1. Data Reconnaissance

Several baseline datasets, reports, and observations were reviewed, including, but not limited to, 2018 United States Geological Survey (USGS) Light Detection and Ranging (LiDAR) data; Harvey storm surge elevations, Storm Water Master Plan, The GSD; historical high-water mark data for Port Aransas, including relative sea-level rise model projections; as-built infrastructure information; and direct observation.

This information enhanced understanding of current development practices, allowing identification of potential sources for the excess sediment and conditions that might

be worsening the flooding and negatively impacting the coastal ecology of Port Aransas.

2. Policy Review

The City's current drainage criteria, code, and draft landscape ordinance were reviewed in comparison to State and Federal regulations, the GSD and innovative stormwater and land development practices. This allowed the identification of opportunities to improve the City's land development regulations and maintenance requirements to meet the City's goals.

3. Permitting

Understanding the Federal and State permitting environment is critical to success in addressing the City's challenges, both for existing developed areas in need of retrofit and new greenfield development. Existing permitting systems at the federal and state levels were reviewed to identify applicable permits that could strengthen, enforce, serve the City's needs within its administrative and financial capacity, while avoiding duplication and unnecessarily bureaucratic processes at the local level.

4. Conceptual Solutions Development

Conceptual solutions were developed to achieve the City's missions of improving coastal ecology while reducing flooding conditions through low impact development (LID) implementation. Stormwater management controls were reviewed and precedent approaches were evaluated to create tangible and cost-effective solutions.

Article II. Precedent Approaches to Stormwater Management

Section 1. Introduction

FNI reviewed existing documents on sustainable development and best management practices provided by organizations and other municipalities both locally and from different regions with similar coastal environment challenges. The purpose of each document, along with specific, relevant findings, is included below. The reviewed materials and practices provide a comprehensive review of ideas, various approaches, standard practices, and lessons learned when it comes to sustainable development and improved water quality.

Section 2. Guidance for Sustainable Drainage on the Texas Coast

The *Guidance for Sustainable Drainage on the Texas Coast* (GSD) was developed by the Center for Research in Water Resources at the University of Texas to support small communities in the Texas Coastal Zone with a focus on new development. The chapters are written for the various parties that play a role in drainage systems.

1. The document lists methods that residents can enact to improve stormwater runoff from their properties, emphasizing that anyone can play a role in enhancing runoff. Methods include water-smart landscaping, using native plants, fertilizing with compost, and integrated pest management. Proper disposal of household waste and animal waste are also important factors that rely on resident action and policing.
2. The chapter on site design for new development starts with a focus on preserving sensitive areas, such as floodplains, wetlands, critical habitat areas, as well as natural depressions and buffers, as seen in Figure 1. Geotechnical findings, such as soil characteristics, permeability, infiltration rate, and depth to the water table, are a key indicator of sensitive areas. Conservation design practices include aggregating shared open space, clustering built features, and reducing clearing and grubbing. Lastly, many ways to reduce and disconnect impervious cover are mentioned. Shared driveways, reduced driveway width and setback, reduced cul-de-sac radius, application of permeable pavement, and a sidewalk separated from other impervious areas are all options for residential development. Commercial development can apply

a reduction or elimination of parking requirements that cause excessive impervious cover, shared parking calculations, and disconnect impervious surfaces.

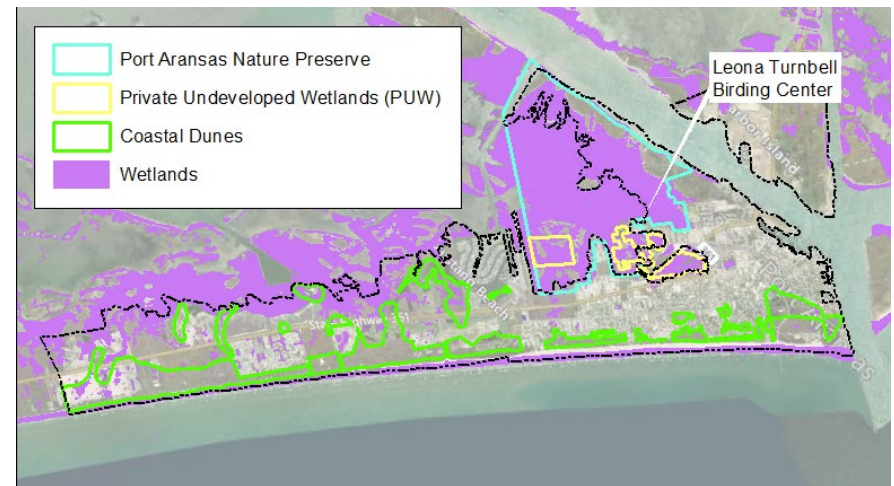


Figure 1: City's sensitive areas that should be preserved.

3. The GSD describes minimum requirements to achieve a sustainable design. Designs with more than 20 percent impervious cover have two options to meet sustainable drainage requirements:
 - a payment in lieu where a developer pays a certain amount per impervious acre created, which would go towards the management of stormwater runoff from the site.
 - Apply one or more structural practices to mitigate water quality and runoff volume from the created impervious cover.

The document covers submittal requirements as well as design criteria and guidelines for the structural practices appropriate for the region: vegetated swale and filter strips, porous pavement (permeable pavers, porous asphalt, and concrete), enhanced detention, bioretention (rain gardens, stormwater planter boxes), and infiltration.

4. There are key opportunities for structural practices in the common types of new development.

- Single-family homes are an excellent opportunity to apply vegetated filter strips and swales.
- Multi-family developments are an ideal situation for bioretention and infiltration areas. Permeable pavers for parking and driveways are a functional and aesthetic option for all residential development.
- Commercial, retail, and office development typically are high in impervious area and, therefore, have the most potential for reduction. Green options for these types of development include bioretention in the median or along any curb line, filter strips along edges, and trees. A couple more practices include covered dumpster area and grading to distribute runoff flows in different directions and porous pavement.
- Downtown areas are identified as ideal locations for bioretention and porous pavement, as well as the application of disconnected impervious cover.

Detention is commonly used to address runoff requirements. Minor adjustments to detention pond requirements can have significant benefits. Application of more wet pond or wetland characteristics have aesthetic and water quality improvements. Lastly, the document addresses that all waterfront properties should always include a riparian buffer.

Section 3. Harris County Low Impact Development & Green Infrastructure Design Criteria for Storm Water Management

The Harris County Flood Control District (HCFCD) document states the primary goal of LID is to preserve existing hydrology and then mitigate any unavoidable changes. The document provides criteria for projects that choose to utilize LID to meet development requirements. The approval process starts with a required pre-project meeting with HCFCD and the Permit Office of the County Engineering Department. This meeting is intended to expedite the review process through earlier communications. Any approvals are valid for two years.

There are stormwater quality treatment requirements for any site greater than or equal to one acre. The first 1" of runoff must be treated, and a Storm Water Quality Permit and Storm Water Quality Management Plan are both required.

Disconnecting roof runoff and impervious surfaces is noted as ideal for single family developments and has applicability to other types of development sites. This practice can help reduce total volume and peak rates.

The document has an appendix devoted to *in situ* testing of bioretention media. This testing is key for bioretention systems and should be performed at the perimeter of the site because the area is most likely to be affected by sediment runoff.

HCFCD identifies construction sequencing and tree preservation as priorities during development. Lastly, HCFCD states the LID techniques should not include maintenance responsibility for the Flood Control District.

Section 4. San Antonio River Basin Low Impact Development Technical Design Guidance Manual

This document from the San Antonio River Authority (SARA) has an approach that states LID practices integrate stormwater management into natural landscapes. The document points out LID reduces the need for traditional drainage infrastructure. SARA approaches LID guidance at three scales: the site/block, the community/neighborhood, and the regional/large watershed scales. Applying LIDs consistently on each site or block development ultimately benefits the whole community in terms of stormwater performance as well as the reduced cost to retrofit and maintain stormwater infrastructure. The neighborhood guidance approach can influence growth patterns. Lastly, the regional LID approach should focus on where and how to develop. The fundamental planning concepts of LID are noted as use hydrology as the integrating framework; use distributed practices as opposed to centralized approaches; control stormwater at the source; use simple, non-engineered methods; and create a multifunctional landscape.

Constraints and limitations that can be identified in a preliminary site assessment include:

- Slow infiltrating soils
- Soil contamination
- Steep slopes
- The adjacent foundation of structures
- The high seasonal water table

A drainage area characterization checklist is provided to record site conditions. Best Management Practice (BMP) characterization checklists are available to assist in determining whether a certain BMP is ideal for the site.

The review process for LID is more iterative than typical, and early communication is key. Meeting with regulatory staff early in the process to agree upon stormwater management goals and document analysis criteria is beneficial. There is a need for multi-discipline input from geotechnical engineers, structural engineers, landscape architects, water resources engineers, site planners, and building architects during the site planning process. BMP siting, sensitive area preservation, soil definition, and natural topography significantly influence smaller storm events used for regulatory checks.

There are four types of local incentives (identified from FEMA) commonly used at the local level:

- Storm Water Utility Fee (SWUF) discount or credit
- Development incentives
- Rebate and installation financing
- Awards and recognition programs

Alternatively, developers can choose a FILO (fee in lieu of) by purchasing offsite credits instead of meeting 100 percent of requirements on-site. This latter option requires a watershed approach to credit programs.

Execution considerations include defining a proper construction sequence, construction observation by a qualified inspector and ensuring temporary erosion control practices are properly implemented and maintained.

Section 5. Other Precedents and Experience

Additional documents were reviewed that had a more limited applicability to Port Aransas than those previously discussed. Additionally, FNI has significant experience with stormwater management from the regulatory and design perspectives.

1. North Central Texas Council of Governments

The NCTCOG Stormwater Controls for Site Developments defines the various engineered facilities that can be used to mitigate changes to stormwater runoff

volume and quality due to development. NCTCOG mentions stormwater inlet stamping as an easy way to promote water quality education.

2. Aransas County

The Development Guidelines & Stormwater Management Design Criteria for Aransas County designates stormwater quality credits and incentives for certain LID practices. The credits vary. For example, the Stormwater Quality Credit for the disconnection of impervious cover is a reduced impervious cover by 10 percent for the area served. A developer can benefit from showing a reduction in impervious cover because it facilitates meeting impervious cover requirements and potentially enables more land to be developed while still meeting these requirements.

3. Escambia County, Florida (Highway 30A)

Escambia County has a Low Impact Design BMP Manual that points out how LID concepts, design criteria, and specifications are sometimes very similar to conventional practices. LID BMPs have many benefits, including increased developed potential. One method used is floating wetland islands or mats. The plants on the floating wetland extract the nutrients that have accumulated in detained stormwater runoff.

4. Sarasota County, Florida (Highway 30A)

Sarasota has a Low Impact Development Guidance Document. LID is voluntary for development in the county but is one resource used to meet stormwater quality and quantity requirements outlined in the land development regulation and comprehensive plan. The importance of a site assessment and how high water tables limit infiltration-based LID BMPs is particularly relevant to Port Aransas.

5. The United States Environmental Protection Agency

The EPA has multiple resources that define the suitability for each of the various stormwater management practices for green infrastructure.

6. City of Virginia Beach

The City developed a thorough document on Sea Level Rise Adaptation Strategy. The focus on flood resiliency of the critical economic sectors is especially pertinent to Port Aransas. The economy of a key tourist destination is highly dependent on the

success of specific sectors. Improving flood resiliency thus improves economic resiliency.

7. Blue Water Baltimore

This organization plans and constructs green sustainable infrastructure on public and private property. The implementation challenges they faced resulted in recommendations for other communities. They mention updating city code with voluntary Green Stormwater Infrastructure (GSI) and developing an inter-departmental GSI task force to encourage collaborative approaches as well as consistent criteria and guidance.

8. FNI Experience

The references discussed previously have noted many beneficial practices for Texas and out of state coastal municipalities. Through FNI's work in stormwater management on both the regulatory and design side of this topic, there are a few more notes to build upon the previously discussed points.

The following are effective GSI controls that are frequently used: Stormwater/Rainwater Cisterns/Barrels, Bioswales, Green Roofs, Constructed Wetlands, Bioslope, Vegetative Swale, Soil Restoration, and Manufactured Systems.

In addition to the GSI controls listed for the different types of structural development, Single-Family Residential Developments are an excellent opportunity for disconnected downspouts, rainwater barrels, rain gardens, and soil restoration. Wet ponds and extended detention are commonly used GSI controls for Multi-Family Residential developments. Lastly, Commercial Developments commonly utilize wet ponds and green roofs.

Article III. Existing Approaches and Conditions in Port Aransas

Section 1. Introduction

The City's existing policies, ordinances, plans were reviewed to identify current practices and plans for the future. Additionally, conditions relative to water quality, sustainable

drainage, and flood risk were also reviewed. The purpose of these reviews is to distinguish existing strategies that are benefitting the City, recognize areas for improvements, and note any criteria that might inhibit proposed approaches.

Section 2. Port Aransas Storm Drain Design Manual and Drainage Master Plan

The current Drainage Design Manual and Drainage Master Plan were last revised in 2005. The revision applies to the downtown area. The 1992 edition of the plan applies to the remaining portions of Port Aransas. The policy states that all habitable parts of homes and businesses must be elevated to at least the FEMA 100-year flood elevation of 8.0 feet above Mean Sea Level (MSL). It also notes it is only economically feasible to design storm drainage facilities for a 2-year frequency storm. As a result, detention is designed for the 2-year return event. Pumps are considered unacceptable.

The stated minimum slopes and grading requirements vary based on cover, but all are required to provide positive drainage away from buildings towards streets or storm drainage facilities. All points of the finished floor of any structure must be above the centerline of the adjacent perimeter street.

The Master Plan is designed on the basis that only 20% of the drainage area outside of the downtown area is covered with impervious material. The policy states storm drainage shall be transported in closed storm sewer except where designated to be an open channel in the Master Plan. The minimum pipe size permitted is a 12" diameter.

The Design Manual uses the Rational Method to calculate storm runoff, and three types of typical road sections are identified: a 24-foot wide minor street, a 28-foot wide collector street, and a 40-foot wide major/arterial collector street. These widths correspond with the minimum pavement widths in the current street design specifications (adopted 1989).

Section 3. Ordinance Content and Regulatory Enforcement

The City code, most recently published to Municode in 2017, was reviewed for ordinances that may conflict with sustainable development.

1. Chapter 20 – Streets, Sidewalks and Other Public Ways

A permit is required for the construction, replacement, or enlargement of a driveway approach or parking area. The permit application requires a sketch to scale. Driveway approaches must be constructed of asphalt or concrete.

If the building inspector determines an engineer is required to fix curbs, sidewalks, driveways, or ramps, the services will be at no cost to the City.

The City is responsible for furnishing and installing two pieces of drainage tile per property where the lot has an existing drainage ditch that would limit vehicle access to the property, and the development is not required to meet design specification guidelines for subsurface drainage. The drainage tile shall be no smaller than 15" for most cases.

2. Chapter 21 – Subdivisions

A building permit is not required for an addition that constitutes no more than 25% of the existing floor space living area or 500 square feet, whichever is larger.

Additionally, no building permit is required to build a garage or carport or an addition to a carport or garage as long as the garage or carport, as finished, is less than 1,000 square feet. Also, a building permit is not required to build fences less than eight (8) feet high.

The procedural structure of subdivision platting has limited opportunities to address stormwater management proactively.

3. Recent Landscaping Ordinance

Port Aransas recently adopted an update to its landscape ordinance. The ordinance uses a point system calibrated to reflect 20 percent of the lot area. Different types of plants receive various credits, generally based on height. It is not clear whether this is based on mature height or height at the time of installation. It includes thresholds to trigger landscaping retrofitting in addition to new construction, with landscape design approval tied to the building permit. The ordinance accounts for dune protection, sight visibility triangles, landscape maintenance, irrigation, and application within easements. The building department is responsible for maintaining an appropriate recommended plant species list. The ordinance is silent regarding treatment and design criteria of enhanced water quality and detention features, such as wet ponds.

Section 4. Soil Typology and Elevation Considerations

The naturally occurring soils throughout the City range from poorly drained (approximately 65 percent of the City) to somewhat excessively drained (approximately 25 percent of the City). Depth to the water table is less than six inches for the majority of the soils. Of the remaining areas to be developed according to the future land use plan, approximately 57% have poorly drained soils with a shallow depth to the water table, 29% are currently coastal sand dunes with somewhat excessively draining soil and no depth to the water table, and 10% is also somewhat excessively drained with 26-72" depth to the water table. Figure 2 show the soil type by NRCS Map Unit Symbols for the for the undeveloped areas.

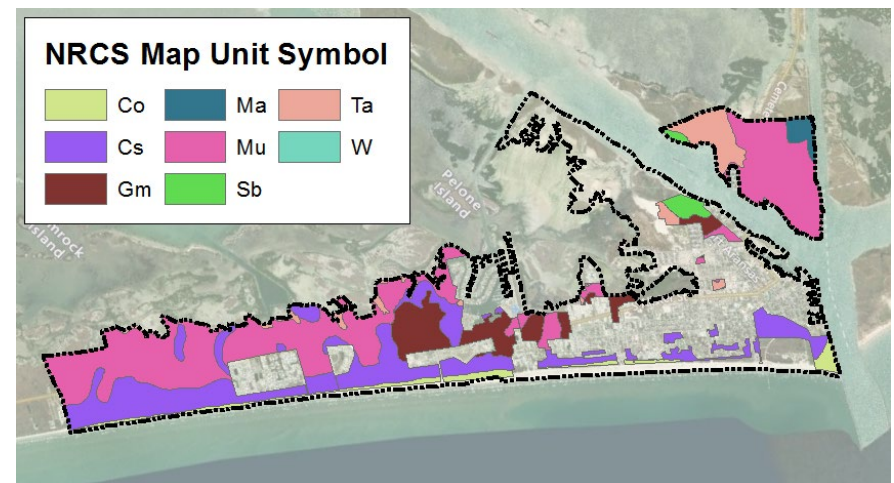


Figure 2: NRCS Map Unit Symbol

The City is situated on a narrow barrier island with most of the ground elevation well below the high point elevation of approximately thirteen (13) feet above mean sea level. This means flowpath length and elevation difference is often limited, reducing the slope variability that stormwater drainage systems rely upon for efficiency and effectiveness. The stormwater runoff ultimately drains to one of the following large bodies of water shown in Figure 3: the Gulf of Mexico, the Aransas Pass ship channel, or the Corpus Christi Bay.

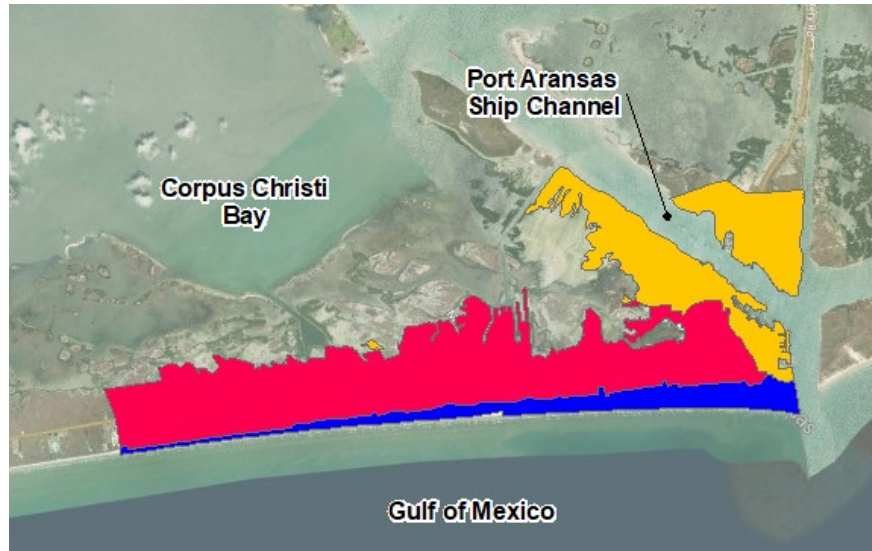


Figure 3: Drainage areas for the major bodies of water surrounding City.

Section 5. Municipal Separate Storm Sewer System (MS4) Program

The City is not currently designated as an MS4 community. The neighboring communities of Aransas Pass and Corpus Christi are a part of the MS4 program. It is expected that the City will become a part of the program in the future due to population growth. Some common practices by MS4 communities address water quality problems the City has identified include:

1. An Illegal Discharge Ordinance can address water quality, animal waste, pool backwashing, and lawn maintenance debris.
2. A Construction Ordinance can address temporary erosion control and site discharges.
3. Post-Construction Requirements can address facility maintenance agreements, maximum detention time, and impervious cover limits.
4. Public education and outreach, like inlet stamping and fact sheets, can inform a community and help instigate behavioral changes to reduce pollutants in stormwater runoff.

Section 6. National Oceanic and Atmospheric Administration (NOAA) Sea Level Rise Viewer

NOAA has developed a tool that models community level impacts from coastal flooding and sea level rise. Four impacts it considers are Vulnerability, Flood Frequency, Local Scenario of Sea level Rise, and Wetland Migration. For the latter two factors, two parameters can be adjusted to model different combinations. The future year can be set up to year 2100 and there are five scenarios that range from intermediate low to extreme. The year 2060 and the intermediate-high scenario was applied for the purpose of this project. These parameters were chosen to view the estimated moderate results for a future point in time that is relative for existing and new developments.

Figure 4 through Figure 7 on the following pages show the mapped results from the model for the four impacts.



Figure 4: The Vulnerability impact is based on socio-economic data for human impact. The model shows the majority of developed areas of the City to be a Medium level of vulnerability and the majority of undeveloped areas to be a low level of vulnerability.

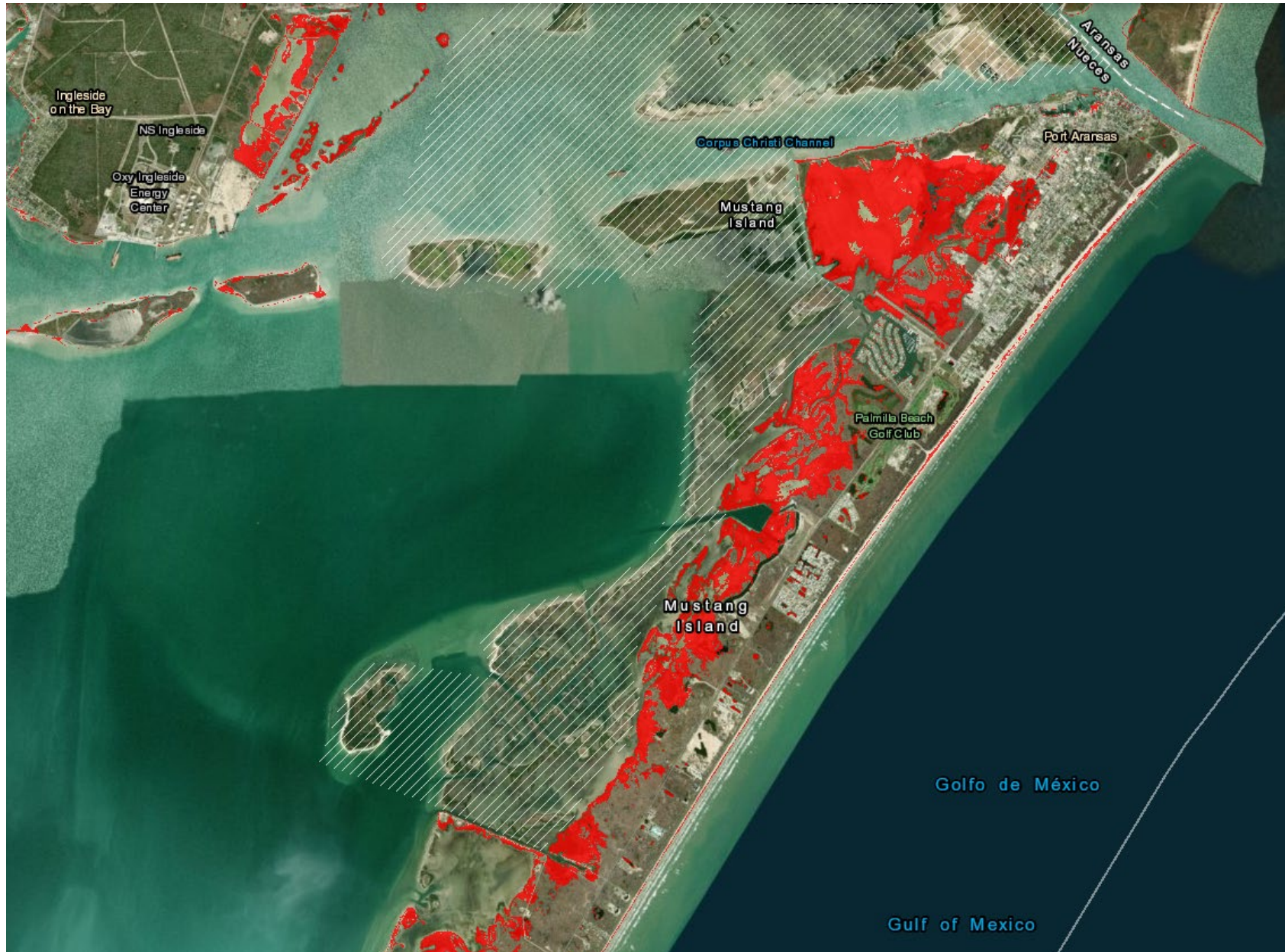


Figure 5: The Flood Frequency impact highlights areas that are susceptible to frequent flooding. The model shows the bayside of the City most vulnerable to frequent flooding. This data coincides with stormwater outfall challenges the City noted.

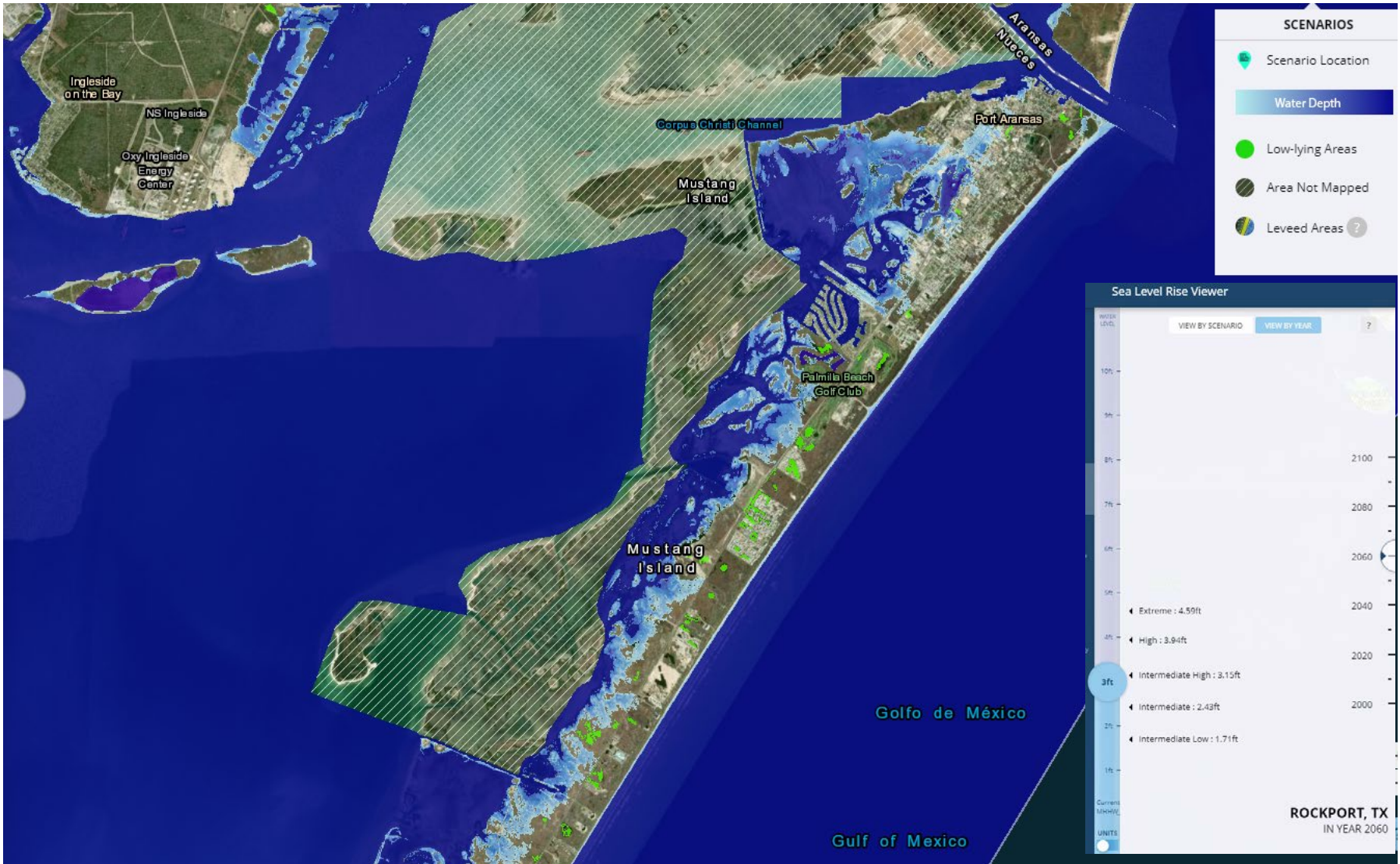


Figure 6: The Local Scenario of Sea-level Rise impact with the applied parameters previously mentioned indicate the sea level rise will affect bayside areas similar to the frequently flooded areas. The majority of the existing coastal beach will also be inundated.

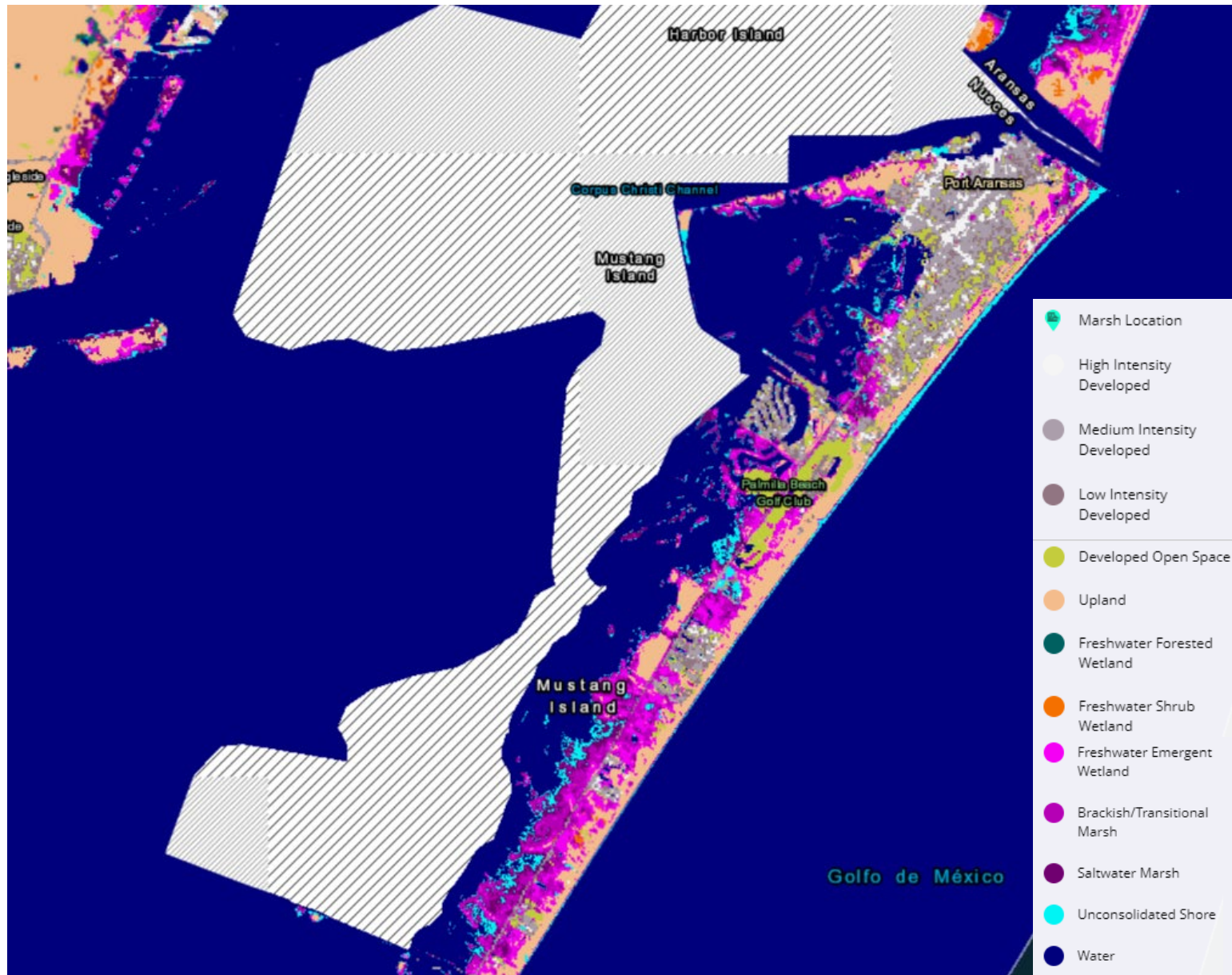


Figure 7: The Wetland Migration impact, with the applied parameters previously mentioned, show the wetlands and marsh near undeveloped areas migrate towards land as the sea level rises. Developed areas prevent wetland and marsh migration, thus; there is a significant reduction of these vital water quality ecosystems near the developed areas of the City as the sea level rises

Article IV. Conceptual Solutions and Permitting

Section 1. Introduction

Review of the City's existing conditions identified City problems and goals, and the reviewed references were utilized to create conceptual solutions in the form of ordinance updates, enhanced permitting, and community actions. These potential solutions are identified in Section 3, below, using the following categories: Ordinance Revisions, Education and Coordination, and Agreements and Acquisitions.

Section 2. Permitting

Permit systems already existing at the federal and state levels can be utilized by the City. Referencing permit systems from other agencies can be an efficient way to enact increased regulation without expending vast local resources. The City could employ the following permitting systems to improve stormwater runoff quality and volume.

1. Texas Pollutant Discharge Elimination System (TPDES)

The state of Texas has the authority to administer the NPDES program in Texas. This is done through the Texas Commission on Environmental Quality (TCEQ) and the TPDES program. The program requires a Stormwater Pollution Prevention Plan (SWPPP) to obtain a Construction Stormwater General Permit.

The major components of an SWPPP are descriptions of the site, BMPS that will be used to minimize pollution in the runoff, permanent stormwater controls, maintenance requirements, and inspection of controls, along with documentation of compliance with approved state and local plans. These components would help the City address the various sources of pollution from developments by requiring developers to clearly define their plan upfront before they receive the construction general permit.

TCEQ requires an SWPPP to be prepared and implemented, a Site Notice to be posted, and a copy of the Site Notice to be sent to the MS4 operator for developments that disturb more than one (1) acre. Additionally, if a development disturbs more than five (5) acres, TCEQ requires a Notice of Intent (NOI) to be submitted to TCEQ. FNI recommends the City augment the TCEQ requirements to require the SWPPP requirement with a smaller area due to the water quality issues the City experiences.

2. U. S. Army Corps of Engineers (USACE)

Any activity that involves placing material in waters of the U. S. will require a Clean Water Act Section 404 permit from the USACE. Permit requirements may be determined by the type and magnitude of the proposed activity. A variety of wetland types likely to be protected by Section 404 are found in the City of Port Aransas. The pursuit of these permits will require demonstration that alternatives have been considered, and impacts to wetlands are going to be avoided, minimized, or mitigated. If an activity requires a Section 404 permit, the activity will also need a TCEQ 401 water quality certification confirming that best management practices (BMP) will be used during the project to ensure water quality standards are protected. Issuance of permits under Section 404 may also require cultural resource assessments to preserve historic resources. Penalties may be assessed for projects which impact wetlands and which have not been authorized by a Section 404 permit.

3. USFWS

Federally listed threatened and endangered species of birds and other wildlife, along with migratory birds, are protected by the U. S. Fish and Wildlife Service (USFWS). The USFWS does not issue permits but ensures these species are protected through its review of applications to the USACE for Section 404 permits. The USFWS may critically review work in Port Aransas in the future since federally endangered Whooping Cranes have been observed on Mustang Island near the Turnbull Birding Center. Critical habitat for federally threatened Piping Plovers has also been designated on the Gulf beach and Corpus Christi Bay sides of Port Aransas. Beach, shrub, and tree habitat on Mustang Island, including in Port Aransas, is important stopover habitat for neotropical migratory songbirds protected by the federal Migratory Bird Treaty Act. Direct impacts to individuals of these species may be prosecuted with criminal or financial penalties.

4. NMFS

The National Marine Fisheries Service (NMFS) protects federally listed threatened and endangered species of marine organisms, including sea turtles. NMFS, like USFWS, ensures these species are protected through its review of applications to the USACE for Section 404 permits. Since federally listed species of turtles, primarily Kemp's Ridley sea turtles, are known to nest on the Gulf beach of Mustang Island,

NMFS will be alert to any activity that may affect the ability of these turtles to nest. These activities may extend beyond physical disturbance of nesting habitat to the creation of structures and lights that may disorient the turtles or otherwise interfere indirectly with their ability to nest.

The NMFS partners with state and federal agencies to enforce compliance with the nation's marine resource laws. The NMFS can work with the EPA and USACE to issue compliance orders to stop Section 404 violators, assess civil penalties, and take civil and, in extreme circumstances, criminal enforcement actions.

5. TPWD

Texas Parks and Wildlife Department (TPWD) protects fish, wildlife, and their habitat in Texas. As do the USFWS and the NMFS, TPWD exerts this protection in large part through its review of applications for Section 404 permits. The TPWD can seek civil restitution for the unlawful injury of fish or wildlife resulting from any construction activity. Depending on the type, magnitude, and location of the activity, TPWD may expect fish and wildlife to be relocated for their protection during any development. In these cases, TPWD requires a permit to introduce species be obtained before any species is relocated for its protection. TPWD also prevents the introduction of certain invasive species of plants and animals. Possession or transport of certain invasive species may be punishable with criminal or financial penalties.

6. GLO

The Texas General Land Office (GLO) protects the submerged bottoms of the state of Texas. Any commercial or residential activity that disturbs state submerged land up to the mean high tide line either on the Gulf or bay side of Port Aransas may require an easement or lease from the GLO. Penalties may be assessed for projects disturbing submerged bottoms of the state which have not been previously authorized by the GLO.

Section 3. Conceptual Solutions

The following conceptual solutions have been identified as appropriate and applicable to the City of Port Aransas.

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Incentivize sustainable renovations	City updates code to incentivize voluntary action to renovate an existing property or to apply GSI to new development, frequently using regulatory incentives	<p>Improve runoff volume and water quality from existing properties and future development</p> <p>Improve aesthetics</p> <p>Community involvement</p> <p>Improved flood resiliency contributes to enhanced economic resiliency</p>	Ordinance revisions	<p>Revise ordinances to create a regulatory incentive or alternative compliance mechanism whereby stormwater management BMP installation can reduce other obligations.</p> <p>Chapter 16, Article IV (Landscaping)</p>
Stamp drainage structures	<p>City stamps inlets, BMP structures, and other prominent drainage structure stating where the runoff drains</p> <p>City modify or create standard stormwater maintenance hole cover for systems installed in the future</p> <p>City provides educational information about the element to promote education and awareness</p>	<p>Increased awareness by locals and visitors will encourage better practices that affect water quality and care of the stormwater features</p>	Education and Coordination	<p>Non-regulatory: Capital cost and operations to install on existing infrastructure and specify in drainage manual technical specifications for new infrastructure</p>

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Protect natural conservation areas	City utilizes deed restrictions, conservation easements, maintenance agreements	These areas are valuable for water quality in addition to other benefits; an emphasis on protection will help protect these resources	Agreements and Acquisitions	Non-regulatory; Capital cost and private transactions
Identify and preserve sensitive areas	<p>City adds a requirement to development permit that requires identification and preservation of floodplains, erodible soils, wetlands, critical habitat areas</p> <p>City adds a requirement to development permit that prioritizes the preservation of natural depressions, storage, and buffers</p>	<p>Sensitive areas are key to ecosystems and protection will benefit stormwater runoff quality and volume</p> <p>Preserving these natural components reduces the impact of development and therefore the cost and effort to apply mitigation elements</p>	Ordinance revisions	<p>Revise ordinances to establish minimum protection standards for sensitive areas</p> <p>Chapter 21 (Subdivision)</p> <p>Chapter 25 (Zoning)</p> <p>New Ordinance as needed</p>
Reduce clearing and grubbing	City updates development permit to require developers to minimize the amount of clearing and grubbing	Elimination of excessive clearing and grubbing reduces the negative impact on stormwater runoff quality and volume.	Ordinance revisions	<p>Revise ordinances to promote non-disturbance of natural vegetation.</p> <p>Chapter 21 (Subdivision)</p> <p>Chapter 25 (Zoning)</p> <p>New Ordinance as needed</p>

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Add detention design requirements	City updates design manual and development permit to regulate detention development	<p>Detention draw-down requirements reduce the frequency of standing water</p> <p>The addition of wet pond, wetland characteristics to detention design increases the water quality benefits of detention pond and aesthetic value.</p>	Ordinance revisions	<p>Revise ordinances and technical manuals to reflect better BMP performance.</p> <p>Chapter 21 (Subdivision)</p> <p>Chapter 25 (Zoning)</p> <p>New Ordinance as needed</p>
Change street/driveway specifications	<p>Reduce driveway width</p> <p>Reduce setback</p> <p>Allow permeable pavement for parking areas</p> <p>Disconnect impervious cover</p> <p>Promote on-site control of water and allowance for curb cuts to disconnect impervious cover</p> <p>Revise specification that requires water to drain to the street via pipe</p>	Reduced impervious surface which reduces runoff volume	Ordinance revisions	<p>Revise development ordinances to reflect reduced driveway width and reduced setbacks.</p> <p>Chapter 20 (Streets, Sidewalks and Other Public Ways)</p> <p>Chapter 25 (Zoning)</p>

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Add commercial parking specifications	<p>Include regulation for shared parking</p> <p>Add landscaping requirement to parking lots</p>	<p>Reduce runoff volume</p> <p>Improve water quality</p> <p>Improve the aesthetic appeal of commercial areas</p>	Ordinance revisions	<p>Revise development ordinances to reflect shared parking regulation and parking lot landscaping requirement</p> <p>Chapter 16, Article IV (Landscaping)</p> <p>Chapter 20 (Streets, Sidewalks and Other Public Ways)</p> <p>Chapter 25 (Zoning)</p>
Change cul-de-sac specifications	Reduce minimum cul-de-sac radius	Reduced imperious cover reduces runoff volume	Ordinance revisions	<p>Revise development ordinances to reflect reduced driveway width and reduced setbacks</p> <p>Chapter 20 (Streets, Sidewalks and Other Public Ways)</p> <p>Chapter 21 (Subdivision)</p> <p>Chapter 25 (Zoning)</p>
Create Green Sustainability Task Force	City creates a multi-departmental Green Sustainability task force	Collaborative group to make sure City has a consistent and involved approach to sustainability in the community	Education and Coordination	Develop an internal program
Education Workshops	Host workshops catered towards citizens, developers, and other relevant parties to educate about City revised approach and individual parties' roles	Spread awareness within the community	Education and Coordination	Develop an internal program

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Business outreach	Include local business and offer incentives for GSI retrofits and additions	Spread awareness within the community	Education and Coordination	Develop an internal program
Community partnerships	Partner with businesses, other organizations in the community to promote City natural resources and preservation efforts	Spread awareness within the community	Education and Coordination	Develop an internal program
Consultation Services	City provide internal resources or have vetted external references for developers to utilize as they start to apply new regulations	Have a productive relationship with developers	Education and Coordination	Develop an internal program
Public-facing resources	Place resources in easily accessible locations for the public: Public signage near resources, GSI controls Promote "Leave No Trace" practice on the beach through signage Online resources Pamphlets	Spread awareness within the community	Education and Coordination	Develop an internal program

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Dumping Practices	<p>Allow for annual/bi-annual pickup of hazardous waste and bulk collection</p> <p>Consider disallowing Styrofoam and plastic on beaches</p> <p>Promote recycling program to support local non-profits</p>	<p>Decrease litter and pollution</p> <p>Increase community involvement</p>	Education and Coordination	<p>Develop a reoccurring event</p> <p>New ordinance as needed</p> <p>Develop an internal program</p>
Illegal Discharge Ordinance	<p>Animal waste practices</p> <p>Disallow pool backwashing into the stormwater system</p> <p>Apply lawn maintenance debris regulation</p>	<p>Improve water quality</p> <p>Reduce drainage system maintenance</p>	Ordinance revisions	Create a new illicit discharge ordinance
Construction Ordinance	<p>Require a certified inspector to monitor projects</p>	<p>Addresses construction issues City has experienced</p> <p>Enforces other City regulations</p>	Ordinance revisions	<p>Revise development ordinances to provide construction oversight</p> <p>Chapter 20 (Streets, Sidewalks and Other Public Ways)</p> <p>Chapter 21 (Subdivision)</p> <p>Chapter 25 (Zoning)</p> <p>New Ordinance as needed</p>

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Post Construction Requirements	Maintenance agreement	Addresses multiple post-construction issues City has experienced	Ordinance revisions	Revise development ordinances to provide post-construction restoration Chapter 20 (Streets, Sidewalks and Other Public Ways) Chapter 21 (Subdivision) Chapter 25 (Zoning) New Ordinance as needed
Construction requirements to enforce E&S controls for all exterior and site developments	City require general construction permit to be required for all development, even <1 acre	Drainage systems are already undersized for mid to large storm events. Additional E&S controls will reduce sedimentation and debris that reduces the efficiency of the system and reduces City maintenance efforts	Ordinance revisions	Revise development ordinances to provide stormwater/site compliance for sites less than 1 acre Chapter 20 (Streets, Sidewalks and Other Public Ways) Chapter 21 (Subdivision) Chapter 25 (Zoning) New Ordinance as needed

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Change Development ordinance	Update ordinance to require mitigation for impervious area >20% through listed GSI controls and respective design criteria	Drainage systems are already undersized for mid to large storm events. Mitigation reduces surcharge of the drainage system and makes development responsible for addressing water quality effects on site	Ordinance revisions	Revise development ordinances to provide for stormwater mitigation when impervious area exceeds 20 percent Chapter 20 (Streets, Sidewalks and Other Public Ways) Chapter 21 (Subdivision) Chapter 25 (Zoning) New Ordinance as needed
Limit Cut and Fill	Update permit to limit the amount of cut and fill allowed per development	Minimizes change to natural hydrology and vegetation	Ordinance revisions	Revise development ordinances to limit cut and fill Chapter 20 (Streets, Sidewalks and Other Public Ways) Chapter 21 (Subdivision) Chapter 25 (Zoning) New Ordinance as needed
Establish GSI criteria	Either City compile their own set of GSI control criteria or reference another agency	Improve water quality Reduce water runoff volume	Ordinance revisions	Revise development ordinances to adopt necessary GSI criteria by reference Chapter 20 (Streets, Sidewalks and Other Public Ways) Chapter 21 (Subdivision) Chapter 25 (Zoning) New Ordinance as needed

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Establish an inspection schedule	City to dedicate effort towards inspection of drainage facilities to ensure maintenance agreements are followed	Inspection will encourage acceptable practices and make ordinances more effective Reduce long-term maintenance demand	Education and Coordination	Develop an internal program
Change platting requirements	City to require all developments more than 1000 s.f. to secure approval of preliminary and final plats	Prevent destructive development practices	Ordinance revisions	Revise development ordinances to reflect modern platting standards Chapter 21 (Subdivision)
Require building permit for structures with a specified footprint	Including fences, sheds, other structures that will impact drainage patterns; must show no impact to adjacent properties	Increase checks on developments that affect water runoff patterns	Ordinance revisions	Revise development ordinances to reflect the need for permits Chapter 25 (Zoning) New Ordinance as needed
Require pre-project meeting for larger developments	City to require developers of major and staged developments to attend a pre-project meeting Also encouraged for minor developments, but optional	Improve communication with development Early communication can reduce rework for developer	Ordinance revisions	Revise development ordinances to include pre-construction meetings Chapter 20 (Streets, Sidewalks and Other Public Ways) Chapter 21 (Subdivision) Chapter 25 (Zoning) New Ordinance as needed

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
<p>Increase design storm</p>	<p>City to verify the feasibility of increased design storm and update drainage plan to reflect</p>	<p>Reduce human risk and water quality issues that arise from flooding</p>	<p>Ordinance revisions</p>	<p>Revise development ordinances to reflect a higher design storm</p> <p>Chapter 20 (Streets, Sidewalks and Other Public Ways)</p> <p>Chapter 21 (Subdivision)</p> <p>Chapter 25 (Zoning)</p> <p>New Ordinance as needed</p>

Article V. Conclusion

While Port Aransas has experienced substantial increases in development permitting and land development, acting now to implement this report's recommendations can improve stormwater management practices to address the quantity and quality of stormwater runoff. Improved methods serve to benefit the coastal ecosystems of the Port Aransas area. Also, proactively implementing these recommendations through ordinance revisions ultimately reduces the long-term burden to the City and its taxpayers, as the need to retrofit drainage infrastructure in the future will be substantially reduced.

While this effort focused primarily on stormwater management, the evaluation process led to the identification of other needs for the City's consideration as well as current funding opportunities. Needs identified include:

- The Comprehensive Plan is approaching 15 years old, which significantly exceeds the recommended periods for updates. In particular, significant advances in urban planning practice have occurred in the intervening years, particularly regarding resiliency.
- All development-related ordinances require streamlining and general updates to reflect current best practices and changes to the legal environment; a rewrite of the subdivision and zoning ordinances is recommended, and a unified development code would be appropriate to support streamlining.
- Chapter 8 (Flood Damage Prevention Regulations) underwent some updates in 2015 but needs a substantial upgrade to reflect the advancement of practices since 1992.
- A variety of capital improvement projects are needed to retrofit and address the current problem areas of the City.

While beyond the scope of this report, it may be advantageous for Port Aransas to consider addressing these other outstanding issues due to potential funding availability.

A selection of funding sources is included in the Appendix.

Article VI. Appendix

PREPARING FOR THE NEXT DISASTER

Using CDBG-MIT Grant Funds to Build Disaster-Resilient Communities



What is CDBG-MIT?

- **>\$4.2 BILLION IN GRANTS**
- Administered by the Texas General Land Office (GLO)
- For Texas communities recovering from qualifying disasters
 - 2015 Floods
 - 2016 Floods
 - 2017 Hurricane Harvey
- To fund a broad range of resiliency activities and infrastructure projects

Projects Eligible for CDBG-MIT Funds

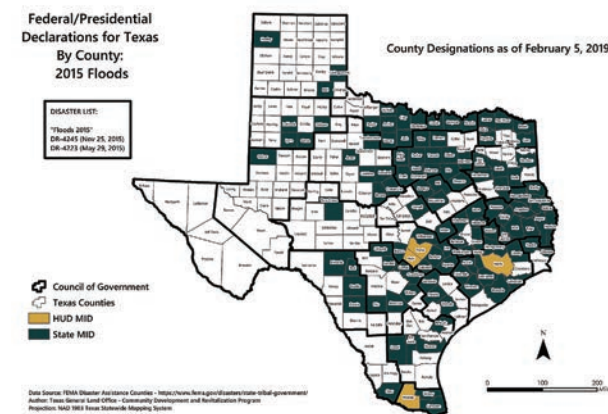
- **Increase resilience** to disasters
- **Reduce or eliminate the long-term risk** of loss of life, injury, damage to and loss of property, and suffering and hardship
- **Lessen the impact of future disasters**

CDBG-MIT Program Requirements

- At least 50% of funds must address mitigation needs in HUD most-impacted and distressed (MID) areas
- **HUD requires that at least 50% of total funds must be used for activities benefiting low-to moderate-income (LMI) persons. All programs will have an LMI priority.**

Benefits of CDBG-MIT

- **100% grant no match required** (although a 1% non-CDBG "Leverage" match encouraged through the scoring criteria)
- **Does not require a "tie-back"** to the specific qualified disaster
- **No benefits/cost analysis (BCA)** requirements for projects under \$100 million

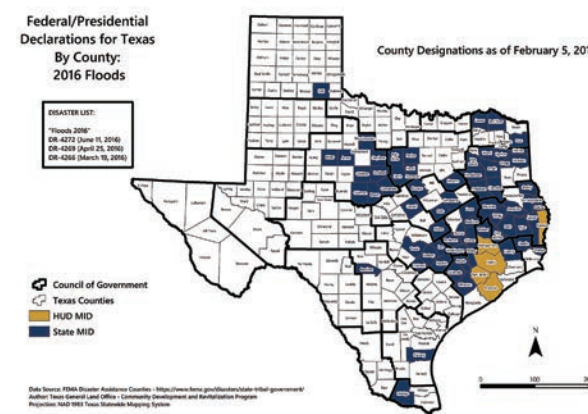


2015 Competition Declared Counties

\$46M

4 HUD MID

- Travis
- Hays
- Hidalgo
- Harris

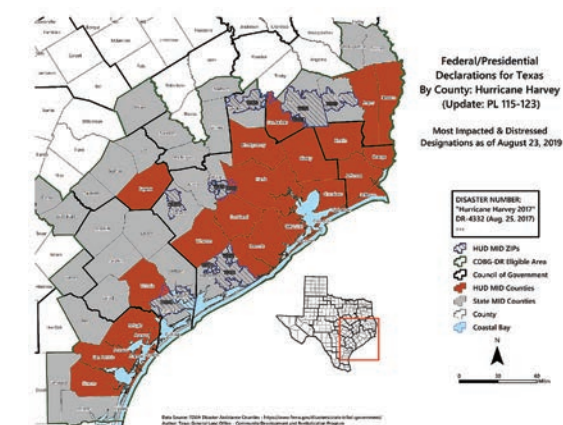


2016 Competition Declared Counties

\$147.6M

5 HUD MID

- Brazoria
- Fort Bend
- Harris
- Montgomery
- Newton



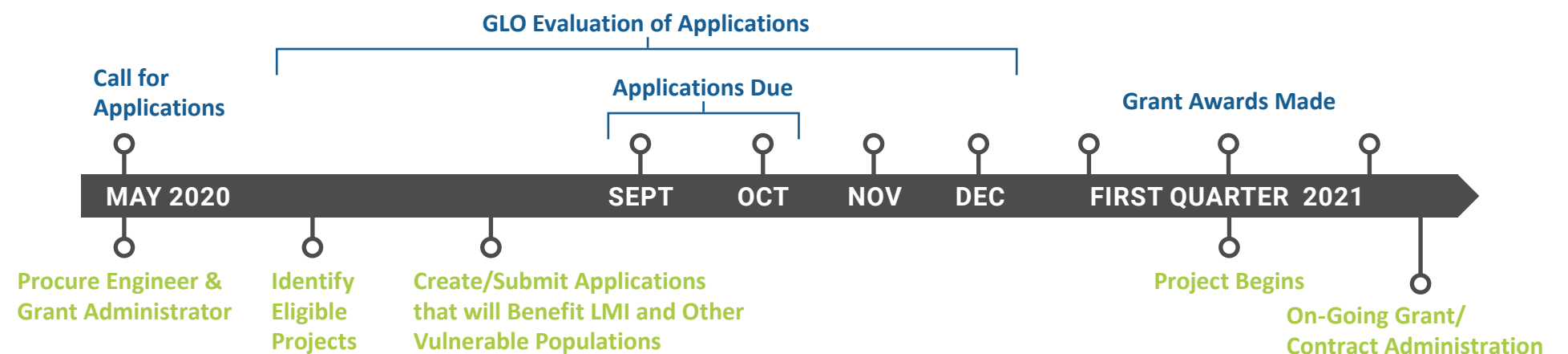
Hurricane Harvey Competition Declared Counties

\$2.1B

20 HUD MID
Counties and Zip Codes

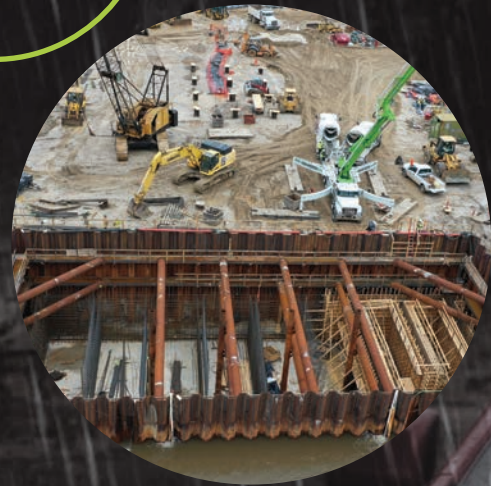
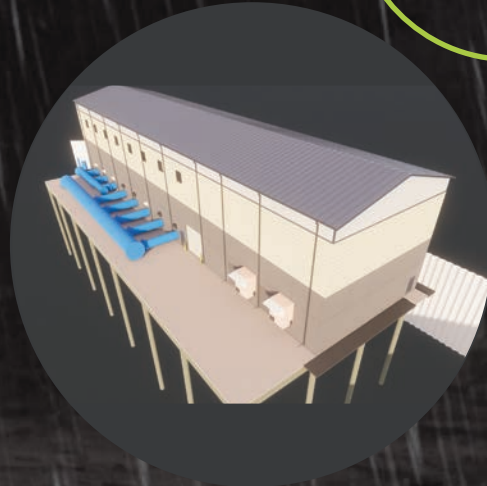
Next Steps for CDBG-MIT Funding

- GLO Activities
- Client Activities



|||| CDBG-MIT Project-Eligible examples

**Replacement
Pump Station**



Upgrading water, sewer, transportation and other public infrastructure

**SWTP
Risk
Assessment**



Regional risk reduction / disaster resistant projects

additional examples

**Stormwater
Mapping**



Upgrade mapping, data and other capabilities to better understand evolving potential disaster risks

**Livable Center
Study**



Development of resilient building and zoning codes, and land use plans

**Stormwater
Management**



Flood control and drainage improvements



4.4.10 RESILIENT COMMUNITIES PROGRAM

The GLO supports the adoption of policies that both reflect local and regional priorities and will have long-lasting effects on community risk reduction. Accordingly, the Resilient Communities Program will fund the development, adoption, and implementation of modern and resilient building codes and flood damage prevention ordinances to ensure that structures built within the community can withstand future hazards.

Building codes are the primary mechanism for communities to regulate the design and construction of new buildings and the renovation of existing buildings. At a minimum, codes reflect a community's accepted requirements for ensuring the safety of a building occupants and people in proximity to buildings. Many communities rely on model building codes as the basis for their locally adopted code. These model building codes are developed through a national consensus process to efficiently leverage national experts, respond to the latest research findings, identify and incorporate new technology and processes, and support economies of scale.

Flood damage prevention ordinances provide the framework regulating what can be built in a floodplain, limited changes to the flows of waterways, and ensuring buildings are constructed at or above the base flood elevation. Adoption of a flood damage prevention ordinance, or some equivalent enforcement mechanism, is required for participation in FEMA's National Flood Insurance Program (NFIP). Adoption of higher regulatory standards—for instance, mandating construction at 2 feet or greater above base flood elevation—can make a community eligible to participate in the NFIP Community Rating System (CRS), which can reduce the flood insurance premiums for a community's property owners.

Land use and comprehensive plans, along with the zoning codes that often accompany them, take community goals and aspirations and formalize them into actionable policies that determine what can be built within a certain jurisdiction and where it can be built. Land use and comprehensive plans themselves serve as guiding documents that provide the framework by which regulatory structures are created—by themselves these plans have regulatory authority. Zoning codes take the ideas outlined in the land use and comprehensive plans and formalize those ideas into legally binding ordinances that ultimately shape how and where a community develops. Creating land use and comprehensive plans that incorporate hazard mitigation considerations within their framework helps cities and towns to develop in a manner that reduces the risk to future hazards.

Applicants may submit applications for any eligible activity for which they are an eligible applicant (e.g. a county may apply to update or adopt a new building code but may not apply to create and adopt a zoning code). The applicant is NOT required to engage in all eligible activities—only those activities the applicant is interested in pursuing. The GLO may use the adoption of codes, ordinances, and/or plans in this program as scoring criteria in other CDBG-MIT programs.



4.4.10.1 *Connection to Identified Risk:* This program encourages communities to look at all their identified risks in a comprehensive manner and integrate mitigation measures in each activity they undertake.

4.4.10.2 *Allocation Amount:* \$100,000,000

4.4.10.3 *Maximum Award Amount:* \$300,000 per applicant

4.4.10.4 *Eligible Entities:*

- i. Units of local government (cities and counties), Indian Tribes, and councils of governments located within a CDBG-MIT eligible area.

4.4.10.5 *Eligible Activities:*

- i. Development, adoption, and implementation of Building Codes that meet or exceed the standards set forth in the International Residential Code 2012 (IRC 2012);
- ii. Development, adoption, and implementation of a Flood Damage Prevention Ordinance that meets CDBG-MIT requirements of at least 2 feet above base flood elevation;
- iii. Development, adoption, and implementation of a Zoning Ordinance based upon a land use plan or comprehensive plan;
- iv. Development and adoption of forward-looking land use plans that integrate hazard mitigation plans;
- v. Development and adoption of forward-looking Comprehensive Plans that integrate hazard mitigation plans; or
- vi. Public Service activities focused on education and outreach campaigns designed to alert communities and beneficiaries to opportunities to further mitigate identified risks through insurance, best practices, and other strategies. Public information activities leading to CRS credit accrual and CRS eligibility are eligible under this activity.

4.4.10.6 *Ineligible Activities:*

- i. Activities not expressly listed under the Eligible Activities section are prohibited.

4.4.10.7 *Program Requirements:*

- i. Building Codes:
- ii. Adopted building code must meet or exceed IRC 2012.



- iii. Adoption of selected building code must be complete within 12 months of grant award. Failure to adopt within that timeframe will result in the forfeiture of grant funds and repayment.
- iv. Flood Damage Prevention Ordinance:
 - v. Adopted ordinance must meet CDBG-MIT requirements of at least two feet above base flood elevation.
 - vi. Adoption of flood damage prevention ordinance must be complete within 12 months of grant award. Failure to adopt within that timeframe will result in the forfeiture of grant funds and repayment.
- vii. Zoning Ordinance:
- viii. Adopted ordinance must be based on an adopted Land Use or Comprehensive Plan that was written within the last five (5) years of the date of application for this program.
- ix. Adoption of approved zoning ordinance must be complete within 12 months of grant award. Failure to adopt within that timeframe will result in the forfeiture of grant funds and repayment.
- x. Land Use Plans:
 - xi. Land use plans must be forward-looking and integrate the relevant portions of the local hazard mitigation plan, if one exists.
 - xii. Land use plans must identify local hazard risks and explain how the plan mitigates against those risks.
 - xiii. Land use plans must be accompanied by a zoning ordinance that codifies the land use plan.
 - xiv. Adoption of an approved Land Use Plan and Zoning Ordinance must be complete within 18 months of grant award. Failure to adopt within that timeframe will result in the forfeiture of grant funds.
- xv. Comprehensive Plans:
- xvi. Adopted Comprehensive Plans must include: (1) a Population Study that provides a population estimate and population projection for the next 20 years; (2) a Housing Study that describes the composition of the existing housing stock, including total number of units, number of single family and multifamily units, and vacancy rates, as well as a projection for the number of future housing units needed ten (10) years from the date of the plan and the composition of those units (e.g., single family, multifamily); (3) a Land Use Study/Plan that describes the land use of every parcel within the jurisdiction and includes a future land use map that accounts for future population changes; (4) a Zoning Ordinance that codifies the Land Use Plan; and



- (5) an Infrastructure Study and Capital Improvement Plan that describes the water, wastewater, drainage, and streets systems, including length, width, materials, and condition or age (if available), as well as proposed prioritized improvements to those systems.
- xvii. Plan must identify local hazard risks and explain how the plan mitigates against those risks.
- xviii. Adoption of approved Comprehensive Plan and Zoning Ordinance must be complete within 24 months of grant award. Failure to adopt within that timeframe will result in the forfeiture of grant funds and repayment.
- xix. Public service activities:
 - xx. Must be focused on education and outreach campaigns designed to alert communities and beneficiaries to opportunities to further mitigate identified risks through insurance, best practices and other strategies; and
 - xxi. Public information activities conducted with the intent of earning CRS credits must meet the requirements for those activities within the CRS Coordinator’s Manual.⁴⁵⁰

4.4.10.8 *Eligibility/Selection Criteria:*

- i. Applicant/beneficiary must be located within a CDBG-MIT county;
- ii. Applicant must be a unit of local government, Indian tribe, or any other entity that has the legal authority to adopt and enforce the code, ordinance, or plan for which funding was requested (i.e., most counties do not have the authority to adopt or enforce zoning ordinances);
- iii. Applicants must demonstrate the capacity to administer grant funds and complete the selected project on time or describe how they will procure assistance to do so;
- iv. Applicants must list and describe existing building codes, ordinances, and local and/or regional plans (if applicable)—including county or regional level hazard mitigation plans—and how those existing regulations and planning efforts will inform the project for which funding was requested; and
- v. Applications will be processed on a first-come, first-served basis.

4.4.10.9 *Activities should:*

- i. Promote sound, sustainable long-term mitigation planning informed by a post-disaster evaluation of hazard risk, especially land-use decisions that reflect

⁴⁵⁰ *Coordinator’s Manual*, National Flood Insurance Program Community Rating System, FIA-15/2017, FEMA, https://www.fema.gov/media-library-data/1493905477815-d794671adeed5beab6a6304d8ba0b207/633300_2017_CRS_Coordinators_Manual_508.pdf

responsible floodplain management and take into account future possible extreme weather events and other natural hazards and long-term risks;






















- ii. Coordinate with local and regional planning efforts to ensure consistency, and promote community-level and/or regional (e.g., multiple local jurisdictions) mitigation planning;
- iii. Integrate mitigation measures into all activities and achieve objectives outlined in regionally or locally established plans and policies that are designed to reduce future risk to the jurisdiction; and
- iv. Result in buildings that are more resilient to the impacts of natural hazards.



















4.4.10.10 *AFFH Review:*











All proposed activities will undergo AFFH review by the GLO before approval. Such review will include assessments of (1) area demography, (2) socioeconomic characteristics, (3) housing configuration and needs, (4) educational, transportation, and health care opportunities, (5) environmental hazards or concerns, and (6) all other factors material to the AFFH determination. Applications should show that activities are likely to lessen area racial, ethnic, and low-income concentrations, and/or promote affordable housing in low-poverty, nonminority areas in response to natural hazard-related impacts.









4.4.10.11 *Timeline*























The proposed program start date is six (6) months after HUD's approval of this Action Plan. The proposed end date is six (6) years from the start date of the program.
















































BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
BMP 1	Stamp Drainage Structures	 (City)  (Developer)	★ - ★★★ (varies by pollutant type)			<p>Design stamp to be placed on inlets and other drainage structures.</p> <p>Modify or create stormwater maintenance manhole cover as standard detail.</p> <p>Identify source(s) that can produce and supply stamps and manhole covers</p> <p>Identify funding needed for following two years to apply stamps to existing drainage structures</p>	<p>Apply stamps to existing inlets</p> <p>Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.</p>	<p>Apply stamps to remaining existing inlets</p> <p>Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.</p>	<p>Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.</p>	<p>Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.</p>
BMP 2	Protect Natural Conservation Areas	 (City)  (Developer)	★★	 	 	<p>Identify areas that qualify for conservation easement on undeveloped properties and funding needed to obtain</p> <p>Define requirements of maintenance agreements that will be required for future developments</p>	<p>Require long-term maintenance agreements to achieve final plat approval</p> <p>Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval</p> <p>Create conservation easements for previously identified areas</p>	<p>Require long-term maintenance agreements to achieve final plat approval</p> <p>Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval</p>	<p>Require long-term maintenance agreements to achieve final plat approval</p> <p>Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval</p>	<p>Require long-term maintenance agreements to achieve final plat approval</p> <p>Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval</p>
BMP 3	Create Green Sustainability Task Force	 (City)  (Developer)	★	  		<p>Identify representative(s) from each City department</p>	<p>Define goals of task force</p> <p>Define extents of routine meetings and coordination</p>	<p>Reassess functionality of task force and adjust goals as needed based on experience from first full year</p>	<p>Continue to meet, share sustainability actions amongst departments, and achieve task force determined goals</p>	<p>Continue to meet, share sustainability actions amongst departments, and achieve task force determined goals</p>
BMP 4	Education Workshops	 (City)  (Developer)	★ - ★★★ (varies by pollutant type)	 		<p>Identify workshops that would be beneficial based on new ordinance revisions and other City actions</p> <p>Identify staff member(s) responsible for organizing workshop</p> <p>Outline workshop(s) and identify expected audience(s)</p>	<p>Host initial workshop</p> <p>Request feedback from audience</p> <p>Use feedback to improve subsequent workshops</p>	<p>Host subsequent workshop</p>	<p>Continue to utilize workshop program as new ordinances, programs, or actions are put into effect</p>	<p>Continue to utilize workshop program as new ordinances, programs, or actions are put into effect</p>










































BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
BMP 5	Business Outreach	 (City)  (Developer)	★★ - ★★★ (varies by pollutant type)	 		Identify incentives the City can offer for GSI retrofits and additions	Develop application and criteria for businesses to earn incentive	Advertise program to community Process applications and award incentives as appropriate	Process applications and award incentives as appropriate	Process applications and award incentives as appropriate
BMP 6	Community Partnerships	 (City)  (Developer)	★ - ★★★ (varies by pollutant type)			Identify staff member(s) to take responsibility for community partnerships Develop outline for community partnerships Start outreach to connect with interested organizations	Develop community partnerships Continue outreach for new partnerships	Maintain advertisement of community partnerships via website and other platforms	Maintain advertisement of community partnerships via website and other platforms	Maintain advertisement of community partnerships via website and other platforms
BMP 7	Consultation Services	 (City)  (Developer)	★		 	Identify staff member to be primary contact; have them be knowledgeable of applicable ordinances and City criteria Alternatively, if using vetted list of external resources, identify qualification for external resource to be on list.	Utilize identified staff as primary contact for consultation services. Alternatively, advertise to potential external resources the requirements to be on City list	Utilize identified staff as primary contact for consultation services. Alternatively, provide list of vetted external resources to parties that request consultation services	Utilize identified staff as primary contact for consultation services. Alternatively, provide list of vetted external resources to parties that request consultation services	Utilize identified staff as primary contact for consultation services. Alternatively, provide list of vetted external resources to parties that request consultation services
BMP 8	Public-Facing Resources	 (City)  (Developer)	★-★★★ (varies by pollutant type)			Develop reoccurring event for hazardous waste and bulk collection	Try to find community partnership and then host first hazardous waste and bulk collection Develop recycling program and identify party that will pay for recycled resources	Continue to host hazardous waste and bulk collection with community partnership Try to find community partnership and then kickoff recycling program	Continue to host hazardous waste and bulk collection with community partnership Continue to run recycling program with community partnership Ban Styrofoam from beaches Apply Styrofoam info on public facing resources	Continue to host hazardous waste and bulk collection with community partnership Continue to run recycling program with community partnership Enforce Styrofoam ban on beaches





BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
BMP 9	Dumping Practices	 (City)  (Developer)	★ - ★★★ (varies by pollutant type)	 		<i>Develop reoccurring event for hazardous waste and bulk collection</i>	<i>Try to find community partnership and then host first hazardous waste and bulk collection</i> <i>Develop recycling program and identify party that will pay for recycled resources</i>	<i>Continue to host hazardous waste and bulk collection with community partnership</i> <i>Try to find community partnership and then kickoff recycling program</i>	<i>Continue to host hazardous waste and bulk collection with community partnership</i> <i>Continue to run recycling program with community partnership</i> <i>Ban Styrofoam from beaches</i> <i>Apply Styrofoam info on public facing resources</i>	<i>Continue to host hazardous waste and bulk collection with community partnership</i> <i>Continue to run recycling program with community partnership</i> <i>Enforce Styrofoam ban on beaches</i>
BMP10	Establish an Inspection Schedule	 (City)   (Developer)	★ - ★★★ (varies by pollutant type)			<i>Identify staff responsible for inspection of drainage facilities</i>	<i>Identify drainage facilities that will need to be on inspection schedule</i> <i>Create inspection criteria, may differ based on drainage facility type</i> <i>Create inspection schedule</i> <i>Notify owners of when inspections will begin and inspection criteria</i>	<i>Begin drainage facility inspection schedule</i> <i>Notify owners of failed inspections, along with deadline to address issues</i> <i>Add drainage facilities from new development to inspection schedule</i>	<i>Continue routine inspections</i> <i>Add drainage facilities from new development to inspection schedule</i>	<i>Continue routine inspections</i> <i>Add drainage facilities from new development to inspection schedule</i>

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
ORD 1	Incentivize Sustainable Renovations	 (City)  (Developer)	★★			<p><i>Adopt landscape ordinance amendment to provide landscaping credits for the implementation of green stormwater infrastructure for both new development and redevelopment (with higher credit in redevelopment).</i></p> <p><i>Adopt zoning ordinance amendment to provide green space incentive credit for areas functioning as green stormwater infrastructure, with higher credit for redevelopment.</i></p> <p><i>Adopt Stormwater Management and Drainage Ordinance, with initial provision to cross-reference incentives listed above.</i></p>	<i>Evaluate incentives for effectiveness and continued need.</i>	<i>Evaluate incentives for effectiveness and continued need.</i>	<i>Evaluate incentives for effectiveness and continued need.</i>	<i>Evaluate incentives for effectiveness and continued need.</i>
ORD 2	Identify and Preserve Sensitive Areas	 (City)  (Developer)	★★			<p><i>Adopt landscape ordinance amendment to provide landscaping credits for the preservation of sensitive areas, such as wetlands, and the restoration of such sensitive areas in redevelopment scenarios.</i></p> <p><i>Adopt zoning ordinance amendment to provide green space incentive credits for the preservation of sensitive areas, such as wetlands, and the restoration of such sensitive areas in redevelopment scenarios.</i></p>	<i>Evaluate incentives for effectiveness and continued need.</i>	<i>Evaluate incentives for effectiveness and continued need.</i>	<i>Evaluate incentives for effectiveness and continued need.</i>	<i>Evaluate incentives for effectiveness and continued need.</i>

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
ORD 3	Reduce Clearing and Grubbing	 (City)  (Developer)	★			<p>Adopt landscape ordinance amendment to provide landscaping credits for the preservation of sensitive areas, such as wetlands, and the restoration of such sensitive areas in redevelopment scenarios. This effectively reduces clearing and grubbing.</p> <p>Adopt Stormwater and Drainage Ordinance, to include provisions making clear that clearing and grubbing activity is not allowed prior to securing appropriate development permits.</p>	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.
ORD 4	Add Detention Design Requirements	 (City)  (Developer)	★			Adopt Stormwater and Drainage Ordinance, to include provisions establishing drawdown requirements for detention, enhanced detention and bioretention.		Evaluate drawdown effectiveness.		
ORD 5	Change Street/Driveway Specifications	 (City)  (Developer)	★					Update necessary ordinances and technical manuals to new street and cul-de-sac sections, reconciling with adopted fire code.		
ORD 6	Add Commercial Parking Specifications	 (City)  (Developer/Business)	★ - ★★★ (varies by approach)		 -  	Adopt landscape ordinance amendment to provide regulatory direction on the placement of landscaping in such a way that stormwater runoff flows into/through the landscape areas prior to leaving the site.	Adopt zoning ordinance amendment to require permeable surfaces when the parking provided exceeds the required minimum by more than 25 percent.	Evaluate effectiveness and revise as needed as part of annual review of zoning ordinance amendment needs.	Evaluate effectiveness and revise as needed as part of annual review of zoning ordinance amendment needs.	Evaluate effectiveness and revise as needed as part of annual review of zoning ordinance amendment needs.
ORD 7	Change cul-de-sac Specifications	 (City)  (Developer/Business)	★					Update necessary ordinances and technical manuals to new street and cul-de-sac sections, reconciling with adopted fire code.		

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
ORD 8	Update Litter Ordinance and Dumping Practices	 (City)  (Developer/Business)	★							
ORD 9	Establish Regulations for Illicit Discharges	 (City)  (Developer/Business)	★ - ★★★ (varies by pollutant type)	 	 		Adopt illicit discharge ordinance			
ORD 10	Establish Construction Monitoring Regulations	 (City)  (Developer/Business)	★★	 	 	Adopt Stormwater Management and Drainage Ordinance, to include provisions for monitoring erosion and sedimentation controls.	Adopt Illicit Discharge ordinance			
ORD 11	Establish Post-Construction Maintenance	 (City)  -   (Developer/Business)	★★		 	Adopt Stormwater Management and Drainage Ordinance, to include provisions for post-construction maintenance. This includes functionality inspections, necessary easements and creation of maintenance entities as necessary.				
ORD 12	Establish Construction Requirements to Enforce Erosion and Sedimentation Controls for All Exterior and Site Developments	 (City)  -   (Developer/Business)	★★	 	 	Adopt Stormwater Management and Drainage Ordinance, to include provisions for monitoring erosion and sedimentation controls.	Adopt illicit discharge ordinance			
ORD 13	Update Ordinances to Require Mitigation of Impervious Area Through GSI Controls	 (City)   -    (Developer/Business)	★★★ - ★★★★★ (varies by approach)	 	 			Amend Stormwater Management and Drainage Ordinance to adopt Option 2 (GSI requirement when impervious cover exceeds 50%) or Option 3 (GSI requirement for all impervious cover).		
ORD 14	Limit Cut and Fill	 (City)  (Developer/Business)	★		 -  	Adopt zoning ordinance amendment removing exceptions to development permit requirement for residential or commercial fill of less than one (1) foot in depth.				

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5	
ORD 15	Establish GSI Criteria	 (City)  -    (Developer/Business) <i>Depends on level of requirement, ranging from incentive-only to requirement for all new development</i>	★★ - ★★★★★ (varies by approach)	 -  	 -    <i>Depends on level of requirement, ranging from incentive-only to requirement for all new development</i>	<i>Adopt landscape ordinance amendment to provide landscaping credits for the implementation of green stormwater infrastructure for both new development and redevelopment (with higher credit in redevelopment).</i> <i>Adopt zoning ordinance amendment to provide green space incentive credit for areas functioning as green stormwater infrastructure, with higher credit for redevelopment.</i> <i>Adopt Stormwater Management and Drainage Ordinance, to include adoption by reference of Guidance for Sustainable Stormwater Drainage on the Texas Coast.</i>					
ORD 16	Change Platting Requirements to Include more Development Types	 (City)  -   (Developer/Business)	★	 -  	 -  		<i>Amend Subdivision Ordinance to adopt best and current practices for platting in Texas, consistent with state law and case law.</i>				
ORD 17	Update Building Permit Thresholds to Capture More Structure Types	 (City)  (Developer/Business)	★	 -  	 -  	<i>Adopt zoning ordinance amendment removing exceptions to development permit requirement for residential or commercial fill of less than one (1) foot in depth.</i>					
ORD 18	Require Pre-Project Meetings for Larger Developments	 (City)  (Developer/Business)	★		 -  		<i>Amend zoning, subdivision and other relevant ordinances to require pre-project or pre-proposal meetings</i>				
ORD 19	Increase the Design Storm	 (City)   (Developer/Business)	★ - ★★				<i>Update Drainage System Master Plan and use to assess appropriate design storm.</i>	<i>Update necessary ordinances and technical manuals to the recommended design storm.</i>			

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
ORD 20	Update Flood Damage Prevention Ordinance	 (City)  (Developer/Business)	★				<p><i>Adopt Ordinance reflecting current recommended regulatory template from Texas Water Development Board and FEMA.</i></p> <p><i>Include higher regulatory standards to improve resilience post-disaster and resulting from sea level changes that:</i></p> <ul style="list-style-type: none"> <i>• Provide additional definitions, particularly for repetitive loss</i> <i>• Establish two-foot (2') freeboard requirements for elevation of residential structures and elevation/flood-proofing of non-residential structures</i> <i>• Establish two-foot (2') freeboard requirements above adjacent grade and crown of road</i> <i>• Adopt standard for acceptable fill</i> <i>• Provide access during a base flood event</i> <p><i>Provide standard elevation outside of special flood hazard area</i></p>			



Stormwater Management Plan and Recommended Ordinances

April 1, 2021

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1. Introduction

1.1. Purpose

The City of Port Aransas (City), in conjunction with the Coastal Bend Bays & Estuaries Program and the Mission-Aransas National Estuarine Research Reserve (NERR) at the University of Texas Marine Science Institute (UTMSI), engaged Freese and Nichols, Inc. (FNI) to assist in sustainable drainage codification. Currently, the City of Port Aransas relies on voluntary use of the *Guidance for Sustainable Drainage on the Texas Coast* (GSD) by Michael Barrett, et al. (2014, and revised in 2019). However, its use has been inconsistent and lacks voluntary incentive. Port Aransas has experienced substantial increases in development permitting and land development, prompting interest in improving stormwater management to reduce non-point source (NPS) pollution and protect vital coastal ecology.

The City of Port Aransas is not currently subject to the requirements of the Texas Commission on Environmental Quality (TCEQ) Texas Pollutant Discharge Elimination System (TPDES) General Permit No. TXR040000 (General Permit) which sets the requirements and conditions for stormwater discharges from a small municipal separate storm sewer system (MS4) to surface waters in the state. However, it is anticipated to become subject to the General Permit in the near future due to expected population growth.

The goals of this stormwater management plan (SWMP) are to reduce NPS pollution into local waters, reduce flooding from improper drainage and high tides, and inform local citizens of the value of coastal resources and their role in ensuring sound management and resiliency. The plan documents ordinance revisions and best management practices (BMPs) the City should consider implementing over the next five years to meet the City defined goals. The City has identified these BMPs as being cost-effective approaches to protect water quality and increase community awareness of the importance of protecting natural resources.

1.2. Methodology

Preparation of this plan involved three main stages:

1. Data Reconnaissance

Several baseline datasets, reports, and observations were reviewed, including, but not limited to, 2018 United States Geological Survey (USGS) Light Detection and Ranging (LiDAR) data; Harvey storm surge elevations, the City's Storm Water Master Plan (October 2005), The GSD; historical high-water mark data for Port Aransas, including relative sea-level rise model projections; as-built infrastructure information; and direct observation.

This information enhanced understanding of current development practices, allowing identification of potential sources for the excess sediment and conditions that might be worsening the flooding and negatively impacting the coastal ecology of Port Aransas.

2. Policy Review

The City's current drainage criteria, code, and draft landscape ordinance were reviewed in comparison to State and Federal regulations, the GSD and innovative stormwater and land development practices. This allowed the identification of opportunities to improve the City's land development regulations and maintenance requirements to meet the City's goals.

3. Permitting

Understanding the Federal and State permitting environment is critical to success in addressing the City's challenges, both for existing developed areas in need of retrofit and new greenfield development. Existing permitting systems at the federal and state levels were reviewed to identify applicable permits that could strengthen, enforce, and serve the City's needs within its administrative and financial capacity, while avoiding duplication and unnecessarily bureaucratic processes at the local level.

4. Conceptual Solutions Development

Conceptual solutions were developed to achieve the City's missions of improving coastal ecology while reducing flooding conditions through low impact development (LID) implementation. Stormwater management controls were reviewed and precedent approaches were evaluated to create tangible and cost-effective solutions.

5. Ordinance Revisions & BMP Development

The conceptual solutions were transformed into ordinance revisions and BMPs to accompany the

proposed Stormwater Management Plan. An implementation schedule was established to layout a path toward implementation that was realistic given the City's financial resources, personnel resources and community culture. In nearly all cases, regulatory changes begin first with an incentive based approach, allowing implementation to have pilot projects to test effectiveness and impact to allow appropriate planning for larger rollouts. It was likewise clear that an incentive-based approach is likely a better fit initially with the community culture and regional development practices, and more likely to make those regulated into ambassadors for change rather than opponents.



2. Goals, Objectives, and Outcomes

2.1. Goals

The goals of the stormwater management plan are to reduce NPS pollution into local waters, reduce flooding from improper drainage and high tides, and inform local citizens of the value of coastal resources and their role in ensuring sound management and resiliency.

2.2. Objectives

The objectives of the SWMP are to increase the community's involvement in stormwater runoff quality as well as promote responsible development while protecting existing development and mitigating flooding and erosion concerns. The SWMP also serves as solid basis for when the City does become subject to the TCEQ MS4 General Permit.

2.3. Outcomes

Many of the actions involve education and spreading awareness which is not directly associated to a metric that is easily tracked. However, the effectiveness of these actions can be measured via the pollutants that affect the community. Key locations should be chosen throughout the City that can be used to measure the amount of petroleum product runoff, nutrients (phosphorus and nitrogen), bacteria, and/or suspended solids that are present. The percent reduction of these pollutants each year at the identified locations can be used as a metric to determine the effectiveness of the SWMP.



3. Actions

3.1. Ordinance Revisions

The 20 ordinance revisions ultimately affect seven ordinances, proposing two new ordinances and replacing one ordinance. As described earlier, the ordinances are structured to establish basic measuring approaches for what qualifies as green stormwater infrastructure, and then go on through incremental approaches using incentives and then regulations. The goal is to change the culture and understanding of stormwater infrastructure long-term, and this incentive-first approach helps to achieve that as it becomes a choice rather than a burden. Each ordinance action has a one page report (OPR) included in Appendix B. These OPRs describe the BMP, what it will accomplish, the impact to the City, and the impact to the Development/Business Community.

The affected ordinances include:

- Litter (existing)
- Illicit Discharge (new)
- Stormwater Management and Drainage (new)
- Landscape (existing)
- Zoning (existing)
- Subdivision (existing)
- Flood Damage Prevention (replacement of existing)

3.2. Best Management Practices (BMPs)

The ten BMPs include developing new internal programs and a couple capital cost items that are primarily focused on education and coordination. A one page report (OPR) was created for each BMP and is included in Appendix A. Like the OPRs for the ordinance revisions, these OPRs describe the BMP, what it will accomplish, the impact to the City, and the impact to the Development/Business Community.

Legend

Potential Pollutant Reduction: ★(slight reduction) - ★★★(significant reduction)

Cost: 🏠(slight capital cost) - 🏠🏠🏠(Significant capital cost)

Personnel: 👤(1 City staff) - 👤👤👤(Many City staff)

Bureaucracy: 📄(Minimal additional bureaucratic involvement) - 📄📄📄(significant additional bureaucratic involvement)































4. Implementation Strategy





















The following table outlines the five-year approach to implement the actions described in Section 1. This implementation strategy serves as a tool to break down multiple actions into manageable steps. These are designed with the City's capacity to implement in mind. They are not mandatory; the City may find certain actions ultimately do not fit their needs, or decide a different order is better given changing circumstances.





















In addition, preparation of this Plan identified two other key community needs:




































- **An update to the Comprehensive Plan**
The market, economy, best practices and technology have changed radically since the current plan was last updated. It is important to reconnect with public, stakeholders and other groups to develop and affirm a current community vision. Doing so can realign and support strategic planning for city leadership.
- A comprehensive revision to all development ordinances, including potential for a Unified Development Code.
The real estate market and development practices have changed radically, as has the approach to drafting development regulations. Given the crossover between different ordinances, a Unified Development Code is the likely best solution to streamline all regulations and organize them in a user-friendly way. An approach in which the Comprehensive Plan and Unified Development Code are done together as serial actions is recommended for effective implementation. If the City is considering moving forward with this approach within the next two years, then this Plan recommends deferring any regulatory changes that are not incentive-based to the overall code process.





















Additional detail on each BMP is found in Appendix A, while additional detail on each ordinance is found in Appendix B.

















BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
BMP 1	Stamp Drainage Structures	 (City)  (Developer)	★ - ★★★ (varies by pollutant type)			Design stamp to be placed on inlets and other drainage structures. Modify or create stormwater maintenance manhole cover as standard detail. Identify source(s) that can produce and supply stamps and manhole covers Identify funding needed for following two years to apply stamps to existing drainage structures	Apply stamps to existing inlets Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Apply stamps to remaining existing inlets Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.	Require new developments submitting plans to include application of stamps to proposed drainage structures and use City standard stormwater maintenance manhole cover.
BMP 2	Protect Natural Conservation Areas	 (City)  (Developer)	★★	 	 	Identify areas that qualify for conservation easement on undeveloped properties and funding needed to obtain Define requirements of maintenance agreements that will be required for future developments	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval Create conservation easements for previously identified areas	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval	Require long-term maintenance agreements to achieve final plat approval Require appropriate deed restrictions to protect natural conservation areas to achieve final plat approval
BMP 3	Create Green Sustainability Task Force	 (City)  (Developer)	★	  		Identify representative(s) from each City department	Define goals of task force Define extents of routine meetings and coordination	Reassess functionality of task force and adjust goals as needed based on experience from first full year	Continue to meet, share sustainability actions amongst departments, and achieve task force determined goals	Continue to meet, share sustainability actions amongst departments, and achieve task force determined goals
BMP 4	Education Workshops	 (City)  (Developer)	★ - ★★★ (varies by pollutant type)	 		Identify workshops that would be beneficial based on new ordinance revisions and other City actions Identify staff member(s) responsible for organizing workshop Outline workshop(s) and identify expected audience(s)	Host initial workshop Request feedback from audience Use feedback to improve subsequent workshops	Host subsequent workshop	Continue to utilize workshop program as new ordinances, programs, or actions are put into effect	Continue to utilize workshop program as new ordinances, programs, or actions are put into effect
BMP 5	Business Outreach	 (City)  (Developer)	★★★ - ★★★★★ (varies by pollutant type)	 		Identify incentives the City can offer for GSI retrofits and additions	Develop application and criteria for businesses to earn incentive	Advertise program to community Process applications and award incentives as appropriate	Process applications and award incentives as appropriate	Process applications and award incentives as appropriate
BMP 6	Community Partnerships	 (City)  (Developer)	★ - ★★★ (varies by pollutant type)			Identify staff member(s) to take responsibility for community partnerships Develop outline for community partnerships Start outreach to connect with interested organizations	Develop community partnerships Continue outreach for new partnerships	Maintain advertisement of community partnerships via website and other platforms	Maintain advertisement of community partnerships via website and other platforms	Maintain advertisement of community partnerships via website and other platforms

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
BMP 7	Consultation Services	 (City)  (Developer)	★			Identify staff member to be primary contact; have them be knowledgeable of applicable ordinances and City criteria Alternatively, if using vetted list of external resources, identify qualification for external resource to be on list.	Utilize identified staff as primary contact for consultation services. Alternatively, advertise to potential external resources the requirements to be on City list	Utilize identified staff as primary contact for consultation services. Alternatively, provide list of vetted external resources to parties that request consultation services	Utilize identified staff as primary contact for consultation services. Alternatively, provide list of vetted external resources to parties that request consultation services	Utilize identified staff as primary contact for consultation services. Alternatively, provide list of vetted external resources to parties that request consultation services
BMP 8	Public-Facing Resources	 (City)  (Developer)	★-★★★★ (varies by pollutant type)			Develop reoccurring event for hazardous waste and bulk collection	Try to find community partnership and then host first hazardous waste and bulk collection Develop recycling program and identify party that will pay for recycled resources	Continue to host hazardous waste and bulk collection with community partnership Try to find community partnership and then kickoff recycling program	Continue to host hazardous waste and bulk collection with community partnership Continue to run recycling program with community partnership Ban Styrofoam from beaches Apply Styrofoam info on public facing resources	Continue to host hazardous waste and bulk collection with community partnership Continue to run recycling program with community partnership Enforce Styrofoam ban on beaches
BMP 9	Dumping Practices	 (City)  (Developer)	★ - ★★★★★ (varies by pollutant type)			Develop reoccurring event for hazardous waste and bulk collection	Try to find community partnership and then host first hazardous waste and bulk collection Develop recycling program and identify party that will pay for recycled resources	Continue to host hazardous waste and bulk collection with community partnership Try to find community partnership and then kickoff recycling program	Continue to host hazardous waste and bulk collection with community partnership Continue to run recycling program with community partnership Ban Styrofoam from beaches Apply Styrofoam info on public facing resources	Continue to host hazardous waste and bulk collection with community partnership Continue to run recycling program with community partnership Enforce Styrofoam ban on beaches
BMP10	Establish an Inspection Schedule	 (City)  (Developer)	★ - ★★★ (varies by pollutant type)			Identify staff responsible for inspection of drainage facilities	Identify drainage facilities that will need to be on inspection schedule Create inspection criteria, may differ based on drainage facility type Create inspection schedule Notify owners of when inspections will begin and inspection criteria	Begin drainage facility inspection schedule Notify owners of failed inspections, along with deadline to address issues Add drainage facilities from new development to inspection schedule	Continue routine inspections Add drainage facilities from new development to inspection schedule	Continue routine inspections Add drainage facilities from new development to inspection schedule
ORD 1	Incentivize Sustainable Renovations	 (City)  (Developer)	★★			Adopt landscape ordinance amendment to provide landscaping credits for the implementation of green stormwater infrastructure for both new development and redevelopment (with higher credit in redevelopment). Adopt zoning ordinance amendment to provide green space incentive credit for areas functioning as green stormwater infrastructure, with higher credit for redevelopment. Adopt Stormwater Management and Drainage Ordinance, with initial provision to cross-reference incentives listed above.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
ORD 2	Identify and Preserve Sensitive Areas	 (City)  (Developer)	★★			Adopt landscape ordinance amendment to provide landscaping credits for the preservation of sensitive areas, such as wetlands, and the restoration of such sensitive areas in redevelopment scenarios. Adopt zoning ordinance amendment to provide green space incentive credits for the preservation of sensitive areas, such as wetlands, and the restoration of such sensitive areas in redevelopment scenarios.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.
ORD 3	Reduce Clearing and Grubbing	 (City)  (Developer)	★			Adopt landscape ordinance amendment to provide landscaping credits for the preservation of sensitive areas, such as wetlands, and the restoration of such sensitive areas in redevelopment scenarios. This effectively reduces clearing and grubbing. Adopt Stormwater and Drainage Ordinance, to include provisions making clear that clearing and grubbing activity is not allowed prior to securing appropriate development permits.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.	Evaluate incentives for effectiveness and continued need.
ORD 4	Add Detention Design Requirements	 (City)  (Developer)	★			Adopt Stormwater and Drainage Ordinance, to include provisions establishing drawdown requirements for detention, enhanced detention and bioretention.		Evaluate drawdown effectiveness.		
ORD 5	Change Street/Driveway Specifications	 (City)  (Developer)	★					Update necessary ordinances and technical manuals to new street and cul-de-sac sections, reconciling with adopted fire code.		
ORD 6	Add Commercial Parking Specifications	 (City)  (Developer/Business)	★ - ★★★ (varies by approach)			Adopt landscape ordinance amendment to provide regulatory direction on the placement of landscaping in such a way that stormwater runoff flows into/through the landscape areas prior to leaving the site.	Adopt zoning ordinance amendment to require permeable surfaces when the parking provided exceeds the required minimum by more than 25 percent.	Evaluate effectiveness and revise as needed as part of annual review of zoning ordinance amendment needs.	Evaluate effectiveness and revise as needed as part of annual review of zoning ordinance amendment needs.	Evaluate effectiveness and revise as needed as part of annual review of zoning ordinance amendment needs.

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
ORD 7	Change cul-de-sac Specifications	 (City)  (Developer/Business)	★					Update necessary ordinances and technical manuals to new street and cul-de-sac sections, reconciling with adopted fire code.		
ORD 8	Update Litter Ordinance and Dumping Practices	 (City)  (Developer/Business)	★							
ORD 9	Establish Regulations for Illicit Discharges	 (City)  (Developer/Business)	★ - ★★★ (varies by pollutant type)	 	 		Adopt illicit discharge ordinance			
ORD 10	Establish Construction Monitoring Regulations	 (City)  (Developer/Business)	★★	 	 	Adopt Stormwater Management and Drainage Ordinance, to include provisions for monitoring erosion and sedimentation controls.	Adopt Illicit Discharge ordinance			
ORD 11	Establish Post-Construction Maintenance	 (City)  -   (Developer/Business)	★★		 	Adopt Stormwater Management and Drainage Ordinance, to include provisions for post-construction maintenance. This includes functionality inspections, necessary easements and creation of maintenance entities as necessary.				
ORD 12	Establish Construction Requirements to Enforce Erosion and Sedimentation Controls for All Exterior and Site Developments	 (City)  -   (Developer/Business)	★★	 	 	Adopt Stormwater Management and Drainage Ordinance, to include provisions for monitoring erosion and sedimentation controls.	Adopt illicit discharge ordinance			

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
ORD 13	Update Ordinances to Require Mitigation of Impervious Area Through GSI Controls	 (City)  (Developer/Business)	★★★ - ★★★★★ (varies by approach)					Amend Stormwater Management and Drainage Ordinance to adopt Option 2 (GSI requirement when impervious cover exceeds 50%) or Option 3 (GSI requirement for all impervious cover).		
ORD 14	Limit Cut and Fill	 (City)  (Developer/Business)	★			Adopt zoning ordinance amendment removing exceptions to development permit requirement for residential or commercial fill of less than one (1) foot in depth.				
ORD 15	Establish GSI Criteria	 (City)  (Developer/Business) Depends on level of requirement, ranging from incentive-only to requirement for all new development	★★★ - ★★★★★ (varies by approach)		 Depends on level of requirement, ranging from incentive-only to requirement for all new development	Adopt landscape ordinance amendment to provide landscaping credits for the implementation of green stormwater infrastructure for both new development and redevelopment (with higher credit in redevelopment). Adopt zoning ordinance amendment to provide green space incentive credit for areas functioning as green stormwater infrastructure, with higher credit for redevelopment. Adopt Stormwater Management and Drainage Ordinance, to include adoption by reference of Guidance for Sustainable Stormwater Drainage on the Texas Coast.	Update Stormwater Management and Drainage Ordinance by developing a local/regional specific reference manual; OR work with Texas Coastal Nonpoint Source Pollution Program to refine manual requirements for local adoption.			
ORD 16	Change Platting Requirements to Include more Development Types	 (City)  (Developer/Business)	★				Amend Subdivision Ordinance to adopt best and current practices for platting in Texas, consistent with state law and case law.			
ORD 17	Update Building Permit Thresholds to Capture More Structure Types	 (City)  (Developer/Business)	★			Adopt zoning ordinance amendment removing exceptions to development permit requirement for residential or commercial fill of less than one (1) foot in depth.				

BMP ID or ORD ID	Best Management Practice or Regulatory Approach	Cost	Potential Pollutant Reduction	City Personnel Impact	Bureaucratic Involvement	Year 1	Year 2	Year 3	Year 4	Year 5
ORD 18	Require Pre-Project Meetings for Larger Developments	 (City)  (Developer/Business)	★		 -  		Amend zoning, subdivision and other relevant ordinances to require pre-project or pre-proposal meetings			
ORD 19	Increase the Design Storm	 (City)   (Developer/Business)	★ - ★★				Update Drainage System Master Plan and use to assess appropriate design storm.	Update necessary ordinances and technical manuals to the recommended design storm.		
ORD 20	Update Flood Damage Prevention Ordinance	 (City)   (Developer/Business)	★				Adopt Ordinance reflecting current recommended regulatory template from Texas Water Development Board and FEMA. Include higher regulatory standards to improve resilience post-disaster and resulting from sea level changes that: <ul style="list-style-type: none"> • Provide additional definitions, particularly for repetitive loss • Establish two-foot (2') freeboard requirements for elevation of residential structures and elevation/flood-proofing of non-residential structures • Establish two-foot (2') freeboard requirements above adjacent grade and crown of road • Adopt standard for acceptable fill • Provide access during a base flood event • Provide standard elevation outside of special flood hazard area 			

Appendix A: Best Management Practice and Ordinance Information Sheets

BMP 1: Stamp Drainage Structures

Stamp existing stormwater inlets, BMP structures, and other prominent drainage structures stating where the runoff drains. Modify or create standard stormwater maintenance manhole cover for systems installed in the future. Provide educational information about the element to promote education and awareness. Seek cost-effective methods to retrofitting.



What it accomplishes

Increased awareness by locals and visitors will encourage better practices that affect water quality and care of the stormwater features.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★★

Impact to City

Cost: 🏠

Personnel: 👤

City will need to design a stamp and/or sign to be used. Consider using a community design contest as a way to achieve the task and increase community awareness and involvement. Additionally, City will need to modify or create standard stormwater maintenance manhole cover for systems installed in the future. Lastly, provide educational information about the element to promote education and awareness.

Impact to Development/Business Community

Cost: 🏠

Bureaucracy: 📄

Future development will need to use the City-designed manhole cover and apply the stamp/sign to the BMPs on site.

BMP 2: Protect Natural Conservation Areas

Utilize deed restrictions and conservation easements to preserve the valuable natural areas, especially areas that serve as buffers that can catch pollutants before they enter the bay or ocean. Develop maintenance agreements with developers to ensure the areas are protected and maintained without added workload to City staff. Develop criteria to identify natural areas to conserve, and identify those areas.



What it accomplishes

These areas are valuable for water quality in addition to other benefits. An emphasis on protection will help protect these resources.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★	★★	★★

Impact to City

Cost:

Personnel:

City will need to identify which areas would qualify for a conservation easement. Soil type, land cover, presence of beneficial flora and fauna, the location relative to development under ultimate landuse conditions are some of the criteria that can be used to determine which areas qualify. Deed restrictions and maintenance agreements would need to be included and reviewed by City during applications for new developments.

Impact to Development/Business Community

Cost:

Bureaucracy:

Future development will need to clearly state long-term maintenance plans for new developments. Deed restrictions may need to be incorporated into new development property in order to achieve City approval of final plats.

BMP 3: Create Green Sustainability Task Force

Create a multi-departmental Green Sustainability task force at the City that is responsible for organizing, implementing, and measuring sustainable actions through the various bureaucratic avenues.



What it accomplishes

Results in a collaborative group to make sure City has a consistent and involved approach to sustainability in the community.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★

Impact to City

Cost: 🗳️

Personnel: 👤 👤 👤

City will need to develop an internal program that includes representatives from the various departments.

Impact to Development/Business Community

Cost: 🗳️

Bureaucracy: 📄

Developers will benefit from the efficiency that comes from having a collaborative group responsible for City-wide sustainability initiatives.

BMP 4: Education Workshops

Host workshops catered towards citizens, developers, and other relevant parties to educate these audiences about City's revised approach and individual parties' roles in regard to sustainable development.



gulfseagrant.org

What it accomplishes

Workshops are a great way to spread awareness in the community since they encourage a community atmosphere while delivering useful information directly from a reliable source.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★★

Impact to City

Cost: 💰

Personnel: 👤 👤

City will need to develop workshop structure. May involve more than one type of workshop that addresses the specific parties (i.e. One for developers and one for citizens). Workshop dates will need to be advertised.

Impact to Development/Business Community

Cost: 💰

Bureaucracy: 📄

Development community will benefit from attending these workshops by hearing directly from City about any changes and/or expectations. Will also be an opportunity for this community to ask questions.

BMP 5: Business Outreach

An internal program that offers incentives to existing local businesses for Green Stormwater Infrastructure (GSI) retrofits and additions.



What it accomplishes

Encourages existing businesses to benefit from the new direction the City is headed as well as contribute to pollutant reduction and community sustainability goals.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★★	★★★	★★★

Impact to City

Cost: 🏠 🏠

Personnel: 👤 👤

City will need to develop a program that offers incentives to local businesses for GSI retrofits and additions. Incentives may include stormwater utility fee discount or credit, rebate and installation financing, and/or awards and recognition programs. Criteria should clearly explain what needs to be done by a business in order to participate. The program will also need to be advertised to the business community.

Impact to Development/Business Community

Cost: 🏠 🏠

Bureaucracy: 📄

This is an optional feature for existing developments. To participate they would need to coordinate with the City and make sure they meet the program criteria.

BMP 6: Community Partnerships

Partner with businesses and other organizations in the community to promote City natural resources and preservation efforts. Partnerships can include beach clean ups, booths at community events to raise awareness, and more.



What it accomplishes

Enables the City to team up with other parties within the community to accomplish pollutant reduction and sustainability goals.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★★	★★	★★

Impact to City

Cost: 🏠

Personnel: 👤

City will need to develop program outline for community partnerships and then perform outreach to identify organizations interested in partnership. Maintain advertisement of program via website or other platforms to increase awareness of program and partnerships.

Impact to Development/Business Community

Cost: 🏠

Bureaucracy: 📄

Development and business communities will have opportunity to participate in City partnership program. Will need certain level of funds, organization, and man power depending on what events, activities the partnership entails.

BMP 7: Consultation Services

Provide internal resources or have vetted external references for developers to utilize as they start to apply new regulations. Reference would need to be familiar with incentive program, City code, and design criteria in order to provide proper guidance to developers who utilize the service.



What it accomplishes

Having these services and/or references available will contribute to a smooth and effective transition to the new ordinances and criteria.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★

Impact to City

Cost: 🏠

Personnel: 👤

City will need to have an internal staff identified as the contact. Alternatively, City can approve external references that can be distributed to developers for consultation services. External references may be required to attend City workshop or meet some other internally developed criteria to obtain reference status.

Impact to Development/Business Community

Cost: 🏠 🏠

Bureaucracy: 📄 📄

Development community will benefit from utilizing these consultation services that result in plans that meet City criteria and reduce submittal iterations.

BMP 8: Public-facing Resources

Place a variety of resources in easily accessible locations for the public including signage near resources and GSI controls, 'Leave No Trace' signage on the beach, include information on parking passes and other existing handouts, online resources, and pamphlets.



nps.gov

What it accomplishes

The variety of public-facing resources will increase awareness throughout the community by reaching both long-term residents and visiting tourists.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★★	★★	★★★★

Impact to City

Cost: 🏠 🏠

Personnel: 👤

City will need to develop these resources and obtain the funding to print or produce them. These resources may be something that is included in the local partnership program.

Impact to Development/Business Community

Cost: 🏠

Bureaucracy: 📄

New developments may need to incorporate these resources with their development plans. For example, adding the signage near GSI controls for their development.

BMP 9: Dumping Practices

Impact dumping practices through a variety of methods: Hosting an annual/bi-annual pickup of hazardous waste and bulk collection, consider disallowing Styrofoam and plastic on beaches, and promoting a recycling program to support local non-profits. Management of pet waste also supports this BMP, as well as other community needs.



What it accomplishes

These events and programs will decrease Suspended Solids and pollution and increase community involvement.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★	★	★★★

Impact to City

Cost: 🏠

Personnel: 👤 👤

City will need to develop a reoccurring event for the pickup. This could be in conjunction with one or more of the local partnerships. The recycling program would require the development of an internal program as well as identifying a party that would pay for a recycled resource.

Impact to Development/Business Community

Cost: 🏠

Bureaucracy: 📄

These programs would not significantly affect the development/business community. These would be opportunities for these parties to support the local community.

BMP 10: Establish an Inspection Schedule

An inspection schedule for drainage facilities throughout the community to ensure maintenance agreements are followed and facilities are functioning correctly.



What it accomplishes

Routine inspection will encourage acceptable practices and make ordinances more effective. The efficiency of pollutant removal is maximized with properly functioning facilities.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★★	★	★★

Impact to City

Cost: 🏠 🏠

Personnel: 👤

City will need to assign a staff member(s) to be responsible for inspecting facilities. A set of criteria should be established for the types of drainage facilities.

Impact to Development/Business Community

Cost: 🏠 🏠

Bureaucracy: 📄

Additional fee might be required from new developments to fund the inspections. If issues are found upon inspection, the responsible party for the development's drainage facility will need to fix the noted issues.

ORD 1: Incentivize Sustainable Renovations


Develop a regulatory framework that encourages the retrofitting of sites to support improved non-point source pollution conditions.

What it accomplishes

Addressing negative existing site conditions not only helps with improvement to future non-point source pollution, it reduces the current problem. In other words, rather than making future projects more sustainable, this approach allows the City to go back in time to improve the conditions that raised concerns about pollution in the first place. In addition, this can help place underutilized parcels back into economic production. The effort is accomplished through adoption of a Stormwater Management and Drainage Ordinance to establish and define green stormwater infrastructure, and amendments to the landscape and zoning ordinances to create the regulatory offsets.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★★	★★	★	★★★


Impact to City


Cost: 

Personnel: 

As a voluntary program, the cost to the city should be negligible with projects being spread out over time as redevelopment occurs. This limits impact to staff, and projects should include appropriate maintenance plans.

Impact to Development/Business Community

Cost: 

Bureaucracy: 

As a voluntary program, the cost to the developer should be negligible and the incentive should be structured in a way that offsets other development costs.

ORD 2: Identify and Preserve Sensitive Areas


Building upon BMP 2, this ordinance seeks to create a regulatory framework that supports preservation of sensitive areas such as wetlands, and the restoration of such sensitive areas in redevelopment scenarios. Like ORD 1, this effort relies heavily on regulatory incentives to encourage behavior and offset potential impacts, essentially shifting development rights within the site.


What it accomplishes

Like ORD 1, this effort relies heavily on regulatory incentives to encourage behavior and offset potential impacts, essentially shifting development rights within the site in order to preserve natural features that support removal of pollutants. Addressing negative existing site conditions not only helps with improvement to future non-point source pollution, it reduces the current problem. In other words, rather than making future projects more sustainable, this approach allows the City to go back in time to improve the conditions that raised concerns about pollution in the first place. In addition, this can help place underutilized parcels back into economic production. The effort is accomplished through adoption of amendments to the landscape and zoning ordinances to create the regulatory offsets as incentives.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★	★★	★★


Impact to City

Cost: 

Personnel: 

As a voluntary program, the cost to the city should be negligible with projects being spread out over time as redevelopment occurs. This limits impact to staff, and projects should include appropriate maintenance plans.

Impact to Development/Business Community

Cost: 

Bureaucracy: 

As a voluntary program, the cost to the developer should be negligible and the incentive should be structured in a way that offsets other development costs.

ORD 3: Reduce Clearing and Grubbing


This regulatory approach establishes a combination of new requirements and incentives to maintain greater portions of sites in a natural state with native vegetation.


What it accomplishes

This approach seeks to maintain natural vegetation, which has been shown to function effectively to reduce erosion and filter pollutants. This is accomplished through the incentive to preserve sensitive and natural areas referenced in ORD 2, and through the Stormwater Management and Drainage Ordinance prohibiting clearing a grubbing activity prior to securing appropriate development permits.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★★


Impact to City


Cost: 

Personnel: 

While this does contain a new regulation, this is likely offset by fewer code enforcement-related complaints and also should not generally prompt increased workload since subject activity would be tied to development permits.

Impact to Development/Business Community

Cost: 

Bureaucracy: 

This does contain a new regulation, resulting in impact to the development/business community if they are seeking a head start on construction activity prior to release of permits. The city could choose to allow a clear and grub release while a permit is being reviewed. Regardless, the cost and bureaucratic impact is minimal.

ORD 4: Add Detention Requirements


This regulatory approach establishes a combination of new standards to mitigate potential vector control issues and to restore capacity of detention facilities to perform pollutant removal functions.

What it accomplishes

This approach seeks to improve performance of green stormwater infrastructure and stormwater infrastructure in general by establishing drawdown requirements for detention, enhanced detention and bioretention by adopting GSI standards via a new Stormwater Management and Drainage Ordinance.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★


Impact to City


Cost: 

Personnel: 

These additional standards are not projected to have significant impacts to the City. If anything, this may reduce vector issues and improve private maintenance of facilities.

Impact to Development/Business Community

Cost: 

Bureaucracy: 

While this does introduce some new standards, drawdown requirements are common engineering practice and unlikely to produce material increases to stormwater facility design and construction.

ORD 5: Change Street and Driveway Specifications


This regulatory approach seeks to modify street and driveway specifications to reduce unnecessary impervious cover, disconnect impervious cover and introduce green stormwater practices in transportation system design, reducing non-point source pollution that might otherwise occur with new development.


What it accomplishes

This approach seeks to update standards for driveway widths and placements, with an emphasis on shared driveways, and update street sections to minimize the impervious cover created by new roadways while still reconciling with fire code. In addition, it seeks to introduce vegetative interruptions in contiguous impervious areas, like sidewalks and streets, to allow for some filtration and pollutant removal. In addition, this can serve to promote an environment that encourages pedestrians and bicycles, reducing the transportation mode share of vehicles with a tendency to create petroleum product runoff. This is accomplished via the subdivision ordinance and updates to technical standards and specifications.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★


Impact to City


Cost: 

Personnel: 

These additional standards are not projected to have significant impacts to the City. The City already enforces similar standards, and this simply updates those standards.

Impact to Development/Business Community

Cost: 

Bureaucracy: 

Alteration of these standards as described is likely to reduce paving materials involved with new development. As such, no negative impacts to the development and business community are anticipated.

ORD 6: Add Commercial Parking Specifications


This regulatory approach seeks to modify parking specifications to reduce unnecessary impervious cover, disconnect impervious cover and introduce green stormwater practices in parking lots, reducing non-point source pollution that might otherwise occur with new development.


What it accomplishes

This approach involves multiple steps over time. It begins with amendment to the landscape ordinance to provide regulatory direction to place landscaping in such a way that stormwater runoff flows into and through the landscape areas prior to leaving a site, providing some degree of filtration. This is followed by an update to the zoning ordinance to require deployment of permeable surfaces when the parking provided exceeds the required minimum ratio by more than 25 percent.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★	★	★★

Impact to City

Cost: 

Personnel: 

Adjusting these standards is a modification of existing regulations rather than introducing new regulations. As a result, the impact to the City is minimal.

Impact to Development/Business Community

Cost:  -  

Bureaucracy:  -  

The impact of these changes will vary based upon how a property owner chooses to respond. The landscape is required currently, so the change to the landscaping ordinance merely provides some specificity regarding placement. The requirement for pervious treatments is likely to draw attention to cost and prompt design inquiry as to whether the extra parking is unnecessary. Note that the draft ordinance recommends paths to compliance in which pervious surfaces to comply may use other flatwork on the site, recognizing that areas like sidewalks do not have the same compaction needs.

ORD 7: Change Cul-de-Sac Specifications


This regulatory approach seeks to modify cul-de-sac specifications to reduce unnecessary impervious cover, disconnect impervious cover and introduce green stormwater practices in transportation system design, reducing non-point source pollution that might otherwise occur with new development.

What it accomplishes

This approach seeks to update standards for cul-de-sacs, with an emphasis on discouraging their use, minimize their radius to align with local fire equipment, and provide islands to support green infrastructure while still reconciling with fire code. Doing so seeks to introduce vegetative interruptions in contiguous impervious areas to allow for some filtration and pollutant removal. In addition, this can serve to promote an environment that encourages pedestrians and bicycles, reducing the transportation mode share of vehicles with a tendency to create petroleum product runoff. This is accomplished via the subdivision ordinance and updates to technical standards and specifications.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★


Impact to City


Cost: 

Personnel: 

These additional standards are not projected to have significant impacts to the City. The City already enforces similar standards, and this simply updates those standards.

Impact to Development/Business Community

Cost: 

Bureaucracy: 

Alteration of these standards as described is likely to reduce paving materials involved with new development. As such, no negative impacts to the development and business community are anticipated.

ORD 8: Update Litter Ordinance and Dumping Practices


This regulatory approach seeks to update litter and dumping related ordinances to reduce litter pollution in stormwater.


What it accomplishes

This approach takes multiple steps to reduce impact of the waste stream on stormwater management, working in concert with BMP 9. Perhaps most effective is to seek removal of lightweight materials and low bio-degradation materials from the waste stream. While state laws have preempted municipal regulation of single-use plastic bags, prohibition of Styrofoam near water bodies and beaches has precedent.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★


Impact to City


Cost: 

Personnel: 

These additional standards are not projected to have significant impacts to the City. The City already enforces similar standards, and this simply updates those standards. These changes may, however, reduce litter cleanup by City employees or City programs.

Impact to Development/Business Community

Cost: 

Bureaucracy: 

Alteration of these standards as described is unlikely to impact the development and business community substantially.

ORD 9: Establish Regulations for Illicit Discharges

This regulatory approach seeks to specifically prohibit a number of activities likely to result in increased non-point source pollutant loads in the stormwater system.

What it accomplishes

This approach involves adoption of a new group of regulations to require erosion controls and mitigation as well as prohibit several activities that result in increased pollutants in the stormwater system. This is accomplished with a new Illicit Discharge Ordinance.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★	★	★★


Impact to City

Cost: 

Personnel:  

This ordinance does introduce new regulations that may increase workload for code enforcement or require tracking. These impacts are expected to be minimal, but the personnel impact notes existing workloads with current staff may result in greater personnel impacts.

Impact to Development/Business Community

Cost: 

Bureaucracy:  

While compliance is not costly, the ordinance does introduce some procedural steps when certain discharges are necessary and also introduces some standards that may slightly increase costs, such as requiring dichlorination of super-chlorinated water.

ORD 10: Establish Construction Monitoring Regulations


This regulatory approach seeks to establish provisions to monitor erosion and sedimentation controls in an effort to assure proper performance of stormwater conveyances to reduce non-point source pollutant loads in the stormwater system.

What it accomplishes

Through adoption of the Stormwater Management and Drainage Ordinance, a system of inspections, creation of necessary easements and establishment of maintenance entities is accomplished to ensure stormwater facilities function as designed years later as well as during construction. The Illicit Discharge Ordinance furthers this purpose in similar manner.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★	★★	★★


Impact to City


Cost: 

Personnel:  

Personnel impact should be minimal, as checking erosion and sedimentation controls can be quickly accomplished during inspections of other construction items. Likewise, following storms, checking erosion and sedimentation controls can be performed while accomplishing other post-storm tasks.

Impact to Development/Business Community

Cost: 

Bureaucracy: 

The impact to the development and business community should be minimal, as requirements to maintain controls should already be common practice for contractors and superintendents.

ORD 11: Establish Post-Construction Maintenance


This regulatory approach seeks to establish provisions for post-construction maintenance in an effort to assure proper performance of stormwater conveyances to reduce non-point source pollutant loads in the stormwater system.

What it accomplishes

Through adoption of the Stormwater Management and Drainage Ordinance, a system of inspections, creation of necessary easements and establishment of maintenance entities is accomplished to ensure stormwater facilities function as designed years later.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★	★★	★★

Impact to City

Cost: 

Personnel: 

This ordinance does introduce new regulations that may increase workload for code enforcement or require tracking. These impacts are expected to be minimal, but the personnel impact notes existing workloads with current staff may result in greater personnel impacts.

Impact to Development/Business Community

Cost:  -  

Bureaucracy:  

The impact to the development and business community varies significantly based on the methods deployed and specific site conditions. With proper design and thoughtful maintenance documents/entities, the cost can be minimized.

ORD 12: Establish Construction Requirements to Enforce Erosion and Sedimentation Controls for All Exterior and Site Developments


This regulatory approach seeks to establish provisions for erosion and sedimentation controls during all construction activity involving exterior or site alterations.



What it accomplishes

Through adoption of the Stormwater Management and Drainage Ordinance and Illicit Discharge Ordinance, requirements for erosion and sedimentation are established. This reduces pollutant loads in runoff, which are typically higher in runoff leaving untreated from a construction site.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★	★★	★★


Impact to City

Cost: 

Personnel:  

Personnel impact should be minimal, as checking erosion and sedimentation controls can be quickly accomplished during inspections of other construction items. Likewise, following storms, checking erosion and sedimentation controls can be performed while accomplishing other post-storm tasks.

Impact to Development/Business Community

Cost: 

Bureaucracy:  

The impact to the development and business community should be minimal, as requirements to maintain controls should already be common practice for contractors and superintendents.

ORD 13: Update Ordinances to Require Mitigation of Impervious Area Through GSI Controls


This regulatory approach seeks to require implementation of permanent green stormwater infrastructure requirements with various thresholds of new development.


What it accomplishes

This ordinance is a follow-up to ORD 15 in which green stormwater infrastructure is adopted through incentive-based programs. This effort goes a step further in requiring such permanent controls. This is shown in two options in which the requirement is triggered either for all impervious cover or for impervious cover exceeding 50%.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★★-★★★★	★★★-★★★★	★★	★★★-★★★★

Impact to City

Cost: 

Personnel:  

Personnel impact should be minimal, as checking calculations for pollutant load removal can be done simultaneously with verification of drainage quantity (H&H) runoff. There is, however, a greater need to verify construction of the improvements post-construction.

Impact to Development/Business Community

Cost:   -   

Bureaucracy:  

Of all of the controls, transitioning to a mandatory provision to provide green stormwater infrastructure represents the highest potential impact. The requirement does increase costs, though site conditions may result in that increased cost being offset due to efforts necessary to make the site usable. For example, the need to prepare building pads may require a degree of excavation that makes the incremental capital cost to transition the borrow area to a green stormwater infrastructure facility minimal.

ORD 14: Limit Cut and Fill


This regulatory approach seeks to limit the ability to cut and fill a site without a development permit.

What it accomplishes

This ordinance addresses the fundamental geography of Port Aransas, where changes in grade of less than a foot can significantly alter runoff characteristics, direction and other attributes. By requiring all cut and fill activity to secure an appropriate permit, the City is better-positioned to avoid issues of negative stormwater impacts to adjacent properties. This is accomplished through amendments to the Zoning Ordinance.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★★-★★★★	★★★-★★★★	★★	★★★-★★★★


Impact to City

Cost: 

Personnel: 

Personnel impact should be minimal since the development permit can be potentially consolidated for concurrent review with associated building permits for minor projects.

Impact to Development/Business Community

Cost: 

Bureaucracy:  -  

While there is some cost to permit, the reality is that this provision helps position developers to have lower risk of civil actions from adjacent land owners due to accusations of violating state water code.

ORD 15: Establish GSI Criteria


This regulatory approach seeks primarily to establish criteria to qualify a stormwater facility as green stormwater infrastructure.

What it accomplishes

This Ordinance works together with ORD 13 and ORD 1, serving to establish the fundamental method of measurement for green stormwater infrastructure whether in an incentive-based environment or regulatory approach. This adopts a regional reference *Guidance for Sustainable Stormwater Drainage on the Texas Coast*. The Ordinance attached in Appendix B also includes an attachment providing additional standards to support appropriate application of that manual to Port Aransas’ context. Port Aransas should consider working with the manual authors to update based on the recommendations of this Plan or eventually draft its own technical manual.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★-★★★★	★★-★★★★	★★	★★-★★★★

Impact to City

Cost: 

Personnel:  -  

Personnel impact should be minimal, as checking calculations for pollutant load removal can be done simultaneously with verification of drainage quantity (H&H) runoff. There is, however, a greater need to verify construction of the improvements post-construction. As an incentive-based approach, the personnel impact should remain low as participants voluntarily adopt the infrastructure standard.

Impact to Development/Business Community

Cost:  -   

Bureaucracy:  -   

The impact to the development and business community depends on the degree of implementation. As an incentive, the impact is very low, but transitioning into mandates as described for ORD 13 can have substantial impacts.

ORD 16: Change Platting Requirements to Include more Development Types


This regulatory approach seeks to position the City to see and address issues early in the development process.

What it accomplishes

This approach involves the amendment of the Subdivision Ordinance to address procedures and applicability, and also address recent changes in state law and best/common practices.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★

Impact to City

Cost: 

Personnel:  -  

Personnel impact should be minimal, as platting is a common activity currently. Depending on approach, these amendments could maintain current effort levels for personnel or increase them.

Impact to Development/Business Community

Cost:  -  

Bureaucracy:  -  

While some impact to development costs and procedures is likely, it can be done in a way that streamlines the process and makes outcomes and timelines highly predictable, which is critical to development feasibility and pro forma.

ORD 17: Update Building Permit Thresholds to Capture More Structure Types


This regulatory approach seeks to position the City to see and address issues early in the development process.

What it accomplishes

This approach involves the amendment of the Zoning Ordinance and building code related ordinances to establish clear review authority for buildings and cut/fill that results in negative impacts to adjacent properties. This does not necessarily seek to apply inspections for building code compliance, but instead focuses on impact to stormwater management.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★


Impact to City

Cost: 

Personnel:  -  

Personnel impact should be minimal, as review can be relatively quick or even over-the-counter, followed by a site verification on completion.

Impact to Development/Business Community

Cost: 

Bureaucracy:  -  

Requiring this step can seem like unnecessary bureaucracy, but Port Aransas' geography demonstrates the impact of small changes in drainage to adjacent properties and the performance of the municipal stormwater conveyances.

ORD 18: Require Pre-Development Meetings


This approach relies on communication to improve stormwater outcomes and reduce frustration of applicants and staff by requiring meetings prior to submission of development applications and beginning of construction.

What it accomplishes

This approach amends the zoning, subdivision and other relevant ordinances to require pre-construction and pre-development meetings. This provides a forum to ensure projects begin with the best of intentions with clarity of standards and expectations, resulting in a better experience for all parties.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★


Impact to City

Cost: 

Personnel:  -  

While the additional meetings do add burden, this burden may be offset by higher quality application submissions and improved compliance in the field.

Impact to Development/Business Community

Cost: 

Bureaucracy:  -  

This approach, common in other jurisdictions, can set a project up for success without substantially affecting the bottom-line for a project. Many design professionals prefer this approach in order to avoid errors that are the result of local nuance and understanding.

ORD 19: Increase the Design Storm


This regulatory approach seeks to improve performance during flooding to achieve greater resilience.


What it accomplishes

This approach involves amending stormwater management technical requirements to increase the design storm for infrastructure. Doing so reduces nuisance as well as severe flooding, and introduces better opportunities to filter pollutants. The current 2-year storm event has not been evaluated in many years for cost-effectiveness.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★★	★★	★	★★

Impact to City


Cost: 

Personnel: 

There is no change to the level of effort for the city to enforce updated storm design criteria.

Impact to Development/Business Community

Cost:  

Bureaucracy: 

Increasing the design storm will, inevitably, increase capital costs for projects to the development and business community. The cost is not going away by not acting; instead, the City is absorbing this cost through more expensive retrofitting.

ORD 20: Update the Flood Damage Prevention Ordinance


This regulatory approach seeks to improve performance during flooding to achieve greater resilience and reduce damage caused by flooding.

What it accomplishes

This approach involves replacing the City's current flood damage prevention ordinance, enacting several provisions representing higher regulatory approaches for potential participation in the Community Rating System. The recommended changes, particularly increases to freeboard and raising finished floor elevations above the crown of the street, acknowledge the changing characteristics of flooding related to rising sea levels, higher tidal ranges and increasingly severe tropical systems.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★

Impact to City


Cost: 

Personnel: 

There is no change to the level of effort for the city to enforce updated flood damage prevention standards.

Impact to Development/Business Community

Cost:  

Bureaucracy: 

These increases will result in higher capital costs. Through participation in the Community Rating System, some costs may be offset by lower insurance rates. In addition, the cost of flood damage and economic loss even during minor events can be substantially reduced.

Appendix B: Draft Ordinances

Landscape Ordinance Amendment

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 3 to incentivize reducing disturbance of natural land/systems*
- *ORD 6 to improve parking specifications related to landscape placement supporting improved stormwater runoff*
- *ORD 15 to incentivize implementation of green stormwater infrastructure for both new development and redevelopment*

ORDINANCE NO. _____ - ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH LANDSCAPING REQUIREMENTS AND LANDSCAPE INCENTIVES AND CREDITS FOR THE IMPLEMENTATION OF LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT FACILITIES; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 16, Sec. 16-143 and 16-144, is amended as follows:

Sec. 16-143. – Landscaping Requirements

- (a) General requirements.
 - (1) No art objects, decorative pieces, or shade devices may be used to satisfy the requirements of this Article.
 - (2) Permeable/Pervious Area: All planted areas and tree wells shall provide sufficient permeable/pervious area to foster plant maturity and health.
 - (3) Water sources: If an irrigation system is not installed at the time of installation, a hose bib must be provided within eighty (80) feet of any planted area.

- (4) Plant heights are measured from natural grade or if the plant is in a planter/container, from the soil level in the planter/container.
- (5) Landscaping shall be placed, and landscape borders design with sufficient openings, to allow for stormwater runoff to flow into and through the landscape areas before leaving the site.

Sec. 16-144. – Landscaping Points

- (a) Required landscaping points: The landscaping points required for each lot shall be equivalent to twenty percent (20%) of the lot area. For example, a five thousand (5,000) square foot lot would require one thousand (1,000) points while a three thousand (3,000) square foot lot would require six hundred (600) points.
- (b) Landscaping under this Code shall earn points with plantings as indicated on the Point Tabulation Table in Section 16.145 of this Article. No plan considered intrusive/invasive shall receive points under this Code.
- (c) Credit for Implementation of Low Impact Development Stormwater Practices.

The City of Port Aransas, in order to encourage implementation of stormwater management practices supportive of reduced stormwater runoff rates and volumes, reduced quantities of water-borne pollutants, reduced erosion and enhance hydrologic response of local watersheds, and to recognize the aesthetic value of low impact development stormwater infrastructure, has adopted the following landscape incentive credits:

- (1) New Development: The landscape plant classification points shall count two (2) times the amounts shown on the Point Tabulation Table in Section 16.145 of this Article for all plant materials included in the area of a lot delineated as an approved stormwater treatment practice under Chapter 16, Article V Stormwater Management and Drainage.
- (2) Redevelopment of a Previously Developed Lot: The landscape plant classification points shall count three (3) times the amounts shown on the Point Tabulation Table in Section 16.145 of this Article for all plant materials included in the area of a lot delineated as an approved stormwater treatment practice under Chapter 16, Article V Stormwater Management and Drainage.

- (d) Credit for Preservation of Sensitive Areas.

The City of Port Aransas, in order to encourage preservation of sensitive areas that play a role in reduced stormwater runoff rates and volumes, reduced quantities of water-borne pollutants, reduced erosion and enhance hydrologic response of local watersheds, and to recognize the aesthetic value of maintaining such areas in their natural state, has adopted the following incentive credits:

- (1) New Development: Area delineated as wetlands, critical habitat areas, natural depressions and storage, and buffers of such sensitive areas, as identified in Sec. 25-146(e) of this

Code, shall be deducted from the lot area for purposes of determining the required landscaping points in Sec. 16-144(a).

- (2) Redevelopment of a Previously Developed Lot: Restoration of areas delineated as previous wetlands, critical habitat areas, natural depressions and storage, and buffers of such sensitive areas, as identified in Sec. 25-146(e) of this Code, shall be deducted from the lot area for purposes of determining the required landscaping points in Sec. 16-144(a).

Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied..

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PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

City Secretary
City of Port Aransas, Texas

Zoning Ordinance Amendment

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 6 to improve parking specifications by requiring permeable surfaces when the parking provided exceeds the required minimum by more than 25 percent.*
- *ORD 14 to regulate cut and fill practices for a broader range of project types.*
- *ORD 16 to establish Green Stormwater Infrastructure criteria and incentivize implementation of green stormwater infrastructure for both new development and redevelopment*
- *ORD 17 to broaden applicability of development permit to capture a broader range of project types*

ORDINANCE NO. _____ - ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH ENVIRONMENTAL CONTROLS AND SURFACING STANDARDS IN THE ZONING ORDINANCE; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 25, Sec. 25-146., is amended as follows:

Sec. 25-146. – Environmental Controls Established.

- (b) Screening. Open storage and loading or service areas shall be screened from any adjacent residence or public way by six-foot, opaque fencing, junk, trash or debris shall be confined out of sight.
- (c) Green space. In any multifamily dwelling development there shall be three hundred twenty-five (325) square feet of green space per dwelling unit average.

The City of Port Aransas, in order to encourage implementation of stormwater management practices supportive of reduced stormwater runoff rates and volumes, reduced quantities of water-borne pollutants, reduced erosion and enhance hydrologic response of local watersheds, and to recognize the aesthetic value of low impact development stormwater infrastructure, has adopted the following green space incentive credits:

- (1) **New Development:** The area of a lot delineated as an approved stormwater treatment practice under Chapter 16, Article V Stormwater Management and Drainage shall count two (2) times for the purposes of satisfying the amount of green space per dwelling unit average.
 - (2) **Redevelopment of a Previously Developed Lot:** The area of a lot delineated as an approved stormwater treatment practice under Chapter 16, Article V Stormwater Management and Drainage shall count three (3) times for the purposes of satisfying the amount of green space per dwelling unit average.
- (d) No machine, process, or procedure shall be employed on any property in the city, in which:
- (1) Emission of smoke, dust, or noxious, toxic or lethal gases that are deemed "excessive" above normal operations that produce such emissions, and that are detectable beyond the perimeter of the property that causes material distress, discomfort or injury to persons of ordinary sensibilities in the immediate vicinity;
 - (2) Materials are stored or accumulated in such a way that they may be carried by rainwater in natural drainage channels beyond the limits of the property, which are noxious, toxic, radioactive, contain oil or grease, wood, cellulose fibers, hair, feathers, or plastic, or have a pH factor greater than nine (9) or less than six (6);
 - (3) Vibration is discernible beyond the property line.
- (e) **Septic systems.** In the absence of public water or public sewer, no building permit shall be issued until the lot meets all applicable requirements of this chapter, and a septic system meeting State regulations has been approved by Nueces County Water Control District No. 4.
- (f) **Drainage and stormwater management.** If a development project is not directly associated with a building permit or subdivision development a development permit shall be required for any manmade change in improved and unimproved real estate, said development including but not limited to excavation or fill of material, mining, grading, or paving. If the development is associated with a building permit or subdivision, the required development information shall be included with the submitted construction plans.
- (1) For drainage and stormwater design, all development within the city shall utilize the policies and technical information standards as set forth in the latest edition of the City of Port Aransas "Storm Drainage Design manual." (For more information, see also: Chapter 8, flood damage prevention, **Chapter 16 Article V, stormwater management and drainage, and/or** the development permit on file with the building department).
 - (2) The development permit shall identify and preserve wetlands, critical habitat areas, natural depressions and storage, and buffers of such sensitive areas.

~~(g) Exemptions from development permit:~~

~~(1) The project is solely for the blanket filling of a residential or commercial property with a fill depth less than one (1) foot in depth.~~

~~(2) The project consist of filling isolated portions of a residential or commercial property that exceed one (1) foot in depth and are determined by the building official to be inconsequential in regards to its effect on the properties drainage or impacts to adjacent properties.~~

(h) Wetlands. It is the sole responsibility of the property owner to determine whether or not their proposed development activity impacts wetlands that are under the jurisdiction of the U.S. Army Corps of Engineers.

Section 2: The City of Port Aransas Code of Ordinances Chapter 25, Sec. 25-159., is amended as follows:

Sec. 25-159. – Surfacing Standards

(a) All parking areas shall have durable surfaces for vehicle use areas, shall be properly drained and shall be designed with regard to pedestrian safety. A durable surface shall consist of an improved surface, including concrete, asphalt, stone, compacted shell and other permanent surfaces. Each parking space shall be accessible from a driveway.

(b) If the total amount of parking spaces provided exceeds twenty-five (25) percent of the minimum parking spaces required by Sec. 25-161, at least twenty-five (25) percent of all hardscape and paving (other than the building footprint) shall be comprised of permeable surfaces allowing the infiltration of stormwater.

Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official

newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied..

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PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

City Secretary
City of Port Aransas, Texas

Stormwater Management and Drainage Ordinance

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- **ORD 1 – Section 5(c) adopts GSI criteria and makes a cross-reference to incentives**
- **ORD 3 – Section 6(c)(2) establishes that clearing and grubbing should not take place without required permits, and erosion and sedimentation controls.**
- **ORD 4 – Section 1(f) provides drawdown requirements by adopting the manuals, specifying drawdown for enhanced detention wet ponds and bioretention design, and Section 5(b) reiterates this.**
- **ORD 10 – Section 6 addresses construction monitoring**
- **ORD 11 – Section 7 addresses post-construction maintenance of stormwater controls**
- **ORD 12 – Section 6 includes construction monitoring and enforcement provisions, including erosion and sedimentation controls**
- **ORD 13 – Section 5(d) Option 2 and Option 3 creates mitigation of impervious area through green stormwater infrastructure controls**
- **ORD 15 – Section 1(f), ordinance in general establishes GSI criteria**

ORDINANCE NO. _____ - ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH REQUIREMENTS FOR STORMWATER MANAGEMENT AND DRAINAGE; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 16 is amended to add the following Article V regarding the regulation of Stormwater Management and Drainage:

Article V. Stormwater Management and Drainage

Section 1. General Provisions

(a) Findings of Fact

It is hereby determined that:

(1) Land development projects and associated increases in impervious cover alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition; and

(2) This stormwater runoff contributes to increased quantities of water-borne pollutants, and;

- (3) Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of stormwater runoff from development sites; and
- (4) Increased stormwater runoff rates and volumes, flooding, stream channel erosion, soil erosion, and nonpoint source pollutants are threats to the public health.

Therefore, the City of Port Aransas establishes this set of stormwater runoff regulations for the purpose of protecting local, regional and state water resources from degradation. It is determined that the regulation of stormwater runoff discharges from land development projects and other construction activities in order to control and minimize increases in stormwater runoff rates and volumes, erosion, and nonpoint source pollution associated with stormwater runoff is in the public interest and will prevent threats to public health and safety.

(b) Purpose

The purpose of this ordinance is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds within this jurisdiction. This ordinance seeks to meet that purpose through the following objectives:

- (1) Minimize increases in stormwater runoff from any development in order to reduce flooding, siltation, increases in bay and estuary temperatures, and bank erosion, and maintain the integrity of channels; and
- (2) Minimize increases in nonpoint source pollution caused by stormwater runoff from development which would otherwise degrade local and receiving water quality; and
- (3) Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.

(c) Applicability

To prevent the adverse impacts of stormwater runoff, the City of Port Aransas has developed a set of performance standards that must be met at new development sites.

(1) Generally

a. Geographic and Process Applicability

This ordinance shall be applicable to all subdivision and site plan applications for property within the city limits and the city's extraterritorial jurisdiction, unless eligible for an exemption or granted a waiver by the (jurisdictional stormwater authority) under the specifications of Section 4 of this ordinance.

b. Applicability to Sites Part of a Larger Plan of Development

The ordinance also applies to land development activities that are smaller than the minimum applicability criteria if such activities are part of a larger common plan of development that meets the following applicability criteria, even though multiple separate and distinct land development activities may take place at different times on different schedules.

c. Other Interested Officials

In addition, all plans must also be reviewed by local environmental protection officials to ensure that established water quality standards will be maintained during and after development of the site and that post construction runoff levels are consistent with any local and regional watershed plans.

(2) Exemptions

The following activities are exempt from these stormwater performance criteria:

- a. Any logging and agricultural activity;
- b. Repairs to any stormwater treatment practice deemed necessary by the City of Port Aransas.

(3) Applicability to Redevelopment

When a site development plan is submitted that qualifies as a redevelopment project as defined in Section 2 of this ordinance, only any newly created impervious cover is subject to these stormwater requirements. Final authorization of all redevelopment projects will be determined after a review by the City of Port Aransas.

(d) Compatibility with Other Permit and Ordinance Requirements

This ordinance is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of law. The requirements of this ordinance should be considered minimum requirements, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

(e) Severability

If the provisions of any article, section, subsection, paragraph, subdivision or clause of this ordinance shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any article, section, subsection, paragraph, subdivision or clause of this ordinance.

(f) Development of a Stormwater Design Manual

All stormwater and drainage shall be designed and constructed in accordance with the following:

(1) Adoption of the *Guidance for Sustainable Stormwater Drainage on the Texas Coast* manual

- a. The City of Port Aransas has adopted the *Guidance for Sustainable Stormwater Drainage on the Texas Coast* manual. This manual includes a list of acceptable stormwater treatment practices, including the specific design criteria and operation and maintenance requirements for each stormwater practice. The manual may be updated and expanded from time to time, at the discretion of the local review authority, based on improvements in engineering, science, monitoring and local maintenance experience. Stormwater treatment practices that are designed and constructed in accordance with these design and sizing criteria will be presumed to achieve water quality performance standards of eighty (80) percent removal of total suspended solids (TSS).
- b. Modifications to the *Guidance for Sustainable Stormwater Drainage on the Texas Coast Manual* are included in Attachment A.

(2) Adoption of the City of Port Aransas Storm Drainage Design Manual

The following manual and maps are hereby adopted by reference as though they were copied herein fully as the Storm Drainage Master plan of the City of Port Aransas:

- a. Storm Drainage Design Manual – October, 2005
- b. Storm Drainage Master Plan Maps – October, 2005

(3) Consistency with Flood Damage Prevention Regulations

All stormwater and drainage shall be designed and constructed in accordance with Chapter 8, Flood Damage Prevention, City of Port Aransas Code of Ordinances.

Section 2. Definitions

(a) Applicant

means a property owner or agent of a property owner who has filed an application for a stormwater management permit.

(b) Building

means any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal, or property, and occupying more than 100 square feet of area.

(c) Channel

means a natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

(d) Dedication

means the deliberate appropriation of property by its owner for general public use.

(e) Developer

means a person who undertakes land disturbance activities.

(f) Drainage Easement

means a legal right granted by a landowner to a grantee allowing the use of private land for stormwater management purposes.

(g) Payment in Lieu

means a payment of money in place of meeting all or part of the storm water performance standards required by this ordinance.

(h) Impervious Cover

means those surfaces that cannot effectively infiltrate rainfall (including such things as building rooftops, pavement, sidewalks, paved and unpaved driveways, parking areas, and streets, but not including swimming pools and ponds).

(i) Land Disturbance Activity

means any activity which changes the volume or peak flow discharge rate of rainfall runoff from the land surface. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity which bares soil or rock or involves the diversion or piping of any natural or man-made watercourse.

(j) Landowner

means the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

(k) Maintenance Agreement

means a legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of storm water management practices.

(l) Nonpoint Source Pollution

means pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

(m) Off-Site Facility

means a stormwater management measure located outside the subject property boundary described in the permit application for land development activity.

(n) On-Site Facility

means a stormwater management measure located within the subject property boundary described in the permit application for land development activity.

(o) Redevelopment

means any construction, alteration or improvement exceeding one acre in areas where existing land use is high density commercial, industrial, institutional or multi-family residential.

(p) Stop Work Order

means an order issued which requires that all construction activity on a site be stopped.

(q) Stormwater Management

means the use of structural or non-structural practices that are designed to reduce storm water runoff pollutant loads, discharge volumes, peak flow discharge rates and detrimental changes in stream temperature that affect water quality and habitat.

(r) Stormwater Runoff

means flow on the surface of the ground, resulting from precipitation.

(s) Stormwater Treatment Practices (STPs)

means measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing or reducing point source or nonpoint source pollution inputs to stormwater runoff and water bodies.

(t) Water Quality Volume (WQV)

means the storage needed to capture and treat the storm identified in the stormwater guidance manual.

(u) Watercourse

means a permanent or intermittent stream or other body of water, either natural or manmade, which gathers or carries surface water.

(v) Waters of the United States (WOTUS)

threshold term in the Clean Water Act and establishes the scope of federal jurisdiction under the Act. The Clean Water Act does not define “waters of the United States”; rather, it provides discretion for EPA and the USACE to define “waters of the United States” in regulations. Generally, WOTUS includes bays and oceans, lakes, reservoirs, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds.

Section 3. Permit Procedures and Requirements

(a) Permit Required

No landowner or land operator shall receive any of the building, grading or other land development permits required for land disturbance activities without first meeting the requirements of this ordinance prior to commencing the proposed activity.

(b) Application Requirements

Unless specifically excluded by this ordinance, any landowner or operator desiring a permit for a land disturbance activity shall submit to the City of Port Aransas a permit application containing the material required by the stormwater design manual.

The stormwater management plan shall be prepared to meet the requirements of Section 5 of this ordinance, the maintenance agreement shall be prepared to meet the requirements of Section 7 of this ordinance, and fees shall be those established by the City of Port Aransas.

In addition to the above, the following documents shall be included in the submittal to the City of Port Aransas for any building permit, site permit or other permit involving land disturbance:

- (1) TPDES permit issued by Texas Commission on Environmental Quality (TCEQ), as applicable; and
- (2) US Army Corps of Engineers (USACE) Section 404 permit, as applicable

(c) Application Review Fees

The fee for review of any land development application shall be based on the amount of land to be disturbed at the site, and the fee structure shall be established by the City of Port Aransas. All of the monetary contributions shall be credited to a local budgetary category to support local plan review, inspection and program administration, and shall be made prior to the issuance of any building permit for the development.

(d) Application Procedures

The following procedure shall apply:

- (1) Applications for land disturbance activity permits must be filed with the City of Port Aransas. The City of Port Aransas may establish uniform submission dates and shall publish a submission calendar annually should uniform submission dates be established.
- (2) The City of Port Aransas shall specify in appropriate forms the submission content, number of copies and other pertinent information to ascertain consistency with this Article, as well as any required review fees.
- (3) The City of Port Aransas shall inform the applicant whether the application, plan and maintenance agreement are approved or disapproved. If disapproved, the City of Port Aransas shall indicate specific deficiencies and citations.
- (4) If the stormwater management plan is disapproved, the applicant may revise the stormwater management plan.
- (5) If the final stormwater management plan is approved by the City of Port Aransas, all appropriate land disturbance activity permits shall be issued.

(e) Permit Duration

Permits issued under this Section shall be valid from the date of issuance through the date the City of Port Aransas notifies the permit holder that all stormwater management practices have passed the final inspection required under permit condition.

Section 4. Relief from Stormwater Management Requirements

(a) Waivers for Providing Stormwater Management

Every applicant shall provide for stormwater management as required by this ordinance, unless a written request is filed to waive this requirement. Requests to waive the stormwater management plan requirements shall be submitted to the City of Port Aransas for approval. In instances where one of the conditions below applies, the City of Port Aransas may grant a

waiver in whole or in part from strict compliance with these stormwater management provisions as long as acceptable mitigation measures are provided:

- (1) It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this ordinance; or
- (2) Alternative minimum requirements for on-site management of stormwater discharges have been established in a stormwater management plan that has been approved by the City of Port Aransas and the implementation of the plan is required by local ordinance; or
- (3) Provisions are made to manage stormwater by an off-site facility. The off-site facility is required to be in place, to be designed and adequately sized to provide a level of stormwater control that is equal to or greater than that which would be afforded by on-site practices and there is a legally obligated entity responsible for long-term operation and maintenance of the stormwater practice; or
- (4) The City of Port Aransas finds that meeting the minimum on-site management requirements is not feasible due to the natural or existing physical characteristics of a site.

(b) Payment in Lieu of Stormwater Management Practices

Where the City of Port Aransas waives all or part of the minimum stormwater management requirements, or where the waiver is based on the provision of adequate stormwater facilities provided downstream of the proposed development, the applicant shall be required to pay a fee in an amount as determined by the City of Port Aransas.

When an applicant obtains a waiver of the required stormwater management, the monetary contribution required shall be in accordance with a fee schedule (unless the developer and the stormwater authority agree on a greater alternate contribution) established by the City of Port Aransas, and based on the amount of impervious cover created by the development in question. All of the monetary contributions shall be credited to an appropriate capital improvements program project, and shall be made by the developer prior to the issuance of any building permit for the development.

(c) Dedication of Land

In lieu of a monetary contribution, an applicant may obtain a waiver of the required stormwater management by entering into an agreement with the City of Port Aransas for the granting of an easement or the dedication of land by the applicant, to be used for the construction of an off-site stormwater management facility. The agreement shall be entered into by the applicant and the City of Port Aransas prior to the recording of plats or, if no record plat is required, prior to the issuance of the building permit.

Section 5. General Performance Criteria for Stormwater Management

Unless judged by the City of Port Aransas to be exempt or granted a waiver, the following performance criteria shall be addressed for stormwater management at all sites:

- (a) All site designs shall establish stormwater management practices to control the peak flow rates of stormwater discharge associated with specified design storms and reduce the generation of stormwater. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.
- (b) Maximum retention or “draw-down” time for detention ponds shall not exceed 24 hours from the time of peak storage to the time of complete emptying of the pond, as determined by hydrograph routing or other calculations acceptable to the City. This requirement does not apply to facilities in which retention or “draw-down” time is required to be greater than 24 hours. All volume required for detention shall be available after 24 hours to allow for subsequent storms, including any portion of the water quality volume utilized for detention purposes.
- (c) All stormwater runoff generated from new development shall not discharge untreated stormwater directly into waters of the US (WOTUS) or a local waterbody without adequate treatment, and compliance with state and federal regulatory requirements. For new developments where such discharges are proposed, City of Port Aransas shall evaluate compliance with any mitigation requirements from the United States Army Corp of Engineers (USACE), Texas Commission on Environmental Quality (TCEQ), or other Federal or State Agency.

OPTION 1 – INCENTIVE APPROACH

- (d) For new development seeking incentives, development bonuses or credit under Chapter 16 Article IV Landscaping or Chapter 25 Zoning, structural stormwater stormwater treatment practices shall be designed to remove eighty (80) percent of the average annual post development total suspended solids load (TSS). It is presumed that a STP complies with this performance standard if it is:
 - (1) Sized to capture the prescribed water quality volume (WQV); and
 - (2) Designed according to the specific performance criteria outlined in the adopted Stormwater Design Manuals; and
 - (3) Constructed properly; and
 - (4) Maintained regularly.

OPTION 2 – REGULATORY APPROACH INITIAL

- (d) For new development beyond fifty (50) percent impervious cover, structural stormwater stormwater treatment practices shall be designed to remove eighty (80) percent of the average annual post development total suspended solids load (TSS). It is presumed that a STP complies with this performance standard if it is:
 - (1) Sized to capture the prescribed water quality volume (WQV); and
 - (2) Designed according to the specific performance criteria outlined in the adopted Stormwater Design Manuals; and
 - (3) Constructed properly; and
 - (4) Maintained regularly.

OPTION 3 – REGULATORY APPROACH FINAL

- (d) For new development, structural stormwater stormwater treatment practices shall be designed to remove eighty (80) percent of the average annual post development total suspended solids load (TSS). It is presumed that a STP complies with this performance standard if it is:
 - (1) Sized to capture the prescribed water quality volume (WQV); and
 - (2) Designed according to the specific performance criteria outlined in the adopted Stormwater Design Manuals; and
 - (3) Constructed properly; and
 - (4) Maintained regularly.

Section 6. Requirements for Stormwater Management Plan Approval

- (a) Stormwater Management Plan Required

No application for development will be approved unless it includes a stormwater management plan detailing in concept how runoff and associated water quality impacts resulting from the development will be controlled or managed. This plan must be prepared by an engineer licensed in the State of Texas and must indicate whether stormwater will be managed on-site or off-site and, if on-site, the general location and type of practices.

The stormwater management plan(s) shall be referred for comment to all other interested agencies, and any comments must be addressed in a final stormwater management plan. This final plan must be signed by a licensed professional engineer (PE), who will verify that the design of all stormwater management practices meet the submittal requirements outlined in the

Submittal Checklist found in the stormwater design manual. No building, grading, or sediment control permit shall be issued until a satisfactory final stormwater management plan, or a waiver thereof, shall have undergone a review and been approved by the City of Port Aransas after determining that the plan or waiver is consistent with the requirements of this ordinance.

(b) Stormwater Management Plan Requirements

A stormwater management plan shall be required with all permit applications and will include the information required by the stormwater guidance manual.

The applicant must ensure access to all stormwater treatment practices at the site for the purpose of inspection and repair by securing all the maintenance easements needed on a permanent basis. These easements will be recorded with the plan and will remain in effect even with transfer of title to the property.

The applicant must provide for appropriate BMPs during construction to minimize erosion.

The applicant must execute an easement and an inspection and maintenance agreement binding on all subsequent owners of land served by an on-site stormwater management measure in accordance with the specifications of this ordinance.

(c) Erosion Control Plan

- (1) In order to clearly identify all erosion and sediment control measures to be installed and maintained throughout the duration of the project, a detailed erosion control plan shall be required prior to the issuance of the site development permit or the building permit in accordance with adopted design manuals.
- (2) Each developer shall implement and maintain the erosion control measures shown on its approved erosion control plan or otherwise approved by the City in order to minimize the erosion and the transport of silt, earth, topsoil, etc., by water runoff or construction activities, beyond the limits of the developer's site onto city streets, drainage easements, drainage facilities, storm drains or other city property, prior to beginning any land-disturbing activity.
 - a. The contractor shall install erosion/sedimentation controls, tree/natural area protective fencing, and conduct "Pre-Construction" tree fertilization (if applicable) prior to any site preparation work (clearing, grubbing or excavation).
 - b. The placement of erosion/sedimentation controls shall be in accordance with the approved erosion control plan or otherwise approved by the City. It shall be available for review by the City at all times during construction.
 - c. The contractor is required to provide a certified inspector that is either a licensed engineer (or person directly supervised by the licensed engineer) or Certified Professional in Erosion and Sediment Control (CPESC or CPESC - IT),

Certified Erosion, Sediment and Stormwater - Inspector (CESSWI or CESSWI - IT) or Certified Inspector of Sedimentation and Erosion Controls (CISEC or CISEC - IT) certification to inspect the controls and fences at weekly or bi-weekly intervals and after one-half (½) inch or greater rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six (6) inches or one-third (⅓) of the installed height of the control whichever is less.

- d. Prior to final acceptance by the City, haul roads and waterway crossings constructed for temporary contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.
- (3) It shall be an offense for a developer or a third party performing work on a project to violate any of the requirements of this article, including, but not limited to, the following:
- a. Conducting any land-disturbing or construction activity without an approved erosion control plan for the location where the violation occurred.
 - b. Failing to install erosion control devices or to maintain erosion control devices throughout the duration of land-disturbing activities, in compliance with the approved erosion control plan for the location where the violation occurred.
 - c. Failing to remove off-site sedimentation that is a direct result of land-disturbing activities where such off-site sedimentation results from the failure to implement or maintain erosion control devices as specified in an approved erosion control plan for the location where the violation occurred.
 - d. Allowing sediment-laden water resulting from below-ground installations to flow from a site without being treated through an erosion control device.
 - e. Failing to repair damage to existing erosion control devices, including replacement of existing grass or sod.
- (4) Written notice of violation shall be given to the developer or his job site representative as identified in the erosion control plan for a site. Such notice shall identify the nature of the alleged violation and the action required to obtain compliance with the intent of the approved erosion control plan.

(d) TPDES Permit and City Notification

- (1) Any operator who intends to obtain coverage as an operator for stormwater discharges from a construction site under a TPDES general permit for stormwater discharges from construction sites (the construction general permit) from Texas Commission on Environmental Quality (TCEQ) shall submit a signed copy of its Notice of Intent (NOI) to the city engineer at least fourteen (14) days prior to the commencement of construction activities. If the construction activity is already underway upon the effective date of this article, the NOI shall be submitted within thirty (30) days. For stormwater discharges from construction sites where the operator changes, an NOI shall be submitted to the city engineer at least seven (7) days prior to when the operator commences work at the site.
- (2) A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared and implemented in accordance with the requirements of the TPDES construction general permit, or any individual or group TPDES permit issued for stormwater discharges from the construction site. The SWPPP shall include any additional requirement imposed by or under this article and any other provision of the city's Code of Ordinances.
- (3) On a site of more than one acre in total land area or a site which is impacted by off-site drainage for more than one acre, the SWPPP shall be prepared, signed, and sealed by a registered professional engineer. The signature and seal of the registered professional engineer shall constitute certification that the SWPPP fully complies with the requirements of the construction general permit, or with any applicable individual or group TPDES permit issued for stormwater discharges from the construction site, and with any additional requirement imposed by or under this article. The SWPPP shall contain the name, title, and business address of the registered professional engineer signing it, and the date that he/she did so.
- (4) The SWPPP shall be completed prior to the submittal of the NOI to the city and, for new construction, prior to the commencement of construction activities. The SWPPP shall be updated and modified as appropriate and as required by the construction general permit and this article. Any update or modification to the SWPPP shall be prepared, signed, and sealed by a registered professional engineer, if the original SWPPP was required to have been prepared by a registered professional engineer.
- (5) A copy of any NOI that is required shall be submitted to the city in conjunction with any application for a building permit, site development, subdivision plat approval, site development plan approval, and any other city approval necessary to commence or continue construction at the site.
- (6) The city engineer shall require any operator who is required to prepare a SWPPP to submit the SWPPP, and any modifications thereto, to the city engineer for review.

Such submittal and review of the SWPPP shall be required by the city prior to commencement of or during construction activities at the site.

- (7) Upon the city's review of the SWPPP and any site inspection that it may conduct, the city may deny approval of any building permit, site development permit, subdivision plat, site development plan, or any other city approval necessary to commence or continue construction, or to assume occupancy, on the grounds that the SWPPP does not comply with the requirements of the construction general permit, any individual or group TPDES permit issued for stormwater discharge from the construction site, or any additional requirement imposed by or under this article. Also, if at any time the city determines that the SWPPP is not being fully implemented, the city may similarly deny approval of any building permit, site development permit, subdivision plat, site development plan or any other city approval necessary to commence or continue construction, or to assume occupancy, at the site.
- (8) The owner shall make the SWPPP and any modification thereto available to the city upon request, and to TCEQ inspectors.
- (9) The city may notify the owner at any time that the SWPPP does not meet the requirements of the construction general permit, any applicable individual or group TPDES permit issued for stormwater discharges from the construction site, or any additional requirement imposed by or under this article. Such notification shall identify those provisions of the permit or this article which are not being met by the SWPPP, and identify which provisions of the SWPPP require modifications in order to meet such requirements. Within seven (7) days of such written notification from the city, the operator shall make the required changes to the SWPPP and shall submit to the city a written certification that the requested changes have been made.
- (10) The operator shall amend the SWPPP whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the potential for the discharge of pollutants to the stormwater drainage system or to waters of the United States (WOTUS), and which has not otherwise been addressed in the SWPPP, or if the SWPPP proves to be ineffective in eliminating or significantly minimizing pollutants, or in otherwise achieving the general objective of controlling pollutants in stormwater discharges associated with construction activity. In addition, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement a measure in the SWPPP.
- (11) Qualified personnel, provided by the operator of the construction site, shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site, at least once every seven calendar days and within twenty-four (24) hours of the end of the storm that is one-half inch (0.5") or greater. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the

potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP shall be observed to ensure that they are operating correctly. Discharge locations or points that are accessible shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

- (12) Based on the results of the inspections, the site description and the pollution prevention measures identified in the SWPPP, the SWPPP shall be revised as appropriate, but in no case later than seven calendar days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP within seven calendar days following the inspection.
- (13) A report summarizing the scope of any inspection, and the name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP, and actions taken in accordance with subsection (12) above shall be made and retained as part of the SWPPP for at least three (3) years from the date that the site is finally stabilized. Such report shall identify any incidence of noncompliance. Where a report does not identify any incidence of noncompliance, the report shall contain a certification that the facility is in compliance with the SWPPP, the facility's TPDES permit, and this article. The report shall be certified and signed by the person responsible for making the report.
- (14) The owner shall retain copies of any SWPPP and all reports required by this article or by the TPDES permit for the site, and records of all data used to complete the NOI, for a period of at least three (3) years from the date that the site is finally stabilized.
- (15) Where a site has been finally stabilized and all stormwater discharges from construction activities that are authorized by this article and by the TPDES permit for those construction activities are eliminated, or where the operator of all stormwater discharges at a facility changes, the owner of the construction site shall submit to the city a notice of termination (NOT) that includes the information required for notices of termination by part VIII of the construction general permit.
- (16) Upon final stabilization of the construction site, the owner or the duly authorized representative thereof shall submit written certification to the city that the site has been finally stabilized. The city may withhold an occupancy or use permit for any premises constructed on the site until such certification of final stabilization has been filed and the city has determined, following any appropriate inspection, that final stabilization has, in fact, occurred and that any required permanent structural controls have been completed.

(e) Performance Bond and Security

The City of Port Aransas may, at its discretion, require the submittal of a performance security or bond prior to issuance of a permit in order to insure that the stormwater practices are installed by the permit holder as required by the approved stormwater management plan. The amount of the installation performance security shall be the total estimated construction cost of the stormwater management practices approved under the permit, plus twenty-five (25) percent. The performance security shall contain forfeiture provisions for failure to complete work specified in the stormwater management plan.

The installation performance security shall be released in full only upon submission of "as built plans" and written certification by a licensed professional engineer that the stormwater practice has been installed in accordance with the approved plan and other applicable provisions of this ordinance. The City of Port Aransas will make a final inspection of the stormwater practice to ensure that it is in compliance with the approved plan and the provisions of this ordinance. Provisions for a partial pro-rata release of the performance security based on the completion of various development stages can be done at the discretion of the City of Port Aransas.

Section 7. Maintenance and Repair of Stormwater Facilities

(a) Maintenance Easement

Prior to the issuance of any permit that has a stormwater management facility as one of the requirements of the permit, the applicant or owner of the site must execute a maintenance easement agreement that shall be binding on all subsequent owners of land served by the stormwater management facility. The agreement shall provide for access to the facility at reasonable times for periodic inspection by the City of Port Aransas, or their contractor or agent, and for regular or special assessments of property owners to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by this ordinance. The easement agreement shall be recorded by the City of Port Aransas in the land records.

(b) Maintenance Covenants

Maintenance of all stormwater management facilities shall be ensured through the creation of a formal maintenance covenant that must be approved by the City of Port Aransas and recorded into the land record prior to final plan approval. As part of the covenant, a schedule shall be developed for when and how often maintenance will occur to ensure proper function of the stormwater management facility. The covenant shall also include plans for periodic inspections to ensure proper performance of the facility between scheduled cleanouts.

The City of Port Aransas, in lieu of a maintenance covenant, may accept dedication of any existing or future stormwater management facility for maintenance, provided such facility meets all the requirements of this chapter and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.

(c) Requirements for Maintenance Covenants

All stormwater management facilities must undergo, at the minimum, an annual inspection to document maintenance and repair needs and ensure compliance with the requirements of this ordinance and accomplishment of its purposes. These needs may include: removal of silt, litter and other debris from all catch basins, inlets and drainage pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation. Any maintenance needs found must be addressed in a timely manner, as determined by the City of Port Aransas, and the inspection and maintenance requirement may be increased as deemed necessary to ensure proper functioning of the stormwater management facility.

(d) Inspection of Stormwater Facilities

Inspection programs may be established on any reasonable basis, including but not limited to routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other stormwater treatment practices.

(e) Right-of-Entry for Inspection

When any new drainage control facility is installed on private property, or when any new connection is made between private property and a public drainage control system, sanitary sewer or combined sewer, the property owner shall grant to the (jurisdictional stormwater authority) the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This includes, but is not limited to, the right to enter a property when it has a reasonable basis to believe that a violation of this ordinance is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this ordinance.

(f) Failure to Maintain Practices

If a responsible party fails or refuses to meet the requirements of the maintenance covenant, the City of Port Aransas, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work to place the facility in proper working condition. In the event that the stormwater management facility becomes a danger to public safety or public health, the City of Port Aransas shall notify the party responsible for maintenance of the stormwater management facility in writing. Upon receipt of that notice, the responsible person shall have 60 days to effect maintenance and repair of the facility in an approved manner. After proper notice, the City of Port Aransas may assess the owner(s) of the facility for the cost of repair work and any penalties; and the cost of the work shall be a lien on the property, or prorated against the beneficial users of the property, and may be placed on the tax bill and collected as ordinary taxes by the municipality.

(g) Requirements for Maintenance Associations.

- (1) Landowners and land users outside the city limits and not within a utility district may elect to form a maintenance association (MA) in accordance with this section prior to permit issuance. All MAs must post financial security or create a maintenance fund for the purpose of maintaining all stormwater management controls required by this article. The duties and responsibilities of an MA may be performed by a homeowners' association, property owners' association, or like entity if it meets the requirements of this section. The maintenance of all BMPs shall be in accordance with the applicable permits and the approved maintenance plan.
- (2) The applicant must submit to the city the approved articles of association for the MA, as well as a map showing the boundaries of its jurisdiction. The MA must have the following general powers which are reflected in the articles of association:
 - a. Own and convey property;
 - b. Operate and maintain common property, specifically the stormwater management controls;
 - c. Establish rules and regulations;
 - d. Assess members maintenance fees and enforce said assessments;
 - e. Sue and be sued;
 - f. Contract for services to provide operation and maintenance;
 - g. If the MA is a homeowners' association, it must have as members all the homeowners, lot owners, property owners, or unit owners;
 - h. The MA shall exist in perpetuity; however, if the MA is dissolved or annexed into the city or a utility district, the articles of association must provide that the property consisting of the stormwater management controls shall be conveyed to the city or a utility district; and
 - i. It shall be clearly stated in the articles of association of the MA that:
 1. It is the responsibility of the MA to operate and maintain the stormwater controls;
 2. The water quality controls are owned by the MA or described therein as common property;

3. There is a method of assessing and collecting the assessment for operation and maintenance of the stormwater management controls; and
 4. Any amendment that would affect the stormwater management controls must be approved by the city.
- (3) If an MA is proposed for a project which will be developed in phases and subsequent phases will utilize the stormwater management controls, the MA must have the ability to accept future phases into the MA.

(h) Annual Operating Permit

(1) General Requirements.

The owners or operators of all new stormwater management controls for multifamily residential development, for single-family subdivision development, and for nonresidential development must obtain an annual operating permit. The owner or operator is responsible for the proper operation and maintenance of the control and for annual permit renewal. The first operating permit will be issued by the city upon:

- a. The completion of construction, if applicable;
- b. Inspection of the control by the City after review of the maintenance plan accompanying the design engineer's concurrence letter of the completion of construction;
- c. Final inspection approval by the City;
- d. The issuance of a Certificate of Compliance or a Certificate of Occupancy by the City, if applicable; and
- e. Payment of the permit fee.

(2) Procedures.

All stormwater management controls must be maintained in accordance with this article, and each permitted control will be inspected each year by the city to confirm that proper maintenance, as described in the maintenance plan, has occurred prior to renewal of the permit. An operating permit shall be required for developed sites with existing stormwater management control only when new development or redevelopment occurs.

(3) Information Requirements.

The City may establish components and submission requirements to implement this Section.

(4) Renewal.

- a. It is the responsibility of the permittee to apply to the city for renewal of the permit no later than thirty (30) calendar days before the existing permit expires. The application must be accompanied by payment of the appropriate renewal fee, updated information concerning ownership or facility operation and enforcement status. Upon receipt of all information and fees, including a favorable inspection and maintenance report, the city will renew the permit for a period of one (1) year.
- b. Any repair work or modifications of a control not specified in the maintenance plan shall require the permittee's engineer's concurrence letter, prior to renewal of the permit.
- c. Permit renewal will be withheld if there is pending enforcement action against the permittee based on any violations of water quality regulations at the site.

(5) Transfer.

The transfer of the operating permit shall require the completion of a new permit application, and must be submitted not later than thirty (30) calendar days after transfer of ownership or operation of the control.

(i) Functionality Inspections.

- (1) In addition to the inspection and permitting process provided in this Ordinance, each owner of on-site stormwater management controls facilities shall obtain from a qualified professional registered engineer a functionality inspection no less than once every five years. The first functionality test is due on or before the expiration of five years from the date the facility was accepted by the city and every five years thereafter. If no functionality inspection has occurred by a facility that was accepted by the city more than five years from the effective date of the ordinance from which this section was adopted, such facility shall obtain a functionality inspection on or before the expiration of one year from the effective date of the ordinance from which this section was adopted. In addition, functionality inspections shall be conducted during or within (72 hours) following a 1-year storm event which has produced or is producing a depth of precipitation of 1.33 inches during six hours or 0.22 inches/hour. The following, if present, must be inspected and evaluated at each water quality facility, including but not limited to:
 - a. Dams, berms, levees.
 - b. Spillways.
 - c. Inlets.

- d. Pipes, culverts, and appurtenances.
 - e. Outlets.
 - f. Bank erosion.
 - g. Sedimentation.
 - h. Tree/vegetation management.
 - i. Trash and debris removal.
 - j. Water quality impairments.
 - k. Backup power.
 - l. Reservoir drawdown capability.
 - m. Security issues.
 - n. Emergency spillway/service spillway.
 - o. Service outlet structure.
 - p. Service inlet structure.
 - q. Downstream hazard conditions.
 - r. Seepage on downstream slope.
 - s. Downstream embankment general condition.
 - t. Upstream embankment.
 - u. Crest of embankment.
 - v. Irrigation area.
- (2) The purpose of the functionality inspection shall be to determine if each stormwater management control facility is:
- a. Operating properly;
 - b. Pumps, electrical systems, and all appurtenances applicable to the BMP's working;

- c. Structurally integrity protected;
 - d. Accomplishing the purposes for which it was designed and installed; and
 - e. Can be improved or modified in a manner that is likely to improve its functionality or efficiency.
- (3) The engineer conducting the functionality inspection shall prepare and file with the city and the owner a written report that includes the engineer's evaluation of whether the water quality facility is accomplishing the purposes described in subsection (2), including any analysis of optional actions, cost/benefit, any risk associated with the facility, and any other factor that, in the engineer's opinion, should be brought to the attention of the owner and the city. The owner is responsible for the operation and maintenance of a water quality management facility and shall make records of all maintenance installation and repairs. Records of the inspection, maintenance and repairs must be completed, signed by the responsible engineer, and retained for a minimum of five years for review upon city request.
- (4) The owner of the water quality facility shall be responsible for all costs associated with procuring the functionality inspection and shall provide a written copy of the engineer's inspection report not later than thirty (30) days after the sooner of the fifth anniversary of the date the facility was first installed and permitted or the last functionality inspection.
- (5) Failure to obtain a functionality inspection may result in revocation of the owner's permit and such other enforcement or penalties as the city may determine to be appropriate.
- (6) In the event that the inspection reveals that the water quality facility is not accomplishing the purposes for which it was constructed, or that new or additional BMPs, stormwater management controls, or facilities are necessary for proper functioning of the facility or the accomplishment of its intended purposes, the owner shall be required to implement such BMPs or stormwater management controls or to construct such facilities and, to the extent necessary, amend the applicable stormwater pollution prevention plan, TPDES permit, stormwater management controls maintenance plan, pollution control permit, or restrictive covenant as a condition to renewal of the owner or operator's annual operating permit. Deficiencies must be addressed within 90 days from the date identified unless additional time is approved by the city engineer. The person responsible for facility inspection must provide documentation to the city demonstrating that each deficiency identified in the inspection report has been corrected. Additional inspection reports may be required by the city if an event occurs, such as a large storm event, which in the opinion of the city engineer jeopardizes the structural integrity or function of the facility.

Section 8. Enforcement and Penalties

(a) Violations

Any development activity that is commenced or is conducted contrary to this ordinance, may be restrained by injunction or otherwise abated in a manner provided by law.

(b) Notice of Violation

When the City of Port Aransas determines that an activity is not being carried out in accordance with the requirements of this Ordinance, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:

- (1) The name and address of the owner or applicant; and
- (2) The address when available or a description of the building, structure or land upon which the violation is occurring; and
- (3) A statement specifying the nature of the violation; and
- (4) A description of the remedial measures necessary to bring the development activity into compliance with this Ordinance and a time schedule for the completion of such remedial action; and
- (5) A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed; and
- (6) A statement that the determination of violation may be appealed to the City of Port Aransas by filing a written notice of appeal within fifteen (15) days of service of notice of violation.

(c) Stop Work Orders

Persons receiving a notice of violation will be required to halt all construction activities. This "stop work order" will be in effect until the City of Port Aransas confirms that the development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in revocation of a permit as well as civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this ordinance

(d) Civil and Criminal Penalties

Any person who violates the provisions of this Ordinance may be subject to civil penalties as set forth in chapter 7 of the Texas Water Code. Penalties ranging from \$50 to \$25,000 for each day of violation may be imposed pursuant to section 7.102 of the Water Code. Criminal penalties may also be imposed for unauthorized discharges, failure to use pollution control devices or practices, or for intentionally or knowingly submitting false information from an

application or plan pursuant to Water Code sections 7.147, 7.148 and 7.149. Pursuant to Water Code section 7.187, the criminal penalties can include fines and incarceration.

(e) Restoration of Lands

Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the City of Port Aransas may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

(f) Holds on Occupation Permits

Certificates of occupancy or other occupation permits will not be granted until corrections to all stormwater practices have been made and accepted by the City of Port Aransas.

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Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

City Secretary
City of Port Aransas, Texas

ATTACHMENT 'A'

The following is a list of recommendations and additional technical standards for information listed in Chapter 5 Structural Practices for Sustainable Drainage Design

- Terminology stems from GSD

Vegetated Swales and Filter Strips [recommended]

Porous Pavement [recommended]

Enhanced Detention (wet pond) [not recommended but included because it is popular in the City]

Bioretention [not recommended because of high groundwater]

Infiltration [not recommended because of high groundwater]

Rainwater Harvesting [recommended]

Natural Area Preservation [should be included in the land use ordinances]

Disconnection of Roof-Top Runoff [recommended]

Soil Amendment and Conservation Landscaping [should be included in the land use ordinances]

#1a. Vegetated Swales

- Effective for pretreatment of concentrated flows
- Relatively low construction cost, moderate maintenance burden, and requires a moderate amount of surface area
- Only applicable to light to moderate runoff conditions and low to moderate sloped areas

Additional recommendations to GSD criteria:

- GSD states that swale should be sized per local requirements
 - Update local requirements to state the storm event used to design unlined open channels. Maximum velocity and minimum free board are stated but no storm event is listed for these requirements
 - Require a minimum bottom width for unlined open channels
- Include velocity limits (<1 ft/s for water quality storm and <3 ft/s for 25-year 24-hour storm)
- Flow depth not to exceed 2/3 of height of vegetation
- Include check for erosion in maintenance requirements
- Include a required drain time for swales
- Potential to include level spreader design/criteria
- Include recommended vegetation
- Use RG-348 criteria where more stringent

#1b. Vegetated Filter Strips

- Effective for pretreatment of concentrated flows
- Relatively low construction cost, moderate maintenance burden, and requires a moderate amount of surface area
- Only applicable to light to moderate runoff conditions and low to moderate sloped areas

Additional recommendations to GSD criteria:

- Max contributing area of 300 acres
- Max dimension in direction of flow should be 100'
- Seasonal high groundwater table shall be at least 2' below the bottom of the vegetated natural buffer
- Include velocity limits (ex <1 ft/s for water quality storm and <3 ft/s for 25-year 24-hour storm)
- Remove grass clippings during mowing and lawn care maintenance
- Check for and fix channelized flow during maintenance
- Include recommended vegetation
- Use RG-348 criteria where more stringent

#2. Disconnection of roof-top runoff

- Easy to do at residential and commercial properties
- Gives water a chance to infiltrate or filter over pervious area

#3. Porous Pavement/permeable pavement

- Can be hard to maintain
- Cost effective relative to other practices
- Might also be hard with high groundwater table
- May need an underdrain when soils are impermeable

Additional recommendations to GSD criteria:

- Include plastic grid systems as an additional pavement type
- Add structural design requirements unless listed elsewhere
- Add recommendation for observation well to maintain drain time
- Velocity of flood control design condition shall be between 2 and 5 ft/s
- Construct to only pond 2" on the surface before water overflows
- Ensure design includes appropriate downstream erosion controls
- Include max slopes for pedestrian application (max 5%)
- Include max slopes for parking application (max 0.5%)
- Include drawdown requirements. 48 hours is recommended
- Provide concrete transition strip between any permeable and impermeable surfaces and around the perimeter of porous pavement installations
- Include removal of weeds in maintenance requirements
- Include frequency of vacuum sweep. 2X/year recommended
- Include underdrain design requirements with infiltration testing process outlined

#4. Rainwater harvesting

- Maintenance can be difficult in areas prone to bugs and mosquitos so appropriate measures need to be included
- Can be done at residential and commercial properties

Additional recommendations to GSD criteria:

- City needs to determine goal of rainwater harvesting. If it's to reduce use of potable water and use for domestic use, then want to install first flush diverter and provide more design requirements. If goal is to improve water quality, then want to capture first flush but need to maintain system more often.
- Include info for cistern overflow. Appropriate erosion control measures must be made downstream of both discharges.
- Include information for a backflow preventer
- If the cistern is used for irrigation, irrigation rates and timing must comply with current watering restrictions

Enhanced Detention (Wet pond)

- Enhance detention is not recommended due to high costs and maintenance; however, it is included because many wet ponds exist in the City today so design, inspection and maintenance requirements should be developed
- Reduces flow rates while providing a water quality benefit
- Removed dirt can be used to build up property FFE

Additional recommendations to GSD criteria:

- Forebay and main pool should be hydraulically connected 2' above the bottom of the forebay
- Top of forebay wall should be 24" below permanent pool water elevation
- Main pool should have a depth of 6'-8'
- Main pool should have a minimum surface area of 0.5 acre
- Volume of the main pool should be as large as the amount of runoff produced in a two-week period. Design to detain one-year, three-hour storm for 72 hours
- Add trash rack recommendation and requirements
- Include an inverted PVC pipe in the basin outlet
- Include an emergency spillway for the basin
- Include a micro pool directly in front of the outlet structure. 2.5' in depth. Minimum surface area of 10 SF. Concrete unless there is a baseflow or groundwater
- Include information on basin liners if required
- Include requirements for a vegetated bench. A wetland area 5-15% of total pond area
- Include requirements for a drain line to completely/partially drain the permanent pool
- Include that debris and litter should be removed around the control openings as well
- Revisit frequency of dredging the permanent pool. Suggested 6 years in City of Austin
- Include recommended diverse, locally appropriate vegetation
- Use RG-348 criteria where more stringent

Illicit Discharge Ordinance

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 9 to establish an illicit discharge ordinance (entire ordinance)*
- *ORD 10 to establish construction monitoring*
- *ORD 12 to establish and enforce erosion and sedimentation controls*
- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 3 to incentivize reducing disturbance of natural land/systems*
- *ORD 6 to improve parking specifications related to landscape placement supporting improved stormwater runoff*
- *ORD 15 to incentivize implementation of green stormwater infrastructure for both new development and redevelopment*

ORDINANCE NO. _____ - ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH REGULATION OF ILLICIT DISCHARGES OF POLLUTANTS INTO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4); PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 16 is amended to add the following Article VI regarding the regulation of Illicit Discharges into the Municipal Separate Storm Sewer System and Conveyances:

Article VI. Illicit Discharges of Pollutants into the MS4 or Conveyances

Section 6. Purpose and Intent

The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the city through the regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This article establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this article are:

- (a) To regulate the contribution of pollutants to the MS4 by stormwater discharges by any user;
- (b) To prohibit illicit connections and discharges to the MS4; and
- (c) To establish legal authority to carry out all inspection, surveillance, monitoring, and enforcement procedures necessary to ensure compliance with this Article.

Section 7. Definitions

The following words and phrases, when used in this article, shall have the meanings respectively ascribed to them in this section, except when the context otherwise requires. Whenever any words and phrases used herein are not defined herein but are defined in the federal and state laws regulating illicit discharge, any such definition therein shall be deemed to apply to such words and phrases used herein, except when the context otherwise requires.

Calendar day. When the term “day” is used herein, unless specifically defined otherwise, the term shall mean any day of the week, including Saturdays, Sundays, and legal holidays, with no days being excepted.

City staff. Employees of any of the city’s departments, authorized to act on the city’s behalf by the director.

Construction activity. The disturbance of soils associated with clearing, grading, grubbing, demolition or excavating activities or other construction activities.

Conveyance. Any of the following, by way of illustration and not limitation: stream, channel, drainageway, drainage/dry well, ephemeral stream, floodplain, karst feature, storm drainage system, drainage system appurtenance, waterbody, watercourse or waterway.

Director. The city manager, or the city employee(s) designated by the city manager, responsible for enforcement of this article.

Discharge. Any addition or introduction of any pollutant, stormwater, or any other substance whatsoever into the municipal separate storm sewer system (MS4) or conveyances.

Discharger. Any person who causes, allows, permits, or is otherwise responsible for a discharge, including, without limitation, any operator of a construction site or industrial facility.

Environmental Protection Agency (EPA). The United States Environmental Protection Agency, the regional office thereof, any federal department, agency, or commission that may succeed to the authority of EPA, and any duly authorized official of EPA or such successor agency.

Extremely hazardous substance. Any substance listed in the appendices to 40 CFR 355, emergency planning and notification.

Facility. Any building, structure, installation, or activity from which there is or may be a discharge of a pollutant.

Fire department. The fire department serving the city and any other fire departments with which the fire department serving the city has mutual assistance or mutual aid agreements.

Fire protection water. Any water, and any substances or materials contained therein, used by any person other than the fire department to control or extinguish a fire.

Garbage. Putrescible animal and vegetable waste materials from the handling, preparation, cooking, or consumption of food, including waste materials from markets, storage facilities, and the handling and sale of produce and other food products.

Harmful quantity. The amount of any substance due to volume or concentration that will cause pollution.

Hazardous material. Any material (including any substance, waste, or combination thereof) which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause or significantly contribute to a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. This term shall include household hazardous wastes as classified under 40 CFR 261, hazardous substances as listed in table 302.4 of 40 CFR 302, and hazardous wastes identified or listed by the EPA pursuant to 40 CFR 261.

Illicit connection. Any connection to the MS4 or conveyances that allows for an illicit discharge.

Illicit discharge. Any direct or indirect discharge of pollutant to the MS4 or conveyances, except as specifically exempted in this article.

Industrial activity. Any activity at an industrial facility described by the TPDES multi-sector general permit, TXR050000, or by any other TCEQ or TPDES permit including any of the following, by way of illustration and not of limitation: manufacturing, processing, materials storage, and waste materials disposal.

Industrial waste. Any waterborne liquid or solid substance that results from any process of industry, manufacturing, mining, production, trade or business.

Motor vehicle fluids. Any vehicle crankcase oil, antifreeze, transmission fluid, brake fluid, differential lubricant, gasoline, diesel fuel, gasoline/alcohol blend, and any other fluid used in a motor vehicle.

Municipal Separate Storm Sewer System (MS4). The storm drainage system operated and maintained by the city which is comprised of the following: the system of conveyances (including roads with drainage systems, municipal streets, catchbasins, curbs, gutters, ditches,

manmade channels, or storm drains) owned and operated by the city and designed or used for collecting or conveying stormwater, and which is not used for collecting or conveying sewage.

Nonstormwater discharge. Any discharge to the storm drain system that is not composed entirely of stormwater runoff.

Notice of Intent (NOI). The notice of intent that is required by either the industrial general permit or the construction general permit.

Oil. Any kind of oil in any form, including but not limited to petroleum, fuel oil, crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure, sludge, oil refuse, and oil mixed with waste. This term shall include used oil that has become unsuitable for its original purpose because of impurities or the loss of original properties but that may be suitable for further use and is recyclable in compliance with state and federal law.

Operator. The person or persons who, either individually or taken together, meet the following two criteria:

- (1) Has operational control over the facility specifications (including the ability to make modifications in specifications); and
- (2) Has the day-to-day operational control over those activities at the facility necessary to ensure compliance with pollution prevention requirements and any permit conditions.

Owner. The person who owns a facility or part of a facility.

Person. Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity, or their legal representatives, agents, lessees, or assigns. This term shall also include all federal, state, and local governmental entities.

Petroleum storage tank (PST). Any one or a combination of aboveground or underground storage tanks or connecting underground pipes that contain petroleum products that are obtained from distilling and processing crude oil and that are capable of being used as a fuel.

Pollutant. A substance, the entrance of which causes or contributes to a violation of applicable water quality standards as defined by the Clean Water Act. This term includes but is not limited to paints, varnishes, solvents, oil and other automotive fluids, yard wastes, trash, sediments, household chemicals, detergents, pesticides, herbicides, fertilizers, hazardous materials, sewage, animal wastes, dredged spoil, solid waste, incinerator residue, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water, and other materials exposed to stormwater as a result of construction activity.

Pollution. The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious

to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Release. Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the municipal separate storm sewer system (MS4) or conveyances.

Sanitary sewer or sewer. The system of pipes, conduits, and other conveyances which carry industrial waste and domestic sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions, whether treated or untreated, to the city sewage treatment plant (and to which stormwater, surface water, and groundwater are not intentionally admitted).

Service station. Any retail establishment engaged in the business of selling fuel for motor vehicles that is dispensed from stationary storage tanks.

Site. The land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

Solid waste. Any garbage, trash, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations, and from community and institutional activities.

Stormwater. Any surface flow, stormwater runoff, snow melt runoff, and surface runoff and drainage consisting entirely of water from any form of natural precipitation.

Stormwater Pollution Prevention Plan (SWPPP). A plan required by either the construction general permit or the industrial general permit and which describes and ensures the implementation of practices that are to be used to reduce the pollutants in stormwater discharges associated with construction or other industrial activity at the facility.

TCEQ. The Texas Commission on Environmental Quality, or any duly authorized official of said agency.

Texas Pollutant Discharge Elimination System (TPDES). The program delegated to the State of Texas by EPA pursuant to 33 USC 1342(b).

Trash. Non-putrescible solid waste, excluding ashes, that consists of:

- (1) Combustible waste materials, including paper, rags, cartons, wood, excelsior, furniture, rubber, plastics, yard trimmings, leaves, and similar materials; and

- (2) Noncombustible waste materials, including glass, crockery, tin cans, aluminum cans, metal objects, and similar materials that do not burn at ordinary incinerator temperatures (1,600 to 1,800 degrees Fahrenheit).

Uncontaminated. Not containing a harmful quantity of any substance.

Washwater. Any water containing pollutants from the act of cleaning parking lots, vehicles, or building exteriors.

Wastewater. Human excrement, gray water (from home clothes washing, bathing, showering, dishwashing, and food preparation), other wastewater that is free from industrial waste including from household drains, and waterborne waste normally discharged from the sanitary conveniences of dwellings (including apartment houses and hotels), office buildings, factories, and institutions.

Water quality standard. The designation of a body or segment of surface water in the state for desirable uses and the narrative and numerical criteria deemed by the state to be necessary to protect those uses, as specified in 31 Tex. Admin. Code, chapter 307.

Yard waste. Leaves, grass clippings, yard and garden debris, and brush that results from landscaping maintenance and land-clearing operations.

Section 2. Applicability

This article shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by the city.

Section 3. Minimum Standards

The standards set forth in this article are minimum standards; therefore, no inference is intended that compliance with this article will ensure that there will be no contamination, pollution, or unauthorized discharge of pollutants. Additionally, no inference is intended that compliance with this article will serve to extend any deadline established by a state or federal standard or requirement, nor is any inference intended that compliance with this article will relieve a discharger of liability for any violation or continuing violation.

Section 4. Compliance Obligations

- (a) Any person subject to an industrial or construction activity TPDES stormwater discharge permit shall comply with all provisions of such permit or any other state or federal regulations. Prior to the city allowing discharges to the MS4 or conveyances, the city may require proof of such compliance in a form acceptable to the city.
- (b) Every person owning property through which a conveyance passes, or such person's lessee, shall have the obligation to keep and maintain that part of the conveyance within

the property free of trash, debris, excessive vegetation, other pollutants and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the conveyance. The owner or lessee shall maintain existing privately owned structures within or adjacent to a conveyance, so that such structures will not become a hazard to the use, function, or physical integrity of the conveyance.

Section 5. General Prohibitions and Affirmative Defenses

(a) General Prohibition.

No person within the city limits and extraterritorial jurisdiction of the city shall introduce, cause to be introduced, discharge, or cause to be discharged into the municipal separate storm sewer system (MS4) or any conveyances any discharge that is not composed entirely of stormwater. Such prohibition includes commencement of any illicit discharge into the MS4 or any conveyances, and continuation of any illicit discharge into the MS4 or any conveyances.

(b) Affirmative Defenses.

It is an affirmative defense to any enforcement action for violation of subsection (a) of this section that the discharge was composed entirely of one or more of the following categories of discharges:

- (1) A discharge specified in writing by the city as being necessary to protect public health and safety.
- (2) A discharge associated with dye testing, however this activity requires a verbal notification to the director prior to the time of the test.
- (3) A discharge authorized by a TPDES permit, waiver, or waste discharge order issued to the discharger and administered under authority of the TCEQ or USEPA, provided that the discharger is in full compliance with all requirements of the permit, waiver, order, and other applicable laws and regulations.
- (4) A discharge resulting from firefighting/fire suppression activities.
- (5) A discharge of fire protection water from standard municipal operations and training that does not contain oil or hazardous substances or materials that are required to be contained and treated prior to discharge, in which case treatment adequate to remove harmful quantities of pollutants must have occurred prior to discharge.
- (6) A discharge resulting from the standard municipal operations of street sweeping and street washing activities, which discharge is not contaminated with any soap, detergent, degreaser, solvent, emulsifier, dispersant, or any other harmful cleaning substance.

- (7) A discharge from water line flushing, but not including a discharge from water line disinfection by super-chlorination or other means unless the total residual chlorine (TRC) has been reduced to less than one ppm (part per million) and it contains no harmful quantity of chlorine or any other chemical used in line disinfection.
 - (8) A discharge from a potable water source not containing any harmful quantity of a substance or material from the cleaning or draining of a storage tank or other container.
 - (9) A discharge from lawn watering or landscape irrigation.
 - (10) A discharge from individual residential carwashing.
 - (11) A discharge from air-conditioning condensation that is unmixed with water from a cooling tower, emissions scrubber, emissions filter, or any other source of pollutant.
 - (12) Swimming pool water that has been dechlorinated so that total residual chlorine (TRC) is less than one ppm (part per million) and that contains no harmful quantity of chlorine, muriatic acid or other chemical used in the treatment or disinfection of the swimming pool water or in pool cleaning.
 - (13) Stormwater runoff from a roof that is not contaminated by any runoff or discharge from an emissions scrubber or filter or any other source of pollutant.
 - (14) A discharge or flow from a diverted stream flow or natural spring.
 - (15) A discharge or flow from uncontaminated pumped groundwater, rising groundwater, or groundwater infiltration to storm drains.
 - (16) Uncontaminated groundwater infiltration, as defined by 40 CFR 35.2005(20), to the MS4.
 - (17) Uncontaminated discharge from a foundation or footing drain (excluding active groundwater dewatering systems), crawl space pump, or sump pump.
- (c) No affirmative defense shall be available under this article if the discharge in question has been previously determined by the city to be a source of a pollutant to the MS4 or any conveyances, and written notice of such determination has been provided to the discharger. The city's determination that a discharge is a source of a pollutant may be reviewed in any administrative or judicial enforcement proceeding.

Section 6. Specific Prohibitions

- (a) The specific prohibitions and requirements in this section are not inclusive of all the discharges prohibited by the general prohibition in Section 5(a).
- (b) No person shall introduce, cause to be introduced, discharge, or cause to be discharged into the MS4 or conveyances any discharge that causes or contributes to causing the city to violate a water quality standard, the city's TPDES permit, or any state-issued discharge permit for discharges from its MS4.
- (c) No person shall dump, spill, leak, pump, pour, emit, empty, discharge, leach, dispose, or otherwise introduce or cause, allow, or permit to be introduced any of the following substances into the MS4 or conveyances:
 - (1) Any motor oil, antifreeze, or any other motor vehicle fluid.
 - (2) Any industrial waste.
 - (3) Any hazardous material, including household hazardous waste, hazardous substances, and hazardous waste.
 - (4) Any wastewater or septic tank waste, grease trap waste, or grit trap waste.
 - (5) Any garbage, trash, or yard waste, specifically including but not limited to pressure-treated wood, painted wood, painted wood pallets, laminated wood, insulation, and particle board.
 - (6) Any discharge from a carwash facility; from any vehicle washing, cleaning, or maintenance at any new or used automobile or other vehicle dealership, rental agency, body shop, repair shop, or maintenance facility; or from any washing, cleaning, or maintenance of any vehicle, including a truck, bus, or heavy equipment, by a business or public entity that operates more than four such vehicles.
 - (7) Any discharge from a mobile power washer or from the washing or other cleaning of a building exterior that contains any soap, detergent, degreaser, solvent, or any other harmful cleaning substance.
 - (8) Any discharge from commercial floor, rug, or carpet cleaning.
 - (9) Any discharge from the washdown or other cleaning of pavement that contains any harmful quantity of soap, detergent, solvent, degreaser, emulsifier, dispersant, or any other harmful cleaning substance; or any discharge from the washdown or other cleaning of any pavement where any spill, leak, or other release of oil, motor fuel, or other petroleum or hazardous substance has occurred, unless all harmful quantities of such released material have been previously removed.

- (10) Any effluent from a cooling tower, condenser, compressor, emissions scrubber, emissions filter, or the blowdown from a boiler.
- (11) Any ready-mixed concrete, mortar, ceramic, or asphalt base material or hydro-mulch material, or material from the cleaning of vehicles or equipment containing, or used in transporting or applying, such materials.
- (12) Any runoff or washdown water from concentrated animal feeding operations as defined in 40 CFR 122.23 or discharges from concentrated aquatic animal production facilities as defined in 40 CFR 122.24.
- (13) Any swimming pool, fountain, or spa water, including backwash water, containing total residual chlorine (TRC) of one ppm (part per million) or more or containing any harmful quantity of chlorine, muriatic acid or other chemical used in the treatment or disinfection of the swimming pool water or in pool cleaning.
- (14) Any discharge from water line disinfection by super-chlorination or other means if the total residual chlorine (TRC) is at one ppm (part per million) or more or if it contains any harmful quantity of chlorine or any other chemical used in line disinfection.
- (15) Any fire protection water containing oil or hazardous materials that are required to be contained and treated prior to discharge, unless treatment adequate to remove pollutants occurs prior to discharge. This prohibition does not apply to discharges or flow from firefighting/fire suppression activities.
- (16) Any contaminated runoff from a vehicle salvage yard or storage yard.
- (17) Any substance or material that will damage the MS4.
- (18) Any release from a petroleum storage tank (PST), or any leachate or runoff from soil contaminated by a leaking PST, or any discharge from the remediation of any such PST release, unless the discharge satisfies all of the following criteria:
 - a. Compliance with all state and federal standards and requirements; and
 - b. No discharge containing a harmful quantity of any pollutant.
- (19) Any harmful quantity of sediment, silt, earth, soil, or other material which is associated with clearing, grading, excavation or other such construction activities, or which is associated with landfilling or other placement or disposal of soil, rock, or other earth materials.
- (20) Any pavement washwater from a service station unless such washwater has passed through a properly functioning and maintained grease, oil, and sand separator before discharge into the MS4 or conveyances.

- (21) Any introduction of oil into the environment, specifically including but not limited to oil applied to a road or land for dust suppression, weed abatement, or other similar use; any introduction of oil commingled or mixed with solid waste that is to be disposed of in a landfill; any introduction of oil by direct disposal on land or in a landfill; or any introduction of oil into the MS4 or conveyances, or into any septic tank.

Section 7. Prohibition of Illicit Connections

The construction of, use of, maintenance of, or continued use of a new or existing illicit connection to the MS4 or any conveyances is prohibited. This prohibition expressly includes any illicit connection made before passage of the ordinance codified in this article, regardless of whether such connection was permissible under law or practices applicable or prevailing at the time of connection. A person is deemed to be in violation of this article if the person connects a line conveying wastewater or industrial waste to the MS4 or any conveyances, or allows such a connection to continue.

Section 8. Industrial or Construction Activity Discharges

- (a) Any person subject to an industrial or construction activity TPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the director prior to the allowing of discharges to the MS4.
- (b) The operator of a facility, including construction sites, required to have a TPDES permit to discharge stormwater associated with industrial activity shall submit a copy of the notice of intent (NOI) to the director at the same time the operator submits the original notice of intent to the EPA and/or TCEQ as applicable.
- (c) A person commits an offense if the person operates a facility that is discharging stormwater associated with industrial activity without having submitted a copy of the notice of intent to do so to the director.

Section 9. Prevention, Control, and Reduction of Stormwater Pollutants by the Use of Best Management Practices

The city will adopt requirements identifying best management practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of stormwater, the storm drain system, or waters of the United States. The owner or operator of such activity, operation, or facility shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and nonstructural BMPs. Further, any person responsible for a property or premises that is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and nonstructural BMPs to prevent the further discharge of pollutants to the MS4. Compliance with all terms and conditions of a valid TPDES

permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a stormwater management plan as necessary for compliance with requirements of the TPDES permit.

Section 10. Compliance Monitoring

(a) Right of entry; inspection and sampling.

City staff shall have the right to enter any facility or site, including industrial and construction facilities or sites, which are discharging to the MS4 or any conveyances to determine if the discharger is complying with all requirements of this article. Dischargers shall allow city staff immediate access to all parts of the premises for the purposes of inspection, sampling, records examination, and copying, and for the performance of any additional inspections or duties. Dischargers shall make available to city staff, upon request, any Stormwater Pollution Prevention Plans (SWPPPs), modifications thereto, self-inspection reports, monitoring records, compliance evaluations, notices of intent, and any other records, reports, and other documents related to compliance with this article and with any state or federal discharge permit.

- (1) Where a discharger has security measures in force which require proper identification and clearance before entry onto its premises, the discharger shall make necessary arrangements with its security guards so that, upon presentation of suitable identification, city staff will be permitted to enter without delay for the purposes of performing the city’s responsibilities.
- (2) City staff shall have the right to set up on the discharger’s property, or require installation on the discharger’s property, of such devices as city staff deem necessary to conduct sampling and/or metering of the discharger’s operations.
- (3) City staff may require any discharger to the MS4 or any conveyances to conduct specified sampling, testing, analysis, and other monitoring of its stormwater discharges at the discharger’s expense, and may specify the frequency and parameters of any such required monitoring.
- (4) City staff may require the discharger to install monitoring equipment as necessary at the discharger’s expense. The facility’s sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure accuracy.
- (5) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the discharger at the written or verbal request of city staff and shall not be replaced. The costs of clearing such access shall be borne by the discharger.

(6) Unreasonable delays in allowing city staff access to the discharger's premises shall be deemed a violation of this article.

(b) Search Warrant

If city staff has been refused access to any part of the premises from which stormwater is discharged, and the city is able to demonstrate probable cause to believe that there may be a violation of this article, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program of the city designed to verify compliance with this article or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the city may seek issuance of a search warrant from any court of competent jurisdiction.

Section 11. Notification of Spills

- (a) Discovery, containment and cleanup procedure.

Notwithstanding other requirements of law, as soon as any discharger or operator of a facility or operation, or person responsible for emergency response for a facility or operation, has information of any known or suspected release of materials which are resulting or may result in an illicit discharge, such person shall take all necessary steps to ensure the discovery, containment and cleanup of such discharge.

- (1) Hazardous materials spill. In the event of discharge of hazardous materials, the discharger shall immediately notify emergency response agencies. Once the immediate threat has been properly contained, the discharger shall notify the city via the director.
- (2) Nonhazardous materials spill. In the event of a release of nonhazardous materials, the discharger shall notify the city, via the director, in person or by telephone no later than the next business day. Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the director within three business days of the telephone notice.

- (b) Record of discharge from commercial or industrial establishment.

If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain on site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for a minimum of three years.

Section 12. Enforcement Provisions

- (a) Warning notice.

When the city finds that any person has violated, or continues to violate, any provision of this article, or any order issued hereunder, the city may service upon that person a written warning notice, specifying the particular violation believed to have occurred and requesting the discharger to immediately investigate the matter and to seek a resolution whereby any offending discharge will cease. Investigation and/or resolution of the matter in response to the warning notice in no way relieves the alleged violator of liability for any violations occurring before or after receipt of the warning notice. Nothing in this subsection shall limit the authority of the city to take any action, including emergency action or any other enforcement action, without first issuing a warning notice.

(b) Notice of violation.

When city staff believes that a discharger has violated, or continues to violate, any provision of this article, or any order issued hereunder, the director, or his designee, may serve upon the alleged violator a written notice of violation. Such notice shall contain the following:

- (1) The name and address of the alleged violator;
- (2) The address when available or a description of the building, structure or land upon which the violation is occurring, or has occurred;
- (3) A statement specifying the nature of the violation;
- (4) A description of the remedial measures necessary to restore compliance with this article and a time schedule for the completion of such remedial action;
- (5) A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
- (6) A statement that the determination of violation may be appealed, specifying the deadline and form of such appeal; and
- (7) A statement specifying that, should the violator fail to restore compliance within the established time schedule, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

Within ten days of mailing of such notice of violation, the alleged violator shall submit to the director a written explanation of the violation and a written plan for the satisfactory correction and prevention of recurrence thereof, including specific required actions. If the alleged violator denies that any violation occurred and/or contends that no corrective action is necessary, a written explanation of the basis of any such denial or contention shall be submitted by the alleged violator to the director within seven days of receipt of the notice of violation. Submission of an explanation and/or plan shall in no way relieve the alleged violator of liability for any violation occurring before or after receipt of the notice of violation. Nothing herein shall limit the authority of the city and the director to take any action, including emergency action or any other enforcement action, in the absence of issuance of a notice of violation.

(c) Voluntary consent order.

The city, via the director, may enter into a voluntary consent order, an assurance of voluntary compliance, or other similar agreement with any violator noncompliant with any provision of this article, or any order issued hereunder. Such document may include specific action to be taken by the violator to correct noncompliance within a time period specified by the director. Such agreement shall have the same force and effect as administrative orders issued pursuant to this article, and same shall be judicially enforceable.

(d) Mandatory compliance order.

When city staff finds that any discharger has violated, or continues to violate, any provision of this article, or any order issued hereunder, the director may issue a mandatory compliance order to the violator ordering any one or more of the following:

- (1) Compliance within time limit.
- (2) Directing that the violator come into compliance within a specified time limit. Such an order also may contain other requirements to address noncompliance, including additional self-monitoring and management practices designed to minimize the amount of pollutants discharged to the MS4 or conveyances.
- (3) Remediation, abatement, and/or restoration.

Directing that the violator (if the violation has adversely affected the MS4 or conveyances or any other aspect of the environment) undertake and implement any appropriate action to remediate and/or abate any adverse effects of the violation upon the MS4 or conveyances or any other aspect of the environment, and/or to restore any part of the MS4 or conveyances or any other aspect of the environment that has been harmed. Such remedial, abatement, and restoration action may include but shall not be limited to: monitoring, assessment, and evaluation of the adverse effects and determination of the appropriate remedial, abatement, and/or restoration action; confinement, removal, cleanup, treatment, and disposal of any discharged or released pollutant or contamination; prevention, minimization, and/or mitigation of any damage to the public health, safety, welfare, or the environment that may result from the violation; restoration or replacement of city property or natural resources damaged by the violation. Such an order may direct that the remediation, abatement, and/or restoration be accomplished on a specified compliance schedule and/or be completed within a specified period of time. Any expenses related to the remediation, abatement, and/or restoration incurred by the city shall be fully reimbursed by the person deemed responsible by the director. If the amount due is not paid within a timely manner, as determined by decision of the city, then the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

(4) Emergency cease and desist.

Directing that the violator immediately cease and desist from all violations (if the violations have caused or contributed to an actual or threatened discharge to the MS4 or any conveyances which reasonably appears to present an imminent or substantial endangerment to the health, safety, or welfare of persons or to the environment; or if past violations are likely to recur). The emergency cease and desist order may also direct the violator to:

- a. Immediately comply with all chapter requirements; and

- b. Take such appropriate preventive action as may be needed to properly address a continuing or threatened violation, including immediately halting operations and/or terminating the discharge.

Any violator notified of an emergency cease and desist order shall immediately comply and stop or eliminate the endangering discharge. In the event of a violator's failure to immediately comply voluntarily with the emergency cease and desist order, the city and city staff may take such steps as it/they deem necessary to prevent or minimize harm to the MS4 or conveyances, and/or endangerment to persons or to the environment. Any expenses related to the remediation, abatement, and/or restoration incurred by the city shall be fully reimbursed by the person deemed by the director to be responsible. If the amount due is not paid within a timely manner, as determined by decision of the city, then the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

The city may allow the violator to recommence its discharge when it has demonstrated to the satisfaction of city staff that the period of endangerment has passed, unless further termination proceedings are initiated against the violator under this article. A violator that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit the following to the director within five days of receipt of the emergency cease and desist order, a detailed written statement, describing the causes of the harmful discharge and the measures taken to prevent any future occurrence. Issuance of an emergency cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the violator.

(5) Construction stop-work order regarding illicit discharge.

Whenever city staff finds that any operator of a construction site has violated, or continues to violate, any provision of this article, or any order issued hereunder, the director may order that a construction stop-work order regarding illicit discharge be issued to the operator or person responsible, posted at the construction site, and distributed to all city departments and divisions whose decisions affect any activity at such site. Unless express written exception is made by the city, the construction stop-work order regarding illicit discharge shall prohibit any further construction activity at the site and shall bar any further inspection or approval by the city associated with a building permit, grading permit, or any other city authorization necessary to commence or continue construction or to assume occupancy at the site. Issuance of a construction stop-work order regarding illicit discharge shall not be a bar against, or a prerequisite for, taking any other action against the violator.

A mandatory compliance order may not extend the deadline for compliance established by a state or federal standard or requirement, nor shall a mandatory compliance order relieve the violator of liability for any violation, including any continuing violation.

Issuance of a mandatory compliance order shall not be a bar against, or a prerequisite for, taking any other action against the violator or any responsible party.

(e) Disconnection from MS4.

- (1) Any discharger in violation of this article may have its/their MS4 connection terminated by city staff, if such disconnection would abate or reduce an illicit discharge. The city has the right to require the violator to disconnect from the MS4 at the violator's expense, or require the discharger to take corrective action to eliminate the source of the illicit discharge. A discharger commits an offense if it reinstates an MS4 connection previously terminated pursuant to this article, without the prior written approval of the city.
- (2) Without any prior notice, city staff may terminate a discharger's MS4 connection when such action is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or any conveyances. If the discharger fails to comply with any order issued in such an emergency, the city may take such steps as it deems necessary to prevent or minimize damage to the MS4 or any conveyances, and to minimize danger to persons.

Section 13. Right to Reconsideration of Enforcement Provision, and Cost of Abatement of the Violation

- (a) Any discharger subject to an order under Section 12 may petition the director to reconsider the basis for the order within seven days of the affected person's notice of issuance of such an order.
- (b) After the director has reviewed relevant documents and evidence, he shall:
 - (1) Grant the petition;
 - (2) Deny the petition; or
 - (3) Grant the petition in part and deny it in part.

The director may modify the order as is appropriate based upon all the documents and evidence. Further orders and directives as are necessary and appropriate may be issued. The decision of the director shall be final and shall be non-appealable.

- (c) If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or, in the event of an appeal, within seven days of the decision of the municipal authority upholding the decision of the director, then representatives of the city may enter upon the subject's private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above.

- (d) Within seven days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within seven days. If the amount due is not paid within a timely manner as determined by the decision of the municipal authority or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment. Any person violating any of the provisions of this article shall become liable to the city by reason of such violation. Interest at the maximum rate permitted by law shall be assessed on the balance beginning on the thirtieth (30th) day after the assessment of the lien.

Section 14. Civil Remedies and Injunctive Relief

It shall be unlawful for any person to violate any provision of this article, or to fail to comply with any of the requirements of this article. If a discharger has violated or continues to violate the provisions of this article, the city may avail itself of any and all civil remedies available to it, including petitioning the courts for a preliminary or permanent injunction restraining the discharger from activities which would create further violations or compelling the discharger to perform abatement or remediation of the violation.

Section 15. Violation Deemed Public Nuisance

Any condition caused or permitted to exist in violation of any of the provisions of this article is a threat to public health, safety, and welfare, and is therefore declared and deemed a public nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken by the city.

Section 16. Criminal Penalties

Each day any violation of this code or of any ordinance shall continue shall constitute a separate offense. A violation of this article is considered a violation of a rule ordinance or police regulation that governs fire safety, zoning, or public health and sanitation. A violation of this article is punishable by a fine not to exceed two thousand dollars (\$2,000.00).

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Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

City Secretary
City of Buda, Texas

Flood Damage Prevention Ordinance

Contains implementation of Ordinance Best Management Practice 20

RED denotes enhancements above the standard required template for Flood Damage Prevention Ordinances as provided by TWDB. These enhancements are based on the *Higher Standards Reference Guide for Local Floodplain Management Regulations, May 2014.*

ORDINANCE NO. ____ - ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH REQUIREMENTS FOR FLOOD DAMAGE PREVENTION; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 8 is replaced with the following regarding the prevention of flood damage:

Article I. Statutory Authorization, Findings of Fact, Purpose and Methods

Section 1. Statutory Authorization

The Legislature of the State of Texas has in the Flood Control Insurance Act, Texas Water Code, Section 16.315, delegated the responsibility of local governmental units to adopt regulations designed to minimize flood losses. Therefore, the City Council of the City of Port Aransas, Texas, does ordain as follows:

Section 2. Findings of Fact

- (a) The flood hazard areas of the City are subject to periodic inundation, which results in loss of life and property, health and safety hazards, disruption of commerce and

governmental services, and extraordinary public expenditures for flood protection and relief, all of which adversely affect the public health, safety and general welfare.

- (b) These flood losses are created by the cumulative effect of obstructions in floodplains which cause an increase in flood heights and velocities, and by the occupancy of flood hazard areas by uses vulnerable to floods and hazardous to other lands because they are inadequately elevated, floodproofed or otherwise protected from flood damage.

Section 3. Statement of Purpose

It is the purpose of this Chapter to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (a) Protect human life and health;
- (b) Minimize expenditure of public money for costly flood control projects;
- (c) Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- (d) Minimize prolonged business interruptions;
- (e) Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains;
- (f) Help maintain a stable tax base by providing for the sound use and development of flood-prone areas in such a manner as to minimize future flood blight areas; and
- (g) Insure that potential buyers are notified that property is in a flood area.

Section 4. Methods of Reducing Flood Losses

In order to accomplish its purposes, this Chapter uses the following methods:

- (a) Restrict or prohibit uses that are dangerous to health, safety or property in times of flood, or cause excessive increases in flood heights or velocities;
- (b) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- (c) Control the alteration of natural floodplains, stream channels, and natural protective barriers, which are involved in the accommodation of flood waters;
- (d) Control filling, grading, dredging and other development which may increase flood damage;

- (e) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

Article II. Definitions

Unless specifically defined below, words or phrases used in this Chapter shall be interpreted to give them the meaning they have in common usage and to give this Chapter its most reasonable application.

(a) ALLUVIAL FAN FLOODING

means flooding occurring on the surface of an alluvial fan or similar landform which originates at the apex and is characterized by high-velocity flows; active processes of erosion, sediment transport, and deposition; and unpredictable flow paths.

(b) APEX

means a point on an alluvial fan or similar landform below which the flow path of the major stream that formed the fan becomes unpredictable and alluvial fan flooding can occur.

(c) APPURTENANT STRUCTURE

- (d) means a structure which is on the same parcel of property as the principal structure to be insured and the use of which is incidental to the use of the principal structure

(e) AREA OF FUTURE CONDITIONS FLOOD HAZARD

means the land area that would be inundated by the 1-percent-annual chance (100 year) flood based on future conditions hydrology.

(f) AREA OF SHALLOW FLOODING

means a designated AO, AH, AR/AO, AR/AH, or VO zone on a community's Flood Insurance Rate Map (FIRM) with a 1 percent or greater annual chance of flooding to an average depth of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.

(g) AREA OF SPECIAL FLOOD HAZARD

is the land in the floodplain within a community subject to a 1 percent or greater chance of flooding in any given year. The area may be designated as Zone A on the Flood Hazard Boundary Map (FHBM). After detailed rate-making has been completed in preparation for publication of the FIRM, Zone A usually is refined into Zones A, AO, AH, A1-30, AE, A99, AR, AR/A1-30, AR/AE, AR/AO, AR/AH, AR/A, VO, V1-30, VE or V.

(h) BASE FLOOD

means the flood having a 1 percent chance of being equaled or exceeded in any given year.

(i) BASE FLOOD ELEVATION (BFE)

The elevation shown on the Flood Insurance Rate Map (FIRM) and found in the accompanying Flood Insurance Study (FIS) for Zones A, AE, AH, A1-A30, AR, V1-V30, or VE that indicates the water surface elevation resulting from the flood that has a 1% chance of equaling or exceeding that level in any given year - also called the Base Flood.

(j) BASEMENT

means any area of the building having its floor subgrade (below ground level) on all sides.

(k) BREAKAWAY WALL

means a wall that is not part of the structural support of the building and is intended through its design and construction to collapse under specific lateral loading forces, without causing damage to the elevated portion of the building or supporting foundation system.

(l) CRITICAL FEATURE

means an integral and readily identifiable part of a flood protection system, without which the flood protection provided by the entire system would be compromised.

(m) DEVELOPMENT

means any man-made change to improved and unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

(n) ELEVATED BUILDING

means, for insurance purposes, a non-basement building, which has its lowest elevated floor, raised above ground level by foundation walls, shear walls, posts, piers, pilings, or columns.

(o) ENCLOSURE

means a fully enclosed area below the lowest floor that is usable solely for parking of vehicles, building access or storage in an area other than a basement. To qualify as an enclosure, the area must meet the non-elevation design requirements of 44 CFR 60.3. See also the definition of "lowest floor."

(p) EXISTING CONSTRUCTION

means for the purposes of determining rates, structures for which the "start of construction" commenced before the effective date of the FIRM or before January 1, 1975, for FIRMs effective before that date. "Existing construction" may also be referred to as "existing structures."

(q) EXISTING MANUFACTURED HOME PARK OR SUBDIVISION

means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including, at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed before the effective date of the floodplain management regulations adopted by a community.

(r) EXPANSION TO AN EXISTING MANUFACTURED HOME PARK OR SUBDIVISION

means the preparation of additional sites by the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads).

(s) FLOOD OR FLOODING

means a general and temporary condition of partial or complete inundation of normally dry land areas from:

- (1) the overflow of inland or tidal waters.
- (2) the unusual and rapid accumulation or runoff of surface waters from any source.

(t) FLOOD ELEVATION STUDY

means an examination, evaluation and determination of flood hazards and, if appropriate, corresponding water surface elevations, or an examination, evaluation and determination of mudslide (i.e., mudflow) and/or flood-related erosion hazards.

(u) FLOOD INSURANCE RATE MAP (FIRM)

means an official map of a community, on which the Federal Emergency Management Agency has delineated both the special flood hazard areas and the risk premium zones applicable to the community.

(v) FLOOD INSURANCE STUDY (FIS)

see Flood Elevation Study

(w) FLOODPLAIN OR FLOOD-PRONE AREA

means any land area susceptible to being inundated by water from any source (see definition of flooding).

(x) FLOODPLAIN MANAGEMENT

means the operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works and floodplain management regulations.

(y) FLOODPLAIN MANAGEMENT REGULATIONS

means zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances (such as a floodplain ordinance, grading ordinance and erosion control ordinance) and other applications of police power. The term describes such state or local regulations, in any combination thereof, which provide standards for the purpose of flood damage prevention and reduction.

(z) FLOOD PROTECTION SYSTEM

means those physical structural works for which funds have been authorized, appropriated, and expended and which have been constructed specifically to modify flooding in order to reduce the extent of the area within a community subject to a "special flood hazard" and the extent of the depths of associated flooding. Such a system typically includes hurricane tidal barriers, dams, reservoirs, levees or dikes. These specialized flood modifying works are those constructed in conformance with sound engineering standards.

(aa) FLOOD PROOFING

means any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures and their contents.

(bb) FLOODWAY

see Regulatory Floodway

(cc) FUNCTIONALLY DEPENDENT USE

means a use, which cannot perform its intended purpose unless it is located or carried out in close proximity to water. The term includes only docking facilities, port facilities that are necessary for the loading and unloading of cargo or passengers, and ship building and ship repair facilities, but does not include long-term storage or related manufacturing facilities.

(dd) HIGHEST ADJACENT GRADE

means the highest natural elevation of the ground surface prior to construction next to the proposed walls of a structure.

(ee) HISTORIC STRUCTURE

means any structure that is:

- (1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- (2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- (3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or
- (4) Individually listed on a local inventory or historic places in communities with historic preservation programs that have been certified either:
 - a. By an approved state program as determined by the Secretary of the Interior or;
 - b. Directly by the Secretary of the Interior in states without approved programs.

(ff) LEVEE

means a man-made structure, usually an earthen embankment, designed and constructed in accordance with sound engineering practices to contain, control, or divert the flow of water so as to provide protection from temporary flooding.

(gg) LEVEE SYSTEM

means a flood protection system which consists of a levee, or levees, and associated structures, such as closure and drainage devices, which are constructed and operated in accordance with sound engineering practices.

(hh) LOWEST FLOOR

means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood resistant enclosure, usable solely for parking or vehicles, building access or storage in an area other than a basement area is not considered a building's lowest floor; provided that such enclosure is not built so as to render the structure in violation of the applicable non-elevation design requirement of Section 60.3 of the National Flood Insurance Program regulations.

(ii) MANUFACTURED HOME

means a structure transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when connected to the required utilities. The term "manufactured home" does not include a "recreational vehicle".

(jj) MANUFACTURED HOME PARK OR SUBDIVISION

means a parcel (or contiguous parcels) of land divided into two or more manufactured home lots for rent or sale.

(kk) MEAN SEA LEVEL

means, for purposes of the National Flood Insurance Program, the National Geodetic Vertical Datum (NGVD) of 1929 or other datum, to which base flood elevations shown on a community's Flood Insurance Rate Map are referenced.

(ll) NEW CONSTRUCTION

means, for the purpose of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

(mm) NEW MANUFACTURED HOME PARK OR SUBDIVISION

means a manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by a community.

(nn) NONRESIDENTIAL STRUCTURE

Includes but is not limited to: small business concerns, churches, schools, farm buildings (including grain bins and silos), poolhouses, clubhouses, recreational buildings, mercantile structures, agricultural and industrial structures, warehouses, hotels and motels with normal room rentals for less than six months' duration, and nursing homes

(oo) PRIMARY FRONTAL DUNE

means a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes immediately landward and adjacent to the beach and subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of

the primary frontal dune occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.

(pp) **REASONABLY SAFE FROM FLOODING**

means base flood waters will not inundate the land or damage structures to be removed from the sfha and that any subsurface waters related to the base flood will not damage existing or proposed buildings.

(qq) **RECREATIONAL VEHICLE**

means a vehicle which is (i) built on a single chassis; (ii) 400 square feet or less when measured at the largest horizontal projections; (iii) designed to be self-propelled or permanently towable by a light duty truck; and (iv) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

(rr) **REGULATORY FLOODWAY**

means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

(ss) **RESIDENTIAL STRUCTURE**

means a structure that is considered to be a domicile or is used for residential purposes for six months or more. Residential structures include a single-family home, multiple-unit apartment buildings, a residential condominium, or a manufactured or modular home.

(tt) **RIVERINE**

means relating to, formed by, or resembling a river (including tributaries), stream, brook, etc.

(uu) **SAND DUNES**

mean naturally occurring accumulations of sand in ridges or mounds landward of the beach.

(vv) **SPECIAL FLOOD HAZARD AREA**

see Area of Special Flood Hazard

(ww) **START OF CONSTRUCTION**

(for other than new construction or substantial improvements under the Coastal Barrier Resources Act (Pub. L. 97-348)), includes substantial improvement and means the date the building permit was issued, provided the actual start of construction, repair, reconstruction, rehabilitation, addition placement, or other improvement was within 180 days of the permit

date. The actual start means either the first placement of permanent construction of a structure on a site, such as the pouring of slab or footings, the installation of piles, the construction of columns, or any work beyond the stage of excavation; or the placement of a manufactured home on a foundation. Permanent construction does not include land preparation, such as clearing, grading and filling; nor does it include the installation of streets and/or walkways; nor does it include excavation for basement, footings, piers or foundations or the erection of temporary forms; nor does it include the installation on the property of accessory buildings, such as garages or sheds not occupied as dwelling units or not part of the main structure. For a substantial improvement, the actual start of construction means the first alteration of any wall, ceiling, floor, or other structural part of a building, whether or not that alteration affects the external dimensions of the building.

(xx) STRUCTURE

means, for floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

(yy) SUBSTANTIAL DAMAGE

means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed fifty (50) percent of the market value of the structure before the damage occurred. "Substantial Damage" also means flood-related damaged sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each flood event, on the average, equals or exceeds twenty-five (25) percent of the market value of the structure before the damage occurred.

(zz) SUBSTANTIAL IMPROVEMENT

means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either: (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or (2) Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure."

(aaa) VARIANCE

means a grant of relief by a community from the terms of a floodplain management regulation. (For full requirements see Section 60.6 of the National Flood Insurance Program regulations.)

(bbb) VIOLATION

means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. A structure or other development without the elevation certificate, other certifications, or other evidence of compliance required in Section 60.3(b)(5), (c)(4), (c)(10), (d)(3), (e)(2), (e)(4), or (e)(5) is presumed to be in violation until such time as that documentation is provided.

(ccc) WATER SURFACE ELEVATION

means the height, in relation to the National Geodetic Vertical Datum (NGVD) of 1929 (or other datum, where specified), of floods of various magnitudes and frequencies in the floodplains of coastal or riverine areas.

Article III. General Provisions

Section 1. Lands to which this Chapter applies:

The Chapter shall apply to all areas of special flood hazard with the jurisdiction of the City.

Section 2. Basis for Establishing the areas of Special Flood Hazard

The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "The Flood Insurance Study (FIS) for Aransas County and Incorporated Areas," dated May 4, 1992, and the Flood Insurance Study (FIS) for Nueces County and incorporated areas, dated May 4, 1992, with accompanying Flood Insurance Rate Maps (FIRM) dated May 4, 1992, and any revisions thereto are hereby adopted by reference and declared to be a part of this Chapter.

Section 3. Establishment of Development Permit

A Development Permit shall be required to ensure conformance with the provisions of this Chapter.

Section 4. Compliance

No structure or land shall hereafter be located, altered, or have its use changed without full compliance with the terms of this Chapter and other applicable regulations.

Section 5. Abrogation and Greater Restrictions

This Chapter is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance and another ordinance, easement, covenant, or deed restriction conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

Section 6. Interpretation

In the interpretation and application of this Chapter, all provisions shall be; (1) considered as minimum requirements; (2) liberally construed in favor of the governing body; and (3) deemed neither to limit nor repeal any other powers granted under State statutes.

Section 7. Warning and Disclaimer or Liability

The degree of flood protection required by this Chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. On rare occasions greater floods can and will occur and flood heights may be increased by man-made or natural causes. This Chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This Chapter shall not create liability on the part of the community or any official or employee thereof for any flood damages that result from reliance on this Chapter or any administrative decision lawfully made hereunder.

Article IV. Administration

Section 1. Designation of the Floodplain Administrator

The Building Inspector is hereby appointed the Floodplain Administrator to administer and implement the provisions of this Chapter and other appropriate sections of 44 CFR (Emergency Management and Assistance - National Flood Insurance Program Regulations) pertaining to floodplain management.

Section 2. Duties and Responsibilities of the Floodplain Administrator

Duties and responsibilities of the Floodplain Administrator shall include, but not be limited to, the following:

- (a) Maintain and hold open for public inspection all records pertaining to the provisions of this Chapter.
- (b) Review permit application to determine whether to ensure that the proposed building site project, including the placement of manufactured homes, will be reasonably safe from flooding.
- (c) Review, approve or deny all applications for development permits required by adoption of this Chapter.
- (d) Review permits for proposed development to assure that all necessary permits have been obtained from those Federal, State or local governmental agencies (including Section 404 of the Federal Water Pollution Control Act Amendments of 1972, 33 U.S.C. 1334) from which prior approval is required.

- (e) Where interpretation is needed as to the exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions) the Floodplain Administrator shall make the necessary interpretation.
- (f) Notify, in riverine situations, adjacent communities and the State Coordinating Agency which the Texas Water Development Board (TWDB) and also the Texas Commission on Environmental Quality (TCEQ), prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Emergency Management Agency.
- (g) Assure that the flood carrying capacity within the altered or relocated portion of any watercourse is maintained.
- (h) When base flood elevation data has not been provided in accordance with Article III, Section 2, the Floodplain Administrator shall obtain, review and reasonably utilize any base flood elevation data and floodway data available from a Federal, State or other source, in order to administer the provisions of Article V.
- (i) When a regulatory floodway has not been designated, the Floodplain Administrator must require that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.
- (j) Under the provisions of 44 CFR Chapter 1, Section 65.12, of the National Flood Insurance Program regulations, a community may approve certain development in Zones A1-30, AE, AH, on the community's FIRM which increases the water surface elevation of the base flood by more than 1 foot, provided that the community first completes all of the provisions required by Section 65.12.

Section 3. Permit Procedures

- (a) Application for a Floodplain Development Permit shall be presented to the Floodplain Administrator on forms furnished by him/her and may include, but not be limited to, plans in duplicate drawn to scale showing the location, dimensions, and elevation of proposed landscape alterations, existing and proposed structures, including the placement of manufactured homes, and the location of the foregoing in relation to areas of special flood hazard. Additionally, the following information is required:
 - (1) Elevation (in relation to mean sea level), of the lowest floor (including basement) of all new and substantially improved structures;

- (2) Elevation in relation to mean sea level to which any nonresidential structure shall be floodproofed;
 - (3) A certificate from a registered professional engineer or architect that the nonresidential floodproofed structure shall meet the floodproofing criteria of Article V, Section 2(b);
 - (4) Description of the extent to which any watercourse or natural drainage will be altered or relocated as a result of proposed development;
 - (5) Maintain a record of all such information in accordance with Article IV certificate, Section (2)(b).
- (b) Approval or denial of a Floodplain Development Permit by the Floodplain Administrator shall be based on all of the provisions of this Chapter and the following relevant factors:
- (1) The danger to life and property due to flooding or erosion damage;
 - (2) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - (3) The danger that materials may be swept onto other lands to the injury of others;
 - (4) The compatibility of the proposed use with existing and anticipated development;
 - (5) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (6) The costs of providing governmental services during and after flood conditions including maintenance and repair of streets and bridges, and public utilities and facilities such as sewer, gas, electrical and water systems;
 - (7) The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters and the effects of wave action, if applicable, expected at the site;
 - (8) The necessity to the facility of a waterfront location, where applicable;
 - (9) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use.

Section 4. Variance Procedures

- (a) The Appeal Board, as established by the community, shall hear and render judgment on requests for variances from the requirements of this Chapter.

- (b) The Appeal Board shall hear and render judgment on an appeal only when it is alleged there is an error in any requirement, decision, or determination made by the Floodplain Administrator in the enforcement or administration of this Chapter.
- (c) Any person or persons aggrieved by the decision of the Appeal Board may appeal such decision in the courts of competent jurisdiction.
- (d) The Floodplain Administrator shall maintain a record of all actions involving an appeal and shall report variances to the Federal Emergency Management Agency upon request.
- (e) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in the remainder of this Chapter.
- (f) Variances may be issued for new construction and substantial improvements to be erected on a lot of 1/2 acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing the relevant factors in Section 3(b) of this Article have been fully considered. As the lot size increases beyond the 1/2 acre, the technical justification required for issuing the variance increases.
- (g) Upon consideration of the factors noted above and the intent of this Chapter, the Appeal Board may attach such conditions to the granting of variances as it deems necessary to further the purpose and objectives of this Chapter (Article I, Section 3).
- (h) Variances shall not be issued within any designated floodway if any increase in flood levels during the base flood discharge would result.
- (i) Variances may be issued for the repair or rehabilitation of historic structures upon a determination that the proposed repair or rehabilitation will not preclude the structure's continued designation as a historic structure and the variance is the minimum necessary to preserve the historic character and design of the structure.
- (j) Prerequisites for granting variances:
 - (1) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
 - (2) Variances shall only be issued upon:
 - a. showing a good and sufficient cause;
 - b. a determination that failure to grant the variance would result in exceptional hardship to the applicant, and

- c. a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
- (3) Any application to which a variance is granted shall be given written notice that the structure will be permitted to be built with the lowest floor elevation below the base flood elevation, and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
- (k) Variances may be issued by a community for new construction and substantial improvements and for other development necessary for the conduct of a functionally dependent use provided that:
- (1) the criteria outlined in Article IV, Section 4 (a)-(i) are met, and
 - (2) the structure or other development is protected by methods that minimize flood damages during the base flood and create no additional threats to public safety.

Article V. Provisions for Flood Hazard Reduction

Section 1. General Standards

In all areas of special flood hazards the following provisions are required for all new construction and substantial improvements:

- (a) All new construction or substantial improvements shall be designed (or modified) and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- (b) All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damage;
- (c) All new construction or substantial improvements shall be constructed with materials resistant to flood damage;
- (d) All new construction or substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
- (e) All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;

- (f) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the system and discharge from the systems into flood waters; and,
- (g) On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.

Section 2. Specific Standards

In all areas of special flood hazards where base flood elevation data has been provided as set forth in Article III, Section 2, Article IV, Section 2(h), or Article V, Section 3(c), the following provisions are required:

- (a) Residential Construction - new construction and substantial improvement of any residential structure shall have the lowest floor (including basement) **and exposed plumbing and electrical components**, elevated **to a minimum of two (2) feet** above the base flood elevation. **In all cases, the lowest floor of a residential structure shall be elevated at least two (2) feet above the natural grade or the crown of the road, whichever is higher.** A registered professional engineer, architect, or land surveyor shall submit a certification to the Floodplain Administrator that the standard of this subsection as proposed in Article IV, Section 3(a)(1), is satisfied.
- (b) Nonresidential Construction - new construction and substantial improvements of any commercial, industrial or other nonresidential structure shall either have the lowest floor (including basement) elevated **to a minimum of two (2) feet** above the base flood level or together with attendant utility and sanitary facilities, be designed so that the structure is watertight **to a minimum of two (2) feet** above the base flood elevation with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice as outlined in this subsection. A record of such certification which includes the specific elevation (in relation to mean sea level) to which such structures are floodproofed shall be maintained by the Floodplain Administrator.
- (c) Enclosures - new construction and substantial improvements, with fully enclosed areas below the lowest floor that are usable solely for parking of vehicles, building access or storage in an area other than a basement and which are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:

- (1) A minimum of two openings on separate walls having a total net area of not less than 1 square inch for every square foot of enclosed area subject to flooding shall be provided.
- (2) The bottom of all openings shall be no higher than 1 foot above grade.
- (3) Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

(d) Manufactured Homes -

- (1) Require that all manufactured homes to be placed within Zone A on a community's FHBM or FIRM shall be installed using methods and practices which minimize flood damage. For the purposes of this requirement, manufactured homes must be elevated and anchored to resist flotation, collapse, or lateral movement. Methods of anchoring may include, but are not limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State and local anchoring requirements for resisting wind forces.
- (2) Require that manufactured homes that are placed or substantially improved within Zones A1-30, AH, and AE on the community's FIRM on sites (i) outside of a manufactured home park or subdivision, (ii) in a new manufactured home park or subdivision, (iii) in an expansion to an existing manufactured home park or subdivision, or (iv) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as a result of a flood, be elevated on a permanent foundation such that the **lowest horizontal structural member of the chassis** of the manufactured home **and exposed plumbing and electrical components** are elevated **to a minimum of two (2) feet** above the base flood elevation and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.
- (3) Require that manufactured homes be placed or substantially improved on sites in an existing manufactured home park or subdivision with Zones A1-30, AH and AE on the community's FIRM that are not subject to the provisions of paragraph (4) of this section be elevated so that either:
 - a. the **lowest horizontal structural member of the chassis** of the manufactured home **and exposed plumbing and electrical components** are elevated **to a minimum of two (2) feet** above the base flood elevation, or
 - b. the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches in height above grade and be securely anchored to an adequately anchored foundation system to resist flotation, collapse, and lateral movement.

- (4) The lowest floor of a manufactured home that is outside of the SFHA shall be elevated two (2) feet above the natural grade or the crown of the road, whichever is higher.
- (e) Recreational Vehicles - Require that recreational vehicles placed on sites within Zones A1-30, AH, and AE on the community's FIRM either (i) be on the site for fewer than 180 consecutive days, or (ii) be fully licensed and ready for highway use, or (iii) meet the permit requirements of Article 4, Section 3(a), and the elevation and anchoring requirements for "manufactured homes" in paragraph (d) of this section. A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.
- (f) Fill Material – If fill material is to be used to elevate any structure in Zones A, A1-30, AE, AO, AH, AR, or A99, the following will apply:
- (1) Fill material must be compacted to at least 95 percent of Standard Laboratory Maximum Density (Standard Proctor) according to ASTM Standard D-698;
 - (2) Fill soils must be fine grained soils of low permeability, such as those classified as CH, CL, SC, or ML according to ASTM Standard D-2487, "Classification of Soils for Engineering Purposes." See Table 1804.2 in the International Building Code (IBC) for descriptions of these soil types.
 - (3) The fill material must be homogeneous and isotropic; that is, the soil must be all of one material, and the engineering properties must be the same in all directions.

Section 3. Standards for Subdivision Proposals

- (a) All subdivision proposals including the placement of manufactured home parks and subdivisions shall be consistent with Article I, Sections 2, 3, and 4 of this Chapter.
- (b) All proposals for the development of subdivisions including the placement of manufactured home parks and subdivisions shall meet Floodplain Development Permit requirements of Article III, Section 3; Article IV, Section 3; and the provisions of Article V of this Chapter.
- (c) Base flood elevation data shall be generated for subdivision proposals and other proposed development including the placement of manufactured home parks and subdivisions which is greater than 50 lots or 5 acres, whichever is lesser, if not otherwise provided pursuant to Article III, Section 2 or Article IV, Section 2(h) of this Chapter.
- (d) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have adequate drainage provided to reduce exposure to flood hazards.

- (e) All subdivision proposals including the placement of manufactured home parks and subdivisions shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize or eliminate flood damage.
- (f) At least one primary entry road to a residential structure shall be elevated to or above the BFE to allow entry and exit of vehicles during a base flood event.

Section 4. Standards for areas of Shallow Flooding (AO/AH Zones)

Located within the areas of special flood hazard established in Article III, Section 2, are areas designated as shallow flooding. These areas have special flood hazards associated with flood depths of 1 to 3 feet where a clearly defined channel does not exist, where the path of flooding is unpredictable, and where velocity flow may be evident. Such flooding is characterized by ponding or sheet flow; therefore, the following provisions apply:

- (a) All new construction and substantial improvements of residential structures have the lowest floor (including basement) and exposed plumbing and electrical components elevated to a minimum of two (2) feet above the base flood elevation or the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least 2 feet if no depth number is specified).
- (b) All new construction and substantial improvements of non-residential structures;
 - (1) have the lowest floor (including basement) elevated to or above the base flood elevation or the highest adjacent grade at least as high as the depth number specified in feet on the community's FIRM (at least 2 feet if no depth number is specified), or
 - (2) together with attendant utility and sanitary facilities be designed so that below the base specified flood depth in an AO Zone, or below the Base Flood Elevation in an AH Zone, level the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads of effects of buoyancy.
- (c) A registered professional engineer or architect shall submit a certification to the Floodplain Administrator that the standards of this Section, as proposed in Article 4, Section C are satisfied.
- (d) Require within Zones AH or AO adequate drainage paths around structures on slopes, to guide flood waters around and away from proposed structures.

Section 5. Coastal High Hazard Areas

Located within the areas of special flood hazard established in Article III, Section 2, are areas designated as Coastal High Hazard Areas (Zones V1-30, VE, and/or V). These areas have special

flood hazards associated with high velocity waters from tidal surges and hurricane wave wash; therefore, in addition to meeting all provisions outlined in this Chapter, the following provisions must also apply:

- (a) Obtain the elevation (in relation to mean sea level) of the bottom of the lowest structural member of the lowest floor (excluding pilings and columns) of all new and substantially improved structures, and whether or not such structures contain a basement. The Floodplain Administrator shall maintain a record of all such information.
- (b) All new construction shall be located landward of the reach of mean high tide.
- (c) All new construction and substantial improvements shall be elevated on pilings and columns so that:
 - (1) the bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the base flood level;
 - (2) the pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction, and shall certify that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of (c)(1) and (2) of this Section.
- (d) Provide that all new construction and substantial improvements have the space below the lowest floor either free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or supporting foundation system.
- (e) For the purpose of this section, a breakaway wall shall have a design safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or State codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:
 - (1) breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
 - (2) the elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of

wind and water loads acting simultaneously on all building components (structural and nonstructural). Water loading values used shall be those associated with the base flood. Wind loading values used shall be those required by applicable State or local building standards. Such enclosed space shall be useable solely for parking of vehicles, building access, or storage. Such space shall not be used for human habitation.

- (f) Prohibit the use of fill for structural support of buildings.
- (g) Prohibit man-made alteration of sand dunes and mangrove stands that increase potential flood damage.
- (h) Manufactured Homes

Require that manufactured homes placed or substantially improved within Zone V1-30, V, and VE on the community's FIRM on sites:

- (1) outside of a manufactured home park or subdivision,
- (2) in a new manufactured home park or subdivision,
- (3) in an expansion to an existing manufactured home park or subdivision, or
- (4) in an existing manufactured home park or subdivision on which a manufactured home has incurred "substantial damage" as the result of a flood

meet the standards of paragraphs (a) through (f) of this section and that manufactured homes placed or substantially improved on other sites in an existing manufactured home park or subdivision within Zones V1-30, V, and VE on the community's FIRM meet the requirements of Article V, Section 2(d) of this Chapter.

- (i) Recreational Vehicles

Require that recreational vehicles placed on sites within Zones V1-30, V, and VE on the community's FIRM either

- (1) be on the site for fewer than 180 consecutive days, or
- (2) be fully licensed and ready for highway use, or
- (3) meet the requirements in Article III, Section 3 of this Chapter and paragraphs (a) through (f) of this section.

A recreational vehicle is ready for highway use if it is on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions.

Section 6. Areas Outside of the SFHA

- (a) The lowest floor of a nonresidential or residential structure, or manufactured home that is outside of the SFHA shall be elevated two (2) feet above the natural grade or the crown of the road, whichever is higher.

- (b) If a new or substantially improved nonresidential or residential structure, or manufactured home is constructed outside the SFHA but is within 500 feet of the centerline of a known but unmapped water course (including an intermittent water course) on the community's FIRM, then it shall be elevated so that the lowest floor (including basement) is a minimum of two (2) feet above the highest adjacent grade.

Section 7. Penalties for Noncompliance

No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this court order and other applicable regulations. Violation of the provisions of this court order by failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with conditions) shall constitute a misdemeanor. Any person who violates this court order or fails to comply with any of its requirements shall upon conviction thereof be fined not more than five hundred dollars (\$500) for each violation, and in addition shall pay all costs and expenses involved in the case. Nothing herein contained shall prevent the City from taking such other lawful action as is necessary to prevent or remedy any violation.

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Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied..

PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

City Secretary
City of Port Aransas, Texas

Port Aransas Stormwater Management Program Development

Advisory Committee Workshop

April 30, 2020



Meet Your Team



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Deep Talent Support...

Urban Planning + Design
Stormwater Engineering
Environmental Science & Coastal

... and more



Purpose



Data Review



Existing Practices



Conceptual Solutions

Purpose



REDUCE NON-POINT SOURCE (NPS)
POLLUTION



REDUCE FLOODING FROM IMPROPER
DRAINAGE AND HIGH TIDES



CITIZEN BUY-IN



Purpose



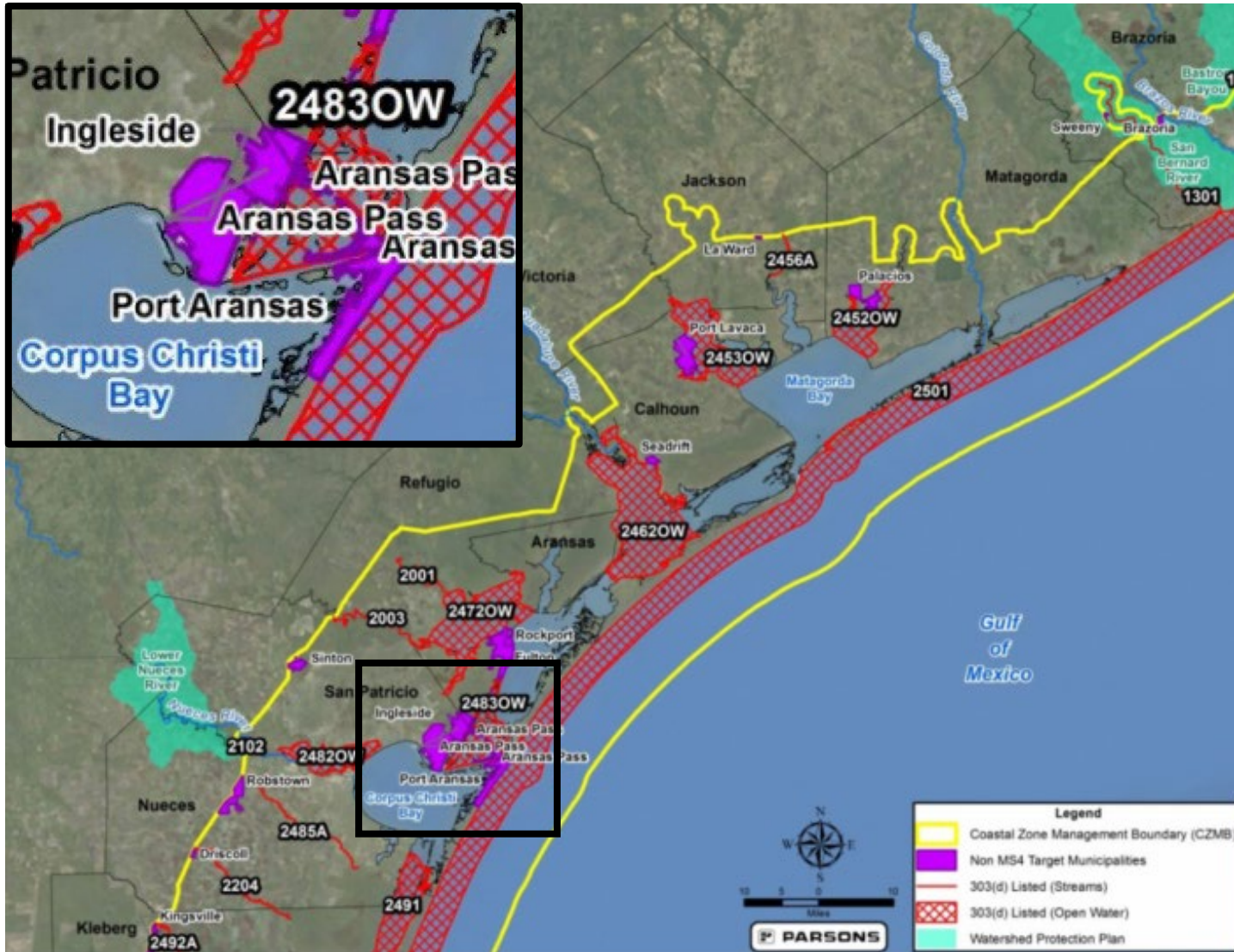
Data Review



Existing Practices



Conceptual Solutions



GSD Water Quality Report*

Port Aransas listed as municipality with 303(d)

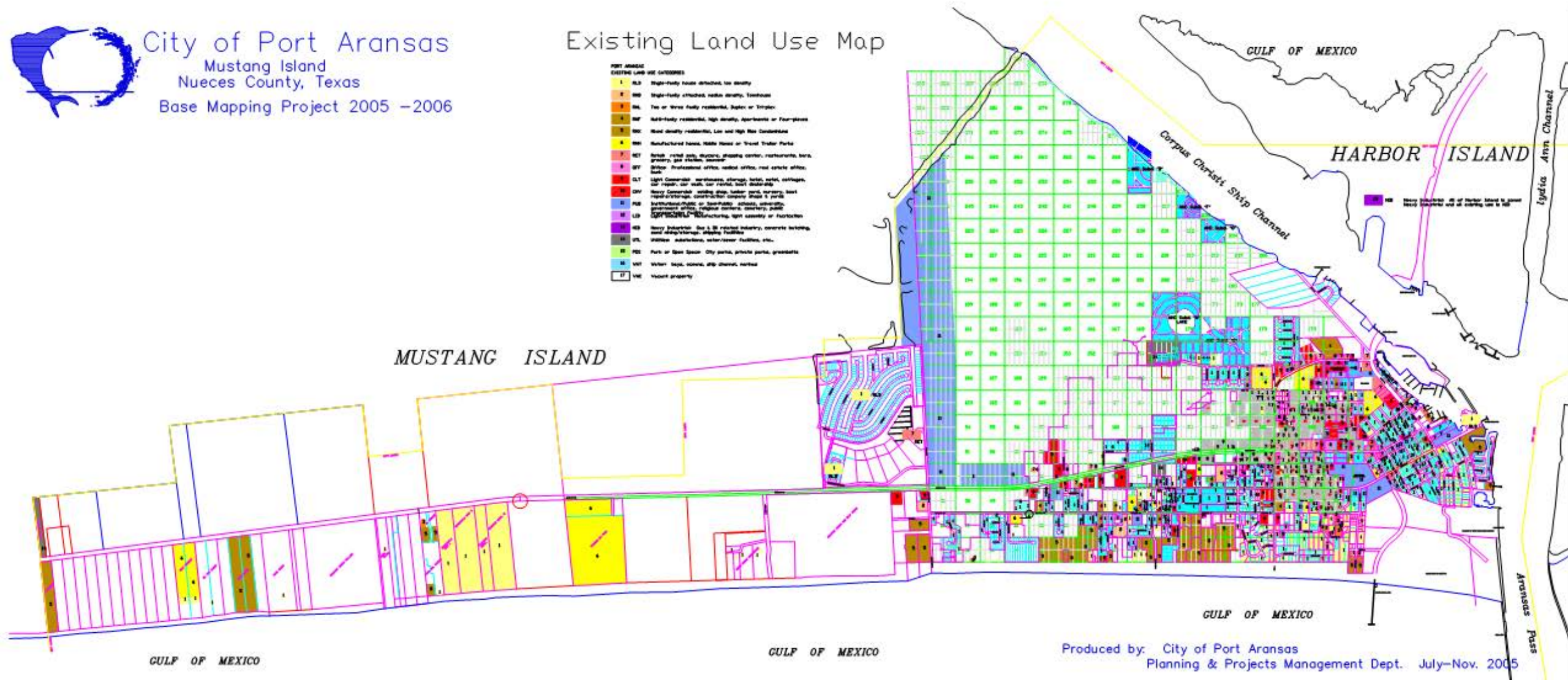
- Impaired body: Gulf of Mexico
- Impaired use: contact, fish
- Pollutant: bacteria, mercury inedible tissue



City of Port Aransas
Mustang Island
Nueces County, Texas
Base Mapping Project 2005 - 2006

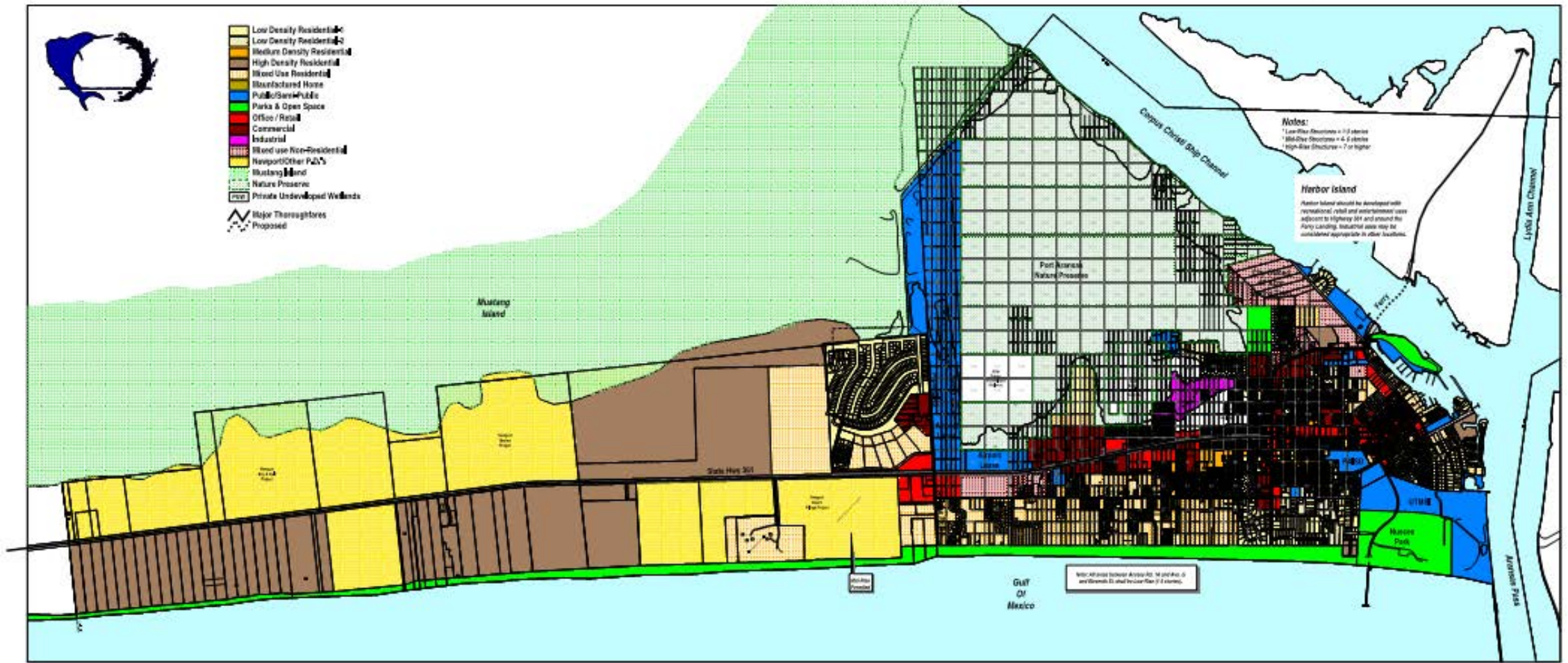
Existing Land Use Map

- PORT ARANAS**
EXISTING LAND USE CATEGORIES
- 1 R1 Single-family detached, low density
 - 2 R2 Single-family attached, medium density, townhomes
 - 3 R3 Two or three family residential, duplex or triplex
 - 4 R4 Medium density residential, high density, apartments or fourplexes
 - 5 R5 Medium density residential, low and high rise condominium
 - 6 M1 Manufactured homes, mobile homes or travel trailer parks
 - 7 C1 Retail - retail sale, dryclean, shopping center, restaurants, bars, grocery, gas station, service
 - 8 C2 Office - professional offices, medical offices, real estate offices, bank
 - 9 C3 Light Commercial - warehouses, storage, hotels, motels, cottages, car repair, car wash, car rental, boat dealership
 - 10 C4 Heavy Commercial - wholesaler, auto, labor pool, nursery, boat repair/storage, construction company, shop & parts
 - 11 P1 Institutional/public or community - schools, university, government offices, religious centers, libraries, park
 - 12 U1 UTILITIES - electric, gas, water, sewer, telephone
 - 13 I1 Industrial - light industry, light assembly or fabrication
 - 14 I2 Heavy Industrial - large scale industry, concrete batching, steel storage, shipping facilities
 - 15 U2 Utilities - substations, water/sewer facilities, etc.
 - 16 P2 Park or Open Space - City parks, private parks, greenbelt
 - 17 W1 Water - bays, ponds, deep channels, marsh
 - 18 V1 Vacant property



Produced by: City of Port Aransas
Planning & Projects Management Dept. July-Nov. 2005

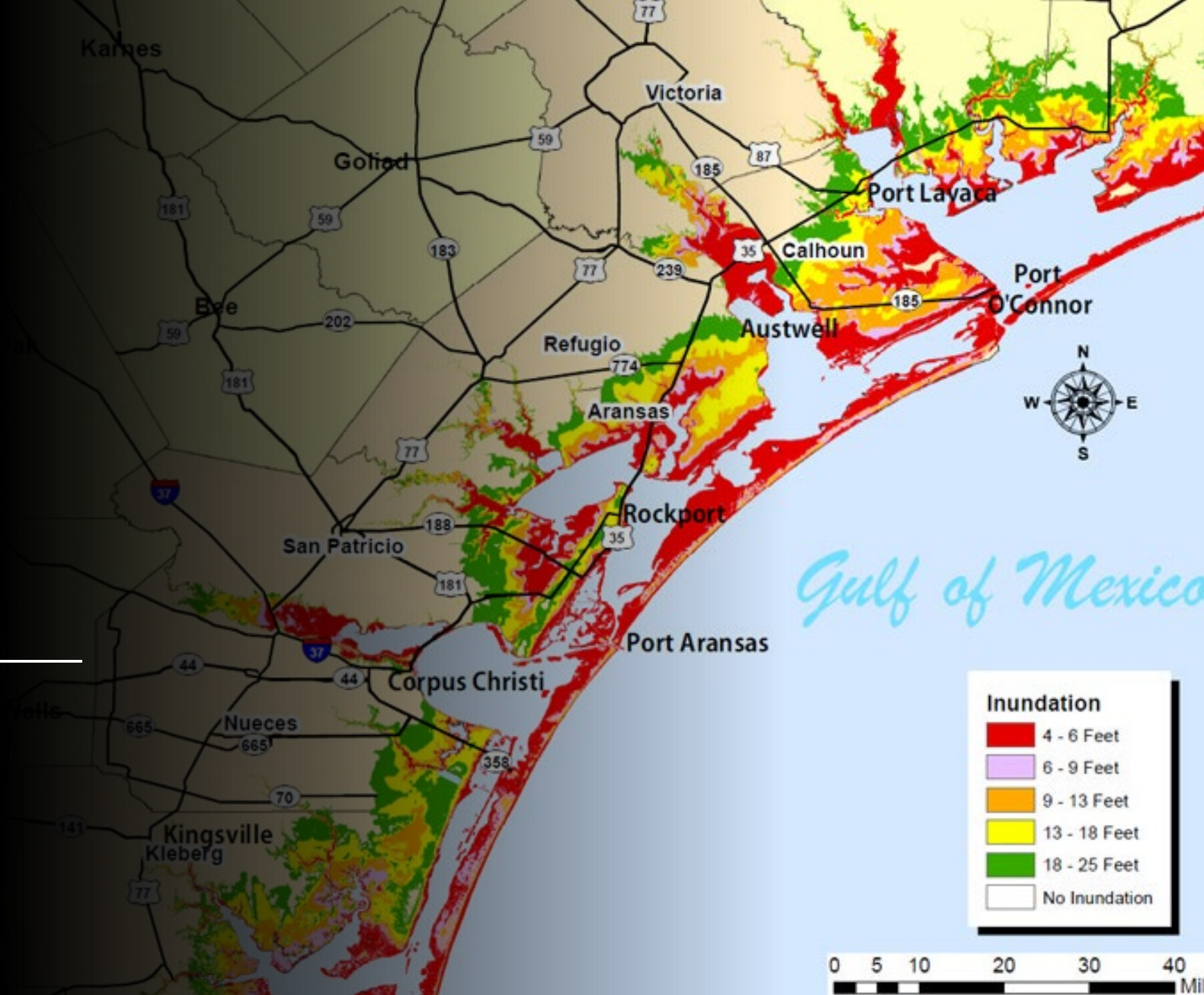




Preliminary Future Land Use Plan

Port Aransas, Texas

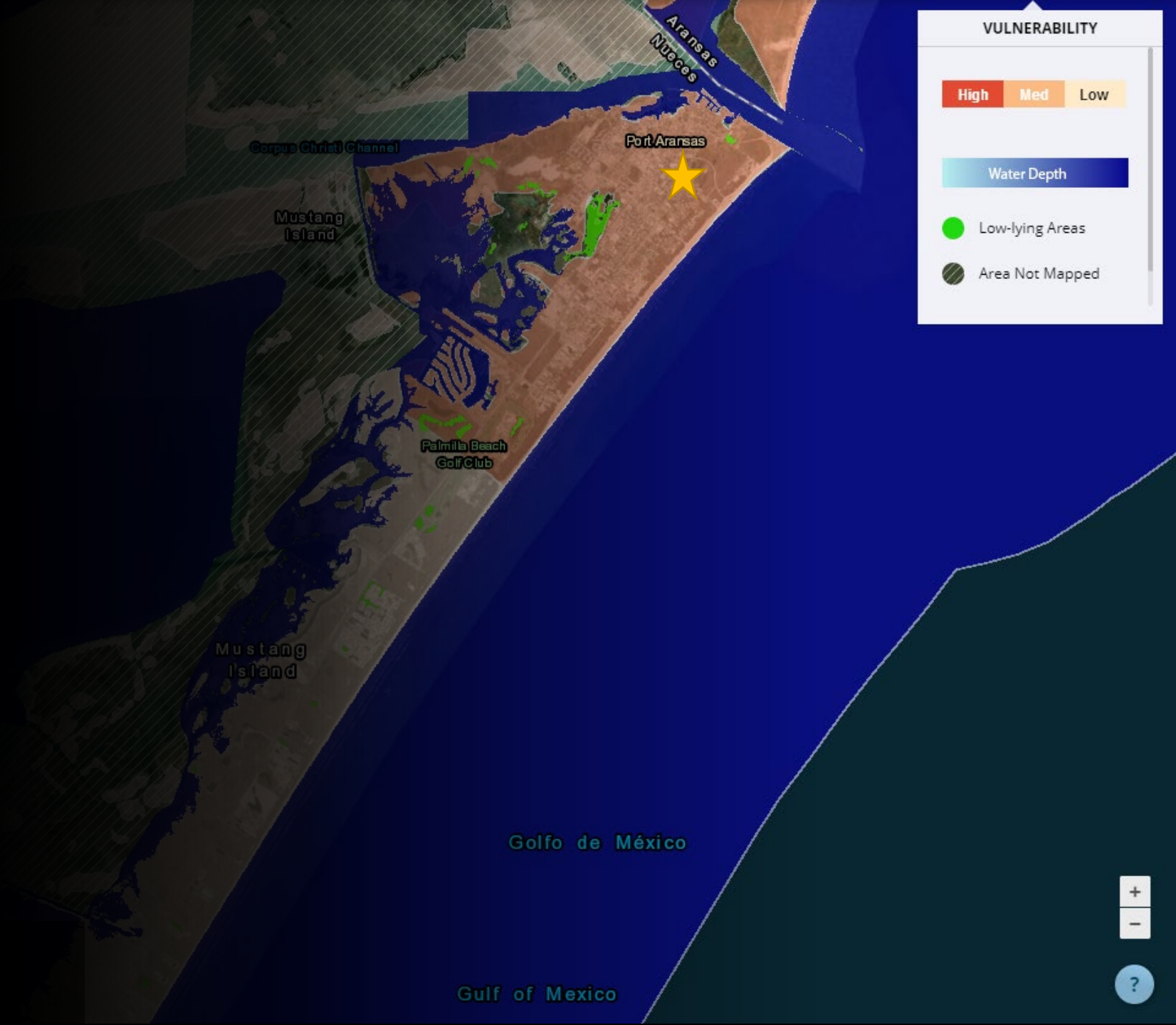
Harvey Surge



NOAA Sea Level Rise Viewer: Vulnerability

Based on socioeconomic data

Developed area generally medium level



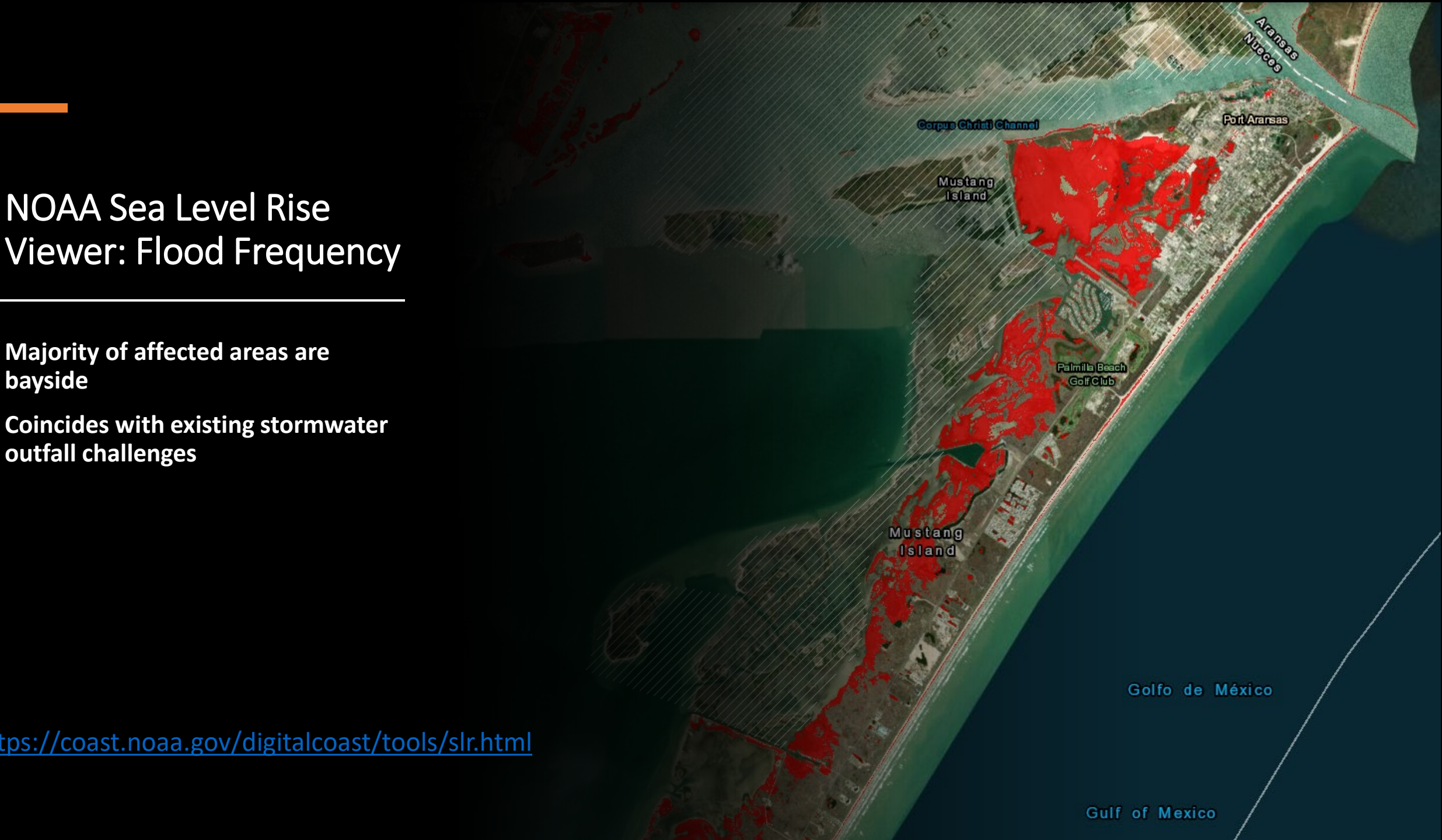
<https://coast.noaa.gov/digitalcoast/tools/slr.html>

NOAA Sea Level Rise Viewer: Flood Frequency

Majority of affected areas are
bayside

Coincides with existing stormwater
outfall challenges

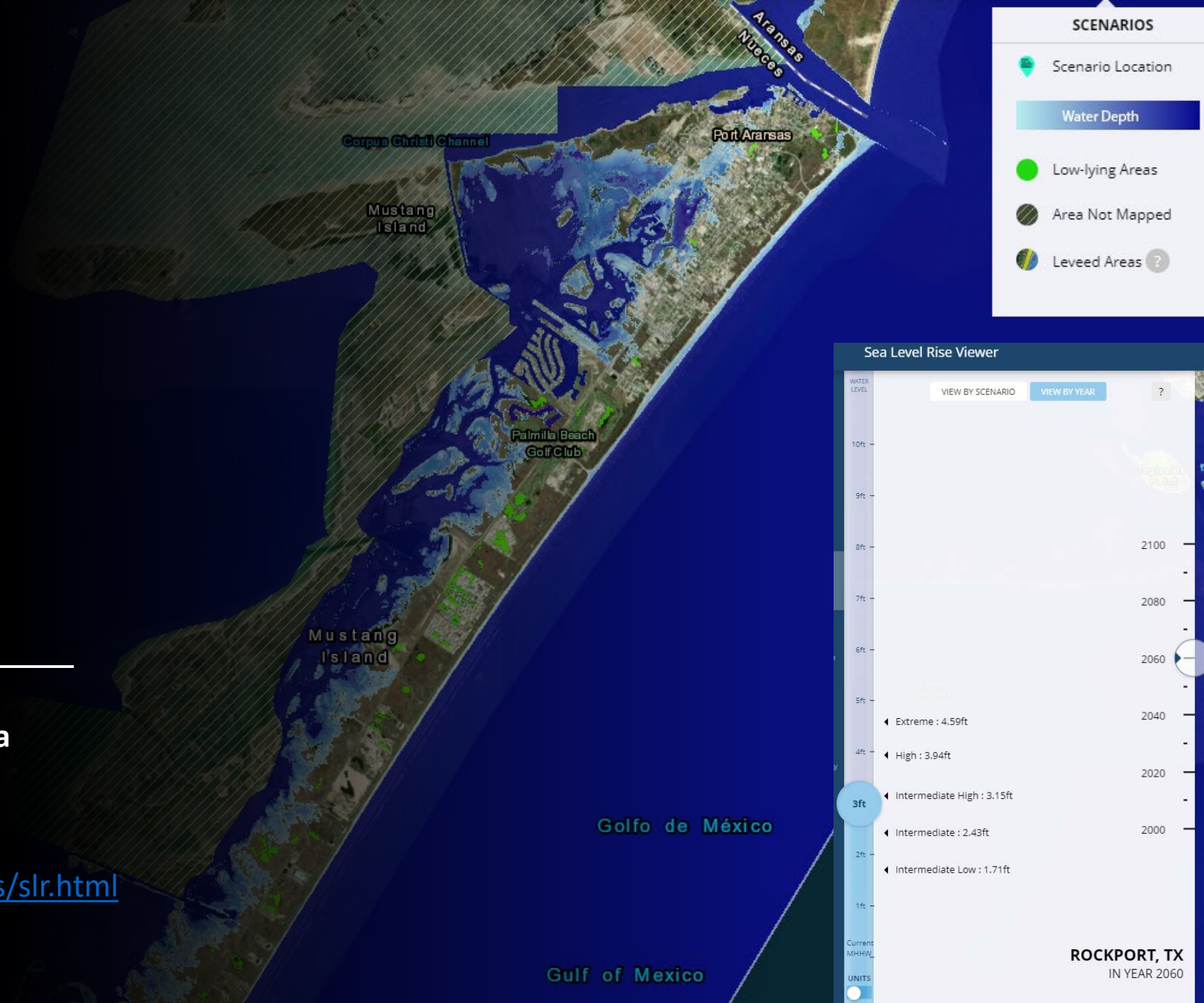
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NOAA Sea Level Rise Viewer: Local Scenario

2060 intermediate-high estimate is a 3.15' rise

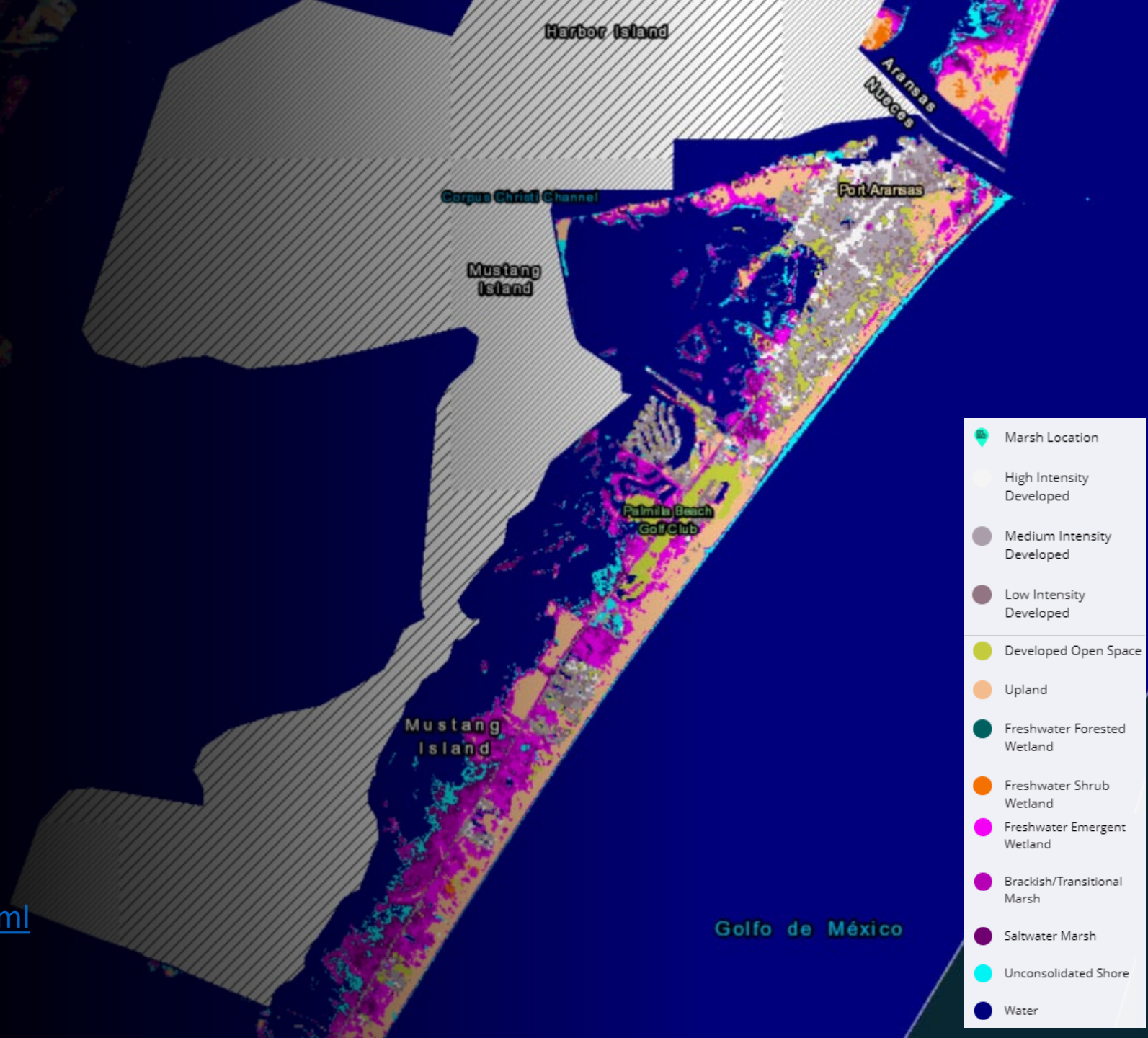
<https://coast.noaa.gov/digitalcoast/tools/slr.html>



NOAA Sea Level Rise Viewer: Wetland Migration

Wetland migration varies due to level of development

<https://coast.noaa.gov/digitalcoast/tools/slr.html>



Guidance for Sustainable
Stormwater Drainage on the
Texas Coast



This paper is hereby a historical reference issued from the U.S. Department of the Interior, U.S. Fish and Wildlife Service, Coastal Program Resource Center. The views and opinions of the U.S. Fish and Wildlife Service. Document available for download at www.fws.gov July 2014



LID/GSI Technical Manuals

Supplements from Government and Environmental Organizations





Purpose



Data Review



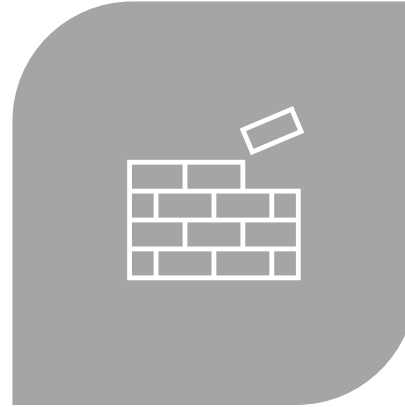
Existing Practices



Conceptual Solutions



DESIGNATED WILDLIFE AREAS AND
NATURE PRESERVES



MASTERPLAN DESIGNED BASED ON
ASSUMED 20% IMPERVIOUS AREA

Beneficial Existing Practices



2-YEAR DESIGN STORM



STREET
SPECIFICATIONS



PLAT SUBMITTAL
PROCESS



BUILDING PERMIT
REQUIREMENTS AND
STANDARDS

Opportunities to Improve Existing Practices



Purpose



Data Review



Existing Practices



Conceptual Solutions

Opportunities for Redevelopment of Existing Properties



- **Update code for voluntary measures; incentivize**
 - Property Tax relief and similar financial incentives
 - Regulatory incentives
- **Promote economic resilience**
 - Communities depend on key economic sectors
 - Encourage flood resiliency

Opportunities for New Development: Preservation

- **Protect natural conservation areas**
 - by deed restrictions*
 - conservation easements*
 - maintenance agreements*
- **Identify and preserve sensitive area**
 - Floodplains, Erodible soils, Wetlands, Mature forests, Critical habitat areas*
 - Preserve natural depressions storage and buffers*
 - Reduce clearing, grubbing*
- **Detention requirements**
 - Incorporate more wet pond, wetland characteristics*



Opportunities for New Development: Reduce Impervious Cover

■ Residential

- Driveways: shared, reduced width, reduce setback*
- Cul-de-sacs: reduce radius, rain garden in center*
- Permeable pavement*
- Bicycle/Pedestrian path separated from other impervious area*

■ Commercial

- Reduce/Eliminate parking requirements*
- Shared parking*
- Disconnect impervious cover*



Opportunities for New Development: Deploy Incentives

■ Paths to Compliance

- Payment of \$XX,XXX/acre of impervious cover
- Construct 1+ LID structure to address runoff requirements

■ EPA Examples

- Stormwater utility fee discount or credit
- Development incentives (regulatory and procedural)
- Rebates and installation financing
- Awards and recognition programs



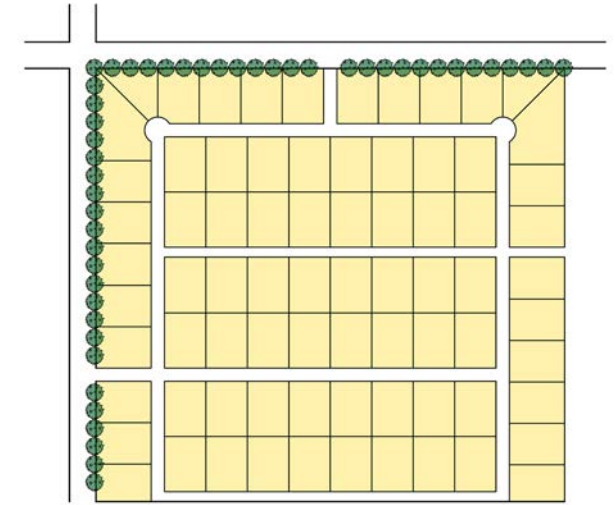
Opportunities for New Development: LID & Criteria Application

■ Single Family Residential

- Minimum 25' buffer from body of water*
- Rain Gardens*
- Cluster Development*

■ Multi-Family Residential

- Pervious Pavers*
- Bioretention*
- Infiltration Facilities*
- Cluster Development*



Opportunities for New Development: LID & Criteria Application

- **Commercial/Real Estate/Office**
 - Bioretention areas*
 - Filter Strips*
 - Trees*
 - Covered dumpster area*
 - Grade so runoff flows different directions*
 - Cluster Development*
- **Downtown Development**
 - Bioretention*
 - Porous Pavers*



MS4 Aligned Opportunities



Illegal Discharge Ordinance

Animal Waste
Pool Backwashing
Lawn Maintenance Debris



Construction Ordinance

Temporary Erosion Control
Site Discharges



Post-Construction Requirements

Facility Maintenance Agreement
Max Detention Time
Impervious limit

Non-Regulatory Ideas



Task Force

Interdepartmental collaboration



Outreach

Education workshops

Business outreach

Community partnerships

Consultation services

Public Facing Resources

Opportunities for New Development: Long-Term Operational Sustainability

- **Registration and regular inspection of facilities to prevent nuisance**
- **Limitations on cut and fill**
- **Linking effective stormwater management, including water quality, to economic benefit and resiliency**



Next Steps

Article I. Introduction

Section 1. Purpose

The City of Port Aransas (City), in conjunction with the Coastal Bend Bays & Estuaries Program and the Mission-Aransas National Estuarine Research Reserve (NERR) at the University of Texas Marine Science Institute (UTMSI), engaged Freese and Nichols, Inc. (FNI) to assist in sustainable drainage codification. Currently, the City of Port Aransas relies on voluntary use of the *Guidance for Sustainable Drainage on the Texas Coast (GSD)* by Michael Barrett, et al. (2014, and revised in 2019); its use has been inconsistent. Port Aransas has experienced substantial increases in development permitting and land development, prompting interest in improving stormwater management to reduce non-point source (NPS) pollution and protect vital fish habitat. The work is in association with the Texas General Land Office (GLO) Coastal Management Program (CMP) Cycle 24 program funds awarded to the City under GLO Contract No. 20-035-000-B743. The goal of the project is to reduce NPS pollution into local waters, reduce flooding from improper drainage and high tides, and inform local citizens of the value of coastal resources and their role in ensuring sound management and resiliency.

Section 2. Methodology

Preparation of this report involved four key elements, as follows:

1. Data Reconnaissance

Several baseline datasets, reports and observations were reviewed initially, including, but not limited to: 2018 United States Geological Survey (USGS) Light Detection and Ranging (LIDAR) data; The GSD; historical high-water mark data for Port Aransas, including relative sea level rise model projections; AS-built infrastructure information; and Direct observation.

This information enhanced understanding of current development practices, allowing identification of potential sources for the excess sediment and conditions that might be worsening the flooding and negatively impacting the coastal ecology of Port Aransas.

2. Conceptual Solutions Development

This involved development of conceptual solutions that achieve the City's missions of improving coastal ecology while reducing flooding conditions through low impact development (LID) implementation. This element included review of existing stormwater management controls and evaluation of precedent approaches to create tangible and cost-effective solutions for the City's implementation.

3. Permitting

Understanding the Federal and State permitting environment is critical to success in addressing the City's challenges, both for existing developed areas in need of retrofit, and new greenfield development. Other agency permit systems can be leveraged to serve the City's needs within its administrative and financial capacity, while avoiding duplication and unnecessary bureaucratic processes at the local level.

4. Policy Review

The City's current drainage criteria, code, and draft landscape ordinance were reviewed in comparison to State and Federal regulations, the GSD and innovative stormwater and land development practices. This allowed identification of opportunities to improve the City's land development regulations and maintenance requirements to meet the City's goals.

5

Section 3. Conceptual Solutions – Residential Participation

Paragraph Paragraph Paragraph, Corresponds to Chapter 2 of the GSD

Conceptual Solution	Description	Relevance to Port Aransas	Precedent Examples (if applicable)	Other

9

Port Aransas Stormwater Management Program Development

Advisory Committee Workshop

April 30, 2020



Kimberly Patak, P.E., CFM, ENV SP
Associate, Stormwater Management



Chance Sparks, AICP, CNU-A
Urban Planning Project Manager



Blaine Laechelin, P.E., CFM
Stormwater Management



Kristina McLaren, EIT, CFM, ENV SP
Stormwater Management



Port Aransas Stormwater Management Program Development

City Council Update

July 16, 2020



Meet Your Team



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Deep Talent Support...

Urban Planning + Design
Stormwater Engineering
Environmental Science & Coastal

... and more

- Single-family homes are an excellent opportunity to apply vegetated filter strips and swales.
- Multi-family developments are an ideal situation for bioretention and infiltration areas. Permeable pavers for parking and driveways are a functional and aesthetic option for all residential development.
- Commercial, retail, and office development typically are high in impervious area and, therefore, have the most potential for reduction. Green options for these types of development include bioretention in the median or along any curb line, filter strips along edges, and trees. A couple more practices include covered dumpster area and grading to distribute runoff flows in different directions and porous pavement.
- Downtown areas are identified as ideal locations for bioretention and porous pavement, as well as the application of disconnected impervious cover.

Disconnecting roof runoff and impervious surfaces is noted as ideal for single family developments, but also that it can apply to many development sites. This practice can help reduce total volume and peak rates.

The document has an appendix devoted to *in situ* testing of bioretention media. This testing is key for bioretention systems and should be performed at the perimeter of the site because the area is most likely to be affected by sediment runoff.

HCFCD identifies construction sequencing and tree preservation as priorities during development. Lastly, HCFCD states the LID techniques should not include maintenance responsibility for the Flood Control District.

Section 4. San Antonio River Basin Low Impact Development Technical Design Guidance Manual

This document from the San Antonio River Authority (SARA) has an approach that states LID practices integrate stormwater management into natural landscapes. The document points out LID reduces the need for traditional drainage infrastructure. SARA approaches LID guidance at three scales: the site/block, the community/neighborhood, and the

retention is commonly used to address runoff requirements. Minor adjustments to retention pond requirements can have significant impacts on wetland characteristics have aesthetically, the document addresses that all wetland retention buffer.

Section 3. Harris County Low Impact Development Criteria for Storm Water Management

Harris County Flood Control District (HCFCD) provides criteria for projects that choose to preserve existing hydrology and then implement LID. The approval process starts with the Permit Office of the County Engineer and the Permit Office of the County Engineer to expedite the review process through the permit process for two years.

are stormwater quality treatment requirements. The first 1" of runoff must be treated in the Water Quality Management Plan are both

Section 3. Conceptual Solutions

The following conceptual solutions have been identified as appropriate and applicable to the City of Port Aransas.

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Incentivize sustainable renovations	City updates code to incentivize voluntary action to renovate existing property or to apply GSI to new development, frequently using regulatory incentives	Improve runoff volume and water quality from existing properties and future development Improve aesthetics Community involvement Improved flood resiliency contributes to improved economic resiliency	Ordinance revisions	Revise ordinances to create regulatory incentive or alternative compliance mechanism whereby stormwater management BMP installation can reduce other obligations. Chapter 16, Article IV (Landscaping)
Stamp drainage structures	City stamps inlets, BMP structures, and other prominent drainage structure stating where the runoff drains City modify or create standard stormwater manhole cover for systems installed in the future City provides educational information about the element to promote education and awareness	Increased awareness by locals and visitors will encourage better practices that effect water quality and care of the stormwater features	Education and Coordination	Non-regulatory, Capital cost and operations to install on existing infrastructure and specify in drainage manual technical specifications for new infrastructure

City of Port Aransas Stormwater Management Report

June 30, 2020



Purpose



Data Review and Precedents



Existing Practices



Conceptual Solutions

Purpose



REDUCE NON-POINT SOURCE (NPS)
POLLUTION



REDUCE FLOODING FROM IMPROPER
DRAINAGE AND HIGH TIDES



CITIZEN BUY-IN



Purpose



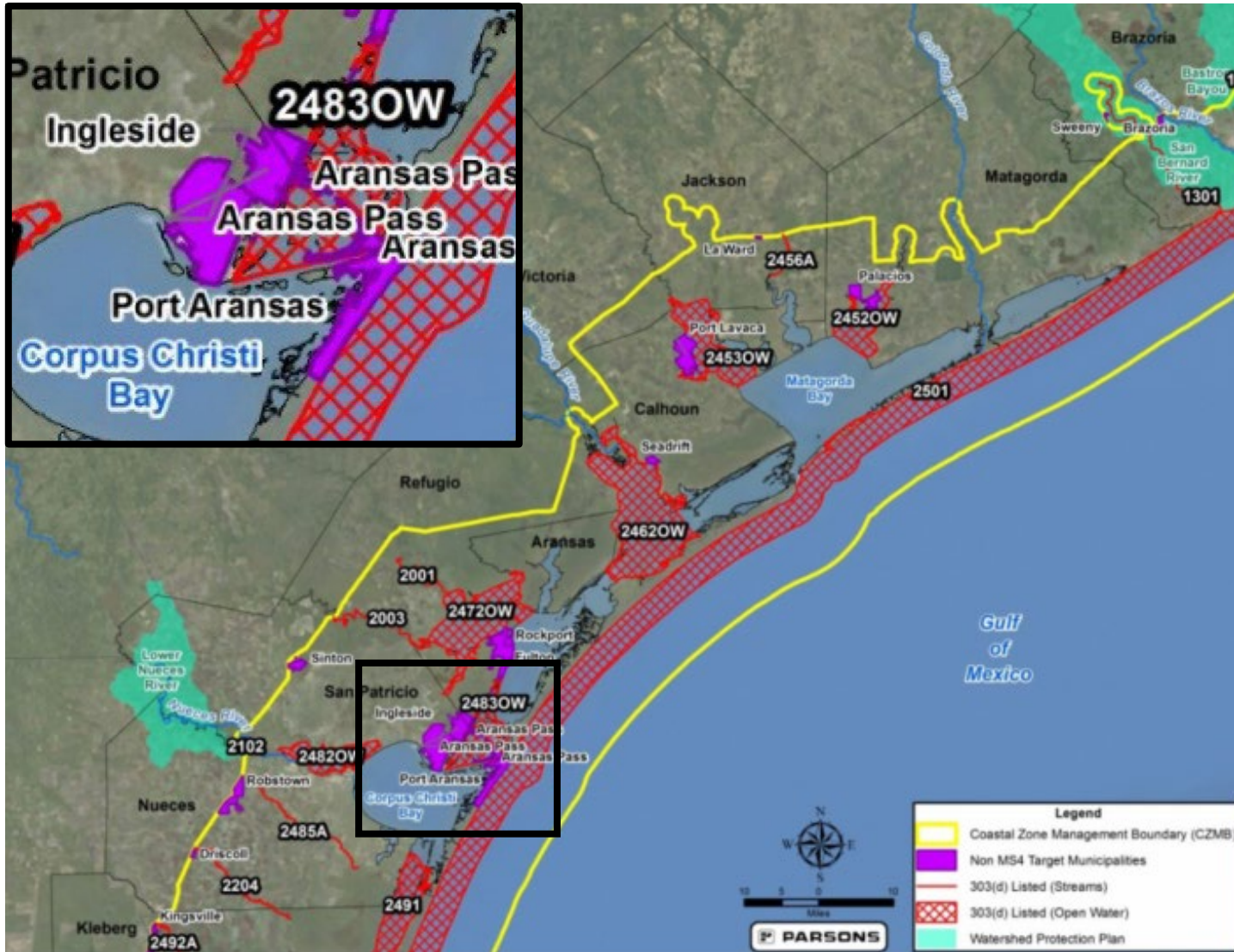
Data Review



Existing Practices



Conceptual Solutions



GSD Water Quality Report*

Port Aransas listed as municipality with 303(d)

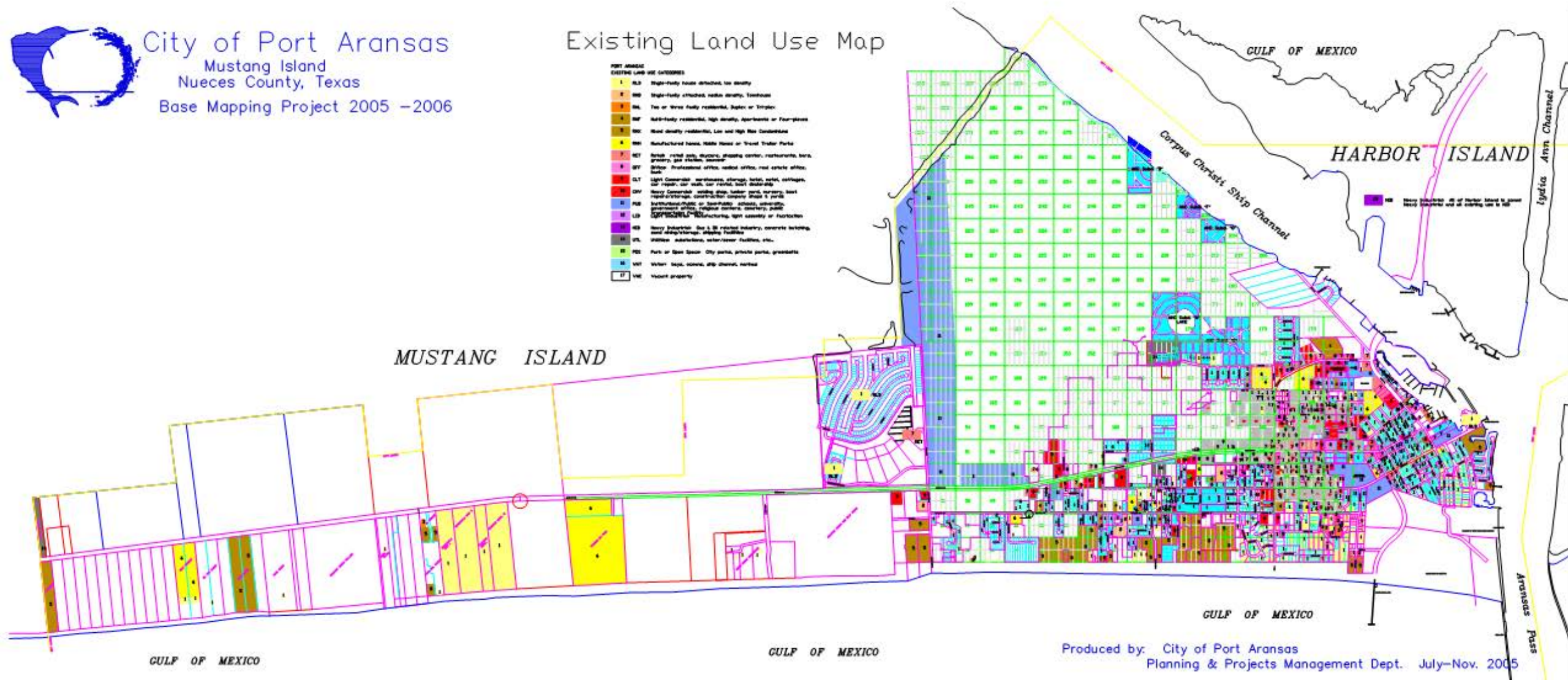
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- Pollutant: bacteria, mercury inedible tissue



City of Port Aransas
Mustang Island
Nueces County, Texas
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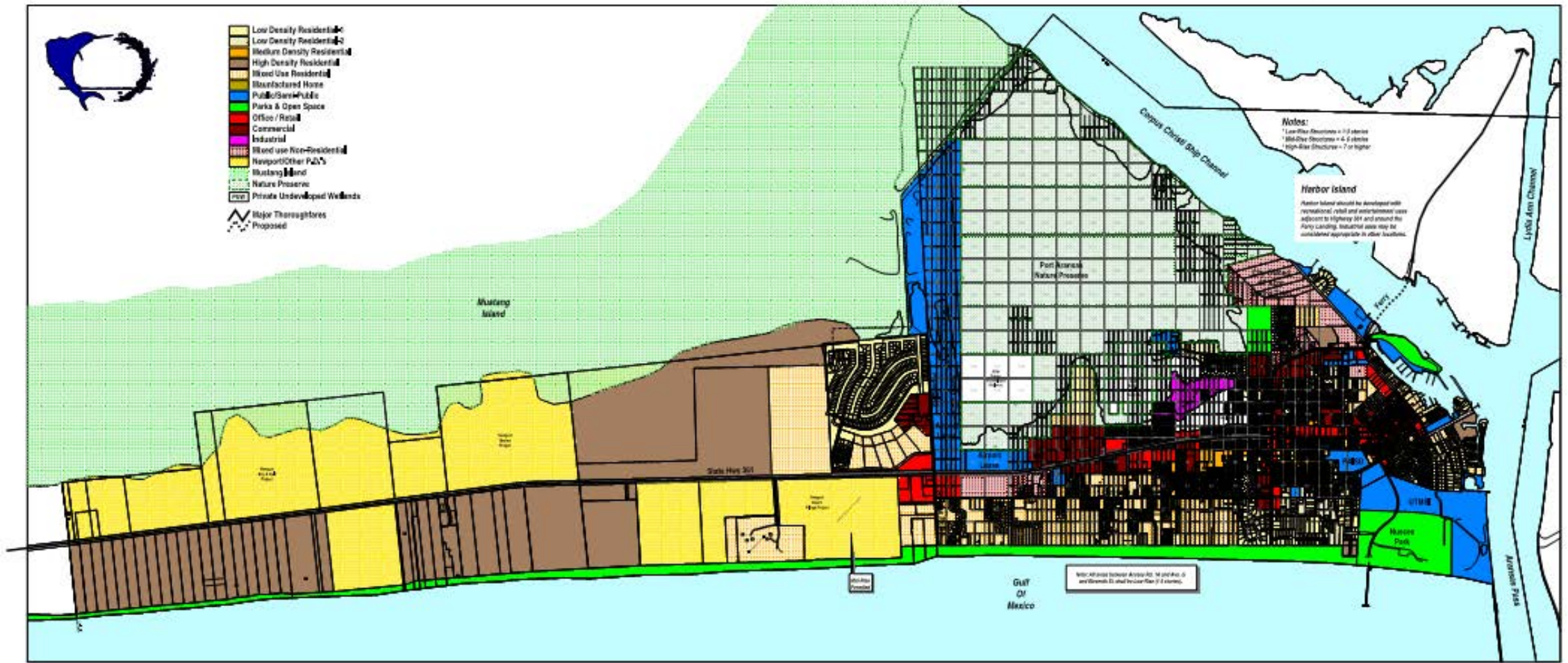
Existing Land Use Map

- PORT ARANAS**
EXISTING LAND USE CATEGORIES
- 1 R1 Single-family detached, low density
 - 2 R2 Single-family attached, medium density, townhomes
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 - 4 R4 Medium density residential, high density, apartments or fourplexes
 - 5 R5 Medium density residential, low and high rise condominium
 - 6 M1 Manufactured homes, mobile homes or travel trailer parks
 - 7 C1 Retail - retail sale, dryclean, shopping center, restaurants, bars, grocery, gas station, service
 - 8 C2 Office - professional offices, medical offices, real estate offices, bank
 - 9 C3 Light Commercial - warehouses, storage, retail, retail, cottages, car repair, car wash, car rental, boat dealership
 - 10 C4 Heavy Commercial - wholesaler, auto, labor pool, nursery, boat repair/storage, construction company, shop & parts
 - 11 P1 Institutional/public or community - schools, university, government office, religious centers, libraries, park
 - 12 U1 UTILITIES - electric, gas, water, sewer, telephone
 - 13 I1 Heavy Industrial - for & B related industry, concrete batching, steel storage, shipping facilities
 - 14 I2 Light Industrial - auto/repair facilities, etc.
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Produced by: City of Port Aransas
Planning & Projects Management Dept. July-Nov. 2005

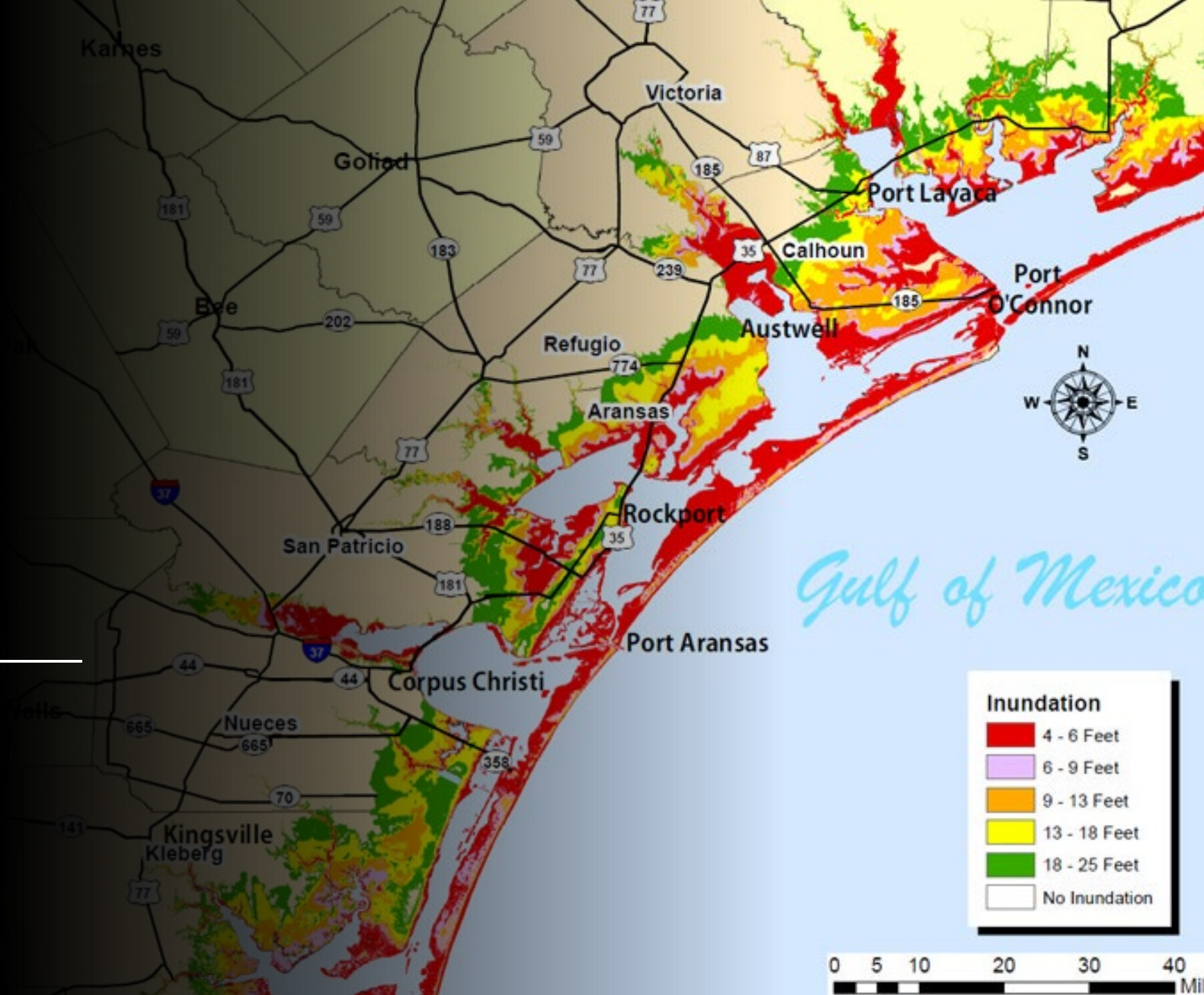




Preliminary Future Land Use Plan

Port Aransas, Texas

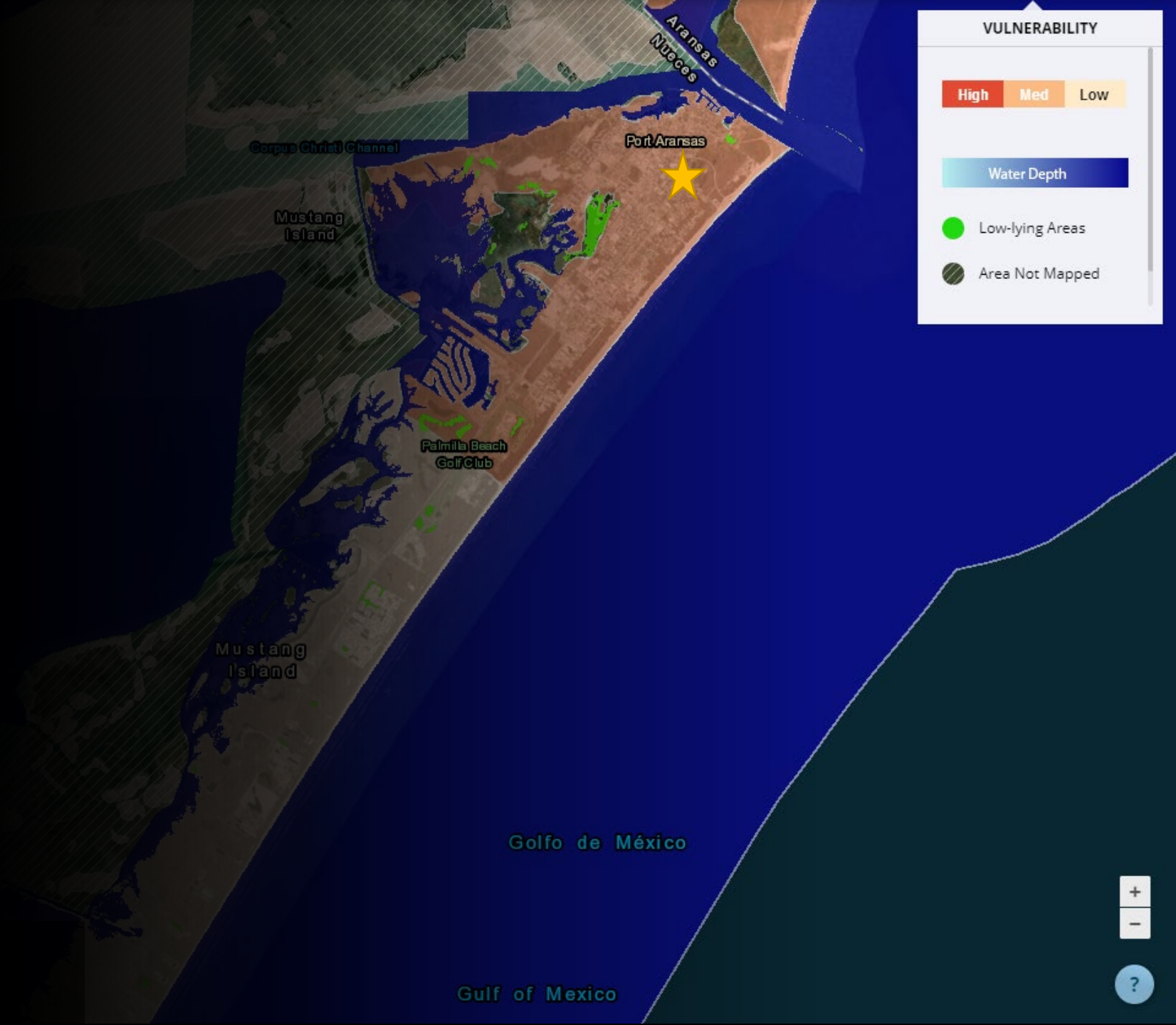
Harvey Surge



NOAA Sea Level Rise Viewer: Vulnerability

Based on socioeconomic data

Developed area generally medium level



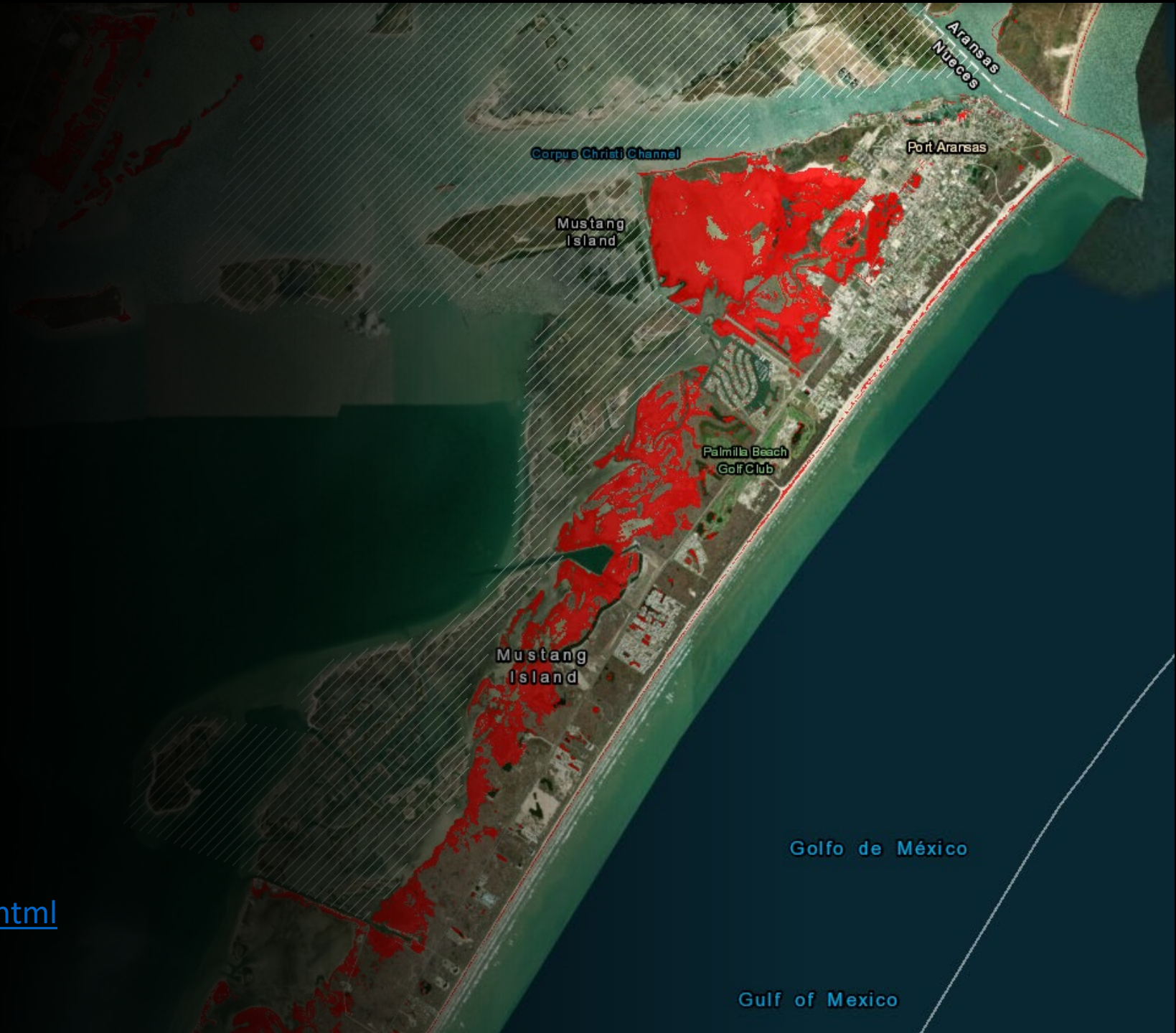
<https://coast.noaa.gov/digitalcoast/tools/slr.html>

NOAA Sea Level Rise Viewer: Flood Frequency

Majority of affected areas are
bayside

Coincides with existing stormwater
outfall challenges

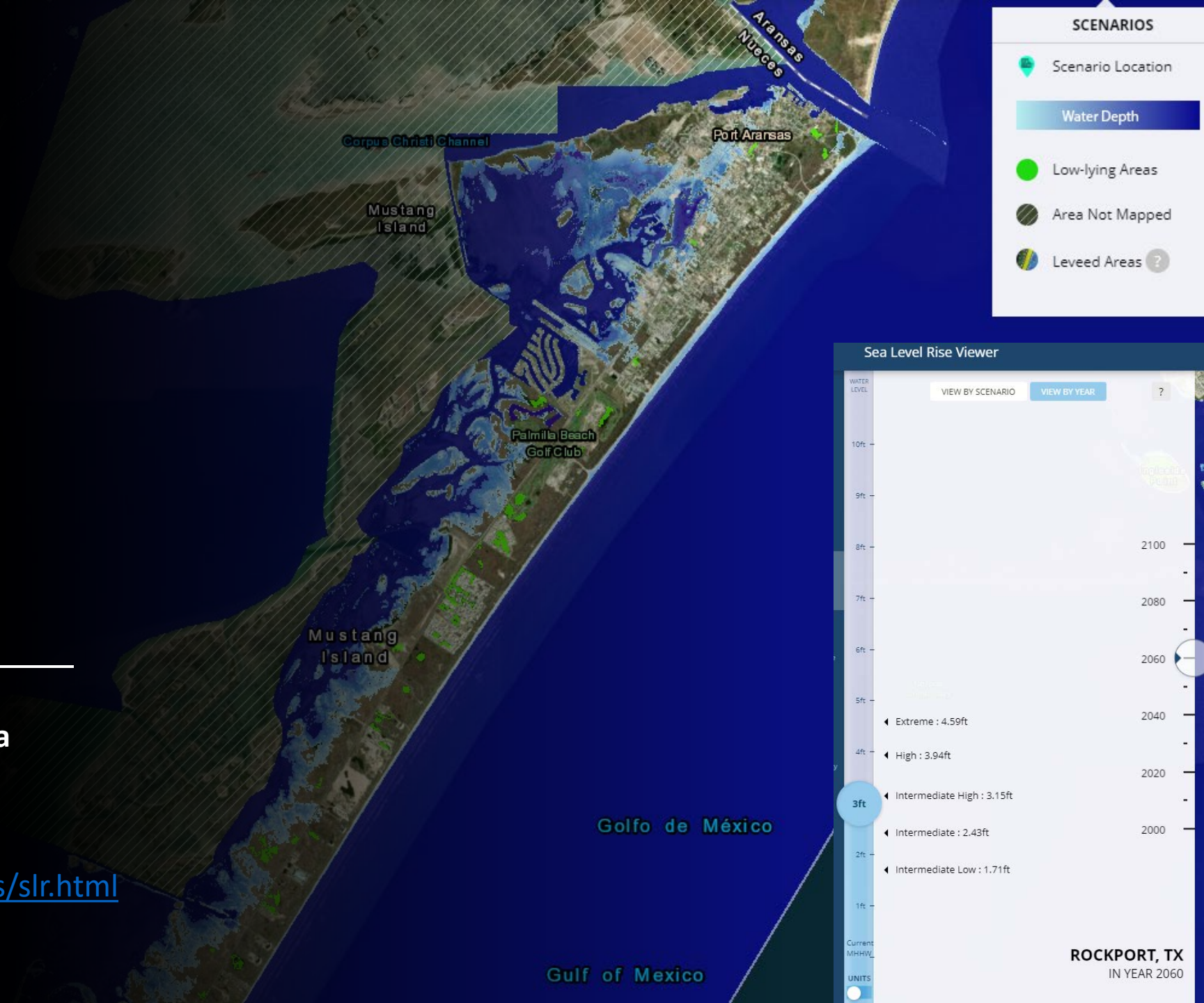
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NOAA Sea Level Rise Viewer: Local Scenario

2060 intermediate-high estimate is a 3.15' rise

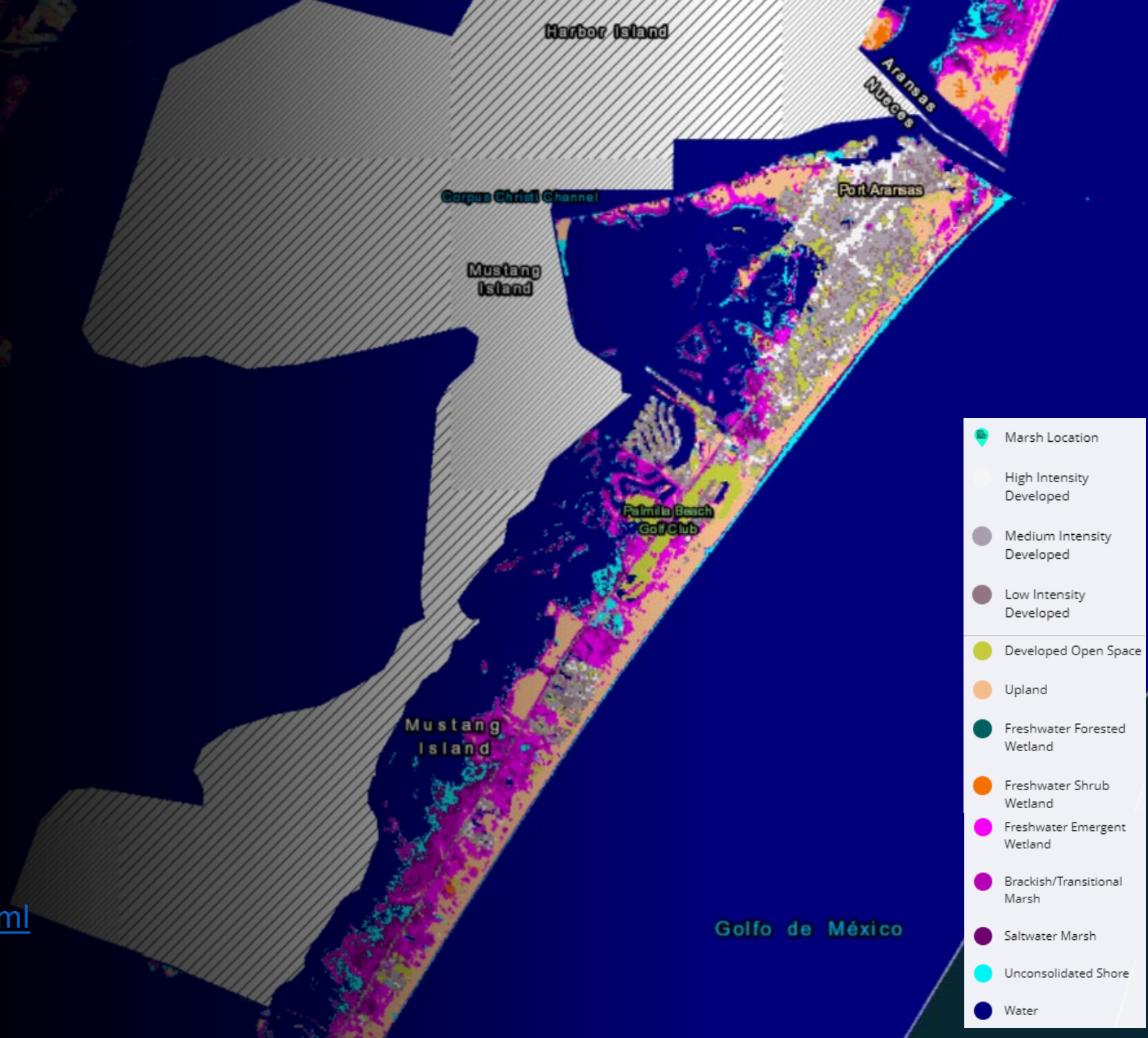
<https://coast.noaa.gov/digitalcoast/tools/slr.html>



NOAA Sea Level Rise Viewer: Wetland Migration

Wetland migration varies due to level of development

<https://coast.noaa.gov/digitalcoast/tools/slr.html>



Guidance for Sustainable
Stormwater Drainage on the
Texas Coast



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July 2014



LID/GSI Technical Manuals

Supplements from Government and Environmental Organizations



North Central Texas
Council of Governments



City of
Virginia Beach



BLUE
WATER
BALTIMORE

Clean Water. Strong Communities.





Purpose



Data Review



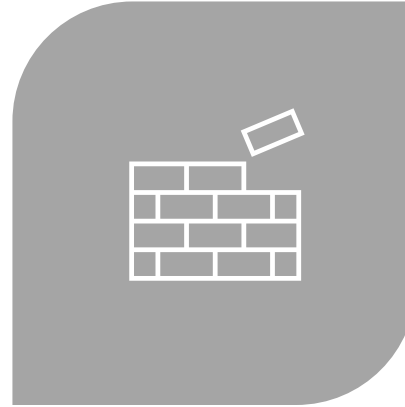
Existing Practices



Conceptual Solutions



DESIGNATED WILDLIFE AREAS AND
NATURE PRESERVES



MASTERPLAN DESIGNED BASED ON
ASSUMED 20% IMPERVIOUS AREA

Beneficial Existing Practices



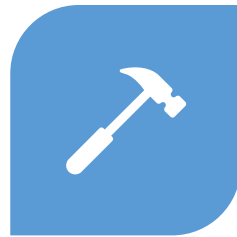
2-YEAR DESIGN STORM



STREET
SPECIFICATIONS



PLAT SUBMITTAL
PROCESS



BUILDING PERMIT
REQUIREMENTS AND
STANDARDS



LANDSCAPE
ORDINANCE

Opportunities to Improve Existing Practices



Purpose



Data Review



Existing Practices



Conceptual Solutions

Leveraging Existing Permitting Systems

- **Texas Pollutant Discharge Elimination System**
 - Stormwater Pollution Prevention Plan (SWPPP)
- **U.S. Army Corps of Engineers**
 - Clean Water Act Section 404 permits
 - U.S. Fish and Wildlife, National Marine Fisheries Service and Texas Parks & Wildlife Department involvement in review
- **General Land Office**
 - Disturbance of state submerged land

28 Solutions Identified

Conceptual Solutions

- Solution
- Description
- Relevance to Port Aransas
- Category (Type of Action)
- Operationalization (How to Implement)

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Non-Regulatory Ideas



Task Force

Interdepartmental collaboration



Agreements and Acquisitions

Deed Restrictions
Conservation easements
Maintenance agreements
Capital costs
NGO partners



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Business outreach
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Regulations Potentially Involved



Chapter 16(IV) – Landscaping



Chapter 20 – Streets, Sidewalks and Other Public Ways



Chapter 21 – Subdivision



Chapter 25 – Zoning



Some may be new ordinances altogether

Opportunities for Redevelopment of Existing Properties

- **Update code for voluntary measures; incentivize**
 - Property Tax relief and similar financial incentives
 - Regulatory incentives
- **Promote economic resilience**
 - Communities depend on key economic sectors
 - Encourage flood resiliency



Permit Processes to Create Opportunities to Reduce/Prevent Drainage Issues

- **Change platting requirements to reflect current best practice**
- **Require building permits for anything above the minimum in building codes; Establish standards for and create fence permits**



Efforts to Protect Existing Environment

- Identify and preserve sensitive areas
- Illicit discharge ordinance
- Litter ordinances





Construction Practices

- **Reduce Clearing and Grubbing**
- **Implement Pre-Project Meeting for Larger Developments**
- **Construction requirements to enforce erosion and sedimentation controls for all exterior and site developments**
- **Post-Construction Requirements**
- **Construction Ordinance to Require Certified Inspector Monitoring**



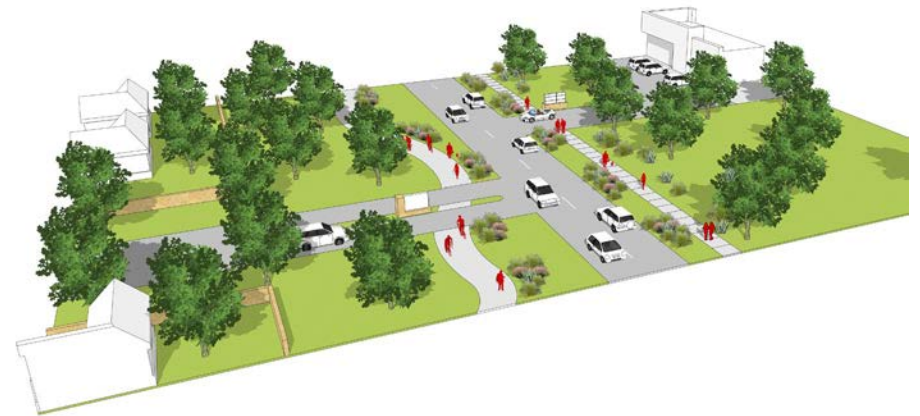
Development Design

- Increase the Design Storm for Drainage Design
- Establish Green Stormwater Infrastructure Criteria
- Limit Cut and Fill
- Require mitigation of impervious area exceeding 20%
- Add detention design requirements
- Change cul-de-sac specifications
- Change street/driveway specifications



Development Design: Reduce Impervious Cover

- **Residential**
 - Driveways: shared, reduced width, reduce setback*
 - Cul-de-sacs: reduce radius, rain garden in center*
 - Permeable pavement*
 - Bicycle/Pedestrian path separated from other impervious area*
- **Commercial**
 - Reduce/Eliminate parking requirements*
 - Shared parking*
 - Disconnect impervious cover*



Opportunities for New Development: LID & Criteria Application

▪ **Single Family Residential**

- Minimum 25' buffer from body of water*
- Rain Gardens*
- Cluster Development*

▪ **Multi-Family Residential**

- Pervious Pavers*
- Bioretention*
- Infiltration Facilities*
- Cluster Development*



Opportunities for New Development: LID & Criteria Application

- **Commercial/Real Estate/Office**

- Bioretention areas*
- Filter Strips*
- Trees*
- Covered dumpster area*
- Grade so runoff flows different directions*
- Cluster Development*

- **Downtown Development**

- Bioretention*
- Porous Pavers*





Opportunities for New Development: Deploy Incentives

- **Paths to Compliance**
 - Payment of \$XX,XXX/acre of impervious cover
 - Construct 1+ LID structure to address runoff requirements
- **EPA Examples**
 - Stormwater utility fee discount or credit
 - Development incentives (regulatory and procedural)
 - Rebates and installation financing
 - Awards and recognition programs

Other Observations

- **Comprehensive Plan is aging**
- **Development-related ordinances need a rewrite and streamlining**
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- **A variety of capital projects are needed to retrofit and address current problem areas of the city**

**Significant Funding Sources
Becoming Available**

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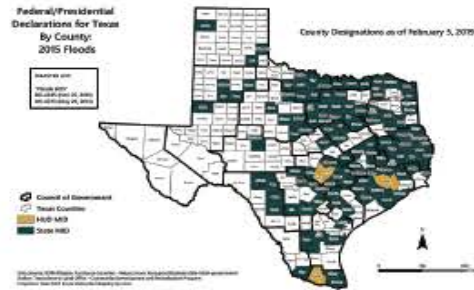
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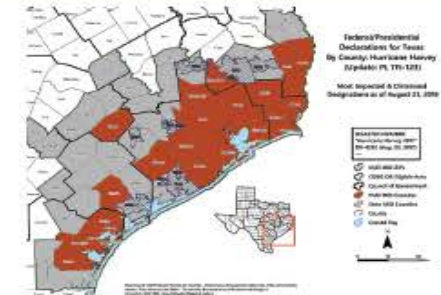
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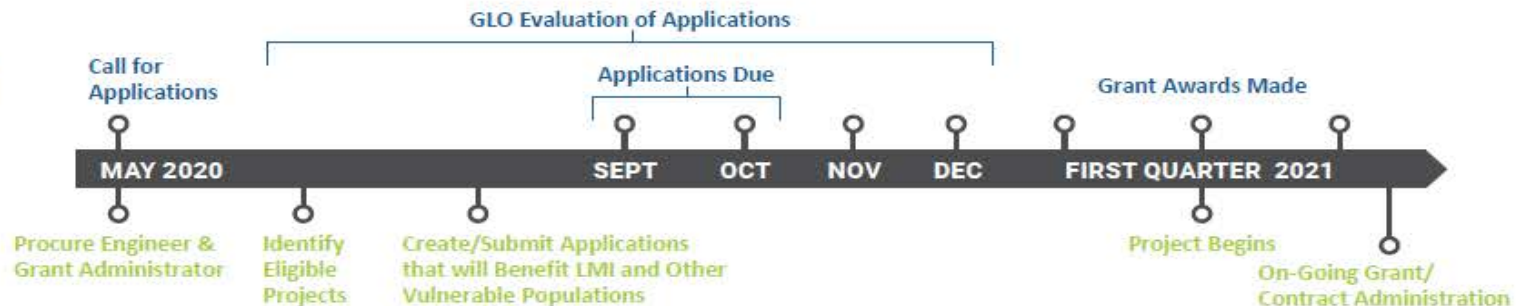
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20 HUD MID Counties and Zip Codes

Next Steps for CDBG-MIT Funding

- GLO Activities
- Client Activities



CDBG-MIT Project-Eligible examples

Replacement
Pump Station



SWTP
Risk
Assessment



Upgrading water, sewer, transportation
and other public infrastructure

Regional risk reduction / disaster
resistant projects

additional examples

Stormwater
Mapping



Upgrade mapping, data
and other capabilities
to better understand
evolving potential
disaster risks

Livable Center
Study



Development of
resilient building and
zoning codes, and
land use plans

Stormwater
Management



Flood control
and drainage
improvements

The Ask

- **Spend the next two weeks reviewing the draft provided.**
- **Reach back to Colleen Simpson on or before July 31st with comments.**

- **We plan to add a couple of recommendations, such as the reference to transfers of development rights mentioned today.**

Port Aransas Stormwater Management Program Development

City Council Meeting

July 16, 2020



Kimberly Patak, P.E., CFM, ENV SP
Associate, Stormwater Management



Chance Sparks, AICP, CNU-A
Urban Planning Project Manager



Blaine Laechelin, P.E., CFM
Stormwater Management



Kristina McLaren, EIT, CFM, ENV SP
Stormwater Management



Port Aransas Stormwater Management Program Development

Stakeholders' Meeting
September 29, 2020



Meet Your Team



Kimberly Patak, P.E., CFM, ENV SP
Associate, Stormwater Management



Blaine Laechelin, P.E., CFM
Stormwater Management



Kristina McLaren, EIT, CFM, ENV SP
Stormwater Management



Chance Sparks, AICP, CNU-A
Urban Planning Project Manager

Deep Talent Support...

Urban Planning + Design
Stormwater Engineering
Environmental Science & Coastal

... and more

- Single-family homes are an excellent opportunity to apply vegetated filter strips and swales.
- Multi-family developments are an ideal situation for bioretention and infiltration areas. Permeable pavers for parking and driveways are a functional and aesthetic option for all residential development.
- Commercial, retail, and office development typically are high in impervious area and, therefore, have the most potential for reduction. Green options for these types of development include bioretention in the median or along any curb line, filter strips along edges, and trees. A couple more practices include curbside dumpster area and grading to distribute runoff flows in porous pavement.

Disconnecting roof runoff and impervious surfaces is noted as ideal for single family developments, but also that it can apply to many development sites. This practice can help reduce total volume and peak rates.

The document has an appendix devoted to *in situ* testing of bioretention media. This testing is key for bioretention systems and should be performed at the perimeter of the site because the area is most likely to be affected by sediment runoff.

HCFCO identifies construction sequencing and tree preservation as priorities during development. Lastly, HCFCO states the LID techniques should not include maintenance responsibility for the Flood Control District.

Section 4. San Antonio River Basin Low Impact Development Technical Design Guidance Manual

This document from the San Antonio River Authority (SARA) has an approach that states LID practices integrate stormwater management into natural landscapes. The document points out LID reduces the need for traditional drainage infrastructure. SARA approaches LID guidance at three scales: the site/block, the community/neighborhood, and the



to address runoff requirements. Minor adjustments to can have significant effects. Landscaping practices have aesthetic benefits that all water

Low Impact Development (LID) practices are identified as ideal locations for bioretention and as well as the application of disconnected impervious surfaces to address runoff requirements. Minor adjustments to can have significant effects. Landscaping practices have aesthetic benefits that all water

ment requires must be treated in the stormwater management plan are both

Section 3. Conceptual Solutions

The following conceptual solutions have been identified as appropriate and applicable to the City of Port Aransas.

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Incentivize sustainable renovations	City updates code to incentivize voluntary action to renovate existing property or to apply GSI to new development, frequently using regulatory incentives	Improve runoff volume and water quality from existing properties and future development Improve aesthetics Community involvement Improved flood resiliency contributes to improved economic resiliency	Ordinance revisions	Revise ordinances to create regulatory incentive or alternative compliance mechanism whereby stormwater management BMP installation can reduce other obligations. Chapter 16, Article IV (Landscaping)
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City of Port Aransas Stormwater Management Report

June 30, 2020

A publication funded by a Texas Coastal Management Program grant approved by the Texas Land Commissioner pursuant to National Oceanic and Atmospheric Administration Award No. NA18NOS4190153



Purpose



Data Review and Precedents



Existing Practices



Conceptual Solutions

Purpose



REDUCE NON-POINT SOURCE (NPS)
POLLUTION



REDUCE FLOODING FROM IMPROPER
DRAINAGE AND HIGH TIDES



CITIZEN BUY-IN



Purpose



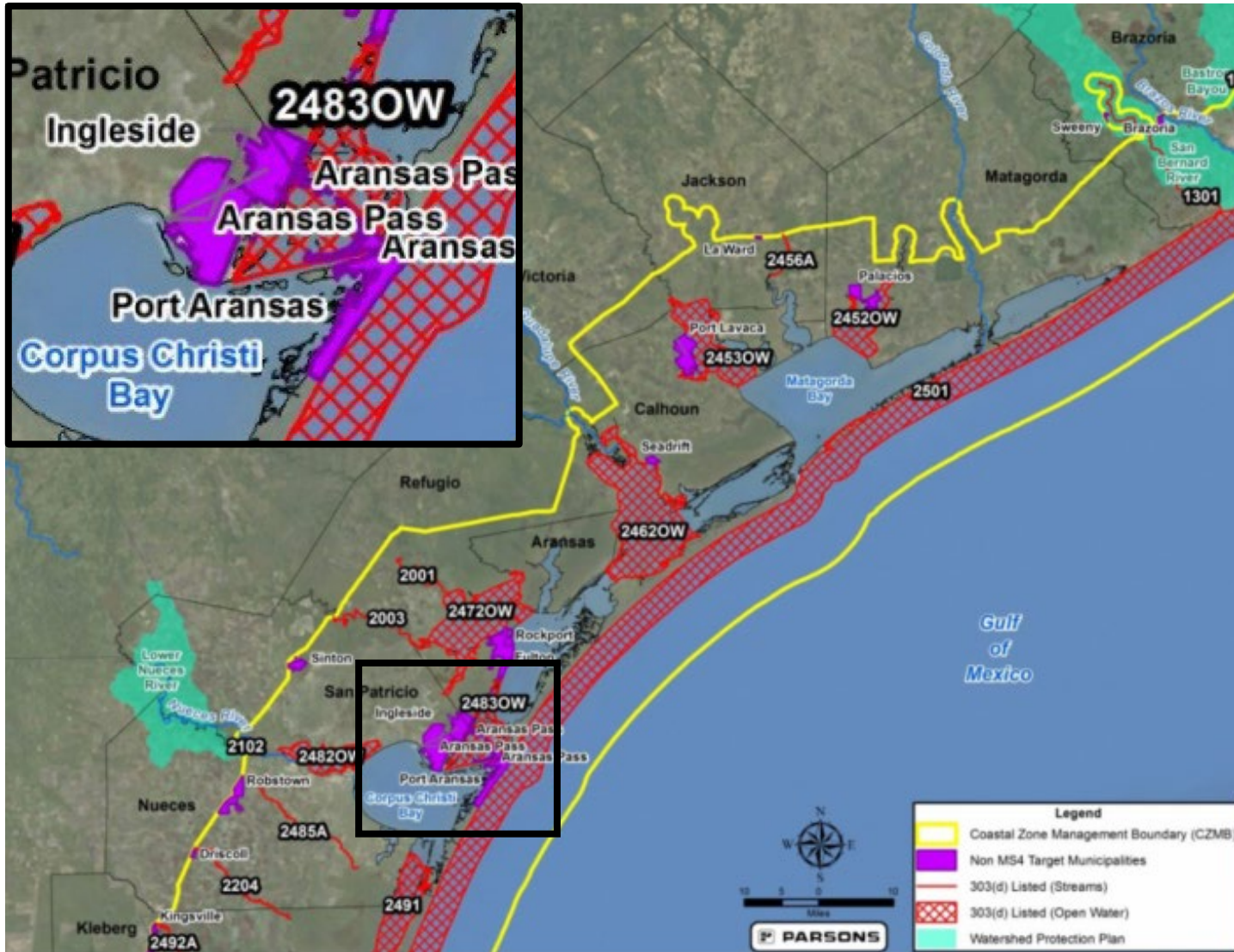
Data Review



Existing Practices



Conceptual Solutions



GSD Water Quality Report*

Port Aransas listed as municipality with 303(d)

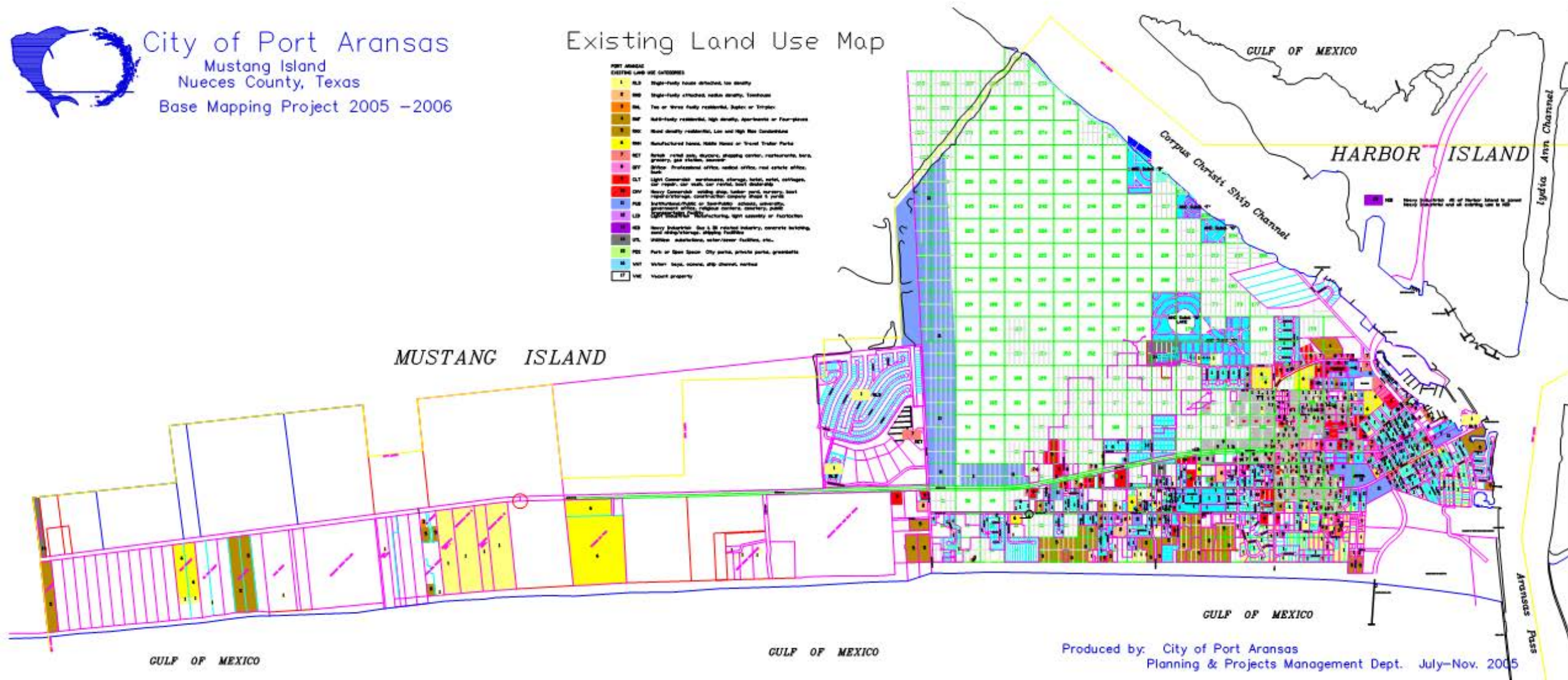
- Impaired body: Gulf of Mexico
- Impaired use: contact, fish
- Pollutant: bacteria, mercury inedible tissue



City of Port Aransas
Mustang Island
Nueces County, Texas
Base Mapping Project 2005 - 2006

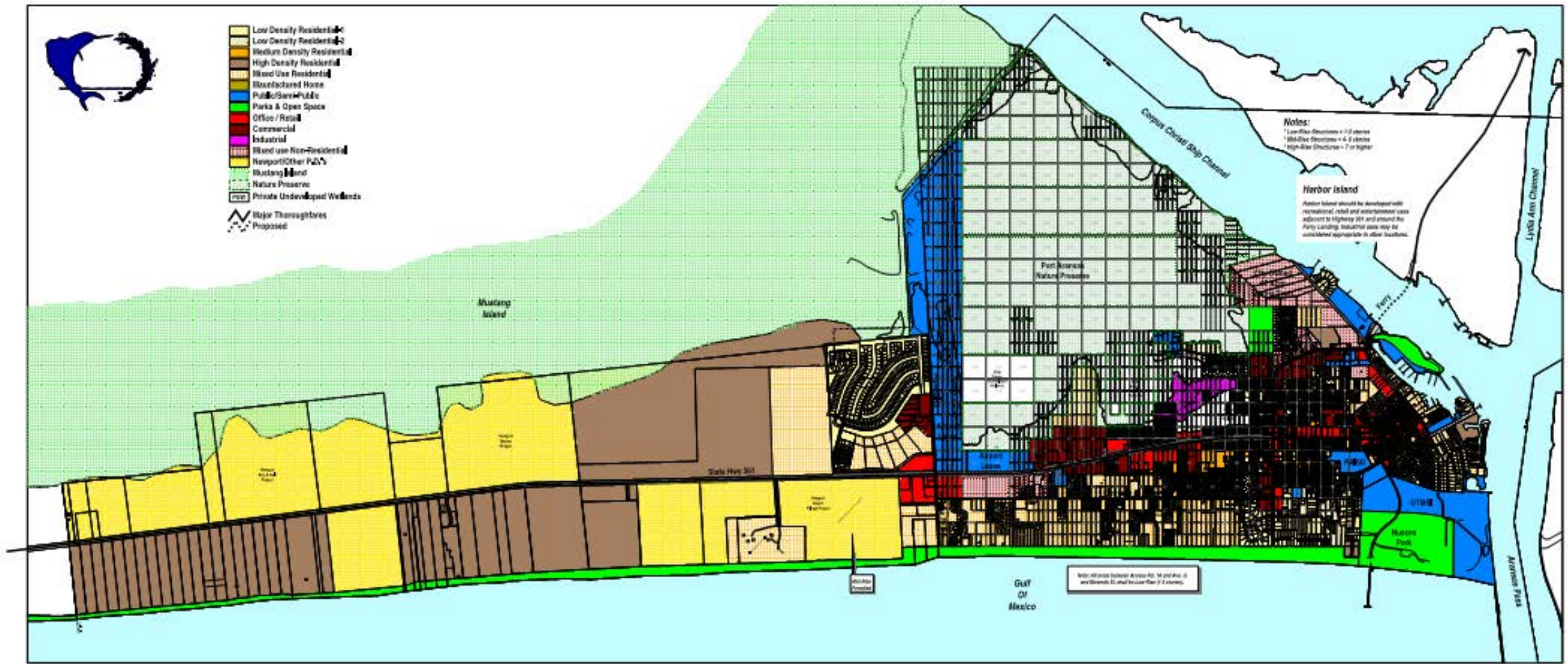
Existing Land Use Map

- PORT ARANAS**
EXISTING LAND USE CATEGORIES
- 1 R1 Single-family detached, low density
 - 2 R2 Single-family attached, medium density, townhomes
 - 3 R3 Two or three family residential, duplex or triplex
 - 4 R4 Medium density residential, high density, apartments or fourplexes
 - 5 R5 Medium density residential, low and high rise condominium
 - 6 M1 Manufactured homes, mobile homes or travel trailer parks
 - 7 C1 Retail - retail sale, dryclean, shopping center, restaurants, bars, grocery, gas station, service
 - 8 C2 Office - professional offices, medical offices, real estate offices, bank
 - 9 C3 Light Commercial - warehouses, storage, hotels, motels, cottages, car repair, car wash, car rental, boat dealership
 - 10 C4 Heavy Commercial - vehicle shop, labor pool, nursery, boat repair/storage, construction company, shop & parts
 - 11 P1 Institutional/public or community - schools, university, government offices, religious centers, libraries, park
 - 12 U1 UTILITIES - electric, gas, water, sewer, telephone
 - 13 I1 Heavy Industrial - for & B related industry, concrete batching, steel storage, shipping facilities
 - 14 I2 Light Industrial - auto/repair facilities, etc.
 - 15 P2 Park or Open Space - City parks, private parks, greenbelt
 - 16 W1 Water - bays, ponds, deep channels, marsh
 - 17 V1 Vacant property



Produced by: City of Port Aransas
Planning & Projects Management Dept. July-Nov. 2005

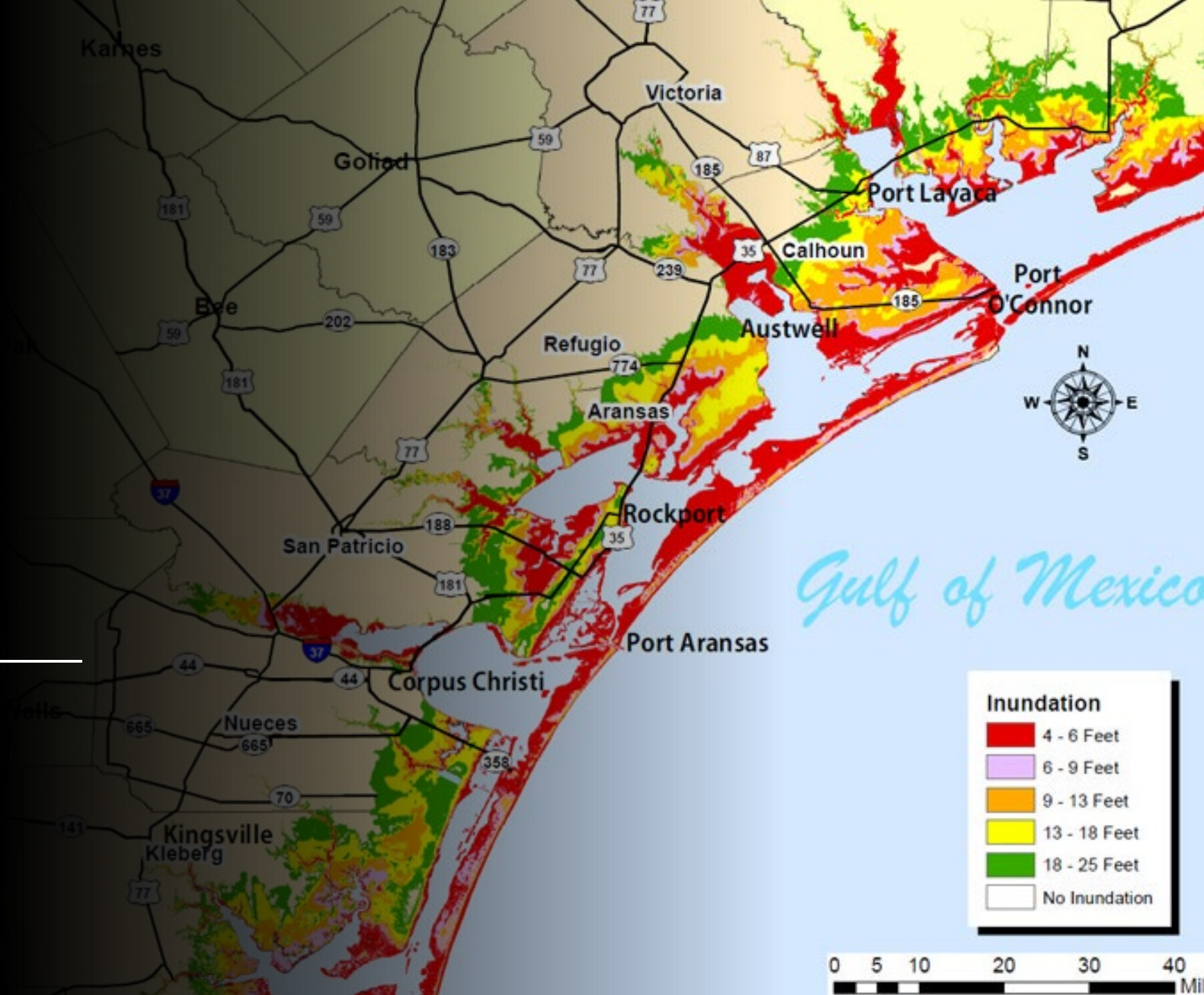




Preliminary Future Land Use Plan

Port Aransas, Texas

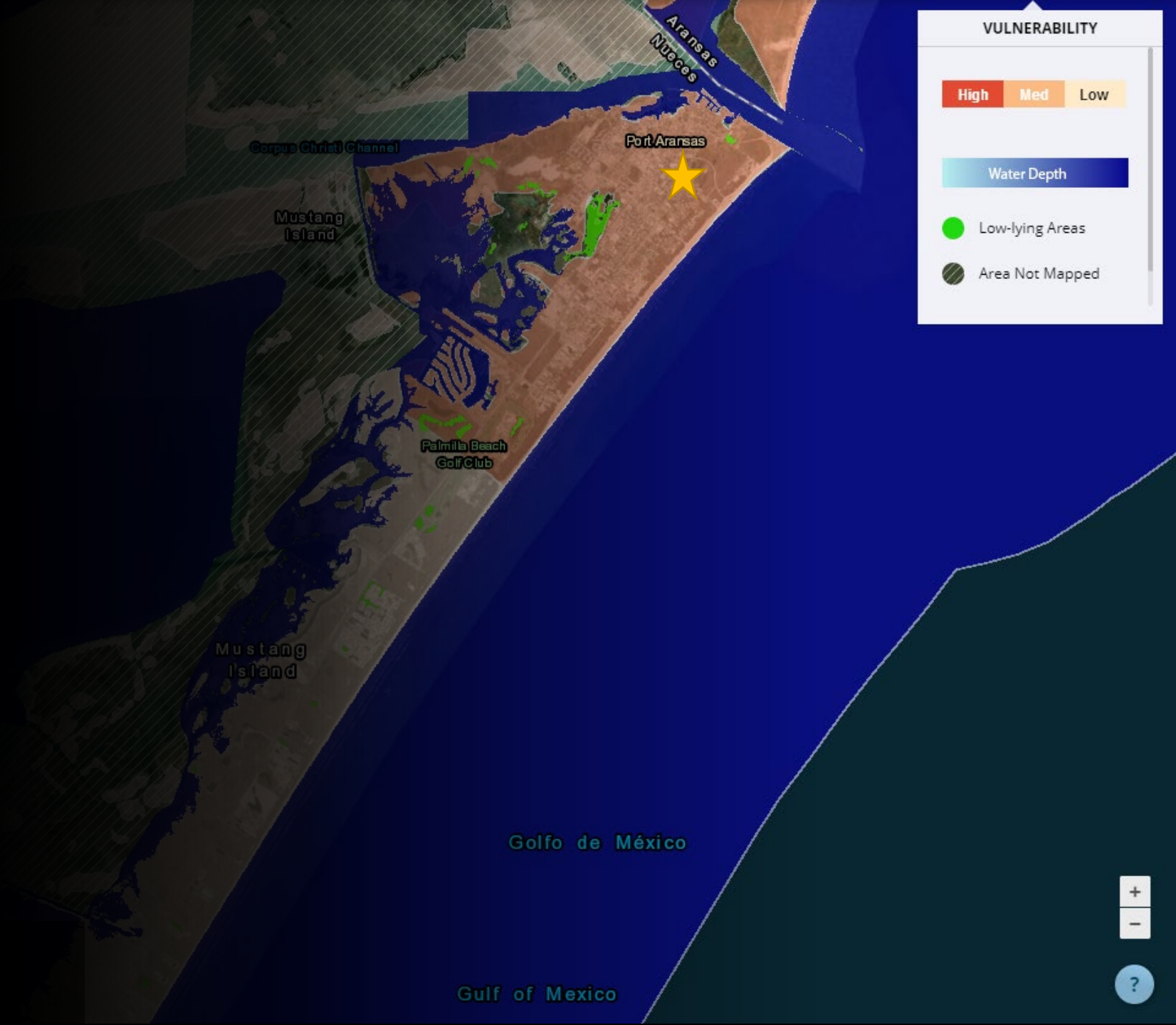
Harvey Surge



NOAA Sea Level Rise Viewer: Vulnerability

Based on socioeconomic data

Developed area generally medium level



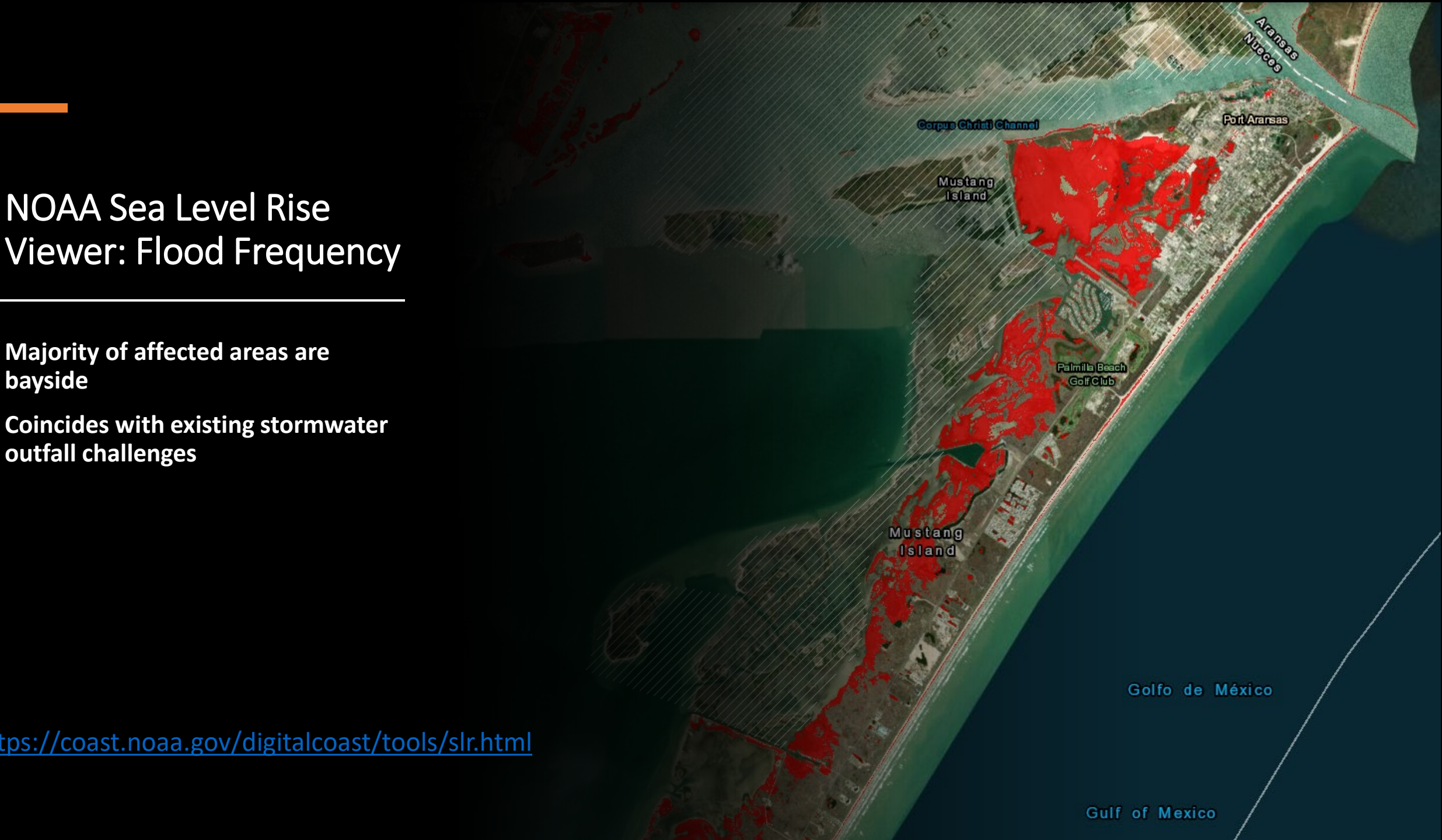
<https://coast.noaa.gov/digitalcoast/tools/slr.html>

NOAA Sea Level Rise Viewer: Flood Frequency

Majority of affected areas are
bayside

Coincides with existing stormwater
outfall challenges

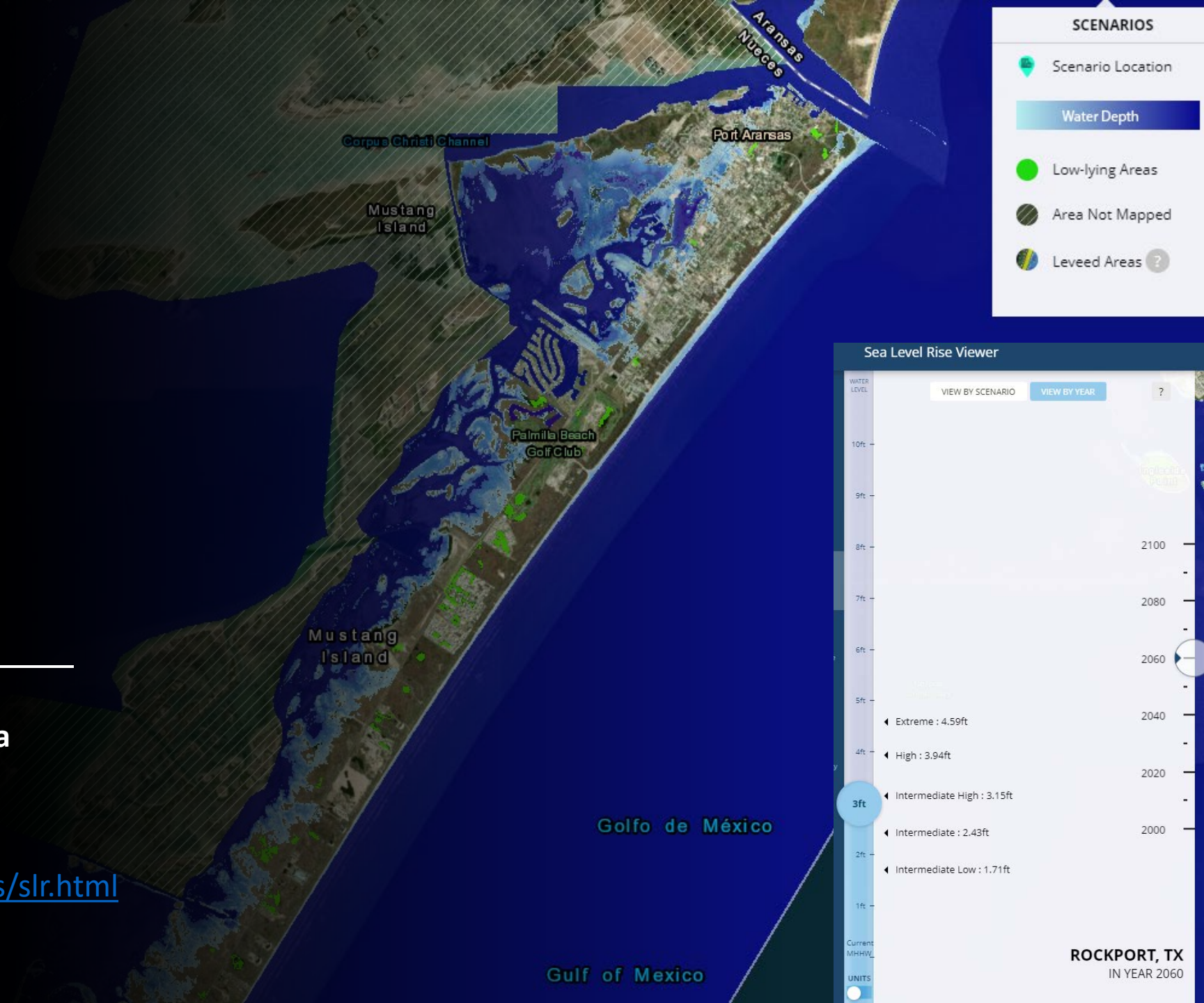
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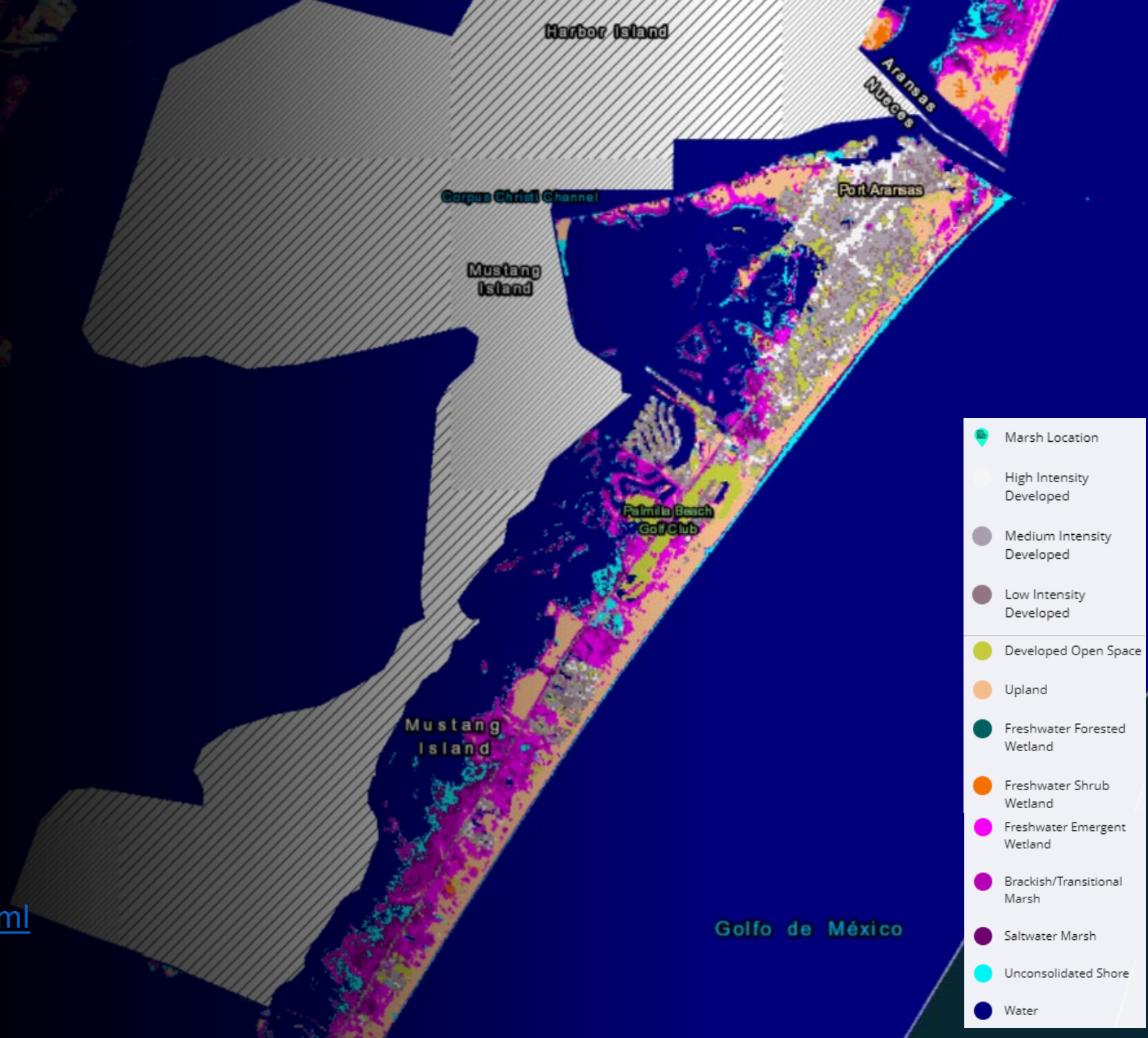
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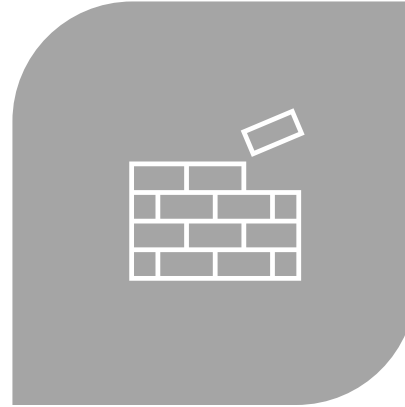
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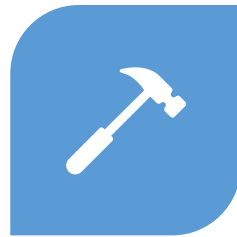
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Other Observations Beyond Scope

- **Comprehensive Plan is aging**
- **Development-related ordinances need a rewrite and streamlining**
 - Best practice for many of the regulatory changes is restructuring as a Unified Development Ordinance in order to improve cross-references and streamlining
- **Flood Damage Prevention Regulations need further update**
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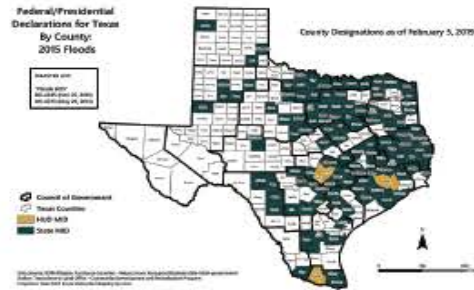
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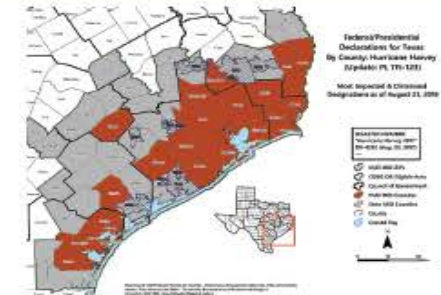
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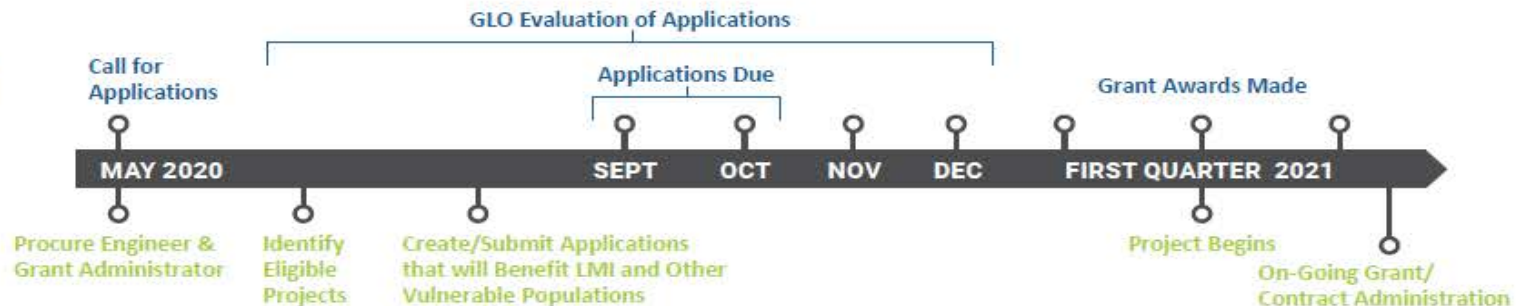
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Conservation easements
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Chapter 20 – Streets, Sidewalks and Other Public Ways



Chapter 21 – Subdivision



Chapter 25 – Zoning



Some may be new ordinances altogether

Operational Ordinances to Protect Existing Environment

- **Illicit discharge ordinance**
 - Animal waste practices, pool backwashing, lawn maintenance debris, car wash runoff, other commercial chemical applications
- **Litter ordinances**
 - General litter prohibitions
 - Prohibitions on Styrofoam at beaches & parks, etc.



Opportunities for Redevelopment of Existing Properties

- **Update code for voluntary measures; incentivize**
 - Property tax relief and similar financial incentives
 - Regulatory incentives
 - Other programs
 - Can accomplish MULTIPLE city goals (aesthetics, small business opportunity, etc.)
- **Promote economic resilience**
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Opportunities for New Development: Deploy Incentives

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- **Require building permits for anything above the minimum in building codes; Establish standards for and create fence permits**



Standards to Protect Existing Environment

- **Sensitive areas protection ordinance (buffers for floodplains, erodible soils, wetlands, natural depressions/storage, critical habitat)**
 - Identified in development application with minimum protections
 - Moderate: include offsets (clustering, density/height bonus, double credit for open space, even more for restoration of degraded sensitive areas, etc.)
 - Advanced: Transfers of Development Rights



Flood Damage Prevention

- **Increase the design storm for drainage design**
 - Currently 2-year
 - Consider 5-year, 10-year, 25-year and 100-year as appropriate
 - Cost burden up-front to developer, or later to taxpayers with retrofitting
- **Adopt higher standards for flood damage prevention regulations**
 - Best practices to reduce flood damage and promote resiliency
 - FEMA Community Rating System participation can reduce insurance costs



Stormwater Performance

- Establish cut and fill limits to preserve natural flows and features
- Require mitigation of impervious area above 20%
- Add detention design requirements
 - Design aesthetics
 - Draw-down requirements to reduce standing water
 - Wet pond standards, maintenance protocols
 - Design manual for water quality (presumed compliance; filter strips, bioretention)



Streets and Driveways

- **Driveways**

- sharing, cross-access, access management/driveway spacing, widths

- **Cul-de-sacs**

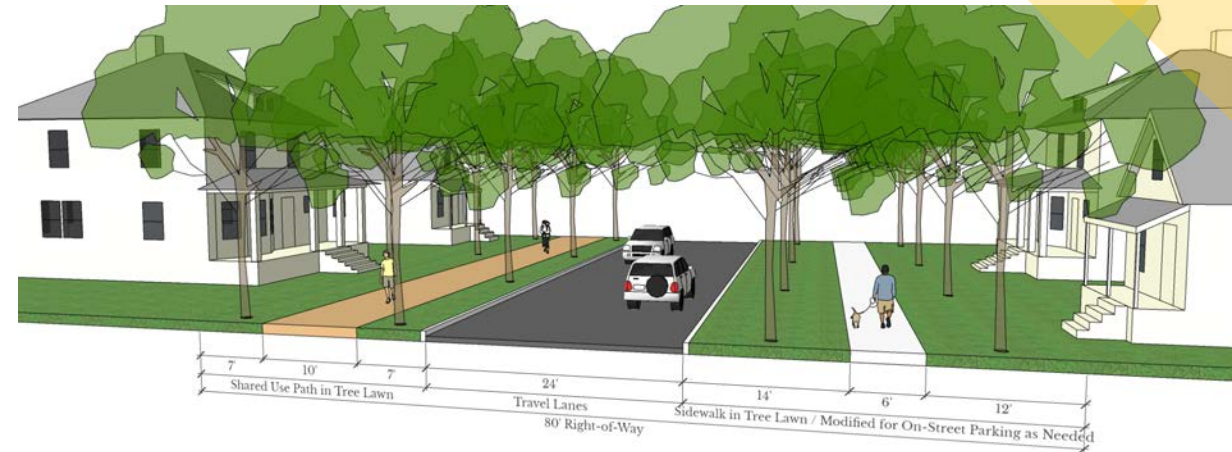
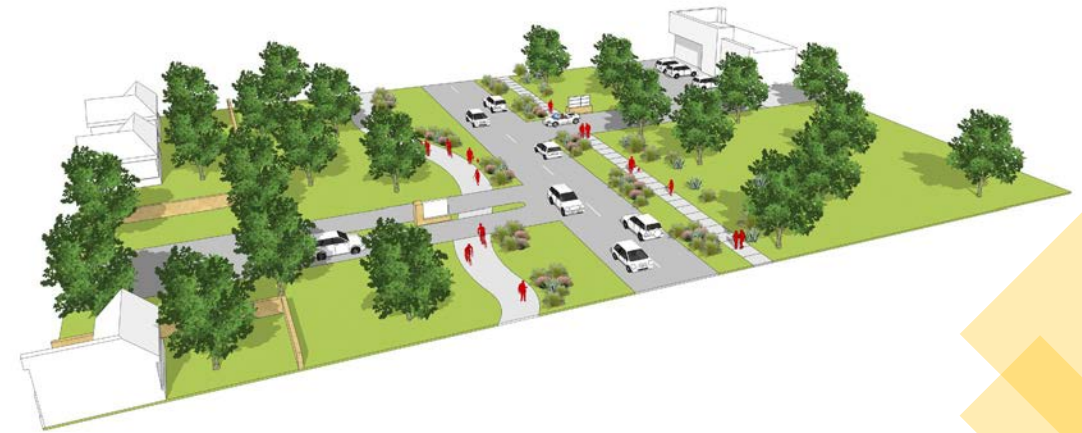
- reduce radius, rain garden in center
- May require POA maintenance

- **Bicycle/Pedestrian path separated from other impervious area**

- Encourage flow-thru design to assist in biofiltration, litter containment
- Improves safety

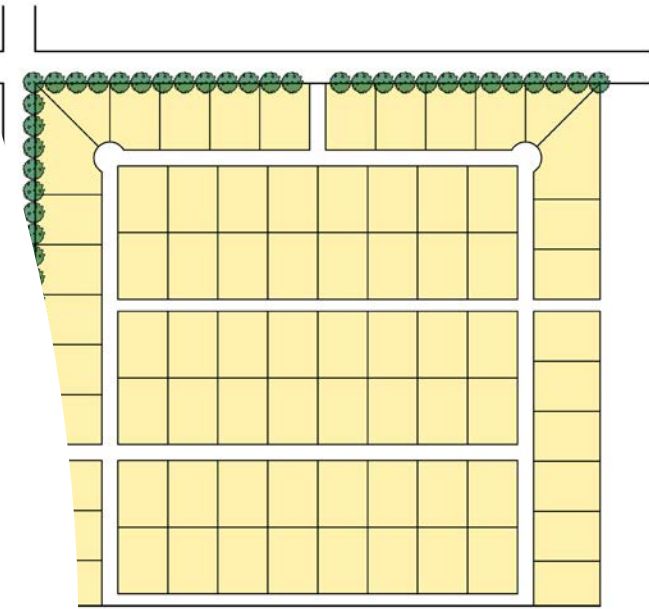
- **Right size street specifications**

- Road diets and appropriate widths
- “Complete streets” design
- Improves safety
- Allow/incentivize green infrastructure



Parking and Site Regulations

- **Reduce setbacks**
- **Permeable pavement**
 - Give impervious cover credit
- **Parking reform**
 - Reduce/Eliminate parking requirements
 - Shared parking
 - Credit for adjacent on-street parking
 - Parking above minimum must be permeable
- **Disconnect impervious cover**
 - Encourage flow-thru design for biofiltration, litter containment
 - Also applies to sidewalk and bicycle facilities
- **Establish cut and fill standards**
 - Preserves natural flows and features



Landscape and Other Standards

- **Landscape credit bonuses for implementing LID and stormwater practices**
- **Tree cover**
 - Increased credit for preserving mature or planting mature
- **Covered dumpster areas**
- **Cluster and conservation development**
- **Sustainable building practices, such as green roofs**



Construction Practices

- **Reduce Clearing and Grubbing**
 - Credit non-disturbed natural areas for landscaping and open space
- **Implement Pre-Project Meeting for Larger Developments**
- **Construction requirements to enforce erosion and sedimentation controls for all exterior and site developments**
- **Post-Construction Requirements**
- **Construction Ordinance to Require Certified Inspector Monitoring**



Phase 1

- Internal multi-department task force
- Education and outreach program
- Anti-litter ordinance
- Comprehensive Plan update (Option 1)

Phase 2

- Post-construction stormwater runoff ordinance
- Design storm update and certification of impacts
- Revisions to landscape and other development regulations (LID credits, sensitive sites preservation, cut/fill standards, applicability thresholds for various permits, parking requirements, fence standards, etc.)

Phase 3

- Flood damage prevention ordinance and implementation of higher standards (Community Rating System)
- Illicit discharge ordinance
- Comprehensive Plan update (Option 2)

Phase 4

- Update subdivision ordinance, street and driveway standards
- **Comprehensive revision of all development ordinances into a unified development ordinance for streamlining and usability**

Phase 5

- Transfers of development rights

Almost all regulatory issues are interconnected. FNI recommends conducting changes via creation of a Unified Development Ordinance, potentially as an earlier phase. This allows for most effective approach to regulatory incentives to encourage, rather than force, preferred behaviors.

Port Aransas Stormwater Management Program Development

Stakeholders' Meeting

September 29, 2020



Kimberly Patak, P.E., CFM, ENV SP
Associate, Stormwater Management



Chance Sparks, AICP, CNU-A
Urban Planning Project Manager



Blaine Laechelin, P.E., CFM
Stormwater Management



Kristina McLaren, EIT, CFM, ENV SP
Stormwater Management



Port Aransas Stormwater Management Program Development

City Council

February 25, 2021



Meet Your Team



Kimberly Patak, P.E., CFM, ENV SP
Associate, Stormwater Management



Blaine Laechelin, P.E., CFM
Stormwater Management



Kristina McLaren, EIT, CFM, ENV SP
Stormwater Management



Chance Sparks, AICP, CNU-A
Urban Planning Project Manager

Deep Talent Support...

Urban Planning + Design
Stormwater Engineering
Environmental Science & Coastal

... and more

- Single-family homes are an excellent opportunity to apply vegetated filter strips and swales.
- Multi-family developments are an ideal situation for bioretention and infiltration areas. Permeable pavers for parking and driveways are a functional and aesthetic option for all residential development.
- Commercial, retail, and office development typically are high in impervious area and, therefore, have the most potential for reduction. Green options for these types of development include bioretention in the median or along any curb line, filter strips along edges, and trees. A couple more practices include curbside dumpster area and grading to distribute runoff flows in porous pavement.

Disconnecting roof runoff and impervious surfaces is noted as ideal for single family developments, but also that it can apply to many development sites. This practice can help reduce total volume and peak rates.

The document has an appendix devoted to *in situ* testing of bioretention media. This testing is key for bioretention systems and should be performed at the perimeter of the site because the area is most likely to be affected by sediment runoff.

HCFCO identifies construction sequencing and tree preservation as priorities during development. Lastly, HCFCO states the LID techniques should not include maintenance responsibility for the Flood Control District.

Section 4. San Antonio River Basin Low Impact Development Technical Design Guidance Manual

This document from the San Antonio River Authority (SARA) has an approach that states LID practices integrate stormwater management into natural landscapes. The document points out LID reduces the need for traditional drainage infrastructure. SARA approaches LID guidance at three scales: the site/block, the community/neighborhood, and the



to address runoff requirements. Minor adjustments to can have significant effects. Landscaping has aesthetic value that all water

Low Impact Development (LID) practices are identified as ideal locations for bioretention and as well as the application of disconnected impervious surfaces to address runoff requirements. Minor adjustments to can have significant effects. Landscaping has aesthetic value that all water

ment requires that be treated in the stormwater management plan are both

Section 3. Conceptual Solutions

The following conceptual solutions have been identified as appropriate and applicable to the City of Port Aransas.

Conceptual Solution	Description	Relevance to Port Aransas	Category	Operationalization
Incentivize sustainable renovations	City updates code to incentivize voluntary action to renovate existing property or to apply GSI to new development, frequently using regulatory incentives	Improve runoff volume and water quality from existing properties and future development Improve aesthetics Community involvement Improved flood resiliency contributes to improved economic resiliency	Ordinance revisions	Revise ordinances to create regulatory incentive or alternative compliance mechanism whereby stormwater management BMP installation can reduce other obligations. Chapter 16, Article IV (Landscaping)
Stamp drainage structures	City stamps inlets, BMP structures, and other prominent drainage structure stating where the runoff drains City modify or create standard stormwater manhole cover for systems installed in the future City provides educational information about the element to promote education and awareness	Increased awareness by locals and visitors will encourage better practices that effect water quality and care of the stormwater features	Education and Coordination	Non-regulatory, Capital cost and operations to install on existing infrastructure and specify in drainage manual technical specifications for new infrastructure



City of Port Aransas Stormwater Management Report

June 30, 2020

A publication funded by a Texas Coastal Management Program grant approved by the Texas Land Commissioner pursuant to National Oceanic and Atmospheric Administration Award No. NA18NOS4190153



Observations Beyond Scope

- **Recommend preparation of a new Comprehensive Plan**
 - Market, economy, best practices and technology have changed radically
 - Reconnecting with public and interest groups to develop/affirm vision
 - Supports strategic planning for city leadership
- **Recommend a comprehensive rewrite of all development regulations**
 - Real estate market and development practices have changed radically
 - Recommend a unified code
 - Recommend a comprehensive plan—to—code rewrite approach



City of Port Aransas Stormwater Management Plan

2021 - DRAFT



Stormwater Management Plan – Goals

- **Reduce Non-Point Source (NPS) pollution**
- **Reduce flooding**
- **Inform local citizens of coastal resources' value**

Stormwater Management Plan – Objectives

- Increase community involvement in stormwater runoff quality
- Promote responsible development while protecting existing development
- Mitigating flooding and erosion concerns
- Serve as basis for when the City becomes subject to the TCEQ MS4 General Permit



City of Port Aransas Stormwater Management Plan

2021 - DRAFT



Stormwater Management Plan – Outcomes

- **Education and awareness**

- Limited tracking metrics

- **Reduced pollutant loads via testing at key locations**

- Petroleum product runoff
- Nutrients (phosphorus and nitrogen)
- Bacteria
- Suspended solids



City of Port Aransas Stormwater Management Plan

2021 - DRAFT



Stormwater Plan Actions – Types

- **10 Best Management Practices (BMPs)**
- **20 Ordinance-Related Actions (ORDs), impacting/creating seven ordinances**
 - Litter (existing)
 - Illicit Discharge (new)
 - Stormwater Management and Drainage (new)
 - Landscape (existing)
 - Zoning (existing)
 - Subdivision (existing)
 - Flood Damage Prevention (replacement of existing)
- **5-Year Recommended Implementation Schedule**
 - City not obligated – simply our recommendation

Stormwater Plan Actions – Impacts

Potential Pollutant Reduction:

★ (slight reduction) – ★★★ (significant reduction)

Cost:

🏠 (slight capital cost) – 🏠 🏠 🏠 (Significant capital cost)

Personnel Involved:

👤 (1 City staff) – 👤 👤 👤 (Many City staff)

Bureaucracy:

📄 (Minimal additional bureaucratic involvement) – 📄 📄 📄 (significant additional bureaucratic involvement)

Broken Down By:

- Petroleum Products
- Nutrients
- Bacteria
- Suspended Solids

One-Page Tear Sheets for Each Action

BMP 4: Education Workshops

Host workshops catered towards citizens, developers, and other relevant parties to educate these audiences about City's revised approach and individual parties' roles in regard to sustainable development.

What it accomplishes

Workshops are a great way to spread awareness in the community since they encourage a community atmosphere while delivering useful information directly from a reliable source.

Pollutant	Petroleum Product Runoff	Nutrients (P & N)	Bacteria	Suspended Solids
BMP Potential Reduction	★	★	★	★★

Impact to City

Cost: 💰

Personnel: 👤 👤

City will need to develop workshop structure. May involve more than one type of workshop that addresses the specific parties (i.e. One for developers and one for citizens). Workshop dates will need to be advertised.

Impact to Development/Business Community

Cost: 💰

Bureaucracy: 📄

Development community will benefit from attending these workshops by hearing directly from City about any changes and/or expectations. Will also be an opportunity for this community to ask questions.



aulfseagrant.org

Brief Description

Anticipated Pollutant Impact

Personnel and Direct Cost Impact

Impact to Development/Business



Recommended BMPs



Year 1

- **Design manhole stamp, standard detail, source to produce and funding needs for retrofits**
 - Recommend a community/youth design contest (see: San Marcos, TX)
- **Identify areas that qualify for conservation easements and funding needed to obtain; define requirements of maintenance agreements**
- **Identify department representatives for Sustainability Task Force**
- **Identify workshops based on new ordinance revisions and other actions; Identify staff responsible for each; outline each workshop and target audience**

Year 1

- **Identify incentives to offer for GSI retrofits and additions**
- **Identify staff to be responsible for community partnerships; develop outline; begin outreach**
- **Identify staff/consultant knowledgeable on ordinances/criteria or other 3rd party resources**
- **Develop reoccurring event for hazardous waste & bulk collection**
- **Identify staff responsible for inspection of drainage facilities**

Year 2

- **Begin applying stamps to existing inlets; begin requiring new developments to include the stamps/manholes**
- **Require long-term maintenance agreements/restrictions for natural areas to achieve final plat approval; Begin to create conservation easements for previously identified areas**
- **Define Sustainability Task Force goals and extents of routine meetings/coordination**
- **Host initial workshop and request feedback from audience in order to improve subsequent workshops**

Year 2

- **Develop application and criteria for businesses to earn GSI incentives**
- **Develop community partnerships and continue outreach for new**
- **Utilize staff/consultant knowledgeable on ordinances/criteria or other 3rd party resources**
- **Host hazardous waste & bulk collection, potentially with partner; develop recycling program**
- **Identify drainage facilities in need of inspection; create inspection criteria; create schedule; notify owners when inspections will begin and the criteria**

Year 3-5

- **Continuing applying stamps to existing inlets; continue requiring new developments to include the stamps/manholes**
- **Continue requiring long-term maintenance agreements/restrictions for natural areas to achieve final plat approval; Continue creation of conservation easements for previously identified areas**
- **Reassess functionality of Sustainability Task Force and adjust goals as needed**
- **Host subsequent workshops**

Year 3-5

- **Continue use and advertising of program for businesses to earn GSI incentives**
- **Continue community partnerships and outreach for new**
- **Continue to utilize staff/consultant knowledgeable on ordinances/criteria or other 3rd party resources**
- **Continue hazardous waste & bulk collection, potentially with partner;
Implement Styrofoam ban**
- **Continue drainage facility inspections**
 - Note: contemplated ordinance proposes reporting by owners using qualified individuals



Recommended Ordinances



Year 1 Ordinances – Stormwater Ordinance

- Provisions to ensure clearing/grubbing requires appropriate permits
- Drawdown requirements for detention, enhanced detention and bioretention
- Provisions requiring/monitoring E&S controls
- Provisions for post-construction maintenance of facilities
- Adoption of Guidance for Sustainable Stormwater Drainage on Texas Coast, with adjustments, as the criteria for GSI
- No requirement for permanent water quality facilities—standards in place to inform incentives

Year 1 Ordinances – Others

- **Zoning Ordinance**

- Create GSI incentive toward green space credit, with higher for redevelopment
- Create incentive for preservation of sensitive areas toward green space credit, with higher for redevelopment
- Remove exception to development permit requirement for residential/commercial fill under one foot in depth

- **Landscape Ordinance**

- Create GSI incentive toward landscape credit, with higher for redevelopment
- Create incentive for preservation of sensitive areas toward landscape credit, with higher for redevelopment
- Standard to place landscaping in a way that it filters stormwater runoff

Year 2 Ordinances – Stormwater

- **Unrelated – update Drainage System Master Plan and use to assess appropriate design storm**
- **Adopt Illicit Discharge Ordinance**
- **Adopt updated Flood Damage Prevention Ordinance**
 - Additional definitions for repetitive loss
 - 2' freeboard requirements above floodplain, adjacent grade and crown of road
 - Standards for acceptable fill
 - Requirements for access during base flood events
 - Standard elevation outside of special flood hazard areas

Year 2 Ordinances – Others

- **Subdivision Ordinance**

- Amendment to adopt current best practices for platting in Texas, consistent with state law and case law
- Require pre-project or pre-proposal meetings

- **Zoning Ordinance**

- Require pre-project or pre-proposal meetings
- Require use of permeable surfaces when the parking provided exceeds the required minimum by more than 25%
- Evaluate incentives' effectiveness

- **Landscape Ordinance**

- Evaluate incentives' effectiveness

Year 3-5 Ordinances – All

- **Amend necessary ordinances based on updated Drainage System Master Plan and identified appropriate design storm**
- **Amend Stormwater Management Ordinance**
 - Option 2 requiring GSI when impervious cover exceeds 50%, or Option 3 requiring GSI for all increased impervious cover
 - Evaluate drawdown requirement effectiveness
- **Evaluate incentives' effectiveness in zoning and landscape ordinances**
- **Update subdivision ordinance and necessary technical manuals to new street and cul-de-sac sections**
- **Update litter control ordinance, particularly addressing Styrofoam**
- **Evaluate potential for Transfers of Development Rights (advanced)**



Next Steps

- **Delivery of final Stormwater Management Plan for City Council consideration**
- **Delivery of the package of ordinances for City Council consideration**

Port Aransas Stormwater Management Program Development

City Council

February 25, 2021



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ILLICIT DISCHARGE ORDINANCE

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 9 to establish an illicit discharge ordinance (entire ordinance)*
- *ORD 10 to establish construction monitoring*
- *ORD 12 to establish and enforce erosion and sedimentation controls*

- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 3 to incentivize reducing disturbance of natural land/systems*
- *ORD 6 to improve parking specifications related to landscape placement supporting improved stormwater runoff*
- *ORD 15 to incentivize implementation of green stormwater infrastructure for both new development and redevelopment*

ORDINANCE NO. _____ - _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH REGULATION OF ILLICIT DISCHARGES OF POLLUTANTS INTO THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4); PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 16 is amended to add the following Article VI regarding the regulation of Illicit Discharges into the Municipal Separate Storm Sewer System and Conveyances:

Article VI. Illicit Discharges of Pollutants into the MS4 or Conveyances

Section 1. Purpose and Intent

The purpose of this article is to provide for the health, safety, and general welfare of the citizens of the city through the regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This article establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this article are:

- (a) To regulate the contribution of pollutants to the MS4 by stormwater discharges by any user;
- (b) To prohibit illicit connections and discharges to the MS4; and
- (c) To establish legal authority to carry out all inspection, surveillance, monitoring, and enforcement procedures necessary to ensure compliance with this Article.

Section 2. Definitions

The following words and phrases, when used in this article, shall have the meanings respectively ascribed to them in this section, except when the context otherwise requires. Whenever any words and phrases used herein are not defined herein but are defined in the federal and state laws regulating illicit discharge, any such definition therein shall be deemed to apply to such words and phrases used herein, except when the context otherwise requires.

Calendar day. When the term “day” is used herein, unless specifically defined otherwise, the term shall mean any day of the week, including Saturdays, Sundays, and legal holidays, with no days being excepted.

City staff. Employees of any of the city’s departments, authorized to act on the city’s behalf by the director.

Construction activity. The disturbance of soils associated with clearing, grading, grubbing, demolition or excavating activities or other construction activities.

Conveyance. Any of the following, by way of illustration and not limitation: stream, channel, drainageway, drainage/dry well, ephemeral stream, floodplain, karst feature, storm drainage system, drainage system appurtenance, waterbody, watercourse or waterway.

Director. The city manager, or the city employee(s) designated by the city manager, responsible for enforcement of this article.

Discharge. Any addition or introduction of any pollutant, stormwater, or any other substance whatsoever into the municipal separate storm sewer system (MS4) or conveyances.

Discharger. Any person who causes, allows, permits, or is otherwise responsible for a discharge, including, without limitation, any operator of a construction site or industrial facility.

Environmental Protection Agency (EPA). The United States Environmental Protection Agency, the regional office thereof, any federal department, agency, or commission that may succeed to the authority of EPA, and any duly authorized official of EPA or such successor agency.

Extremely hazardous substance. Any substance listed in the appendices to 40 CFR 355, emergency planning and notification.

Facility. Any building, structure, installation, or activity from which there is or may be a discharge of a pollutant.

Fire department. The fire department serving the city and any other fire departments with which the fire department serving the city has mutual assistance or mutual aid agreements.

Fire protection water. Any water, and any substances or materials contained therein, used by any person other than the fire department to control or extinguish a fire.

Garbage. Putrescible animal and vegetable waste materials from the handling, preparation, cooking, or consumption of food, including waste materials from markets, storage facilities, and the handling and sale of produce and other food products.

Harmful quantity. The amount of any substance due to volume or concentration that will cause pollution.

Hazardous material. Any material (including any substance, waste, or combination thereof) which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause or significantly contribute to a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated,

stored, transported, disposed of, or otherwise managed. This term shall include household hazardous wastes as classified under 40 CFR 261, hazardous substances as listed in table 302.4 of 40 CFR 302, and hazardous wastes identified or listed by the EPA pursuant to 40 CFR 261.

Illicit connection. Any connection to the MS4 or conveyances that allows for an illicit discharge.

Illicit discharge. Any direct or indirect discharge of pollutant to the MS4 or conveyances, except as specifically exempted in this article.

Industrial activity. Any activity at an industrial facility described by the TPDES multi-sector general permit, TXR050000, or by any other TCEQ or TPDES permit including any of the following, by way of illustration and not of limitation: manufacturing, processing, materials storage, and waste materials disposal.

Industrial waste. Any waterborne liquid or solid substance that results from any process of industry, manufacturing, mining, production, trade or business.

Motor vehicle fluids. Any vehicle crankcase oil, antifreeze, transmission fluid, brake fluid, differential lubricant, gasoline, diesel fuel, gasoline/alcohol blend, and any other fluid used in a motor vehicle.

Municipal Separate Storm Sewer System (MS4). The storm drainage system operated and maintained by the city which is comprised of the following: the system of conveyances (including roads with drainage systems, municipal streets, catchbasins, curbs, gutters, ditches, manmade channels, or storm drains) owned and operated by the city and designed or used for collecting or conveying stormwater, and which is not used for collecting or conveying sewage.

Nonstormwater discharge. Any discharge to the storm drain system that is not composed entirely of stormwater runoff.

Notice of Intent (NOI). The notice of intent that is required by either the industrial general permit or the construction general permit.

Oil. Any kind of oil in any form, including but not limited to petroleum, fuel oil, crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure, sludge, oil refuse, and oil mixed with waste. This term shall include used oil that has become unsuitable for its original purpose because of impurities or the loss of original properties but that may be suitable for further use and is recyclable in compliance with state and federal law.

Operator. The person or persons who, either individually or taken together, meet the following two criteria:

- (1) Has operational control over the facility specifications (including the ability to make modifications in specifications); and
- (2) Has the day-to-day operational control over those activities at the facility necessary to ensure compliance with pollution prevention requirements and any permit conditions.

Owner. The person who owns a facility or part of a facility.

Person. Any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity, or their legal representatives, agents, lessees, or assigns. This term shall also include all federal, state, and local governmental entities.

Petroleum storage tank (PST). Any one or a combination of aboveground or underground storage tanks or connecting underground pipes that contain petroleum products that are obtained from distilling and processing crude oil and that are capable of being used as a fuel.

Pollutant. A substance, the entrance of which causes or contributes to a violation of applicable water quality standards as defined by the Clean Water Act. This term includes but is not limited to paints, varnishes, solvents, oil and other automotive fluids, yard wastes, trash, sediments, household chemicals, detergents, pesticides, herbicides, fertilizers, hazardous materials, sewage, animal wastes, dredged spoil, solid waste, incinerator residue, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water, and other materials exposed to stormwater as a result of construction activity.

Pollution. The alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water in the state that renders the water harmful, detrimental, or injurious to humans, animal life, vegetation, or property, or to the public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.

Release. Any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the municipal separate storm sewer system (MS4) or conveyances.

Sanitary sewer or sewer. The system of pipes, conduits, and other conveyances which carry industrial waste and domestic sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions, whether treated or untreated, to the city sewage treatment plant (and to which stormwater, surface water, and groundwater are not intentionally admitted).

Service station. Any retail establishment engaged in the business of selling fuel for motor vehicles that is dispensed from stationary storage tanks.

Site. The land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

Solid waste. Any garbage, trash, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, municipal, commercial, mining, and agricultural operations, and from community and institutional activities.

Stormwater. Any surface flow, stormwater runoff, snow melt runoff, and surface runoff and drainage consisting entirely of water from any form of natural precipitation.

Stormwater Pollution Prevention Plan (SWPPP). A plan required by either the construction general permit or the industrial general permit and which describes and ensures the implementation of practices that are to be used to reduce the pollutants in stormwater discharges associated with construction or other industrial activity at the facility.

TCEQ. The Texas Commission on Environmental Quality, or any duly authorized official of said agency.

Texas Pollutant Discharge Elimination System (TPDES). The program delegated to the State of Texas by EPA pursuant to 33 USC 1342(b).

Trash. Non-putrescible solid waste, excluding ashes, that consists of:

- (1) Combustible waste materials, including paper, rags, cartons, wood, excelsior, furniture, rubber, plastics, yard trimmings, leaves, and similar materials; and
- (2) Noncombustible waste materials, including glass, crockery, tin cans, aluminum cans, metal objects, and similar materials that do not burn at ordinary incinerator temperatures (1,600 to 1,800 degrees Fahrenheit).

Uncontaminated. Not containing a harmful quantity of any substance.

Washwater. Any water containing pollutants from the act of cleaning parking lots, vehicles, or building exteriors.

Wastewater. Human excrement, gray water (from home clothes washing, bathing, showering, dishwashing, and food preparation), other wastewater that is free from industrial waste including from household drains, and waterborne waste normally

discharged from the sanitary conveniences of dwellings (including apartment houses and hotels), office buildings, factories, and institutions.

Water quality standard. The designation of a body or segment of surface water in the state for desirable uses and the narrative and numerical criteria deemed by the state to be necessary to protect those uses, as specified in 31 Tex. Admin. Code, chapter 307.

Yard waste. Leaves, grass clippings, yard and garden debris, and brush that results from landscaping maintenance and land-clearing operations.

Section 2. Applicability

This article shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by the city.

Section 3. Minimum Standards

The standards set forth in this article are minimum standards; therefore, no inference is intended that compliance with this article will ensure that there will be no contamination, pollution, or unauthorized discharge of pollutants. Additionally, no inference is intended that compliance with this article will serve to extend any deadline established by a state or federal standard or requirement, nor is any inference intended that compliance with this article will relieve a discharger of liability for any violation or continuing violation.

Section 4. Compliance Obligations

- (a) Any person subject to an industrial or construction activity TPDES stormwater discharge permit shall comply with all provisions of such permit or any other state or federal regulations. Prior to the city allowing discharges to the MS4 or conveyances, the city may require proof of such compliance in a form acceptable to the city.
- (b) Every person owning property through which a conveyance passes, or such person's lessee, shall have the obligation to keep and maintain that part of the conveyance within the property free of trash, debris, excessive vegetation, other pollutants and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the conveyance. The owner or lessee shall maintain existing privately owned structures within or adjacent to a conveyance, so that such structures will not become a hazard to the use, function, or physical integrity of the conveyance.

Section 5. General Prohibitions and Affirmative Defenses

- (a) General Prohibition.

No person within the city limits and extraterritorial jurisdiction of the city shall introduce, cause to be introduced, discharge, or cause to be discharged into the municipal separate storm sewer system (MS4) or any conveyances any discharge that is not composed entirely of stormwater. Such prohibition includes commencement of any illicit discharge into the MS4 or any conveyances, and continuation of any illicit discharge into the MS4 or any conveyances.

(b) Affirmative Defenses.

It is an affirmative defense to any enforcement action for violation of subsection (a) of this section that the discharge was composed entirely of one or more of the following categories of discharges:

- (1) A discharge specified in writing by the city as being necessary to protect public health and safety.
- (2) A discharge associated with dye testing, however this activity requires a verbal notification to the director prior to the time of the test.
- (3) A discharge authorized by a TPDES permit, waiver, or waste discharge order issued to the discharger and administered under authority of the TCEQ or USEPA, provided that the discharger is in full compliance with all requirements of the permit, waiver, order, and other applicable laws and regulations.
- (4) A discharge resulting from firefighting/fire suppression activities.
- (5) A discharge of fire protection water from standard municipal operations and training that does not contain oil or hazardous substances or materials that are required to be contained and treated prior to discharge, in which case treatment adequate to remove harmful quantities of pollutants must have occurred prior to discharge.
- (6) A discharge resulting from the standard municipal operations of street sweeping and street washing activities, which discharge is not contaminated with any soap, detergent, degreaser, solvent, emulsifier, dispersant, or any other harmful cleaning substance.
- (7) A discharge from water line flushing, but not including a discharge from water line disinfection by super-chlorination or other means unless the total residual chlorine (TRC) has been reduced to less than one ppm (part per million) and it contains no harmful quantity of chlorine or any other chemical used in line disinfection.
- (8) A discharge from a potable water source not containing any harmful quantity of a substance or material from the cleaning or draining of a storage tank or other container.

- (9) A discharge from lawn watering or landscape irrigation.
 - (10) A discharge from individual residential carwashing.
 - (11) A discharge from air-conditioning condensation that is unmixed with water from a cooling tower, emissions scrubber, emissions filter, or any other source of pollutant.
 - (12) Swimming pool water that has been dechlorinated so that total residual chlorine (TRC) is less than one ppm (part per million) and that contains no harmful quantity of chlorine, muriatic acid or other chemical used in the treatment or disinfection of the swimming pool water or in pool cleaning.
 - (13) Stormwater runoff from a roof that is not contaminated by any runoff or discharge from an emissions scrubber or filter or any other source of pollutant.
 - (14) A discharge or flow from a diverted stream flow or natural spring.
 - (15) A discharge or flow from uncontaminated pumped groundwater, rising groundwater, or groundwater infiltration to storm drains.
 - (16) Uncontaminated groundwater infiltration, as defined by 40 CFR 35.2005(20), to the MS4.
 - (17) Uncontaminated discharge from a foundation or footing drain (excluding active groundwater dewatering systems), crawl space pump, or sump pump.
- (c) No affirmative defense shall be available under this article if the discharge in question has been previously determined by the city to be a source of a pollutant to the MS4 or any conveyances, and written notice of such determination has been provided to the discharger. The city's determination that a discharge is a source of a pollutant may be reviewed in any administrative or judicial enforcement proceeding.

Section 6. Specific Prohibitions

- (a) The specific prohibitions and requirements in this section are not inclusive of all the discharges prohibited by the general prohibition in Section 5(a).
- (b) No person shall introduce, cause to be introduced, discharge, or cause to be discharged into the MS4 or conveyances any discharge that causes or contributes to causing the city to violate a water quality standard, the city's TPDES permit, or any state-issued discharge permit for discharges from its MS4.
- (c) No person shall dump, spill, leak, pump, pour, emit, empty, discharge, leach, dispose, or otherwise introduce or cause, allow, or permit to be introduced any of the following substances into the MS4 or conveyances:

- (1) Any motor oil, antifreeze, or any other motor vehicle fluid.
- (2) Any industrial waste.
- (3) Any hazardous material, including household hazardous waste, hazardous substances, and hazardous waste.
- (4) Any wastewater or septic tank waste, grease trap waste, or grit trap waste.
- (5) Any garbage, trash, or yard waste, specifically including but not limited to pressure-treated wood, painted wood, painted wood pallets, laminated wood, insulation, and particle board.
- (6) Any discharge from a carwash facility; from any vehicle washing, cleaning, or maintenance at any new or used automobile or other vehicle dealership, rental agency, body shop, repair shop, or maintenance facility; or from any washing, cleaning, or maintenance of any vehicle, including a truck, bus, or heavy equipment, by a business or public entity that operates more than four such vehicles.
- (7) Any discharge from a mobile power washer or from the washing or other cleaning of a building exterior that contains any soap, detergent, degreaser, solvent, or any other harmful cleaning substance.
- (8) Any discharge from commercial floor, rug, or carpet cleaning.
- (9) Any discharge from the washdown or other cleaning of pavement that contains any harmful quantity of soap, detergent, solvent, degreaser, emulsifier, dispersant, or any other harmful cleaning substance; or any discharge from the washdown or other cleaning of any pavement where any spill, leak, or other release of oil, motor fuel, or other petroleum or hazardous substance has occurred, unless all harmful quantities of such released material have been previously removed.
- (10) Any effluent from a cooling tower, condenser, compressor, emissions scrubber, emissions filter, or the blowdown from a boiler.
- (11) Any ready-mixed concrete, mortar, ceramic, or asphalt base material or hydro-mulch material, or material from the cleaning of vehicles or equipment containing, or used in transporting or applying, such materials.
- (12) Any runoff or washdown water from concentrated animal feeding operations as defined in 40 CFR 122.23 or discharges from concentrated aquatic animal production facilities as defined in 40 CFR 122.24.

- (13) Any swimming pool, fountain, or spa water, including backwash water, containing total residual chlorine (TRC) of one ppm (part per million) or more or containing any harmful quantity of chlorine, muriatic acid or other chemical used in the treatment or disinfection of the swimming pool water or in pool cleaning.
- (14) Any discharge from water line disinfection by super-chlorination or other means if the total residual chlorine (TRC) is at one ppm (part per million) or more or if it contains any harmful quantity of chlorine or any other chemical used in line disinfection.
- (15) Any fire protection water containing oil or hazardous materials that are required to be contained and treated prior to discharge, unless treatment adequate to remove pollutants occurs prior to discharge. This prohibition does not apply to discharges or flow from firefighting/fire suppression activities.
- (16) Any contaminated runoff from a vehicle salvage yard or storage yard.
- (17) Any substance or material that will damage the MS4.
- (18) Any release from a petroleum storage tank (PST), or any leachate or runoff from soil contaminated by a leaking PST, or any discharge from the remediation of any such PST release, unless the discharge satisfies all of the following criteria:
 - a. Compliance with all state and federal standards and requirements; and
 - b. No discharge containing a harmful quantity of any pollutant.
- (19) Any harmful quantity of sediment, silt, earth, soil, or other material which is associated with clearing, grading, excavation or other such construction activities, or which is associated with landfilling or other placement or disposal of soil, rock, or other earth materials.
- (20) Any pavement washwater from a service station unless such washwater has passed through a properly functioning and maintained grease, oil, and sand separator before discharge into the MS4 or conveyances.
- (21) Any introduction of oil into the environment, specifically including but not limited to oil applied to a road or land for dust suppression, weed abatement, or other similar use; any introduction of oil commingled or mixed with solid waste that is to be disposed of in a landfill; any introduction of oil by direct disposal on land or in a landfill; or any introduction of oil into the MS4 or conveyances, or into any septic tank.

Section 7. Prohibition of Illicit Connections

The construction of, use of, maintenance of, or continued use of a new or existing illicit connection to the MS4 or any conveyances is prohibited. This prohibition expressly includes any illicit connection made before passage of the ordinance codified in this article, regardless of whether such connection was permissible under law or practices applicable or prevailing at the time of connection. A person is deemed to be in violation of this article if the person connects a line conveying wastewater or industrial waste to the MS4 or any conveyances, or allows such a connection to continue.

Section 8. Industrial or Construction Activity Discharges

- (a) Any person subject to an industrial or construction activity TPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the director prior to the allowing of discharges to the MS4.
- (b) The operator of a facility, including construction sites, required to have a TPDES permit to discharge stormwater associated with industrial activity shall submit a copy of the notice of intent (NOI) to the director at the same time the operator submits the original notice of intent to the EPA and/or TCEQ as applicable.
- (c) A person commits an offense if the person operates a facility that is discharging stormwater associated with industrial activity without having submitted a copy of the notice of intent to do so to the director.

Section 9. Prevention, Control, and Reduction of Stormwater Pollutants by the Use of Best Management Practices

The city will adopt requirements identifying best management practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of stormwater, the storm drain system, or waters of the United States. The owner or operator of such activity, operation, or facility shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and nonstructural BMPs. Further, any person responsible for a property or premises that is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and nonstructural BMPs to prevent the further discharge of pollutants to the MS4. Compliance with all terms and conditions of a valid TPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a stormwater management plan as necessary for compliance with requirements of the TPDES permit.

Section 10. Compliance Monitoring

- (a) Right of entry; inspection and sampling.

City staff shall have the right to enter any facility or site, including industrial and construction facilities or sites, which are discharging to the MS4 or any conveyances to determine if the discharger is complying with all requirements of this article. Dischargers shall allow city staff immediate access to all parts of the premises for the purposes of inspection, sampling, records examination, and copying, and for the performance of any additional inspections or duties. Dischargers shall make available to city staff, upon request, any Stormwater Pollution Prevention Plans (SWPPPs), modifications thereto, self-inspection reports, monitoring records, compliance evaluations, notices of intent, and any other records, reports, and other documents related to compliance with this article and with any state or federal discharge permit.

- (1) Where a discharger has security measures in force which require proper identification and clearance before entry onto its premises, the discharger shall make necessary arrangements with its security guards so that, upon presentation of suitable identification, city staff will be permitted to enter without delay for the purposes of performing the city's responsibilities.
- (2) City staff shall have the right to set up on the discharger's property, or require installation on the discharger's property, of such devices as city staff deem necessary to conduct sampling and/or metering of the discharger's operations.
- (3) City staff may require any discharger to the MS4 or any conveyances to conduct specified sampling, testing, analysis, and other monitoring of its stormwater discharges at the discharger's expense, and may specify the frequency and parameters of any such required monitoring.
- (4) City staff may require the discharger to install monitoring equipment as necessary at the discharger's expense. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure accuracy.
- (5) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the discharger at the written or verbal request of city staff and shall not be replaced. The costs of clearing such access shall be borne by the discharger.
- (6) Unreasonable delays in allowing city staff access to the discharger's premises shall be deemed a violation of this article.

(b) Search Warrant

If city staff has been refused access to any part of the premises from which stormwater is discharged, and the city is able to demonstrate probable cause to believe that there may be a violation of this article, or that there is a need to inspect and/or sample as part of a

routine inspection and sampling program of the city designed to verify compliance with this article or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the city may seek issuance of a search warrant from any court of competent jurisdiction.

Section 11. Notification of Spills

(a) Discovery, containment and cleanup procedure.

Notwithstanding other requirements of law, as soon as any discharger or operator of a facility or operation, or person responsible for emergency response for a facility or operation, has information of any known or suspected release of materials which are resulting or may result in an illicit discharge, such person shall take all necessary steps to ensure the discovery, containment and cleanup of such discharge.

- (1) Hazardous materials spill. In the event of discharge of hazardous materials, the discharger shall immediately notify emergency response agencies. Once the immediate threat has been properly contained, the discharger shall notify the city via the director.
- (2) Nonhazardous materials spill. In the event of a release of nonhazardous materials, the discharger shall notify the city, via the director, in person or by telephone no later than the next business day. Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the director within three business days of the telephone notice.

(b) Record of discharge from commercial or industrial establishment.

If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain on site a written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for a minimum of three years.

Section 12. Enforcement Provisions

(a) Warning notice.

When the city finds that any person has violated, or continues to violate, any provision of this article, or any order issued hereunder, the city may service upon that person a written warning notice, specifying the particular violation believed to have occurred and requesting the discharger to immediately investigate the matter and to seek a resolution whereby any offending discharge will cease. Investigation and/or resolution of the matter in response to the warning notice in no way relieves the alleged violator of liability for any violations occurring before or after receipt of the warning notice. Nothing in this

subsection shall limit the authority of the city to take any action, including emergency action or any other enforcement action, without first issuing a warning notice.

(b) Notice of violation.

When city staff believes that a discharger has violated, or continues to violate, any provision of this article, or any order issued hereunder, the director, or his designee, may serve upon the alleged violator a written notice of violation. Such notice shall contain the following:

- (1) The name and address of the alleged violator;
- (2) The address when available or a description of the building, structure or land upon which the violation is occurring, or has occurred;
- (3) A statement specifying the nature of the violation;
- (4) A description of the remedial measures necessary to restore compliance with this article and a time schedule for the completion of such remedial action;
- (5) A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;
- (6) A statement that the determination of violation may be appealed, specifying the deadline and form of such appeal; and
- (7) A statement specifying that, should the violator fail to restore compliance within the established time schedule, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

Within ten days of mailing of such notice of violation, the alleged violator shall submit to the director a written explanation of the violation and a written plan for the satisfactory correction and prevention of recurrence thereof, including specific required actions. If the alleged violator denies that any violation occurred and/or contends that no corrective action is necessary, a written explanation of the basis of any such denial or contention shall be submitted by the alleged violator to the director within seven days of receipt of the notice of violation. Submission of an explanation and/or plan shall in no way relieve the alleged violator of liability for any violation occurring before or after receipt of the notice of violation. Nothing herein shall limit the authority of the city and the director to take any action, including emergency action or any other enforcement action, in the absence of issuance of a notice of violation.

(c) Voluntary consent order.

The city, via the director, may enter into a voluntary consent order, an assurance of voluntary compliance, or other similar agreement with any violator noncompliant with any provision of this article, or any order issued hereunder. Such document may include specific action to be taken by the violator to correct noncompliance within a time period specified by the director. Such agreement shall have the same force and effect as administrative orders issued pursuant to this article, and same shall be judicially enforceable.

(d) Mandatory compliance order.

When city staff finds that any discharger has violated, or continues to violate, any provision of this article, or any order issued hereunder, the director may issue a mandatory compliance order to the violator ordering any one or more of the following:

- (1) Compliance within time limit.
- (2) Directing that the violator come into compliance within a specified time limit. Such an order also may contain other requirements to address noncompliance, including additional self-monitoring and management practices designed to minimize the amount of pollutants discharged to the MS4 or conveyances.
- (3) Remediation, abatement, and/or restoration.

Directing that the violator (if the violation has adversely affected the MS4 or conveyances or any other aspect of the environment) undertake and implement any appropriate action to remediate and/or abate any adverse effects of the violation upon the MS4 or conveyances or any other aspect of the environment, and/or to restore any part of the MS4 or conveyances or any other aspect of the environment that has been harmed. Such remedial, abatement, and restoration action may include but shall not be limited to: monitoring, assessment, and evaluation of the adverse effects and determination of the appropriate remedial, abatement, and/or restoration action; confinement, removal, cleanup, treatment, and disposal of any discharged or released pollutant or contamination; prevention, minimization, and/or mitigation of any damage to the public health, safety, welfare, or the environment that may result from the violation; restoration or replacement of city property or natural resources damaged by the violation. Such an order may direct that the remediation, abatement, and/or restoration be accomplished on a specified compliance schedule and/or be completed within a specified period of time. Any expenses related to the remediation, abatement, and/or restoration incurred by the city shall be fully reimbursed by the person deemed responsible by the director. If the amount due is not paid within a timely manner, as determined by decision of the city, then the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

- (4) Emergency cease and desist.

Directing that the violator immediately cease and desist from all violations (if the violations have caused or contributed to an actual or threatened discharge to the MS4 or any conveyances which reasonably appears to present an imminent or substantial endangerment to the health, safety, or welfare of persons or to the environment; or if past violations are likely to recur). The emergency cease and desist order may also direct the violator to:

- a. Immediately comply with all chapter requirements; and
- b. Take such appropriate preventive action as may be needed to properly address a continuing or threatened violation, including immediately halting operations and/or terminating the discharge.

Any violator notified of an emergency cease and desist order shall immediately comply and stop or eliminate the endangering discharge. In the event of a violator's failure to immediately comply voluntarily with the emergency cease and desist order, the city and city staff may take such steps as it/they deem necessary to prevent or minimize harm to the MS4 or conveyances, and/or endangerment to persons or to the environment. Any expenses related to the remediation, abatement, and/or restoration incurred by the city shall be fully reimbursed by the person deemed by the director to be responsible. If the amount due is not paid within a timely manner, as determined by decision of the city, then the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

The city may allow the violator to recommence its discharge when it has demonstrated to the satisfaction of city staff that the period of endangerment has passed, unless further termination proceedings are initiated against the violator under this article. A violator that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit the following to the director within five days of receipt of the emergency cease and desist order, a detailed written statement, describing the causes of the harmful discharge and the measures taken to prevent any future occurrence. Issuance of an emergency cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the violator.

(5) Construction stop-work order regarding illicit discharge.

Whenever city staff finds that any operator of a construction site has violated, or continues to violate, any provision of this article, or any order issued hereunder, the director may order that a construction stop-work order regarding illicit discharge be issued to the operator or person responsible, posted at the construction site, and distributed to all city departments and divisions whose decisions affect any activity at such site. Unless express written exception is made by the city, the construction stop-work order regarding illicit discharge shall prohibit any further construction activity at the site and shall bar any further inspection or approval by the city associated with

a building permit, grading permit, or any other city authorization necessary to commence or continue construction or to assume occupancy at the site. Issuance of a construction stop-work order regarding illicit discharge shall not be a bar against, or a prerequisite for, taking any other action against the violator.

A mandatory compliance order may not extend the deadline for compliance established by a state or federal standard or requirement, nor shall a mandatory compliance order relieve the violator of liability for any violation, including any continuing violation.

Issuance of a mandatory compliance order shall not be a bar against, or a prerequisite for, taking any other action against the violator or any responsible party.

(e) Disconnection from MS4.

- (1) Any discharger in violation of this article may have its/their MS4 connection terminated by city staff, if such disconnection would abate or reduce an illicit discharge. The city has the right to require the violator to disconnect from the MS4 at the violator's expense, or require the discharger to take corrective action to eliminate the source of the illicit discharge. A discharger commits an offense if it reinstates an MS4 connection previously terminated pursuant to this article, without the prior written approval of the city.
- (2) Without any prior notice, city staff may terminate a discharger's MS4 connection when such action is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or any conveyances. If the discharger fails to comply with any order issued in such an emergency, the city may take such steps as it deems necessary to prevent or minimize damage to the MS4 or any conveyances, and to minimize danger to persons.

Section 13. Right to Reconsideration of Enforcement Provision, and Cost of Abatement of the Violation

- (a) Any discharger subject to an order under Section 12 may petition the director to reconsider the basis for the order within seven days of the affected person's notice of issuance of such an order.
- (b) After the director has reviewed relevant documents and evidence, he shall:
 - (1) Grant the petition;
 - (2) Deny the petition; or
 - (3) Grant the petition in part and deny it in part.

The director may modify the order as is appropriate based upon all the documents and evidence. Further orders and directives as are necessary and appropriate may be issued. The decision of the director shall be final and shall be non-appealable.

- (c) If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, or, in the event of an appeal, within seven days of the decision of the municipal authority upholding the decision of the director, then representatives of the city may enter upon the subject's private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the government agency or designated contractor to enter upon the premises for the purposes set forth above.
- (d) Within seven days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within seven days. If the amount due is not paid within a timely manner as determined by the decision of the municipal authority or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment. Any person violating any of the provisions of this article shall become liable to the city by reason of such violation. Interest at the maximum rate permitted by law shall be assessed on the balance beginning on the thirtieth (30th) day after the assessment of the lien.

Section 14. Civil Remedies and Injunctive Relief

It shall be unlawful for any person to violate any provision of this article, or to fail to comply with any of the requirements of this article. If a discharger has violated or continues to violate the provisions of this article, the city may avail itself of any and all civil remedies available to it, including petitioning the courts for a preliminary or permanent injunction restraining the discharger from activities which would create further violations or compelling the discharger to perform abatement or remediation of the violation.

Section 15. Violation Deemed Public Nuisance

Any condition caused or permitted to exist in violation of any of the provisions of this article is a threat to public health, safety, and welfare, and is therefore declared and deemed a public nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken by the city.

Section 16. Criminal Penalties

Each day any violation of this code or of any ordinance shall continue shall constitute a separate offense. A violation of this article is considered a violation of a rule ordinance or police regulation that governs fire safety, zoning, or public health and sanitation. A violation of this article is punishable by a fine not to exceed two thousand dollars (\$2,000.00).

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Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

**City Secretary
City of Buda, Texas**

STORMWATER MANAGEMENT AND DRAINAGE ORDINANCE

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- **ORD 1 – Section 5(c) adopts GSI criteria and makes a cross-reference to incentives**
- **ORD 3 – Section 6(c)(2) establishes that clearing and grubbing should not take place without required permits, and erosion and sedimentation controls.**
- **ORD 4 – Section 1(f) provides drawdown requirements by adopting the manuals, specifying drawdown for enhanced detention wet ponds and bioretention design, and Section 5(b) reiterates this.**
- **ORD 10 – Section 6 addresses construction monitoring**
- **ORD 11 – Section 7 addresses post-construction maintenance of stormwater controls**
- **ORD 12 – Section 6 includes construction monitoring and enforcement provisions, including erosion and sedimentation controls**
- **ORD 13 – Section 5(d) Option 2 and Option 3 creates mitigation of impervious area through green stormwater infrastructure controls**
- **ORD 15 – Section 1(f), ordinance in general establishes GSI criteria**

ORDINANCE NO. _____ - _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH REQUIREMENTS FOR STORMWATER MANAGEMENT AND DRAINAGE; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 16 is amended to add the following Article V regarding the regulation of Stormwater Management and Drainage:

Article V. Stormwater Management and Drainage

Section 1. General Provisions

(a) Findings of Fact

It is hereby determined that:

- (1) Land development projects and associated increases in impervious cover alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition; and
- (2) This stormwater runoff contributes to increased quantities of water-borne pollutants, and;
- (3) Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of stormwater runoff from development sites; and
- (4) Increased stormwater runoff rates and volumes, flooding, stream channel erosion, soil erosion, and nonpoint source pollutants are threats to the public health.

Therefore, the City of Port Aransas establishes this set of stormwater runoff regulations for the purpose of protecting local, regional and state water resources from degradation. It is determined that the regulation of stormwater runoff discharges from land development projects and other construction activities in order to control and minimize increases in stormwater runoff rates and volumes, erosion, and nonpoint source pollution associated with stormwater runoff is in the public interest and will prevent threats to public health and safety.

(b) Purpose

The purpose of this ordinance is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety, and welfare of the public residing in watersheds within this jurisdiction. This ordinance seeks to meet that purpose through the following objectives:

- (1) Minimize increases in stormwater runoff from any development in order to reduce flooding, siltation, increases in bay and estuary temperatures, and bank erosion, and maintain the integrity of channels; and

- (2) Minimize increases in nonpoint source pollution caused by stormwater runoff from development which would otherwise degrade local and receiving water quality; and
- (3) Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management controls and to ensure that these management controls are properly maintained and pose no threat to public safety.

(c) Applicability

To prevent the adverse impacts of stormwater runoff, the City of Port Aransas has developed a set of performance standards that must be met at new development sites.

(1) Generally

a. Geographic and Process Applicability

This ordinance shall be applicable to all subdivision and site plan applications for property within the city limits and the city's extraterritorial jurisdiction, unless eligible for an exemption or granted a waiver by the (jurisdictional stormwater authority) under the specifications of Section 4 of this ordinance.

b. Applicability to Sites Part of a Larger Plan of Development

The ordinance also applies to land development activities that are smaller than the minimum applicability criteria if such activities are part of a larger common plan of development that meets the following applicability criteria, even though multiple separate and distinct land development activities may take place at different times on different schedules.

c. Other Interested Officials

In addition, all plans must also be reviewed by local environmental protection officials to ensure that established water quality standards will be maintained during and after development of the site and that post construction runoff levels are consistent with any local and regional watershed plans.

(2) Exemptions

The following activities are exempt from these stormwater performance criteria:

- a. Any logging and agricultural activity;

- b. Repairs to any stormwater treatment practice deemed necessary by the City of Port Aransas.

(3) Applicability to Redevelopment

When a site development plan is submitted that qualifies as a redevelopment project as defined in Section 2 of this ordinance, only any newly created impervious cover is subject to these stormwater requirements. Final authorization of all redevelopment projects will be determined after a review by the City of Port Aransas.

(d) Compatibility with Other Permit and Ordinance Requirements

This ordinance is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of law. The requirements of this ordinance should be considered minimum requirements, and where any provision of this ordinance imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

(e) Severability

If the provisions of any article, section, subsection, paragraph, subdivision or clause of this ordinance shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any article, section, subsection, paragraph, subdivision or clause of this ordinance.

(f) Development of a Stormwater Design Manual

All stormwater and drainage shall be designed and constructed in accordance with the following:

(1) Adoption of the *Guidance for Sustainable Stormwater Drainage on the Texas Coast* manual

The City of Port Aransas has adopted the *Guidance for Sustainable Stormwater Drainage on the Texas Coast* manual. This manual includes a list of acceptable stormwater treatment practices, including the specific design criteria and operation and maintenance requirements for each stormwater practice. The manual may be updated and expanded from time to time, at the discretion of the local review authority, based on improvements in engineering, science, monitoring and local maintenance experience. Stormwater treatment practices that are designed and constructed in accordance with these design and sizing criteria will be presumed to achieve water quality performance standards of eighty (80) percent removal of total suspended solids (TSS).

(2) Adoption of the City of Port Aransas Storm Drainage Design Manual

The following manual and maps are hereby adopted by reference as though they were copied herein fully as the Storm Drainage Master plan of the City of Port Aransas:

- a. Storm Drainage Design Manual – October, 2005
- b. Storm Drainage Master Plan Maps – October, 2005

(3) Consistency with Flood Damage Prevention Regulations

All stormwater and drainage shall be designed and constructed in accordance with Chapter 8, Flood Damage Prevention, City of Port Aransas Code of Ordinances.

Section 2. Definitions

(a) Applicant

means a property owner or agent of a property owner who has filed an application for a stormwater management permit.

(b) Building

means any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal, or property, and occupying more than 100 square feet of area.

(c) Channel

means a natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

(d) Dedication

means the deliberate appropriation of property by its owner for general public use.

(e) Developer

means a person who undertakes land disturbance activities.

(f) Drainage Easement

means a legal right granted by a landowner to a grantee allowing the use of private land for stormwater management purposes.

(g) Payment in Lieu

means a payment of money in place of meeting all or part of the storm water performance standards required by this ordinance.

(h) Impervious Cover

means those surfaces that cannot effectively infiltrate rainfall (including such things as building rooftops, pavement, sidewalks, paved and unpaved driveways, parking areas, and streets, but not including swimming pools and ponds).

(i) Land Disturbance Activity

means any activity which changes the volume or peak flow discharge rate of rainfall runoff from the land surface. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity which bares soil or rock or involves the diversion or piping of any natural or man-made watercourse.

(j) Landowner

means the legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

(k) Maintenance Agreement

means a legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of storm water management practices.

(l) Nonpoint Source Pollution

means pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

(m) Off-Site Facility

means a stormwater management measure located outside the subject property boundary described in the permit application for land development activity.

(n) On-Site Facility

means a stormwater management measure located within the subject property boundary described in the permit application for land development activity.

(o) Redevelopment

means any construction, alteration or improvement exceeding one acre in areas where existing land use is high density commercial, industrial, institutional or multi-family residential.

(p) Stop Work Order

means an order issued which requires that all construction activity on a site be stopped.

(q) Stormwater Management

means the use of structural or non-structural practices that are designed to reduce storm water runoff pollutant loads, discharge volumes, peak flow discharge rates and detrimental changes in stream temperature that affect water quality and habitat.

(r) Stormwater Runoff

means flow on the surface of the ground, resulting from precipitation.

(s) Stormwater Treatment Practices (STPs)

means measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing or reducing point source or nonpoint source pollution inputs to stormwater runoff and water bodies.

(t) Water Quality Volume (WQV)

means the storage needed to capture and treat the storm identified in the stormwater guidance manual.

(u) Watercourse

means a permanent or intermittent stream or other body of water, either natural or manmade, which gathers or carries surface water.

(v) Waters of the United States (WOTUS)

threshold term in the Clean Water Act and establishes the scope of federal jurisdiction under the Act. The Clean Water Act does not define “waters of the United States”; rather, it provides discretion for EPA and the USACE to define “waters of the United States” in regulations. Generally, WOTUS includes bays and oceans, lakes, reservoirs, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds.

Section 3. Permit Procedures and Requirements

(a) Permit Required

No landowner or land operator shall receive any of the building, grading or other land development permits required for land disturbance activities without first meeting the requirements of this ordinance prior to commencing the proposed activity.

(b) Application Requirements

Unless specifically excluded by this ordinance, any landowner or operator desiring a permit for a land disturbance activity shall submit to the City of Port Aransas a permit application containing the material required by the stormwater design manual.

The stormwater management plan shall be prepared to meet the requirements of Section 5 of this ordinance, the maintenance agreement shall be prepared to meet the requirements of Section 7 of this ordinance, and fees shall be those established by the City of Port Aransas.

In addition to the above, the following documents shall be included in the submittal to the City of Port Aransas for any building permit, site permit or other permit involving land disturbance:

- (1) TPDES permit issued by Texas Commission on Environmental Quality (TCEQ), as applicable; and
- (2) US Army Corps of Engineers (USACE) Section 404 permit, as applicable

(c) Application Review Fees

The fee for review of any land development application shall be based on the amount of land to be disturbed at the site, and the fee structure shall be established by the City of Port Aransas. All of the monetary contributions shall be credited to a local budgetary category to support local plan review, inspection and program administration, and shall be made prior to the issuance of any building permit for the development.

(d) Application Procedures

The following procedure shall apply:

- (1) Applications for land disturbance activity permits must be filed with the City of Port Aransas. The City of Port Aransas may establish uniform submission dates and shall

publish a submission calendar annually should uniform submission dates be established.

- (2) The City of Port Aransas shall specify in appropriate forms the submission content, number of copies and other pertinent information to ascertain consistency with this Article, as well as any required review fees.
- (3) The City of Port Aransas shall inform the applicant whether the application, plan and maintenance agreement are approved or disapproved. If disapproved, the City of Port Aransas shall indicate specific deficiencies and citations.
- (4) If the stormwater management plan is disapproved, the applicant may revise the stormwater management plan.
- (5) If the final stormwater management plan is approved by the City of Port Aransas, all appropriate land disturbance activity permits shall be issued.

(e) Permit Duration

Permits issued under this Section shall be valid from the date of issuance through the date the City of Port Aransas notifies the permit holder that all stormwater management practices have passed the final inspection required under permit condition.

Section 4. Relief from Stormwater Management Requirements

(a) Waivers for Providing Stormwater Management

Every applicant shall provide for stormwater management as required by this ordinance, unless a written request is filed to waive this requirement. Requests to waive the stormwater management plan requirements shall be submitted to the City of Port Aransas for approval. In instances where one of the conditions below applies, the City of Port Aransas may grant a waiver in whole or in part from strict compliance with these stormwater management provisions as long as acceptable mitigation measures are provided:

- (1) It can be demonstrated that the proposed development is not likely to impair attainment of the objectives of this ordinance; or
- (2) Alternative minimum requirements for on-site management of stormwater discharges have been established in a stormwater management plan that has been approved by the City of Port Aransas and the implementation of the plan is required by local ordinance; or
- (3) Provisions are made to manage stormwater by an off-site facility. The off-site facility is required to be in place, to be designed and adequately sized to provide a level of

stormwater control that is equal to or greater than that which would be afforded by on-site practices and there is a legally obligated entity responsible for long-term operation and maintenance of the stormwater practice; or

- (4) The City of Port Aransas finds that meeting the minimum on-site management requirements is not feasible due to the natural or existing physical characteristics of a site.

(b) Payment in Lieu of Stormwater Management Practices

Where the City of Port Aransas waives all or part of the minimum stormwater management requirements, or where the waiver is based on the provision of adequate stormwater facilities provided downstream of the proposed development, the applicant shall be required to pay a fee in an amount as determined by the City of Port Aransas.

When an applicant obtains a waiver of the required stormwater management, the monetary contribution required shall be in accordance with a fee schedule (unless the developer and the stormwater authority agree on a greater alternate contribution) established by the City of Port Aransas, and based on the amount of impervious cover created by the development in question. All of the monetary contributions shall be credited to an appropriate capital improvements program project, and shall be made by the developer prior to the issuance of any building permit for the development.

(c) Dedication of Land

In lieu of a monetary contribution, an applicant may obtain a waiver of the required stormwater management by entering into an agreement with the City of Port Aransas for the granting of an easement or the dedication of land by the applicant, to be used for the construction of an off-site stormwater management facility. The agreement shall be entered into by the applicant and the City of Port Aransas prior to the recording of plats or, if no record plat is required, prior to the issuance of the building permit.

Section 5. General Performance Criteria for Stormwater Management

Unless judged by the City of Port Aransas to be exempt or granted a waiver, the following performance criteria shall be addressed for stormwater management at all sites:

- (a) All site designs shall establish stormwater management practices to control the peak flow rates of stormwater discharge associated with specified design storms and reduce the generation of stormwater. These practices should seek to utilize pervious areas for stormwater treatment and to infiltrate stormwater runoff from driveways, sidewalks, rooftops, parking lots, and landscaped areas to the maximum extent practical to provide treatment for both water quality and quantity.

- (b) Maximum retention or “draw-down” time for detention ponds shall not exceed 24 hours from the time of peak storage to the time of complete emptying of the pond, as determined by hydrograph routing or other calculations acceptable to the City. This requirement does not apply to facilities in which retention or “draw-down” time is required to be greater than 24 hours. All volume required for detention shall be available after 24 hours to allow for subsequent storms, including any portion of the water quality volume utilized for detention purposes.
- (c) All stormwater runoff generated from new development shall not discharge untreated stormwater directly into waters of the US (WOTUS) or a local waterbody without adequate treatment, and compliance with state and federal regulatory requirements. For new developments where such discharges are proposed, City of Port Aransas shall evaluate compliance with any mitigation requirements from the United States Army Corp of Engineers (USACE), Texas Commission on Environmental Quality (TCEQ), or other Federal or State Agency.

OPTION 1 – INCENTIVE APPROACH

- (d) For new development seeking incentives, development bonuses or credit under Chapter 16 Article IV Landscaping or Chapter 25 Zoning, structural stormwater treatment practices shall be designed to remove eighty (80) percent of the average annual post development total suspended solids load (TSS). It is presumed that a STP complies with this performance standard if it is:
 - (1) Sized to capture the prescribed water quality volume (WQV); and
 - (2) Designed according to the specific performance criteria outlined in the adopted Stormwater Design Manuals; and
 - (3) Constructed properly; and
 - (4) Maintained regularly.

OPTION 2 – REGULATORY APPROACH INITIAL

- (d) For new development beyond fifty (50) percent impervious cover, structural stormwater treatment practices shall be designed to remove eighty (80) percent of the average annual post development total suspended solids load (TSS). It is presumed that a STP complies with this performance standard if it is:
 - (1) Sized to capture the prescribed water quality volume (WQV); and
 - (2) Designed according to the specific performance criteria outlined in the adopted Stormwater Design Manuals; and

(3) Constructed properly; and

(4) Maintained regularly.

OPTION 3 – REGULATORY APPROACH FINAL

(d) For new development, structural stormwater treatment practices shall be designed to remove eighty (80) percent of the average annual post development total suspended solids load (TSS). It is presumed that a STP complies with this performance standard if it is:

(1) Sized to capture the prescribed water quality volume (WQV); and

(2) Designed according to the specific performance criteria outlined in the adopted Stormwater Design Manuals; and

(3) Constructed properly; and

(4) Maintained regularly.

Section 6. Requirements for Stormwater Management Plan Approval

(a) Stormwater Management Plan Required

No application for development will be approved unless it includes a stormwater management plan detailing in concept how runoff and associated water quality impacts resulting from the development will be controlled or managed. This plan must be prepared by an engineer licensed in the State of Texas and must indicate whether stormwater will be managed on-site or off-site and, if on-site, the general location and type of practices.

The stormwater management plan(s) shall be referred for comment to all other interested agencies, and any comments must be addressed in a final stormwater management plan. This final plan must be signed by a licensed professional engineer (PE), who will verify that the design of all stormwater management practices meet the submittal requirements outlined in the Submittal Checklist found in the stormwater design manual. No building, grading, or sediment control permit shall be issued until a satisfactory final stormwater management plan, or a waiver thereof, shall have undergone a review and been approved by the City of Port Aransas after determining that the plan or waiver is consistent with the requirements of this ordinance.

(b) Stormwater Management Plan Requirements

A stormwater management plan shall be required with all permit applications and will include the information required by the stormwater guidance manual.

The applicant must ensure access to all stormwater treatment practices at the site for the purpose of inspection and repair by securing all the maintenance easements needed on a permanent basis. These easements will be recorded with the plan and will remain in effect even with transfer of title to the property.

The applicant must provide for appropriate BMPs during construction to minimize erosion.

The applicant must execute an easement and an inspection and maintenance agreement binding on all subsequent owners of land served by an on-site stormwater management measure in accordance with the specifications of this ordinance.

(c) Erosion Control Plan

- (1) In order to clearly identify all erosion and sediment control measures to be installed and maintained throughout the duration of the project, a detailed erosion control plan shall be required prior to the issuance of the site development permit or the building permit in accordance with adopted design manuals.
- (2) Each developer shall implement and maintain the erosion control measures shown on its approved erosion control plan or otherwise approved by the City in order to minimize the erosion and the transport of silt, earth, topsoil, etc., by water runoff or construction activities, beyond the limits of the developer's site onto city streets, drainage easements, drainage facilities, storm drains or other city property, prior to beginning any land-disturbing activity.
 - a. The contractor shall install erosion/sedimentation controls, tree/natural area protective fencing, and conduct "Pre-Construction" tree fertilization (if applicable) prior to any site preparation work (clearing, grubbing or excavation).
 - b. The placement of erosion/sedimentation controls shall be in accordance with the approved erosion control plan or otherwise approved by the City. It shall be available for review by the City at all times during construction.
 - c. The contractor is required to provide a certified inspector that is either a licensed engineer (or person directly supervised by the licensed engineer) or Certified Professional in Erosion and Sediment Control (CPESC or CPESC - IT), Certified Erosion, Sediment and Stormwater - Inspector (CESSWI or CESSWI - IT) or Certified Inspector of Sedimentation and Erosion Controls (CISEC or CISEC - IT) certification to inspect the controls and fences at weekly or bi-weekly intervals and after one-half (1/2) inch or greater rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt

accumulation at controls must be removed when the depth reaches six (6) inches or one-third ($\frac{1}{3}$) of the installed height of the control whichever is less.

- d. Prior to final acceptance by the City, haul roads and waterway crossings constructed for temporary contractor access must be removed, accumulated sediment removed from the waterway and the area restored to the original grade and revegetated. All land clearing debris shall be disposed of in approved spoil disposal sites.
- (3) It shall be an offense for a developer or a third party performing work on a project to violate any of the requirements of this article, including, but not limited to, the following:
- a. Conducting any land-disturbing or construction activity without an approved erosion control plan for the location where the violation occurred.
 - b. Failing to install erosion control devices or to maintain erosion control devices throughout the duration of land-disturbing activities, in compliance with the approved erosion control plan for the location where the violation occurred.
 - c. Failing to remove off-site sedimentation that is a direct result of land-disturbing activities where such off-site sedimentation results from the failure to implement or maintain erosion control devices as specified in an approved erosion control plan for the location where the violation occurred.
 - d. Allowing sediment-laden water resulting from below-ground installations to flow from a site without being treated through an erosion control device.
 - e. Failing to repair damage to existing erosion control devices, including replacement of existing grass or sod.
- (4) Written notice of violation shall be given to the developer or his job site representative as identified in the erosion control plan for a site. Such notice shall identify the nature of the alleged violation and the action required to obtain compliance with the intent of the approved erosion control plan.

(d) TPDES Permit and City Notification

- (1) Any operator who intends to obtain coverage as an operator for stormwater discharges from a construction site under a TPDES general permit for stormwater discharges from construction sites (the construction general permit) from Texas Commission on Environmental Quality (TCEQ) shall submit a signed copy of its Notice of Intent (NOI) to the city engineer at least fourteen (14) days prior to the commencement of construction activities. If the construction activity is already underway upon the effective date of this article, the NOI shall be submitted within

thirty (30) days. For stormwater discharges from construction sites where the operator changes, an NOI shall be submitted to the city engineer at least seven (7) days prior to when the operator commences work at the site.

- (2) A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared and implemented in accordance with the requirements of the TPDES construction general permit, or any individual or group TPDES permit issued for stormwater discharges from the construction site. The SWPPP shall include any additional requirement imposed by or under this article and any other provision of the city's Code of Ordinances.
- (3) On a site of more than one acre in total land area or a site which is impacted by off-site drainage for more than one acre, the SWPPP shall be prepared, signed, and sealed by a registered professional engineer. The signature and seal of the registered professional engineer shall constitute certification that the SWPPP fully complies with the requirements of the construction general permit, or with any applicable individual or group TPDES permit issued for stormwater discharges from the construction site, and with any additional requirement imposed by or under this article. The SWPPP shall contain the name, title, and business address of the registered professional engineer signing it, and the date that he/she did so.
- (4) The SWPPP shall be completed prior to the submittal of the NOI to the city and, for new construction, prior to the commencement of construction activities. The SWPPP shall be updated and modified as appropriate and as required by the construction general permit and this article. Any update or modification to the SWPPP shall be prepared, signed, and sealed by a registered professional engineer, if the original SWPPP was required to have been prepared by a registered professional engineer.
- (5) A copy of any NOI that is required shall be submitted to the city in conjunction with any application for a building permit, site development, subdivision plat approval, site development plan approval, and any other city approval necessary to commence or continue construction at the site.
- (6) The city engineer shall require any operator who is required to prepare a SWPPP to submit the SWPPP, and any modifications thereto, to the city engineer for review. Such submittal and review of the SWPPP shall be required by the city prior to commencement of or during construction activities at the site.
- (7) Upon the city's review of the SWPPP and any site inspection that it may conduct, the city may deny approval of any building permit, site development permit, subdivision plat, site development plan, or any other city approval necessary to commence or continue construction, or to assume occupancy, on the grounds that the SWPPP does not comply with the requirements of the construction general permit, any individual or group TPDES permit issued for stormwater discharge from the construction site, or any additional requirement imposed by or under this article. Also, if at any time the city determines that the SWPPP is not being fully implemented, the city may

similarly deny approval of any building permit, site development permit, subdivision plat, site development plan or any other city approval necessary to commence or continue construction, or to assume occupancy, at the site.

- (8) The owner shall make the SWPPP and any modification thereto available to the city upon request, and to TCEQ inspectors.
- (9) The city may notify the owner at any time that the SWPPP does not meet the requirements of the construction general permit, any applicable individual or group TPDES permit issued for stormwater discharges from the construction site, or any additional requirement imposed by or under this article. Such notification shall identify those provisions of the permit or this article which are not being met by the SWPPP, and identify which provisions of the SWPPP require modifications in order to meet such requirements. Within seven (7) days of such written notification from the city, the operator shall make the required changes to the SWPPP and shall submit to the city a written certification that the requested changes have been made.
- (10) The operator shall amend the SWPPP whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the potential for the discharge of pollutants to the stormwater drainage system or to waters of the United States (WOTUS), and which has not otherwise been addressed in the SWPPP, or if the SWPPP proves to be ineffective in eliminating or significantly minimizing pollutants, or in otherwise achieving the general objective of controlling pollutants in stormwater discharges associated with construction activity. In addition, the SWPPP shall be amended to identify any new contractor or subcontractor that will implement a measure in the SWPPP.
- (11) Qualified personnel, provided by the operator of the construction site, shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site, at least once every seven calendar days and within twenty-four (24) hours of the end of the storm that is one-half inch (0.5") or greater. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP shall be observed to ensure that they are operating correctly. Discharge locations or points that are accessible shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.
- (12) Based on the results of the inspections, the site description and the pollution prevention measures identified in the SWPPP, the SWPPP shall be revised as appropriate, but in no case later than seven calendar days following the inspection.

Such modifications shall provide for timely implementation of any changes to the SWPPP within seven calendar days following the inspection.

- (13) A report summarizing the scope of any inspection, and the name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP, and actions taken in accordance with subsection (12) above shall be made and retained as part of the SWPPP for at least three (3) years from the date that the site is finally stabilized. Such report shall identify any incidence of noncompliance. Where a report does not identify any incidence of noncompliance, the report shall contain a certification that the facility is in compliance with the SWPPP, the facility's TPDES permit, and this article. The report shall be certified and signed by the person responsible for making the report.
- (14) The owner shall retain copies of any SWPPP and all reports required by this article or by the TPDES permit for the site, and records of all data used to complete the NOI, for a period of at least three (3) years from the date that the site is finally stabilized.
- (15) Where a site has been finally stabilized and all stormwater discharges from construction activities that are authorized by this article and by the TPDES permit for those construction activities are eliminated, or where the operator of all stormwater discharges at a facility changes, the owner of the construction site shall submit to the city a notice of termination (NOT) that includes the information required for notices of termination by part VIII of the construction general permit.
- (16) Upon final stabilization of the construction site, the owner or the duly authorized representative thereof shall submit written certification to the city that the site has been finally stabilized. The city may withhold an occupancy or use permit for any premises constructed on the site until such certification of final stabilization has been filed and the city has determined, following any appropriate inspection, that final stabilization has, in fact, occurred and that any required permanent structural controls have been completed.

(e) Performance Bond and Security

The City of Port Aransas may, at its discretion, require the submittal of a performance security or bond prior to issuance of a permit in order to insure that the stormwater practices are installed by the permit holder as required by the approved stormwater management plan. The amount of the installation performance security shall be the total estimated construction cost of the stormwater management practices approved under the permit, plus twenty-five (25) percent. The performance security shall contain forfeiture provisions for failure to complete work specified in the stormwater management plan.

The installation performance security shall be released in full only upon submission of "as built plans" and written certification by a licensed professional engineer that the stormwater practice has been installed in accordance with the approved plan and other applicable provisions of this ordinance. The City of Port Aransas will make a final inspection of the stormwater practice to ensure that it is in compliance with the approved plan and the provisions of this ordinance. Provisions for a partial pro-rata release of the performance security based on the completion of various development stages can be done at the discretion of the City of Port Aransas.

Section 7. Maintenance and Repair of Stormwater Facilities

(a) Maintenance Easement

Prior to the issuance of any permit that has a stormwater management facility as one of the requirements of the permit, the applicant or owner of the site must execute a maintenance easement agreement that shall be binding on all subsequent owners of land served by the stormwater management facility. The agreement shall provide for access to the facility at reasonable times for periodic inspection by the City of Port Aransas, or their contractor or agent, and for regular or special assessments of property owners to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by this ordinance. The easement agreement shall be recorded by the City of Port Aransas in the land records.

(b) Maintenance Covenants

Maintenance of all stormwater management facilities shall be ensured through the creation of a formal maintenance covenant that must be approved by the City of Port Aransas and recorded into the land record prior to final plan approval. As part of the covenant, a schedule shall be developed for when and how often maintenance will occur to ensure proper function of the stormwater management facility. The covenant shall also include plans for periodic inspections to ensure proper performance of the facility between scheduled cleanouts.

The City of Port Aransas, in lieu of a maintenance covenant, may accept dedication of any existing or future stormwater management facility for maintenance, provided such facility meets all the requirements of this chapter and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.

(c) Requirements for Maintenance Covenants

All stormwater management facilities must undergo, at the minimum, an annual inspection to document maintenance and repair needs and ensure compliance with the requirements of this ordinance and accomplishment of its purposes. These needs may include: removal of silt, litter and other debris from all catch basins, inlets and drainage

pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation. Any maintenance needs found must be addressed in a timely manner, as determined by the City of Port Aransas, and the inspection and maintenance requirement may be increased as deemed necessary to ensure proper functioning of the stormwater management facility.

(d) Inspection of Stormwater Facilities

Inspection programs may be established on any reasonable basis, including but not limited to routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other stormwater treatment practices.

(e) Right-of-Entry for Inspection

When any new drainage control facility is installed on private property, or when any new connection is made between private property and a public drainage control system, sanitary sewer or combined sewer, the property owner shall grant to the (jurisdictional stormwater authority) the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This includes, but is not limited to, the right to enter a property when it has a reasonable basis to believe that a violation of this ordinance is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this ordinance.

(f) Failure to Maintain Practices

If a responsible party fails or refuses to meet the requirements of the maintenance covenant, the City of Port Aransas, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work to place the facility in proper working condition. In the event that the stormwater management facility becomes a danger to public safety or public health, the City of Port Aransas shall notify the party responsible for maintenance of the stormwater management facility in writing. Upon receipt of that notice, the responsible person shall have 60 days to effect maintenance and repair of the facility in an approved manner. After proper notice, the City of Port Aransas may assess the owner(s) of the facility for the cost of repair work and any penalties; and the cost of the work shall be a lien on the property, or prorated against the beneficial users of the property, and may be placed on the tax bill and collected as ordinary taxes by the municipality.

(g) Requirements for Maintenance Associations.

- (1) Landowners and land users outside the city limits and not within a utility district may elect to form a maintenance association (MA) in accordance with this section prior to permit issuance. All MAs must post financial security or create a maintenance fund for the purpose of maintaining all stormwater management controls required by this article. The duties and responsibilities of an MA may be performed by a homeowners' association, property owners' association, or like entity if it meets the requirements of this section. The maintenance of all BMPs shall be in accordance with the applicable permits and the approved maintenance plan.
- (2) The applicant must submit to the city the approved articles of association for the MA, as well as a map showing the boundaries of its jurisdiction. The MA must have the following general powers which are reflected in the articles of association:
 - a. Own and convey property;
 - b. Operate and maintain common property, specifically the stormwater management controls;
 - c. Establish rules and regulations;
 - d. Assess members maintenance fees and enforce said assessments;
 - e. Sue and be sued;
 - f. Contract for services to provide operation and maintenance;
 - g. If the MA is a homeowners' association, it must have as members all the homeowners, lot owners, property owners, or unit owners;
 - h. The MA shall exist in perpetuity; however, if the MA is dissolved or annexed into the city or a utility district, the articles of association must provide that the property consisting of the stormwater management controls shall be conveyed to the city or a utility district; and
 - i. It shall be clearly stated in the articles of association of the MA that:
 1. It is the responsibility of the MA to operate and maintain the stormwater controls;
 2. The water quality controls are owned by the MA or described therein as common property;
 3. There is a method of assessing and collecting the assessment for operation and maintenance of the stormwater management controls; and

4. Any amendment that would affect the stormwater management controls must be approved by the city.

(3) If an MA is proposed for a project which will be developed in phases and subsequent phases will utilize the stormwater management controls, the MA must have the ability to accept future phases into the MA.

(h) Annual Operating Permit

(1) General Requirements.

The owners or operators of all new stormwater management controls for multifamily residential development, for single-family subdivision development, and for nonresidential development must obtain an annual operating permit. The owner or operator is responsible for the proper operation and maintenance of the control and for annual permit renewal. The first operating permit will be issued by the city upon:

- a. The completion of construction, if applicable;
- b. Inspection of the control by the City after review of the maintenance plan accompanying the design engineer's concurrence letter of the completion of construction;
- c. Final inspection approval by the City;
- d. The issuance of a Certificate of Compliance or a Certificate of Occupancy by the City, if applicable; and
- e. Payment of the permit fee.

(2) Procedures.

All stormwater management controls must be maintained in accordance with this article, and each permitted control will be inspected each year by the city to confirm that proper maintenance, as described in the maintenance plan, has occurred prior to renewal of the permit. An operating permit shall be required for developed sites with existing stormwater management control only when new development or redevelopment occurs.

(3) Information Requirements.

The City may establish components and submission requirements to implement this Section.

(4) Renewal.

- a. It is the responsibility of the permittee to apply to the city for renewal of the permit no later than thirty (30) calendar days before the existing permit expires. The application must be accompanied by payment of the appropriate renewal fee, updated information concerning ownership or facility operation and enforcement status. Upon receipt of all information and fees, including a favorable inspection and maintenance report, the city will renew the permit for a period of one (1) year.
- b. Any repair work or modifications of a control not specified in the maintenance plan shall require the permittee's engineer's concurrence letter, prior to renewal of the permit.
- c. Permit renewal will be withheld if there is pending enforcement action against the permittee based on any violations of water quality regulations at the site.

(5) Transfer.

The transfer of the operating permit shall require the completion of a new permit application, and must be submitted not later than thirty (30) calendar days after transfer of ownership or operation of the control.

(i) Functionality Inspections.

(1) In addition to the inspection and permitting process provided in this Ordinance, each owner of on-site stormwater management controls facilities shall obtain from a qualified professional registered engineer a functionality inspection no less than once every five years. The first functionality test is due on or before the expiration of five years from the date the facility was accepted by the city and every five years thereafter. If no functionality inspection has occurred by a facility that was accepted by the city more than five years from the effective date of the ordinance from which this section was adopted, such facility shall obtain a functionality inspection on or before the expiration of one year from the effective date of the ordinance from which this section was adopted. In addition, functionality inspections shall be conducted during or within (72 hours) following a 1-year storm event which has produced or is producing a depth of precipitation of 1.33 inches during six hours or 0.22 inches/hour. The following, if present, must be inspected and evaluated at each water quality facility, including but not limited to:

- a. Dams, berms, levees.
- b. Spillways.
- c. Inlets.

- d. Pipes, culverts, and appurtenances.
 - e. Outlets.
 - f. Bank erosion.
 - g. Sedimentation.
 - h. Tree/vegetation management.
 - i. Trash and debris removal.
 - j. Water quality impairments.
 - k. Backup power.
 - l. Reservoir drawdown capability.
 - m. Security issues.
 - n. Emergency spillway/service spillway.
 - o. Service outlet structure.
 - p. Service inlet structure.
 - q. Downstream hazard conditions.
 - r. Seepage on downstream slope.
 - s. Downstream embankment general condition.
 - t. Upstream embankment.
 - u. Crest of embankment.
 - v. Irrigation area.
- (2) The purpose of the functionality inspection shall be to determine if each stormwater management control facility is:
- a. Operating properly;

- b. Pumps, electrical systems, and all appurtenances applicable to the BMP's working;
 - c. Structurally integrity protected;
 - d. Accomplishing the purposes for which it was designed and installed; and
 - e. Can be improved or modified in a manner that is likely to improve its functionality or efficiency.
- (3) The engineer conducting the functionality inspection shall prepare and file with the city and the owner a written report that includes the engineer's evaluation of whether the water quality facility is accomplishing the purposes described in subsection (2), including any analysis of optional actions, cost/benefit, any risk associated with the facility, and any other factor that, in the engineer's opinion, should be brought to the attention of the owner and the city. The owner is responsible for the operation and maintenance of a water quality management facility and shall make records of all maintenance installation and repairs. Records of the inspection, maintenance and repairs must be completed, signed by the responsible engineer, and retained for a minimum of five years for review upon city request.
- (4) The owner of the water quality facility shall be responsible for all costs associated with procuring the functionality inspection and shall provide a written copy of the engineer's inspection report not later than thirty (30) days after the sooner of the fifth anniversary of the date the facility was first installed and permitted or the last functionality inspection.
- (5) Failure to obtain a functionality inspection may result in revocation of the owner's permit and such other enforcement or penalties as the city may determine to be appropriate.
- (6) In the event that the inspection reveals that the water quality facility is not accomplishing the purposes for which it was constructed, or that new or additional BMPs, stormwater management controls, or facilities are necessary for proper functioning of the facility or the accomplishment of its intended purposes, the owner shall be required to implement such BMPs or stormwater management controls or to construct such facilities and, to the extent necessary, amend the applicable stormwater pollution prevention plan, TPDES permit, stormwater management controls maintenance plan, pollution control permit, or restrictive covenant as a condition to renewal of the owner or operator's annual operating permit. Deficiencies must be addressed within 90 days from the date identified unless additional time is approved by the city engineer. The person responsible for facility inspection must provide documentation to the city demonstrating that each deficiency identified in the inspection report has been corrected. Additional inspection reports may be required

by the city if an event occurs, such as a large storm event, which in the opinion of the city engineer jeopardizes the structural integrity or function of the facility.

Section 8. Enforcement and Penalties

(a) Violations

Any development activity that is commenced or is conducted contrary to this ordinance, may be restrained by injunction or otherwise abated in a manner provided by law.

(b) Notice of Violation

When the City of Port Aransas determines that an activity is not being carried out in accordance with the requirements of this Ordinance, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:

- (1) The name and address of the owner or applicant; and
- (2) The address when available or a description of the building, structure or land upon which the violation is occurring; and
- (3) A statement specifying the nature of the violation; and
- (4) A description of the remedial measures necessary to bring the development activity into compliance with this Ordinance and a time schedule for the completion of such remedial action; and
- (5) A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed; and
- (6) A statement that the determination of violation may be appealed to the City of Port Aransas by filing a written notice of appeal within fifteen (15) days of service of notice of violation.

(c) Stop Work Orders

Persons receiving a notice of violation will be required to halt all construction activities. This "stop work order" will be in effect until the City of Port Aransas confirms that the development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in revocation of a permit as well as civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this ordinance

(d) Civil and Criminal Penalties

Any person who violates the provisions of this Ordinance may be subject to civil penalties as set forth in chapter 7 of the Texas Water Code. Penalties ranging from \$50 to \$25,000 for each day of violation may be imposed pursuant to section 7.102 of the Water Code. Criminal penalties may also be imposed for unauthorized discharges, failure to use pollution control devices or practices, or for intentionally or knowingly submitting false information from an application or plan pursuant to Water Code sections 7.147, 7.148 and 7.149. Pursuant to Water Code section 7.187, the criminal penalties can include fines and incarceration.

(e) Restoration of Lands

Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the City of Port Aransas may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

(f) Holds on Occupation Permits

Certificates of occupancy or other occupation permits will not be granted until corrections to all stormwater practices have been made and accepted by the City of Port Aransas.

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Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied.

PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

City Secretary
City of Port Aransas, Texas

ZONING ORDINANCE AMENDMENT

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 6 to improve parking specifications by requiring permeable surfaces when the parking provided exceeds the required minimum by more than 25 percent.*
- *ORD 14 to regulate cut and fill practices for a broader range of project types.*
- *ORD 16 to establish Green Stormwater Infrastructure criteria and incentivize implementation of green stormwater infrastructure for both new development and redevelopment*
- *ORD 17 to broaden applicability of development permit to capture a broader range of project types*

ORDINANCE NO. ____ - ____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH ENVIRONMENTAL CONTROLS AND SURFACING STANDARDS IN THE ZONING ORDINANCE; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 25, Sec. 25-146., is amended as follows:

Sec. 25-146. – Environmental Controls Established.

- (a) Screening. Open storage and loading or service areas shall be screened from any adjacent residence or public way by six-foot, opaque fencing, junk, trash or debris shall be confined out of sight.
- (b) Green space. In any multifamily dwelling development there shall be three hundred twenty-five (325) square feet of green space per dwelling unit average.

The City of Port Aransas, in order to encourage implementation of stormwater management practices supportive of reduced stormwater runoff rates and volumes, reduced quantities of water-borne pollutants, reduced erosion and enhance hydrologic response of local watersheds, and to recognize the aesthetic value of low impact development stormwater infrastructure, has adopted the following green space incentive credits:

- (1) New Development: The area of a lot delineated as an approved stormwater treatment practice under Chapter 16, Article V Stormwater Management and Drainage shall count two (2) times for the purposes of satisfying the amount of green space per dwelling unit average.
 - (2) Redevelopment of a Previously Developed Lot: The area of a lot delineated as an approved stormwater treatment practice under Chapter 16, Article V Stormwater Management and Drainage shall count three (3) times for the purposes of satisfying the amount of green space per dwelling unit average.
- (c) No machine, process, or procedure shall be employed on any property in the city, in which:
 - (1) Emission of smoke, dust, or noxious, toxic or lethal gases that are deemed "excessive" above normal operations that produce such emissions, and that are detectable beyond the perimeter of the property that causes material distress, discomfort or injury to persons of ordinary sensibilities in the immediate vicinity;
 - (2) Materials are stored or accumulated in such a way that they may be carried by rainwater in natural drainage channels beyond the limits of the property, which are noxious, toxic, radioactive, contain oil or grease, wood, cellulose fibers, hair, feathers, or plastic, or have a pH factor greater than nine (9) or less than six (6);
 - (3) Vibration is discernible beyond the property line.

- (d) Septic systems. In the absence of public water or public sewer, no building permit shall be issued until the lot meets all applicable requirements of this chapter, and a septic system meeting State regulations has been approved by Nueces County Water Control District No. 4.
- (e) Drainage and stormwater management. If a development project is not directly associated with a building permit or subdivision development a development permit shall be required for any manmade change in improved and unimproved real estate, said development including but not limited to excavation or fill of material, mining, grading, or paving. If the development is associated with a building permit or subdivision, the required development information shall be included with the submitted construction plans.
 - (1) For drainage and stormwater design, all development within the city shall utilize the policies and technical information standards as set forth in the latest edition of the City of Port Aransas "Storm Drainage Design manual." (For more information, see also: Chapter 8, flood damage prevention, **Chapter 16 Article V, stormwater management and drainage, and/or** the development permit on file with the building department).
 - (2) The development permit shall identify and preserve wetlands, critical habitat areas, natural depressions and storage, and buffers of such sensitive areas.
- ~~(f) Exemptions from development permit.
 - (1) The project is solely for the blanket filling of a residential or commercial property with a fill depth less than one (1) foot in depth.
 - (2) The project consist of filling isolated portions of a residential or commercial property that exceed one (1) foot in depth and are determined by the building official to be inconsequential in regards to its effect on the properties drainage or impacts to adjacent properties.~~
- (g) Wetlands. It is the sole responsibility of the property owner to determine whether or not their proposed development activity impacts wetlands that are under the jurisdiction of the U.S. Army Corps of Engineers.

Section 2: The City of Port Aransas Code of Ordinances Chapter 25, Sec. 25-159., is amended as follows:

Sec. 25-159. – Surfacing Standards

- (a) All parking areas shall have durable surfaces for vehicle use areas, shall be properly drained and shall be designed with regard to pedestrian safety. A durable surface shall consist of an

improved surface, including concrete, asphalt, stone, compacted shell and other permanent surfaces. Each parking space shall be accessible from a driveway.

- (b) If the total amount of parking spaces provided exceeds twenty-five (25) percent of the minimum parking spaces required by Sec. 25-161, at least twenty-five (25) percent of all hardscape and paving (other than the building footprint) shall be comprised of permeable surfaces allowing the infiltration of stormwater.

Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied..

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PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

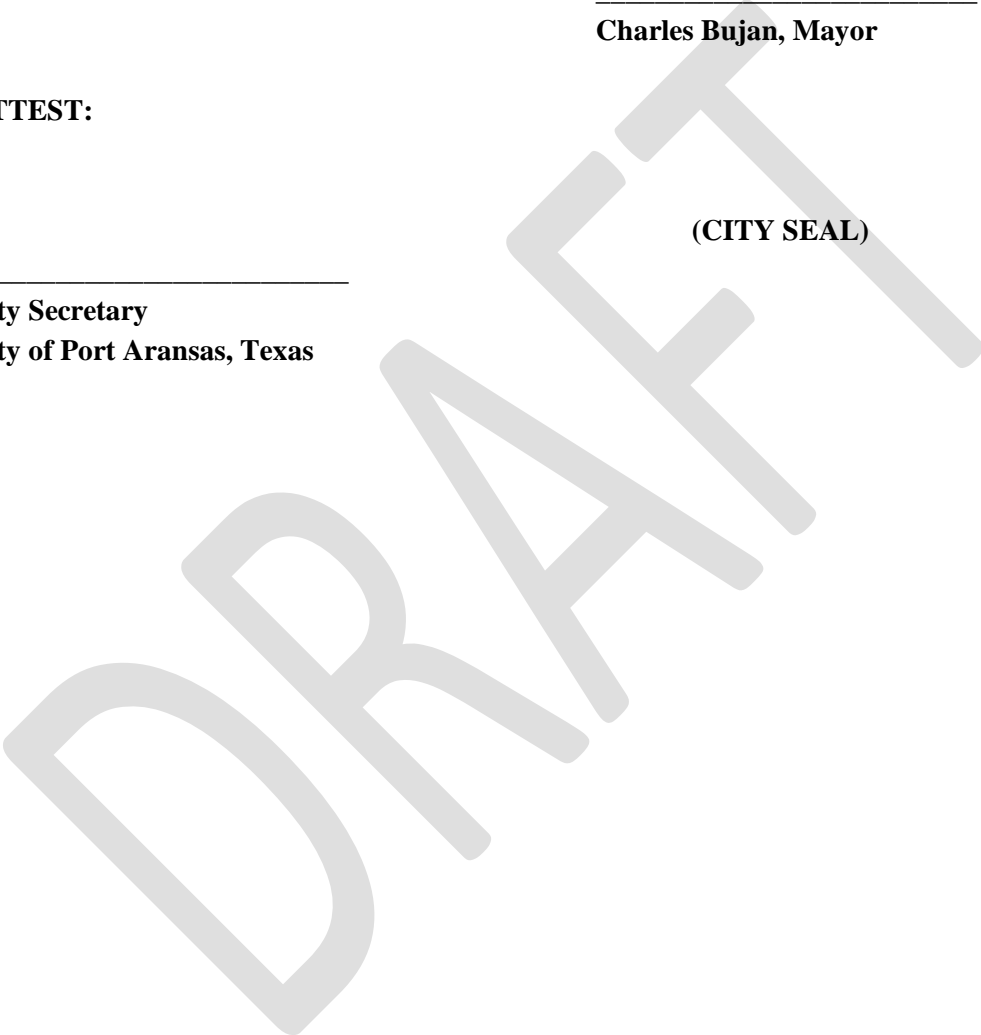
APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

City Secretary
City of Port Aransas, Texas



LANDSCAPE ORDINANCE AMENDMENT

Contains regulatory language relevant to the following Ordinance Best Management Practices:

- *ORD 1 to incentivize sustainable renovations*
- *ORD 2 to incentivize identification and preservation of sensitive areas*
- *ORD 3 to incentivize reducing disturbance of natural land/systems*
- *ORD 6 to improve parking specifications related to landscape placement supporting improved stormwater runoff*
- *ORD 15 to incentivize implementation of green stormwater infrastructure for both new development and redevelopment*

ORDINANCE NO. _____ - _____

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, NUECES COUNTY, TEXAS, SETTING FORTH LANDSCAPING REQUIREMENTS AND LANDSCAPE INCENTIVES AND CREDITS FOR THE IMPLEMENTATION OF LOW IMPACT DEVELOPMENT STORMWATER MANAGEMENT FACILITIES; PROVIDING FOR A PENALTY; PROVIDING FOR ASSOCIATED FEES; PROVIDING FOR A SEVERABILITY CLAUSE AND PROVIDING AN EFFECTIVE DATE; PROVIDING FOR A SAVINGS CLAUSE AND REPEALING CONFLICTING ORDINANCES OR RESOLUTIONS.

WHEREAS, the City Council finds the City of Port Aransas is a Texas Home-Rule Municipality as that term is defined by Texas law; and

WHEREAS, the City Council has decided to amend the Code of Ordinances as more specifically set forth herein; and

WHEREAS, the City Council of the City of Port Aransas has determined that the provisions of this Ordinance will promote the health, safety, morals and the general welfare of the City of Port Aransas and its surrounding areas; and

WHEREAS, this Ordinance was adopted at a meeting held in strict compliance with the Texas Open Meetings Act;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ARANSAS, TEXAS:

Section 1: The City of Port Aransas Code of Ordinances Chapter 16, Sec. 16-143 and 16-144, is amended as follows:

Sec. 16-143. – Landscaping Requirements

(a) General requirements.

- (1) No art objects, decorative pieces, or shade devices may be used to satisfy the requirements of this Article.
- (2) Permeable/Pervious Area: All planted areas and tree wells shall provide sufficient permeable/pervious area to foster plant maturity and health.
- (3) Water sources: If an irrigation system is not installed at the time of installation, a hose bib must be provided within eighty (80) feet of any planted area.
- (4) Plant heights are measured from natural grade or if the plant is in a planter/container, from the soil level in the planter/container.
- (5) Landscaping shall be placed, and landscape borders design with sufficient openings, to allow for stormwater runoff to flow into and through the landscape areas before leaving the site.

Sec. 16-144. – Landscaping Points

- (a) Required landscaping points: The landscaping points required for each lot shall be equivalent to twenty percent (20%) of the lot area. For example, a five thousand (5,000) square foot lot would require one thousand (1,000) points while a three thousand (3,000) square foot lot would require six hundred (600) points.
- (b) Landscaping under this Code shall earn points with plantings as indicated on the Point Tabulation Table in Section 16.145 of this Article. No plan considered intrusive/invasive shall receive points under this Code.
- (c) Credit for Implementation of Low Impact Development Stormwater Practices.

The City of Port Aransas, in order to encourage implementation of stormwater management practices supportive of reduced stormwater runoff rates and volumes, reduced quantities of water-borne pollutants, reduced erosion and enhance hydrologic response of local watersheds, and to recognize the aesthetic value of low impact development stormwater infrastructure, has adopted the following landscape incentive credits:

- (1) New Development: The landscape plant classification points shall count two (2) times the amounts shown on the Point Tabulation Table in Section 16.145 of this Article for all plant

materials included in the area of a lot delineated as an approved stormwater treatment practice under Chapter 16, Article V Stormwater Management and Drainage.

- (2) Redevelopment of a Previously Developed Lot: The landscape plant classification points shall count three (3) times the amounts shown on the Point Tabulation Table in Section 16.145 of this Article for all plant materials included in the area of a lot delineated as an approved stormwater treatment practice under Chapter 16, Article V Stormwater Management and Drainage.

(d) Credit for Preservation of Sensitive Areas.

The City of Port Aransas, in order to encourage preservation of sensitive areas that play a role in reduced stormwater runoff rates and volumes, reduced quantities of water-borne pollutants, reduced erosion and enhance hydrologic response of local watersheds, and to recognize the aesthetic value of maintaining such areas in their natural state, has adopted the following incentive credits:

- (1) New Development: Area delineated as wetlands, critical habitat areas, natural depressions and storage, and buffers of such sensitive areas, as identified in Sec. 25-146(e) of this Code, shall be deducted from the lot area for purposes of determining the required landscaping points in Sec. 16-144(a).
- (2) Redevelopment of a Previously Developed Lot: Restoration of areas delineated as previous wetlands, critical habitat areas, natural depressions and storage, and buffers of such sensitive areas, as identified in Sec. 25-146(e) of this Code, shall be deducted from the lot area for purposes of determining the required landscaping points in Sec. 16-144(a).

Section 2: If any clause or provision of this Ordinance shall be deemed to be unenforceable for any reason, such unenforceable clause or provision shall be severed from the remaining portion of the Ordinance, which shall continue to have full force and effect.

Section 3. All ordinances, parts of ordinances, or resolutions in conflict herewith are expressly repealed.

Section 4. Effective Date. Pursuant to Section 3.12(c) of the City Charter, this ordinance is effective upon adoption, except that every ordinance imposing any penalty, fine or forfeiture shall become effective only after having been published once in its entirety, or a caption that summarizes the purpose of the ordinance and the penalty for violating the ordinance in a newspaper designated as the official newspaper of the City. An ordinance required by the Charter to be published shall take effect when the publication requirement is satisfied..

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DRAFT

PASSED, APPROVED AND ADOPTED by the City Council of the City of Port Aransas, on this the ____ day of _____, 2021.

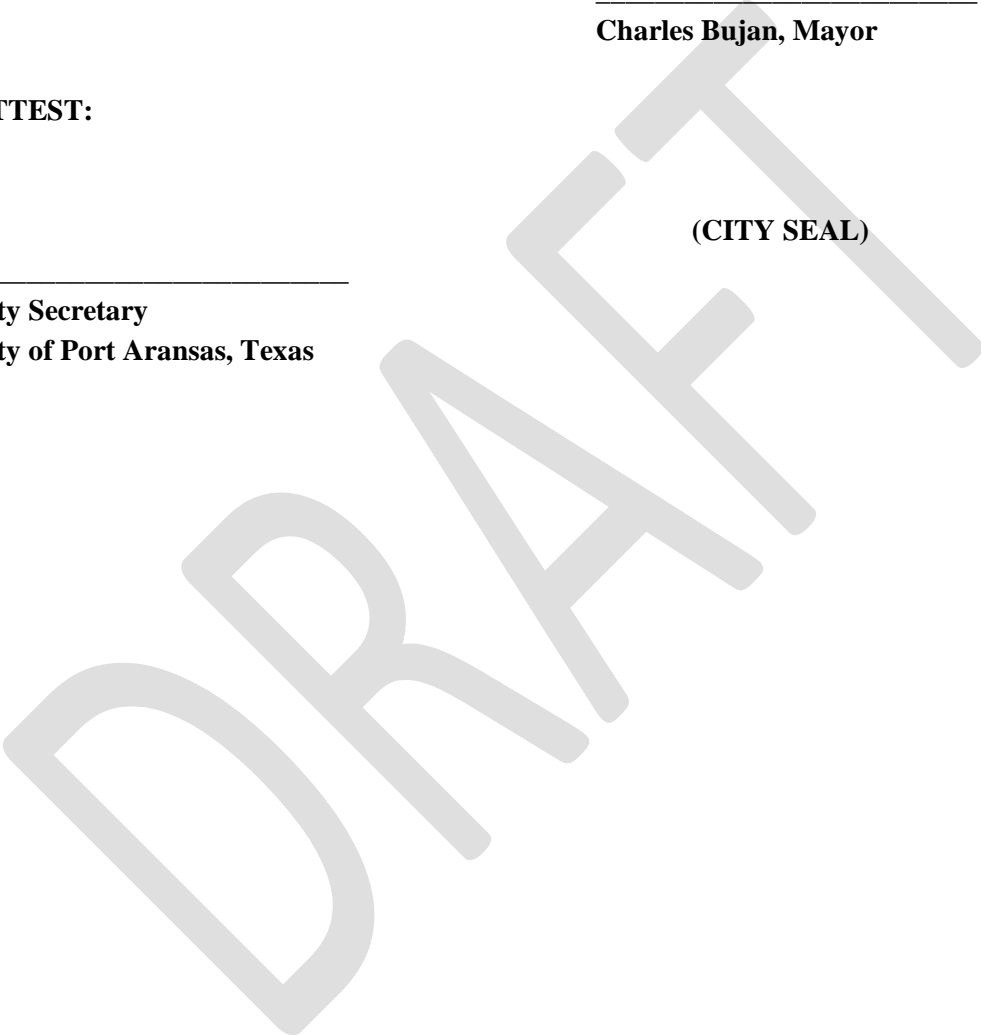
APPROVED:

Charles Bujan, Mayor

ATTEST:

(CITY SEAL)

City Secretary
City of Port Aransas, Texas



**Post-Hurricane Harvey multi-stakeholder decision-making on stormwater
resilience enhancing projects**

***By Sarah Cunningham
Coastal Training Program Coordinator
Mission-Aransas NERR
for the City of Port Aransas and Coastal Bend Bays and Estuaries Program
as a project within the
Coastal Management Program of the Texas General Land Office***

March 31, 2021

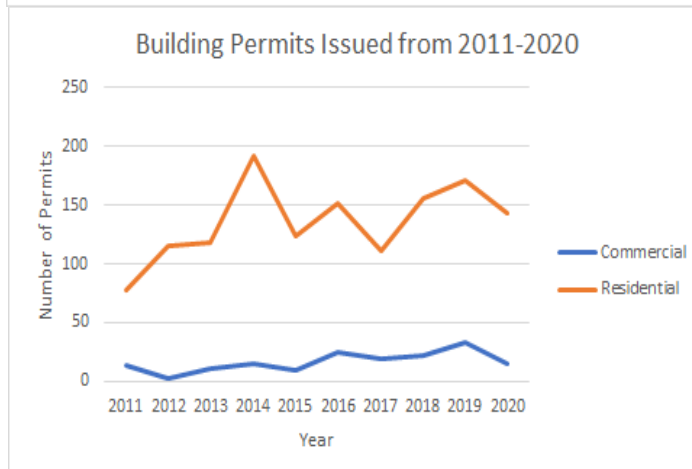
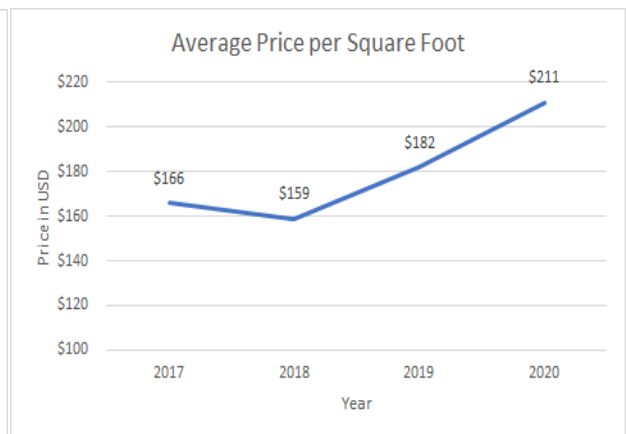
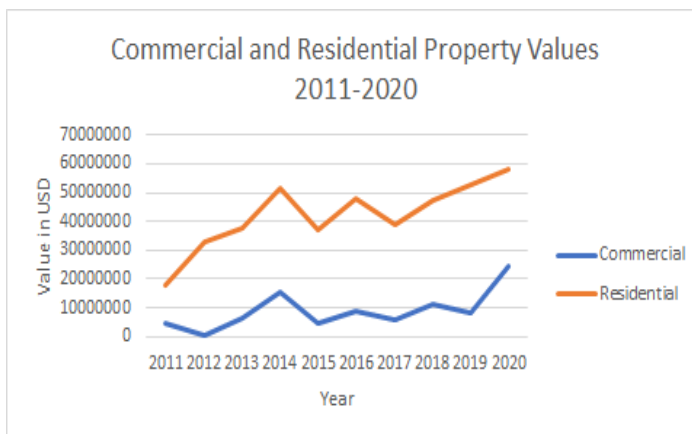


A PUBLICATION FUNDED BY A TEXAS COASTAL MANAGEMENT PROGRAM GRANT
APPROVED BY THE TEXAS LAND COMMISSIONER PURSUANT TO NATIONAL OCEANIC
AND ATMOSPHERIC ADMINISTRATION AWARD NO. NA18NOS4190153.

Background

Tourism supports the businesses in Port Aransas with an economic impact of over \$200 million. The natural resources of the area, including the Gulf of Mexico beaches, recreational fisheries, and bird watching are all major drivers of tourism. The eco-tourism based economy depends on clean water for recreation and a healthy fishery. For many years, the low population density and large swaths of vegetation on the island maintained good water quality and habitat for fish and bird species. As Port Aransas grew in popularity among retirees and vacationers, development on the island has increased. Between 2006-2015, the City of Port Aransas (the City) issued 1,112 new home permits, adding 128 acres of new development to a city that is 12.1 miles² in size. Concerns about the impacts of development on local water quality led to the City and its citizens initiating a project to upgrade the stormwater management plan.

On August 25, 2017, Category 4 Hurricane Harvey made landfall on San Jose Island, a few miles northeast of Port Aransas, causing severe damage throughout the community and the local ecosystem. After the hurricane, development on the island exploded. Several large development projects reduced their development timelines by years. Increases in the cost of land and existing homes has led to higher-density developments. For example the median cost of real estate sales in Port Aransas in January 2017 was \$332,450 and in January 2021 was \$452,500 (data courtesy of Michele Lorette via Texas REALTOR Data Relevance Project).



New permit data for the City of Port Aransas in the last decade reveals a growth in development (source: City of Port Aransas Planning & Zoning Department).

Additionally, the short term rental home trend has increased occupancy of homes and has increased the need for parking. This has led to an increase in impervious surfaces at many homes. Since 2018, the City has issued 470 new residential and 70 new commercial permits. The associated increase in impervious cover and decrease in vegetation exacerbated nuisance flooding and raised concerns about runoff into the surrounding waters.



Due to hurricane damages, many lots in Port Aransas were sold and re-developed post-Harvey. This lot on Eleventh Street was converted from a small apartment unit with grass (left Jan. 2017) to 18 small vacation homes(right Jan. 2020; photo credit: Google Earth).

In the aftermath of Hurricane Harvey, the City has become committed to better managing stormwater, increasing resilience to flood events, and reducing and/or eliminating direct inputs of stormwater into the bay and Gulf of Mexico. There are still areas of undeveloped land on the island, but it is rapidly being purchased by developers, making this a critical time to improve stormwater management to reduce non-point source (NPS) pollution and protect vital fish habitat. Currently, voluntary use of the “Guidance for Sustainable Drainage on the Texas Coast (GSD)” by Michael Barrett, et al. (2014, and revised in 2019) is strongly encouraged for new development but its use is inconsistent.

The City of Port Aransas applied for and received grant funding from the Texas General Land Office Coastal Management Program to engage an engineering firm to assist in sustainable drainage codification. To ensure the new code aligned with the community’s values and received public buy-in, the City enlisted the Mission-Aransas National Estuarine Research Reserve (Reserve) at the University of Texas Marine Science Institute to facilitate stakeholder engagement.

Process

The City of Port Aransas enlisted an engineering firm, Freese & Nichols, to review historical data and future sea-level rise scenarios for Port Aransas and use it to create tangible and cost-effective action items for the City to implement. The project team selected Freese & Nichols due to its strength in environmental and civil engineering and planning, as Port Aransas is on a barrier island and the entire island ecosystem needed to be considered. The firm was tasked with creating a report of their findings and drafting a city ordinance to bring before the City Council.

Next, the project team established an advisory group for the project, which consisted of roughly 15 people knowledgeable in stormwater maintenance and issues, as well as stakeholder engagement. This group met quarterly to discuss the data review report, evaluate the “Guidance for Sustainable Development on the Texas Coast” document, and brainstorm to formulate goals based on the report. The advisory group also helped establish a community stakeholder group, which consisted of roughly 10 real estate agents, developers, business owners, homeowners, and RV park owners from the Port Aransas community.

Non-Regulatory Ideas

 Task Force	 Agreements and Acquisitions	 Outreach
Interdepartmental collaboration	Deed Restrictions Conservation easements Maintenance agreements Capital costs NGO partners	Education workshops Business outreach Community partnerships Consultation services Public Facing Resources



Non-regulatory ideas for stormwater management from the engineering firm’s presentation to the Advisory and Community Stakeholder groups on July 16, 2020.

Freese and Nichols’ findings and draft ordinances were presented to the advisory board and City Council for their feedback. Findings were then presented to the stakeholder group, which consisted of laypersons from the community, to gather their feedback. Originally, the project team planned to convene three in-person meetings for stakeholders to voice their opinions to the project engineers; however, due to the Covid-19 pandemic, the project team was forced to pivot to virtual meetings (Table 1). These meetings were approximately 2 hours long and hosted

through Zoom. Stakeholders were able to provide feedback on Freese and Nichols recommendations at the virtual meetings and via email to the project team post-meeting.

Table 1. Stakeholder Engagement Schedule

Date	Stakeholder Groups Included	Meeting Objectives
2/4/2020	Advisory Group	<ul style="list-style-type: none"> ● Finalize Freese and Nichols (F&N) scope of work ● Start planning community stakeholder group
4/30/2020	Advisory Group	<ul style="list-style-type: none"> ● F&N present draft findings
7/16/2020	Advisory Group/City Council	<ul style="list-style-type: none"> ● F&N present findings to City Council ● Solicit feedback from City Council
9/29/2021	Advisory/Community Stakeholder Groups	<ul style="list-style-type: none"> ● F&N present findings, draft recommendations ● Stakeholders brought on board to solicit feedback
1/20/2021	Advisory/Community Stakeholder Groups	<ul style="list-style-type: none"> ● F&N present final recommendations, implementation schedule ● Final feedback from stakeholders on recommendations ● Solicit feedback on outreach activities
2/25/2021	Advisory Group/City Council	<ul style="list-style-type: none"> ● F&N present final recommendations and implementation schedule

Finally, based on the firms’ findings and stakeholder opinions, the engineering firm drafted updated ordinances for the City of Port Aransas.

Stakeholder Engagement & Feedback

The advisory group, community stakeholder group, and city council all served as stakeholders. Several points of view were present in the advisory group, including government and elected officials, water and city public works professionals, environmental groups, engineers, and land- and homeowners. Stakeholders in this group indicated they were concerned about increased nuisance flooding, especially in the historic and downtown areas of Port Aransas (‘Old Town’); health of the surrounding wetlands; and landscaping and vegetation increasingly being replaced by concrete. They also expressed concerns about the City being unable to enforce code due to limited staff and time.

Stakeholders in the community stakeholder group indicated they were concerned about nuisance flooding and the costs of new stormwater regulations to businesses and property owners, especially considering the recent financial toll of Hurricane Harvey. Stakeholders in the community stakeholder group indicated a preference for incentivized measures rather than

regulatory measures. A good example was the idea of retrofit projects: the high cost means businesses are not likely to implement them, and the fact that they are on private property means the government can neither require nor fund the projects. However, the advisory and community stakeholder groups believed incentivizing businesses to undertake retrofit projects in return for reduced fees and taxes could work.



Even before Harvey, many businesses in Port Aransas covered their lots in concrete, contributing to nuisance flooding and runoff. Photo credit: Freese & Nichols.

The City Council was concerned about financial and time costs that the City (and therefore its taxpayers) might incur by adapting new codes. Like the advisory group, stakeholders in this group were concerned the City would not be able to enforce new code due to limited staff and time. A particularly useful piece of feedback from this group was that the engineering firm should rank their recommendations by level of difficulty to implement. As a result, the engineering firm provided the City with a list of 10 Best Management Practices and 20 Recommended Ordinances ranked by cost, potential pollutant reductions, burden on city personnel, and bureaucratic involvement, along with a 5-year schedule in which to implement each item (Appendix 3). Most of the recommended ordinances are regarding construction and development, such as reducing clearing and grubbing, erosion and sediment controls, and limiting impervious cover. Dumping, illicit discharge, and preserving sensitive areas are also addressed. Several of the BMPs are outreach-oriented with the goal of educating stakeholders about the importance of stormwater management and creating citizen buy-in for the updated

ordinances (for example, the creation of a “Green” task force, educational workshops, and community outreach).



Screenshot of the engineering firm presenting to the Port Aransas City Council on July 16, 2020. Top from left to right: City Secretary Francisca Nixon, Councilwoman Joan Holt, and Mayor Charles Bujan. Middle from left to right: City Council room, Parks & Recreation Director Colleen Simpson, and Finance Directory Darla Honea. Bottom: Chance Sparks (Freese & Nichols).

Moving Forward

The City of Port Aransas will only continue to grow in the coming years. Getting a handle on stormwater management now will help the City reduce nuisance flooding and maintain high water quality in our bays and beaches. With several recommendations by the engineering firm and a 5-year schedule in which to implement them, the City can move forward with updating its stormwater, zoning, and illicit discharge codes and seeking funding for retrofit projects (for example, through Community Development Block Grants). This project also highlighted the need for the City to update their Comprehensive Plan, which was last updated in 2005. The relationships that this project helped establish between the City of Port Aransas, the Mission-Aransas Reserve, and stakeholders in the Port Aransas community will be important for all of these endeavors.

Appendix 1. 9/29/2020 Presentation from engineering firm to the advisory and stakeholder groups of the firm's findings and draft recommendations:

https://drive.google.com/file/d/1kfog18zLH49yKMuo7XKhYQuBZA_erhfX/view?usp=sharing

Appendix 2. 1/10/2020 Presentation from the engineering firm to the advisory and stakeholder groups of the firm's final recommendations:

<https://drive.google.com/file/d/1qOYmJMF86A6i6hhznzjkKiPyeU-1yP8T/view?usp=sharing>

Appendix 3. BMPs and 5-year schedule from the engineering firm

https://drive.google.com/file/d/12lXh3rqYRnf_SSPEo6VhRQC8MJ2Lmog5/view?usp=sharing

Stormwater plan priority for Holt

| March 24, 2021

Dan Parker
News editor



Joan Holt

Port Aransas City Council member Joan Holt recently responded to some questions from the South Jetty on the subject of stormwater management in town.

Holt, a retired marine scientist, has been actively involved in a city project designed to reduce flooding, increase the town's resiliency to flooding when storms hit and keep local seawater quality from being damaged by runoff pollutants. (See related story, page 1A.)

A draft stormwater management plan has been created by a city contractor, Freese and Nichols, a firm that's headquartered in Fort Worth.

South Jetty: In your opinion, what are a few of the most significant recommendations that have come out of the process of putting together the draft stormwater management plan?

Holt: (One would be) an update to our landscape ordinance to encourage the reduction of stormwater runoff and to encourage preservation of wetlands. A large group of citizens met for a year, after Harvey, discussing how to achieve these two priorities, but finally ran into too

much resistance. I think Freese and Nichols' suggestions about using incentives to accomplish this are achievable, and the time is right. A stormwater management and drainage ordinance on water entering the storm drainage system would go a long way to prevent adverse impact to the surrounding waterbodies. The presentation of a timeline to gradually phase in ordinance changes and how to implement them makes a lot of sense and would make it much easier to manage and accomplish our goals.

South Jetty: Recommendations are one thing, but mandates are another. Can you see the city council considering creation of any new mandates as a result of this effort, and what might one or two of the most significant ones be? Is the city considering any kind of move that would legally prohibit people from certain actions they take right now as they develop a piece of property?

Holt: I can't really answer this question. I think it will be slow to develop as we review all our current ordinance(s) and make changes. I really like the suggestion that we could use incentives to accomplish some of these goals, although changes in mandates will also be needed. It will be a work in progress, but I do hope that we seriously consider and incorporate these changes as we move forward.

South Jetty: Why is it so important that we, as a community, address this subject of flooding and runoff, with regard to environmental concerns and more?

Holt: My overriding concern is for the water quality of our bays. As development and impervious surfaces increase, the resulting flooding and stormwater runoff increase water-borne pollutants and degrade local receiving waters. These waters, including the salt marsh and seagrass beds, are the nursery grounds for the young fish that support the sports fishing industry in Port Aransas. The nursery sites and the young fish are very sensitive to changes in water quality. Because the natural resources of the area are the lifeblood of our economy and the reason many of us are here, we have a vested interest in healthy, productive seagrasses, salt marshes and clean water.

Appendix 4. Interview with Councilwoman Joan Holt, who helped spearhead the stormwater management project, in the Port Aransas newspaper South Jetty. South Jetty Articles are available to view here:

<https://www.portasouthjetty.com/articles/stormwater-plan-priority-for-holt/>



STAFF PHOTO BY DAN PARKER

Downpour

Esmerelda Flores makes her way through a downpour behind her place of employment at the Tower Center on State Highway 361 on Wednesday, March 18. Rainwater drainage in Port Aransas is a subject that city officials have been discussing in some detail lately.

City developing plans for stormwater drainage

DAN PARKER
NEWS EDITOR

A concerted effort is underway in Port Aransas to reduce flooding, increase the town's resiliency to flooding when storms hit and keep local seawater quality from being damaged by runoff pollutants.

A draft stormwater management plan has been created by a city contractor, Freese and Nichols, a firm that's headquartered in Fort Worth.

Folks heavily involved in

the effort have included Port Aransas Parks and Recreation Department Director Colleen Simpson and council members Joan Holt, Beth Owens and Chuck Crawford.

Virtual meetings have been held with stakeholders representing developers, homeowners' associations, civic groups and RV parks, Simpson said. Residents of various areas of town and Port Aransas decision makers also have been involved, she said.

The plan was put together as part of a \$100,000 project that the City of Port Aransas has undertaken as an effort to deal with the effects of stormwater.

The Texas General Land Office is paying for 70 percent of the project. The City of Port Aransas, Coastal Bend Bays and Estuaries Program and the Mission-Aransas National Estuarine Research Reserve (NERR) at the University of Texas Marine Sci-

SEE 'DRAINAGE,' PAGE 10A

Appendix 5. Article regarding the stormwater management project in the South Jetty.



STORMWATER MANAGEMENT IN PORT ARANSAS: CITIZEN'S GUIDE

PROJECT OUTCOMES

ABOUT THE PROJECT

The City of Port Aransas received grant funding to update its stormwater management plan with help from an outside engineering firm, Freese & Nichols. After looking at City drainage plans, historical data on flooding, and what other cities have done, the firm has provided the City with several recommendations and updates to its code.

WHY IS IT IMPORTANT?

Port Aransas is renowned for its excellent fishing, beautiful beaches, and migratory birds, all of which is thanks to good water quality. Coastal development can harm water quality by increasing pollution and removing wetlands, which naturally filter water. A high-quality stormwater plan will help maintain high-quality water.

UPDATES TO CODE

- [Stormwater management and drainage ordinance](#) with requirements for new construction and development
- [Landscaping ordinance](#) amended to streamline the current point system and incentivize low-impact design and preservation of natural areas
- [Illicit discharge ordinance](#) to be added to City code
- [Zoning ordinance](#) amended to adopt new green space incentive credits

BEST MANAGEMENT PRACTICES

[Thirty recommendations](#) for the City to adopt regarding development practices and outreach strategies over the next five years.

STRATEGIC IMPLEMENTATION

The list of Best Management Practices and Ordinances are ranked by cost and potential pollution reduction.





STORMWATER MANAGEMENT IN PORT ARANSAS: DECISION-MAKER'S GUIDE

PROJECT OUTCOMES

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Storm Drain Etiquette

Water Quality Wednesdays



Storm drains drain directly to the bay to provide immediate relief of flooding. If there's trash and pollutants on the streets, those also get emptied into the bay - so keep our streets clean!



Water-wise Lawns



Water Quality Wednesdays



Summer watering tips:
• Aim for 0.5" - 1" of water each week

- Adjust your watering schedule if it rains
- Water less frequently but more deeply
- Organic fertilizers help retain more moisture
- Mow frequently but at a high level



Permeable Surfaces



Water Quality Wednesdays



Parks & Recreation

Permeable surfaces, like grass and landscaping, allow water to soak into the ground, whereas impermeable surfaces, like concrete, increase localized flooding. More permeable surfaces on your property means less flooding!



Pond Maintenance

Water Quality Wednesdays



- When properly designed and maintained, retention ponds hold stormwater, filter out impurities, and provide habitat for wildlife. Maintain your ponds by regularly removing debris and sediment and inspecting inputs and outputs.



Parks & Recreation



Rain Gardens



Water Quality Wednesdays



Beautiful and functional, properly designed rain gardens hold excess rainwater and allow it to slowly seep into the ground over time to prevent flooding. Contact Texas A&M AgriLife for more information on how to create your own!



Responsible Herbicide Use



Excess herbicides and pesticides wash off lawns during rain events. Save your money and our water quality by only using the amount specified on the bag. Better yet, opt for chemical-free lawn maintenance!

Water Quality Wednesdays



Storm Preparation

Water Quality Wednesdays



If a hurricane (or any storm!)
is on its way....

- Pick up yard debris
- Secure your trash can
- Modify your irrigation schedule
- Wait to fertilize



Stormwater Management

Water Quality Wednesdays



Each month the Mission-Aransas NERR and Port A Parks & Rec will bring you tips on how to improve local water quality, prevent flooding, and become more resilient to storms.



Responsible Pet Ownership



Water Quality Wednesdays



Dog waste has bacteria that gets washed into local waterways during rain events. Help keep our bays and beach clean by picking up after your pets!



Rain Barrels



Water Quality Wednesdays



You can collect the water that comes off your roof during rain events with a rain barrel. This helps prevent localized flooding issues - and can be used later to water your garden when water is scarce!



Soil Testing

Urban and Homeowner Soil Sample Information Form

Please submit this completed form and payment with samples. Mark each sample bag with your sample identification and ensure that it corresponds with the sample identification written on this form. *See sampling and mailing instructions on the back of this form.
(PLEASE DO NOT SEND CASH)

SUBMITTAL AND INVOICE INFORMATION: This information will be used for all official invoicing and communication.

Name _____ County where sampled _____

Address _____ Phone _____

City _____ State _____ Zip _____

CLIENT NAME: Client name will only be included with information above on result reports.

Name _____

Lab Use only

Payment (DO NOT SEND CASH)

- Check/ Money Order (keep your M.O. receipt)
 Credit Card -- requires additional form*

Amount Paid \$ _____

Make Checks Payable to: Soil Testing Laboratory
*Credit card payment forms can be downloaded at
<http://soiltesting.tamu.edu>

If enclosed payment is insufficient, by submission of this form, I agree to make payment for the testing services selected herein and provided upon receipt of invoice from AgriLife Extension.

SAMPLE INFORMATION (Required)

(see options listed below)

Laboratory # For Lab Use)	My Sample ID	Square feet of sampled area	Last Time Fertilized	I previously used fertilizers/organics	I am growing (see below*)	Requested Analyses
Example	Front Yard	2000	5/30/14	5 lbs 21-0-5 per 1000 sqft	F	<input type="checkbox"/> 01 <input type="checkbox"/> 02 <input type="checkbox"/> 03 <input type="checkbox"/> 04 <input type="checkbox"/> 05 <input type="checkbox"/> 06 <input type="checkbox"/> 07 <input type="checkbox"/> 08 <input type="checkbox"/> 09 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12
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						<input type="checkbox"/> 01 <input type="checkbox"/> 02 <input type="checkbox"/> 03 <input type="checkbox"/> 04 <input type="checkbox"/> 05 <input type="checkbox"/> 06 <input type="checkbox"/> 07 <input type="checkbox"/> 08 <input type="checkbox"/> 09 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12

*Annual, Flowers and Gardens
A. Azaleas and Camellias

Turfgrass
F. Common Bermudagrass

Trees and Woody Ornamentals
M. Pecan trees



Test your soil every 2 years to see what nutrients it needs - and what it already has enough of. This will help you select the right fertilizer for your yard so excess nutrients don't wash off into our bays!

Water Quality Wednesdays



Xeriscaping



Xeriscapes are landscapes that reduce or eliminate the need for irrigation. Plants used for xeriscaping are often hardy, reducing the need for chemicals. Try xeriscaping instead of concrete slabs for low-maintenance, attractive landscaping!

Water Quality Wednesdays

