

# INTEGRATING PORT PLANNING EFFORTS FOR ALL-HAZARDS RESPONSE

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**PORTCORPUSCHRISTI**<sup>®</sup>

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# Strategic Plan 2023



**PORT CORPUS CHRISTI**®

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| Goals  | #  | Objectives  | Lead                | Target End |
|--|----|---|---------------------|------------|
| Foster Strategic Growth                              | 1  | Develop decision support tool to systematically evaluate business development opportunities   | Planning            | Q4 2019    |
|  | 2  | Develop standard lease language/template that includes clear terms and standards for maintenance of Port-owned assets   | Real Estate         | Q2 2020    |
|  | 3  | Develop standard language/template for user agreements for public docks   | Real Estate         | Q2 2020    |
|  | 4  | Implement Customer Relationship Management (CRM) database   | Commercial          | Q2 2020    |
|  | 5  | Develop decision support tool for determining highest and best use of Port-owned property   | Planning            | Q2 2020    |
|  | 6  | Develop decision support tool for prioritizing strategic property acquisition   | Planning            | Q2 2020    |
|  | 7  | Co-sponsor a Ports and Waterways Safety Assessment (PAWSA) to evaluate feasibility of establishing a designated marine exchange   | Harbor Master       | Q2 2020    |
|  | 8  | Update Property Planning Guide to inform land use decisions   | Planning            | Q2 2021    |
|  | 9  | Develop multi-year plan to acquire and protect property   | Real Estate         | Q2 2021    |
|  | 10 | Implement operational changes per Port Optimization Committee recommendations to increase total cargo moved across all public docks each year relative to prior year        | Harbor Master + CEO | Recurring  |
| Be a Good Business + Community Partner               | 1  | Adopt Regional Mutual Aid Agreement   | Port Security       | Q3 2019    |
|  | 2  | Develop new (internal) Emergency Action Plan  | Emergency Mgmt.     | Q3 2019    |
|  | 3  | Develop master database for managing stakeholder engagements  | Community Relations | Q4 2019    |
|  | 4  | Develop master database for managing engagements with Government Affairs stakeholders   | Government Affairs  | Q4 2019    |
|  | 5  | Develop working plan and budget for expenditure of Promotion and Development funds  | Communication       | Q1 2020    |
|  | 6  | Develop Stakeholder Engagement Checklist for use in project scoping / implementation  | Communication       | Q2 2020    |
|  | 7  | Implement protocol for managing/responding to/tracking stakeholder inquiries (including social media)   | Community Relations | Q2 2020    |
|  | 8  | Develop STEM-based educational module(s) about PCCA targeting school-aged audiences (but applicable for multiple audiences)   | Communications      | Q2 2020    |
|  | 9  | Develop PCCA Style Guide Part 1 to help standardize all PCCA branding   | Community Relations | Q2 2020    |
|  | 10 | Establish Port Ambassador Program   | Community Relations | Q2 2020    |
|  | 11 | Conduct SWOT analysis/charrette (customers + security + shippers) to define safety priorities and right-size procedures for accessing secure locations                      | Planning            | Q2 2020    |
|  | 12 | Develop all-hazards (internal/external) Emergency Management Plan   | Emergency Mgmt.     | Q4 2020    |
| Provide Facilities + Services to Meet Customer Needs | 1  | Develop a protocol for assessing dock utilization relative to capacity  | Planning            | Q4 2019    |
|  | 2  | Conduct economic analysis of potential beneficial use alternatives for new dredge material  | Planning            | Q2 2020    |
|  | 3  | Develop capital infrastructure planning decision support tool   | Planning            | Q2 2020    |
|  | 4  | Update design standards and guidelines for infrastructure   | Engineering         | Q2 2020    |
|  | 5  | Update Project Management Manual  | Engineering         | Q2 2020    |
|  | 6  | Update 2012 Rail Capital Plan   | Planning            | Q2 2020    |
|  | 7  | Establish protocol for facility audits of marine assets (Phase I) to inform asset management/capital maintenance planning   | Operations          | Q2 2020    |
|  | 8  | Evaluate alternatives and define actionable strategy for developing additional dredge material placement capacity along north side of Inner Harbor                          | Engineering         | Q4 2020    |
|  | 9  | Evaluate alternatives and define actionable strategy for developing additional dredge material placement capacity to serve Outer Harbor (including La Quinta Channel reach) | Engineering         | Q4 2020    |
|  | 10 | Develop comprehensive, regional/collaborative Rail Master Plan  | Planning            | Q4 2020    |
|  | 11 | Implement Phase I (marine assets + Bulk Terminal + vehicle and equipment fleets) of an Asset Management System  | Operations          | Q2 2021    |
|  | 12 | Update Bulk Terminal Master Plan to include Asset Management  | Planning + B. T.    | Q2 2021    |

| Goals   | # Objectives | Lead   | Target End             |           |
|---|--------------|--|------------------------|-----------|
| Be an Environmental Leader                    | 1            | Establish a Port Scientific Advisory Committee to enhance integration of best available science from local practitioners in planning and development decisions   | Planning               | Q4 2019   |
|   | 2            | Update Environmental Standards to specify that all new terminals constructed after 2019 will be Green Marine certified   | Environmental          | Q4 2019   |
|   | 3            | Develop/initiate a Clean Fleet (administrative + field vehicles) Conversion Program  | Environmental          | Q4 2019   |
|   | 4            | Develop/initiate a Clean Equipment Conversion Program  | Environmental          | Q4 2020   |
|   | 5            | Develop a decision support tool to 1. identify and 2. prioritize habitat restoration and/or creation projects  | Planning               | Q2 2021   |
|   | 6            | Facilitate creation of the state's first marine park (or equivalent designation)   | Planning               | Q2 2022   |
|   | 7            | Achieve highest level of Green Marine Certification in five (Greenhouse Gases and Air Pollutants; Spill Prevention; Dry Bulk Handling & Storage; Community Impacts; Waste Mgmt.) of seven program areas              | Environmental          | Q3 2022   |
|   | 8            | Establish minimum of one new standard port-wide (including users) on at least two environmental precepts per year  | Environmental          | Recurring |
|   | 9            | Each year for next five years, implement at least one new (relative to 2018 baseline) water quality treatment Best Management Practice in 10% of stormwater sub-basins on PCCA property (per Stormwater Master Plan) | Environmental          | Recurring |
|   | 10           | Uphold policy of purchasing electricity from 100% renewable sources  | Environmental          | Recurring |
|   | 11           | Uphold ISO 140001 certification for PCCA's Environmental Management System   | Environmental          | Recurring |
| Fund Our Vision                               | 1            | Procure Enterprise Resource Planning (ERP) System  | Information Technology | Q4 2019   |
|   | 2            | Develop a protocol for calculating revenue per commodity by acre   | Planning               | Q4 2019   |
|   | 3            | Implement mechanism(s) to begin tracking non-water borne freight (pipe, truck, rail) to expand revenue capture   | Finance                | Q4 2019   |
|   | 4            | Create decision support tool to systematically evaluate grant opportunities, including a process and schedule pro forma to guide management of application process   | Planning               | Q2 2020   |
|   | 5            | Implement organization-wide, centralized document control and storage policy/protocol  | Records Mgmt.          | Q2 2020   |
|   | 6            | Develop process for capturing <i>operational risk</i> , including integrating it into existing Risk Matrix and associated Heat Map   | Risk Mgmt.             | Q2 2020   |
|   | 7            | Implement all modules within Enterprise Resource Planning (ERP) system   | Information Technology | Q4 2021   |
|   | 8            | Impose structure on existing self-insurance program to include actuarial-based budget that informs organizational budgeting process and includes case reserves for litigation  | Risk Mgmt.             | Q2 2022   |
| Cultivate the Workforce + Tools of the Future | 1            | Procure Talent Management System (TMS) software  | Human Resources        | Q4 2019   |
|   | 2            | Complete assessment of needs and opportunities for potential UAS applications in Port operations   | Planning               | Q4 2019   |
|   | 3            | Update Port's GIS Server (hardware + software)   | Planning               | Q2 2020   |
|   | 4            | Integrate geospatial analyses to enhance departmental workflow in Real Estate, Engineering, and Environmental  | CEO + Legal            | Q2 2020   |
|   | 5            | Update training program (content + schedule) for recurring training of Port Commission   | Human Resources        | Q2 2020   |
|   | 6            | Develop template and codification protocol for establishing new organization-wide policy   | Planning               | Q2 2020   |
|   | 7            | Update full suite of Human Resources policies  | Human Resources        | Q2 2021   |
|   | 8            | Achieve 45001 accreditation for occupational health and safety   | Safety                 | Q2 2022   |
|   | 9            | Implement all modules within Talent Management System (TMS)  | Human Resources        | Q2 2022   |
|   | 10           | Within 12 months of acquisition of a given module in TMS, develop procedures and implement training for that module for all stakeholders   | Human Resources        | Q2 2022   |

## Strategic Goal 2 ::

# Be a Good Business + Community Partner

“Productive partnerships are the lifeblood of our business at the Port of Corpus Christi, and we understand that transparency, consistency, and good communication are the cornerstones of those relationships. In the face of tremendous growth, we’ve invested heavily in new staff and new tools to help the Port be an ever better partner to our customers and neighbors.”



Omar Garcia, *Chief External Affairs Officer*

**Be a Good  
Business +  
Community  
Partner**

| Objectives   | Lead                 | 2019        | 2020 | 2021 | 2022 |
|--|----------------------|-------------|------|------|------|
| 1 Adopt Regional Mutual Aid Agreement  | Port Security        | •           |      |      |      |
| 2 Develop new (internal) Emergency Action Plan   | Emergency Management | •           |      |      |      |
| 3 Develop master database for managing stakeholder engagements   | Community Relations  | • •         |      |      |      |
| 4 Develop master database for managing engagements with government affairs stakeholders  | Government Affairs   | • •         |      |      |      |
| 5 Develop working plan and budget for expenditure of Promotion + Development funds   | Community Relations  | • • •       |      |      |      |
| 6 Develop Stakeholder Engagement Checklist for use in scoping + implementation   | Community Relations  | • • • •     |      |      |      |
| 7 Implement protocol for managing/responding to/tracking stakeholder inquiries (including social media)  | Communication        | • • • •     |      |      |      |
| 8 Develop STEM-based educational module(s) about PCCA targeting school-aged audiences (but applicable for multiple audiences)                      | Communication        | • • • •     |      |      |      |
| 9 Develop PCCA Style Guide Part 1 to help standardize all PCCA branding  | Communication        | • • • •     |      |      |      |
| 10 Establish Port Ambassador Program   | Community Relations  | • • • •     |      |      |      |
| 11 Conduct SWOT analysis/charrette (customers + security + shippers) to define safety priorities and right-size procedures for accessing locations | Planning             | • • • •     |      |      |      |
| 12 Develop all-hazards (internal + external) Emergency Management Plan   | Emergency Management | • • • • • • |      |      |      |

# SEAPORT Values

## Environmental Precepts

### Management Systems

### Plans

### Decision Support Tools

### Protocols

● Goal 1 - Foster Strategic Growth

● Goal 2 - Be a Good Community + Business Partner

● Goal 3 - Provide Facilities + Services to Meet Customer Needs

● Goal 4 - Be an Environmental Leader

● Goal 5 - Fund Our Vision

● Goal 6 - Cultivate the Workforce + Tools of the Future

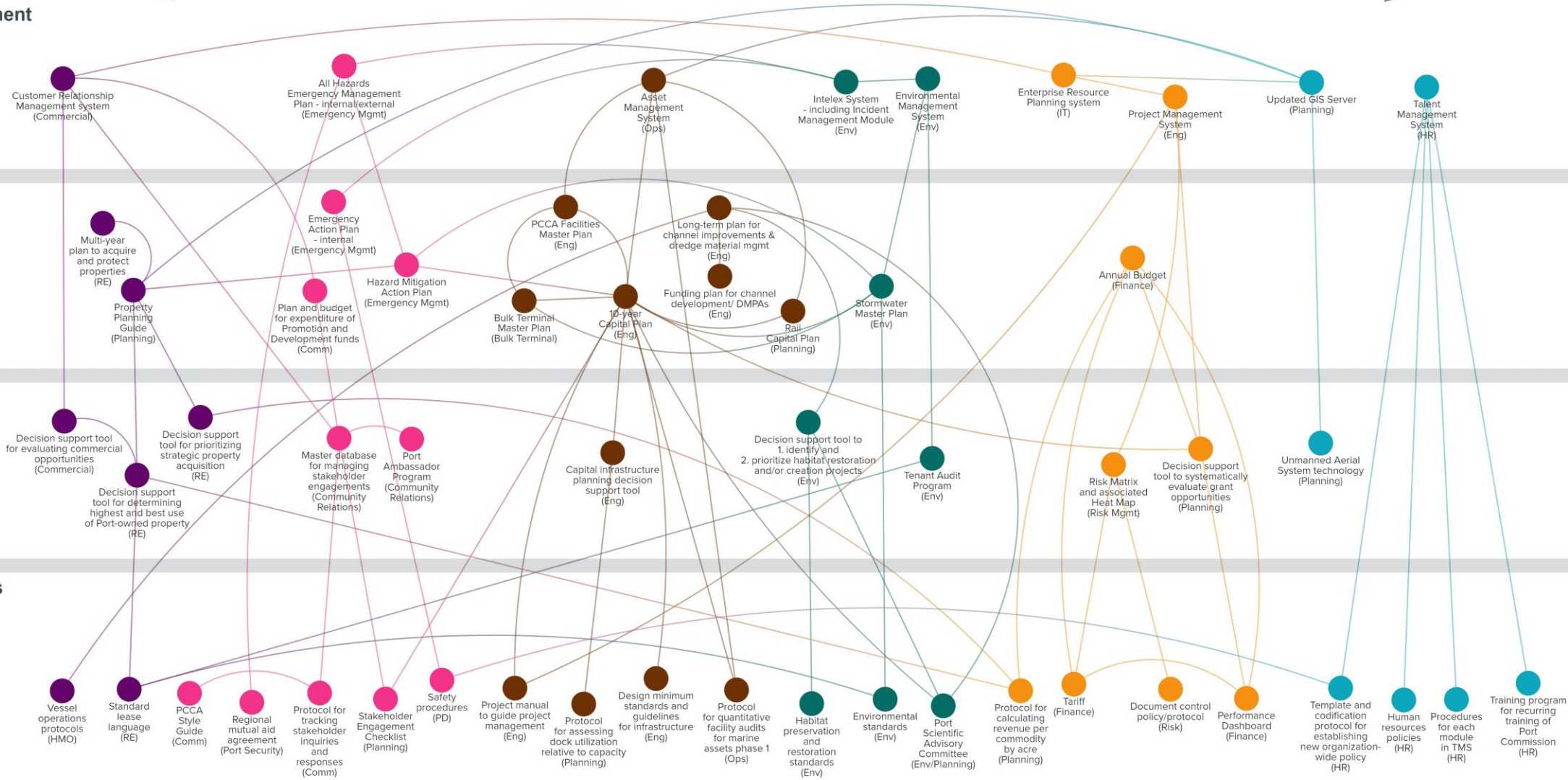
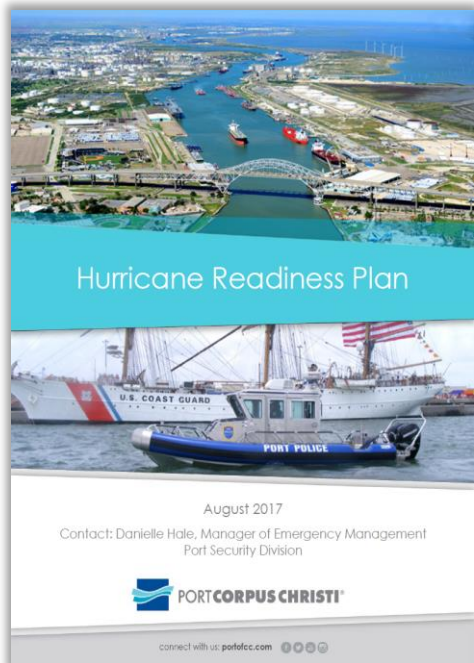


Figure 1 - Port Work Flow



# All-Hazards Plan Integration



Hazard Specific

## Emergency Actions

- Environmental Management System
- Occupational Health & Safety

## Risk & Damage Assessment

- Insurance Gap Analysis
- Asset Management

## Disaster Finance

- Finance Procedures and Grant Management
- Disaster Events Policy & Procedure

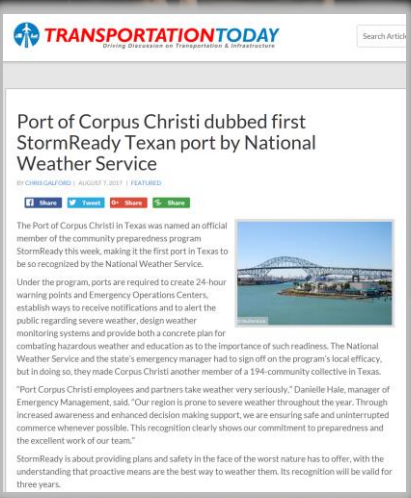
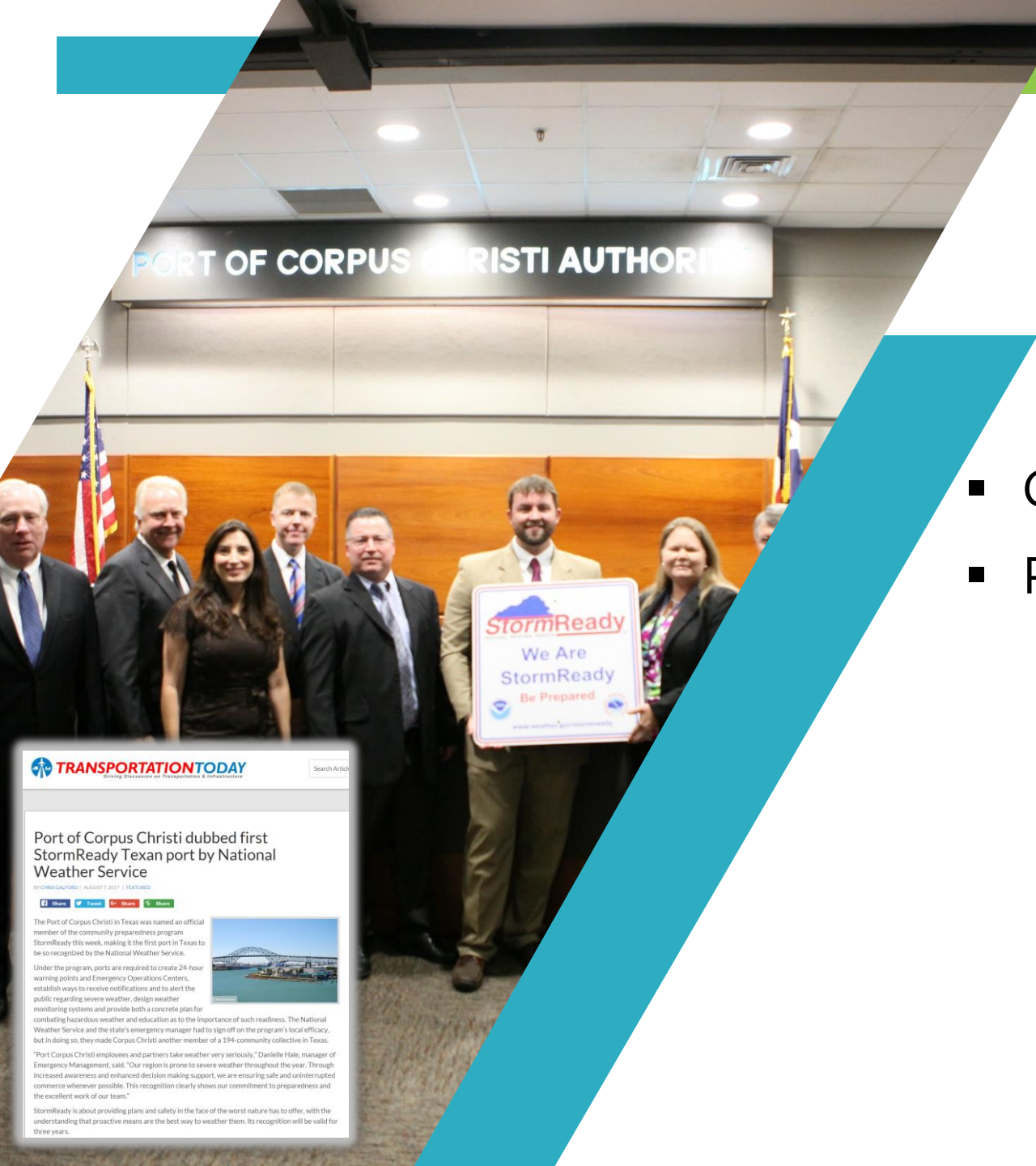
## Debris Management

- Channel Development & Improvement
- Environmental Planning & Compliance



# NOAA Storm Ready

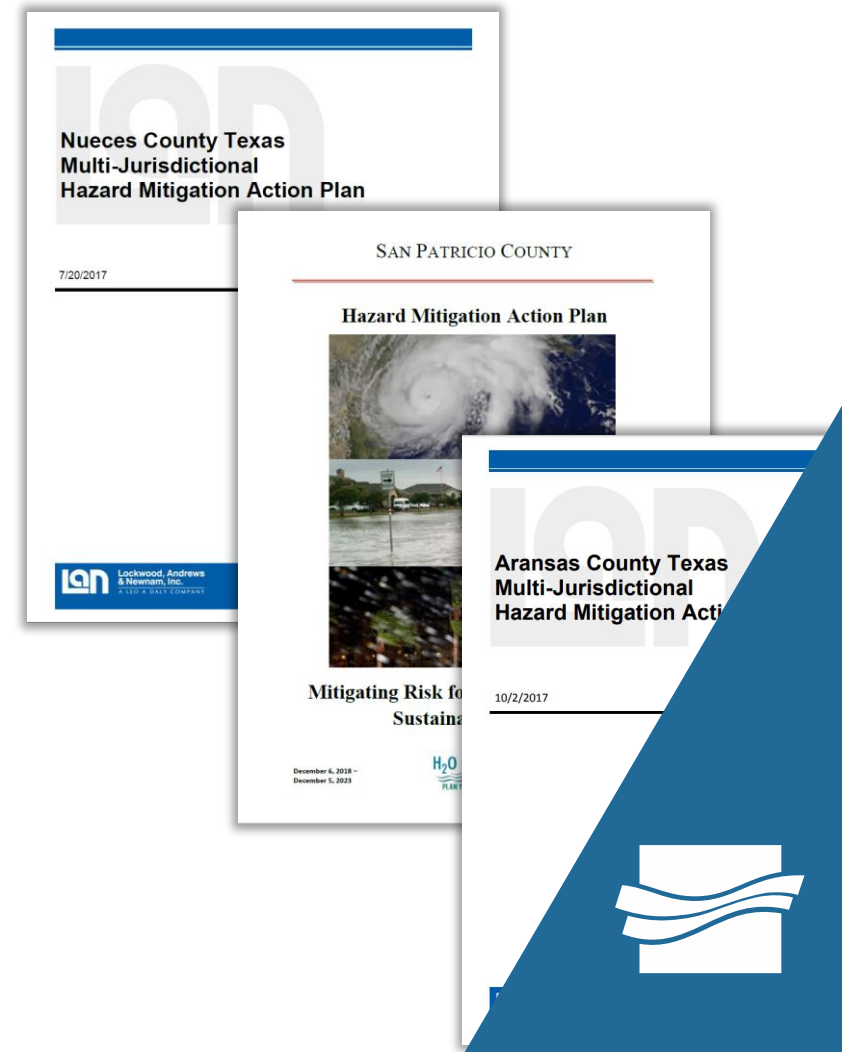
- Conference Center Special Events
- Port Optimization
  - Physical Oceanographic Real-Time System (PORTS)
  - Fog Coordination
  - Lightning Detection



# Hazard Mitigation Planning

Under the Disaster Mitigation Act of 2000, required to implement a Mitigation Action Plan (MAP) to:

- Prevent or reduce future loss of life and property
- Identify cost-effective mitigation measures
- Build partnerships with stakeholders and public
- Leverage FEMA hazard mitigation funding



# MAP Planning Process



# Capability Assessment

- Describes existing authorities, policies, programs and resources
- Identify opportunities to integrate into other plans, programs and policies
- Identify mitigation measures already in place or underway
- One assessment per jurisdiction



# Natural Hazards

- Floods
- Hurricanes / Tropical Storms
- Wildfire
- Tornado
- Drought
- Coastal Erosion
- Dam/Levee Failure
- Expansive Soils
- Extreme Heat
- Hailstorms
- Land Subsidence
- Extreme Winter Storm
- Windstorms
- Lightening

Other:

Climate Change / Sea Level Change

Man Made Hazards such as Cyber Security, Terrorism and HazMat Spills



# Risk Analysis Example

## Port of Corpus Christi Authority Tornado Hazard

| LOCATION                    |                                   |     |     |     |     |     |     |
|-----------------------------|-----------------------------------|-----|-----|-----|-----|-----|-----|
| Jurisdiction Wide           |                                   |     |     |     |     |     |     |
| OCCURENCE                   | EXTENT                            |     |     |     |     |     |     |
|                             | Magnitude (Fujita Scale)          |     |     |     |     |     |     |
| Number of Events 1950-2006* | N/A                               | F0  | F1  | F2  | F3  | F4  | F5  |
| 3                           | 0                                 | 0   | 0   | 3   | 0   | 0   | 0   |
| Number of Events 2007-2016* | Magnitude (Enhanced Fujita Scale) |     |     |     |     |     |     |
|                             | N/A                               | EF0 | EF1 | EF2 | EF3 | EF4 | EF5 |
| 1                           | 0                                 | 0   | 1   | 0   | 0   | 0   | 0   |

\* Fujita Scale replaced with Enhanced Fujita Scale in 2007

The Port of Corpus Christi experienced four of the 51 tornadoes that took place within the City of Corpus Christi from 1950 – 2016.

| PROBABILITY      |                         |                   |   |
|------------------|-------------------------|-------------------|---|
| Number of Events | Record Time Period      | Time Period Years | Probability                                     |
| 4                | 11/1/1950 to 11/30/2016 | 66                | 1 TORNADO TOUCHDOWNS ESTIMATED EVERY 16.5 YEARS |

| IMPACT           |        |          |                 |
|------------------|--------|----------|-----------------|
| Number of Events | Deaths | Injuries | Property Damage |
| 0                | 0      | 0        | \$51,000        |

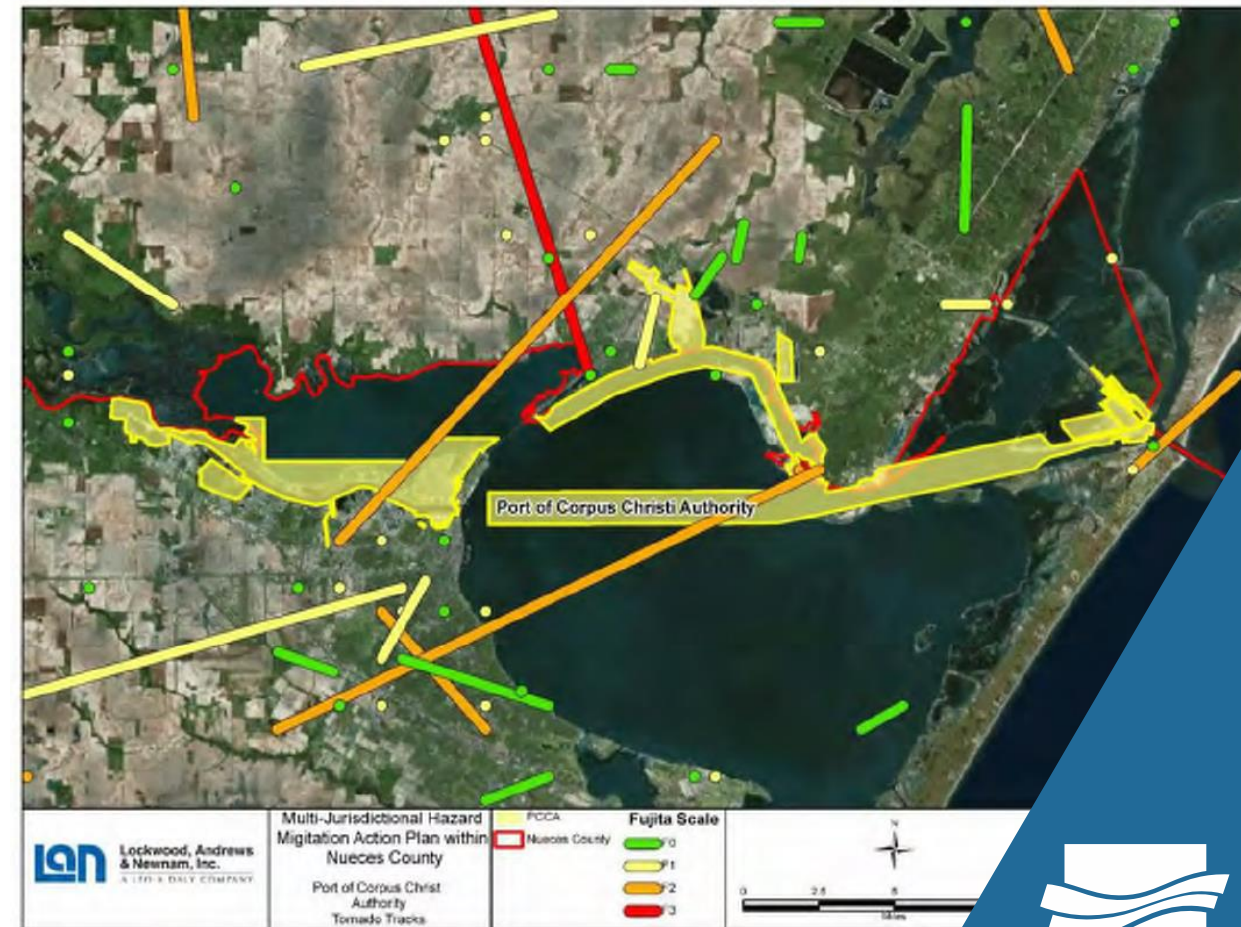
| VULNERABILITY        |                  |             |              |       |
|----------------------|------------------|-------------|--------------|-------|
| Population (County)* | Property Value** |             | Crop Land*** |       |
|                      | Commercial       | Residential | Acres        | Value |
| N/A                  | \$174,026,681    | \$0         | 0            | \$0   |
| Industrial Area      |                  |             |              |       |

\*Texas Association of Counties, 2015

\*\*Nueces County Appraisal District, Reappraisal Plan 2015-2016

\*\*\*Census of Agriculture, 2012 (The latest Agriculture Census published 2012)

Figure 12-10. Port of Corpus Christi Authority Tornado Hazard Map (1950 – 2016)



# Mitigation Strategy

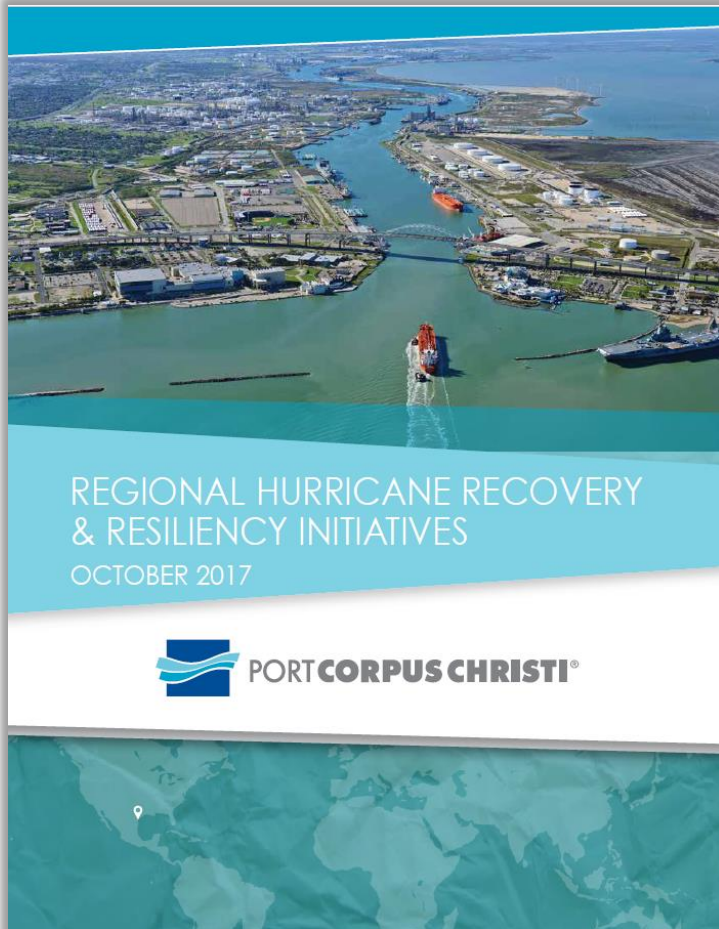
- **Mitigation Actions/Goals-** Once capabilities have been assessed, hazards analyzed, risks addressed, mitigation actions are developed to reduce the threat to known hazards.
- **Types of Actions**
  - Local Plans and Regulations
  - Structural and Infrastructure
  - Natural Systems Protection
  - Education and Awareness





# Real World Application

## Post Hurricane Harvey Requests for Information



### CRITICAL INITIATIVES

#### SHORELINE & LEVEE STABILIZATION

**TYPE:** Environmental Protection  
**PARTNERS:** US Army Corps of Engineers, US Fish & Wildlife Service, Texas Parks & Wildlife Department, Coastal Bend Bays & Estuaries, Coastal Bend Bays Foundation  
**COST ESTIMATE:** \$44,934,000

**PROPOSED ACTIONS:** Provide shoreline and dredge material placement area protection against storm generated waves and currents along levees exposed directly to Nueces Bay to reduce impacts from tropical storms and hurricanes. Protection of dredge material placement areas that are used to receive emergency dredging to reopen the ship channel. Provide additional shoreline stabilization and erosion protection along Corpus Christi Ship Channel, Nueces River, Nueces Bay including the public fishing areas.

- Provide additional shoreline erosion protection along Corpus Christi Ship Channel, Nueces River, Nueces Bay including the public fishing areas  
ESTIMATION: \$9,504,000
- Breakwater Revetment at Open Water Beneficial Use Sites to reduce erosion from wave action  
ESTIMATION: \$3,180,000
- Establish near shore vegetation buffer areas  
ESTIMATION: \$250,000
- Reinforce shoreline levees from South Shore Cells A & B and Herbie A. Maurer dredge material placement areas  
ESTIMATION: \$10,000,000
- Active dredge material placement area shoreline protection  
ESTIMATION: \$9,000,000
- Inactive dredge material placement area and property  
ESTIMATION: \$3,000,000
- Increase height of levee system  
ESTIMATION: \$10,000,000

**RISK REDUCTION BENEFIT:** Shoreline stabilization to mitigate and prevent future erosion is important for protection of wetland and sea grass ecosystems which provide habitat for fish and wildlife, including endangered species. Shoreline habitat is also a critical component for improving water quality and storm water runoff. Protected shorelines reduce impacts from wave action.

Protection of shoreline through soft stabilization and regeneration helps by maintaining dynamics and healthy sand movement, enhances shoreline habitat for fish and wildlife, reduces wave energy, protects against storm surge and flooding, and improves water quality through filtration.

Breakwater revetments will protect open water beneficial use sites which are comprised of marsh, sand flats and sea grass areas. These important ecosystems provide habitat for fish and wildlife spawning, and important rookery and nesting habitats for birds. These beneficial use sites were created to also provide protection to the coastline from storms, surf, and tidal surges.

Current dredge material placement area levee structures along environmentally sensitive Nueces Bay are vulnerable to damages associated with excessive rainfall, storm surge and storm generated waves and currents. These levee structures if not properly protected will require repair prior to reconstituting usage potentially delaying reopening of the ship channel and will better ensure dredge material does not enter the environmentally sensitive Nueces Bay.



### HIGH PRIORITY INITIATIVES

#### DOCK & MOORING SURGE PROTECTION

**TYPE:** Continuity of Operations  
**PARTNERS:** US Army Corps of Engineers  
**COST ESTIMATE:** \$135,550,000

#### PROPOSED ACTIONS:

- Provide safe mooring locations in Ingleside and the Rincon Industrial Park for vessels, reducing the potential for spills and casualty  
ESTIMATION: \$10,500,000
- Oil dock storm surge protection resiliency upgrades to prevent or avoid damage  
ESTIMATION: \$100,000,000
- Elevate oil & cargo docks to meet current flood plain standards, limit storm surge impacts, reduce sea level rise vulnerability, and reduce the potential for business operation interruptions  
ESTIMATION: \$20,000,000
- Mooring Structure Analysis & Severe Weather Berthing Policy Update - assess existing mooring structures to identify mitigation actions to reduce damages from surge and sway conditions. Results to be considered in the severe weather berthing policy review and update as determined appropriate  
ESTIMATION: \$50,000
- Harbor Island Restoration Project - remove dilapidated/abandoned Harbor Island docks to reduce potential navigation obstructions in the ship channel  
ESTIMATION: \$5,000,000

**RISK REDUCTION BENEFIT:** Dock and Mooring Surge Protection will increase resiliency, reduce the potential for damage, spills and casualties, and provide safe harbor for vessels. Dock operations are critical to PCCA and its customers, and protecting the docks will reduce down time post event.



**TOTAL HURRICANE RECOVERY & RESILIENCY INITIATIVES**

**GRAND TOTAL: \$650,656,927**



# THANK YOU. QUESTIONS?

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