



# HB 2031 Marine Desalination

Decision Support Tool for  
Alternative Expedited Permit Applications

## Background

- Legislation required a joint TPWD-GLO study to recommend zones appropriate for diversions and discharges
- Zones are applicable for the TWC Chapter 18 alternative expedited permitting process

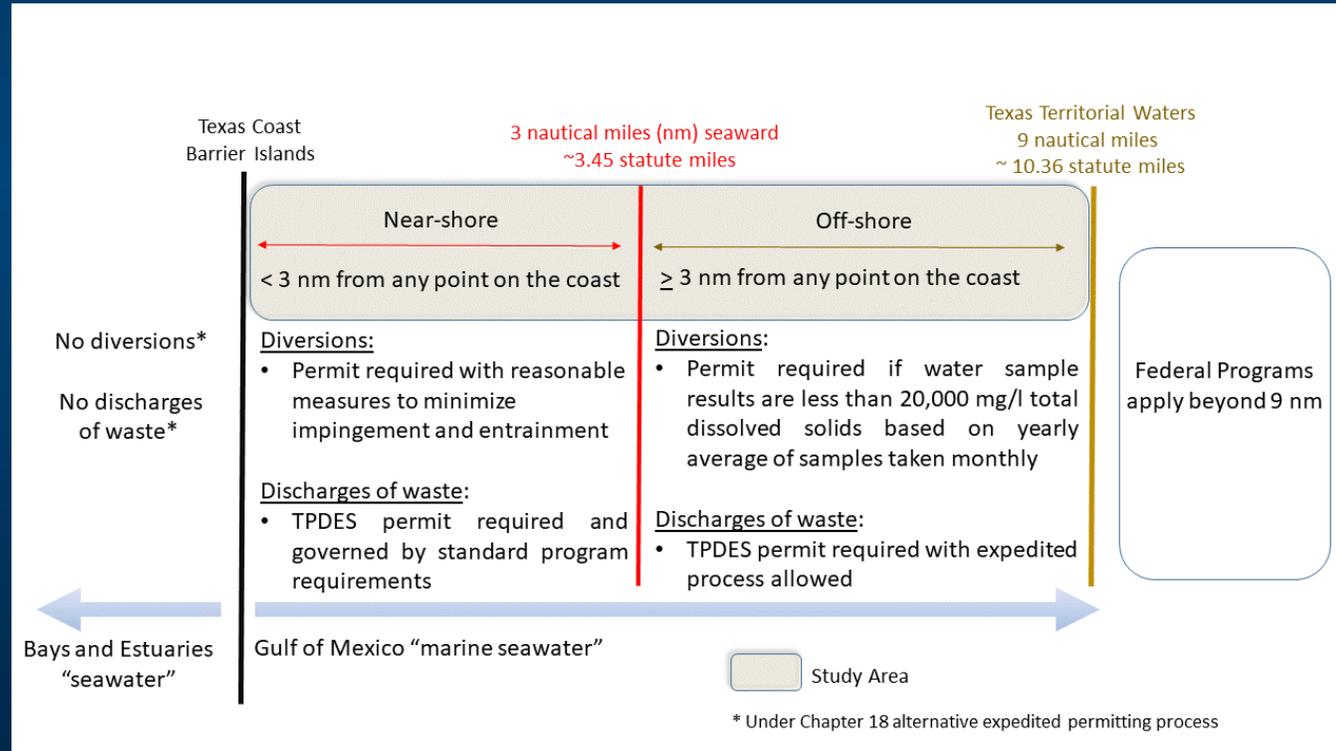
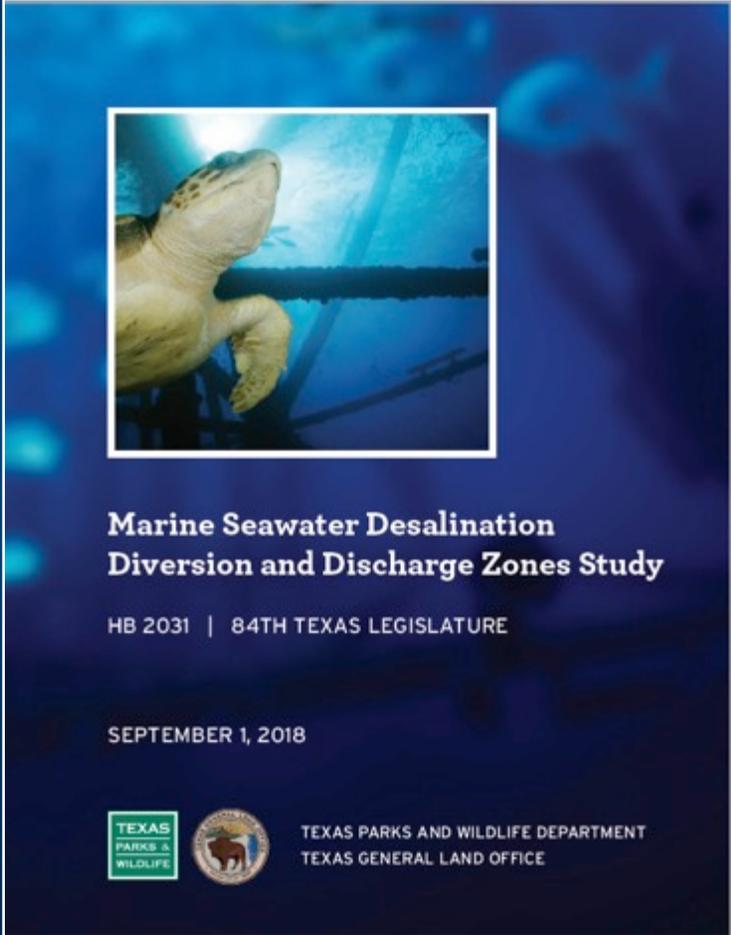


Illustration of Chapter 18 permitting requirements

# TPWD-GLO study completed September 2018



**Marine Seawater Desalination  
Diversion and Discharge Zones Study**

HB 2031 | 84TH TEXAS LEGISLATURE

SEPTEMBER 1, 2018

  TEXAS PARKS AND WILDLIFE DEPARTMENT  
TEXAS GENERAL LAND OFFICE

## Geospatial approach

- GLO submerged land tract framework with coastal resource management codes (RMCs)
  - Select tracts with RMC code MA (no identified sensitive areas), then remove tracts having time constraints related to sensitive habitat or species (TA through TF)
- Exclude tracts for these data overlays:
  - TPWD Resource Monitoring Program sampling footprint around major coastal passes (> 50% within)
  - TPWD Artificial Reef Program sites and adjacent tracts
  - Potential marine habitat (hard substrate, natural features) identified in the TPWD longline survey program database
  - Tracts within 3 miles of four minor coastal passes identified by TPWD coastal fisheries biologists
  - Tracts within 5 miles of six sea turtle nesting beaches

# Zone Map

Diversion and Discharge Zones for TWC Chapter 18 alternative expedited permitting process



**Legend**

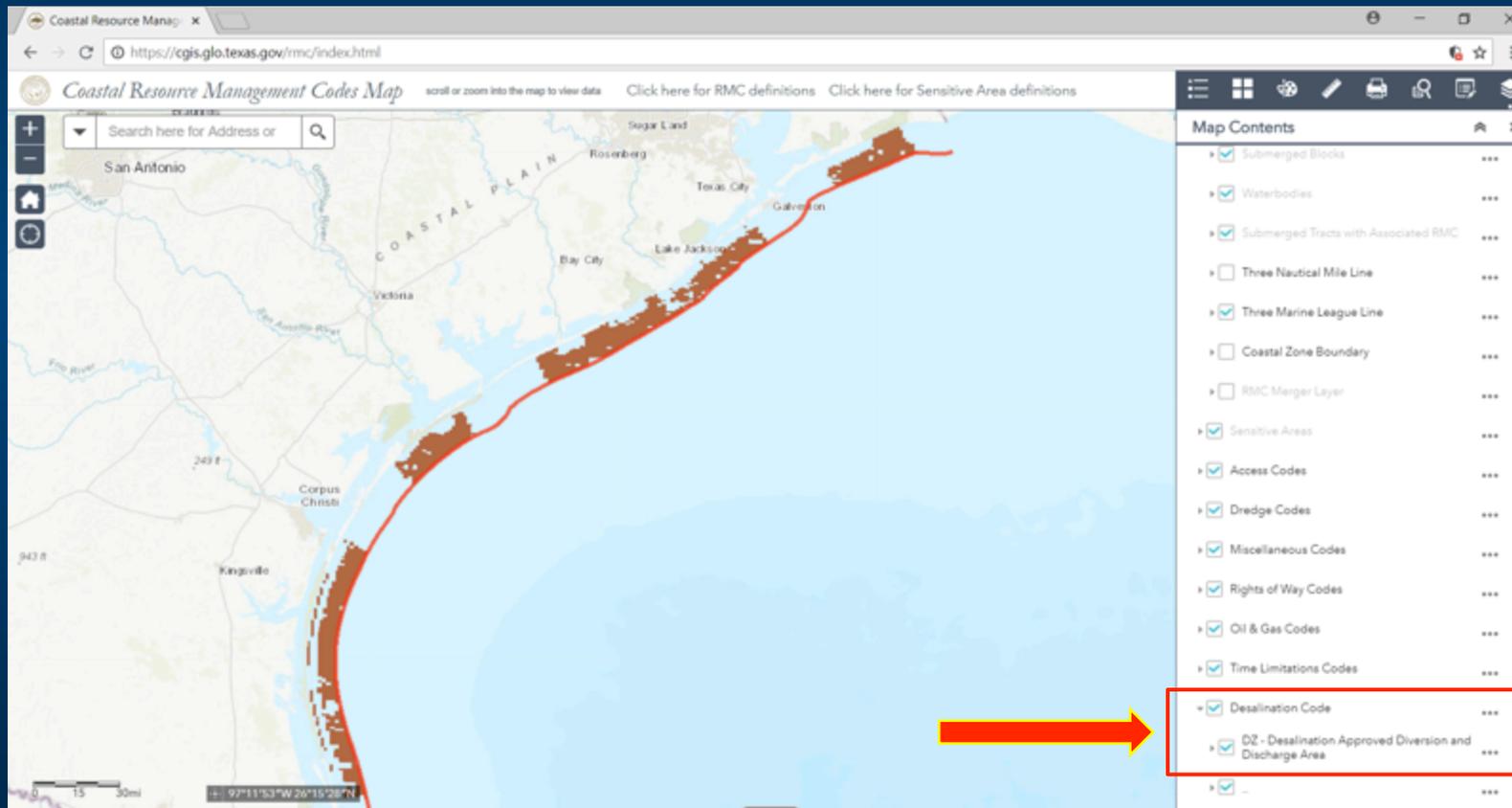
- Marine Seawater Diversion and Discharge Zone Recommendation for the TWC Chapter 18 alternative expedited permitting process
- State - Federal Boundary

30  
Nautical Miles

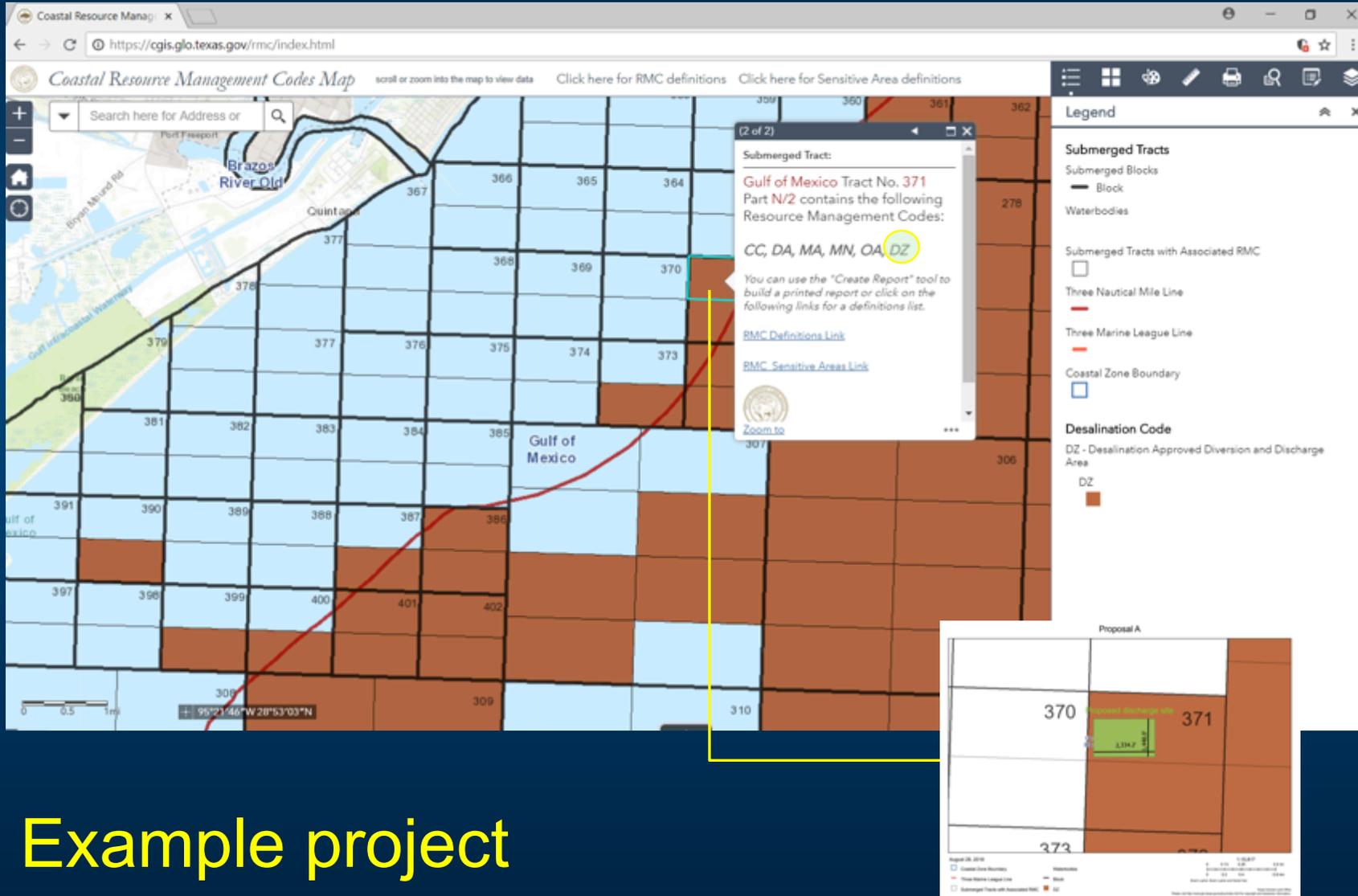
TPWD/Herrell 13-Aug-2018 E:\data\GIS\Distal\_A\2018

Online access to the recommended zones:

## *The Coastal Resource Management Codes Map*



<https://cgis.glo.texas.gov/rmc/index.html>



Example project

# Recommendations for brine concentrate discharges

## *Evaluations should include:*

- Total salt content as compared with receiving waters.
- Source of the salts (from groundwater or surface water).
- Ratio of the type of salts compared with those in the receiving water.
- Whether there is adequate circulation to prevent salt from building up over time to a point where it is toxic to the ecological community.
- Potential for depressed oxygen levels due to poor dispersion.
- Contaminants discharged with the brine resulting from
  - Natural sources such as fluoride and copper
  - Operation and maintenance such as conditioning reagents, antiscalant chemicals, and metals from corrosion of piping.
- A site-specific analysis is recommended to determine if there is toxicity and, if so, the steps needed to minimize the impact.

# Recommendations for marine seawater diversions

- Diversion points should not exceed flow-through velocity of 0.5 ft/sec, nor be co-located such that combined impacts in the surrounding approach area exceeds 0.5 ft/sec.
- Intake structure design should adjust or adaptively manage with varying flows and water quality that may occur at the intake site.
- Intake structures should be designed to reduce the flow velocity so that marine organisms may escape being drawn into the intake.
- Screens or booms, or both, should be used to exclude organisms from the intake
- A site-specific study of conditions at proposed intake locations to identify marine organisms at risk from intake operations, and to inform the design planning process.
- When feasible, directional drilling to install piping below the seabed and drawing water down through a sandy bottom will prevent impingement of organisms on intake screens exposed to open water, and entrainment of other organisms carried with the feedwater through the intake screen.

## What's next?

- Recommended diversion and discharge zones undergo rulemaking at TCEQ and final zones will be adopted no later than Sept 2020
- TWC Chapter 18 applicants are required to consult with TPWD and GLO until rulemaking is complete

**TEXAS**

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**PARKS &**

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**WILDLIFE**