



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

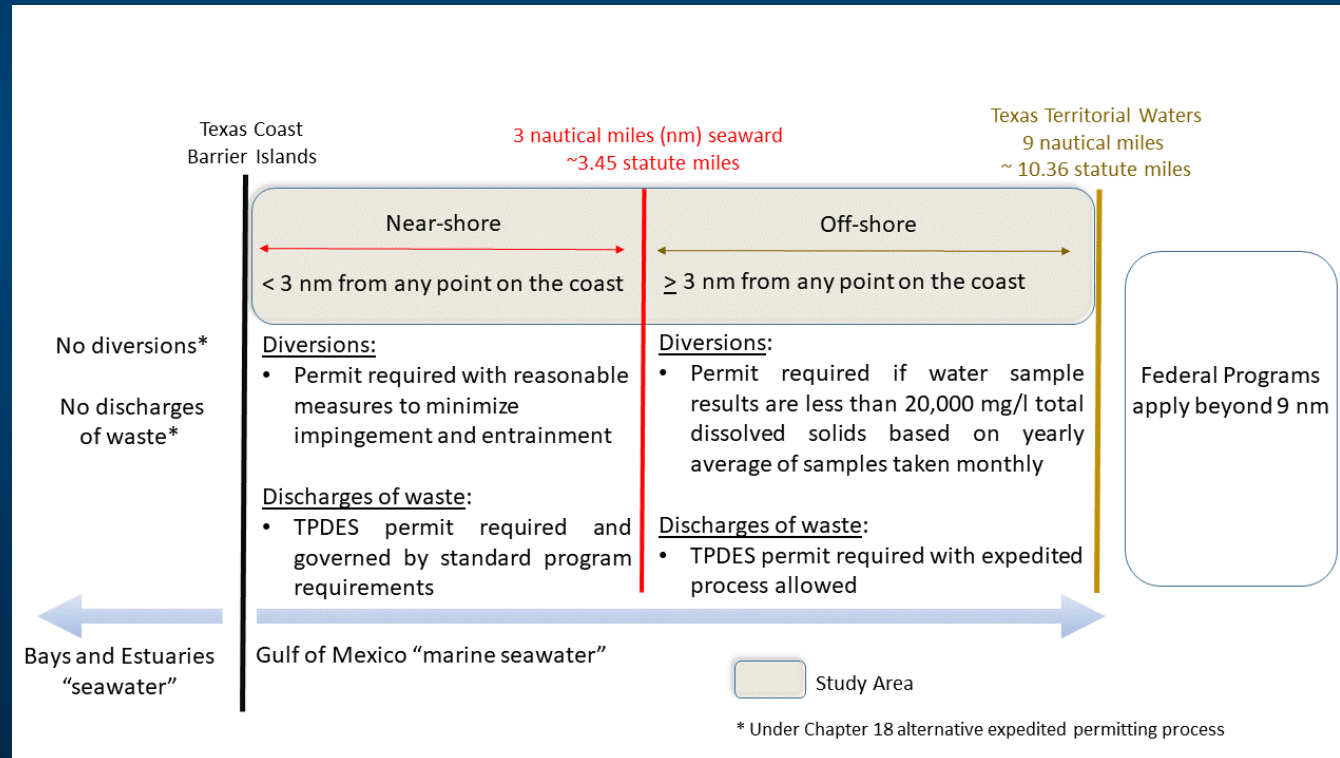
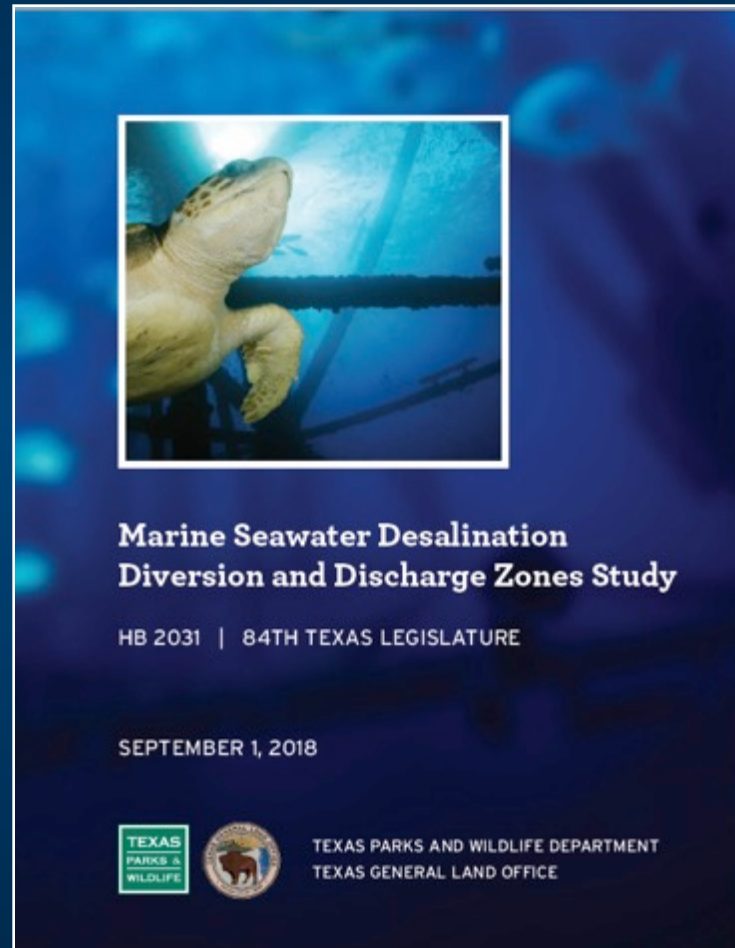


Illustration of Chapter 18 permitting requirements

TPWD-GLO study completed September 2018



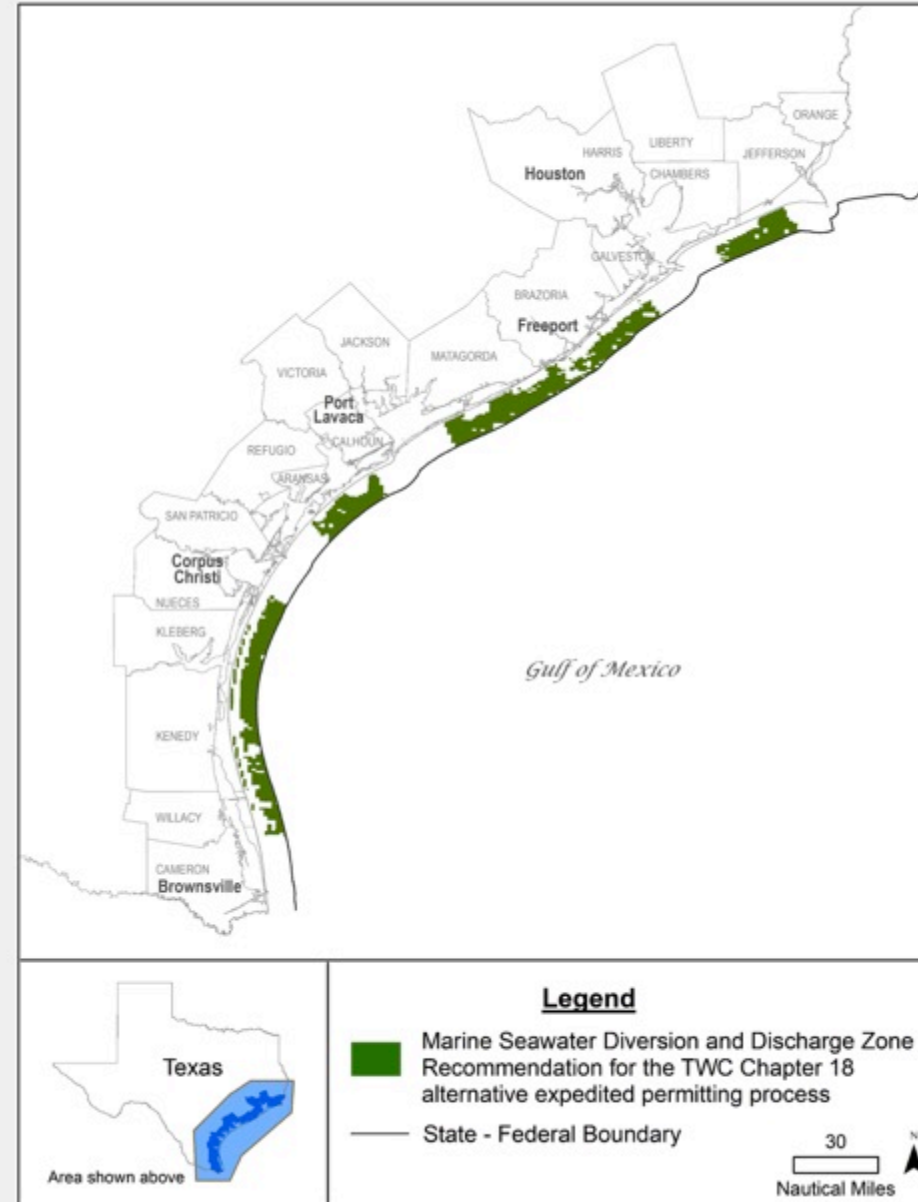
https://tpwd.texas.gov/landwater/water/conservation/water_resources/water_quantity/hb2031/hb2031dz.pdf

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

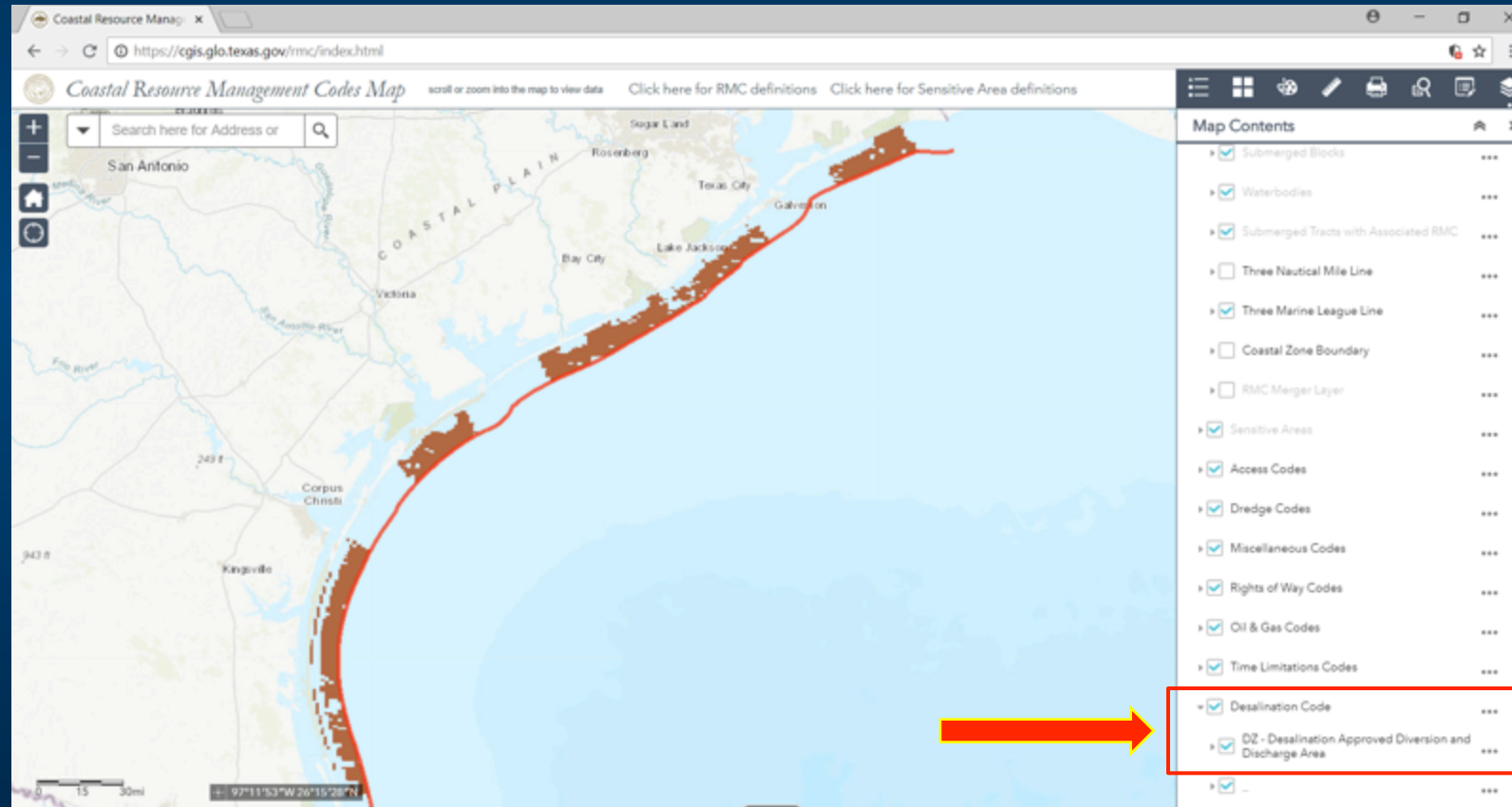
Zone Map

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

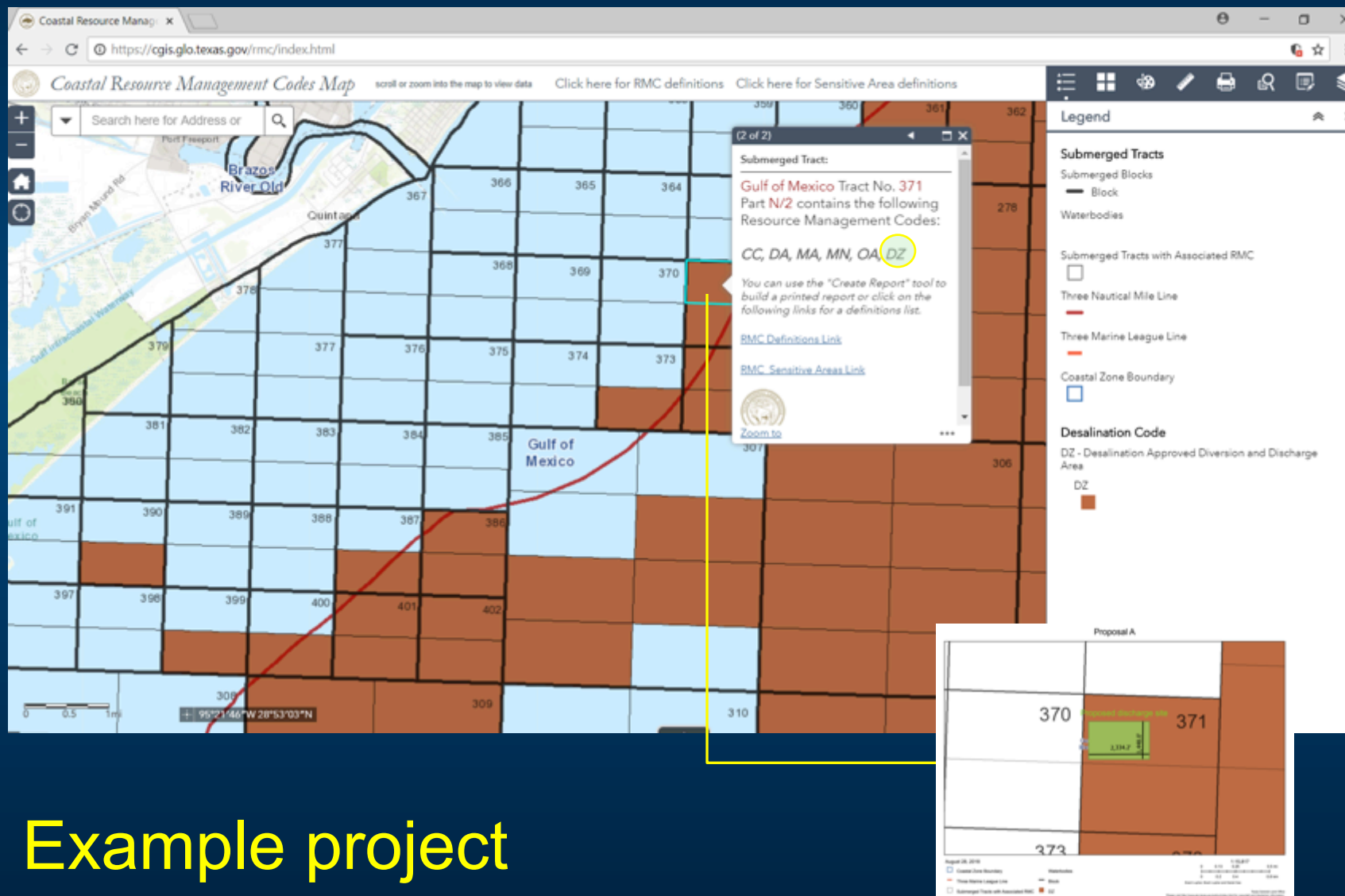


Online access to the recommended zones:

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

PARKS &

WILDLIFE