Texas Coastal Construction

Handbook

Texas General Land Office
David Dewhurst, Commissioner

Texas Coastal Construction Handbook

A sign on a beach of Brazoria County's Treasure Island subdivision indicates the seriousness of protecting dunes.

Acknowledgments

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Texas Coastal Construction Handbook

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The Texas Gulf of Mexico shoreline is one of the state's most unique environments offering sand beaches, gentle waves, pristine dunes, and uninhibited wildlife.

It's no wonder that so many folks long to visit or live near the coast.

However, if you choose to live along the Gulf shoreline, you must realize that you are living along an ever-changing body of water. Storms, especially hurricanes and tropical systems, can raise tides, waves, and winds. The Texas coast has been subjected to numerous deadly storms and shorefront homeowners must be aware of the potential impacts they bring.

The purpose of this handbook is to provide Gulf-front homeowners, developers, contractors, and coastal residents a quick guide that can be used as a reference for construction planning, dune restoration, and shorefront homeowner actions following disastrous storms.

This handbook contains excerpts from the General Land Office (Land Office) Rules for Management of the Beach/Dune System (31 TAC §§15.1-15.11). Copies of complete regulations for coastal development can be obtained from the Land Office or from the Texas Secretary of State website at http://www.sos.state.tx.us/.

If you have questions regarding a specific project, please contact your local county or municipal building permit authority or the Land Office.

Important Terms

BEACHFRONT CONSTRUCTION CERTIFICATE – The document issued by the local government that certifies that proposed construction is either consistent or not consistent with the local dune protection and beach access plan.

BEACH / DUNE SYSTEM – The land from the line of mean low tide of the Gulf of Mexico to the landward limit of dune formation.

BLOWOUT – A breach in the dunes caused by wind erosion.

CRITICAL DUNE AREAS – Those portions of the beach / dune system that are located within 1,000 feet of mean high tide of the Gulf of Mexico that contain dunes and dune complexes that are essential to the protection of public beaches, submerged land, and state-owned land, such as public roads and coastal public lands, from nuisance, erosion, storm surge, and high wind and waves. Critical dune areas include, but are not limited to, the dunes that store sand in the beach / dune system to replenish eroding public beaches.

DUNE – An emergent mound, hill, or ridge of sand, either bare or vegetated, located on land bordering the waters of the Gulf of Mexico.

DUNE PROTECTION AND BEACH ACCESS PLAN – (beach / dune plan) A local government's legally enforceable program, policies, and procedures for protecting dunes and dune vegetation and for preserving and enhancing use of and access to and from public beaches, as required by the Dune Protection Act and the Open Beaches Act.

DUNE PROTECTION LINE – A line established by a local government for the purpose of preserving all critical dune areas.

DUNE PROTECTION PERMIT – The document issued by the local government to authorize construction seaward of a dune protection line.

DUNE VEGETATION – Flora indigenous to natural dune complexes and growing on naturally formed dunes or man-made vegetated mounds on the Texas coast; can include coastal grasses and herbaceous and woody plants.

ERODING AREA — A portion of the shoreline with a historical erosion rate of greater than two feet per year based on published data of the University of Texas at Austin, Bureau of Economic Geology. Local governments may establish an "eroding area boundary" in beach / dune plans; this boundary shall be whichever distance landward of the line of vegetation is greater: 200 feet, or the distance determined by multiplying 50 years by the annual historical erosion rate.

EROSION — The wearing away of land or the removal of beach and / or dune sediments by wave action, tidal currents, wave currents, drainage, or wind. Erosion includes, but is not limited to, horizontal recession and scour and can be induced or aggravated by human activities.

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EROSION RESPONSE STRUCTURE — A hard or rigid structure built for stabilizing the shoreline and includes, but is not limited to, a jetty, groin, breakwater, bulkhead, seawall, riprap, rubble mound, revetment, or the foundation of a structure that is the functional equivalent of these specified structures.

LARGE-SCALE CONSTRUCTION – Construction activity greater than 5,000 square feet in area and habitable structures greater than two stories in height. Multiple-family habitable structures are typical of this type of construction.

LINE OF VEGETATION – (LOV, sometimes referred to as the vegetation line) The extreme seaward boundary of natural vegetation that spreads continuously inland and is typically used to determine the landward extent of the public beach.

LITTORAL ZONE — The area of the exposed beach seaward to just beyond the breaking waves.

LITTORAL SEDIMENT TRANSPORT OR LONGSHORE SEDIMENT TRANSPORT – The movement of sediment parallel to the shoreline; the volume of moving sediment is called littoral drift.

PUBLIC BEACH – Any beach bordering on the Gulf of Mexico that extends inland from the line of mean low tide to the natural line of vegetation bordering on the seaward shore of the Gulf of Mexico.

SMALL-SCALE CONSTRUCTION – Construction activity less than or equal to 5,000 square feet and habitable structures less than or equal to two stories in height. Single-family habitable structures are typical of this type of construction.

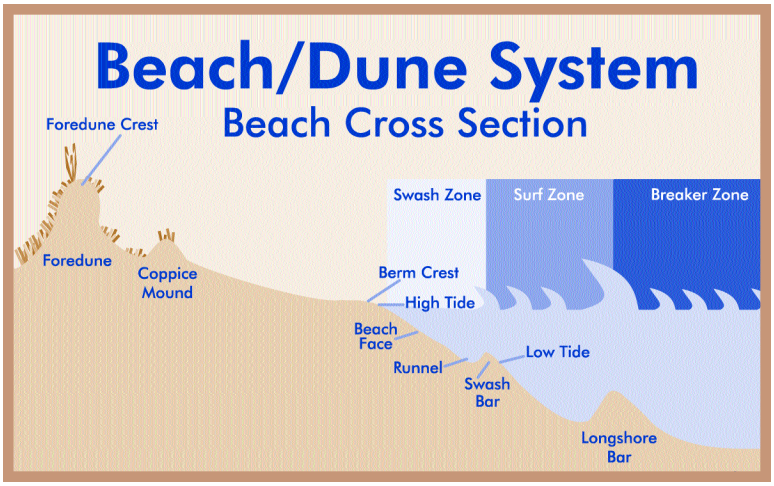

Figure 1. Figure 1 is a beachgoer's view of the dune, beach, and nearshore zone while Figure 2 (right) displays a bird's eye view of the shoreline. Many of the "Important Terms" identified on pages 2 and 3 are labeled.

Texas Gulf Shoreline

Natural beaches are formed by the accumulation of sand-sized or larger sediment along a coastline. In Texas, this sediment is mostly composed of very fine sand. Much of the sand was carried to the coast by former and present-day Texas rivers and deposited in the Gulf of Mexico. Some of the sand is from eroding coastal headlands and some is brought to the littoral zone from offshore. Once in the littoral drift, the sand particles are carried to the beach and deposited on the berm crest by normal waves and tides. Predominant winds from the southeast help blow sand to the dunes where it is trapped by vegetation and held until waves bring the dune sand back into the littoral drift during storms or periods of elevated tides.

This is why dunes are so important, they are the reservoirs of sand for beaches impacted by storms. Dunes also provide natural buffers that dissipate storm wave energy.

Vegetation on dunes can be easily damaged by human activities. Dune areas with little vegetative cover are susceptible to erosion by winds and blowouts.

Like many other coastal states, the Texas Gulf shoreline is generally eroding. Erosion rates range from high (-10.9 feet/yr) on Galveston Island downdrift of the Galveston seawall to stable (-1 foot/year) on Mustang Island (Morton, 1993). Some beaches on the updrift side of jetties are actually accreting. Samples

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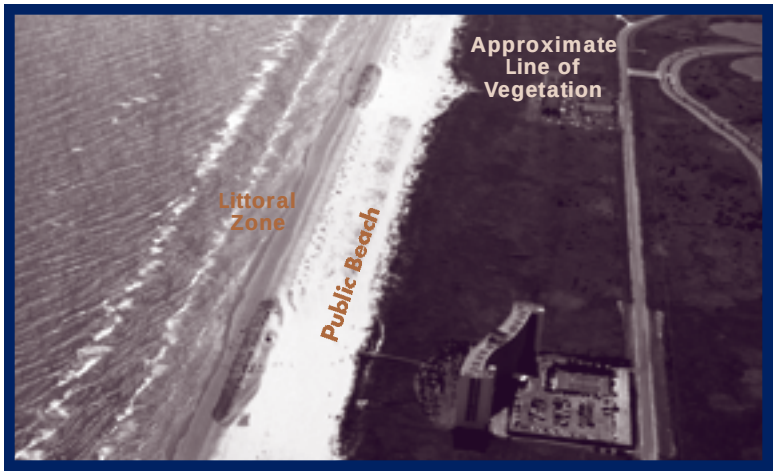

Figure 2. Aerial view of the shoreline

Texas Gulf Shoreline, cont'd.

of shoreline change rates are listed in Table 1. The causes of coastal erosion are well documented — from influences by storms and changes in climate to decreases in the amount of sediment in the littoral zone (McGowan et al., 1977).

Basically, there needs to be enough sediment within the littoral drift to keep the beaches in equilibrium. When sediment has been moved away by storms from the local system or is generally not available, the beaches erode. The main problem in Texas, and common in many other coastal states with high erosion rates, is managing structures and infrastructure on an eroding shoreline.

The University of Texas at Austin, Bureau of Economic Geology (BEG) is the state's official source of erosion rate information and the historical shoreline inventory. Erosion rates for both gulf and bay shorelines are available on their website at http://www.beg.utexas.edu/.

If you find that your property is located within an eroding area, certain building restrictions apply for new construction. These restrictions include that structures be elevated on pilings and designed for feasible relocation. Some local beach/dune plans contain specific details regarding paving. Check with your local building permit authority on the local restrictions. Permitting assistance may also be obtained at the Land Office website at http://www.glo.state.tx.us/coastalpermits/.

Location	Average Rate (ft / yr)
Bolivar Peninsula (Transect 45)	-5.3
Bolivar Peninsula (Transect 62)	+27.2
Galveston Island (Transect 13)	-10.9
Follets Island (Transect 2)	-13.2
Mustang Island (Transect 19)	-3.2
South Padre Island (Transect 18)	-7.8

(A negative number indicates landward movement of the shoreline.)

Table 1. Examples of shoreline change rates (from Morton, 1993)

Texas Coastal Laws, Regulations, and Programs

Texas Open Beaches Act (OBA)

Since the early frontier days when the beaches were used as public travel ways, the public has enjoyed its Gulf of Mexico beaches. The Texas Open Beaches Act (OBA), passed in 1959, codified the continued common law rights to access and use of the Texas Gulf shoreline by the public (Vernon's Texas Statutes and Codes Annotated, Natural Resources Code, §61.001). The OBA prohibits barriers or construction that will interfere with the free and unrestricted right of the public to access and use the public beach. The OBA further allows the public to use the public beach that moves with the changes in the shoreline in what is known as a "rolling easement." [1]

Important note – the OBA restrictions do not apply to property along bay shorelines. Bayfront property owners should contact their local building permit authority or their local Land Office field office for information on construction standards and permits.

Dune Protection Act (DPA)

The Dune Protection Act (DPA) was enacted in 1973 to preserve the coastal sand dunes and dune vegetation that characterize the Texas Gulf shoreline (Vernon's Texas Statutes and Codes Annotated, Natural Resources Code, §63.001). The DPA requires local governments to issue dune protection permits for construction seaward of their dune protection line, which may damage dunes or dune vegetation. The Land Office and the OAG may submit comments on the permit applications.

Coastal Erosion Planning and Response Act (CEPRA)

In 1999, the Texas Legislature passed the Coastal Erosion Planning and Response Act (CEPRA) to provide funding assistance to coastal communities for projects that slow the effects of coastal and shoreline erosion. Communities may submit proposals to the Land Office for such projects.

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1 The OBA requires local governments to issue beachfront construction certificates for all construction adjacent to public beaches. The Land Office and Office of the Attorney General (OAG) may submit comments on the certificate application.

Texas Coastal Laws, Regulations, and Programs, cont'd.

Coastal Management Program (CMP)

The Texas Coastal Management Program (CMP) contains a series of goals and policies aimed at protecting the Texas coastal environment. Texas receives funding from the federal government for coastal projects and the Land Office administers the grants program for these projects. The CMP directive is to review federal actions, any activity or project, and applications for federal assistance under other federal programs for consistency with the goals and policies of the CMP. CMP guidelines allow the Texas Coastal Coordination Council (CCC) to review coastal projects for consistency. The CCC may review applications for federal assistance, some beachfront construction certificates and dune protection permits issued by local governments, and local government dune protection and beach access plan certifications. For more information on the CMP, visit http://www.glo.state.tx.us/coastal/cmp.html.

General Land Office Rules

The Land Office Rules for Management of the Beach/Dune System (31 TAC §§15.1-15.11), also known as the Beach/Dune Rules, provide the basic criteria for development generally within 1000 feet landward of mean high tide. Portions of the Beach/Dune Rules are summarized in this handbook. For copies of the official version of the rules, contact the Land Office or check the Texas Secretary of State website given in the appendix.

Local Government Dune Protection and Beach Access Plans

Local governments are required to adopt plans that include the basic state criteria for development along the Texas Gulf shoreline. While the Beach/Dune Rules provide the basic criteria, local governments may adopt plans with more details and restrictions that match their community goals for managing the shoreline. By adopting plans, local governments have the authority to issue the permits and certificates for coastal development. Local governments with state-certified plans also are eligible to receive funding for coastal projects from the state CMP and CEPRA programs.

So, remember, it's a local permit or certificate, not a state-issued permit. Before you begin any beachfront construction, check with your local building inspector if you need to apply for a permit or certificate.

Applying for a Permit and/or Certificate

Dune protection permits and beachfront construction certificates are issued by each of the following local governments.

Jefferson County
Jefferson County Engineer
Jefferson County Courthouse
1149 Pearl Street, 5th floor
Beaumont, Texas 77701-3619
(409) 835-8584

City of Port Arthur
Director of Planning
City of Port Arthur
P.O. Box 1089
Port Arthur, Texas 77641-1089
(409) 983-8138

Chambers County
Floodplain Administrator
P.O. Drawer H
Anahuac, Texas 77514-1708
(409) 267-8379

Galveston County
Asst. Floodplain Administrator
123 Rosenberg, Suite 4157
Galveston, Texas 77550-1403
(409) 770-5552

City of Galveston
Director of Planning and
Community Development
City of Galveston
823 Rosenberg, Room 401
Galveston, Texas 77550
(409) 797-3660

Village of Jamaica Beach
City Administrator
Village of Jamaica Beach
P.O. Box 5264
Jamaica Beach, Texas
77554-5264
(409) 737-1142

Brazoria County
Brazoria County Floodplain
Administrator
200 E. Locust, Room 8
Angleton, Texas 77515-4684
(979) 849-5711

Village of Surfside Beach
Mayor
Village of Surfside Beach
1304 Monument Drive
Surfside Beach, Texas
77541-9999
(979) 233-1531, ext. 4

Village of Quintana
Mayor
Village of Quintana
814 N. Lamar
Quintana, Texas 77541
(979) 233-0848

Matagorda County
Floodplain Management
2200 7th Street
Bay City, Texas 77414-0571
(979) 244-2717

Nueces County
Nueces County Engineer
901 Leopard St., Suite 103
Corpus Christi, Texas
78401-3697
(361) 888-0490

City of Port Aransas
City Manager
710 W. Avenue A
Port Aransas, Texas
78373-4128
(361) 749-4111

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Applying for a Permit and/or Certificate, cont'd.

CITY OF CORPUS CHRISTI
Director of Planning
and Development
City of Corpus Christi
Planning Department
P.O. Box 9277
Corpus Christi, Texas
78469-9277
(361) 880-3560

CAMERON COUNTY
Director of Cameron County
Park System
P.O. Box 2106
South Padre Island, Texas
78597-2106
(956) 761-5493

TOWN OF SOUTH PADRE ISLAND
Department of Public Works
P.O. Box 3410
South Padre Island, Texas
78597-3410
(956) 761-1025

TEXAS GENERAL LAND OFFICE
Director
Resource Conservation Division
P.O. Box 12873
Austin, Texas 78711-2873
(800) 998-4GLO

SMALL BUSINESS & INDIVIDUAL
PERMITTING ASSISTANCE OFFICE
Permitting Assistance
Coordinator
Texas A&M University-Corpus
Christi
Natural Resources Building,
Suite 2800
6300 Ocean Drive
Corpus Christi, Texas
78412-5599
(866) 894-3578

Public beach access over a geotextile tube at a Galveston beach.

General Permit and Certificate Application Requirements

The following items are summarized from the Land Office Beach/Dune Rules and are required for a complete application to local governments to help them make the appropriate decisions for dune protection permits (permits) or beachfront construction certificates (certificates). Your local permitting authority may require additional items in its applications for construction.

Beachfront Construction Certificate

Application Requirements for All Proposed Construction

1. Applicant's name, address, and phone and fax numbers
2. Legal description and size of the tract
3. Number of proposed structures (amenities or habitable)
4. Applicant's written statement affirming that the construction, the completed structure, and use of or access to and from the structure will not adversely affect the public beach or public beach access ways or exacerbate erosion
5. Approximate duration of the construction
6. Description and location of any existing or proposed walkways or dune walkovers on the tract
7. Photographs showing the current location of the vegetation line and the existing dunes on the tract
8. Map identifying:
   - the site by its legal description;
   - the location of the property lines and description of adjoining tracts;
   - the location of the proposed construction and the distance between the proposed construction and mean high tide, the vegetation line, the dune protection line, and the landward limit of the beachfront construction area;
   - the location of proposed and existing structures, and the size of the proposed project area;
   - proposed roadways and driveways;
   - proposed landscaping activities within 200 feet of the LOV; and
   - the location of any retaining walls or erosion response structures on the tract and on the properties immediately adjacent to the tract and within 100 feet of the common property line.

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Dune Protection Permit

Application Requirements for All Proposed Construction

1. Applicant's name, address and phone and fax numbers
2. Legal description and size of the tract
3. Number of proposed structures (amenities or habitable)
4. Number of parking spaces
5. Approximate percentage of existing and finished open spaces
6. The structure's floor plan and elevation view
7. Approximate duration of the construction
8. Description and location of any existing or proposed walkways or dune walkovers on the tract
9. Grading and layout plan identifying all elevations, existing contours of the project area, and proposed contours for final grade
10. Photographs showing the current location of the vegetation line and the existing dunes on the tract
11. Description of the effects of the proposed activity on the beach/dune system (ex. damage to dune vegetation, alteration of dune size and shape, and changes to dune hydrology)
12. Comprehensive mitigation plan, which includes a detailed description of the methods to be used to avoid, minimize, mitigate and/or compensate for any adverse effects on dunes or dune vegetation
13. Proof of the applicant's financial capability to mitigate or compensate for adverse effects on dunes and dune vegetation
14. Map identifying:
    - the site by its legal description;
    - the location of the property lines and description of adjoining tracts;
    - the location of the dune protection line, the LOV, proposed and existing structures, and the project area of the proposed construction on the tract;
    - proposed roadways and driveways and landscaping on the tract;
    - the location of any seawalls or any other erosion response structures on the tract and on the properties immediately adjacent to the tract; and
    - if known, the location and extent of any man-made vegetated mounds, restored dunes, fill activities, or any other pre-existing human modifications on the tract.

Requirements for Permit and Certificate Applications for Large-scale Construction

1. A certified copy of the recorded plat of the subdivision and a statement of the total area of the subdivision in acres or square feet
2. Number of units proposed
3. Alternatives that would cause fewer or no adverse effects on dunes and dune vegetation or less impairment of beach access
4. Impacts on the natural drainage pattern of the site and the adjacent lots

A CMP consistency determination is required for some large-scale projects. For example, the CCC may review a local permit or certificate for a proposed project that will disturb more than 7,000 square feet of dunes and dune vegetation and will be located within 200 feet landward of the LOV.

Who Reviews the Application and Issues the Permit or Certificate?

Each local permitting authority has different ways of issuing permits and certificates. Some require planning board approval while others issue them through the engineer's office.

Once an application is deemed complete by the local permitting authority, the application is submitted to the Land Office and OAG for review and comment. These state agencies have ten working days to complete their reviews and provide comments to the local permitting authority.

If, however, the agencies find problems with the application, the applicant must correct them and resubmit it to the local permitting authority. The local government issues or denies the permit or certificate under the terms and conditions of its local beach/dune plan.

Dunes on the beaches of Brazoria County

Construction Near Dunes and Dune Vegetation

Designs for coastal construction should avoid any impacts to coastal sand dunes due to their importance as natural buffers to tides and waves and for their function as sources of sand to the beach while impacted by storms. If however, dunes and dune vegetation are impacted by construction activities, the *Dune Protection and Improvement Manual for the Texas Gulf Coast* and the *Dune Protection Guide* provide information on repairing and improving dunes. Both publications are available online from the Land Office at http://www.glo.state.tx.us/.

The Beach/Dune Rules require that unavoidable impacts to dunes and dune vegetation be addressed in the design and the construction phases of a project. The repairing, rehabilitating or restoring process is called dune mitigation, and it requires that every scoop of dune sand and every plant that is damaged be replaced, at a minimum, to the extent that it had occurred naturally on the tract. A dune mitigation plan must be submitted along with the permit application. The local government must determine prior to issuing a permit that there will be no material weakening of the dunes and dune vegetation.

In designing a dune mitigation project, plan to restore the dunes to approximate the natural position, contour, volume, vegetative cover, elevation, and sediment content. Salt-, wind-, and drought-tolerant native beach grasses such as bitter panicum, sea oats, or marshhay cordgrass are the preferred choices for dune vegetation. Repair blowouts and breaches first, then focus on the dune areas along the line of vegetation. Avoid constructing a wall or berm of sand as this does not mimic natural dune formation. Plants and temporary sand fences may be permitted on the beach within 20 feet seaward from the LOV. Slatted wood or plastic mesh sand fences may be used, but they should be removed once the vegetation takes hold.

Beach Access by Dune Walkovers

Dune walkovers are a common structure that can be built to channel pedestrian traffic over Texas coastal sand dunes onto the public beach. They stop folks from creating footpaths through the dunes that could create blowouts and thus help preserve the existing vegetation on the dynamic landscape. Public beach access ways are usually clearly marked.

A permit and certificate must be obtained prior to constructing or modifying dune walkovers. In constructing them, walkovers must be restricted to the most landward point of the public beach and not interfere with, or restrict public use of, the beach at normal high tides. If a storm should occur that causes a significant landward migration of the line of vegetation and the public beach, then dune walkovers must be shortened to coincide with the new location of the LOV.

Dune walkover construction standards and designs can be found in the *Dune Protection and Improvement Manual for the Texas Gulf Coast* or from the U.S. Army Corps of Engineers electronic library at http://chl.wes.army.mil/library/publications/chetn/pdf/cetn-ii5.pdf/.

Erosion Response

Shoreline erosion often results in the loss of public and private property and infrastructure because structures usually are not constructed to move with the ever-changing shoreline. With the many forces of nature that cause the erosive process, it is a difficult and expensive task to manage an eroding shoreline. For protecting homes and infrastructure along the Gulf of Mexico shoreline, the state prefers nonstructural methods such as restoring or repairing damaged dunes, creating new dunes, beach nourishment, and nearshore sediment berms. The use of groins, breakwaters, revetments, and seawalls that can modify the natural shoreline and create problems downdrift of them is discouraged.

Local governments are prohibited from issuing permits or certificates for bulkheads, seawalls, groins, and breakwaters. However, they may authorize the construction of a retaining wall if it will be located more than 200 feet landward of the LOV. Existing erosion response

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Erosion Response, cont'd.

structures (bulkheads and riprap) may not be repaired, enlarged or improved within 200 feet landward of the line of vegetation.

Recently, geotextile tubes have been installed by local governments in several areas along the upper coast parallel to the shoreline at the LOV to protect shorefront homes from waves. This practice of shorefront protection is relatively new for the Texas Gulf coast shoreline and the state agencies are working with various coastal stakeholders to develop rules for using geotextile tubes as shorefront protection. State policies protect the public right to access and use the Texas Gulf beaches by requiring public input in the review and approval process, and by requiring that existing public access be replicated if not enhanced in geotextile tube project areas. A public sponsor must receive a dune protection permit issued by the local government for the construction. All of the geotextile tube projects should be planned and designed to protect communities and public infrastructure, not individual private homes, commercial properties, or other privately owned properties. Such projects should be designed to avoid and minimize any detrimental effects to adjacent beaches or properties at either end of the geotextile tube. Certain environmental considerations should be taken into account such as not placing geotextile tube projects in sea turtle nesting areas or on stable or accreting beaches. Geotextile tubes should be covered with sand and conform to the Land Office standards for dune restoration projects. Natural dune vegetation should be planted. Sand should not be taken from the beach/dune system to fill or cover a geotextile tube project. All projects should be monitored using state guidelines. The sponsor of a geotextile tube project should be responsible for ongoing maintenance of the project and, if necessary, removal of the project.

The policies for geotextile tubes could change within the next few years depending on public concern and how geotextile tube projects perform during storms and under everyday coastal conditions.

Post-Storm Emergency Erosion Response

Post-storm erosion response is governed by state law, the local dune protection and beach access plans, and the Beach/Dune Rules. The term "emergency erosion response" becomes effective when the Governor declares a state of emergency and requests federal assistance following a storm incident. At that time, federal funding may be made available to those with flood insurance for acquiring, relocating, or elevating damaged structures.

If storm erosion moves the natural LOV to a position landward of existing beachfront structures, the Attorney General, district attorney, or county attorney may enforce the OBA by seeking a court order for the removal of such structures from the public beach. The OBA also prohibits the construction of any new structure seaward of the post-storm location of the LOV.

Local governments are required to assess the status of the public beach boundary within 30 days after a major storm or other event causing significant landward migration of the public beach. After the assessment, local governments will inform the Land Office and the OAG of any encroachments on the public beach within ten days of completing the assessment.

No rebuilding will be allowed for structures seaward of the LOV. Also prohibited are the construction or repair of bulkheads, riprap, or other erosion response structures, construction activities that interfere with the natural formation of sand dunes, and construction activities that interfere with public use of the beach area immediately adjacent to the structure.

Local governments can issue permits and certificates for repairing erosion response structures if the local government determines that failure to repair a structure will cause an unreasonable hazard to a public facility immediately landward of it, or if failure to repair it will allow adjacent erosion response structures to channel floodwaters toward the habitable structure.

Shorefront landowners should contact their local city planning department, county engineer's office, or city/county floodplain administrator for information before undertaking any construction activities following a storm. Local governments and the Land Office can also provide information on approved methods for shorefront protection.

References

McGowen, J.H., Garner, L.E., and Wilkinson, B.H., 1977, The Gulf Shoreline of Texas: Processes, Characteristics, and Factors in Use, Univ. of Texas, Austin, Bur. Econ. Geology Geol. Circ. 77-3, 26p.

Morton, R. A., 1993, Shoreline Movement along Developed Beaches of the Texas Gulf Coast: A users' guide to analyzing and predicting shoreline changes, Univ. of Texas, Austin, Bur. Econ. Geology Open File Rept. 93-1, 79p.

Texas General Land Office, 1991, Dune Protection and Improvement Manual for the Texas Gulf Coast, 24p.

Texas General Land Office, 1996, Texas Coastwide Erosion Response Plan, Report to the 75th Texas Legislature, Austin, Texas, 91p.

Texas General Land Office 2001 Coastal Erosion Planning & Response Act, Report to the 77th Texas Legislature, Austin, Texas, 185p.

Appendix. You can find the Land Office Rules for Management of the Beach/Dune System at the Texas Secretary of State Website http://www.sos.state.tx.us/

Texas Administrative Code (TAC Viewer)
Title 31 Natural Resources Code
Part 1 General Land Office
Chapter 15 Coastal Area Planning
Subchapter A Management of the Beach/Dune System
§§15.1-15.11 Rules

TEXAS GENERAL LAND OFFICE

Resource Management Program
P.O. Box 12873
Austin, Texas 78711-2873
(800) 998-4GLO