

NC Division of Coastal Management



NC Dept. of Environmental Quality

Division of Coastal Management

Coastal States Hardened Structures

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Maine

- Hardened structures generally prohibited
- Alterations/Replacement under emergency provisions
- 2025 amendment allows one-time height increases



Roger Wheeler State Beach (photo credit: abc 4 news)

Massachusetts

- Restricts hardened structures
- Beach renourishment preferred
- Dune-adjacent construction must avoid impacts to vegetation



Salisbury Beach (photo credit: Citizens for Change via Facebook)

Rhode Island

- Hardened structures prohibited to 75% of the coastline
- Must demonstrate non-structural alternatives have been evaluated before allowance



Matunuck post Tropical Storm Sandy
(photo credit: CRMC)

Connecticut

- Hardened structures allowed when necessary to protect pre-1995 homes



Waterford (photo credit: uconn.edu)

New York

- Hardened structures are discouraged unless necessary
- Nourishment preferred



East Rockaway Beach (photo credit: USACE)

New Jersey

- Hardened structures discouraged
- Repairs to pre-1981 structures allowed under restrictions
- Nourishment and dune restoration preferred



Avalon (photo credit: NJ.com)

New Jersey



Gateway National Recreation Area (photo credit: NPS)

Delaware

- Hardened structures prohibited
- Prioritizes retreat and renourishment



Indian River (photo credit:coasttv.com)

Maryland

- Hardened structures prohibited
- Exceptions for repairs to existing structures in Ocean City



Ocean City (photo credit: Getty Images)

Virginia

- Hardened structures generally prohibited
- Permitted only when there is no ecological harm and serves public interest
- Nourishment preferred



Virginia Beach (photo credit: virginiebeach.gov)

South Carolina

- Hardened structures prohibited except for protecting public roads predating the Beachfront Management Act
- Groins may be allowed only on nourished beaches



Debidue Beach (photo credit: Charles Swenson/Coastal Observer)

Georgia

- Hardened structures discouraged
- Exceptions for public works needs



Tybee Island (photo credit: coastalgadnr.org)

Florida

- Hardened structures allowed when protections are required and no alternatives



St. Augustine Beach (photo credit: USACE)

Alabama

- Hardened structures allowed when alternatives are infeasible



Orange Beach (photo credit: al.com)

Louisiana

- Hardened structures evaluated on case-by-case basis
- No prohibition of hardened structures



Rockefeller Wildlife Refuge, Gulf of Mexico
(photo credit: asce.org)

Texas

- Hardened structures prohibited seaward of vegetation line
- May be allowed on public property outside public beach areas



Galveston (photo credit: Texas A&M)

California

- Hardened structures allowed only for coastal dependent uses and development endangered by erosion



Dana Point (photo credit ocregister.com)

Oregon

- Hardened structures prohibited for development built after 1977
- Vegetation, sandbags, and retreat preferred



Manzanita (photo credit: beachconnection.net)

Conclusion



- Majority of coastal states discourage hardened structures
- Renourishment and retreat is preferred
- Coastal permitting and allowance of ocean erosion control is different in each state and difficult to compare