

How Contractors Evaluate Shorelines Before Building a Bulkhead

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Bulkhead construction begins long before pilings, panels or other structural components reach a shoreline. Contractors typically evaluate soil conditions, erosion patterns, water levels, drainage, existing structures and site access before determining how a bulkhead project should proceed.



For waterfront properties in Louisiana, those considerations can become particularly important because shorelines are constantly influenced by water movement, rainfall, storms and changing soil conditions.

“

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Elwin Ordoyne

A bulkhead is generally constructed to help retain soil and stabilize the boundary between land and water. While the finished structure may appear relatively straightforward, conditions below the surface and behind the wall can significantly affect construction decisions.

“Shoreline evaluation is about understanding what is happening at the property before deciding how the bulkhead should be built,” said [Elwin Ordoyne](#), Vice

President of [E.C.O. Builders Inc.](#) in Slidell, Louisiana. “Soil movement, erosion, drainage and water conditions can all affect the structure. Looking at those factors early provides information needed for planning the project.”

Examining Existing Shoreline Conditions

One of the first steps involves examining the physical condition of the shoreline.

Contractors may look for visible erosion, collapsed soil, exposed roots, washouts or sections where the land has gradually moved toward the water. Existing retaining structures may also provide information about conditions at the site.

An older bulkhead that is leaning, separating or deteriorating can offer clues about soil pressure, drainage problems or water movement.

The shape of the shoreline also matters. A straight canal frontage can present different construction considerations from a curved shoreline, irregular bank or property exposed to open water.

Measurements are generally taken to establish the length and configuration of the proposed structure.

Soil Conditions Affect Construction

What exists beneath the visible ground can be as important as what appears above it.

Louisiana properties can contain combinations of clay, sand, silt and organic material. Different soil types behave differently when exposed to moisture and pressure.

Soft or unstable soil can affect piling depth and structural design. Contractors may evaluate how well the soil can support structural components and whether signs of settlement or movement are present.

Soil behind the proposed bulkhead must also be considered because the wall will retain that material after construction.

A bulkhead is subjected to pressure from both sides. Water acts on one side while soil, groundwater and other forces act on the other.

Understanding those conditions helps determine appropriate construction methods.

Water Levels Provide Important Information

Water levels can fluctuate throughout the year.

Rainfall, tides, storms, drainage systems and nearby waterways can influence the amount of water present along a property.

Contractors evaluate typical water levels along with evidence showing how high water may rise during changing conditions.



The height of a bulkhead must account for the relationship between the land and the water. A structure positioned too low may provide inadequate soil retention during elevated water conditions, while other site characteristics can influence the appropriate elevation.

Water depth can also affect construction access and installation methods.

Drainage Behind the Bulkhead Matters

Not all water pressure comes from the canal, bayou, lake or other body of water.

Rainwater and groundwater behind a bulkhead can create pressure against the structure if drainage is not properly considered.

Water moving through surrounding soil needs an appropriate path. Without adequate drainage, hydrostatic pressure can develop behind a retaining structure.

Contractors may examine property grading, downspouts, drainage ditches, nearby paved surfaces and other features that influence how water travels across the property.

Drainage planning can therefore become part of the bulkhead evaluation rather than a separate issue addressed after construction.

Existing Structures Can Affect the Plan

Waterfront properties often contain docks, boat lifts, decks, fences, sheds, swimming pools or other improvements located near the shoreline.

The position and condition of those structures can affect equipment access and construction methods.

Nearby homes and foundations may also need consideration when construction takes place close to an occupied structure.

Property boundaries represent another important factor. Contractors need accurate information about where construction can occur, particularly when neighboring waterfront properties share portions of a shoreline.

Site Access Determines How Work Can Be Performed

Bulkhead construction requires materials and equipment to reach the shoreline.

That can be simple on an open property and considerably more complicated on a developed residential lot.

Contractors evaluate whether equipment can reach the construction area from land, whether

work must be performed from the water or whether a combination of methods will be necessary.

Trees, fences, landscaping, utility lines, neighboring structures and narrow side yards can all influence access.

Material staging also requires consideration. Pilings, panels and other components need space for delivery and handling before installation.

Erosion Patterns Can Reveal Larger Issues

Visible erosion is often the reason a property owner begins considering a bulkhead, but contractors generally look beyond the most obvious damaged area.

The direction of water movement can reveal where soil is being lost and why.

Boat wakes, storm runoff, tidal changes and drainage discharge can contribute to erosion. Identifying those patterns can help determine whether additional site considerations should accompany the bulkhead project.

“Waterfront construction involves more than placing a wall along the edge of the property,” Ordoyne said. “Conditions around the shoreline help determine what the structure will be dealing with after construction is complete.”

Planning Begins With the Shoreline

Every waterfront property presents a different combination of soil, water, drainage, access and existing development.

Evaluating those conditions before construction provides information needed to determine dimensions, materials, installation methods and other structural considerations.

For Louisiana properties, where water and soil conditions can change considerably from one location to another, shoreline evaluation remains an important early stage of bulkhead planning.

A bulkhead may eventually become the most visible part of a shoreline project, but much of the decision-making begins with understanding the ground, water and structures already present.

About E.C.O. Builders Inc.

E.C.O. Builders Inc. is a construction company based in Slidell, Louisiana, providing residential construction, renovation, elevation, foundation, bulkhead and related construction services.

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