DFW-3

Replacement of Hard Shoreline Stabilization Structures

I. Summary:

The intent of this guidance is to provide a basis for consistent permit application reviews for replacement of functional and lawfully existing shoreline stabilization structures under the Tidal Wetlands regulatory programs.

II. Guidance:

This guidance applies to the replacement of functional and lawfully existing shoreline stabilization structures**.** Structures that are not functional or lawfully existing as defined in this guidance document, are not authorized for replacement structures. Applications to replace non-functional structures are evaluated as applications for new structures. Structures that are not lawfully existing are subject to enforcement as provided in Part 621.3 (f), Uniform Procedures.

This guidance applies to the replacement of hard structures such as bulkheads, seawalls, jetties, groins, revetments and retaining walls. Soft solutions such as beach nourishment, dune restoration, berms, biologs and planting are not considered under this guidance other than to note that soft stabilization methods are preferred wherever such methods can be practically applied.

Terms:

A. Hard Shoreline Stabilization Structure -refers to any structure or man-made feature whose purpose is to stabilize the shoreline substrate and protect it from erosion. Hard shoreline stabilization structures include, but are not limited to, bulkheads, seawalls, retaining walls, revetments, rip-rap, jetties and groins.

B. Functional - A structure is considered functional if it is currently operating as designed for its intended use and has been maintained in working order (e.g. in the case of a bulkhead that forms the barrier between land and water, it keeps the water on the water side and the land on the land side). Please refer to DFW-1 Guidance on Functionality.

C. In-Kind Replacement - refers to the replacement structure will be of the same construction type and materials. Examples include replacement of an existing navy-style, wood bulkhead (a bulkhead where both the wales and the timber piles are seaward of the bulkheads sheathing) with a new navy-style, wood bulkhead; replacement of an existing rock revetment with a new rock revetment of similar core stone and armor stone sizes; and replacement of an existing concrete seawall with a new concrete seawall of the same thickness, height and footing.

D. In-Place Replacement - refers to replacement in the same location as the existing structure

with no seaward extension of the outermost bulkhead face. In-place replacement requires removal of the existing structure.

E. Seaward Replacement - means replacement of the existing structure with a new structure that is constructed seaward of the existing structure. The seaward distance may be variable depending on construction type and materials, the location of existing structures and/or the desire to reclaim or create upland area.

F. Lawfully Existing - means any structure constructed in full compliance with all applicable Department statutes, rules and regulations, including having all Department permits that may be required.

A. In-Kind / In-Place Replacement:

Replacing a functional and lawfully existing shoreline stabilization structure requires a permit from the Department under 6 NYCRR 661 (Tidal Wetland Land Use Regulations). Depending on the location of the structure and the construction techniques proposed, a permit may also be required under 6 NYCRR 608 (Protection of Waters). In-kind, in-place replacement of existing, functional structures is specifically identified as a generally compatible activity (GCp) under Use Category 22 of the Tidal Wetland Land Use regulations [Part 661.5(b)]. Proposed projects that fall into this category may result in temporary construction impacts but are expected to cause few long-term changes to existing conditions at a project site. Therefore, these projects are generally granted permits by the Department, subject to conditions designed to minimize or mitigate construction impacts and the environmental disturbance associated with the project.

B. Alternatives to In-Kind Replacement:

When in-place replacement of an existing, functional structure is proposed but the construction type or material will be altered, further review may be required to determine whether these alterations are minor and the proposed project still qualifies as in-kind replacement or if the alternatives are significant. For example:

- Change of Materials: Some towns prohibit the use of treated woods in structures that will be in contact with tidal waters. Property owners in these areas must construct replacement structures from alternative materials such as vinyl, fiberglass or untreated hardwoods. Similarly, wood treatments such as CCA have not provided the long-term protection that was initially expected in marine and estuarine environments. As a result, most applications for bulkhead replacement currently propose alternative materials whether or not these alternatives are required by local code. If the proposed material, such as vinyl or fiberglass, is expected to reduce chemical leaching from the structure or provide a longer life for the replacement structure so that disturbance for long term maintenance is reduced over time then the proposed change in material may be viewed as an approvable project improvement. Generally approvable materials for replacing existing, functional bulkheads include

fiberglass, steel, vinyl and treated or untreated wood. Generally acceptable examples of bulkhead replacement proposing a change in bulkhead materials are: smooth faced bulkheads replaced with navy style bulkheads are approvable should the seaward most face of the bulkhead sheathing of the new structure be in the same location as the seaward most face of the replacement structures sheathing; similarly, smooth faced bulkheads or navy style bulkheads replaced with corrugated bulkheads of steel and fiberglass are approvable should the seaward most face of the corrugated sheeting of the new structure be in the same location as the seaward most face of the replacement structures sheathing.

Some changes in construction materials, such as changing from wood to poured concrete, will result in more extensive construction impacts and require specialized permit conditions to mitigate potential impacts before the project can be authorized. Such proposals may require complete technical review and evaluation on a site-by-site basis.

- Change in Project Design:

The Department does not typically require changes in project design for the replacement of legally-existing, functional structures with the specific exception of structures that are determined to have an adverse impact on other properties or when site conditions have significantly changed. In these situations, the Department seeks to modify the project design to maintain shoreline protection while minimizing adverse impacts associated with the structure. Examples include, but are not limited to, requiring stone riprap when a bulkhead return is showing clear signs of scour on adjacent properties or requiring low profile construction for proposed groin replacements to minimize impacts on sediment transport and down-drift properties. Low profile groin construction limits the height of the new structure to 18" above the height of the down drift beach with the length of the structure not to extend seaward of apparent low water (low water determined on the date and time of site inspection not a mean low water determined from an 18 year average. This construction helps to retain the existing up drift beach or shoreline while continuing to allow some sediment transport over the structure and reducing the distance that transport is pushed offshore. Similarly, wave break replacement typically requires that the proposed replacement structure provides a minimum of two inch spacing between the slats, with the bottom of the structure no less than two feet from the existing bottom grade.

Changing site conditions may also require substantial changes to the proposed project, for example when the tidal wetland boundary has significantly changed or when significant amounts of vegetated wetlands have become established. In some situations, a replacement hard structure may no longer be feasible or may need to be significantly reduced in scope. Under these circumstances, determining appropriate alternatives may require a full technical review.

- Change in the Type of Structure: A proposal to change the type of hard structure at a project site, such as replacing an existing rock revetment with a new bulkhead or an existing bulkhead with a new rock revetment, will require a complete technical review even when an in-place replacement is proposed. Determinations for project authorization must be made on a site-by-site and case-by-case basis. Some considerations when designing these changes would be: changes that would result in avoidance of further seaward encroachment of the proposed structure and no increase in potential for seaward beach scour or erosion.

- Change in Elevation: Increasing the elevation of an existing structure may be proposed for a variety of reasons. For example, increasing the elevation of a bulkhead may provide flood control benefits in addition to the structure's primary function of controlling erosion. Some towns have established a minimum elevation requirement for all replacement bulkheads. These are typically low-lying communities that are prone to flooding during storm events. Increasing the height of an existing structure may address practical construction difficulties at the project site. For example, if dredging is proposed, the height of the existing bulkhead may not provide sufficient capacity to contain the dredged material. Removing the material from the site will require additional costs for transportation and disposal and may also require sediment testing and contaminant analysis to determine appropriate disposal options under the state regulations for the management of solid waste materials [Part 360-1.2(a)(4)(ix)].

  Minor increases in the elevation of existing bulkheads are authorized by the Department without additional technical review. However, because increasing the elevation of an existing structure can have environmental and aesthetic impacts; these expedited authorizations are generally provided within limits according to the following guidance:

  > Minor increases in elevation are authorized for replacement bulkheads only. Proposals to increase the elevation of replacement groins, jetties, wave breaks, revetments or other shoreline stabilization structures will require further technical review.
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  > The replacement bulkhead may be increased to 18" or no higher than the height of both adjoining structures.

  Applications that propose to increase the height of an existing structure that do not meet the above criteria or to increase the height of a shoreline stabilization structure other than a generally approvable bulkhead may require further technical review and impact assessment. The principal issues of concern are variable depending on the type of structure and existing conditions at the project site. However, impacts to be assessed are likely to include one or more of the following: impacts to existing drainage patterns; current and sediment transport patterns; tidal flow; loss of habitat; and/or public health and welfare.

When the applicant requests increases in bulkhead heights greater than the above noted criteria, the new bulkhead may be increased if the applicant provides justification that potential storm water or habitat related impacts have been addressed in the proposal. Generally, if these issues have been addressed, the height increase will be approvable.

Sites where tidal wetlands are present landward of the existing bulkhead (e.g., low-sill bulkheads) require technical review.

C. Alternatives to In-Place Replacement:

Landward replacement of existing, functional structures typically results in fewer construction impacts to adjacent tidal wetlands and, in most cases, is preferable to both in-place and seaward replacement. Factors to consider in the landward replacement of existing structures include the following:

- In the vast majority of cases, landward replacement will occur in the adjacent area (AA) and not in a regulated tidal wetland. If the activity is limited to the adjacent area, it is identified as a generally compatible (GCp) activity under Part 661.

- In areas where the existing structure is functional, substantial and greater than 100 feet in length, landward replacement may actually occur beyond the Department's jurisdiction. For an activity to take place behind a bulkhead and be non-jurisdictional the bulkhead also needs to predate the law (August 20, 1977). Under these circumstances, the project does not require a permit from the Department as long as the existing structure remains intact. Removal of the existing structure will still require a Tidal Wetland permit.

- When a vegetated marsh is present and adjacent, or in close proximity, to the seaward face of the existing structure, landward replacement prevents the encroachment that occurs from seaward replacement and also protects against the disturbance and sedimentation that are frequently associated with in-place construction. Once the landward replacement structure is completed and can effectively retain sediments, the existing structure can be cut to grade and removed.

  If, however, landward replacement requires the relocation or removal of more substantial accessory structures such as garages, guest houses, in-ground pools or significant utility line disturbance, it may result in unreasonable financial and practical hardship. In such cases, it is again the burden of the applicant to properly document and demonstrate that such site conditions exist and preclude the replacement alternative.

Seaward Replacement of an existing structure encroaches on, and frequently results in the loss of, existing wetlands and waterways. If the existing structure is landward of the wetland boundary and the proposed seaward replacement remains in the adjacent area, then the project is generally compatible (GCp) under the Tidal Wetlands regulations.

Seaward replacement of an existing hard structure in a regulated wetland is categorized as either presumptively incompatible (PIp) in vegetated marsh areas or generally compatible (GCp) in shoals, mud flats and the littoral zone (use category #29). However, any structure that requires the placement of fill in a regulated wetland is classified as presumptively incompatible (PIp) (use category #30). If the fill material is dredged material, then the activity is listed as Incompatible (use category #31) in vegetated marshes and a permit shall not be issued for this activity. These activities may require authorization under Protection of Waters Part 608.

Under the regulations, proposed projects must conform to the standards of permit issuance. The regulations provide general guidance only with regard to the type of wetland impacted. The Department must evaluate the value of the impacted wetlands and the impacts of the proposed project. In the case of seaward replacement structures, particular attention should be paid to whether or not the proposed project: 1) will cause *undue* adverse impacts; 2) is compatible with public health and welfare and; 3) is reasonable and necessary, taking into account *reasonable* alternatives. Construction of seaward replacement structures that result in the filling and loss of tidal wetlands or public waters is a presumptively incompatible activity and requires site-specific justification and appropriate mitigation for Department authorization.

Examples of situations when seaward replacement structures may meet the burden required for authorization include, but are not limited to:

- When the seaward replacement structure is proposed in the adjacent area (landward of apparent high water) and no vegetated marshes are impacted. It should be noted that even in the adjacent area, seaward replacement of an existing structure is likely to accelerate and/or increase adverse impacts associated with the structure (e.g., wave reflection during storm events). Therefore, the distance the replacement structure is authorized to move seaward should be minimized to reasonable construction requirements.

- When landward and in-place replacement alternatives are not feasible without significant risk to structural integrity of primary structures or public infrastructure such as roadways, utilities, etc. It is the burden of the applicant to properly document and demonstrate that such site conditions exist and preclude other replacement alternatives, including construction alternatives such as helical anchors in place of tie-back systems or replacement of the existing structure in sections.

  Risk to an accessory structure does not generally provide sufficient justification for seaward replacement of an existing shoreline structure. For example, docks, decks, patios, sprinkler systems and above-ground

pools can reasonably be removed and replaced, when necessary, as part of the proposed project. Sheds can also be temporarily relocated. However, relocation or removal of more substantial accessory structures such as garages, guest houses or in-ground pools, may result in unreasonable financial and practical hardship. In such cases, it is again the burden of the applicant to properly document and demonstrate that such site conditions exist and preclude other replacement alternatives.

- When in-place or landward replacement will result in significant environmental disturbance, risk of disturbance and relative economic hardship. Examples would include when in-place or landward replacement would result in significant disturbance to an existing, well vegetated bluff area or would require removal of an existing concrete seawall (extensive excavation, disturbance and cost).

III. Purpose and Background:

Under the Tidal Wetland Land Use Regulations (6NYCRR Part 661.5), Use Guideline #22 categorizes the "In-kind and in-place replacement of existing functional bulkheads and similar structures", as a generally compatible use - permit required (GCp), in all areas of jurisdiction. Replacement structures that are not constructed in-kind and in-place are defined by Use Category #29, which identifies construction of groins, bulkheads and other shoreline stabilization structures as a generally compatible use - permit required in shoals, mudflats and littoral zones as well as in the adjacent area. It is only when these stabilization structures are proposed in vegetated marshes or when the project includes filling in any tidal wetlands that this activity is identified as a presumptively incompatible activity under the regulations.

Historically, program staff interpreted "in-place" replacement to include replacement of the existing structure with a new structure built as much as 18 inches seaward of the existing structure where no vegetated wetlands were impacted by the structure, the replacement structure did not result in unreasonable encroachment in narrow waterways or canals, and no prior seaward replacement had been authorized.

The Department no longer classifies 18-inch seaward replacements as “in-place”, but requires review under the permit standards. The impacts associated with additional loss of habitat need to be considered and minimized where possible. For example: changes in available construction materials over time have made it more difficult to maintain most seaward replacement of structures within 18 inches. Instead, these materials typically require a face-to-face distance of two to three feet between structures. Moreover, authorization of an 18-inch replacement has historically been limited to a one-time only replacement, in non-vegetated wetlands. In the nearly thirty years that have passed since the Tidal Wetland Land Use regulations were implemented most bulkheads that might once have been allowed a seaward replacement, have already undergone at least one replacement or have become non-functional. These sites would no longer be considered reasonable locations for the authorization of an 18-inch replacement.

IV. Responsibility:

The regional Marine Habitat Protection Units and the Division of Environmental Permits are responsible for implementing this guidance document and the DFWMR Marine Habitat Section is responsible for maintaining the document.

V. Procedures:

The regional Marine Habitat Protection Units will implement the guidance. The Division of Environmental Permits will make any Uniform Procedures Act determination that is required through the use of this guidance.

VI. References:

- 6 NYCRR Part 608;
- 6 NYCRR Part 661;
- 6 NYCRR Part 621;
- 6 NYCRR 360;