

## PLEASANT BAY RESOURCE MANAGEMENT ALLIANCE



### GUIDELINES FOR PRIVATE WALKWAYS AND STAIRWAYS IN FRESH AND MARINE RESOURCE AREAS IN PLEASANT BAY

#### 1.0 IMPORTANCE OF COASTAL AND FRESHWATER WETLAND RESOURCES

Wetland resources account for more than 2,300 acres or 12 percent of the watershed of Pleasant Bay. When open water bodies are counted, wetlands cover more than 40 per cent.<sup>1</sup> The Massachusetts Department of Environmental Protection has identified sixteen categories of wetlands in the Pleasant Bay watershed. These resources are important for their ecological and aesthetic values, as well as for the recreational and commercial opportunities they support. The Pleasant Bay Resource Management Plan identifies recommendations to protect and enhance the health of the coastal and freshwater wetlands in the Pleasant Bay watershed. Among these is a recommendation to develop guidelines for permitting walkways and stairways that provide access to and through coastal and freshwater resource areas. Two types of wetland resources affected by walkway and stairway structures are salt marshes and Bordering Vegetated Wetlands (BVW).

#### 1.1 THE IMPORTANCE OF SALT MARSHES

Salt marshes are the primary source of much of the organic matter and nutrients forming the basis of the coastal and estuarine food web.<sup>2</sup> Numerous scientific sources have documented the vital role marshes play as a nursery, wildlife habitat, storm buffer, and pollutant filter. Marshes function as a habitat for numerous forms of land and sea-based life. Many organisms depend on tidal marshes for some portion of their life cycle. Some species of finfish and shellfish use tidal creeks, eelgrass beds, and mud flats as nursery grounds. Crabs, worms and other invertebrates within salt marshes provide critical food sources for other species. Birds and mammals rely on marshes for foraging and nesting.

Marshes also provide important ecological transitions from ocean waters to uplands. Marsh vegetation -- particularly *Spartina* and submerged aquatic vegetation -- acts as a natural buffer by dissipating wave energy before it reaches landward areas. Marsh vegetation also filters metals, nutrients and other pollutants from upland run-off.

The zones or structural elements of salt marshes include *low marsh* (where dominant vegetation is *Spartina alterniflora*), *high marsh* (where dominant vegetation is *Spartina patens*)

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<sup>1</sup> Pleasant Bay Resource Management Plan, April 1998, p.35.

<sup>2</sup> Niedowski, Nancy L., *New York State Salt Marsh Restoration and Monitoring Guidelines*, New York State Department of State, Division of Coastal Resources, December, 2000, p. 12.

and *upland fringe*.<sup>3</sup> Over time the gradual accumulation of sediments in shallow coastal waters leads to the formation of mudflats. *Spartina alterniflora* colonizes mudflats, and accelerates sediment deposition. Live roots, rhizomes and decaying vegetation form marsh peat. As peat accumulates, *Spartina patens* replaces *Spartina alterniflora* near the high tide line. The high marsh continues to accumulate peat and also accumulate sediments as a result of flooding and sea level rise. In this manner salt marshes grow upward and outward over time.<sup>4</sup>

The extraordinary system of marshes is perhaps the most unique and significant wetland resource within the Pleasant Bay study area. The Pleasant Bay Resource Management Plan notes the importance of marsh resources to the Pleasant Bay ecosystem and the need to manage human impacts to protect them. Among the human impact issues highlighted in the plan is the development of walkways to provide access over or through marshes and other marine resource areas.

## **1.2 THE IMPORTANCE OF BORDERING VEGETATED WETLANDS**

As defined in state regulation, Bordering Vegetated Wetlands (BVW) are freshwater wetlands which border creeks, rivers, streams, lakes and ponds<sup>5</sup>. BVW are areas where soils are saturated or inundated such that they support a predominance of wetland indicator plants. The boundary of BVW is the line within which 50% or more of the vegetation consists of wetland indicator plants and saturated or inundated conditions exist.<sup>6</sup> BVW are probably the Commonwealth's most important inland habitat for wildlife. BVW are likely to be significant to public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, and protection of fisheries and wildlife habitat (310 CMR 10.55(1).) According to state regulation, BVW within an Area of Critical Environmental Concern (ACEC) should not be destroyed or impaired unless the presumption of significance can be rebutted or the proposed project can meet the three specific performance standards for limited project status under 310 CMR 10.53 (j) which are: (1) protecting rare wildlife habitat (must always be met), (2) preserving adequate light to maintain pre-construction vegetation, and (3) maintaining reasonably unobstructed flowage of water. The intent of the guidelines is to reinforce the state standards for protection of BVW within ACECs.

## **2.0 OBJECTIVE OF THE GUIDELINES FOR WALKWAYS AND STAIRWAYS OVER FRESH AND MARINE RESOURCE AREAS**

As noted above, the Pleasant Bay Resource Management Plan recommends that performance standards and design criteria be developed for permitting walkways and related structures to minimize impacts on wetland resources. The plan further recommends that the Alliance work closely with local conservation commissions to develop the standards and criteria for walkways, and that the standards and criteria for walkways should be consistent with permitting guidelines developed by the Alliance for other types of structures.

The *Guidelines for Private Walkways and Stairways over Fresh and Marine Resource Areas in Pleasant Bay* is intended for use by local conservation commissions and boards of appeal/planning boards in the review of permit applications for private walkways or stairways over marine or freshwater wetland resources. The guidelines provide a framework for permitting

<sup>3</sup> Ibid.

<sup>4</sup> Ibid, p.11.

<sup>5</sup> (310 CMR 10.55(2)(a)

<sup>6</sup> 310 CMR 10.55 (2)(c)

private walkways and stairways that can be implemented through changes in local regulations governing the structures, and also raise issues for consideration in the application of such bylaws and regulations. It should be noted that the guidelines were developed for the Pleasant Bay ACEC study area, and it is up to the discretion of each town to apply policies or adopt regulations on a broader basis. Any such new or revised regulations resulting from these guidelines would not apply to existing licensed structures or to routine maintenance of such structures.

In general, a proposed walkway or stairway structure in the ACEC shall be designed and constructed so as to cause no adverse effect on the local ACEC ecology, including but not limited to, wildlife, fisheries, and marshland. "Shared-use" proposals (i.e., a single structure jointly owned and used by two or more property owners) are generally to be encouraged as a way of preserving access to the shore while reducing the overall number of structures that might otherwise be permitted. The setback recommendations contained herein are intended to encourage two or more property owners to develop joint proposals. In addition, local permitting authorities may wish to explore other methods of encouraging shared use proposals, provided that such proposals are consistent with the new environmental performance criteria.

A work group convened by the Alliance in with representatives from the Orleans, Chatham and Harwich Conservation Commissions, the Chatham Planning and Coastal Resources Departments, the Massachusetts Department of Environmental Protection, Massachusetts Coastal Zone Management, WHOI/SeaGrant and Cape Cod Cooperative Extension developed the guidelines in 2002. The work group met over the period of a year to identify issues, review current regulations, and develop standards for application within the Pleasant Bay ACEC and study area. The guidelines were amended in 2007 for consistency with newly adopted guidelines for docks and piers in freshwater resource areas.

### **3.0 DEFINITION OF WALKWAY AND STAIRWAY**

The first task of the work group was to define the terms walkway and stairway in order to differentiate them from similar or related structures, such as docks, piers and floats. A walkway (also known as a catwalk, or plankwalk) is defined as an elevated structure used to transverse a coastal or freshwater resource area as defined in the Wetlands Protection Act. A walkway begins and terminates above mean high or annual high water, even though it may cross over a point that is below mean high water (MHW) or annual high water (e.g. a creek). Walkways that terminate below MHW in marine settings or annual high water in freshwater settings are equated to, and should be regulated as, a pier or dock.

Accordingly, the prohibition on docks and piers in designated marine areas also applies to walkways when any portion of the walkway extends beyond Mean High Water. When a walkway that extends beyond MHW is proposed in an area outside the designated prohibited areas, then it must meet the same performance standards and design criteria for piers and docks and/or floating docks as outlined in the *Guidelines & Performance Standards for Docks & Piers in Pleasant Bay* (1999).

Likewise when a walkway extends beyond Annual High Water in a freshwater setting it must meet the performance standards and design criteria for docks as outlined in the *Guidelines for Permitting Shoreline Structures on Freshwater Lakes and Ponds in the Pleasant Bay Area of Critical Environmental Concern* (2007).

Under no circumstances should a walkway which is located above MHW or annual high water be eligible for or have affixed to it a float, or raft (e.g., through a section 10(a) permit). This requirement is necessary in recognition of the potential that applicants who are unable to obtain a permit for a dock could conceivably seek a permit for a “walkway” structure that could function as a dock without meeting the same permitting standards.

A stairway or stairs is considered any single or set of steps, either elevated or at grade (“dug into the ground”), and any platform or landing connected thereto, connecting different levels to traverse a dune, bluff or coastal bank or other slope.

#### **4.0 PERFORMANCE CONSIDERATIONS FOR WALKWAYS AND STAIRWAYS**

A walkway or stairway may be permitted in cases where it can be demonstrated to improve the condition of a resource and when such demonstrated improved condition exceeds the benefit that could be reasonably expected from a restoration effort; or where it can be demonstrated that irreparable erosion and destabilization of a resource would result from informal access. The owner of the property on which the structure is proposed should submit all applications and supporting documentation, including clear delineation of property boundaries, to the relevant town for review. In demonstrating the potential improved condition of or preventive benefit to the resource, the following potential impacts must be considered:

- 4.A. Existing Conditions: The extent of existing erosion or degradation of vegetation or substrate (underlying soils) resulting from foot traffic must be evaluated. Reasonable efforts to regenerate damaged resource areas should be fully explored.
- 4.B The presence or absence of habitat must be determined. There should be no loss or degradation of habitat for shellfish, finfish, birds, reptiles or other animals, or of fish runs resulting from the proposed structure.
- 4.C There should be no detrimental impacts on vegetation caused by the proposed structure.
- 4.D There should be no significant alteration in wind patterns and littoral processes resulting from the proposed structure.
- 4.E There should be no undue detriment to public views resulting from the proposed structure.
- 4.F There should be no loss or degradation of public access opportunities resulting from the proposed structure.
- 4.G There should be no other detrimental impact caused by the proposed structure.
- 4.H The cumulative effect of the proposed structure must be considered. Cumulative effects are the combined effects (4A through 4G) of all existing structures within the same resource system.
- 4.I Impacts on the resource from the use of the proposed structure must be determined. The frequency, volume and intensity of use must justify the need for the structure. Shared use structures are to be encouraged as a means to provide access to the shore

while minimizing the number of structures that might otherwise be permitted. Secondary impacts (4.A through 4.G) must be evaluated to determine impacts from use.

## **5.0 DESIGN STANDARDS FOR WALKWAYS**

### **5.A. Setbacks**

Setbacks from property lines and structures provide a way to reduce density, and the associated intensity of impacts on a marsh system, and to encourage shared use structures.

A walkway should be located where it will have the least impact on or can improve the condition of a resource area. A setback of fifty (50) feet from the property boundaries is preferred unless the structure will be owned and used by two or more contiguous property owners. In such cases the setback requirement may apply to the outermost boundaries of the two or more contiguous properties so that the structure may be placed on a shared property line.

The structure must be at least 250 feet from another structure to which the owner has or can reasonably obtain legal access.

### **5.B. Height & Width**

The height of the structure at all points above the marsh or BVW shall be equal to or exceed the width of the deck. For the purpose of this condition, height shall be measured from the substrate to the bottom of the longitudinal support beam. The height shall not go above three (3) feet or below two (2) feet as measured from the substrate or, in the case of a creek, mean high water. The laying of planks directly on the ground or substrate is prohibited

The height of a structure is necessary to allow sufficient light penetration to underlying vegetation, and to prevent storm damage. The height maximum is to protect the natural appearance of the resource area. Similarly, the width limitation is intended to limit adverse impacts on vegetation

### **5.C. Plank Spacing**

No less than one-half inch spacing is required between planks to allow light penetration for vegetation. Alternate decking material may be used if it provides a similar or greater degree of light penetration.

### **5.D Pile Size and Spacing**

Piles shall not exceed 4 inches x 4 inches and should be spaced a minimum of eight feet apart to minimize the impact of installation to the substrate. The use of helical or other alternate technology pilings, or seasonal stub piles, that can be demonstrated to minimize impacts on the substrate, should be encouraged.

### **5.E. Railings**

The use of railings should be avoided unless a need can be demonstrated or to conform to the applicable building code.

### **5.F.Orientation**

A north to south orientation of the structure results in maximum sunlight penetration to underlying vegetation, and is preferred wherever feasible.

#### 5.G. Seasonality

Seasonal installation of structures is encouraged. Permanent 4x4 stub piles with removable planks (or alternate technology per 5.D above) are preferred to prevent storm damage to the structure and potential impacts from storm debris on the adjacent marsh area. By the term seasonal it is meant six months or, generally, May 1 through October 31. Permanent structures may be permitted in cases where the structure will be used consistently year-round, or in cases where more than one property owner is sharing use of the structure.

#### 5. H. Materials

Use of non-leaching materials such as plastic lumber and other such building materials that do not leach pollutants into the aquatic ecosystem are preferred over CCA-treated lumber. Use of treated materials is allowed because they minimize the incidence of rotting in structures. Creosote-treated lumber is prohibited.

#### 5.I. Installation

Installation should be accomplished with minimal disturbance to surrounding soils or vegetation, using methods outlined in the applicable order of conditions, as determined on a case-by-case basis. A design and installation plan approved by a licensed engineer or surveyor is preferred.

#### 5.J. Storage

All removable portions of seasonal structures must be removed using practices that minimize impacts on the resource, and be stored outside the resource area unless otherwise specified in the applicable Order of Conditions.

**5.K Innovative Structures: Innovative structures and materials that can be demonstrated to have less impact on natural resources and public safety than traditional docks may be considered.**

## **6.0 DESIGN STANDARDS FOR STAIRWAYS**

### 6.A GENERAL

6.A.1 The choice of whether stairs are to be designed to be at grade (“dug into the ground”) or elevated is site specific and depends on factors such as the grade of slope, composition of the substrate, and nature of vegetation. The benefits of “dug-in” stairs include their ability to allow vegetative cover, minimal visual impact, tendency to slow the erosion effects of rainfall, and their durability. Elevated stairs may at times be preferred to protect vegetation, or due to the steep slope of a bank.

6.A.2 The stair structure shall be no more than four feet in overall width including but not limited to the supporting posts and, if deemed necessary, railing or handrail.

6.A.3 The structure shall remain unpainted in order to preserve as far as possible the natural appearance of the bank. If non-wood materials are used they should be of a color that will blend in with the natural surroundings.

6.A.4 Where the permitting authority finds, due to height or steepness of the bank, or other factors, that a resting landing is justified, that landing shall meet the above requirements (5A through 5.J) and shall seat not more than two individuals.

6.A.5 Railings or handrails shall be allowed if deemed necessary or to conform to the applicable building code.

6.A.6 Construction and installation of the stairway must be in compliance with the applicable Order of Conditions issued by the Commission.

6.A.7 The stair structure should be located where it will have the least impact on or can improve a resource area. Unless vegetation and contour of slope dictate otherwise, a minimum setback of fifty feet from the property boundaries is preferred unless the stairway will be owned and used by two or more contiguous property owners. In such cases the setback requirement shall apply to the outermost boundaries of the two or more contiguous properties so that the stairway may be placed on a shared property line.

#### 6.B. TREADS OR RISERS THAT ARE DUG INTO THE GROUND

6.B.1 A staircase that is dug into the ground shall follow the natural contour of the bank and minimize erosion potential. Treads must be level to prevent erosion. The stairway may be straight or serpentine.

6.B.2 The stair structure shall be no more than four feet in overall width.

6.B.3 Use of non-leaching materials such as plastic lumber and other such building materials that do not leach pollutants into the aquatic ecosystem are preferred over CCA-treated lumber. Use of treated materials is allowed because they minimize the incidence of rotting in structures. Creosote-treated lumber is prohibited.

#### 6.C ELEVATED STAIRWAYS

6.C.1 A staircase shall follow the slope profile as closely as possible providing, however, that with the exception of the supporting posts, no portion of the proposed stairway shall be closer than one foot from the ground. Plans submitted must show how the contours and how compliance will be accomplished.

6.C.2 The stairway shall have no risers and there shall be a minimum of one half-inch spacing between deck planks in order to permit light penetration and encourage vegetation.

6.C.3. The stairway must be at least 250 feet from another stairway to which the owner has or can reasonably obtain legal access.