



VISUAL IMPACT ASSESSMENT OF SMALL DOCKS & PIERS: THEORY AND PRACTICE



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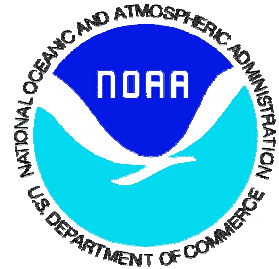
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VISUAL IMPACT ASSESSMENT OF SMALL DOCKS & PIERS: THEORY AND PRACTICE

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Note to Readers

The National Centers for Coastal Ocean Science (NCCOS) provide a focal point through which NOAA, together with other organizations with responsibilities for the coastal environment and its resources, can make significant strides toward finding solutions to critical problems. By working together toward these solutions, we can ensure the sustainability of these coastal resources and allow for compatible economic development that will enhance the well-being of the Nation now and in future generations.

A specific objective of NCCOS is to provide the highest quality of scientific information to coastal managers in time for critical decision-making and in formats useful for these decisions. To this end, the Decision Analysis Series was developed by the Coastal Ocean Program to synthesize information on issues of high priority to coastal managers. As a contribution to the Decision Analysis Series, this report provides a critical overview of the visual impact assessment methodology and application. A list of other available documents in the Decision Analysis Series can be found on the last page of this report.

Visual Impact Assessment of Small Docks and Piers: Theory and Practice was developed in response to requests from the coastal management community. It is part of a series of products produced by NCCOS and other NOAA offices to improve the capabilities of state and local dock management by improving science-based decision-making. Related products include the following:

NOAA Small Docks and Piers Web Site – NCCOS and the Office of Ocean and Coastal Resource Management (OCRM) maintain a website dedicated to issues related to small dock and pier management. The site is located at www.ocrm.nos.noaa.gov/czm/dockpier.html.

The Science of Assessing Impacts from Small Docks – In January of 2003, NCCOS sponsored an invitational workshop to review the state of scientific knowledge related to the impacts of small docks and piers. The workshop results are summarized in *Environmental and Aesthetic Impacts of Small Docks and Piers*. Shading, contamination, and boating associated with docks are discussed, as well as navigation, aesthetic, and quality of life issues. Copies of the report may be downloaded from the web at: <http://www.nccos.noaa.gov/documents/dockpier.pdf> Hardcopies may be requested from Ruth Kelty (301-713-3020, Ruth.Kelty@noaa.gov).

Dock and Pier Bibliography – NCCOS maintains a web-based bibliography of information on docks and piers at <http://www8.nos.noaa.gov/nccos/docks.aspx>. The bibliography is searchable by author, title, state, and keywords (i.e. vegetation, shading, contaminants, sediments, recreational uses, navigation, zoning, design, visual impacts, etc...)

Management Tools Related to Docks and Piers – In November 2003, a second invitational workshop was sponsored by NCCOS, OCRM, and the Coastal Services Center (CSC) to review management options, both regulatory and non-regulatory, related to small docks and piers. A summary of this workshop, *Management Tools to Minimize the Impacts of Residential Docks and Piers*, is available at http://coastalmanagement.noaa.gov/pdf/TCS_paper.pdf or by contacting Allison Castellan (301-713-3155, Allison.Castellan@noaa.gov).

Data Base of State Programs – OCRM and NCCOS maintain a web-based, searchable, database of summary information about how coastal states manage small docks and piers: <http://coastalmanagement.noaa.gov/czm/dockpier.html>. Information entered by state managers can be browsed or queried to allow coastal managers concerned about particular impacts of docks or piers (*i.e.*, shading, aesthetics) to find standards other states have developed to mitigate that impact and the laws that uphold them. Information in the database can also be used to develop new standard operating procedures (SOPs) and support denials when the impacts of a proposed project are unreasonable. By linking the science and management of residential docks and piers, the database will help state and local managers improve their regulations, as well as their permitting and planning processes used to manage dock placement and design. For further information, contact Allison Castellan (301-713-3155, Allison.Castellan@noaa.gov).

Inventory of Laws, Regulations, and Policies Related to Residential Docks – The NOAA Coastal Services Center (CSC) is compiling information about state dock management programs (statutes, regulations, and policies). Summaries for Florida, Georgia, South Carolina, and North Carolina are available in hard copy from Melissa Patterson (843-740-1200, Melissa.Patterson@noaa.gov).

Training Materials related to Management of Small Docks – NCCOS and OCRM partnered with Bliven and Sternack to develop training materials related to science-based dock management. The Powerpoint slide shows and accompanying training workbook introduce major issues related to small dock and pier impacts and management, including: environmental impacts, impacts to navigation and public access, visual impacts, regulatory and non-regulatory techniques that can be used in small dock management, Best Management Practices, and sources for additional information and assistance. NCCOS and OCRM are interesting in partnering with National Estuarine Research Reserves Coastal Trainers and with Sea Grant to offer training sessions. For more information, contact Ruth Kelty (301-713-3020, Ruth.Kelty@noaa.gov).

As with all of its products, the NCCOS is interested in ascertaining the utility of *Environmental and Aesthetic Impacts of Small Docks and Piers*, particularly in regard to its application to the management decision process. Therefore, we encourage you to write, fax, call or email us with your comments. Please be assured that we will appreciate these comments, either positive or negative, and that they will help us direct our future efforts. Our contact information is below.



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INTRODUCTION

From a manager's perspective, oftentimes the publicly held concerns related to small docks and piers are not really related to the environment. They may be more related to visual impacts and aesthetic concerns, a sense of over-development of the shore, or simply change. While individuals may hold personal aesthetic values related to small docks in general or an individual structure in particular, techniques have evolved that appear to provide reproducible, predictive assessments of the visual impacts and aesthetic values of an area and how those might change with development, including an increase in numbers of small docks. These assessments may be used to develop regulatory or non-regulatory methods for the management of small docks based on state or community standards.

Visual impact assessments are increasingly used in the regulatory review of proposed development—although this process is still in its infancy as regards small docks and piers. Some political jurisdictions have established visual impact or aesthetic standards as relate to docks and others are in the process of investigating how to go about such an effort.

This paper is intended to provide an overview of

1. The legal bases for developing visual impact or aesthetic standards,
2. Visual impact analysis techniques,
3. Capabilities at the local and state level to develop and implement visual impact or aesthetic standards,
4. Examples of existing management programs that incorporate visual impacts or aesthetics,
5. Types of mitigation available, and
6. Case Studies of the implementation or judicial review of management decisions based on visual impacts.

The following material is intended to provide an introduction and brief overview of the “reasonableness” and techniques for managing small docks; for greater detail, please refer to the references and background readings provided in the Bibliography.

LEGISLATIVE BASES

Legislation relating to coastal management often incorporates some mention of scenic values, aesthetics or community character, either in the body of the statute or in the legislative findings related to the statute. The following are examples of the types of language found in coastal management laws, statutes, regulations, or ordinances.

Federal Coastal Zone Management Act

Section 303 notes that one of the purposes of the Act is “to encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone, giving full consideration to ecological, cultural, historic, and esthetic values as well as the needs for compatible economic development...” [Emphasis added]. In many instances, states have incorporated this or similar language into their coastal management program statutes and regulations.

Massachusetts Public Waterfront Act (MGL Chapter 91) Regulations (310 CMR 9.01 (2))

This section of the regulations states that its purpose “includes protecting the public trust rights, ensure only water-dependent uses or otherwise serve a proper public purpose, protect public health, safety, and general welfare, support efforts to revitalize unproductive property in urban waterfronts and foster the right of the people to The natural, scenic, historic and esthetic qualities under Article XCVII of the Massachusetts Constitution.” [Emphasis added]

New Jersey Coastal Area Facilities Review Act (N.J.S.A. 13:19):

“The Legislature finds and declares that New Jersey's bays, harbors, sounds, wetlands, inlets, the tidal portions of fresh, saline or partially saline streams ... channels, estuaries, barrier beaches, near shore waters and intertidal areas together constitute an exceptional, unique, irreplaceable and delicately balanced ... natural environmental resource, ... that certain portions of the coastal area are now suffering serious adverse environmental effects resulting from existing development activity impacts that would preclude or tend to preclude those multiple uses which support diversity and are in the best long-term, social, economic, aesthetic and recreational interests of all people of the State; and that, therefore, it is in the interest of the people of the State that all of the coastal area should be dedicated to those kinds of land uses which promote the public health, safety and welfare, protect public and private property, and are reasonably consistent and compatible with the natural laws governing the ... environment of the coastal area.” [Emphasis added.]

Maine Natural Resource Protection Act (38 M.R.S.A. §480-A–Z)

Legislative Findings: “The Legislature finds and declares that the State's rivers and streams, great ponds,... freshwater wetlands, ... coastal wetlands and coastal sand dunes systems are resources of state significance. These resources have great scenic beauty and unique characteristics, unsurpassed recreational, cultural, historical and environmental value of present and future benefit to the citizens of the State and that uses are causing the rapid degradation and, in some cases, the destruction of these critical resources, producing significant adverse economic and environmental impacts and threatening the health, safety and general welfare of the citizens of the State.”

Standard 480-D of the Act states that “a permit may not be granted for an activity in, on, over, or adjacent to protected natural resource when the activity will unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses.” [Emphasis added.]

South Carolina Coastal Tidelands and Wetlands Act (Title 48, Chapter 39)

In the legislative declaration of findings related to the Act: “The General Assembly finds that ... [I]mportant ecological, cultural, natural, geological and scenic characteristics, industrial, economic and historical values in the coastal zone are being irretrievably damaged or lost by ill-planned development that threatens to destroy these values.” [Emphasis added.]

Nantucket (Massachusetts) municipal wetlands ordinance

“The purpose of this chapter is to protect the wetlands of the Town of Nantucket by controlling activities deemed to have a significant or cumulative effect upon wetland values, including but not limited to the following: public or private water supply, groundwater, flood control, erosion control, storm damage prevention, water pollution, fisheries, shellfish, wildlife, rare species, including rare, threatened or endangered plant species and animals and habitats, recreation and wetland scenic views ... This chapter is intended to utilize the Home Rule Authority of this municipality to protect additional resource areas for additional values, with additional standards and procedures in addition to those of the [state] Wetlands Protection Act, MGL c. 131, § 40, and regulations thereunder, 310 CMR 10.00.” [Emphasis added.]

These statutes, ordinances, and regulations describe scenic views, aesthetics, community character, or visual impacts, and can provide the legal basis for the development and implementation of a management plan for small docks and piers.

At the municipal level, zoning ordinances provide the opportunity to regulate design, size, or appearance of structures to ensure the protection of “community character”. Architectural review of proposed structures for building height and appearance, aesthetic zoning based on the historic nature of villages, overlay districts, and billboard laws are all examples of how municipalities regulate based on aesthetics. This process can be applied to private docks as well as to houses, offices, or factories.

Police powers provide the state or municipality authority to regulate activities for the public good in the protection of health, safety, welfare, and morals. Rights to regulate such activities may be delegated to municipalities, usually by one of two principal methods:

1. In some states “Dillon’s Rule” prohibits municipalities from exercising any powers except those expressly granted by the legislature, or those which are incident to powers expressly granted, or
2. In “Home Rule” states, municipalities may establish reasonable standards to protect public welfare so long as they are not expressly prohibited at the state or federal level and are not more lenient than state or federal standards.

Smardon and Karp (1992) provide a thorough review of the legal underpinnings for these statutes, ordinances and regulatory actions.

Two types of authority can be used to manage docks and piers:

- ***police powers to protect public health, safety and general welfare, and***
- ***rights of ownership.***

The rights of ownership are based on state or local proprietary interest in property and associated property rights and are not constrained by the need to link decisions to public health, welfare and safety. In the case of tidal waters, large ponds and some river systems, the property owner (typically the state or municipality) may make management decisions that go well beyond the limits of the police powers. For example, in most coastal waters and many freshwater bodies there is a state or municipal obligation to protect specific rights under the public trust doctrine. These generally include fishing or hunting in, navigation within, or traversing through tidelands. Private activities may be regulated to prevent impairment of these public rights.

Typical challenges to management standards and procedures include claims that:

- the decisions of the reviewing authority are beyond the scope allowable by the enabling act or supporting regulations;
- the decision has violated a law, either in the substance of the decision, the procedure used to reach the decision, or a violation of the public trust obligations of the political entity;
- the process used to establish the standards and procedures, or the decision rendered under those standards is arbitrary and capricious;
- no substantial evidence has been produced to support the establishment of the standards or for the specific decision;
- the regulating authority has abused its discretion in applying the standards to a particular project; and/or
- the standards, or specific decision, result in a violation of the Fifth Amendment of the U.S. Constitution that prohibits taking of land without just compensation. This can include a partial taking or a temporary taking. (McGregor, 2004).

Consequently, management plans or regulatory programs must be carefully crafted and implemented to reflect community values and withstand court challenges.

VISUAL IMPACT ASSESSMENT ANALYSIS: THEORY AND TECHNIQUES

Appropriate standards and reproducible means of evaluation of potential impacts are critical when basing dock and pier permitting decisions on visual impacts or aesthetics. Visual impact assessment provides a process and standards for objective evaluation – thereby removing much of the subjectivity from the decision-making process and making the results more predictable. The Landscape Institute (Lincoln, UK) and Institute of Environmental Assessment (London, UK) have cooperatively prepared *Guidelines for Landscape and Visual Impact Assessment* (E&FN Spon, 1995) to provide validated methodology for visual impact assessments.

Landscape impacts are defined as changes in “the character and quality of the landscape as a result of development” (E&FN Spon, 1995). Consequently, a **landscape impact assessment** evaluates:

- Direct impacts from specific landscape elements;
- More subtle, or indirect, effects on the overall pattern of elements that shapes landscape character; and
- Impacts on generally accepted special interests or values such as designated landscapes or scenic views, conservation areas, public lands, and historic and cultural sites.

Visual impacts are a sub-set of landscapes. They relate solely to changes in views of the landscape and the resultant effects of those changes on people. **Visual impact assessments** address:

- The direct impacts of the proposed changes on views of the landscape due to intrusion or obstruction;
- The reaction of viewers who may be affected; and
- The overall impact on the view (which may range from degradation to enhancement).

Visual impact analyses grow from comparisons between existing settings and proposed changes. This allows individuals to evaluate how much change a landscape can absorb. Richard Smardon (1986, 1988) has developed a system of visual analysis based on the elements of landscape compatibility, scale contrast, and spatial dominance. The steps in the process of landscape and visual impact assessment are very similar to those involved in the environmental assessment process as a whole.

For the analysis, respondents are provided with a series of images showing the existing landscape and how it would be affected by the proposed change as seen from a series of perspectives. The visual image of the constructed project within the landscape may be developed from computer-enhanced images or architectural renderings. Experience with visual impact assessments show that, **when shown images of shorelines in various stages or types of development, the majority of people select the same image as being aesthetically preferable—suggesting that results from such a process can be considered reliable and repeatable.**

In general, VIA in coastal areas indicate aesthetic preferences for historic or generic coastal development, water related development, open/distance water views, enhanced water access, and diverse and well-maintained vegetation (see Table 1). People disliked development in undeveloped coastal landscapes, tourist-like commercial development, utilities, shoreline structures, and litter and debris (see Table 1).



Historic water structures are generally considered scenic, tourist-like commercial structures are disliked. (Photo credit: J. Gates).

When asked about coastal structure preferences, the majority of respondents:

- Indicated that their preference depended on whether or not the landscape was developed,
- Were more positive of structures perceived as marine- or water-related,
- Were more positive of structures perceived as enhancing water access, and
- Were very positive of structures related to historic or heritage values (Smardon, 2003)

Preferences about structures also depended on the perspective, *i.e.*, whether seen from the shore looking seaward, from the water looking landward, or viewed along the shoreline. Views from the shore can offer an open vista, have an edge or visual boundary to the panorama, or be filtered. Generally, people disliked views filtered through structures (Smardon, 2003).

Preparing Comparisons for Visual Analysis

As mentioned earlier, the typical means of preparing a visual analysis is to show respondents side-by-side comparisons of the existing landscape and a simulated version of what the landscape would look like if developed. This sort of analysis can be effectively used either for case-by-case regulatory review or for area-wide planning programs. For large or complicated projects, see Smardon *et al.* (1988); good background sources are listed in the Recommended Background Reading section of the Bibliography (*i.e.* Sheppard, 1986, 1989).

Renderings of proposed structures or landscapes are common tools of architects. In the past these were drawn by hand, but photo-imaging software is making increasingly sophisticated mock-ups more accessible. Products range from static images of the proposed change to complicated images that allow the viewer to see the virtual structure from a continuous series of perspectives as if walking or “flying” through the landscape.

The critical elements that ensure a fair and valid comparison include:

- Clearly documenting the angle of view for the lens used,
- Noting the distance between the viewpoint and the object,
- Providing the aspect or angle of the viewer,
- Providing the location of the viewpoint from which the picture was taken, and
- Providing a sufficient number of views (generally six to seven) to ensure that the structure is seen in its full context (Smardon, 2003).

Methodology	Positive Attributes	Negative Attributes	Source
Urban respondents from LA were shown panoramic images and video clips.	water, activities, beach area	inappropriate structures, high level of development	Banerjee and Gollub 1976
Participants sorted photos of water resource development projects in varying stages into piles according to scenic quality.	beaver ponds, lakes, wildlife	uncompleted projects, pollution, oil tanks, eroded banks, excavation	Gauger and Wycoff 1973
Scenic river boaters in Wisconsin were given cameras and told to photograph positive and negative aspects of the river visual experience.	river scenes, trees, houses set in the woods, rapids, developed recreation areas	metal pipes, powerlines, bridges, abutments	Cherem and Traweek 1977
Photos taken by residents of Dennis, MA (Cape Cod) were sorted by those residents into piles according to landscape type and scenic quality.	void of humans, habitat	degradation, private exploitation	Palmer 1978, 1983
Photos of representative coastal areas were used to assess perception of coastal areas throughout NY.	lack of development	litter and debris, erosion, water appearance, presence of shoreline structures	Neiman 1987
North Country residents and students rated photos of views to the St. Lawrence River from Cape Vincent to Hammond, NY.	views or access to water, vegetation, natural landscape, rural image, water features, views to opposite shore, uniqueness, edge variety, superior or elevated views, fences, dirt roads	utilities, trailer parks, screening or blocking views, signage, excessive vegetation, flat topography, general clutter, boats and docks, poorly maintained areas	Smardon et al. 1987
Students evaluated photos and video of views to the St. Lawrence River from the road and from the water from Massena to Ogdensburg, NY.	islands with vegetation, marsh and emergent vegetation along the shoreline, vegetation rising in steps, dense vegetation down to the water, unique tree forms, golf course, grass area with grazing livestock, boat launch, grassy knoll with little vegetation, stone breakwater.	oil tanks, rocky dike and industrial plant, industrial plant, power lines, shipping lock, dam, steep rocky shoreline w/little vegetation, causeway, power authority dam	Shannon et al. 1990
Visual perception of views taken from the loop road in Arcadia National Park in Maine was measured by asking for positive and negative characteristics.	sense of mystery (they wish to be further drawn into the scene), coastal development that is generic to the Maine landscape or with a distinctly "historical" character, water views, long distance views, "folded" or multi-layered landscape (typically mountains and islands), diverse and well maintained vegetation distribution in the foreground and middle ground of the view.	developed or urbanized landscape, evidence of crowded use, tourist-oriented commercial development	Steinitz 1990

Table 1. Review of visual perception studies (compiled by R. Smarden, modified from Kelty and Bliven 2003)

A simple technique for visualization is to "draw" in the structure or structures on an existing photograph using a photo-manipulation program such as Adobe Photoshop®. [Note: reference to particular computer software should not be construed as an endorsement by either the author or the National Oceanic and Atmospheric Administration (NOAA). References are provided solely as examples of the possibilities available.] The renderings below (Figures 1 and 2) were

prepared by the Massachusetts Coastal Zone Management Office using this technique as part of a preliminary planning exercise in the Town of Fairhaven, MA. In this instance, the purpose was to provide a sense of what the landscape would look like at “full build-out” occurred, *i.e.*, each property facing the embayment had dock.

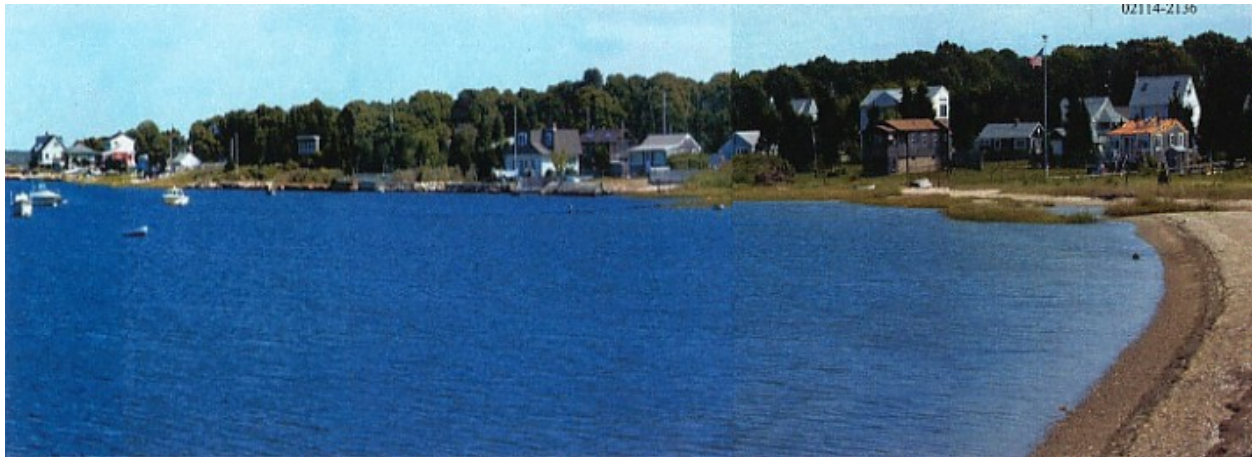


Figure 1. Existing Landscape. The coastal shoreline of an embayment in Fairhaven, MA as it presently exists. Graphic courtesy of the Massachusetts Coastal Zone Management Office.



Figure 2. The same coastal embayment in Fairhaven, MA if each parcel abutting the water's edge had constructed a private dock, *i.e.* a “full build-out” of docks. Docks were added to the Figure 1 picture with Adobe Photoshop®. (Graphic courtesy of the Massachusetts Coastal Zone Management Office.)

The comparison between these two photographs (Figures 1 and 2) allowed municipal officials to understand the potential visual impacts of a variety of types and numbers of structures and, therefore could be used to aid a planning process for the embayment. To be most accurate and effective, renderings should show the shoreline from multiple perspectives, *e.g.*, looking from a distance toward the shore from the water side, from points on the shore looking seaward, from a distance looking along the shoreline (as above), standing near one of the docks looking along the shore, etc.

John Gutwin of Pepperchrome located in Portland, ME (personal communication, 2004) uses a more sophisticated process for dock simulations. Using the programs PhotoModeler® and LightWave® and the base data of the project design, he builds a virtual 3D model of the proposed structure. He then takes a series of photographs, registered to specific locations, and links these with the model. His business is not unique (“there is probably one in almost every

state—look in the Yellow Pages for Visual Impact Assessment, Visual Impact Simulation or Architectural Simulation”). Using this process he prepared the following visuals used in the review of a project in Maine (Figure 3, also see the case study on page 18).



Figure 3. Computerized images of a proposed dock in Somes Sound, Maine. These images provide examples of the way that Visual Impact Simulation can be used to review proposed projects. The dock and float in the center of the photographs do not presently exist; they have been superimposed on the existing background through the use of a computer program. “A” shows the dock at high tide and “B” shows the exposed cribs at low tide. These images were developed by John Gutwin for the using PhotoModeler® and LightWave®, used with permission.

Gutwin notes that while this is not a trivial job, it is common in landscape architecture. The photo-renderings prepared for a visual impact assessment in Maine cost about \$ 5,000 for views of a single dock. Additional docks, particularly “generic” ones or replicas of the original dock, would increase the cost but probably not double it. The PhotoModeler® web site (www.photomodeler.com) further explains the software and its capabilities.

Several variables contribute to the effectiveness of a visual simulation and its appropriateness for regulatory evaluation including the viewpoint and the distance from the object. For example, the perspective of the view can alter the perceived impacts from structures. In general, photos looking along the shore (i.e. Figure 5) suggest greater intrusion than do aerials (i.e. Figure 6).

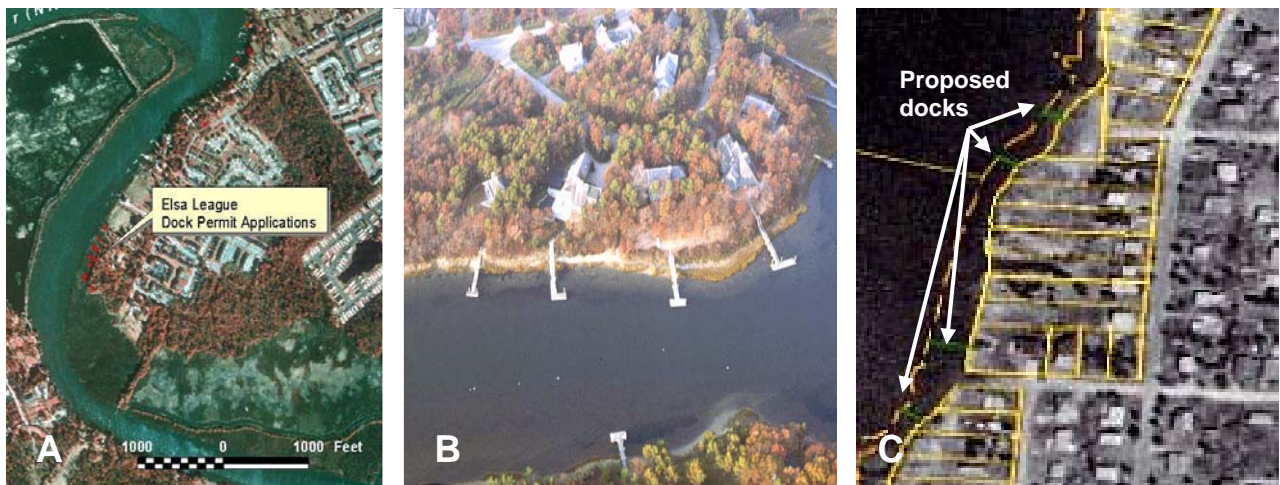


Figure 5. Aerial views of docks often suggest less intrusion than do shore or water views. A shows proposed dock locations on the Ashley River, SC (photo credit: Richard Chinnis), B shows docks in Maryland, and the green lines in C indicate proposed docks along a Massachusetts shoreline (photo credit: MA Coastal Zone Management Office).



Figure 6. Shore and water views often suggest more intrusion than aerial views. Docks in the Severn River, Maryland (A, photo by R. Kelty) and South Carolina (B, photo by R. Chinnis, and C, Photo by D. Sanger).

On account of this complexity, a general background and understanding of the basics of this process are helpful *prior* to engaging someone to prepare visual modeling or image rendering (see Sheppard1986, 1989 in the Recommended Background Readings section).

TECHNIQUES FOR MANAGEMENT

Under the police powers provisions (protecting public health, welfare and safety), states and municipalities have a number of options to implement visual impact or aesthetic standards. The rights of ownership or public trust offer additional capabilities. In either instance, standards must be established for a defined geographic area or resource type – a defined special management area. These areas may be large – the State of Maine established standards that apply over most of its extensive coastline – or limited to a particular embayment or section thereof within a single municipality. Alternately, standards may be applied to specific critical resource types (*i.e.* salt marshes) wherever they are found.

Special management areas may be defined by states or municipalities under a number of options including:

- Zoning overlay districts;
- Critical resource areas or types;
- Wild and Scenic River designations; or
- Harbor management planning areas.

Zoning Overlay Districts

Zoning regulations have been used in coastal and inland areas throughout the country to separate different and potentially conflicting activities within a community. Within any given zone, standards are established and projects meeting those standards are automatically allowable. A variance process is generally established for proposals that do not meet the standards but may provide some communal benefit, or in order to avoid hardship for property owners. “Prior, non-conforming structures” within the zoning area are typically allowed to remain for use by the property owner, but are phased out over time.

Many municipalities have adopted some form of zoning ordinance that prohibits or limits certain uses or types of structures from specific sections of the community. A relatively new concept (and one that has had limited testing through the courts) is the extension of municipal zoning into waterbodies that lie within the jurisdiction of the municipality—often referred to as “watersheet zoning”. The zoning process can be applied to docks in a manner similar to other land uses—provided there is a demonstration that the standards bear a rational relationship to a legitimate governmental objective. (See Lloyd Harbor, NY case study on page 15)

Within such a Zoning Overlay District, communities may establish standards addressing visual impacts, including the regulations of size, length, or height of docks; depth of water at its terminus; construction materials to be used, and/or overall design. In some instances a complete prohibition of docks may be warranted.

Overlay Districts are adopted by a municipality in the same way as any other zoning change. However, zoning standards for docks must take into account the riparian rights of property owners along the shore. In most cases, riparian rights give waterfront property owners access to the water abutting their property—and this often is interpreted as allowing some form of structure or dock. However, this does not mean that reasonable standards for dock

construction cannot be established—or that docks cannot be prohibited altogether, so long as access to the water is not prohibited. There is legal precedent for limiting access to something as simple as a dinghy stored on and launched from the shore.

Harbor Management Areas

In most harbor plans, the central issue is resolving conflicting human uses within a specific geographic area, whether resource-based such as shellfishing; recreational uses such as swimming, boating, water-skiing; commercial wharfs and associated uses; or private docks.



Figure 7. An aerial view of Blakely Harbor on Bainbridge Island, Washington. This clearly shows the small number of docks currently along the shoreline. A recently passed ordinance will limit further development to two communal docks, one on each side of the harbor.

As part of a harbor planning exercise on Bainbridge Island, WA, planners assessed the potential for visual impacts from dock construction (Best, 2002). A GIS model was created showing existing structures and the potential for a full build-out of docks. There are three existing small piers in this generally shallow embayment (Figure 7), but there is the potential for more than 50. Using these two scenarios, the narrowing of views (i.e. views unobstructed by the presence of docks) was calculated from “select public vistas” such as parks and scenic roadways along the harbor as well as views of the land from the water side. Assessments were not done for visual

impacts on views from private properties. Analysis showed that the view corridors from the public land sites would be narrowed between 27% and 58% for projects that had already been proposed and up to 78% at maximum build-out. The study acknowledged the likelihood of additional impacts from light and noise but did not quantify these. Additional assessments were made for impacts to navigation and to natural resources. This methodology offers interesting options for visual impact analysis during a harbor planning exercise. Based on this planning exercise, the construction of new docks is now limited to two or three communal structures within the embayment.

Wild and Scenic River Designations

Wild and Scenic River designation provides another framework for visual impact management. Rivers and their immediate environments selected for their, “outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations.” (The Federal Wild and Scenic Rivers Act; P.L. 90-542 as amended; 16 USC. 1271–1287)

Rivers can be designated either by federal or state legislatures. Many states have developed parallel state legislation to designate and manage wild and scenic rivers (e.g., New Jersey’s Wild and Scenic Rivers Act of 1977; N.J.S.A. 13:8–45 *et seq.*). Within such designated areas,

management plans are developed that may be implemented through either state statutes or municipal ordinances. These plans generally include means for maintaining existing scenic vistas, providing an opportunity for the assessment from docks and piers and a framework for development of management strategies.

Critical Resource Areas

Many states and municipalities have the authority to define certain areas as critical to the protection of coastal resources. These may be known as aquatic preserves, Areas of Critical Environmental Concern, Areas for Preservation and Restoration, significant wildlife or marine resource habitat, etc., but all provide a framework for a dock management plan. In some of these areas, scenic resources are a factor in designation, leading to the potential for construction standards to minimize or avoid visual impacts.

Pleasant Bay, an estuary bordering on four towns on Cape Cod, was designated as an Area of Critical Environmental Concern by the Commonwealth of Massachusetts in 1987. This designation precluded state issuance of permits for dock construction until a state-approved Resource Management Plan was in place. A resource-based dock and pier management plan was submitted for approval in 2000 (Macfarlane et al., 2000). During the development of the resource management plan for the Bay, an inventory was taken of existing private piers and the potential for further construction of these structures. The planning group developed a matrix designed to predict the impacts from individual docks and piers—as well as cumulative impacts—and applied this summary to 26 geographic subsections within the Bay. Each subsection was rated for susceptibility to impacts. This resulted in a moratorium on dock construction in some areas and the establishment of standards for design and construction in others. These moratoria and standards were implemented in a similar manner by each of the four towns through parallel local ordinances. Macfarlane et al. (2002) noted that, “By eliminating the lot-by-lot procedures, we have also eliminated a more subjective approach to the permitting procedure.” While the evaluation of the subsection of the Bay’s susceptibility to impacts from docks and piers was based primarily on the Bay’s ecosystem (although the state regulatory language regarding the resource management plans include “significant scenic sites” as one designation criterion), the methodology is instructive and could easily be modified for visual impacts.

Another, albeit non-coastal, example of a critical area management plan may be seen in Lake Tahoe. The Lake Tahoe Regional Planning Agency has established regulatory standards for construction visible from the lake—the purpose being to “regulate structures in the foreshore and nearshore to avoid interference with attainment of scenic thresholds.” Under this program, the Agency has established “Shoreline Tolerance Districts” based on proximity to the water and geological and topographical conditions. For proposed projects along the waterfront, an applicant must provide an inventory of the current scenic conditions and meet standards related to color of the proposed structure, nature of the roof, types of fencing, etc. As regards new piers, they must meet standards related to location as related to property lines, proximity to tributaries, and important fish habitats; length (based on depth of water or a defined pierhead line established in the Lake); width; height; and design. Regulation of new piers is designed to prevent:

- Degradation of fish habitat,
- Creation of navigation hazards,

- Interference with littoral drift,
- Interference with the attainment of scenic thresholds [emphasis added], and
- Other relevant concerns.

Regulations pertaining to this program may be found at the Lake Tahoe Regional Planning Agency web site (www.trpa.org/default.aspx?tabindex=2&tabid=172). Chapter 30 of the regulations describes the Scenic Quality Review Program, C. 53 describes the Shorezone Tolerance Districts and Design Standards for structures, and C. 54 contains standards specific to new piers.

EXISTING PROGRAMS FOR AESTHETIC REVIEW

Several state or local management programs have incorporated – intentionally or otherwise – some level of visual impact, aesthetic, or scenic standards. Mississippi, Florida, and Georgia have established limits on the height and vertical area of structures on the end of docks. These standards are rooted in the protection of lines of sight for navigation, but also directly affect visual impacts. Massachusetts prohibits structures on the end of docks that are not “water-dependent” (as opposed to “water-enhanced”) (Figure 8). Again, the intent is to protect navigation and manage private use of public waterways, but the prohibition has the secondary effect of lessening visual impacts. In the Lloyd Harbor, NY case study (page 15), the Village



Figure 8. This structure on the Magathy River, Maryland is not water dependent and would not be permitted in Massachusetts.

established length limits for docks to protect navigation but also to “retain community character.”

Perhaps the clearest management of docks for visual impacts takes place in the State of Maine. Maine’s Natural Resources Protection Act (Title 38 §§ 480-A–Z), Standard 1, specifically requires an applicant to demonstrate that a proposed activity will not “unreasonably interfere with existing scenic and aesthetic uses.” The Visual Impact Regulations at Chapter 315: specify State regulatory concerns; define visual

impacts; establish a procedure for evaluating visual impacts; establish when a visual assessment may be necessary; explain the components of a visual assessment; and describe avoidance, mitigation and offset measures that may eliminate or reduce adverse impacts to existing scenic and aesthetic uses.

The regulations call for an evaluation of each structure for three major criteria and sub-criteria, as follows:

Landscape Compatibility (Severe, Moderate, Minimal, None)

- Color (whether the proposed structure is a significantly different color, hue, value, or chroma) from its surrounding landscape,
- Form (whether the two- or three-dimensional shape of the proposed structure is incompatible with landscape surroundings),
- Line (whether the proposed structure introduces incompatible edges, bands, or silhouette lines), and
- Texture (whether the proposed structure will produce an incompatible textural grain, density, regularity, or pattern).

Scale Contrast

- Severe: Major Scale Introduction/intrusion
- Moderate: One of several scales or major objects in a confined setting

- Minimal: Significant object or scale
- None: Small object or scale.

Spatial Dominance (Dominate, Co-dominate, sub-ordinate, Insignificant)

- An evaluation of whether the proposed structure dominates or is prominent in whole landscape composition; is prominently situated within the landscape; or dominates landform, water or sky backdrop.

In many instances, the review process requires the applicant to provide a graphic simulation of how the proposed structure fits into the landscape setting. Figure 3 (page 5) shows two graphic simulations for a dock reviewed under the Maine criteria.

The evaluation produces a score for “Total Visual Impact Severity”. This score is entered into a matrix with the Severity along one axis and the Scenic Significance along the other in order to determine which of the following categories the proposed project falls into: Unacceptable; Acceptable with Mitigation of various levels; or Has low or no impact.

As part of the evaluation process, a Standard Operating Procedure (SOP) for visual assessments was developed as a mechanism to promote consistency between decisions and provide the ability to document how decisions were made. Additionally it increases the comfort level for the staff. Maine’s Visual Impact Assessment Form, definitions of terms, and Visual Impact Matrix are found in Appendix A.

Generally the evaluation addresses impacts to public viewsapes, rather than strictly the impacts on neighbors, abutters, or other private property owners. Assessments are done from locations where the public could view the project. This is similar to the process used on Bainbridge Island, Washington.

Visual Impact Assessments have been used in Maine since 2000 and have produced a range of decisions. In several cases proposed docks were allowed because they didn’t interfere with scenic values (i.e. Figure 9). In another situation, the proponent was asked to consider other



Figure 9. The ME DEP determined that this pier (left) did not interfere with the reason that the view was found to be scenic. As is not unusual, the party declaring a scenic impact was a neighbor, whose grandfathered lot potentially constituted a larger impact to the visual quality of the north side of the island (right). This project caused the DEP to think carefully about whose view they are charged with protecting, and reinforced the concept that it is the public’s view that the legislature was concerned with when it adopted the NRPA. (From Kelty & Bliven, 2003. Photos by J. Gates.)

locations after it was determined that the proposed dock would interfere with scenic views. That application was subsequently withdrawn and the proponents are working with neighbors to negotiate shared use of an existing dock. In a third case, there were no resource or visual impacts but the dock would have been the only one in a natural fjord and would have been visible for hikers in a National Park. Consequently the project was denied (see Somes Sound, ME case study, Figure 15).

After approximately five years, Maine's Department of Environmental Protection (the implementing agency) has found that for the most successful management of visual impacts, it needs to get involved with the first structure in a newly developing area—and, as noted above, they have denied permits for docks proposed in places where there was no previous development.

To date, no municipalities within the state have adopted similar programs at the local level, but the process could be adopted as part of an overlay zoning district evaluation process.

MITIGATION FOR VISUAL IMPACT

Various forms of mitigation are available, the selection of which depends on the existing setting, its “visual character,” plans for the area, and the values of the decision-making body. The generic preferences for coastal structures identified by Smardon (2003) can form a basis on which to overlay state or local standards. Common mitigation measures include:

- Reducing the length, height and overall size of the dock or associated structures;
- Maintaining a minimum distance between structures (this might involve requiring communal or shared docks rather than a one-dock-per-lot situation);
- Enhancing public access to the shoreline adjacent to or waters under the docks,
- Encouraging the use of “natural” or “traditional” materials and designs typically found in the specific type of landscape setting;
- Reducing the color or shadow contrast between the proposed structure and the surrounding landscape;
- Establishing setbacks along the shoreline for other structures where docks are proposed as a way to minimize “visual clutter”; or
- Establishing associated interpretive sites to related to historic or heritage-related usage of the area.

The use of any of these techniques, or others that evolve during the planning process, will vary widely depending on the nature of the existing landscape and the plans for its future.

CASE STUDIES

Case Study 1: Village of Lloyd Harbor, NY

Location:

Lloyd Harbor, NY—a Village in the Town of Huntington on the north side of Long Island in New York (Figure 10).

Background:

The waterbody known as Lloyd Harbor (as distinguished from the Village of the same name in which the embayment is located) is a long, narrow, relatively shallow embayment connected to Huntington Bay (Figure 11). The main portion of the water body ranges from 400–1,200 feet wide.

Lloyd Harbor has been designated by the State of New York as Significant Coastal Fish and Wildlife Habitat and as a Critical Environmental Area by the Village of Lloyd Harbor under provisions of New York State law.

The Village of Lloyd Harbor developed Coastal Overlay District zoning standards with financial and technical assistance from the New York Coastal Management Program. The standards were designed to manage land and water uses in Lloyd Harbor and to protect:

1. the significant natural resources of the area,
2. the relatively undeveloped open space and uses along and in the harbor, and
3. the scenic and visual qualities - essentially the community character of the waterfront.

The Overlay District recognizes the riparian rights of property owners to access and use waters adjacent to their property including the right to a dock subject to “reasonable regulations” to preserve the public right of passage along the shore, public use of the harbor, natural resources, safety and *aesthetic and scenic views.*” [Emphasis added.]

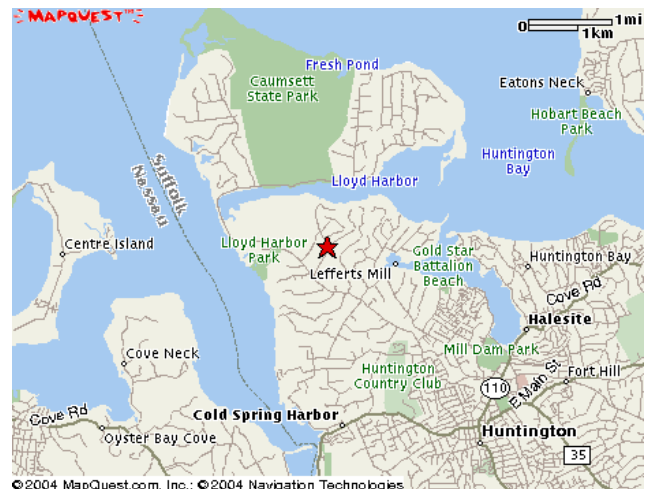


Figure 10. Lloyd Harbor is on the northern shore of Long Island, NY. The dock was proposed for the south side of the harbor, approximately halfway from the opening to Long Island Sound.



Figure 11. An aerial view of Lloyd Harbor showing the location for the proposed dock. As originally proposed, the dock would have extended 115' into the body of water. Lloyd Harbor ranges between 400 and 1,200 feet wide.

Within the Overlay District, dock length is limited to 75 feet from mean high water, or to a depth no greater than two feet at the seaward end of the dock at mean low water, whichever produces the shortest dock. This reduces encroachments into and minimizes the effects of the physical presence and intrusion of docks on the visual quality and character of the area.

An owner of upland property abutting Lloyd Harbor proposed to construct a dock that would extend approximately 115-foot seaward of mean high water reaching a water depth of about four feet. The owner sought to berth a 36-foot long, 3.5-foot draft vessel at the dock. At the time of the proposal, the boat was moored in another location within the Harbor. The requested dock was intended to increase the safety of the boat during storm events; make it safer to load and unload passengers, particularly children or handicapped people; and to provide better access to electricity and water. The request was denied.

Issues Raised

After being denied a permit by the Village to construct a dock longer than allowed by zoning, the upland property owner filed suit in US District Court against the Village of Lloyd Harbor maintaining that the community's refusal to approve the application dampened "their legal and constitutional rights to own and use their property and its riparian rights" as granted under the Fifth Amendment of the US Constitution resulting in a "taking of their property for public use without just compensation". In making this claim, the plaintiffs asserted that the ordinances were "unconstitutional, illegal, and invalid" and did "not promote the health, safety, welfare or morals of the general public; [were] not enacted in furtherance of a comprehensive land use plan; are not rationally related to achieving a permissible municipal goal; and are arbitrary and capricious."

Witnesses for the defense testified that the overall intent of the Coastal Overlay District was to limit the length of docks and depth of water they reach and, among other public interests, "to protect the aesthetic physical character of that portion of the area of the village."

The Court was asked to decide whether the Coastal Overlay District was constitutionally valid.

Result

The case was tried in US District Court in the Eastern District of New York and is referred to as *Stuchin v. Town of Huntington and Village of Lloyd Harbor*.

In September of 1999, the judge handed down a 68-page decision (71 F. Supp 2d 76, No.CV 98-3580 (ADS)) finding that the property owners had not been denied their right to access the waterway adjacent to their property, but merely had their "mode of access...limited to a dinghy launched from the foreshore of their property." He went on to note that both the right of access and construction of a private dock are "subject to general rules and regulations as the Legislature may see proper to impose for the protection of the rights of the public, whatever these may be." The Coastal Overlay District was found to be legally valid and that the property owner's constitutional rights had not been violated, upholding the denial of the permit for the proposed dock.

In making this decision, the judge found there was a "substantial rational basis for reducing the size of docks in these waters including the Village's ... concerns regarding 1) obstruction to navigation, 2) preservation of the pristine natural habitat and precious resources of Lloyd Harbor and 3) *aesthetics*." [Emphasis added.] The judge dismissed the regulatory taking claim and

concluded that the village standards, including those related to visual impacts and aesthetics “pass constitutional muster.”

In making this decision the Court referred to *Montero v. Babbitt*, (US Eastern District Court NY 1995) upholding government’s authority to restrict riparian owners’ rights to access navigable waters through the use of police powers as a valid use of those powers. In the *Montero* case, the riparian right of access had not been denied entirely—the mode of access had merely been limited to a dinghy launched from the shore of the property in question.

The Court concluded that the Village Lloyd Harbor did not act in an “arbitrary or irrational manner” in establishing the Overlay District standards related to dock design, noting that “[g]enerally a municipal zoning ordinance is presumed to be valid and will not be held unconstitutional if its wisdom is at least fairly debatable and it bears a rational relationship to a permissible state objective.” Citing *RRI Realty Corp v. Village of Southampton, NY* (2d Cir, 1989) “zoning regulations will survive substantive due process challenge unless they are ‘clearly arbitrary and unreasonable, having no substantial relation to the public health, safety, morals, or general welfare’.”

The Court also concluded that “aesthetics serve as another rational basis for the decision by the Village to limit dock length ... so as to limit human intrusion in this special natural and relatively undeveloped wildlife area in the midst of a suburban world.” This decision was based in part on testimony that, “In addressing aesthetics and ... in recognizing the character in the area, and the intent of the Village of Lloyd Harbor to maintain and protect that character, they developed the coastal overlay district.... [The Village] has enacted standards for the types of docks that are allowed in the village in order to address aesthetics, in order to maintain and protect the character of the village.”

Accordingly the Court found that the zoning ordinances bore a “rational relationship to a legitimate government objective.”

Lessons Learned

- The Courts concluded that visual impacts, or aesthetics, are a valid basis for managing docks and piers.
- In the Lloyd Harbor instance, the management structure took the form of a zoning standard intended, in part, to maintain the relatively undeveloped character of the municipality’s waterfront.
- Aesthetic values are a valid part of the character of the community.
- The Court found that standards based on these concerns bear a “rational relationship to a legitimate government objective” and therefore are legally defensible.
- Regulatory standards intended to protect public health, welfare and safety, and the process in which they are developed, that are not arbitrary and capricious and that are based on an authority that “bears a rational relationship to a permissible state objective”, are defensible and have been upheld in court.

Case Study 2: Somes Sound, ME

Location:

The project was proposed for the shore of Somes Sound in the Town of Mount Desert, Maine (Figure 12). A portion of Acadia National Park flanks the Sound.

Background:

Somes Sound is the only natural fjord on the east coast of the United States. It is used for recreational boating and is clearly visible from portions of Acadia National Park.

A resident on the shore of the Sound proposed to construct a dock so that friends could pick up passengers and launch dinghies and kayaks from his residence. The application requested a 160-foot long

wooden pier, six feet wide, with a 48-foot long and four-foot wide aluminum ramp leading to a 48 foot long and 14-foot wide wooden float. Initially the proposed pier was to be supported by three granite cribs located in tidal waters but, during the review process, the property owner offered to reduce the length of the pier to 100 feet and eliminate one granite support.

Within the State of Maine, such projects are under the jurisdiction of the Natural Resources Protection Act (38 M.R.S.A. §§ 480–A–Z). This Act allows the Maine Department of Environmental Protection (DEP) to review proposed projects for impacts to water quality, wetland and habitat considerations, erosion, and impacts on existing uses including navigation and scenic and aesthetic qualities. This Act, its standards, and the review process are described earlier in this paper.

Issues Raised:

The project was opposed by neighbors and the Town of Mount Desert. Issues raised during the review process included:

- The potential for increased erosion during construction and thereafter,
- Potential adverse impacts on wetland habitat of intertidal and sub-tidal species,
- Navigation within the waterway, and
- Scenic and aesthetic impacts.

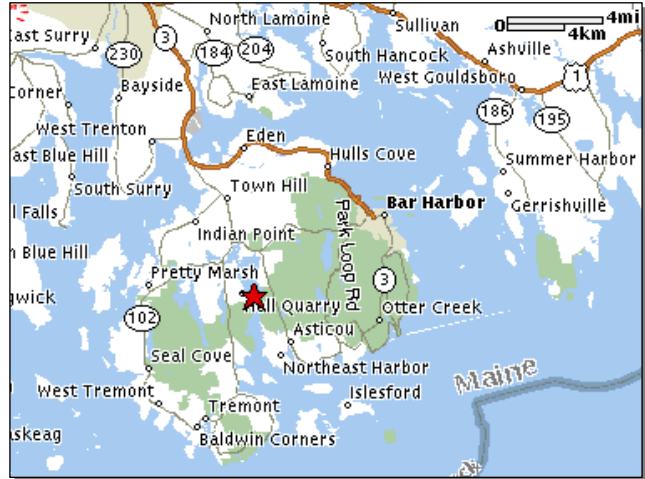


Figure 12. Somes Sound is in the Town of Mount Desert, ME and borders Acadia National Park.

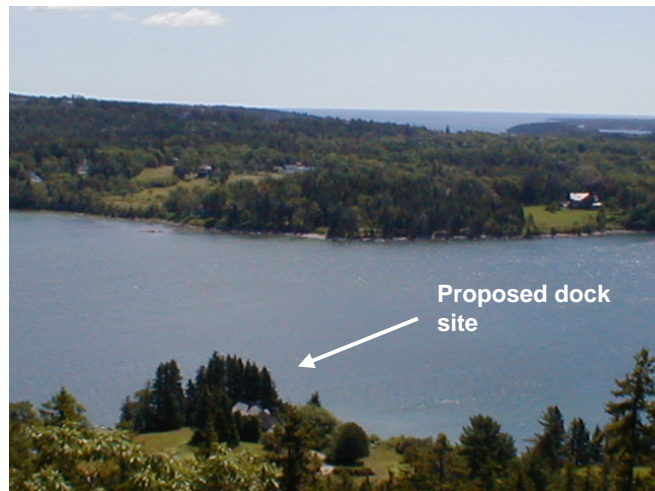


Figure 13. An aerial view of Somes Sound, ME showing the location of the proposed 160-foot pier. The proposal subsequently was redesigned to a length of 100 feet. A 48-foot float was proposed to be attached to the pier. (Photo courtesy of the Maine DEP, used with permission.)

Result:

As a result of the review process the DEP found that the project would not cause unreasonable erosion.

The Coast Guard, the Army Corps of Engineers, and the Town Harbormaster testified that there would not be significant adverse impacts to navigation. The channel in this area is approximately 1,650 feet wide at low water. The proposed pier would intrude only 9.6% of the way across the channel in the original configuration and 6.6% in the reduced version. Additionally, there are 3–4 docks on the opposite side of the Sound from the proposed structure that apparently have not interfered with navigational use of the Sound.

However, 138 square feet of benthic habitat would be covered by the granite crib and 660 square feet of coastal wetland habitat would be permanently shaded by the dock. Because the proposed structure was for water-dependent purposes, it was considered under the provisions of the Natural Resources Protection Act which prohibit loss of wetland area, functions and values if there is a practicable, less environmentally damaging alternative to the project. The Department suggested several alternatives including the use of slip space and moorings at a nearby Town landing (where the applicant had been keeping his 53-sailing vessel). After its review, the DEP found that the applicant did not adequately demonstrate that the impacts of coastal wetland resources could not be avoided.

Particularly germane to this paper, the DEP also carefully reviewed the concerns regarding scenic and aesthetic impacts. Opponents contended that the proposed dock would unreasonably interfere with existing scenic uses by boaters on the Sound and from people using Acadia National Park. As part of the visual impact assessment for the project, the applicant submitted computerized images of how the proposed dock would look (Figures 3, 14).



Figure 14. View of the shoreline of Somes Sound with an image of the 100-foot pier, granite supporting cribs, and a 48-foot float superimposed via a computer program. The color of the proposed pier, here shown in grey-green in the computer-generated image, became an issue in the review of the proposal. (Graphics by Pepperchrome, used with permission.)

Figure 15. Looking toward the shore where the pier was proposed, it was easy to determine that the dock would not interfere with the visual quality of the shoreline any more than the existing development (top right). This was not the first pier proposed in the area, and in fact there are several along the adjacent shoreline (bottom left). Cumulative impact may have been an issue, but in this case there is a good distance between the piers and the additional direct impacts from this pier were unlikely. However, the coastal resource of concern is Some Sound, the only natural fjord on the east coast. The view in this photo (bottom right) is from the top of Flying Mountain, one of the most popular hikes in Acadia National Park. The proposed dock would be clearly visible from the trail and summit of Flying Mountain, while the existing docks are not. (From Kelty & Bliven, 2003. Photos by J Gates)



The applicant argued that the Sound is not a pristine undeveloped area, that there are other existing docks along its shores (Figure 15), and that the proposed project was “consistent with the scenic character of the area.” A consultant for the applicant stated that the proposed materials, colors, and form (identified by the applicant on plans submitted during the review process) blend will with the existing shoreline. In Figure 14, the dock is shown as green in color, based on the applicant’s contention that this is the color of the pressure treated wood to be used—wood that he felt would darken over time.

Opponents argued that the character of the fjord is very important, that there is an absence of existing docks on that portion of the shore and that the structure would be highly visible to viewers of the area. The opponents contended that instead of darkening over time, the structure would weather to a silver gray color and become even more visible and out of character for the area.

The DEP noted that it had a responsibility to consider the impact of this structure both on its own and as part of the potential for cumulative impacts on a relatively undeveloped shoreline. Again, the DEP considered whether there was a viable alternative and found that the applicant had not demonstrated that there was not.

Consequently the DEP denied the application based on impacts to wetland habitat and scenic and aesthetic impacts, noting that there were alternatives available thereby rendering the proposal unnecessary and unreasonable according to the rules under the Natural Resource Protection Act.

The applicant appealed the decision to the State of Maine Superior Court arguing that the delegation of authority by the Legislature to the DEP is unconstitutional in that insufficient guidance was provided as to how the DEP should implement the provisions of the Act that state that an “activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses” or whether the “activity will not unreasonably harm any significant wildlife habitat...”. The challenge therefore was to the claimed lack of definition by the Legislature of “unreasonably interfere” and “unreasonably harm”. After review, the Court found that “when one looks at the delegations in context ... with the entire statutory scheme and procedural safeguards, it is clear that the Legislature has provided reasonable guidance. ... In the present case, the Legislature’s purpose is clear from the preamble and context of the Act and review procedures are built into the statute and regulations.”

Further, the applicant argued that the DEP decision was not supported by substantial evidence and was thereby “arbitrary and capricious.” The Judge quoted from a prior case that, “An administrative decision will be sustained if, on the basis of the entire record before it, the agency could have fairly and reasonably found the facts as it did.” [Emphasis added.] The Judge further noted that “the court should not attempt to second-guess the agency on matters falling within its realm of expertise.” Consequently the court denied the applicant’s appeal, supporting the decision made by the DEP.

Lessons Learned

- It is feasible for a state regulatory program to incorporate scenic and aesthetic concerns in a similar manner as reviews of impacts on the environment, navigation, or recreational uses.
- The State of Maine has established a process for incorporation of visual impact assessments into regulatory review.
- The results of such visual impact assessments may, in some cases, be cause for denial of a proposed project.
- The courts have supported legislation that incorporates scenic and aesthetic values and visual impact assessments that are used in the regulatory review process.
- The courts have found that an agency acting within its regulatory authority and if the agency, based on the entire record before it, could have fairly and reasonably found the facts as it did. So long as the factual determinations of the agency are not “clearly erroneous”, such factual determinations should be sustained by the courts.
- Given the appropriately worded legislation, a clear review process such as that developed by the State of Maine DEP can form the basis for visual impact assessments and findings based on scenic and aesthetic values in the case of private docks and piers.

SUMMARY

There are valid, reproducible techniques for establishing visual standards for shoreline structures, including private docks. While property owners should expect access to adjacent waters as part of their riparian rights, this does not necessarily mean that a dock over public waters should be expected. If permission is granted, it may come with conditions to mitigate visual impacts.

Visual impact assessment techniques allow for quantifiable, repeatable assessments appropriate for guiding dock permitting decisions. These include landscape planning for a specified area such as an embayment or a community, or a case-by-case review based on state-wide standards. Evaluation methods may include analysis of existing landscape views and visualizations of how the landscape would look with the proposed structure or structures in place.

As seen in the case studies, there have been legal decisions in which courts have upheld standards based on visual, aesthetic, or scenic impacts and their implementation for proposed private docks. States or municipalities therefore have the option of managing visual impacts through a variety of regulatory or non-regulatory methods similar to those used to manage environmental impacts.

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APPENDIX 1: Maine Basic VIA Form

VISUAL ELEMENTS	VISUAL SUB ELEMENTS	INDICATORS/CLUES	ELEMENT RATINGS		ELEMENT SCORES
LANDSCAPE COMPATIBILITY ↓	COLOR	Significantly different color, hue, value chroma	Severe	3	
			Moderate	2	
			Minimal	1	
			None	0	
	FORM	Incompatible 2/3 dimensional shape with landscape surroundings	Severe	3	
			Moderate	2	
			Minimal	1	
			None	0	
	LINE	Incompatible edges, bands, or silhouette lines introduced	Severe	3	
			Moderate	2	
			Minimal	1	
			None	0	
	TEXTURE	Incompatible textural grain, density, regularity or pattern	Severe	3	
			Moderate	2	
			Minimal	1	
			None	0	
SUBTOTAL →					
SCALE CONTRAST ↓		Major scale introduction/intrusion	Severe	12	
		One of several major scales or major objects in confined setting	Moderate	8	
		Significant object or scale	Minimal	4	
		Small object or scale	None	0	
		SCORE			
SPATIAL DOMINANCE ↓		Object/activity dominates or is prominent in whole landscape composition; or is prominently situated within the landscape; or dominates landform, water, or sky backdrop	Dominate	12	
			Co-Dominate	8	
			Sub-ordinate	4	
			Insignificant	0	
		SCORE			
TOTAL VISUAL IMPACT SEVERITY					
		Severe	27-36		
		Strong	26-18		
		Moderate	17-9		
		Weak or Negligible	8-0		

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Definitions associated with Maine Visual Impact Assessment Form

- A. Backdrop.** The distant part of a landscape located from 4 miles to infinity from the viewer.
- B. Color.** The property of reflecting light of a particular wavelength that enables the eye to differentiate otherwise indistinguishable objects. A hue (red, green, blue, yellow, etc.) as contrasted with a value (black, white, or gray).
- C. Contrast.** Diversity or distinction of adjacent parts. Effect of striking differences in color, form, line, or texture of a landscape.
- D. Dominance.** The extent to which an object is noticeable when compared to the surrounding context.
- E. Form.** The structure, mass or shape of a landscape or an object. Landscape form is often defined by the edges or outlines of landforms, rockforms, vegetation patterns, or waterforms, or the enclosed spaces created by these attributes.
- F. Landform.** One of the attributes or features that make up the Earth's surface, such as a plain, mountain, or valley.
- G. Landscape.** An area composed of interacting ecosystems that are repeated because of geology, landform, soils, climate, biota, and human influences throughout that area.
- H. Landscape Character or Landscape Composition.** Particular attributes, qualities, and traits of a landscape that give it an image and make it identifiable or unique.
- I. Landscape Compatibility.** The elements of color, form, line, and texture that typically determine landscape character.
- J. Line.** Anything that is arranged in a row or sequence. In landscapes – ridges, skylines, structures, changes in vegetation, or individual trees and branches – may be perceived as line.
- K. Scale Contrast.** The degree to which an activity or object dominates or intrudes into a landscape or confined setting.
- L. Situation.** The position of the activity or object within the landscape.
- M. Spatial Dominance.** The degree to which an activity or object dominates the landscape; is prominently situated within the landscape; or dominates landform, waterform, or sky backdrop.
- N. Texture.** The grain of a landscape or repetitive pattern of tiny forms. Visual texture can range from smooth to coarse.
- O. Visual Elements.** The landscape's components that make up the overall visual character of a landscape.
- P. Waterform.** One of the attributes or features that make up the earth's surface, such as a pond, lake, stream, river, waterfall, estuary, or ocean.

Appendix 2: Basic Visual Assessment Form

(Form DEPLW0451-A2002, used with permission of Terrence DeWan & Associates)

		IMPACT SEVERITY RATING			
		Severe 36-27	Strong 26-18	Moderate 17-9	Weak/None 8-0
SCENIC SIGNIFICANCE OF VIEW	High				
	Medium				
	Low				
	Unrated				

Legend



UNACCEPTABLE. High level of visual contrast in line, form, color, or texture between existing high quality landscape and development proposal; view of water or other significant visual resource obstructed. May be grounds for project denial.



ACCEPTABLE WITH MAJOR MITIGATION. High degree of contrast on landscape of medium significance; moderate degree of contrast on highly significant landscape. Project re-design necessary.



ACCEPTABLE WITH MITIGATION. Some modification to project siting or design necessary to achieve better landscape 'fit.'



ACCEPTABLE WITH MINOR MITIGATION. Relatively minor adjustments to plan or siting necessary to achieve a higher level of project compatibility.

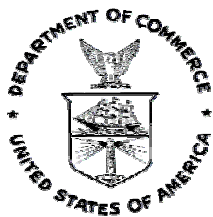


LOW/NO IMPACT. No perceptible change to the visual landscape. No mitigation required.

Chart is recommended method for reviewing visual impacts and determining level of effort required for mitigation and/or reconsideration of project siting and design. Application of the recommended actions should consider length of view and viewer expectation.

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