

# **Design Guidelines for Recreational Fishing Facilities September 2010**

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## **Introduction**

The purpose of this document is to provide guidance to those interested in building a recreational fishing pier or platform, or providing fishing access from shorefront structures such as bulkheads and waterfront walkways. Marine Fisheries Division and Inland Fisheries Division fisheries biologists have had the opportunity to review a number of proposals for fishing facilities submitted by municipalities, businesses and private associations. These reviews are typically conducted through the various DEP application processes for grants and permits. A significant number of these proposals did not fully consider how siting and design affects the function of a facility for the purpose of fishing. Therefore, this document was prepared to assist individuals with the design of a functional facility and to encourage consultation with DEP staff during the design phase of a project.

Three key aspects of fishing facility design are discussed: siting of a facility, railing design and inclusion of amenities that can improve a fishing facility. Pictures of Connecticut fishing facilities are included at the end of this document to illustrate important design features. A list of additional resources is included for assistance these and other design considerations.

## **Siting a facility**

Ideally, a fishing facility should be sited in a location that is particularly productive for fishing. In many cases local anglers can be consulted since they know the best fishing places, or it can be determined by observing the level of current angler activity and success. But in general, productive fishing can often be found in areas that feature structural diversity and varied bathymetry. In coastal areas, natural or manmade channels are often good fishing locations. Jetties and groins are often popular places to fish due to their proximity to channels and other features, and capping them can provide better and safer access. Proximity to habitats such as tidal marshes, submerged aquatic vegetation and rock piles will increase the likelihood of catching fish and crabs. In lakes and ponds, features that attract fish include submerged and emergent vegetation, vegetation overhanging banks, rock piles and drop-offs. In streams, fish take advantage of the cover created by rocks, undercut banks, logs and deep pools. Larger rivers may have all of these features and more, such as deep channels. A facility should be sited such that

anglers will be within casting distance of these features. One of the advantages of building a fishing pier is that it can be designed to put anglers within casting distance of features that lie beyond the casting distance from shore.

In coastal areas it is important to consider the depth of water at all tide stages. From the perspective of achieving the most diversified and productive fishing experience, the least desirable locations are relatively featureless tidal flats where there is no water under the pier for extended periods. It should be noted, however, that even these locations are productive for certain species during the right tidal stage and season.

It is important to evaluate whether a site can provide convenient access to the proposed fishing facility. Adequate parking is essential, and the facility should be within a reasonable walking distance from the parking area. In urban areas, proximity to public transit lines can make the facility accessible to more people. Access to the facility should be barrier-free as required by the Americans with Disability Act (ADA). Additional guidance can be obtained from the sources listed at the end of this document.

## **Railing Design**

The railing is one of the most important features to consider when designing a fishing facility. In particular, the height of the railing should be carefully considered because the height will govern who can fish from the facility. Designers are often faced with the task of balancing the purpose of the pier, which is to provide fishing opportunities for as many types of anglers as possible, with safety concerns. Related to this consideration is the application of ADA guidelines and requirements, the State Building Code (SBC) and U. S. Occupational Safety and Health Administration Act (OSHA) codes to the design of the facility. These issues are discussed below.

### ***Application of the Americans with Disability Act, State Building Code and U.S. Occupational Safety and Health Administration requirements to fishing facilities***

The Federal Americans with Disability Act (ADA), which became law in July 1990, requires that all public facilities provide barrier-free access for persons with disabilities. However, the ADA did not specify design guidelines that would provide barrier-free access for recreational facilities, including fishing piers and platforms. In 1999 the Architectural and Transportation Barriers Compliance Board (Access Board) developed guidelines for recreational facilities and issued them for public comment<sup>1</sup>. The final rule, titled *Final Accessibility Guidelines for Recreation Facilities*, was published in the Federal Register on July 23, 2004. The guidelines were adopted, with some modifications, by the U.S. Department of Justice (DOJ) on July 23, 2010 as part of DOJ's revisions to its ADA regulations and published in the Federal Register on September 15, 2010 (Volume 75, Number 178). According to the DOJ, compliance with the new rules will not be required until March 15, 2012. However, a facility should be accessible pursuant to the ADA, and the rule can be used to design a compliant facility, including fishing facilities (refer to the Access Board and DOJ websites for a full discussion). Readers are encouraged to check the DOJ website for the current status of the rules when designing a facility.

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<sup>1</sup> The Access Board is the designated agency responsible for developing minimum ADA accessibility guidelines.

Piers, boardwalks and platforms constructed over water are subject to the SBC<sup>2</sup>. Exemptions from the code can be obtained for the purpose of constructing a functional fishing facility and to meet ADA requirements. The most common example is the need to obtain an exemption from the section that specifies a minimum railing height of 42 inches, which in general is too high for most people to fish from (see below). Project designers should contact the State Building Inspector to discuss their project and the need to apply for a Request for Modification of the State Building Code or a Request for Accessibility Exemption of the State Building Code.

During the rulemaking process for the Final Accessibility Guidelines for Recreation Facilities, the Access Board determined that the OSHA codes do not apply to recreational fishing piers because OSHA standards are restricted to job responsibilities performed in a workplace. However, in instances where a pier is used for both work and recreational purposes, the OSHA standards may apply. Designers of fishing facilities should consult the Recreational Facility Final Rule posted on the Access Board website for additional information about how OSHA codes and the SBC relate to the guidelines developed by the Access Board.

Since SBC, OSHA and ADA codes and guidelines may be revised from time to time, the appropriate agencies should be consulted to obtain the most current information.

### ***Railing design***

A railing can either enhance or hinder fishing from a facility depending upon the design. Designers should first consider whether a railing is necessary for safety or other concerns. For instance, the Engineering Unit of the DEP Agency Support Services Division evaluates site characteristics to determine if a railing is necessary on fishing platforms less than 24 inches to 30 inches above the ground or water (Eric D. Ott, PE, Assistant Division Director, Field Services, personal communication). A pier located in a reach with strong current and upstream of a waterfall is an obvious case where a railing would be required. If it is determined that a railing is necessary, then it is important to consider who will be using the facility when designing the railing. A pier built for the general public might have a different railing design than one built primarily for children.

The height of the railing is the most important factor governing who will be able to fish from a facility. The ADA guidelines developed by the Access Board can be used as a starting point for a railing design that will not only provide barrier-free access, but will provide reasonable opportunities for most anglers. The guidelines call for at least 25 percent of the railing to be no higher than 34 inches. The 34 inch maximum height was chosen because it enables people in wheelchairs to comfortably fish over the railing, but this also means that anyone who wants to sit in a chair will be able to fish over the railing (many anglers do like to sit in chairs when fishing from shore). Furthermore, a height of 34 inches allows some children to fish over the railing, and since the guideline allows for a height less than 34 inches the height can be tailored to the age and height of children expected to fish from the facility.

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<sup>2</sup> May 25, 2001 letter from Christopher Laux, State Building Inspector, to Mark Johnson, Senior Fisheries Biologist, CT DEP.

An important aspect of the Access Board railing guideline is that up to 100 percent of the railing can be at the lower railing height. However, it is often the case that designers incorporate only the minimum of 25 percent, with the other 75 percent compliant with the SBC requirement of 42 inches. For children, persons in wheelchairs and even many adults, a height of 42 inches is too high to cast over and retrieve lines, and it can be very difficult to bring fish over such a high railing. Many people like to sit in a chair while they are fishing, but a 42 inch railing makes this very difficult. Thus, most people will choose to fish over the lower sections. Those who are unable to fish over higher railings will not be able to fish if the lowered railing areas are occupied. This is particularly a problem on small facilities. Another disadvantage is that the low railing sections determine where some people will be able to fish from the pier, even though that may not be the best place to fish from on any particular day. For these reasons it is strongly recommend that 100 percent of the railing in areas where people can fish should be at the lower railing height. As discussed above, it is possible to obtain an exemption from the SBC railing height for the purpose of building a functional and barrier-free fishing facility.

If only a portion of the railing is at the lower height, then the Access Board final rule specifies that low sections should be distributed on the facility. The width of the sections is not specified in the rule, but these should be as wide as possible to facilitate casting and to create a more open view for those in chairs.

Various features can be incorporated into a railing design to facilitate fishing and increase safety. The top rail board can be angled inward approximately 45 degrees. This discourages people from sitting on top of the rail or placing tackle boxes and other items on it, which could be knocked off into the water. An angled rail also provides anglers in wheelchairs, seated anglers, and children a more comfortable surface to lean upon. Holes for holding rods can be drilled in the top rail (see below).

The railing can include features to make it easier to land fish. Gaps between railing sections has been the feature most commonly used, although there is not much information on what width functions the best. In a 1996 publication, the States Organization for Boating Access recommended nine inch gaps spaced no farther than eight feet apart (Wilson 1996). The gaps on two state piers – the Ferry Landing State Park pier and the Fort Trumbull pier – are slightly narrower at six inches wide. DEP staff have not observed many anglers using them, but it is not known if nine inches would be better, and so designers are encouraged to incorporate as wide a gap as possible. Note that this feature would require an exemption from the SBC, since the SBC requires balusters spaced such that a four-inch sphere cannot pass through any opening. There may be other possibilities that have not been tried, such as providing swinging doors, and so designers are encouraged to explore new ideas.

Many of these features have been successfully incorporated into piers constructed and maintained by the Connecticut DEP and Department of Transportation, including the piers at Ferry Landing State Park in Old Lyme, Baldwin Bridge Boat Launch in Old Saybrook, and Fort Trumbull State Park in New London. Similarly, the city of New London has incorporated some of the guidelines in the design of New London Waterfront Park. Pictures of these facilities are included at the end of this document.

It should be noted that the state facilities shown in the pictures have railing features that stem from earlier ADA guidelines developed by the States Organization for Boating Access (SOBA). When the ADA became law in 1990 it did not specify design guidelines that would provide barrier-free access for recreational facilities, including fishing facilities. To address this issue, SOBA published a document called *Design Handbook for Recreational Boating and Fishing Facilities* (Wilson 1996). The document described existing national Architectural and Transportation Barriers Compliance Board (Access Board) standards that apply to recreational facilities, and recommended a number of guidelines for structures not addressed by the Access Board standards. However, when the Access Board developed the 2004 Final Rule, some of the SOBA guidelines were not included, such as widely spaced vertical and horizontal elements designed to avoid a “cage” effect for those in wheelchairs and gaps between railing sections to make it easier to land fish. In 2006 SOBA released a second edition of the design handbook that was updated with Access Board 2004 guidelines (Boyd et. al 2006).

### **Amenities, posting information and fishing line recycling**

Amenities such as cutting boards, rod holders, benches, lighting, and running water enhance fishing from a facility. By providing cutting boards, fewer anglers will cut bait on railing and deck surfaces. Rod holders are very useful. If the railing has an angled top rail, holes large enough to hold rods can be drilled into the cap rail. The holes should be from 1.75 inches to 2.0 inches in diameter, angled outboard from vertical (from 30 to 60 degrees) and spaced two to four feet apart. A good example of this design is the Fort Trumbull fishing pier, where holes were drilled every two feet in a 2 x 8 angled cap rail made of recycled plastic. If the facility does not have a suitable cap rail, as in the case of the railing at the Ferry Point State Park pier, lengths (about 1 ft) of PVC pipe can be secured to pilings or other suitable support elements. Lighting is helpful for night fishing, serving to attract fish as well as enhancing safety and security. A supply of running water enables anglers to clean their hands and equipment.

Improperly discarded fishing line can entangle wildlife such as turtles, birds and even fish, leading to injury and death. Fishing line collection stations installed at facilities can help mitigate this problem by encouraging anglers to properly dispose of unwanted fishing line. At the initiative of the CT DEP Wildlife Division, collection stations were recently installed at a number of State facilities, including the Ferry Point State Park Fishing Pier. The stations were constructed according to a design used by the state of Florida’s Monofilament Recovery and Recycling Program (MRRP). While the collected line can be cut into smaller sections and disposed of in the trash, monofilament line can be recycled by sending it to Pure Fishing, the parent company of Berkley Fishing. Readers are encouraged to visit the MRRP website for further information, including materials used for constructing the collection stations.

Fishing piers should be adequately posted to inform the public that fishing is allowed. Similarly, parking areas and access routes should be clearly indicated. Signs listing rules for pier use and current fishing regulations should be posted. Fishing regulation posters may be obtained from the Marine Fisheries Division in Old Lyme, or from the Inland Fisheries Division in Hartford.

## Summary

### 1) Siting a fishing facility.

- Fishing facility should be located in productive fishing areas. Factors to consider include:
  - o Knowledge of local anglers.
  - o Casting distance to underwater features that might attract fish, such as rock piles, submerged vegetation and channels.
  - o Species of fish likely to be caught.
  - o Water depths at various tide stages and seasons.
  - o Modification of existing jetties and groins.
- Sites should be evaluated for suitable parking and access to the facility, including barrier free access.

### 2) Fishing facility design recommendations.

- Railing design:
  - o First determine if a railing is necessary.
  - o Railings should be as low as possible in the locations where fishing is possible, and it is recommended that the height not exceed 34 inches.
  - o Place gaps in the railing that are free of any obstruction. Gaps should be a minimum of 9 inches wide and no more than 8 ft apart.
- Incorporate handicapped accessibility features.
- Incorporate amenities such as cutting boards, rod holders, lighting, and running water.
- Post public access signs, fishing regulations, and other information concerning natural resources and fisheries.
- Include used fishing line receptacles on the pier.

## Examples of Connecticut Fishing Facilities and Design Features



**Ferry Point State Park, Connecticut River Old Lyme.** The boardwalk along the park’s waterfront has a very simple railing. The height is 32 inches, which adults can easily fish over. The railing design minimizes visual impediments for those in wheelchairs, which the States Organization for Boating Access recommended in their 1996 guidelines as a measure to avoid the “cage” effect created by closely spaced balusters. Another feature is the gaps between sections that enable anglers to bring fish through, rather than over, the railing.



**Ferry Point State Park.** As can be seen in this picture, some children can fish from a 32 inch high railing, but not all. In general, a 32 inch height is a good compromise when a railing is needed, but it is best to design the railing according to the anglers one wishes to accommodate.

**Entrance to the Ferry Point State Park, fishing and observation pier.**



The 32 inch high railing along the entire pier allows anglers to fish anywhere and enjoy the view from the comfort of a chair.



**Ferry Point State Park fishing and observation Pier: rod holder.** This simple rod holder is comprised of a section of PVC pipe screwed to the piling. Inside diameter is two inches.



**Ferry Point State Park fishing and observation pier: fishing line collection bin.** This collection bin was built according to a design utilized by Florida’s Monofilament Recovery and Recycling Program. The design was slightly modified by inserting a disc with a narrow slot into the opening of the bin, which helps prevent the insertion of unwanted items.

Fishing line that is left in the environment is hazardous to wildlife. The picture at right shows an osprey lethally entangled in fishing line and hanging from a nesting platform on the Roger Tory Peterson Wildlife Area in Old Lyme (photo credit: Hank Golet).



**Fort Trumbull State Park Fishing Pier, New London.** This pier on the lower Thames River is 500 feet long and 25 ft wide. It has a number of amenities, including benches, rod holders (holes in the cap rail), and lighting. The pier is open 24 hours.



**Fort Trumbull State Park Fishing Pier: railing design.** The railing along this pier was designed to meet the minimum ADA guideline specifying 25 percent of a railing be no higher than 34 inches. In this case 33 percent of the railing is 34 inches high. This is sufficient in this case due to the large size of the pier. (1,025 linear feet of railing). The large size of the pier also allows the low sections to be wide, 10 feet in this case. Holes were drilled into the cap rail every two feet to serve as rod holders. Fish can be retrieved through the gaps between railing sections. The horizontal and vertical elements were designed according to the 1996 SOBA ADA guidelines for the purpose of creating a more open feeling for those in wheelchairs as opposed to a “cage” effect created by closely spaced balusters.



**Fort Trumbull State Park Fishing Pier.** The children in this picture are participating in a CT DEP Connecticut Aquatic Resource Education program (CARE) fishing class. The low railing sections enable the younger children to fish from the pier.



**New London Waterfront Park Shaw's Cove Fishing Pier.** The park has a dedicated fishing pier, but fishing is allowed from the other piers as well.



**New London Waterfront Park Shaw's Cove Fishing Pier.** The railing along the park's promenade is 42 inches high, and transitions to 32 inches on the fishing pier.



**New London Waterfront Park, Custom House Pier.** There are no railings around this working pier. Fishing is allowed.



**New London Waterfront Park, Custom House Pier.** The benches along the perimeter of the pier are a nice feature.



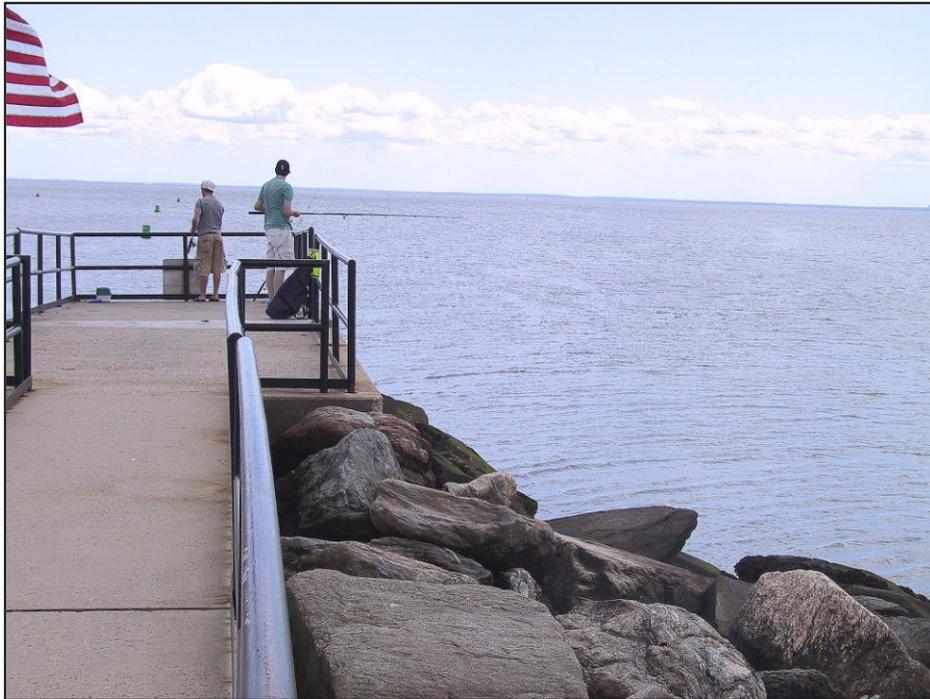
**New London Waterfront Park, Amistad Landing pier.** The railing around the top of the “T” is 32 inches high. Although this is a working pier, fishing is allowed.



**New London Waterfront Park, Children's Discovery Pier.** This pier has 42 inch high railings throughout. Fishing is not prohibited here, but the high railing discourages fishing. Also, there is much better access from the other three piers, so anglers are more inclined to fish in those locations.



**Henry J. Moore Fishing Pier, Fairfield.** Jetties are often favored by anglers due to their locations in good fishing areas, but they can be difficult to fish from. Capping them with a platform can improve access. As of this writing, this jetty along the entrance to Ash Creek is the only example in Connecticut of using an existing jetty or groin to provide fishing access.



**Henry J. Moore Fishing Pier, Fairfield.** Capping a jetty must be planned carefully to ensure anglers can fish from the facility. In this case much of the platform is too far from the water. The section at the end is better, but anglers still must cast and retrieve fish over about 10 feet of rock. The railings are 42 inches high, which works for the relatively tall anglers in the picture but would pose problems for those in wheelchairs or for children.

## **Additional Resources**

### ***Publications offering comprehensive information about recreational facility design:***

Boyd, T., J. McPherson, J. Murphey, T. Bazley, B. Edwards, M. Hough, K. Skaar. 2006. Design Handbook for Recreational Boating and Fishing Facilities. 2<sup>nd</sup> Ed. Prepared for: States Organization for Boating Access, P.O. Box 25655, Washington D.C. 20007. Available for a fee from SOBA at [www.sobaus.org](http://www.sobaus.org). A copy is also available for viewing at the CT DEP Marine Headquarters, Boating Division.

Various publications are also available on the Access Board website at [www.access-board.gov](http://www.access-board.gov).

### ***Technical advice for ADA recreational guidelines and fishing facility construction:***

Connecticut Department of Environmental Protection, Bureau of Financial and Support Services, Agency Support Services Division. Phone # 860-344-2513 (Portland Office). Engineering staff stationed at the Portland Office assist municipalities with recreational facility engineering questions.

### ***For assistance with ADA:***

U. S. Dept. of Justice, ADA Home Page: <http://www.ada.gov/index.html>

Architectural and Transportation Barriers Compliance Board (Access Board) web site: [www.access-board.gov](http://www.access-board.gov).

State Of Connecticut Office for the Protection and Advocacy for Persons with Disabilities. Phone # 1-800-842-7303 or <http://www.state.ct.us/opapd/index.htm>

### ***Long Island Sound recreational fishing information:***

Rod MacLeod, Senior Fisheries Biologist and David Molnar, Fisheries Biologist, CT DEP Marine Fisheries Division, Marine Headquarters, Old Lyme. Phone # 860-434-6043.

### ***Fishing line collection and recycling***

For an example of a simple fishing line collection station, including a materials list and assembly instructions, see the state of Florida's Monofilament Recovery and Recycling Program (MRRP) at <http://myfwc.com/mrrp/index.asp>.

Monofilament fishing line can be sent to Pure Fishing America (Berkley) for recycling. Information is available at [www.berkley-fishing.com](http://www.berkley-fishing.com).

***Regulatory and permitting information***

Structures proposed waterward of the high tide line require authorizations from the DEP's Office of Long Island Sound Programs and the U.S. Army Corps of Engineers. The following offices should be contacted for permitting requirements:

CTDEP, Office of Long Island Sound Programs, Permitting and Enforcement Section, 79 Elm St., Hartford, CT 06106-5127; or, call 860-424-3034

U.S. Army Corps of Engineers, New England Division, Regulatory Branch, 696 Virginia Road, Concord, Massachusetts 01742-2751; or, call 800-343-4789

Structures proposed in inland areas may require authorizations from the municipal inland wetlands and watercourses agency, the CT DEP Inland Water Resources Division or the U.S. Army Corps of Engineers. The following offices should be contacted for permitting requirements:

Municipal inland wetlands and watercourses agency with jurisdiction in the project area.

CT DEP, Inland Water Resources Division, 79 Elm St., Hartford, CT 06106-5127; (860) 424-3019

U.S. Army Corps of Engineers, New England Division, Regulatory Branch, 696 Virginia Road, Concord, Massachusetts 01742-2751; or, call 800-343-4789

For structures located in inland areas that are tidally influenced, applicants should contact both the DEP Office of Long Island Sound Programs and the Inland Water Resources Division.