

18. Develop Uplands

Availability of space for upland development is crucial in site selection and development of a total harbor project. The value of lands adjacent to a harbor basin may exceed that of the moorage space. State and local land use and zoning regulations may affect development. Upland development varies from project to project based on fleet size, fleet mix, fishery, charter business, and incremental cost of upland area, suitability for development, etc.

Include consideration of uplands in the initial planning. It is good to start with a 50/50 ratio of uplands to harbor basin in the preliminary evaluation of a harbor site. However, identification of the appropriate uplands area, like the final harbor size, is an iterative process and should be a result of rational economic decisions, not a rule of thumb or design criteria. Differences in upland ratios from harbor to harbor ought to be expected but also ought to be explainable. Uplands, if not properly scaled, can limit the economic viability of a harbor, or even render it infeasible by constraining benefits or driving up costs.

Several typical upland facilities are included here. Note that requirements for the Americans with Disabilities Act (ADA) and non-point source pollution should be included in all upland development.

•	Harbormaster's Office	18.10
•	Public Restrooms/Showers	18.20
•	Telephones	18.30
•	Parking	18.40
•	Utilities	18.50
•	Fuel Storage/Service	18.60
•	Gear Storage	18.70
•	Boat Storage	18.80
•	Infrastructure	18.90

18.10 Harbormaster's Office

Harbors function much like businesses and may require an operation headquarters building. The harbormaster's office is the focal point of the marine facility. It should be easily located and accessible to all patrons.

Consider a HARBORMASTER'S OFFICE when:

- | | |
|--------|--|
| 1) | Moorage capacity exceeds fifty boats. |
| And/or | |
| 2) | The harbor is at a remote location from the community it serves, so that direct oversight is needed. |
-

Note 1. Office should have an unimpeded view of the *entire marine facility*, especially the entrance channel and transient docks or floats.

Note 2. One set of *restrooms/showers* may be provided in this area.

Note 3. You should include requirements for the Americans with Disabilities Act and non-point source pollution in all upland development.

REFERENCES:

1. Tobiasson, B.O. and Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold. Pg.495-497.
2. ASCE Manual No.50. 1982. *Planning and Design Guidelines for Small Craft Harbors*. Pg.20-36.

18.20 Public Restrooms/Showers

Clean, accessible restrooms and showers are crucial to a harbor facility. Provide adequate toilet facilities to minimize fouling of the environment by harbor-generated sewage and contaminated water.

Consider RESTROOM facilities:

- 1) **ALWAYS.** All public harbors or docks should provide public toilets.
- 2) When no other public facilities are available within a reasonable walking distance.

Consider SHOWER facilities when:

- 1) Harbor fleet is greater than about 50 boats.
 - 2) Commercial fishing or transient fleets may require more facilities.
-

Note 1. The facility should be located within 500 feet, but no more than 1,000 feet, from the shore end of any pier to be practical. It is important to keep restrooms and showers clean to encourage their use.

Note 2. These facilities may be incorporated into the harbormaster's office. They should comply with ADA guidelines.

REFERENCES:

1. Tobiasson, B.O. and Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold Pg.361-363.
2. ASCE Manual No.50. Task Committee on Marinas 2000. 1982. *Planning and Design Guidelines for Small Craft Harbors*. New York. Pg.26-27.

18.30 Telephones

Telephones near harbors are important for security and fire protection, and convenience for harbor patrons. Telephone access may be provided to individual slips, if needed.

TELEPHONES may be necessary when:
--

- 1) The harbor facility is relatively far from the community it serves.
 - 2) There isn't accommodation for fire control or security at the harbor site.
-

Note 1. Telephones can be located at harbormaster's office. Consider accessibility for the disabled, and 24-hour availability.

Note 2. If long piers are part of the design, consider placing telephones every 1,000 feet for safety and convenience.

REFERENCES:

1. ASCE Manual No.50. Task Committee on Marinas 2000. 1982. *Planning and Design Guidelines for Small Craft Harbors*. Pg.34, 219.
2. Tobiasson, B.O. and Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold. Pg.49.

18.40 Parking

Accessible parking is an integral part of harbor development. The amount of parking space needed will vary for each site. Recent studies recommend 0.5 to 0.8 parking spaces per boat berth. Smaller harbors may function adequately with only 0.3 parking spaces per berth.

PARKING ANALYSIS will be needed when:

- 1) The harbor site is in an area that may become, or already is, a popular tourist attraction.
- 2) The traffic flow is dense near the proposed site.
- 3) Other facilities such as restaurants, stores, or public attractions are near the site.
- 4) The harbor includes a launching ramp.

Note 1. Layouts of the parking area need to consider *non-point source pollution*. A vegetated buffer between the parking area and harbor basin will help minimize runoff in the water.

Note 2. *Barrier-free parking* that complies with the ADA may be necessary; address it early in the design process.

Note 3. Many of Alaska's harbors lack even the minimum parking. In the past, zoning codes in other areas have generally required automobile parking ratios of 1.5 to 2.0 parking spaces per recreational boat berth. Recent studies (1988) indicate marinas rarely require such generous amounts.

REFERENCES:

1. SOBA. 1992. *Guidelines for the Design of Barrier-Free Recreational Boating and Fishing Facilities*. Pg.40.
2. Tobiasson, B.O. and Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold. Pg.73-74, 489-492.
3. ASCE Manual No.50.Task Committee on Marinas 2000. 1982. *Planning and Design Guidelines for Small Craft Harbors*. New York. Pg.27-28, 37,47,60,278.
4. Ross, N., et al. *Best Management Practices, BMP EXAMPLES FOR ALASKA, Compilation and Assessment for Harbor, Marina, Boat Operations, Repair and Maintenance*. 1995. State of Alaska, Office of the Governor. Alaska.

18.50 Utilities

The need for service to the floats depends on several factors, such as size and use of the harbor. Transient or remote facilities, and harbors of refuge, may not require the same level of service as municipal harbors. The utilities don't require much upland space, however, you should carefully consider their location and ease of access.

Upland needs for UTILITIES include:

See Section 21.00.

- 1) Easements for excavation and repair equipment
 - 2) Ease of access for maintenance and repair
 - 3) Fire protection systems that are readily available and easy to locate
-

Note 1. The size and remoteness of a harbor site usually establishes the upland development requirements for utilities.

REFERENCES:

1. ASCE Manual No.50. Task Committee on Marinas 2000. 1982. *Planning and Design Guidelines for Small Craft Harbors*. New York. Pg.226-230.
2. Tobiasson, B.O. and Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold. Pg.360-363, 377-384.

18.60 Fuel Storage/Service

A fuel dock should be designed by experienced professionals. They should be familiar with the specialized aspects of fuel system design, so that they comply with all codes and regulatory guidelines. Whether fueling facilities are provided by the community or a commercial vendor, consider available space within the upland development and docks system during the planning and design processes. Also provide space for spill response equipment.

Provide FUEL STORAGE/SERVICE when:

- 1) The harbor is to accommodate a large fleet.
- 2) The proposed harbor site is in a remote location where there are no other available fuel sources within a reasonable distance.

Note 1. A typical ratio for service would be *one diesel* and *one regular* gasoline pump for every *150 boats*.

Note 2. Typically, fuel docks are designed with a concrete deck and are located in an area with easy access, but away from the other floats due to the fire potential. Fuel docks, if located within a harbor, should be visible from the harbormaster's office for safety and environmental reasons.

Note 3. Consider non-point and source-point pollution in design; for example, spill containment equipment should be available near the fuel dock and storage. Whether underground or above ground, a fuel storage tank should be designed to minimize the potential for fuel to enter the harbor basin.

REFERENCES:

1. ASCE Manual No.50. Task Committee on Marinas 2000. 1982. *Planning and Design Guidelines for Small Craft Harbors*. New York. Pg. 21, 44-45.
2. Ross, N., et al. *Best Management Practices, BMP EXAMPLES FOR ALASKA, Compilation and Assessment for Harbor, Marina, Boat Operations, Repair and Maintenance*. 1995. State of Alaska, Office of the Governor. Alaska.
3. Tobiasson, B.O. & Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold. Pg.502-507.

18.70 Gear Storage

Commercial businesses and fishing fleets require additional space for the storage of gear, materials, and machinery, etc. Harbors with recreational vessels may prefer upland storage to keep their floats clear of gear, which can create a tripping hazard, and individual storage boxes that may adversely affect flotation. In some Alaska coastal sites, uplands are inadequate and/or the region is not suitable for commercial development. It may be necessary to develop storage areas by using the dredged material as upland fill.

Include GEAR STORAGE when:

- 1) The fleet is comprised of mostly commercial vessels; and, the need for additional storage area exists. Gear storage, net repair, and vehicle parking are among the considerations.
 - 2) The fleet is largely of non-local recreational vessels that need local storage
-

Note 1. Typically, the number of acres required for storage is proportional to the length of vessels and number of crab pots, nets, and other gear.

Note 2. A work float, accessible only by boat, is recommended for temporary storage of gear.

REFERENCES:

1. Tobiasson, B.O. & Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold.
2. ASCE Manual No.50. Task Committee on Marinas 2000. 1982. *Planning and Design Guidelines for Small Craft Harbors*.

18.70 Boat Storage

A minimal amount of boat storage should be an integral part of any harbor design. This becomes an issue of safety and economic necessity for harbors in remote locations. Large harbors close to communities with developed infrastructure may develop a marine industrial park suitable for major repairs. If water area suitable for moorage is limited, then consider upland dry storage.

Include BOAT STORAGE when:

- 1) The harbor has haul-out facilities (Chapter 19)
 - 2) The harbor is in a remote location
 - 3) A repair yard is available to boaters
-

Note 1. Space for impounded vessels following removal from the water and before sale or disposal is the minimum.

REFERENCES:

1. Tobiasson, B.O. & Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold.
2. ASCE Manual No.50. Task Committee on Marinas 2000. 1982. *Planning and Design Guidelines for Small Craft Harbors*.

18.90 Infrastructure

Roads, trails, buildings, and support facilities are necessary for a fully functional harbor. Commercial businesses, such as marine supply stores and restaurants, may be attracted to a well-developed waterfront as well.

Consider COMMERCIAL DEVELOPMENT when:

- 1) Developing a waterfront or master plan
 - 2) Considering safe access and visibility of the harbor
 - 3) Identifying upland needs for a harbor
-

Note 1. Refer to the Alaska Coastal Program Website under the State of Alaska, Department of Governmental Coordination, for information on Coastal Zone Development.
<http://www.alaskacoast.state.ak.us/>

Note 2. You may need to consider zoning and other ordinances in waterfront development of larger communities.

REFERENCES:

1. Tobiasson, B.O. & Kollmeyer, R.C. 1991. *Marinas and Small Craft Harbors*. New York: Van Nostrand Reinhold.
2. ASCE Manual No.50. Task Committee on Marinas 2000. 1982. *Planning and Design Guidelines for Small Craft Harbors*.