

**Lower Colorado River Authority**  
**Highland Lakes Marina Ordinance**  
**Technical Manual**  
**Amended: May 30, 2023**

## TABLE OF CONTENTS

Section 1.	INTRODUCTION.....	1
Section 2.	THE APPLICATION AND PROCESS .....	2
2.1	Application Form.....	2
2.2	Application Signature.....	2
2.3	Application Process and Timeline .....	3
(a)	New Permit or Major Permit Amendment Process and Timeline .....	3
(b)	Minor Permit Amendment Process and Timeline.....	4
Section 3.	DRAWINGS, PLANS AND MAPS.....	5
3.1	General Specifications.....	5
3.2	Structural Drawings, Plans and Maps .....	5
Section 4.	FEES.....	6
4.1	Application Fee.....	6
4.2	Annual Permit Fee.....	6
4.3	Exceptions.....	6
Section 5.	PERFORMANCE STANDARDS.....	6
5.1	Pollution Control .....	6
(a)	Water Quality Analysis Statement.....	6
(b)	Marine Service Station Requirements.....	9
5.2	Property Control, Location and Configuration .....	12
(a)	Property Control Information .....	12
(b)	Location and Configuration Requirements .....	13
5.3	Risk Management.....	16
(a)	Fire Extinguisher Location Plan.....	16
(b)	Electrical Requirements .....	16
(c)	Insurance Certificate .....	17

## **Section 1. INTRODUCTION**

Marina Facilities on the Highland Lakes must be Constructed, Modified and operated in compliance with the Lower Colorado River Authority Highland Lakes Marina Ordinance (“the Ordinance” or “HLMO”) and all other LCRA rules, regulations, ordinances or those of other governmental authorities with jurisdiction over such activities. All Marina Facilities and Structures on the Highland Lakes, regardless of the lake levels during droughts or if facilities are aground, are subject to the Ordinance. The provisions of the HLMO do not address every potential problem associated with the development and operation of a Marina Facility, and the standards set out in the Ordinance represent the minimum acceptable requirements for development and operation of a Marina Facility.

LCRA shall not approve an application and issue a Permit unless the application meets the requirements of the Ordinance and the required application fees have been paid. This manual is intended to assist the Applicant in preparing an Application and to provide minimum criteria and guidance for complying with the HLMO. Before preparing an Application, the LCRA recommends reading both the Highland Lakes Marina Ordinance and this manual. Capitalized Terms used in this manual are defined in Section 3 of the HLMO.

This manual should not be used as a substitute for the HLMO. To the extent that any statement contained in this manual is inconsistent with the specific requirements set forth in the HLMO, the provisions of the HLMO control.

The HLMO technical manual may be periodically amended by the LCRA General Manager. The most recent HLMO and technical manual may be found at [www.lcra.org/hlmo](http://www.lcra.org/hlmo).

## Section 2. THE APPLICATION AND PROCESS

### 2.1 Application Form

The Marina Facility Permit Application (Form F) must accompany the required attachments to the Application. All blanks on the Application should be completed and "N/A" should be indicated in fields that are not applicable. An Application with fields that have not been completed may be considered to be Administratively Incomplete and may be returned to the Applicant for correction.

### 2.2 Application Signature

Submit the Application with original signature(s). The following list provides examples of who must sign the Application form.

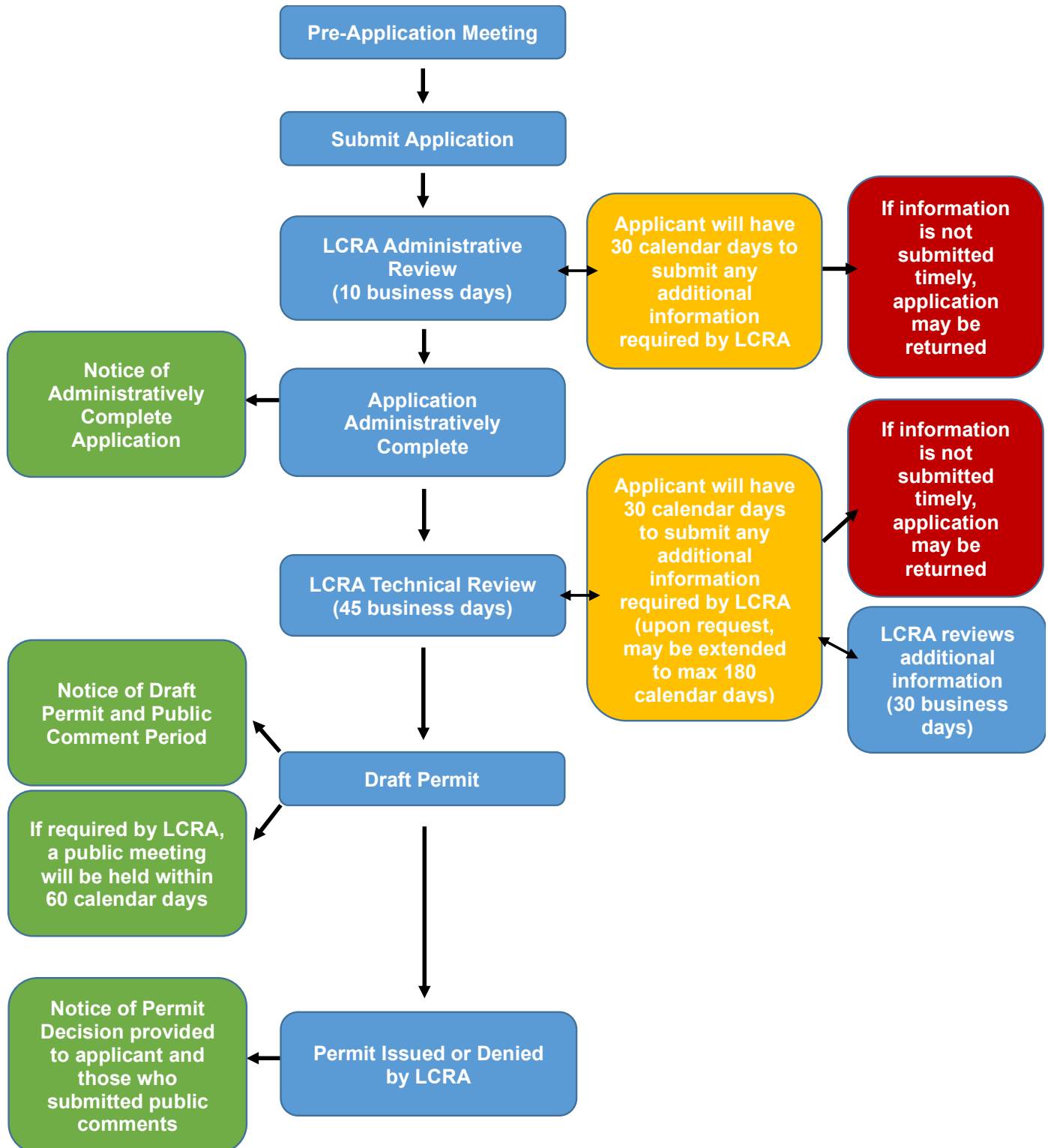
- (1) If the Marina Facility owner is a corporation, partnership, public district, county, municipality, local government, political subdivision, or other corporate entity, the Application shall be signed by a duly authorized official. Written evidence, in the form of bylaws, charter or resolution specifying the authority of the official to take such action must be submitted with the Application. A corporation may file a corporate affidavit as evidence of the official's authority to sign.
- (2) If the Marina Facility owner is a partnership, the Application must be signed by one of the general partners. Relevant portions of the partnership agreement identifying the limited and general partners of the partnership must be submitted with the Application.
- (3) If the Marina Facility owner is an individual, the owner must sign the Application.
- (4) If the Marina Facility owner is doing business under an assumed name, an "assumed name certificate" from the county clerk of the county in which the principal place of business is located must be submitted with the Application.
- (5) If the Marina Facility owner is an estate or guardianship, the Application must be signed by the duly appointed guardian or representative of the estate, and a current copy of the letters issued by the court must be submitted with the Application.
- (6) If the Marina Facility is held in trust for the benefit of another, the Application shall be signed by the trustee in that capacity and documentation must be submitted with the Application disclosing the nature of the trust agreement and providing the name(s) and current address of each trust beneficiary.
- (7) If the Marina Facility is owned by more than one individual or entity, the Application must be signed by each owner in accordance with the guidelines set forth above (e.g., if both husband and wife own the Marina Facility as individuals, each must sign the Application. If husband and wife form a partnership that owns the Marina Facility and one spouse is the general partner, then that spouse can sign the Application on behalf of the partnership). Joint owners need to designate a representative to act for and to represent the others in pursuing the Application, and written evidence of such representation must be submitted with the Application.
- (8) If the Applicant (as described above in items (1) – (7)) designates a representative to act on its behalf, documentation must accompany the Application demonstrating that the representative has the authority to act/sign on behalf of the Applicant, such as a corporate resolution or signed letter of authorization from the marina owner or other similar document.

The above list is not exhaustive. Please contact LCRA Water Surface Management at 512-473-3200 to discuss any unique circumstances or questions regarding application signature.

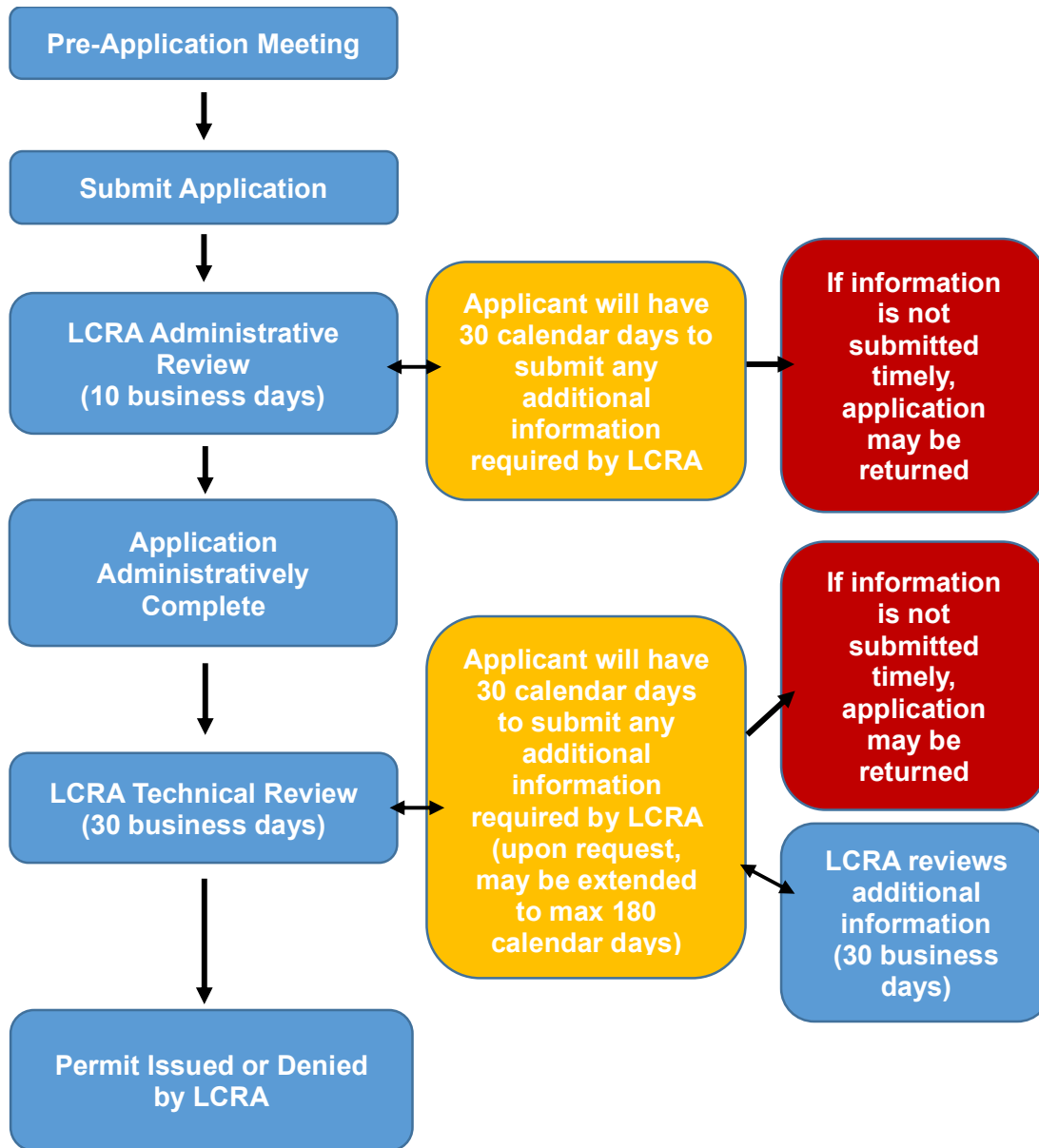
### 2.3 Application Process and Timeline

See Section 6 of the HLMO for more information regarding the application process and timeline.

#### (a) New Permit or Major Permit Amendment Process and Timeline



**(b) Minor Permit Amendment Process and Timeline**



## **Section 3. DRAWINGS, PLANS AND MAPS**

### **3.1 General Specifications**

Drawings, plans and maps must:

- (1) Be large enough to allow all required information to be clearly, accurately, and legibly depicted.
- (2) Contain sufficient detail to enable any contractor to Construct, locate and configure the marina directly from them.
- (3) Be drawn to a scale of not less than 1 inch = 200 feet.  
EXCEPTION: Some maps demonstrating compliance with such requirements as the 10% width rule or 20% width rule may require a smaller scale in order to depict all necessary Structures and Shorelines on one sheet of paper. In this case, the scale must be as large as possible to allow the use of a single 24-by-36-inch sheet of paper.
- (4) Refer to contour elevations in terms of feet above mean sea level (feet msl) datum.
- (5) Have a title block in the lower right corner of each sheet that includes:
  - Name of project (Marina Facility).
  - Name and address of Applicant.
  - Sheet number (e.g., "sheet 3 of 5").
  - Engineer's seal, if appropriate.
  - Date of the plan or plan revision.
  - Plan revision number, if applicable.
- (6) Drawings, plans and maps must be prepared by or under the direction and supervision of a professional engineer who is licensed in the State of Texas. Such drawings, plans and maps must be reviewed by the engineer (if not originally prepared by the engineer), must contain the engineer's seal (if prepared by the engineer) and must be accompanied by a signed Professional Engineer's Certification of a Marina Facility (Form C) and the Certification of Compliance for Electrical Installations and Systems (Form B).
- (7) In lieu of an engineer's certification, electrical drawings, plans and maps may be designed and certified by a licensed master electrician. A Certification of Compliance for Electrical Installations and Systems (Form B) must be submitted with the application.
- (8) For any plan revision submitted for review, other than revisions required by LCRA, the Applicant must submit the review fee for each revised plan package submitted for review.

Upon completion of Construction, Expansion or Modification, LCRA requires follow up certifications from the engineer and/or master electrician of record stating that the Construction, Expansion or Modification was completed in accordance with the plans submitted to and approved by LCRA. See HLMO § 5.4(a)(ii).

### **3.2 Structural Drawings, Plans and Maps**

At a minimum, Structural drawings, plans and maps should include:

- (1) Depth of underwater trusses.
- (2) Specifications for encapsulated flotation, per HLMO § 5.1(f).
- (3) Details and specifications for all Structural components.
- (4) Side profile detail of all Structures illustrating that no Structure extends in height more than

35 feet from the water surface, per HLMO § 5.2(e).

- (5) Roof detail.
- (6) Anchor system components and specifications.
- (7) Profile of anchoring system components.
- (8) Dimensions of slips, walkways, finger piers, platforms, side ties, etc.

## **Section 4. FEES**

HLMO fees are described in Section 13 of the Ordinance and the fee schedule is available at [www.lcra.org/hlmo](http://www.lcra.org/hlmo).

### **4.1 Application Fee**

Submit the calculation used to determine the total Water Surface Area (in square feet) occupied by the Marina Facility and the corresponding fee.

### **4.2 Annual Permit Fee**

Marina Facility permit fees are based on the amount of Water Surface Area (in square feet) occupied by the Marina Facility. Total Water Surface Area includes, but is not limited to, the length times the width of all floating and fixed Structures located on or over the water and the maximum area covered by Watercraft, including:

- All open and covered slips.
- Courtesy Docks
- End tie areas.
- Areas occupied by personal watercraft (PWC) ramps and PWC docks.

### **4.3 Exceptions**

- (1) A Residential Marina or Community Marina are not required to pay annual permit fees. Residential and Community Marinas are subject to all other fees as listed in the fee schedule.
- (2) A Gangway extending from a dock to the shore that, because of its short length, does not require supports by floats or outriggers and which occupies no more than 80 square feet of Water Surface Area is not included in the application or annual permit fee measurement calculations.

## **Section 5. PERFORMANCE STANDARDS**

### **5.1 Pollution Control**

#### **(a) Water Quality Analysis Statement**

See HLMO § 5.1(b). A Water Quality Analysis Statement must be submitted with an Application proposing Construction of any of these improvements:

- 50 or more wet mooring slips.
- Restaurant over the water surface.
- Marine Service Station.



The statement must describe the best management practices (BMP) the Marina Facility will use to address:

- Boat sewage.
- Solid waste collection and disposal.
- Litter and debris collection and disposal.
- Impact to freshwater exchange and water circulation of a Cove.
- Hazardous or toxic material storage and Pollution precautions.
- Marine Service Station operations and Pollution prevention.
- Boat cleaning.

The BMPs proposed in the Water Quality Analysis Statement should clearly demonstrate that the Marina Facility, as a result of the proposed Construction, will have minimal adverse impact on existing water quality. The BMPs must be incorporated into the overall design of the Marina Facility and, where applicable, must be incorporated into Marina operations.

Requirements to minimize the impact on water quality and examples of BMPs to help meet those requirements are listed below. The examples are not necessarily appropriate for all Applications, and LCRA will consider alternative BMPs specific to each Application it reviews.

The Environmental Protection Agency publication, “Clean Marinas – Clear Value” might be a useful resource for developing alternative BMPs. For a free copy, visit [www.epa.gov/nscep](http://www.epa.gov/nscep) and search for “Clean Marinas-Clear Value: Environmental and Business Success Stories.” This document also may be found by searching for publication #EPA841R9603.

**Boat sewage**

REQUIREMENT	BMP EXAMPLES
Minimize the potential for accidental release of boat sewage to surface waters	Install pumpout, dump station, and restroom facilities
Allow ease of access to boat sewage collection facilities and promote the use of such facilities	<ul style="list-style-type: none"> <li>• Offer free or discounted use of pumpout facilities for slip tenants</li> <li>• Design pumpout, dump station and restroom facilities to allow easy access and post signage to promote their use</li> <li>• Add language to slip lease agreement prohibiting direct discharge of sewage into the lakes</li> </ul>
Ensure that boat sewage collection facilities are operating properly, are leak-free, and are otherwise properly maintained	<ul style="list-style-type: none"> <li>• Conduct regularly scheduled inspections of facilities and make repairs immediately, as needed</li> <li>• Periodically perform a dye test in pumpout system</li> </ul>

**Solid waste collection and disposal**

REQUIREMENT	BMP EXAMPLES
Reduce potential for litter and solid waste to pollute nearby land and water	<ul style="list-style-type: none"> <li>• Provide an adequate number of covered trash receptacles for marina patrons</li> <li>• Ensure timely removal of trash from receptacles</li> </ul>

Litter and debris collection and disposal

REQUIREMENT	BMP EXAMPLES
Ensure removal of litter and debris at regular intervals	Conduct regularly scheduled cleanup of the Shoreline and marina property to remove litter and debris
Ensure prompt removal of abandoned anchors, dock materials, debris and refuse in and around the Marina Facility	Conduct regularly scheduled removal of dock materials, abandoned anchors, debris and refuse if it is exposed when lake levels recede

Impact to freshwater exchange and water circulation of a cove

REQUIREMENT	BMP EXAMPLES
Site and design the Marina Facility to ensure that wind and currents will aid in water circulation of the site or renew its water regularly	Locate fairways parallel to the prevailing wind direction
Unless it can be scientifically demonstrated that the bottom will support a natural population of benthic organisms, site and design the Marina Facility such that the bottom of the Marina Facility and the entrance channel are not deeper than adjacent navigable water	Depth of water in a cove should not be greater than the depth of the adjacent waters on the main body
Design Marina Facilities to promote water circulation within the basin	Use a floating attenuator rather than a fixed breakwater
Design and locate entrance channels to promote water circulation	Locate the entrance channel parallel to the natural water channel and the prevailing wind direction
Design Marina Facility to promote flow-through currents	Configuration should be open to preclude dead ends where water cannot pass through
Consider other design alternatives in poorly flushed water bodies to enhance water circulation	Design should promote the most favorable conditions for flushing of the cove

Hazardous or toxic material storage and pollution precautions

REQUIREMENT	BMP EXAMPLES
Design liquid materials storage facilities to prevent toxic or hazardous materials from entering the water in the event of a spill	<ul style="list-style-type: none"> <li>• Install a dike, curb, berm or other barrier around liquid storage areas</li> <li>• Store materials in impervious areas</li> <li>• Provide clearly labeled separate containers for disposal of waste oil, gasoline, anti-freeze, diesel, kerosene, mineral spirits, etc., and ensure proper disposal</li> <li>• Install signs and provide written information for marina patrons about proper disposal of liquid materials</li> </ul>

	<ul style="list-style-type: none"> <li>• Provide a service to marina patrons by picking up and properly disposing of Watercraft batteries placed on the dock</li> <li>• Provide a recycling area for Watercraft batteries and ensure proper disposal</li> </ul>
--	---

### Marine service station operations and pollution prevention

REQUIREMENT	BMP EXAMPLES
Ensure the containment of Spills at fueling stations	<ul style="list-style-type: none"> <li>• Provide spill containment equipment at fueling stations</li> <li>• Promote use of oil-absorbing materials in the bilge areas of boats with inboard engines</li> <li>• Provide appropriate receptacles to recycle and properly dispose of oil-absorbing materials</li> </ul>
Develop a Spill Response Plan	<ul style="list-style-type: none"> <li>• Ensure that employees read the Spill Response Plan</li> <li>• Conduct drills</li> </ul>

### Boat cleaning

REQUIREMENT	BMP EXAMPLES
Ensure that debris from commercial boat cleaning operations can be captured and disposed of properly	<ul style="list-style-type: none"> <li>• Require that boats be removed from the water for cleaning below the water line</li> <li>• Require hand washing of boat hulls above the water line</li> </ul>
If boat cleaning will be allowed, establish procedures that will avoid negative impacts to water quality	<ul style="list-style-type: none"> <li>• Require hand washing of boat hulls above the water line</li> <li>• Require minimal amounts of detergents and cleaning compounds for cleaning and that they are phosphate free and biodegradable</li> <li>• Prohibit hull scraping or any process to remove paint from a boat hull while it is in the water or over the water</li> </ul>

### (b) Marine Service Station Requirements

Refer to HLMO § 5.1(b), 5.1(c) and 5.6(iv) and example drawings at [www.lcra.org/hlmo](http://www.lcra.org/hlmo).

- (1) All Marine Service Stations:
  - (i) Must be so located as to provide natural protection against prevailing winds or shall have adequate artificial protection, such as a breakwater Structure.
  - (ii) Should be located so that, in the event of fire on the fuel dock, access to the shoreline from other locations within the Marina Facility is not impeded.

- (2) Marine Service Station drawings, plans and maps should include, but are not limited to:
- (i) Plan notes – a description of wiring methods and directions to the contractor about specific siting and location of fuel storage tanks.
  - (ii) Equipment schedule – the quantity of all components and equipment with specifications and the description of each, including but not limited to:
    - a. Fuel storage tank(s) – details and specifications for tank type and its capacity.  
 Example: One double-walled steel underground tank, 1000-gallon capacity.  
 NOTE: If tank is above ground, state specifications for the containment dike, including dimensions, capacity and construction material.
    - b. Fuel dispenser(s) – details and specifications for the type of dispenser, length of dispenser hose  
 NOTE: A dispenser hose more than 18 feet in length requires a safety break valve and cannot extend to within 10 feet of any building opening. The hose must be on a reel or a rack. (Latch-open devices are prohibited.)
    - c. Fuel piping and valves – details and specifications for all piping and valves, including flexible piping, rigid piping, double-wall piping, scuff hoses, solenoid valves, quick-throw valves, gate valves, strain relief grip locations at flexible connections.
    - d. Fire extinguishers – specifications and location of all portable fire extinguishers.  
 NOTE: Each marine motor fuel dispensing facility must have one or more listed fire extinguishers having a minimum classification of 80-B:C. They must be located so that an extinguisher will be within 100 feet of each pump, each dispensing device, and each pier-mounted liquid storage tank. (National Fire Protection Association 30-A.11.7.1)
    - e. Absorbent pads, booms, etc. – description and specifications, including the quantity and location of spill control response equipment.
    - f. Signs – specific wording for signs that will be posted at the fuel dispensing area and at the fuel storage tank area. For example:

**FOR THE FUEL DISPENSING AREA**

**EMERGENCY PUMP SHUT-OFF**

**WARNING – NO SMOKING**

**STOP ENGINE WHILE REFUELING**

**SHUT OFF ELECTRICITY**

**DO NOT START ENGINE UNTIL BELOW-DECK  
SPACES ARE VENTILATED**

**FOR THE FUEL STORAGE TANK AREA**

<p><b>DANGER!</b></p> <p><b>FLAMMABLE/COMBUSTIBLE LIQUIDS</b></p> <p><b>NO SMOKING WITHIN 50 FEET</b></p>
---

(iii) Layout – drawings with the exact location (msl contour elevation) of:

- fuel storage tanks
- transfer pumps
- dispensers
- fuel piping
- flexible connection points
- solenoid valves
- quick-throw valves
- gate valves
- fire hose cabinets
- water pumps
- fire-fighting equipment
- Emergency Pump Shutoff

NOTE: Show the msl contour elevation where the flexible connection is located on shore.

(iv) Land-based components that are an integral part of the Marina Facility's Marine Service Station equipment, such as fuel storage tank(s).

(v) A spill response control plan that is site-specific and ensures the containment of spills at fueling stations, to include such things as:

- a. An assurance that an attendant will be present at the fuel dispensing area on weekends and holidays from Memorial Day through Labor Day when the Marine Service Station is open for business per HLMO § 5.6(iv).
- b. The location of an adequate supply of absorbent pads, booms, etc. for control of minor spills.
- c. Shut-down procedures for the system at the end of the business day.
- d. Procedure for closing and locking valves.
- e. Description of the fueling facility, including tank, pump and fuel line location, tank capacity and drainage direction.
- f. Actions to be taken to control a spill:
  - How to control the fuel/oil to get the spill/leak stopped.
  - What needs to be deployed for containment.
  - How the containment material is used.
  - How to dispose of used material.
  - How to order replacement material.

- g. A maintenance/inspection schedule for equipment.
  - Ensure that the spill kit contains the proper equipment.
  - Check secondary containment measures.
  - Inspect tanks, hoses, pumps for leaks.
- h. A designated time for employees to review the plan, train and drill.
- i. Fuel inventory procedures.
- j. Emergency contact information.
- k. A map of the Marina Facility, including the physical address and directions for response personnel.
- l. A list of applicable contacts or notifications in the event of a spill.

## **5.2 Property Control, Location and Configuration**

### **(a) Property Control Information**

To demonstrate that the Marina Facility is located on and over property that is owned, leased or otherwise controlled by the Applicant per HLMO § 5.2(a), the following documentation must be submitted:

- (1) Name and mailing address of the owner(s) of the parcel(s) of land over which the Marina Facility will be located.
- (2) An affidavit (Form D), signed by the Marina Facility Owner (see General Information Section) stating that the Applicant owns, leases or otherwise controls the parcel(s) of land over which the Marina Facility will be located.
- (3) A legal description of the Lot over which the Marina Facility will be located.

NOTE: An accurate legal description is critical for determining who should receive public notice of the Application. The description also will be incorporated into any Permit that might be issued for the Marina Facility. The Lot must include all parcel(s) of land over which the Marina Facility is/will be located; however, the Lot does not need to include all property owned or controlled by the Applicant if such property is not located under the Marina Facility. For instance, an Applicant may legally subdivide his property and locate the Marina Facility over only one or two of the subdivided parcels of the property. In such a case, the Applicant could choose to exclude from the Lot those subdivided parcels over which the Marina Facility is/will not be located. By contrast, an Applicant that owns extensive contiguous underwater property but cannot identify in the public records distinct parcels of land will need to include the entire property as part of the Lot.

- (4) Documentation supporting the proposed legal description and affidavit, including:
  - (i) Copies of plat records or other public records identifying the property) comprising the Lot.
  - (ii) Copies of any lease(s) or license agreement(s) for property over which any portion of the Marina Facility is/will be located indicating that the Marina Facility owner has permission to place a Marina Facility over the property.
  - (iii) A metes and bounds description of the property comprising the Lot not otherwise specifically identifiable in the public records.
  - (iv) Copies of any recorded deeds or easements indicating that the Applicant owns or controls the property over which any portion of the Marina Facility is/will be located.

NOTE: Some available documents may contain more than one type of information requested above. For example, a portion of the Lot that is leased by the Applicant may be documented by a lease that also contains the required metes and bounds description for that portion of the Lot.

- (5) If a Marina Facility Lot is comprised of more than one parcel, submit a map showing the relative location and identity of each parcel and refer to the public record where such parcel(s) can be identified or, if not recorded in the public records, those legal documents containing the metes and bounds descriptions of the parcel(s).

**(b) Location and Configuration Requirements**

Refer to HLMO § 5.2 and example drawings at [www.lcra.org/hlmo](http://www.lcra.org/hlmo).

An Application for a Marina Facility must include drawings, plans and maps depicting the location and Configuration, relative to the Shoreline(s) at the Marina Design Elevations, of all structures located on or over the water that are associated with the Marina Facility. Use this table to determine the required drawings, plans and maps:

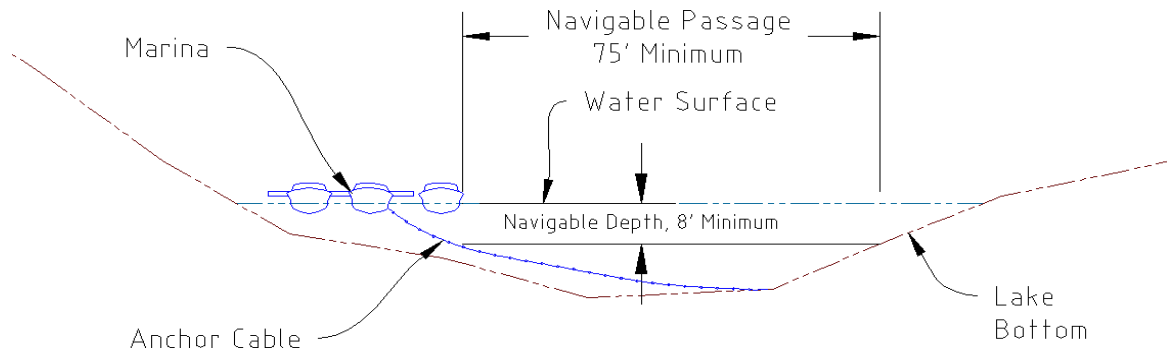
LAKE	MARINA DESIGN ELEVATIONS
Buchanan	1020 feet msl*;1010 feet msl and 1002 feet msl
Inks	888 feet msl
LBJ	825 feet msl
Marble Falls	738 feet msl
Travis	680 feet msl; 660 feet msl and 640 feet msl

**\*feet msl = feet above mean sea level**

- (1) The individual(s) responsible for preparing the drawings, plans and maps may exercise their best professional judgment to determine the appropriate number of drawings, plans and maps needed to clearly depict all the required elements for the location and Configuration of the Marina Facility.
- (2) The drawings, plans and maps must include, at minimum, the following information (unless it is not applicable):
  - (i) Adequate msl contour elevation information to demonstrate that the Marina Facility is/will be located over water of a depth sufficient to accommodate the draft of all Marina Facility Structures at all elevations down to the Low Water Elevation. The water is considered to be of “adequate depth” when:
    - the marina is in compliance with all location and Configuration requirements in HLMO § 5,
    - all slips are useable, and
    - no marina Structure is aground.

EXCEPTION: Courtesy docks engineered to go aground without damage to the structure will not violate this requirement if they go aground, per HLMO § 5.2(g)(ii).

- (ii) Adequate msl contour elevations to demonstrate that the marina can provide a 75-foot wide Navigable Passage with a minimum water depth of 8 feet. Where a Navigable Passage of 8 feet does not exist on lakes LBJ, Marble Falls and Inks, Marina Facilities shall not further restrict lake depth and width. Contour elevations must be shown at not less than 5 feet intervals, but may be required to be shown at smaller intervals as necessary to demonstrate maintenance of the required minimum Navigable Passage.

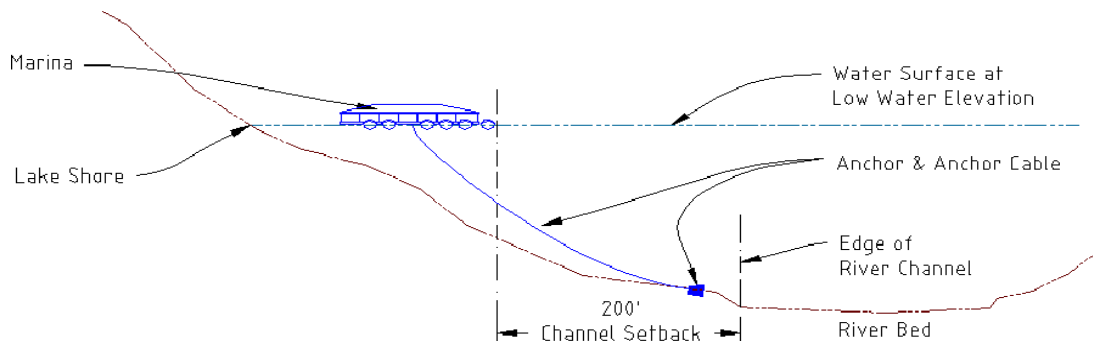


**FIGURE 1. Profile drawing illustrating Navigable Passage and minimum water depth.**

NOTE: If the Navigable Passage also serves as a Fairway, the width of passage must be 1.75 times the longest Watercraft slip or 75 feet, per HLMO § 5.2(d)(ii), whichever is greater. The drawings, plans and maps must show the relative arrangement of the slips and the calculations used to determine the Fairway distance.

- (iii) The relative arrangement of all slips and a slip schedule for each dock.
 

NOTE: A slip schedule should indicate the quantity and size of all slips on each dock. Refer to the drawings on [www.lcra.org/hlmo](http://www.lcra.org/hlmo) for an example of a typical slip schedule.
- (iv) The location of all Adjoining Waterfront Property lines and detail demonstrating that, for all Structures located on or over the water, the required 75-foot setback distance is maintained, per HLMO § 5.2(b)(i).
- (v) The location of existing Designated Swim Areas and any other Designated Swim Area proposed by the Applicant and detail demonstrating that the Marina Facilities will not be located within 50 feet of an existing or proposed Designated Swim Area, per HLMO § 5.2(b)(iv).
- (vi) The location of the edge of the Colorado River channel nearest the Marina Facility and detail demonstrating that the required 200-foot setback distance is maintained, per HLMO § 5.2(b)(iii).



**FIGURE 2. Profile drawing illustrating the setback from the river channel.**



- (vii) The location of Marina Facility property lines showing the Lot over which the Marina Facility will be located (i.e. all property that is owned, leased or otherwise controlled by the Applicant over which the Marina Facility is/will be located).
- (viii) The anchoring plan depicting the location of all anchors. This plan needs to show the location of anchor attachment points demonstrating anchors will be located over property owned, leased or otherwise controlled by the marina.
- (ix) A dock layout, depicting the relative arrangement of all existing and proposed over-the-water Structures, including but not limited to:
  - Individual slips with dimensions
  - All PWC ramps and/or docks
  - Decks
  - Gangways
  - Walkways
  - Ship's store
  - Platforms
  - Courtesy docks (showing individual slips with dimensions)
  - Restaurant
  - Finger piers
  - Designated End Tie areas (End Tie areas must be designated large enough to accommodate the maximum size Watercraft to be moored in the End Tie area. A Permit Amendment is required to enlarge a designated End Tie area.)
- (x) The location of the opposite Shoreline(s) sufficient to demonstrate that all Marina Facility Structures are located and Configured in accordance with the following requirements, where applicable:
  - For locations 1000 feet or less in width, per HLMO §5.2(h):
 

At locations where the lake or Cove has an unobstructed open water width of 1,000 feet or less, no Marina Facility shall, at any time, extend a distance of more than 10% of the width of the unobstructed open water from Shoreline to Shoreline or from the Shoreline to a Structure located on the opposite shore (measured from the Shoreline at the Low Water Elevation for lakes Travis and Buchanan and the Design Elevation for lakes Inks, LBJ, and Marble Falls). Measurements to Structures located on the opposite shore will include only those Structures so located as Permitted by LCRA or otherwise allowed by LCRA rules or regulations and present on the date the Application is filed with LCRA. Areas dredged for a recessed marina shall be exempt from the requirements of HLMO § 5.2(h).
  - For locations greater than 1000 feet in width, per HLMO § 5.2(i):
 

At locations where the lake or Cove has an unobstructed open water width of greater than 1,000 feet, no Marina Facility shall, at any time, extend a distance of more than 20% of the width of the unobstructed open water from Shoreline to Shoreline or from the Shoreline to a Structure located on the opposite shore (measured from the Shoreline at the Low Water Elevation for lakes Travis and Buchanan and the Design Elevation for lakes Inks, LBJ, and Marble Falls). Measurements to Structures located on the opposite shore will include only those Structures so located as Permitted by LCRA or otherwise allowed by LCRA rules or regulations and present on the date the Application is filed with LCRA. Areas dredged for a recessed marina shall be exempt from the requirements of HLMO § 5.2(i).

NOTE: For all locations, regardless of the width of the lake, at no time may a Marina Facility extend more than 400 feet from the Shoreline. The width of the distance that a Marina Facility may extend from shore is measured at all the Marina Design Elevation(s).

### 5.3 Risk Management

#### (a) Fire Extinguisher Location Plan

- (1) Fire extinguishers, with a minimum rating of 2A, 20 B:C, shall be located along the main walkways so the travel distance to the nearest fire extinguisher is no more than 50 feet, per HLMO § 5.6(ii).
- (2) A separate plan showing the location plan of fire extinguishers may be included on or incorporated into one of the other required plans or drawings and should include a note specifying the minimum rating of the fire extinguishers.
- (3) For fire extinguisher locations at a Marine Service Station, see HLMO § 5.4(a)(i) and (iv).

#### (b) Electrical Requirements

Refer to HLMO § 5.4(a)-(b) and example drawings on [www.lcra.org/hlmo](http://www.lcra.org/hlmo). Electrical drawings, plans and maps must be designed and certified either by a professional engineer licensed in the State of Texas or by a licensed master electrician. (Refer to Section 3 of this Technical Manual for guidance about certification.)

Electrical drawings, plans and maps must include the following:

- (1) Plan notes, including but not limited to:
  - Description of wiring methods.
  - Directions to the contractor regarding the specific location of electrical service.
  - Identification of circuits in panels.
- (2) Electrical equipment schedule listing all electrical components and a complete description of them, including but not limited to:
  - Electrical panel(s) –type and rating.  
Example: 100 amp feed through 120/240 V 1 phase, 3-wire panel board with 42 circuits.
  - Panel schedule.
  - Transformer(s) – type and rating.  
Example: 112.5 KVA, 3/0 480 volt primary, 208 /120 secondary.
  - Service equipment – location at msl contour elevation, wiring method, rating  
Example: Above 715 feet msl contour elevation, overhead, 200 amp.
  - Safety light station – description and photocell information.  
Example: Weatherproof, enclosed and gasketed lighting fixture with die cast aluminum housing, glass globe and wire guard, controlled by a photocell.  
NOTE: The minimum lighting required to adequately define the presence of the Marina Facility from sunset to sunrise and during periods of restricted visibility shall be wired with a photo-electric cell-operated switch so that the lights will automatically operate, per HLMO §5.4(b).
  - Receptacles – type and rating.  
Example 1: 120 volt; 20-amp ground fault circuit interrupters (GFCI).  
Example 2: 240 volt, 30-amp multi-wire twist lock receptacle (for shore power).
  - Fluorescent lighting – type and rating.  
Example: Weatherproof; 120 volts, two 40-watt lamps each fixture.
  - Wire and conduit sizes and types – specific wire sizes and types for each circuit.

Example 1: #12 THWN in ¾-inch rigid schedule 40 PVC conduit.

Example 2: 1/0 Type W, 4 wire with strain relief.

- (3) Electrical load analysis – total number of all electrical items with the electrical load for each branch circuit and feeder.
- (4) Layout –the location of all electrical equipment, not limited to:
  - Light fixtures
  - Receptacles
  - GFCIs
  - Transformers
  - Panelboards
  - Flexible connections
  - Homerun circuits
  - Photo-electric cell-operated switch
  - Solar lighting
- (5) Schematic or one-line diagram – all major equipment from the electric service on shore, including transformers and panelboards.
- (6) Land-based components that are an integral part of the Marina Facility's electrical system, such as electrical service equipment.
- (7) The location of all electrical equipment within the fuel dispensing area and the fuel storage area.

### **(c) Insurance Certificate**

Marina Facilities must provide a current certificate of insurance before construction may commence and upon request at any time, including during inspections with the LCRA evidencing that comprehensive general or public liability insurance is being maintained, per HLMO § 5.4(c). The certificate provided to the LCRA must:

- (1) State that LCRA will be given a minimum of 30 calendar days advance notice of cancellation or material change in coverage.
- (2) Show LCRA as an additional insured.  
EXCEPTION: A Marina Facility that is insured under a homeowner's insurance policy and an Existing Community Marina with fewer than five wet mooring slips.
- (3) Be purchased from an insurance company licensed in Texas or from a surplus lines carrier on the list of eligible surplus lines carriers maintained by the Texas Department of Insurance.
- (4) Be purchased from an insurance company that is rated at least A Class VIII by the AM Best Credit Ratings. (An insurance company not rated by the AM Best Credit Ratings may be required to submit audited financial statements to the LCRA for consideration and approval.)
- (5) The certificate must demonstrate these coverage amounts:
  - Marina Facilities that lease boat slips to the public must provide a minimum coverage of \$1 million per person/per occurrence bodily injury and \$1 million property damage or \$2 million combined single limit.
  - Marina Facilities that do not lease boat slips to the public but provide slips only as a service to their customers and Residential Marinas must provide a minimum coverage of \$500,000 per person/per occurrence bodily injury and \$100,000 property damage or \$500,000 combined single limit.