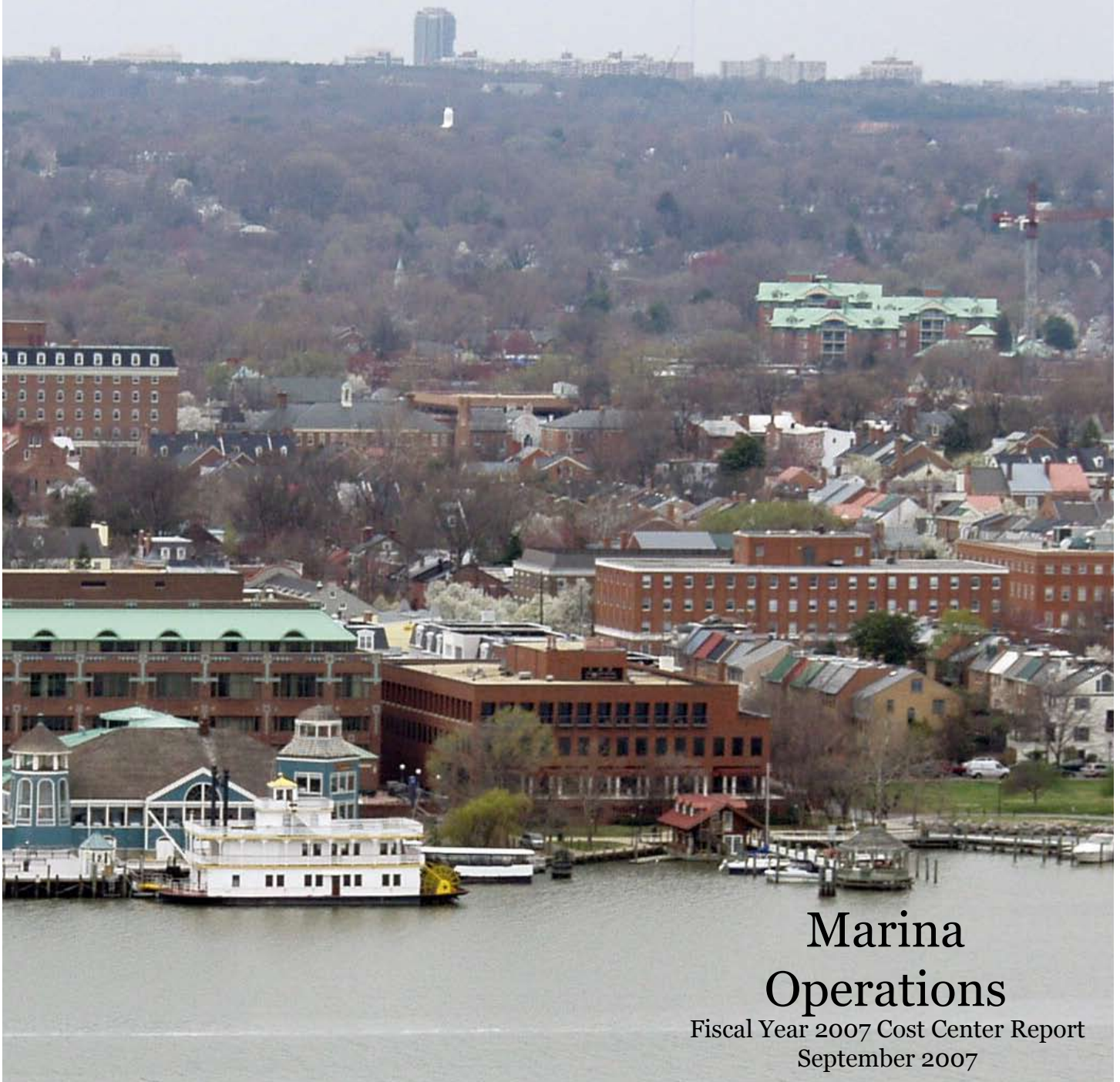


**FAC 7517 Recreational Pier**

FY25 SUC: \$719.29 / EA

Source: Inflated from previous FY using ENR labor and material cost indices to measure actual inflation

Original Source: Commercial Sources



# Marina Operations

Fiscal Year 2007 Cost Center Report  
September 2007

The background of the page is a faded, grayscale photograph of a marina. In the foreground, several white boats are docked at a wooden pier. Behind the pier is a large, multi-story building with a prominent central tower and many windows. The background shows a dense residential area with various houses and buildings, and a hillside with trees in the distance.

## ***Marina Operations***

***Marina Cost Center Fiscal Year 2007***

Published and Printed by  
The City of Alexandria  
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Photos courtesy of the Department of Recreation, Parks & Cultural Activities Staff

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Digital Imaging Assistance  
Beth Carton, Park Planner

The background of the page is a faded, grayscale photograph of the Alexandria City Marina. It shows several boats docked at piers, with buildings and structures along the waterfront in the background.

The Alexandria City Marina Operations Section of the Park Operations and Capital Development Division's mission is to:

*“Provide efficient professional service to visiting boaters, tourists and citizens while providing an inviting maritime atmosphere in a manner that reflects well on the character of the City of Alexandria”*

In order to fulfill the mission, Alexandria City Marina personnel are trained to:

- Act as goodwill ambassadors for the City by promoting tourism and local business patronage.
- Insure that Alexandria City Marina and Docking operations maintain a favorable relationship with neighboring residents and businesses.
- Exercise time and material cost consciousness, while implementing business practices that meet or exceed Marina Industry and City Standards. These practices are carried out in a labor-intensive environment requiring acute safety awareness on the part of each employee.
- Promote clean Marina practices and assist in developing programs and procedures to keep the Potomac River and City waterfront environment safe.

## Marina Operations

Fiscal Year 2007 Cost Center Report  
September 2007



Alexandria City Marina



City of Alexandria  
Department of Recreation,  
Parks & Cultural Activities  
September 2007

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### History

The renovation of the piers at the Torpedo Factory was completed in the spring of 1985. Construction was completed on the new Founders Park piers the following year. The combined projects provided the City with 51 transient boat slips for small vessels up to 40 feet in length, and a number of berthing areas for larger charter, cruise and ship of character vessels. With the anticipation of boating and pedestrian activity in these areas increasing, a City policy was developed concerning docking, security control, and fees.

In 1985 there was one commercial vessel permanently docked at the Alexandria City Marina site, the *Cherry Blossom*, and one ship of character docked at Waterfront Park, *Schooner Alexandria*. Today, six commercial vessels which provide site seeing tours, shuttle service, and private charters dock at the Alexandria City Marina. These vessels are the *Matthew Hayes*, *Miss Christin*, *Admiral Tilp*, *Cherry Blossom*, *Miss Mallory*, and *Potomac Bell*. One ship of character, the *Dory Boat*, is docked at Waterfront Park.

Today, Alexandria City Marina Staff oversee and coordinate the operation and maintenance of 61 boat slips, three T-head piers and hundreds of feet of seawall docking space within the Alexandria City Marina, as well as seawall docking at Waterfront Park. Alexandria City Marina Staff also serve as the first point of contact for citizens and tourists entering this gateway to the City of Alexandria, the City's waterfront and historic district.



Alexandria City Marina



Alexandria City Marina

## Background

### Overview

The Alexandria City Marina is surrounded by parks, quaint restaurants, shops, historic sites, and walking/bike trails. The Alexandria City Marina also hosts public concerts. For boating enthusiasts, the Alexandria City Marina is a 3-mile cruise from the Washington Marina in DC and the James River Creek Marina in Maryland, making it widely accessible within the region. In addition to affording a spectacular view of the Potomac River, the Alexandria City Marina has overnight boat slip docking with additional short-term docking space on sea walls and adjacent areas. The Alexandria City Marina offers docking for pleasure boats and commercial vessels.

### Personnel Organization

- Dockmaster
- Assistant Dockmaster  
2 Part-Time Positions
- Marina Assistant II  
1-2 Seasonal Positions
- Marina Assistant I  
6-7 Seasonal Positions
- Marina Attendant  
1 Seasonal Position

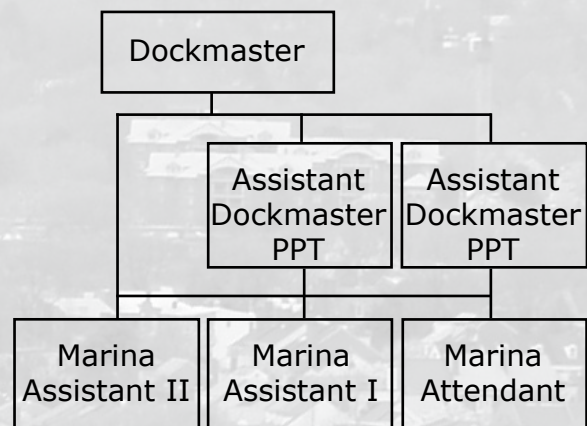


Chart House



Alexandria City Marina

### **Current Operations**

**Location:** City waterfront from King Street to Queen Street

**Operating Hours:** In-Season: (1 April - 31 October)  
Monday - Thursday 10:00 a.m. - 9:00 p.m.  
Friday 10:00 a.m. - 10:00 p.m.  
Saturday 8:00 a.m. - 10:00 p.m.  
Sunday 8:00 a.m. - 9:00 p.m.

Off-Season: (1 November - March 31)  
All Days 10:00 a.m. - 5:00 p.m.

**Night Security:** Daily, year-round 9:00 p.m. - 5:00 a.m. (contract)

**Piers:** A/B Pier, located behind Torpedo Factory, southern most Alexandria City Marina pier  
C/D Pier and Seawall, used for commercial docking  
E/F Pier, by Seaport Foundation facility, with gazebo on the end  
G/H Pier, northern most pier, gazebo in the middle, ends in a T-head  
Waterfront Park bulkhead

**Commercial Slip Agreements:** Presently, the City holds license agreements with two commercial companies: Potomac River Boat Company (PRC) and L.A. Yachts. PRC docks five boats at the Alexandria City Marina. The vessels are used for tours, water taxi, and charters. L.A. Yachts docks the *Potomac Belle* at the Alexandria City Marina, this vessel is used solely for charters.

Each vessel has its own license agreement. The City negotiates with the company on the terms and docking fees for each vessel when the individual license comes up for renewal.

### Current Services Provided

#### **Current Operations**

*Pleasure Boat License Agreements:* Forty slips are reserved for pleasure boat owners holding license agreements. The agreements run 1 April through 31 March, and the docking fees are paid on an annual basis. Rate increases went into effect July 1, 2006. The current rate is \$7.25 per foot per month, paid on an annual basis. The Alexandria City Marina maintains a wait list for the pleasure boat year-round slip spaces. There are approximately 50 names on the waitlist. By City Ordinance, pleasure boat license agreements are limited to boats with a maximum length of 40 feet.

*Transient Pleasure Boats:* The balance of the pleasure boat docking slips is used for transient boats. The fee for short-term visits, with a maximum length of four hours, is ten dollars. Visits over four hours are considered overnight stays and are assessed at a fee of one dollar per foot, per night during the off-season, and one dollar and a half per foot, per night for overnight docking in-season. Currently, during peak times in-season, the Alexandria City Marina is unable to accommodate all requests for docking space.

*Commercial Vessels (short-term):* Visiting cruise, charter, and commercial vessels, and ships of character dock at the Alexandria City Marina. The docking fee is three dollars per foot, per day. Two T-heads (one at the end of the A/B Pier, and one at the end of the G/H Pier) are used for docking these ships and large private yachts. Demand for these larger docking areas far exceeds the ability of the Alexandria City Marina to provide service. In-season, many requests are turned down due to lack of space. Commercial vessels seeking to dock more than four times per month must have approval from City Council. Visiting tall ships and ships of character add to the City's waterfront image and attract tourists.

*Alexandria Fire Boat:* The City's Fire Department docks their fire vessel at the Alexandria City Marina. The vessel is currently located on the E/F Pier.

# Marina Operations

## Current Services Provided

### Current Operations

<i>Slip Locations:</i>	Pier A	13	Pier E	7
	Pier B	13	Pier F	8
	Pier C	Commercial Docking	Pier G	10
	Pier D	Commercial Docking	Pier H	10
*Plus Marina T-head and wall docking spaces (capacity based on size of vessels) and docking at Waterfront Park.				

**Utilities:** Of the 61 docking slips, two have 50 amp connections and fifty-nine have one 30 amp connection each. Both the A/B and C/D Pier T-heads have one 50 amp connection each. The G/H Pier T-head has one 100 amp and three 50 amp connections. A fire suppression system was installed in 2002. All slips and T-heads have one water bib hook-up each. Currently no phone/cable hook-up or laundry facilities are provided.

**Showers/Restrooms:** Shower and restroom facilities are only available for license agreement holders and overnight transient boaters. The facility is secured with an electronic key card system.

**Pump-out:** A pump-out station is available for agreement holders to use as part of their contract. For all others docking at the Alexandria City Marina the fee is \$25.00 per pump-out. Use of the station must be scheduled in advance, as the equipment is located in a docking space.



B. Carton/Department of RPCA

City Marina



C. Alexander/Department of RPCA

City Marina

## Daily Services

### Marina Staff Daily Services

Throughout the day Alexandria City Marina staff:

- Make periodic inspections of boats, piers, docks, and waterfront areas.
- Perform daily maintenance including litter removal, emptying trash cans, cleaning bathrooms, cleaning piers, repairing decking, repairing railings, and repairing benches.
- Assist boaters with docking and departing the Alexandria City Marina, enter transactions in computerized Point of Service (POS) and rental reservation system, and collect user fees.
- Prepare safety and security documentation. Prepare and monitor financial reports, reconcile fees collected, complete deposits, prepare and monitor daily reports and time sheets.
- Schedule boat slip reservations. Respond to VHF radio calls.



C. Alexander/Department of RPCA

City Marina



B. Carton/Department of RPCA

City Marina

# Marina Operations

## Daily Services

### Marina Staff Daily Services

- Enforce all rules and regulations of the Alexandria City Marina. Ensure the Alexandria City Marina is operating in accordance with the City of Alexandria Operation Plan, City Code, and Nautical Laws.
- Answer and resolve any problems, complaints or concerns from boaters, pedestrians, and visitors.
- Maintain vigilant security watch of the Alexandria City Marina, boats, and public/staff safety.
- Monitor and enforce all pleasure boat and commercial boat licenses. Ensure license compliance including payment of fees, updating of insurance, and Coast Guard documentation.
- Assist in emergency response/operations as needed and outlined in the Alexandria City Marina Operating Plan and Standard Operating Procedures. Follow all training and American Red Cross protocols.

B. Carton/Department of RPCA



A/B Pier

Department of RPCA Staff



C/D Pier

### Marina Staff Daily Services

- Maintain navigational channel and docking areas. Contact Army Corps of Engineers and DC Harbor for assistance as needed.
- Maintain storm preparedness level as required by the Alexandria City Marina Storm Preparedness Plan. Activate preparedness levels as situations dictate.
- Train seasonal staff in the proper procedures for docking and securing boats, collecting and handling docking fees, and maintaining a clean, and attractive facility.
- Maintain current Department, Alexandria City Marina, and commercial boat information, and distribute information to the public.
- Coordinate all Alexandria City Marina water based activities and events.



Department of RPCA Staff

E/F Pier



C. Alexander/Department of RPCA

G/H Pier

# Marina Operations

## Operations

### Spring Marina Costs

April - May (9 weeks)

Staff Hours	1,480
Staff Costs	\$28,313
Material Costs	\$8,687
Total	\$37,000



Aerial View



Transient Boater

### Spring Activities

During operational hours, Alexandria City Marina Staff follow timelines and Standard Operating Procedures to coordinate year-round activities. The following are specific spring duties:

- License renewal process
- Work with eligible people from pleasure boat slip waitlist
- Begin accepting transient boat reservations on April 1st
- Prepare for and host events including Boat Club Visits, Tall Ship Visits, and Ship of Character Visits
- Prepare computerized boat slip rental and Point of Service (POS) system
- Perform water based pier and amenity repairs
- Identify winter damage and coordinate repairs
- Accommodate and assist spring boating traffic
- Prepare for April 1st start of new tour boat and water taxi season
- Prepare for summer dockings and schedule events
- Remove debris from Alexandria City Marina navigational areas and piers
- Prepare for and complete United States Coast Guard Facility Safety Inspection
- Prepare for and complete Commonwealth of Virginia Marina Operating Inspection

Storm season has begun, initiate storm preparedness plan.

### Summer Activities

Below are specific summer duties:

- Prepare for and host events including Memorial Day Weekend, Waterfront Festival, 4th of July, City Birthday Celebration, Irish Festival, Labor Day Weekend, United States Coast Guard Vessel Safety Inspection Day, Boat Club Visits, Tall Ship Visits, Ship of Character Visits
- Accommodate influx of summer boating traffic and pedestrian foot traffic
- Coordinate Alexandria City Marina activities with Potomac Riverboat Company, L.A. Yachts, and Seaport Foundation
- Remove debris from Alexandria City Marina navigational areas and piers
- Concentrate on providing a visible staff presence at the Alexandria City Marina and Waterfront Park to assist boaters and pedestrian foot traffic

This is the critical storm and flooding season. Maintain storm readiness level to quickly activate Marina storm preparedness plan.

### Summer Marina Costs

June - August (13 weeks)

Staff Hours	3,360
Staff Costs	\$66,363
Material Costs	\$5,740
Total	\$72,103

C. Alexander/Department of RPCA



Aerial View

Department of RPCA Staff



A/B Pier

# Marina Operations

## Operations

### Fall Marina Costs

September - November (13 weeks)

Staff Hours 1,880

Staff Costs \$44,536

Material Costs \$3,464

Total \$48,000

### Fall Activities

Below are specific fall duties:

- Prepare for and host events including the Arts Festival Weekend, Raft Across the Potomac event with Old Dominion Boat Club, Halloween Festivities, Art Yacht
- Begin to prepare the Alexandria City Marina for winter months to avoid freeze damage
- Begin to prepare for Parade of Lights
- Prepare winter docking plan for license holders remaining at the Alexandria City Marina through the winter months

This is the critical storm and flooding season. Maintain storm readiness level to quickly activate Marina storm preparedness plan.

Department of RPCA Staff



North End Marina

Department of RPCA Staff



A/B Pier, Torpedo Factory

Department of RPCA Staff



Nantucket Clipper Cruise Ship

### Winter Activities

Below are specific winter duties:

- Prepare for, market, and host the annual Parade of Lights events
- Publish, print, and mail the Alexandria City Marina user survey, and tally results
- Develop and issue pleasure boat licenses

Prepare for spring storm season.

### Winter Marina Costs

December - March (17 weeks)

Staff Hours	1,700
Staff Costs	\$46,357
Material Costs	\$2,643
Total	\$49,000

Department of RPCA Staff



Parade of Lights

Department of RPCA Staff



Marina in Winter

Department of RPCA Staff



Marina in Winter

C. Alexander/Department of RPCA



Waterfront Festival 2006

Department of RPCA Staff



Tall Ship Approaching Marina

Department of RPCA Staff



Parade of Lights

### Festivals and Events

#### Waterfront Festival

The City Marina coordinates with the Department's Special Events Section and the American Red Cross every year in hosting the Waterfront Festival. This event commemorates Alexandria's maritime heritage. It features a number of tall ships, a blessing of the fleet, river cruises, races, arts and crafts, exhibits, food, music, and fireworks.

#### Host Tall Ships

Each summer the City Marina plays host to a variety of tall ships. Most notably this past summer were the *Kalmar Nyckel*, *Schooner Virginia* and *Sultana*. These ships are a huge draw for the public and offer a glimpse into Alexandria's history and rich maritime heritage.

#### Parade of Lights

Each December, Alexandria's harbor lights up for this annual parade of boats. Boat owners, who compete for great prizes, beautifully and imaginatively decorate their vessels. These sailing and powerboats cruise the City's historic waterfront on the Potomac River, making their way up to Washington, DC for the conclusion of the parade. Boat owners are not the only people who can enjoy the event, as there are a number of Alexandria City Marina based activities including music, and on shore attractions for the visiting public.

#### Vessel Safety Checks

In coordination with the United States Coast Guard (USCG), the Alexandria City Marina hosts this special day to allow its boaters and others on the river a chance to stop in and have the USCG inspect the vessels to ensure safe boating on the City's waterfront.

### Alexandria City Marina Annual Revenue

Figures from 2005, 2006 and 2007

License Type	FY05	FY06	FY07*
9105 Pleasure Boat Licenses	\$75,000	\$86,457	\$106,946
9109 Commercial Boat Licenses	\$95,000	\$97,536	\$101,659
9106 9107 9108 Transient Boats	\$39,680	\$66,869	\$95,796
Total	\$209,680	\$250,862	\$304,401

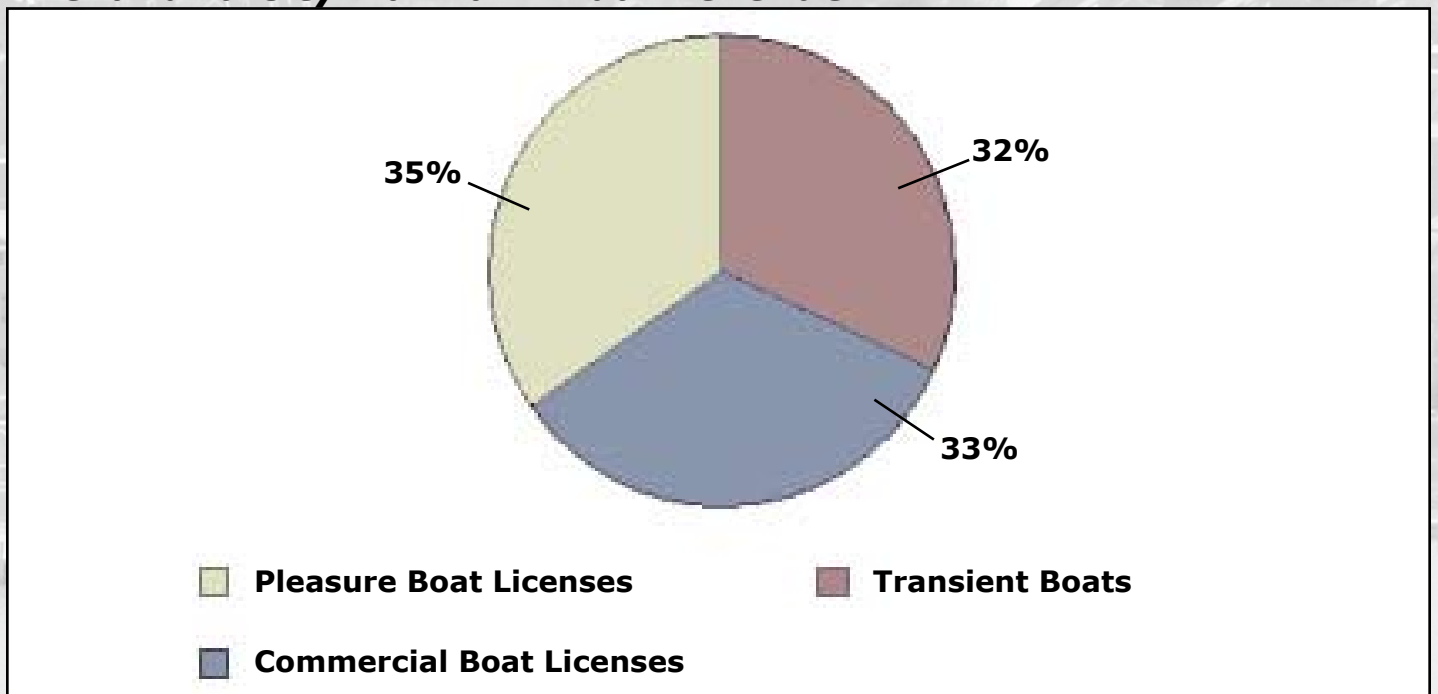
\*As of 6/30/07

#### Code

**Designations:**

- 9105- Annual Pleasure Boats
- 9106- Short Term Transient Boats
- 9107- Overnight Transient Boats
- 9108- Visiting Commercial Vessels
- 9109- Annual Commercial Boats

### Alexandria City Marina Annual Revenue



### **Additional Duties**

Over the last several years, the list of Alexandria City Marina duties has grown to include the following:

- Coordinate berthing of six commercial boats and the Seaport Foundation.
- Accommodate additional tour boat to be added to City waterfront to serve National Harbor in 2008.
- Clear logs and debris from the Alexandria City Marina.
- Perform daily maintenance of Alexandria City Marina boardwalks, sidewalks, gazebos and seawalls.
- Dock boats and collect related fees at Waterfront Park.
- Pick up litter and maintain the brick area behind the Torpedo Factory Arts Center.
- Coordinate and adhere to Homeland Security requirements.

### **Core Activities**

- Coordinate Alexandria City Marina docking activities for tour boats, charter and commercial vessels, ships of character, transient boat visits per City Code 6.3.
- Assist boating traffic approaching and departing Alexandria City Marina.
- Assist boating traffic approaching and departing Waterfront Park.
- Maintain the navigational areas in the Alexandria City Marina to provide safe boating access:
  - Remove debris from the water.
  - Maintain Alexandria City Marina piers.
  - Maintain Alexandria City Marina amenities (ladders, pier lights, rescue rings, railings, etc.).
  - Maintain Alexandria City Marina walkways.
  - Maintain Alexandria City Marina grassy areas.
- Accept and process user fees and boat docking reservations.
- Staff dockmaster office and Alexandria City Marina facility and answer visitor questions.
- Provide storm preparedness planning and staffing.

## Service Levels and Maintenance Options

### **Service and Maintenance Levels**

#### **Level 1 - Meeting Future Needs**

Provide Core Activities

Provide Special Event Assistance and Additional Duties

Operating Hours: April-Oct: Mon-Th, 8am-10pm; Fri, 8am-12pm; Sat, 8am-12pm;  
Sun, 8am-9pm Nov-March: 9am-6pm daily

Staffing Levels: Three additional full-time staff, add seasonal funds as needed

Clean-up: Purchase boat and trash cleaning system for clean-up, provide  
staffing to operate, contract for debris removal

Security: Install security cameras in key areas along the waterfront

Facility: Explore possibilities for additional slip spaces and floating pier system

---

**Operating Cost: \$786,265/year plus CIP**

#### **Level 2 - Meeting Projected Needs**

Provide Core Activities

Provide 50% of Additional Duties

Operating Hours: April-Oct: Mon-Th, 8am-9pm; Fri, 8am-10pm; Sat, 8am-10pm;  
Sun, 8am-9pm Nov-March: 9am-5pm daily

Staffing Levels: Increase one part-time staff to full-time, add seasonal funds as  
needed

Clean-up: Contract Trash Cat service and staffing to monitor the contract

Security: Increase security contract to cover all un-staffed hours; install  
security system on piers

Facility: Explore the possibilities to create larger slip spaces, upgrade  
utilities; provide individually metered electrical hookups; repair or  
replace rope railings, sidewalks; and rebuild the Dockmaster's office

---

**Operating Cost: \$447,442/year plus CIP**

#### **Level 3 - Current Level**

Provide Core Activities

Operating Hours: April-Oct: Mon-Th, 10am-9pm; Fri, 10am-10pm; Sat, 8am-10pm;  
Sun, 8am-9pm Nov-March: 10am-5pm daily

Staffing Levels: In-season- 1 full-time, 2 part-time, plus seasonal,  
Out of season- 1 full-time, 2 part-time

Clean-up: Lack of staff or equipment necessary to clean up waterways

Security: 9pm-5am, no coverage in early morning; insufficient coverage  
during peak times; no security system on piers

Facility: Maintain at current level; including existing docking slip sizes and  
number, amount and type of utilities provided, stationary dock  
system, and present Dockmaster's office conditions

---

**Budget FY07: \$226,637/plus CIP**

#### **Suggestions for Closing the Gap**

- \$66,000. Fund the two Assistant Dockmaster positions as full-time employees. The Alexandria City Marina is currently funded for one 40 hour permanent full-time Dockmaster and two 30 hour permanent part-time Assistant Dockmaster positions.
- \$65,900. Alexandria City Marina staff funding needs to be increased to ensure that the Alexandria City Marina can be staffed from 8:00 a.m. - 9:00 p.m. daily. Contractor funding needs to be increased to ensure that the security contractor staffs the Alexandria City Marina from 9:00 p.m. - 8:00 a.m. daily and provides two staff persons on Friday, Saturday, and Sunday evenings. This funding will help to resolve unauthorized docking, vandalism and trespassing issues.
- \$30,000. Temporary staff and contracted security cost. Provide additional funding for contract staff for additional fall operating hours.
- If the staff funding gaps cannot be filled significantly, reduce the Marina operating hours to allow for a minimum of two Alexandria City Marina staff per shift for the off-season months and four Alexandria City Marina staff per shift for the in-season months (April - October).
- \$8,500. Purchase a work/maintenance cart for the use of the Alexandria City Marina staff to patrol the waterfront area, move supplies and equipment, and periodically assist with Alexandria City Marina trash removal.
- \$69,500. Fund part-time and seasonal staff to perform reservation, duties at the Alexandria City Marina.

**Operational Changes/Actions To Be Taken****Suggestions for Closing the Gap**

- \$21,685. Additional funding needed for Alexandria City Marina supplies and materials. The Alexandria City Marina is funded \$16,000 annually for supplies and materials. The actual cost of supplies and materials is approximately \$37,685.

<b>Item</b>	<b>Cost</b>
Custodial Supplies	\$2,400
Rope and Supplies to Repair Railings	\$1,600
15 Rescue Rings	\$900
Blue Light Bulbs	\$100
Yellow Light Bulbs	\$200
Dock Light Fixture Repair/ Replacement	\$3,000
Repair of 30 amp Electrical Connections	\$2,000
Bench Repair	\$3,000
Water Exit Ladder Repair/ Replacement	\$550
Trash Receptacle Hard Plastic Can Liner Replacement	\$240
First Aid Supplies	\$600
Signs (water based boater signs)	\$3,000
Johnboat Motor Repairs & Equipment	\$800
Lifejacket Canisters	\$120
Boat Line	\$1,100
Dock Hardware	\$800
Dock Cart	\$225
Access Control System Service Contract	\$2,000
Y Electrical Connections for Boats	\$150
Uniforms	\$2,200
Office Supplies	\$900
Printing (Receipts and Forms)	\$500
Electrical Contracting Service	\$3,000
Tool and Hardware Replacement	\$800
Water System Repairs	\$7,000
Pump-out Repairs	\$500
<b>Total</b>	<b>\$37,685</b>

### **Suggestions for Closing the Gap**

- Cost of annual Trex decking repairs are paid for by General Services. In addition, RPCA and General Services split the cost for water pipe repairs when the cost exceeds \$7,000. For the past two years the average cost to repair the water system damaged by winter freeze was \$14,000.
- \$45,000. Increase and designate capital improvement funding for repairs. Currently the Alexandria City Marina shares \$90,000 annually in capital funding with the City's swimming pools. The Alexandria City Marina needs a capital improvement funding program specifically designated for the Alexandria City Marina, waterfront and docking repairs. The Alexandria City Marina's equipment and amenities are continually subjected to the impacts of the environment including: storm surges, storm force winds, driving rains and UV damage. It is imperative that capital funding be provided to repair and replace infrastructure and amenity damages before they escalate in cost and risk.



2002 Trex Decking Project



2002 Trex Decking Project

### Operational Changes/Actions To Be Taken

#### **Suggestions for Closing the Gap**

- A structural and utilities study of the Alexandria City Marina should be conducted to examine the Alexandria City Marina piers, seawalls, electric and water utilities, and associated ancillary amenities.

During the Waterfront Planning Process, an overall master plan for the Alexandria City Marina should be included.

Seek grant funding through the Boating Infrastructure program to offset some of the costs that will be needed to update and upgrade the Alexandria City Marina facility.

The Alexandria City Marina requires structural evaluation of the piers and bulkheads.



2002 Fire Suppression Project



Burst Pipe  
20





# FAC 7517 Recreational Pier

UM = EA

See research paper below; no information is available on size, material, features

Assumed FAC 7517 (Pier) is similar to FAC 7518 (Marina); size assumed to average 50 ft; capable of berthing

3.33333333 small boats

97 craft berths are used for marina; therefore this FAC is 3/97 of FAC 7518

Requirements		Unit	Qty	Cost (2007)	Reduce material (contract) for facility maintenance only	Inflation 2007 to 2010	Prorate from 61 to 97 (Navy) slips		FAC 7517 to FAC 7518 Ratio	FAC 7517 Costs
	Spring costs (material )	EA	1	8687	0.4	1.082	1.590164	\$ 5,978.59	0.03	184.9049
	Summer costs (material)	EA	1	5740	0.4	1.082	1.590164	\$ 3,950.40	0.03	122.1773
	Fall costs (material)	EA	1	3464	0.4	1.082	1.590164	\$ 2,384.00	0.03	73.73209
	Winter costs (material)	EA	1	2643	0.4	1.082	1.590164	\$ 1,818.97	0.03	56.2569
TOTAL								\$ 14,131.97		437.0712
PER UNIT (EA)								\$ 14,131.97		437.0712

## NAVY MWR MARINAS

<http://www.mwr.navy.mil/mwrprgms/marinlst.htm>

	Moorings	Slips	Dry Storage
<i>Naval Base, Coronado, California</i>	80	<b>264</b>	120
<i>Naval Base Point Loma San Diego, California</i>	0	73	83
<i>Naval Submarine Base New London, Connecticut</i>	15	70	70
<i>Naval Air Station Jacksonville, Florida</i>	75	62	220
<i>NAF Key West, Florida</i>	21	126	18
<i>Naval Support Activity Panama City, Florida</i>	0	13	83
<i>NAS Pensacola, Florida Bayou Grande</i>	15	<b>218</b>	209
<i>NAS Pensacola, Florida Sherman Cove</i>	0	34	177
<i>Naval Air Station Atlanta, Georgia</i>	0	58	13
<i>Navy Region Pearl Harbor, Hawaii</i>	0	132	65
<i>Naval Station Great Lakes, Illinois</i>	80	90	30
<i>Naval Support Activity Crane, Indiana</i>	0	10	15
<i>Naval Air Station Patuxent River, Maryland</i>	0	<b>198</b>	95
<i>NS Annapolis, Maryland</i>	48	0	150
<i>Mill Creek Marina</i>	0	32	0
<i>Navy Recreation Center Solomons, Maryland</i>	0	129	82
<i>Naval Shipyard Portsmouth, New Hampshire</i>	90	97	80
<i>NS Newport, Newport Rhode Island</i>	27	<b>165</b>	0
<i>Naval Station Norfolk, Virginia</i>	0	14	19
<i>Naval Amphibious Base Little Creek, Virginia</i>	0	<b>162</b>	425
<i>There are 5 Navy Marinas in list which provide no numbers</i>			
<i>Represents probably half of the inventory of Marinas</i>			<b>1947 average sl</b>

### Cost Factor 7518. Marina A facility for berthing pleasure craft. Cost factors are based upon an :

There are approximately 50 major marinas on military bases spread throughout the United States and it  
They range from the sailing marina tucked away at Dalgren, VA, to the 240-slip marina at Patrick Air Fo  
All of these marinas have sailboats and powerboats for rent.

They range from houseboats to 25-foot deep sea fishing boats and 42-foot sailboats.

[http://findarticles.com/p/articles/mi\\_m0BQK/is\\_6\\_8/ai\\_110961106/](http://findarticles.com/p/articles/mi_m0BQK/is_6_8/ai_110961106/)