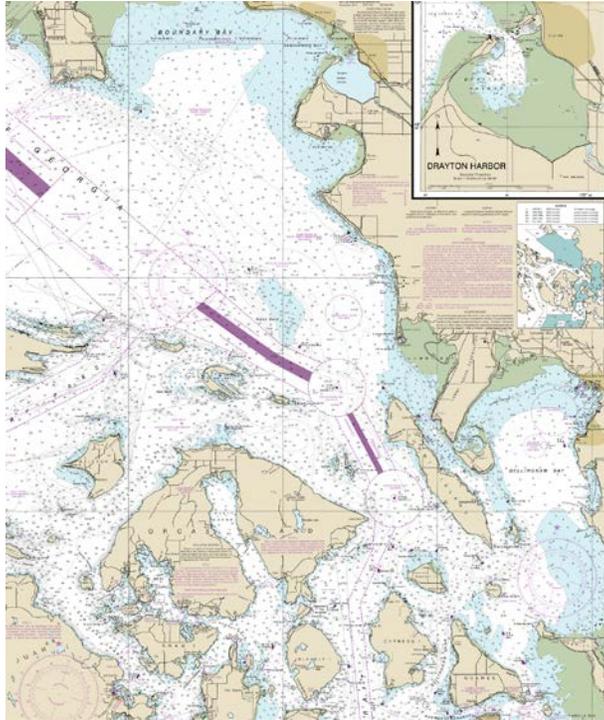


# Thirteenth Coast Guard District Waterways Analysis and Management System



## BELLINGHAM 13007

Including: Bellingham Bay, Bellingham Channel, Boundary Bay, Semiahmoo Bay,  
Hale Passage

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Bellingham WAMS  
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## **I. Purpose**

The purpose of this Waterways Analysis Management System (WAMS) study is to serve as the primary tool for managing the Aids to Navigation (ATON) in our waterways in a systematic manner. As outlined in COMDTINST M16500.7 (series), WAMS reports ensure:

1. All aids are required as necessary elements of the ATON system;
2. Changes to augment and/or reduce aids are made when needed to meet changing needs in the waterway;
3. Aids conform to the system criteria in the Aids to Navigation Manual – Administration; and
4. Aids and the ATON system provide their required operational characteristics; waterways are examined for the effectiveness of traffic management mechanics to assist the Program Manager in fulfilling waterways management responsibilities.

## **II. Action Item Summary**

Two aids are proposed to be altered to better meet the needs of safe navigation:

1. Bellingham Bay Junction Rocks Lighted Buoy (LLNR 19285) is proposed to move approximately 500 yards south to better mark the shoal.
2. Viti Rocks Light (LLNR 19200) is proposed to change to non-lateral boards to improve message of aid.

## **III. Information Collection**

This study encompasses the following bodies of water: Bellingham Bay, Bellingham Channel, Boundary Bay, Semiahmoo Bay, and Hale Passage. All federal and private ATON were included in this study.

Public comments were solicited through Local Notice to Mariners, Puget Sound Harbor Safety Committee meeting, in person visits to marinas, email distribution and phone conversations. The announcement in the Local Notice to Mariners included a link to the Coast Guard D13 WAMS website where the questionnaire was located. Questionnaires were also directly emailed to the Puget Sound Pilot Association, Alaska Marine Highway, BP Cherry Point, Lummi Tribe, Coast Guard Station Bellingham and other Coast Guard units that navigate in Northern Puget Sound area. A press release was published by D13 Public Affairs and sent to the Bellingham Herald and Blaine Northern Light.

The D13 WAMS officer attended the Puget Sound Harbor Safety Committee meeting on August 5<sup>th</sup>, 2015 to present the initial survey request for this WAMS.

A user ride was conducted with Coast Guard Station Bellingham.

## **A. Narrative Description:**

### **1. Geographic features** (As noted from Coast Pilot 7, 47<sup>th</sup> Edition)

**Bellingham Channel:** Deep between Cypress and Guemes Island, is the most direct route to Bellingham Bay from the South. Cypress, Guemes and Sinclair Island's tidal currents have considerable velocity, but between Sinclair and Vendovi islands, the velocities are considerably less. Cone Island, a group of five islets on the W side of Bellingham Channel are .4 miles E of the NE of Cypress Island. Lighted buoys mark the E side of Bellingham Channel. A light is on the W side of Bellingham channel off the E side of Cypress Island. In May 1999, a submerged wreck with 3 3/4 fathoms over it was reported about 780 yards S of Bellingham Channel Lighted Bell Buoy 4 at about 48-31.48N 120-40.12W. Clark Point on the E side of Bellingham Channel is a steep bluff forming the N point of Guemes Island. A reef extends 300 yards N from the point. Vendovi Island is 1.8 miles NE of Clark Point. Shoaling to 4 fathoms, 0.4 mile SW of Vendovi Island is marked by a buoy. A light marks the E side of the island. A private light is in a small cove on the NW side of Vendovi Island. Deep draft vessels approaching Bellingham Bay from N use the channel between Lummi and Sinclair Island. With the exception of Viti Rocks and the dangers N of Sinclair Islands, the channel is free of danger. The fairway is deep and has a width of 0.6 mile at its narrowest part, between Viti Rocks and Carter Point, the S tip of Lummi Island. The northwestern most Viti Rock is 34 feet high, 200 yards long, and marked by a light. A Lighted Bell Buoy marks the shoal extending SSE from the southernmost rock.

**Bellingham:** Located at the head of Bellingham Bay on the E shore. Wood and wood products including pulp, aluminum chemicals, and general cargo are shipped out; salt, alumina, and general cargo are imported. The port has import/export of industrial products as well as mixed use commercial. The S terminal of the Port of Bellingham includes a boatbuilding plant and the Alaska State Ferry Terminal Dock on the N side of Post Point at South Bellingham. Bellingham Yacht Harbor is adjacent to and SE of Squalicum Creek Waterway. Anchorages have a thin accumulation of mud bottom over hardpan and are not good holding ground in heavy weather. A general anchorage and an explosives anchorage are in the bay. The mean range of tide at Bellingham is 5.2 feet, and the diurnal range of tide is 8.6 feet. A range of about 14 feet may occur at the time of maximum tides. Pilotage is compulsory for all vessels except those under enrollment or engaged exclusively in the coasting trade on the West Coast. Pilotage for Bellingham is provided by the Puget Sound Pilots.

**Bellingham Bay:** From William Point to the head is about 12 miles long and 4 miles wide. Anchorage may be obtained almost anywhere in the bay S of the flats. Depths range from 6 to 15 fathoms over most of the area. Due to the mud bottoms, vessels apt to drag anchor in heavy weather. Fishing, both recreational and commercial are heavy in this area and is extremely high during crabbing season when pots fill the bay.

**Squalicum Creek Waterway:** Marked by two lights. Depths inside the harbor are 10 to 15 feet. Berths for about 1200 pleasure craft and fishing boats are in the harbor. Several marine equipment repair and fishing supply firms are in the area N of the SE entrance to the harbor.

**Hale Passage:** The passage is six miles long and separates Lummi Island from the mainland to the NE. Depths in the passage vary from 2 fathoms on the bar near the NW end to 20 fathoms in the SE end of the channel.

**Sandy Point:** About 2.5 miles N of Lummi Island and at the NW side of Lummi Bay is the site of an extensive housing development fronting a privately dredged basin. Between Sand Point and Cherry Point, about 4.5 miles NW, the short of the mainland forms a bight in which there are no off-lying dangers. The piers of two large oil refineries and an aluminum smelter are in the bight. A general anchorage is off Cherry Point.

**Birch Bay:** On the E side of the Strait of Georgia between Point Whitehorn and Birch Point is an open bight with about 4 to 5 fathoms of water. It affords some protection from the N but is open to the SW. Flats that bare occupy a considerable area at the head of the bay. A number of resorts are along the shore. A mooring basin and private marina are on the N side of the bay; the basin entrance is marked by lights and day beacons. Birch Bay does allow for seasonal commercial crabbing.

**Semiahmoo Bay:** An entrance between Birch Point and Kwomais Point, about 5 miles NNW. It is connected with Drayton Harbor by a narrow channel. The E part of the bay is shoal with extensive sand flats in the SE part. Anchorage may be had in the bay in 3 ½ to 9 fathoms on the NW side of Semiahmoo Spit, affording protection from S and Se storms.

**Drayton Harbor:** A small cove formed by the Semiahmoo Spit, the extension of a sandspit N of Birch Point. It is about 2 miles long, but flats that bare at low water occupy a large area in the E and S parts of the harbor. A light and a buoy about 700 yards to the WSW are near the N end of the extensive sand flats of the NW side of Semiahmoo Spit. The channel from Semiahmoo Bay to the cannery wharf on Semiahmoo spit and to Blaine Harbor E of the cannery wharf has a controlling depth of 21 feet; greater depths are possible with local knowledge. The 15 foot spot about 130 yards N of the cannery wharf and the 9 foot spot about 300 yards E of the E end of the wharf should be avoided.

**Blaine Harbor:** A large and well equipped small-boat basin near the entrance of the N shore of Drayton Harbor is located at the city of Blaine. The harbor is an active fishing center operated by the Port of Bellingham. A light marks the outer end of the breakwater that protects the basin on the S side. Currently the harbor has 629 boat slips with more than 800 feet of visitor moorage. The depth of the channel is estimated to be about 5 fathoms and the harbor entrance is mean low water tide is 2 ½ fathoms. The boat launch in the harbor at mean low low is about 2 fathoms.

**Point Roberts:** The prominent feature in approaching either from the N or S. The E face is about 180 feet high and is composed of white, vertical bluffs. The point is well wooded, and because of the low land behind it, is usually made as an island, especially from S. The SW extremity of the point is marked by a light. Extensive night drift fishing in the area from Point Roberts to Blains makes night navigation difficult. A marina at Point Roberts provides transient berths, gasoline, diesel fuel, ice and pump out. An alongside depth of 5 feet was reported in 2010.

**Boundary Bay:** International boundary between the United States and Canada are marked by a series of lights that cross from Semiahmoo Bay into Boundary Bay. Extensive crabbing is done on both sides of the border during crab season.

## 2. Facilities

BP Cherry Point - The BP/Amoco two piers (formerly Atlantic Richfield Co) with a 2400 foot angular approach trestle is at Cherry Point about 4.5 miles NNW of Sandy Point. The pier has 1000 feet of berthing space at the face with dolphins and reported depths of 65 feet alongside. Deck height is 22 feet. The dolphins are marked by private lights. The facility is used for receipt of crude oil, shipment of petroleum products and bunkering vessels. It currently processes over 225,000 barrels per day. No significant changes in volume are anticipated in the near future.

Phillips 66 Ferndale – (Formerly Tosco Refining) the 1800 foot pier of Phillips 66 is at Ferndale, 2.4 miles N of Sandy Point. The L shaped pier has 883 feet of berthing space and reported depths of 42 to 53 feet at the outer face, and 722 feet of berthing space and depths of 35 feet at the inner face. Deck height is 18 feet. The pier is used for the receipt of crude oil and shipment of petroleum products and for bunkering vessels. The pier is marked by private lights and a fog signal. Total capacity is 109,000 barrels per day. No significant changes in volume are anticipated in the near future.

Intalco (Alcoa) Aluminum Corp – the long loading wharf and pier is 0.8 mile N of Phillips 66 pier and 3.2 miles N of Sandy Point. The Wharf has 950 feet of berthing space with dolphins and depths of 36 feet alongside. Deck height is 22 feet. The wharf is used for the receipt of alumina and liquefied natural gas (LNG). Private lights and a fog signal are on the wharf, and two private lighted mooring buoys are just off the wharf. The Intalco smelting plant has capacity of 279,000 metric tons per year (mtpy). The terminal averages 12-13/year vessels over the last few years, but for the next 2 years, no ships are expected as the smelter is in curtailment.

## 3. Anchorages

There are general anchorages located in vicinity of Bellingham Bay and Cherry Point. There is also an explosive anchorage located inside of Bellingham Bay.

Bellingham Bay (general): circular area of 2000 yards with center point at 48°44'15"N  
122°32'25"W

Bellingham Bay (explosive): circular area of 1000 yards with center point at 48°42'48"N 122°  
33' 37"W

Cherry Point (general): circular area of .8nm with center point at 48°48'30"N 122°46'00"W

#### 4. Environmental Factors

The Northern Puget Sound has a maritime climate primarily influenced by strong low-pressure centers generated in the Gulf of Alaska. Mild summers, mild winters and year round rainfall characterize the climate. Snow falls occasionally between November and March in small amounts with most of the winter precipitation occurring as rainfall. Rains may occur anytime of the year, totaling 50-60 inches a year. The wettest month is December averaging 6+ inches. Fog is common along the coast during the summer months. Normal winter temperatures can reach from 30 to 50 degrees F while summer temperature range from 59-71 degrees F. Temperatures can reach record lows of 0F and record highs of 100F. Freezing temperatures during the winter months are relatively short in duration when they do occur. The area is prone to heavy winds and storms, especially in the winter.

**5. Marine Events** – (Bellingham Bay): The permitted events that occur in this area are primarily sailing regattas and races generally occurring April - October.

2015 - 59  
2014 - 85  
2013 - 75  
2012 - 78

#### B. Waterway Users

**1. Vessels:** The primary users of this are recreational boaters, including sail and power boats, and sport and commercial fisherman. There are deep draft commercial vessels and tugs that transit the area; however they remain primarily in the shipping channel. Coast Guard units also use the waterway.

Total commercial traffic (vessels) in the Cherry Point/ Bellingham area from 2009-2013 (*BP Cherry Point Vessel Traffic Analysis Study Report, The Glosten Associates, INC. 20 May 2014*)

2013 - 943  
2012 - 847  
2011 - 784  
2010 - 906  
2009 - 948

Total Vessels into Port of Bellingham Shipping Terminal from 2012-2015

2015 - 24  
2014 - 43  
2013 - 29  
2012 - 14

Total register recreational vessels:

Whatcom County (2015): 6934

Skagit County (2015): 7540

**2. Transit Frequencies:** Fishermen use the waterway primarily from March through October. Recreational boaters from all over use the waterway daily throughout the year, but higher considerable higher volumes between May and September. Cargo vessels and tankers transit to Cherry Point to Ferndale to port at 3 facilities. The waterway is routinely transited by the local Coast Guard station.

**3. Commodities Carried:** Primary commodities carried are petroleum and seafood:

Total products (tons):

2013 – 81,028

2012 – 31,640

2011 – 56,704

2010 – 63,583

2009 – 39,270

Seafood (million pounds):

Port of Bellingham (2010-2014)

2014 - 14

2013 - 23.5

2012 - 10.8

2011 - 18.9

2010 – 18.6

Blaine, WA (2010-2014)

2014 - 2.8

2013 - 2.4

2011 - 3.6

2010 - 3.8

Crude oil & Petroleum products (thousand short tons):

2013 - 50,307

2012 - 1,396

2011 - 25,721

2010 - 36,942

2009 - 24,969

## **C. Charts**

Primary charts used in this WAMS effective 8/1/2015

18421 Strait of Juan De Fuca to Strait of Georgia  
18423 Bellingham to Everett  
18424 Bellingham Bay  
18427 Anacortes to Skagit Bay

Chartlets are enclosed. Each chartlet is broken up for federal aid and private aids. They are visible by light list number (LLNR) on the chartlet and details are in the enclosure of the light list number.

## **D. Aids to Navigation**

The Northern Puget Sound and its harbors are marked with both federal and private Aids to Navigation (ATON). A list of these aides is included in enclosure (3 - (federal) & 4 - (private)). A review of the ATON discrepancies going back to 1992 shows no repeated cause for discrepancies which can be avoided by changing characteristics of the aid.

## **IV. Previous WAMS Action Items**

A. Semiahmoo Bay Buoy 2 (LLNR 19915) was repositioned to better mark the entrance.

B. Sandy Point Light 2 (LLNR 19880) and Sandy Point Light 3 (LLNR 19886) were determined to be needed for federal activity in the area.

## **V. Comments and Suggestions**

The following were recommended through surveys received during public comment period. They were reviewed and agreed upon by District 13 Waterways Staff for advertising the proposals.

A. Viti Rocks Light (LLNR 19200) requested to change the current diamond with “Danger Rocks” as it is too small to read without getting close or using binoculars. Non-lateral boards were recommended.

B. Bellingham Bay Junction Rocks Lighted Buoy (LLNR 19285) requested to move S of the 2 ½ fathom spot. It is currently sitting atop the 2 ½ fathom mark which does not give proper notice for ships on the low mark. Recommend to move approximately 500 yards south.

## VI. Criticality Determination

The criticality of the waterways within the Northern Puget Sound and the Bellingham WAMS area are classified as environmentally critical. By definition, an environmentally critical waterway is where “a degradation of the aids to navigation system would result in an unacceptable level of risk to public safety or the environment.” This criticality should remain.

## VII. Analysis

All federal and private ATON have been evaluated to be necessary elements of the ATON system for this waterway. Recommended changes based on user feedback and review of the waterways are annotated in Section 7. A review of the characteristics confirms the current ATON conforms to system criteria and provides their operational required operational characteristics.

## VIII. Recommended Changes

Approved      Not approved

_____	_____	Viti Rocks Light (LLNR 19200) – change to lateral dayboards
_____	_____	Bellingham Bay Junction Rocks Lighted Buoy (LLNR 19285) – move to approx position 48°40’18.718N 122°35’29.788W using chart 18424

### Sources:

Email dated 12/17/15 “Port of Bellingham Vessels Entering” from Dave Warter, FSO Port of Bellingham 2012-2015

Email dated 12/3/15 “Recreational Vessels” from Sherri Sweeney, Program Specialist Washington State Parks & Recreation Commission Boating Program

Email dated 11/30/15 “Marine Events” From LTJG Johnny Zeng, USCG,

United States Coast Pilot 7; Pacific Coast: California, Oregon, Washington Hawaii, and Pacific Islands. 2015 47<sup>th</sup> Edition

Waterborne Commerce of the United States CY 2013 Part 4 Waterways and Harbors Pacific Coast, Alaska and Hawaii, US Army Corps of Engineer