BRISTOL BAY
SUBAREA CONTINGENCY PLAN

POTENTIAL PLACES OF REFUGE
SECTION

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POTENTIAL PLACES OF REFUGE: PART ONE – INTRODUCTION

A. PURPOSE AND SCOPE

This Potential Places of Refuge (PPOR) section supplements information found elsewhere in the Bristol Bay Subarea Contingency Plan for Oil and Hazardous Substances Spills and Releases, commonly referred to as the Bristol Bay Subarea Contingency Plan (SCP). Information about sensitive areas associated with PPOR may be found in the Sensitive Areas - Section D of the SCP. Information about response strategies to protect sensitive areas and areas of public concern associated with PPOR may be found in the Geographic Response Strategies – Section G of the SCP.

A "place of refuge" is defined as a location where a vessel needing assistance can be temporarily moved to, and where actions can then be taken to stabilize the vessel, protect human life, reduce a hazard to navigation, and/or protect sensitive natural resources and other uses of the area (e.g., subsistence harvesting, commercial fishing, recreational boating). A place of refuge may include constructed harbors, ports, natural embayments, or offshore waters. This section identifies potential docking, anchoring, and mooring locations that may be selected as Places of Refuge in the Bristol Bay Subarea. Actual designation of a Place of Refuge will always be an incident-specific decision made by the U.S. Coast Guard Captain of the Port (COTP) for Bristol Bay.

The Bristol Bay Subarea has thousands of miles of environmentally sensitive coastline. In addition to sensitive shoreline habitats such as marshes, sheltered tidal flats, and exposed tidal flats, Bristol Bay supports a number of sensitive biological resources including birds, fish and shellfish, and marine mammals. The local communities are heavily reliant on marine resources for their livelihood and subsistence. Because of this unique relationship with the marine environment, much of the coast is utilized for subsistence activities and is extremely sensitive to the impacts of marine commerce, especially oil spills. Additional information about identification of sensitive areas and resources may be found in Section D of the SCP. Additional information about protection of sensitive areas may be found in Section G of the SCP.

In the Bristol Bay Subarea there are extensive commercial fisheries. Much of the marine commerce focuses on the support of this industry. The remaining marine commerce includes the resupplying of the communities and industry during the ice-free period of the summer and fall. With climate change precipitating the ongoing reduction in sea ice and the subsequent expansion of the operating season, it is likely that shipping and industrial activities will increase throughout the Arctic and subarctic areas. This activity will see a corresponding rise in marine commerce utilizing a variety of different types of vessels. Fuel barges, freighters, container ships, drilling ships, tankers and cruise ships operating in, and transiting through Bristol Bay may become more routine.

Bristol Bay is a unique operating environment, with limited infrastructure, extreme weather and few protected anchorages. Shallow waters extend for miles offshore in the northern part of the subarea, while deep, narrow fjords are common on the southern side of the Alaska Peninsula. These considerations affect the ability to accommodate stricken vessels of any size in these waters. The protection offered in most of the sites listed is limited and available only under certain circumstances outlined in the plans. In developing this section consideration was given to typical anchorage sites near communities. These are well-known areas that have access to some of the limited infrastructure in the area that may affect repairs and assist in the response.

It is widely acknowledged that there is no perfect docking, mooring or anchoring site for all vessels in all situations. A vessel's length and draft are major determining factors when considering a site for

refuge. Deep draft vessels, such as oil tankers and cruiseships, cannot be taken to certain locations.

It is widely acknowledged that there is no perfect docking, mooring or anchoring, site for all vessels in all situations. A vessel's length and draft are major determining factors when considering a site for refuge. Deep draft vessels, such as oil tankers and cruise ships, cannot be taken to certain locations.

Some ports and bays may have shallow approaches and deep draft ships cannot enter these locations. Shallower draft vessels, such as fishing vessels and supply vessels may be able to utilize these ports. For the purposes of this section, vessels have been divided into four categories:

Deep Draft II Vessels are vessels with lengths up to and greater than 1000 feet and typically have drafts of 40-60 feet. The predominant deep draft vessels that may operate in the Bristol Bay subarea are container ships and tankers that are designed to the New Panamax dimensions.

Deep Draft I Vessels are vessels with lengths up to and greater than 1000 feet and typically have drafts of 20-40 feet. The predominant deep draft vessels of this type that may operate in the Bristol Bay subarea are container ships and tankers.

Light Draft Vessels are vessels up to 450 feet in length and have drafts to 20 feet. Freighters, catcher processors, ferries and ocean going tugs are the most common light draft vessels operating in Bristol Bay.

Shallow Draft Vessels are less than 300 gross tons and have drafts less than 15 feet.

The information in this section may be used for a vessel of any size that has suffered an incident, which creates a need for a temporary place of safe refuge, but it is focused on deep draft and light draft size vessels. Shallow draft sites were identified as assets for responding to PPOR incidents.

B. HOW THE PPOR DOCUMENTS WERE DEVELOPED

This section was developed in 2012 by a Work Group of interested and knowledgeable stakeholders in keeping with the Alaska Regional Response Team's "Guidelines for Places of Refuge Decision-Making," (Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases, Annex O). The Work Group arrived at a consensus on the potential places of refuge and submitted this document to the Subarea Committee for approval and inclusion in the Bristol Bay Subarea Contingency Plan. The Work Group participants represented the following organizations:

Alaska Department of Environmental Conservation
Alaska Department of Natural Resources
Alaska Department of Fish and Game
Alaska Marine Pilots Association
Vitus Marine
Bristol Bay Native Corporation
The City of Dillingham

U.S. Coast Guard
U.S. Department of the Interior – Offices of Environmental Policy and Compliance, Fish and Wildlife Service, and National Park Service
U.S. Environmental Protection Agency
U.S. Department of Commerce
NOAA
National Marine Fisheries Service

First Step: Risk Identification

The first step of the PPOR process identified 14 candidate sites (anchorages, moorings, docks/ piers) within the Bristol Bay subarea. The Workgroup began by researching available information to determine major risk factors. Maps were developed, depicting the following risk and logistical information:

- A composite map of all risk factors combined (Figure H-1);
- Locations of major oil spill events (Figure H-2)
- Locations of spill response hubs/equipment (Figure H-3);
- Location of noncrude carrier routes (Figure H-4);
- Locations of Logistical Support (Figure H-5);
- Locations of frequent fishing vessel traffic (Figure H-6);
- Locations of cruise ship and ferry traffic (Figure H-7);
- Locations of bulk fuel facilities (Figure H-8)

Second Step: Feasibility

The second step led to the identification of 14 PPOR sites within the Bristol Bay subarea, in addition to existing infrastructure. A site assessment matrix (Table H-2) and key (Table H-1) were developed. The matrix consists of identified sites in each row with information about risk factors and site selection criteria in the columns. The information presented for each site includes:

- PPOR identification;
- Response Zone #;
- Type of Berth;
- Location Name;
- Latitude;
- Longitude;
- Maximum Vessel Depth
- Anchoring Swing Room or Dock Face in feet;
- Depth at dock face:
- Depth at anchorage;
- Bottom Type;
- Exposure to predominant wind and sea conditions;
- Conflicting uses;
- Ability to boom;
- GRS in the area;
- Sensitive Resources;
- Distance to population centers; and

- Distance to alternate PPOR.

The PPOR identification method begins with a “DII”, “DI” “L” or “S” which indicates the appropriate size vessel for the site. Following the letter is a number which indicates the response zone in which the site is located. This is then followed by a number which is a unique site identifier with no importance attached to the magnitude of the number.

The site assessment matrix contains potentially suitable emergency anchorage, docking and moorage locations based on operational factors such as water depth, swing room, exposure/protection, and navigational approach. Sites are grouped by the individual response zones and then by the maximum vessel size category suitable for the site.

Third Step: Factors to Consider

Step 3 identified specific factors that should be considered as part of the site assessment process. These factors include:

- Distance from population and logistics centers;
- Proximity to environmentally sensitive areas, wildlife resources, threatened or endangered species or habitats, and/or historic properties;
- Uses, such as fisheries, subsistence use, tourism and recreational use, and the location of public or private facilities;
- Response factors such as booming feasibility and the proximity to existing Geographic Response Strategy (GRS) sites; and
- The distance from the closest alternative PPOR.

Fourth Step: Review and Comment

Step 4 afforded the work group and stakeholders in the area the opportunity to review and comment on the draft documents. In this review, the workgroup ensured that information critical to their area of expertise is included.

C. HOW TO USE THE POTENTIAL PLACES OF REFUGE SECTION

The "Guidelines for Places of Refuge Decision-Making" (Annex O of the Unified Plan) will be used for places of refuge decision-making in the Bristol Bay subarea.
http://dec.alaska.gov/spar/perp/plans/uc/Annex%20O%20(Jan%2010).pdf)

Part Two of this document contains site-specific information for the PPOR in the Bristol Bay subarea. An index map at the beginning of this section shows the location of the PPOR maps. Each PPOR map consists of two parts: 1) a map page showing a locator map, and detailed nautical charts; and 2) a table page providing site information and local site conditions. All geographic data was collected using Mercator Projection, North American Datum 1983.

D. WHO TO CONTACT FOR INPUT

Comments and recommendations on these PPOR are welcomed. Please send your comments to either of the following agencies:

Alaska Department of Environmental Conservation
Prevention and Emergency Response Program
555 Cordova Street
Anchorage, AK 99501

United States Coast Guard
Captain of the Port for Western Alaska
510 L Street-Suite 100
Anchorage, Alaska 99501-1946

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Figure H-1: Composite Map of All Risk Factors Combined

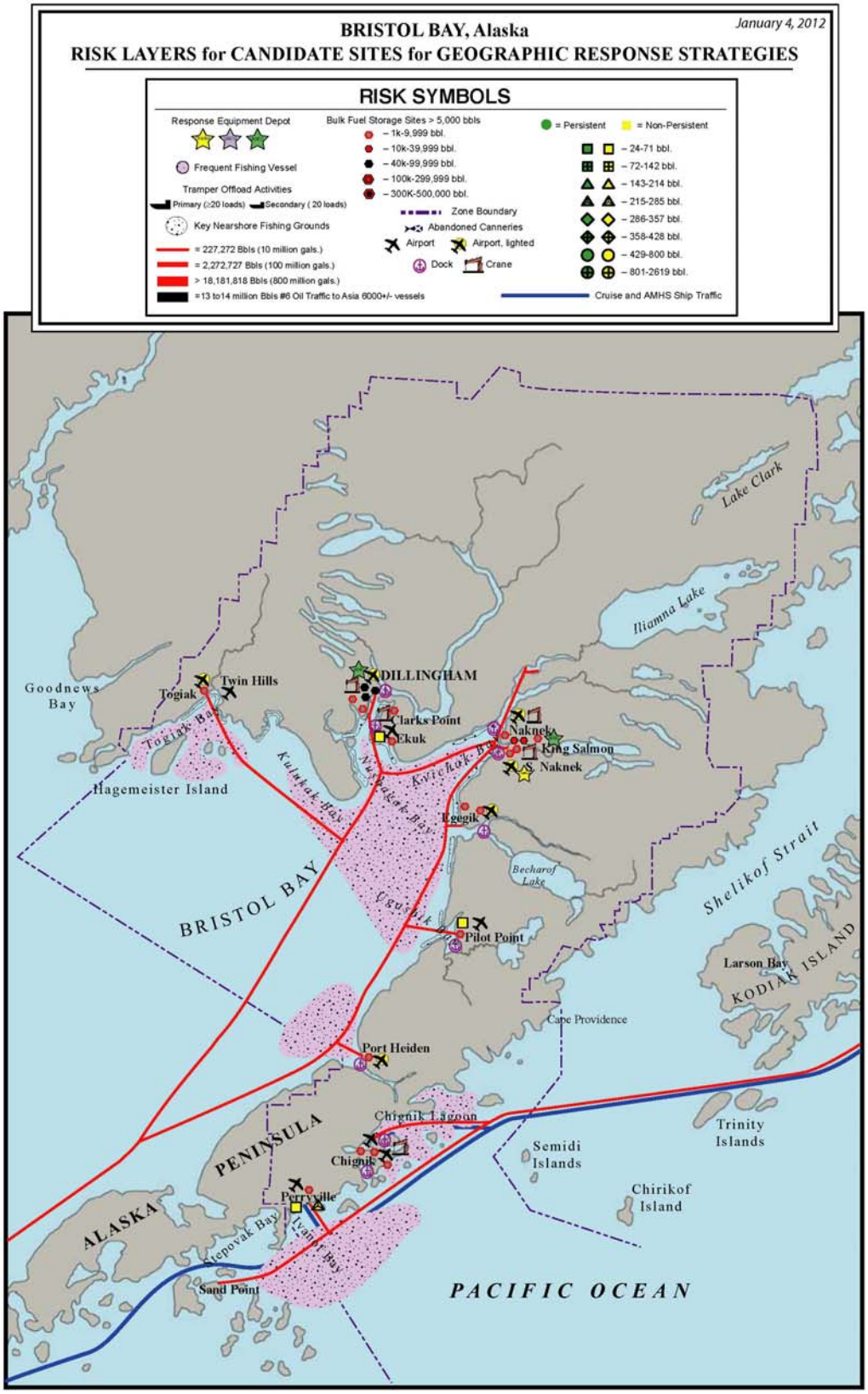
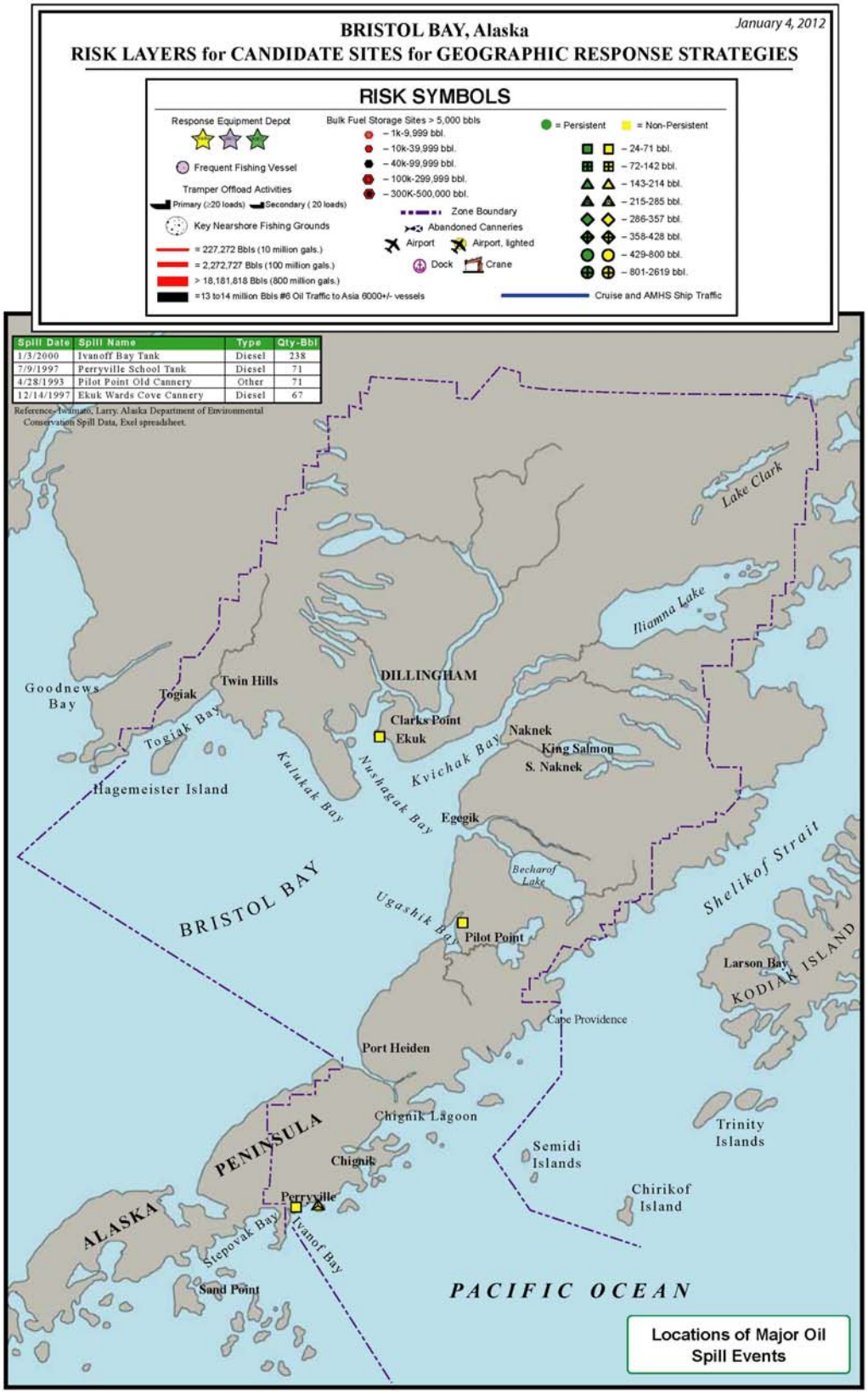


Figure H-2: Locations of Major Oil Spill Events



Spill Date	Spill Name	Type	Qty-Bbl
1/3/2000	Ivanoff Bay Tank	Diesel	238
7/9/1997	Perryville School Tank	Diesel	71
4/28/1993	Pilot Point Old Cannery	Other	71
12/14/1997	Ekuk Wards Cove Cannery	Diesel	67

Figure H-3: Locations of Response Equipment

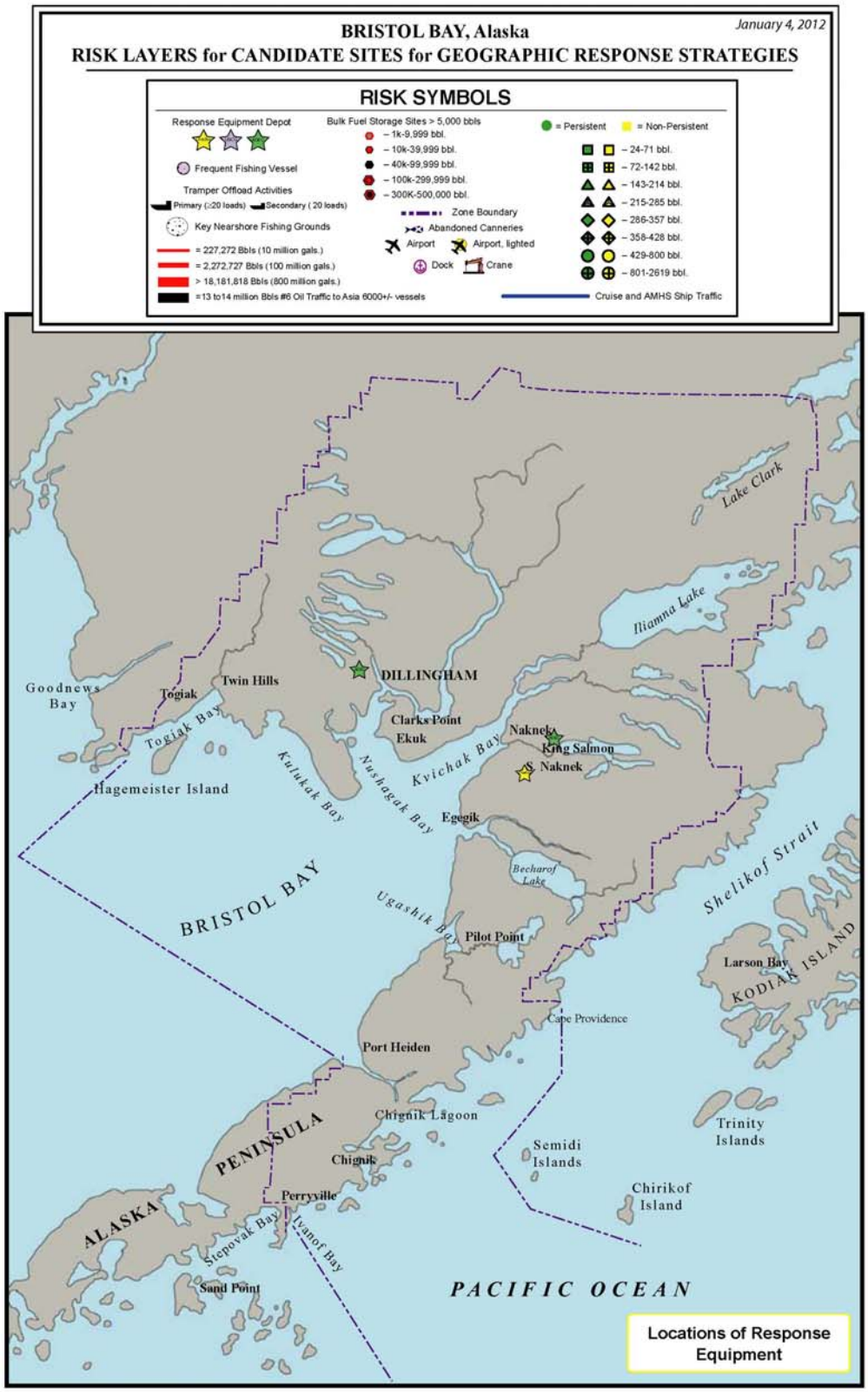


Figure H-4: Locations of Noncrude Carrier Routes

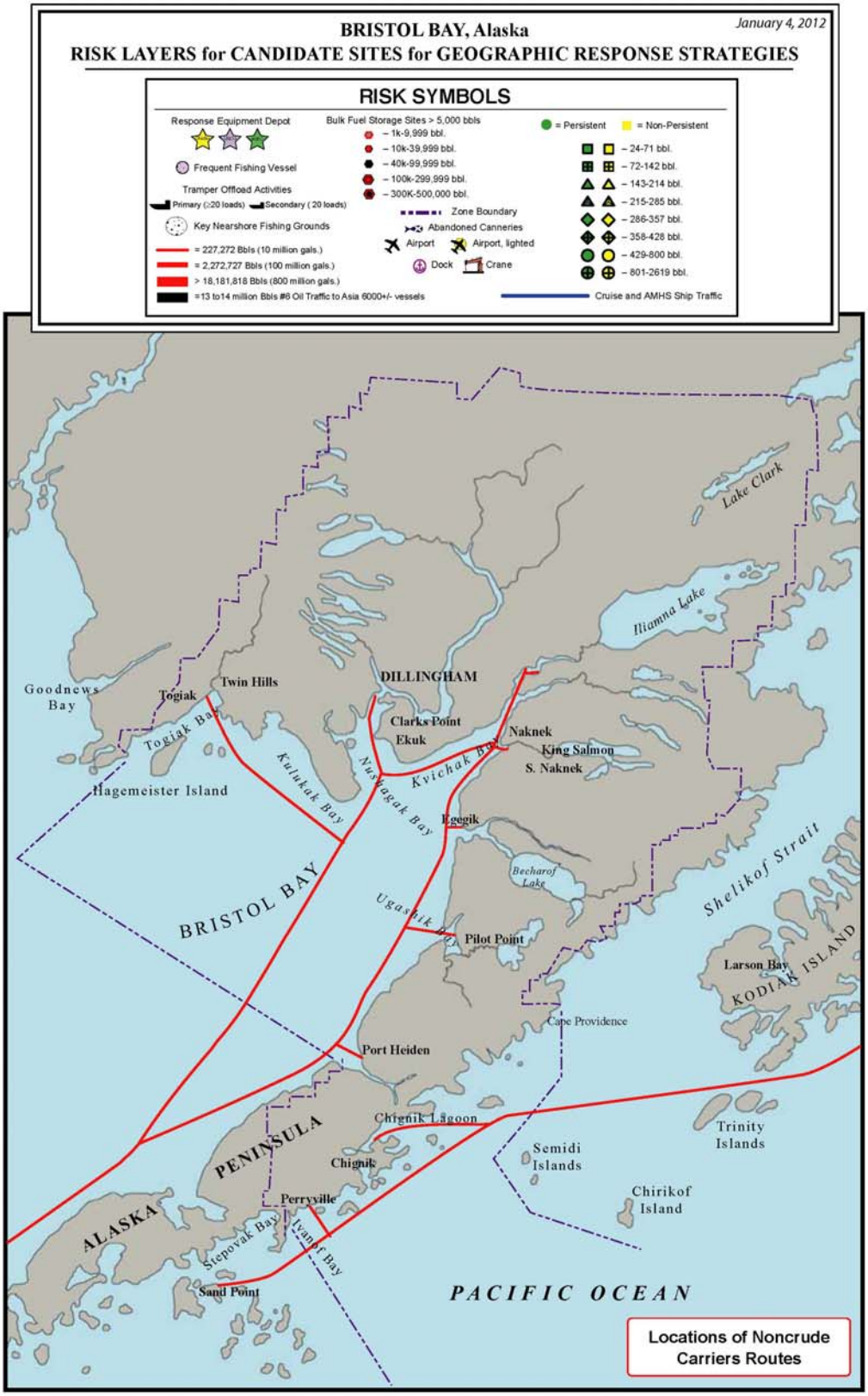
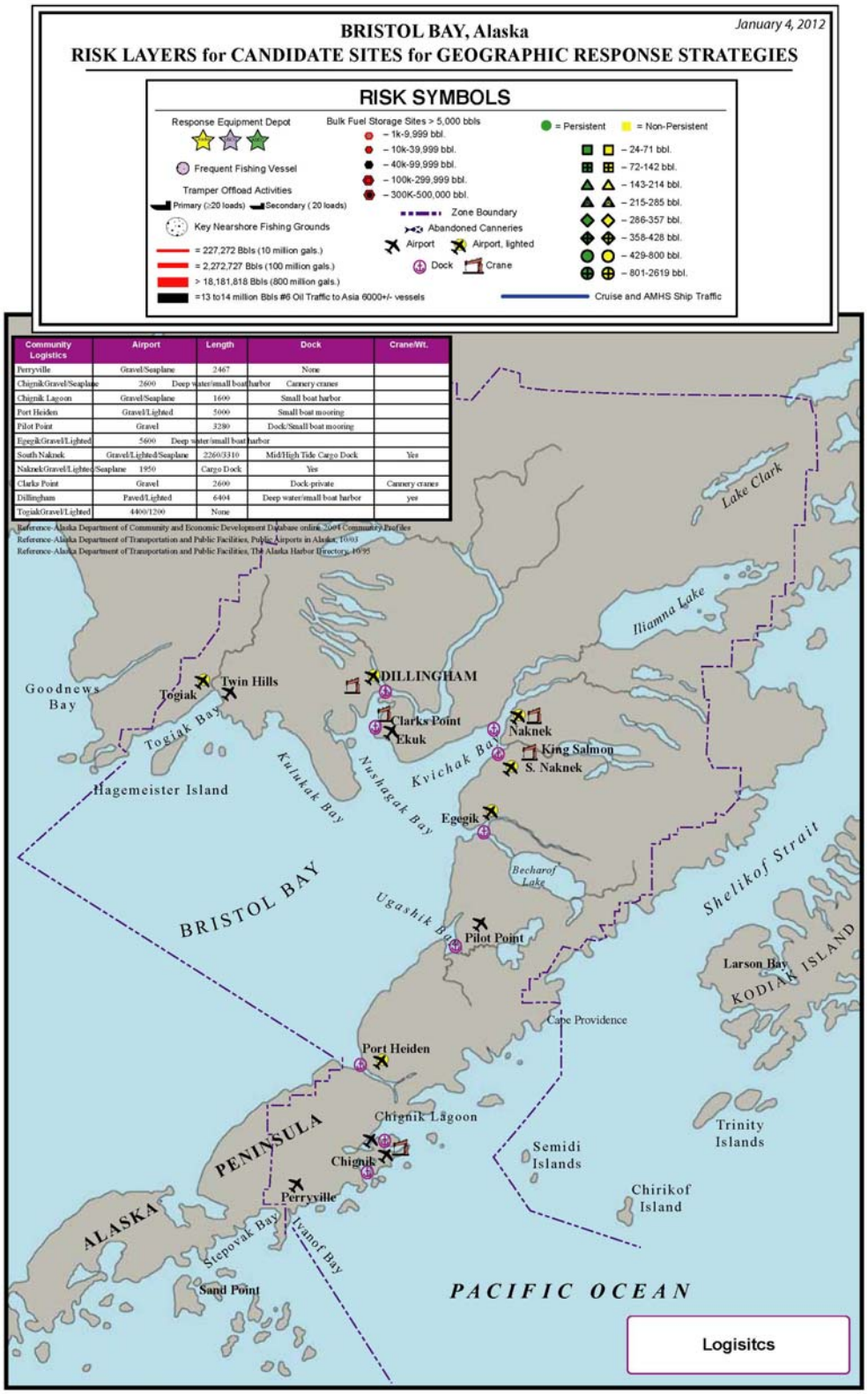


Figure H-5: Logistics



Community Logistics	Airport	Length	Dock	Crane/Wt.
Perryville	Gravel/Seaplane	2467	None	
Chignik/Gravel/Seaplane	2600	Deep water/small boat harbor	Cannery cranes	
Chignik Lagoon	Gravel/Seaplane	1600	Small boat harbor	
Port Heiden	Gravel/Lighted	5000	Small boat mooring	
Pilot Point	Gravel	3280	Dock/Small boat mooring	
Egegik/Gravel/Lighted	5600	Deep water/small boat harbor		
South Naknek	Gravel/Lighted/Seaplane	2260/3310	Mid/High Tide Cargo Dock	Yes
Naknek/Gravel/Lighted/Seaplane	1950	Cargo Dock	Yes	
Clarks Point	Gravel	2600	Dock-private	Cannery cranes
Dillingham	Paved/Lighted	6404	Deep water/small boat harbor	yes
Togiak/Gravel/Lighted	4400/1200	None		

Figure H-6: Locations of Frequent Fishing Vessel Traffic

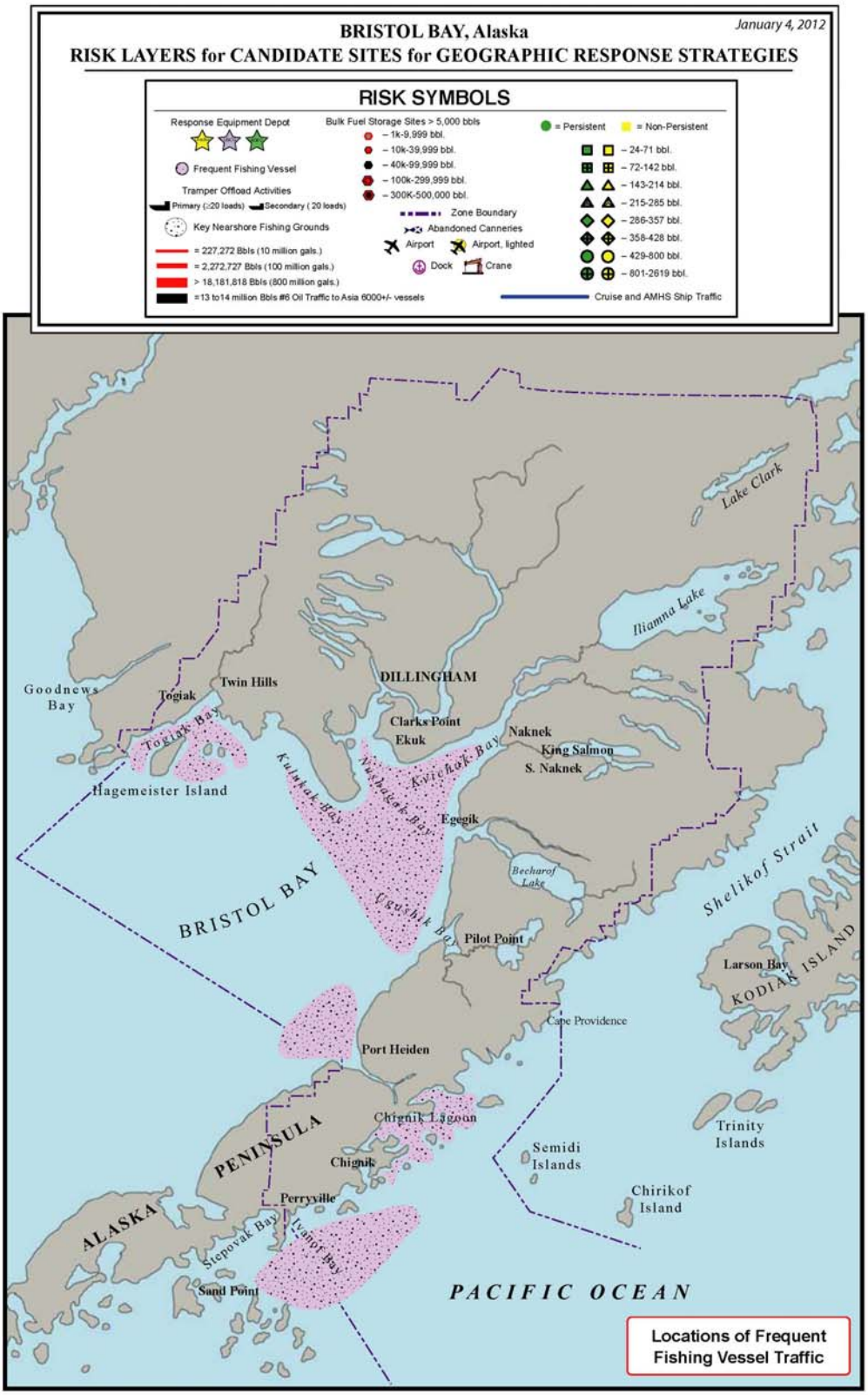


Figure H-7: Locations of Cruise Ship and Ferry Traffic

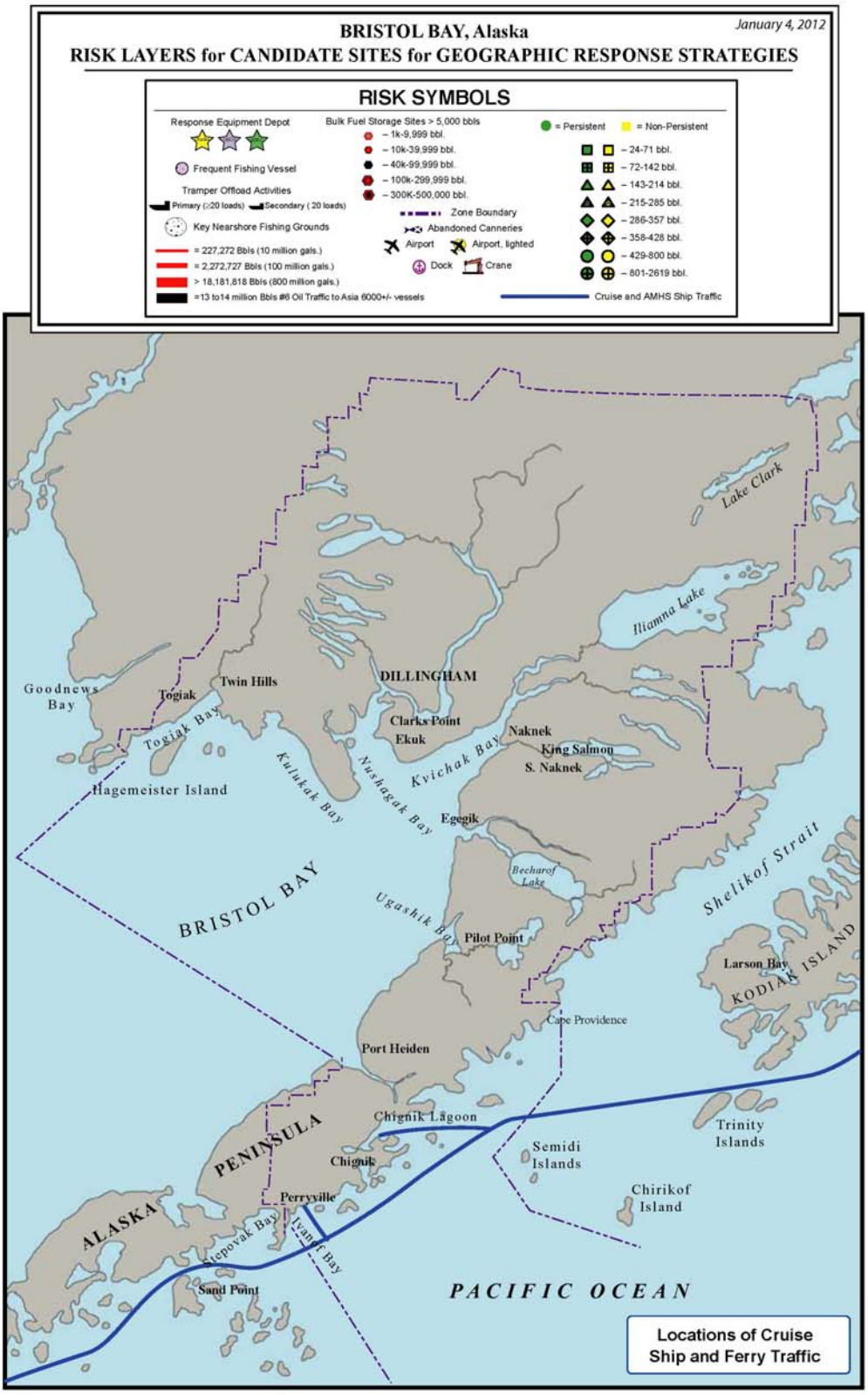
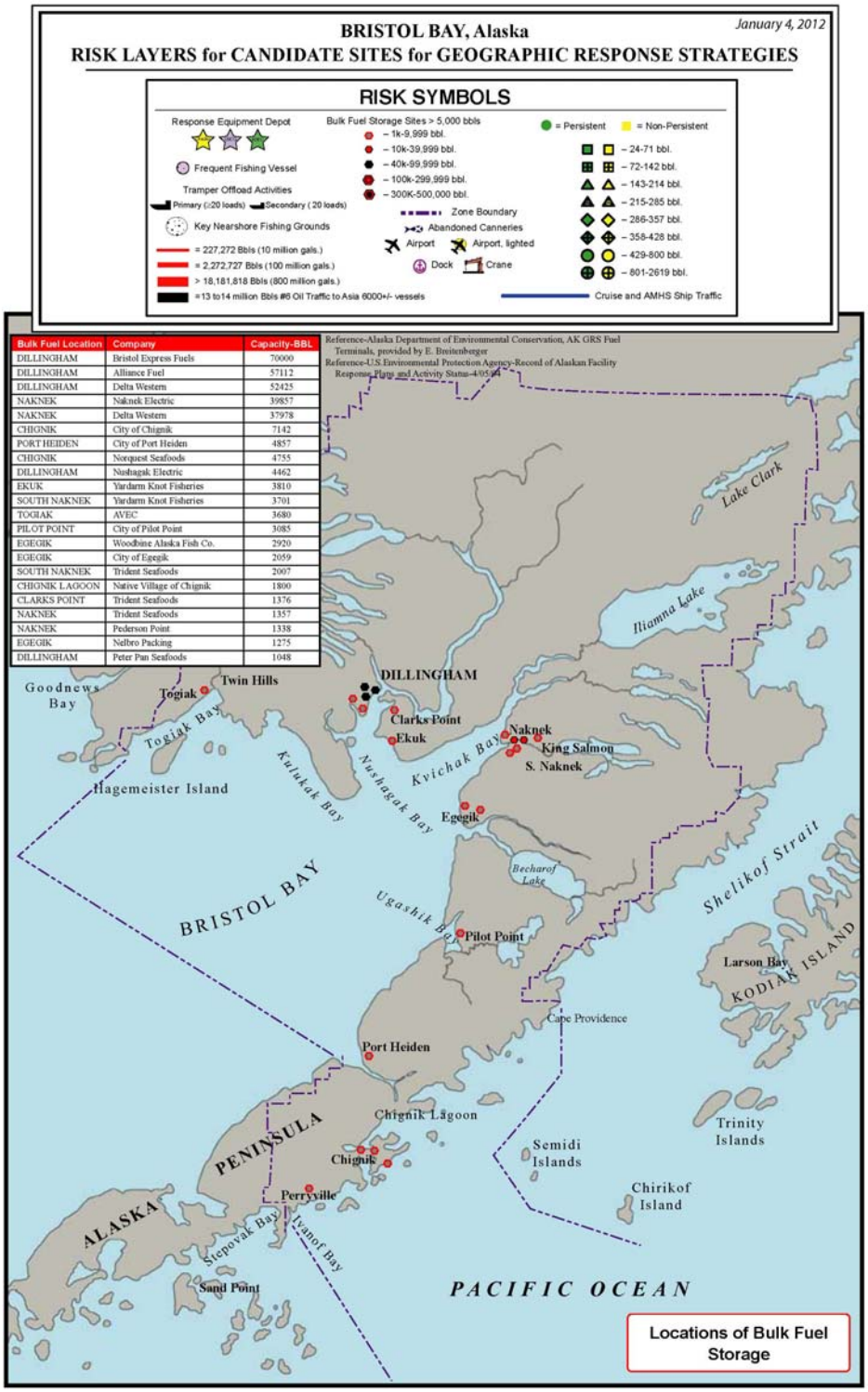


Figure H-8: Locations of Bulk Fuel Storage



Bulk Fuel Location	Company	Capacity-BBL
DILLINGHAM	Bristol Express Fuels	70000
DILLINGHAM	Alliance Fuel	57112
DILLINGHAM	Delta Western	52425
NAKNEK	Naknek Electric	39857
NAKNEK	Delta Western	37978
CHIGNIK	City of Chignik	7142
PORT HEIDEN	City of Port Heiden	4857
CHIGNIK	Norquest Seafoods	4755
DILLINGHAM	Nushagak Electric	4462
EKUK	Yardarm Knot Fisheries	3810
SOUTH NAKNEK	Yardarm Knot Fisheries	3701
TOGIAK	AVEC	3680
PILOT POINT	City of Pilot Point	3085
EGEGIK	Woodbine Alaska Fish Co.	2920
EGEGIK	City of Egegik	2059
SOUTH NAKNEK	Trident Seafoods	2007
CHIGNIK LAGOON	Native Village of Chignik	1800
CLARKS POINT	Trident Seafoods	1376
NAKNEK	Trident Seafoods	1357
NAKNEK	Pederson Point	1338
EGEGIK	Nelbro Packing	1275
DILLINGHAM	Peter Pan Seafoods	1048

Table H-1: Site Assessment Matrix Key

PPOR ID#- Vessel Size	Type of berth	Maximum Vessel Depth	Swing Room	Bottom Type	Exposure	Conflicting Uses	Ability to Boom	Sensitive Resources	Distance via Water to Population Center
DII = Deep Draft Vessels lengths up to 1000 feet, 40-60 feet of draft, greater than 10,000 GT	A= Anchorage	TD=Tidally Dependent	Distance measured to nearest shoal waters or hazard	M= Mud	Exposed to winds/seas from the direction noted	CF=Commercial Fishing	WD=Weather Dependent	E= Threatened or Endangered Species present	T = Togiak
	D/P= Dock or Pier			Rky= Rocky		SF=Sport fishing	Y= Yes	H=Highly Sensitive as designated by the Western Alaska Subarea GRS Workgroup	D=Dillingham
DI = Deep Draft Vessels lengths up to 1000 feet, 20-40 feet of draft, greater than 10,000 GT	M=Mooring		NR=Not restricted/open anchorage where vessel can be moored based on draft.	G= Gravel		AQ= Aquaculture	N = No	CH=Critical Habitat for endangered species	N=Naknek
L= Light Draft Vessel up to 450 feet in length, draft up to 20 feet				Cl= Clay		R=Recreational			P=Perryville
S = A shallow draft vessel less than 300 Gross Tons, has a draft less than 15 ft., LOA less than 200 ft.,				S= Sand		CI=Commercial/ Industrial			C=Chignik
				SH=Shells		A= Anchorage			
				H= Hard		S=Subsistence Activities			
				stk=Sticky		WV=Wildlife Viewing			
				sft=Soft		H=Hunting			
				St=silt					
				Sl=Shale					
				N/A=Not Applicable					
				NI=No Information					

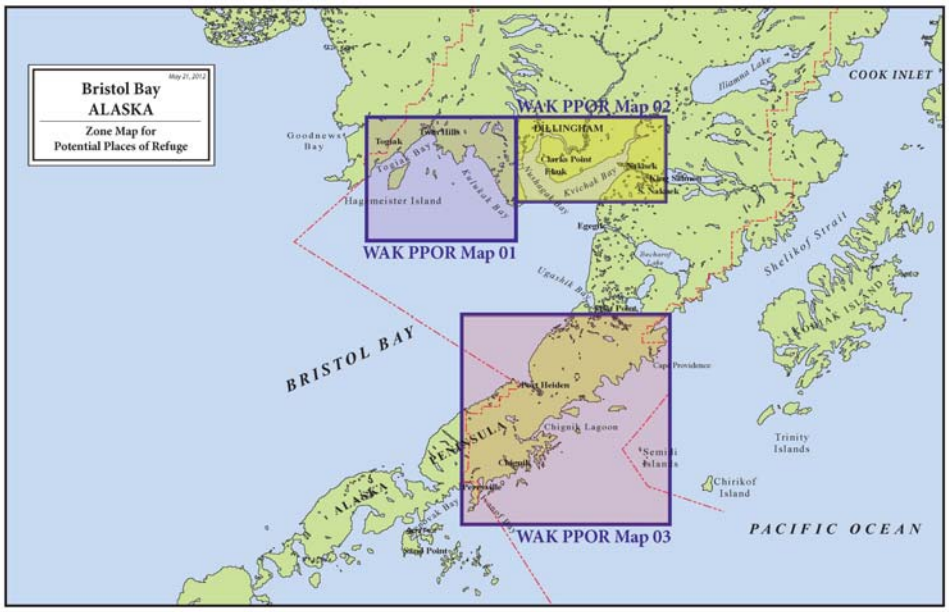
Table H-2: Site Assessment Matrix

PPOR ID# (size-zone numer)	Response Zone #	Type of berth	Location Name	Lat.	Lon.	Max Vessel Depth	Anchoring SwingRoom or Dock Face(w/ Dolphins) in ft.	Depth at dock face in FEET (MLLW)	Depth at Anchorage in Feet	Bottom Type	Exposure to	Conflicting uses	Ability to Boom	Sensitive Resources	Dist. to Population Center(nm)	Dist. To the next Alternative PPOR (nm)
DI-01-01	1	A	Summit Island	58°50.15'N	160°08.16'W	50	1 nm	NA	60	G,S,M	SW	CF	N	E,H,CH	16 to T	100 nm to DII-02-0
L-01-01	1	A	Hagemeister Strait	58°45.35'N	160°51.46'W	25	.2 nm	NA	30	G,S	N, W	S, CF	N	H	20 nm to T	16 nm to L-01-02
L-01-02	1	A	Anchor Point	58°55.34'N	160°20.30'W	30	.17 nm	NA	36	St	S	S, CF	N	E,H,CH	8 nm to T	16 nm to L-01-01
L-02-01	2	A	Clarks Point	58°49.65'N	158°36.77'W	21	.25 nm	NA	26	G	S	S, CF	No	H	13 nm to D	55 nm to L-02-02
L-02-02	2	A	Naknek River	58°43.88'N	157°10.12'W	15	.14 nm	NA	20	S	SW	S, CF	No	H	5 nm to N	55 nm to L-02-01
S-02-01	2	D	Dillingham-Cargo Dock	59°02.22'N	158°27.90'W	TD	208	3	NA	NA		S, CF	Yes		0 nm to D	0.1 nm to S-02-03
S-02-02	2	D	Dillingham-Fuel Terminal	59°02.12'N	158°28.87'W	TD	150	2	NA	NA		S, CF	Yes		0 nm to D	0.5 nm to S-02-03
S-02-03	2	D	Dillingham-Processing Plant	59°02.21'N	158°28.07'W	TD	300	2	NA	NA		S, CF	Yes		0 nm to D	0.1 nm to S-02-01
DII-03-01	3	A	Perryville	55°53.33'N	159°04.18'W	60+	.33 nm	NA	53	M, sty	SE	S, CF	No	E,H	2.7 nm to P	75 nm to DII-03-01
DII-03-02	3	A	Anchorage Bay	56°18.34'N	158°23.68'W	60+	.33 nm	NA	18	M, sft	NE	S, CF	No	E,H	.65 nm to C	50 nm to DII-03-02
DII-03-03	3	A	Aniakchak Bay	56°43.09'N	157°29.47'W	55	1.65 nm	NA	10	M	E, NE	S, CF	No	E,H	50 nm to C	50 nm to DII-03-01
L-03-01	3	D	Chignik Dock-Southern	56°17.95'N	158°23.10'W	30		M	13	NA	N	S, CF	Yes	E,H	0 nm to C	0.1 nm to L-03-01
L-03-02	3	D	Chignik Dock-Southeast	56°17.88'N	158°23.21'W	30		M	13	NA	N	S, CF	Yes	E,H	0 nm to C	0.1 nm to L-03-02

POTENTIAL PLACES OF REFUGE: PART TWO – INDEX & MAPS

Index of PPOR Maps

The Workgroup developed three PPOR Maps within the Bristol Bay Subarea. These maps aid in the site assessment process. These maps are larger in scale, showing a small portion of the Subarea in more detail than the maps in Part One. Each PPOR Map has been assigned an identifying number, which has no relevance other than as a map identifier.



PPOR Maps

Each PPOR Map consists of two parts: 1) a graphic showing a locator map, pictures, and detailed nautical charts showing the location of anchorages, docks, and moorings and other information critical to the selection of a place of refuge; and 2) a series of tables providing site information regarding local site conditions, environmental sensitivities and other considerations.

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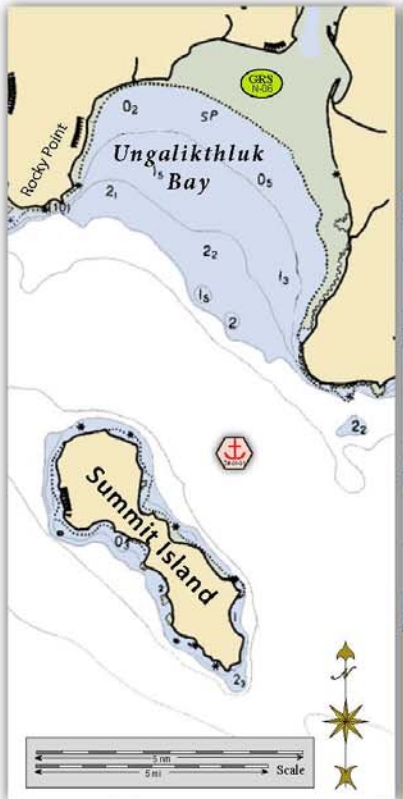
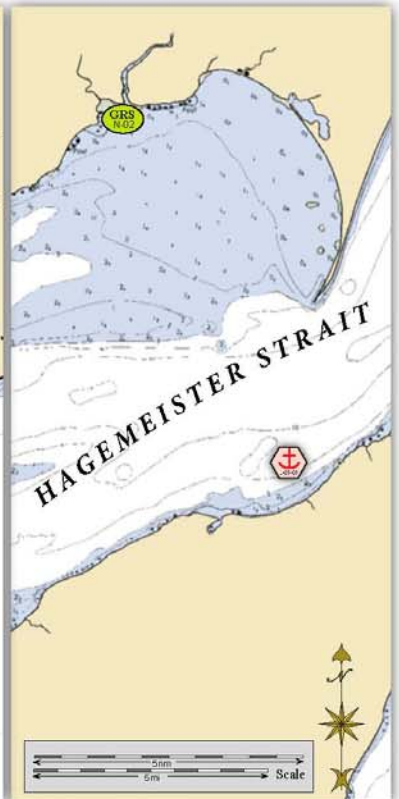


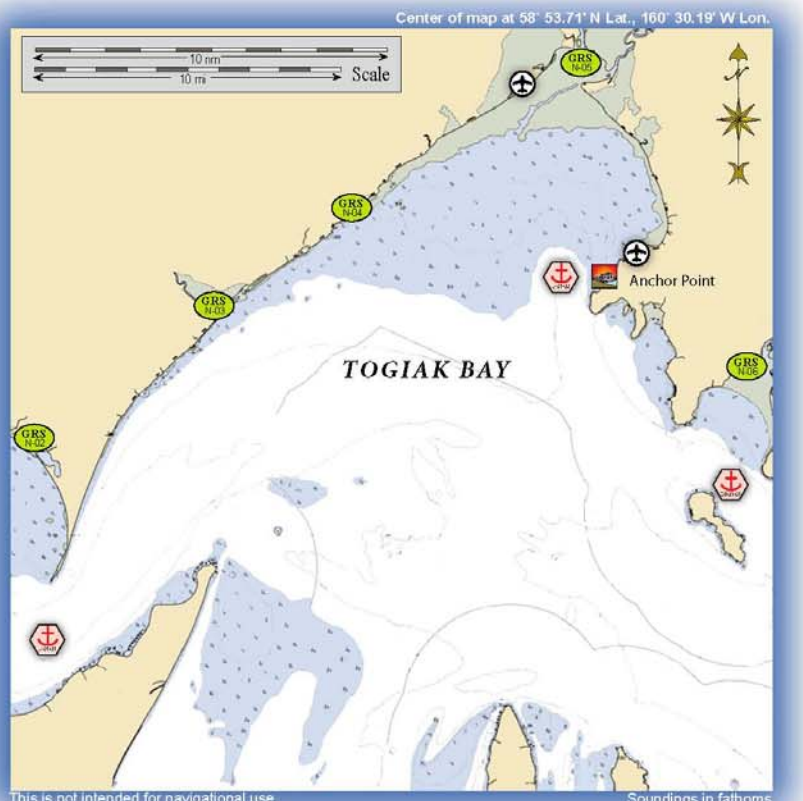
DI-01-01, Summit Island.



L-01-01, Hagemeister Strait.

Stakeholders for PPOR Zone 01 of the Bristol Bay Subarea			
Landowner (year 2012)	*Contact*	*Landowner (year 2012)*	*Contact*
Bureau of Land Management	Dept of the Interior-Regional Environmental Officer	City of Togiak	Mayor
Alaska Maritime National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer	Togiak Natives Limited	President
Alaska Department of Natural Resources	State Historic Preservation Officer	Traditional Village of Togiak	President
Togiak National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer	Twin Hills Native Corporation	President
Native Allotments	Dept of the Interior-Regional Environmental Officer	Twin Hills Village	President
Bristol Bay Native Corporation	President		

Potential Places of Refuge *for Bristol Bay Subarea*



Legend

- Anchorage
- Mooring
- Dock/pier
- Crane
- Airport
- Existing GRS
- Private Cabins
- Public Use Cabins
- Boat Harbor
- Barge Landing

Bristol Bay PPOR

Map 01

USGS 1:1,534,076 Quadrangle Map Reference - Bering Sea Eastern Part 16606_1

NUKA Research & Planning Group, LLC.

Bristol Bay SCP: PPOR, Part One

June 2012

Site Information for Northwest Arctic PPOR Map 01

Physical and Operational Characteristics for PPOR Map 01 of the Northwest Arctic Subarea-Saint Lawrence Island				
	Gambell Anchorage	Savoonga Anchorage	Powooiliak Bay	Manik Lagoon
ID Number	DII-01-01	DII-01-02	DII-01-03	DII-01-04
Location *(In the general area)*	63°40.57'N 171°33.62'W	63°38.41'N 171°34.27'W	63°13.07'N 171°49.88'W	62°59.42'N 169°14.27'W
Maximum Vessel Size	Deep Draft Vessels - lengths to 1000 ft. or greater, 40-60 ft. of draft, greater than 10,000 GT			
Type of Berthing	Anchorage			
Contact	N/A			
Navigational Approach	Approach from N, NE, E	Approach from N, NE	Approach from SW, S, SE	Approach from SW, S, SE, E
Minimum Water Depths *(MLLW)*	8 Fathoms	13 Fathoms	13 Fathoms	12 Fathoms
Maximum Vessel Draft	60 ft.			
Swing Room or Dock Face *(w/ dolphins)*	3 nm to shore	1.3 nm to shore	5 nm to shoal	7 nm to shoal
Bottom Type	Rocky	Mud	Mud, Rocky	Sand, Shells
Nearest Alternative Dock/Piers	168 nm to DII-02-02	143 nm to DII-02-02	190 nm to DII-02-02	132 nm to DII-02-02
Nearest Alternative Anchorage	25 nm to DII-01-02	25 nm to DII-01-01	60 nm to DII-01-04	60 nm to DII-01-03
Prevailing Winds	SW summer / NE winter	October to April N, NE - 17 knots / May to September variable 10 knots (max 34 knots)		
Currents	Current velocity at other places around St. Lawrence Island is generally less than 1 knot	NW 1 knot on flood / E 1.5 knots ebb	Current velocity at other places around St. Lawrence Island is generally less than 1 knot	
Tides	Varies from 1.2 ft. at Niyrakpak Lagoon entrance to 2.4 ft. at NE Cape			
Sea Conditions	9 fathoms with rock bottom 0.5 offshore mile offshore on either side of point.	Taking the area Bering as a whole, the winds are most frequent from N and NE directions from October through May and are variable, with predominating winds from the directions in the S half of the compass during		
Shelter from Severe Storms	Sheltered from S, W winds / Exposed N-E / S-N	Exposed to W, E	Sheltered from N, W winds / Exposed S, E	Sheltered from N, W winds / Exposed S, E
Fog	Bering Sea: sea fog can drop visability to 7 miles or less in midsummer			
Ice	Ice-free July to October			

Site Considerations for PPOR Zone 01 of the Northwest Arctic Subarea-Saint Lawrence Island				
	Gambell Anchorage	Savoonga Anchorage	Powooiliak Bay	Manik Lagoon
ID Number	DII-01-01	DII-01-02	DII-01-03	DII-01-04
Human Health & Safety				
Community-distance to (nm)	Gambell - 7 nm/ pop. 681	Savoonga - 1.3 nm/ pop. 671	Gambell - 50 nm/ pop. 681	Savoonga - 70 nm/ pop. to 671
Health Care Facilities	Bessie A Kaningok Health Clinic: 907-985-5012	Savoonga Clinic: 907-984-3311	Bessie A Kaningok Health Clinic: 907-985-5012	Savoonga Clinic: 907-984-3311
Natural Resources Considerations				
Fish & Wildlife	High density seabird & shorebird nesting, Shorebird migration area, Waterfowl concentrations, Walrus haulout	High density seabird nesting, waterfowl concentrations, walrus haulout	High density seabird & shorebird nesting, Shorebird migration area, Waterfowl concentrations, spotted seals haulout, Polar bears	High density seabird & shorebird nesting, Shorebird migration area, Waterfowl concentrations, spotted seals haulout, Walrus haulout
Threatened & Endangered Species	Walrus (candidate species), Spectacled & Steller's Eiders (threatened)	Spectacled & Steller's Eiders (threatened)	Spectacled & Steller's Eiders (threatened), Polar bears (candidate)	Walrus (candidate species), Spectacled & Steller's Eiders (threatened), Polar bears (threatened)
Sensitive Areas	Not Designated		Spectacled eider critical habitat-winter, Barrier islands designated polar bear critical habitat	
Other Stakeholder Considerations				
Fisheries	Groundfish, Crab			
Historic Properties	Historic Properties are present throughout the area.			
Subsistence	High level of subsistence activities			
Tourism/Recreation	Local recreation			
Waterfront Public Facilities/Parks	None			
Waterfront Private Facilities	None			
Response and Salvage Resource Consideration				
Ability to Boom Vessel	No			
Geographic Response Strategies	Developing (2011)			
Closest Alternative Place of Refuge for same sized vessel	25 to DII-01-02	25 to DII-01-01	60 to DII-01-04	60 to DII-01-03

Site ID Number & Vessel Size Classification

DII = Deep Draft Vessels lengths up to 1000 feet, 40-60 feet of draft, greater than 10,000 GT

DI = Deep Draft Vessels lengths up to 1000 feet, 20-40 feet of draft, greater than 10,000 GT

L= Light Draft Vessel up to 450 feet in length, draft up to 20 feet

S = A shallow draft vessel less than 300 Gross Tons, has a draft less than 15 ft., LOA less than 200 ft

NOTE: Sensitive resource information can be found on other maps which can be accessed through the sensitive area section of the Northwest Arctic Subarea Contingency Plan: http://dec.alaska.gov/spar/perp/plans/scp_nwa.htm

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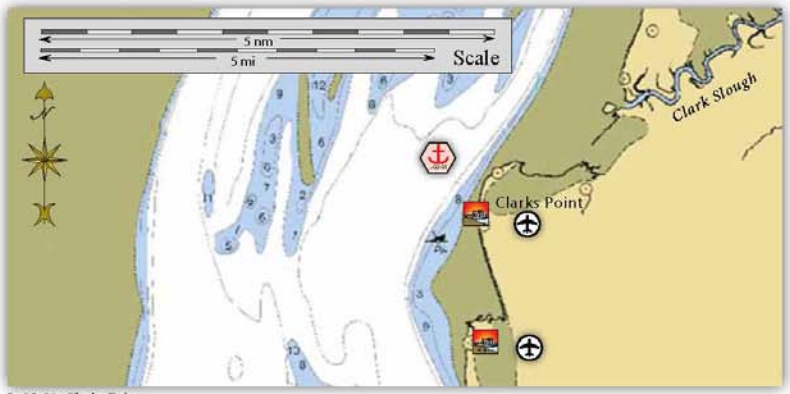
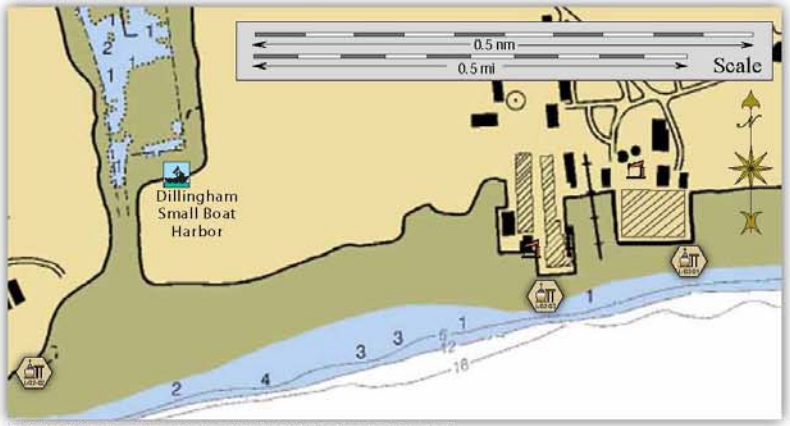


L-02-01, Clarks Point.



S-02-01, Dillingham Cargo Dock and S-02-02, Dillingham Fuel Terminal.

Stakeholders for PPOR Zone 02 of the Bristol Bay Subarea			
Landowners (year-2012)	*Contact*	*Landowners (year-2012)*	*Contact*
Curyung Tribal Council	First Chief	Bristol Bay Borough	Mayor
Choggiung Limited	President	Bristol Bay Native Corporation	President / CEO
City of Dillingham	Manager	Bureau of Land Management	Dept of the Interior-Regional Environmental Officer
City of Naknek	Village Coordinator	Alaska Department of Natural Resources	State Historic Preservation Officer
Naknek Native Village	President	Native Allotments	Dept of the Interior-Regional Environmental Officer
Paug-Vik Incorporated, Limited	President	Togiak National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer

Potential Places of Refuge *for Bristol Bay Subarea*

Legend

- Anchorage
- Mooring
- Dock/pier
- Crane
- Airport
- GRS Site
- Private Cabins
- Public Use Cabins
- Boat Harbor
- Barge Landing

Bristol Bay PPOR

Map 02

USGS 1:1,534,076 Quadrangle Map Reference - Bering Sea Eastern Part 16606_1

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Bristol Bay SCP: PPOR, Part One

June 2012

Site Information for Bristol Bay PPOR Map 02

Site Considerations for PPOR Zone 02 of the Bristol Bay Subarea					
	Clarks Point	Naknek River	Dillingham-Cargo Dock	Dillingham-Fuel Terminal	Dillingham-Processing Plant
ID Number	L-02-01	L-02-02	S-02-01	S-02-02	S-02-03
Human Health & Safety					
Community-distance to (nm)	Dillingham - 13 nm / pop. 2,376	Naknek - 5 nm / pop. 571	Dillingham - 0.0 nm / pop. 2,376		
Health Care Facilities	Kanakanak Hospital Public Health Services: 907-842-5201 / Dillingham Volunteer Fire & Rescue: 907-842-2288 / 5354	Camai Community Health Center: 907-246-4214 / Bristol Bay Borough Fire Department: 907-246-4222 / 4224	Kanakanak Hospital Public Health Services: 907-842-5201 / Dillingham Volunteer Fire & Rescue: 907-842-2288 / 5354		
Natural Resources Considerations					
Fish & Wildlife	Waterfowl concentration,shorebird concentrations, anadromous fish	Waterfowl concentration,shorebird concentrations, anadromous fish, seal haulouts	Waterfowl concentration,shorebird concentrations, anadromous fish		
Threatened & Endangered Species	None				
Sensitive Areas	None designated				
Other Stakeholder Considerations					
Fisheries	Salmon				
Historic Properties	Historic properties are present throughout the area.				
Subsistence	High level of subsistence activity.				
Tourism/Recreation	Seasonal tourism and local recreation.				
Waterfront Public Facilities/Parks	Togiak National Wildlife Refuge		Togiak National Wildlife Refuge, Port of Dillingham		
Waterfront Private Facilities	Decommissioned cannery wharf	Cannery facilities in river	Seafood processing facilities, fuel terminal		
Response and Salvage Resource Consideration					
Ability to Boom Vessel	No	Weather dependent			
Geographic Response Strategies	None	N-11	None		
Closest Alternative Place of Refuge for same sized vessel	55 nm to L-02-02	55 nm to L-02-01	0.1 nm to S-02-03	0.5 nm to S-02-03	0.1 nm to S-02-01

Site ID Number & Vessel Size Classification
DII = Deep Draft Vessels lengths up to 1000 feet, 40-60 feet of draft, greater than 10,000 GT
DI = Deep Draft Vessels lengths up to 1000 feet, 20-40 feet of draft, greater than 10,000 GT
L= Light Draft Vessel up to 450 feet in length, draft up to 20 feet
S = A shallow draft vessel less than 300 Gross Tons, has a draft less than 15 ft., LOA less than 200 ft

Physical and Operational Characteristics for PPOR Zone 2 of the Bristol Bay Subarea					
	Clarks Point	Naknek River	Dillingham-Cargo Dock	Dillingham-Fuel Terminal	Dillingham-Processing Plant
ID Number	L-02-01	L-02-02	S-02-01	S-02-02	S-02-03
Location *(In the general area)*	58°49.65'N 158°36.77'W	58°43.88'N 157°10.12'W	59°02.22'N 158°27.90'W	59° 02.12'N 158° 28.87'W	59° 02.21'N 158° 28.07'W
Maximum Vessel Size	Light Draft Vessels - up to 450 ft. in length, up to 20 ft. draft		Shallow Draft Vessels are less than 300 gross tons and have drafts less than 15 ft.		
Type of Berthing	Anchorage		Dock		
Contact	N/A		907.842.5516	907.842.5955	907.842.5992
Navigational Approach	Approach from the S	Approach from the SW	Approach via marked channel		
Minimum Water Depths *(MLLW)*	26 ft.	20 ft.	3 ft. (tidally dependent for deeper draft)		2 ft. (tidally dependent for deeper draft)
Maximum Vessel Draft	21 ft.	15 ft.	Tidally dependent		
Swing Room or Dock Face *(w/ dolphins)*	0.25 nm to shoal	0.14 nm to shoal	208 ft.	150 ft.	300 ft.
Bottom Type	Mud	Sand	N/A		
Nearest Alternative Dock/Piers	13 nm to S-02-03 (shallow draft vessel)	0.39 nm to Naknek (shallow draft)	0.1 to S-02-03	0.5 to S-02-03	0.1 to S-02-01
Nearest Alternative Anchorage	55 nm to L-02-02B	55 nm to L-02-01B	15 nm to L-02-01B	15 nm to L-02-01B	15 nm to L-02-01B
Prevailing Winds	During June, July, and August, winds are out of the S through SW about 40 percent of the time, at average speeds of 8 to 10 knots. Storms entering Bristol Bay funnel wind into bays and passes creating locally intense winds of significant force.				
Currents	Currents up to 4 knots on ebb and flood and are influenced by the river flow and continuous winds.	Currents up to 2.5 knots at the anchorage.	Currents up to 4 knots on ebb and flood and are influenced by the river flow and continuous winds.		
Tides	Mean High 17.8 ft. (Higher 19.5) Mean Low 2.5 (Lower -5.0)	Mean High 20.7 ft. (Higher 22.6) Mean Low 2.2 (Lower -2.0)	Mean High 18.0 ft. (Higher 19.8) Mean Low 2.1 (Lower -5.0)		
Sea Conditions	Exposed to southerly swell	Sheltered from storms from the W to the S.	Protected from extreme sea conditions		
Shelter from Severe Storms	Exposed to S	Exposed to SW	Sheltered from most storms		
Fog	Fog sometimes sets in from the sea, but there is little fog during the summer.				
Ice	Ice present from November to April but is broken and drifts with the current and wind.				

NOTE: Sensitive resource information can be found on other maps which can be accessed through the sensitive area section of the Bristol Bay Subarea Contingency Plan: http://dec.alaska.gov/spar/perp/plans/scp_bb.htm

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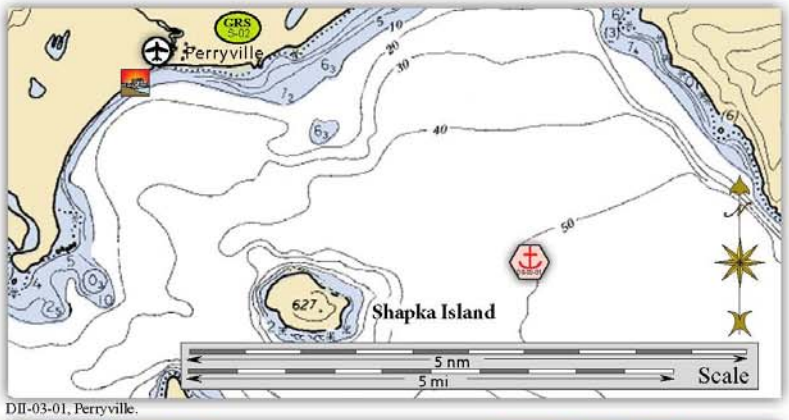
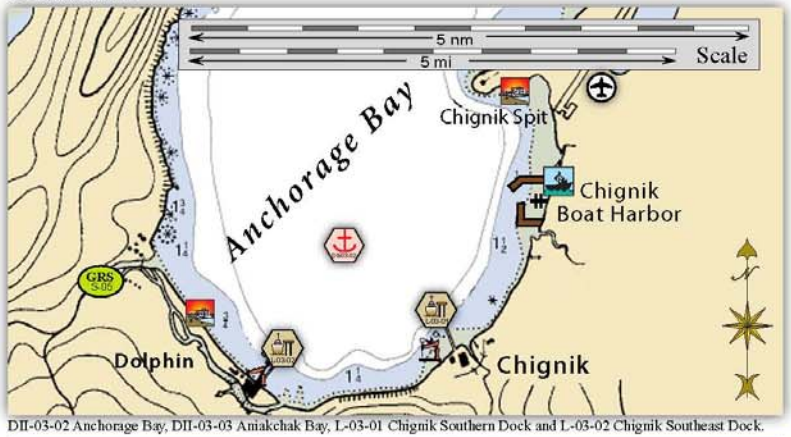


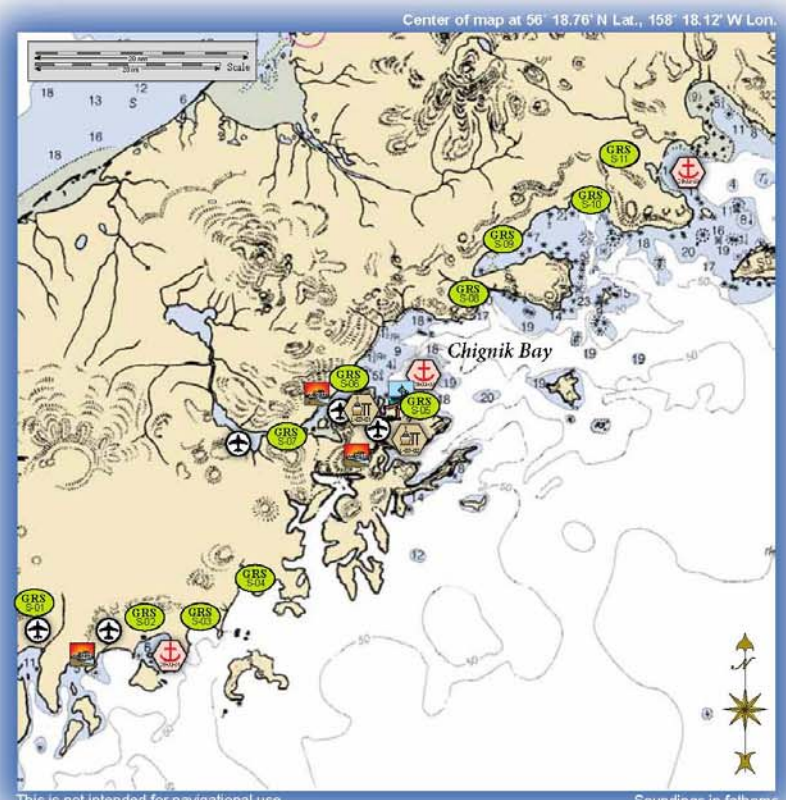
DII-03-01, Perryville.



DII-03-02 Anchorage Bay, DII-03-03 Aniakchak Bay, L-03-01 Chignik Southern Dock and L-03-02 Chignik Southeast Dock.

Stakeholders for PPOR Zone 03 of the Bristol Bay Subarea			
Landowners (year-2012)	*Contact*	*Landowners (year-2012)*	*Contact*
Lake and Peninsula Borough	Mayor	Village of Ivanof Bay	President
Bristol Bay Native Corporation	President	Alaska Peninsula National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer
Native Village of Perryville	President	Aniakchak National Monument and Preserve	Dept of the Interior-Regional Environmental Officer
Oceanside Corporation	President	Bureau of Land Management	Dept of the Interior-Regional Environmental Officer
City of Chignik	Mayor	Alaska Maritime National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer
Chignik Bay Tribal Council	President	Alaska Department of Natural Resources	State Historic Preservation Officer
Far West Incorporated	President	Native Allotments	Dept of the Interior-Regional Environmental Officer
Bay View Inc.	President		

Potential Places of Refuge *for Bristol Bay Subarea*



Legend

- Anchorage
- Mooring
- Dock/pier
- Crane
- Airport
- GRS Site
- Private Cabins
- Public Use Cabins
- Boat Harbor
- Barge Landing

Bristol Bay PPOR

Map 03

USGS 1:1,534,076 Quadrangle Map Reference - Bering Sea Eastern Part 16606_1

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Site Information for Bristol Bay PPOR Map 03

Site Considerations for PPOR Zone 03 of the Bristol Bay Subarea					
	Perryville	Anchorage Bay	Aniakchak Bay	Chignik Dock	Chignik Dock
ID Number	DII-03-01	DII-03-02	DII-03-03	L-03-01	L-03-02
Human Health & Safety					
Community-distance to (nm)	Perryville - 2.7 nm / pop. 130	Chignik - 0.65 nm / pop. 102	Chignik - 50 nm / pop. 102	Chignik - 0.0 nm / pop. 102	
Health Care Facilities	Emilin Health Clinic (Perryville): 907-853-2202 / Perryville First Responders: 907-853-2262	Chignik Bay Sub-Regional Health Clinic: 907-749-2282 / Chignik Bay Fire & Rescue: 907-749-2207	Chignik Bay Sub-Regional Health Clinic: 907-749-2282 / Chignik Bay Fire & Rescue: 907-749-2207		
Natural Resources Considerations					
Fish & Wildlife	Seabird concentration, waterfowl concentration, anadromous fish, otters				
Threatened & Endangered Species	Steller's Eider and sea otters are present.				
Sensitive Areas	None				
Other Stakeholder Considerations					
Fisheries	Salmon / Herring				
Historic Properties	Historic properties are present throughout the area.				
Subsistence	High level of subsistence activity		Low level subsistence activity	High level of subsistence activity	
Tourism/Recreation	Local recreation	Local recreation, seasonal tourism	Seasonal tourism	Local recreation, seasonal tourism	
Waterfront Public Facilities/Parks	None	Small boat harbor	Aniakchak National Monument and Preserve/None	Small boat harbor	
Waterfront Private Facilities	None	Seafood processing facility	None	Docks are privately owned	
Response and Salvage Resource Consideration					
Ability to Boom Vessel	No			Yes	
Geographic Response Strategies	S-03	S-05	S-11	S-05	
Closest Alternative Place of Refuge for same sized vessel	65 nm to DII-03-01	65 nm to DII-03-01	52 nm to L-03-01	0.1 nm to L-03-02	01. nm to L-03-01

Site ID Number & Vessel Size Classification
DII = Deep Draft Vessels lengths up to 1000 feet, 40-60 feet of draft, greater than 10,000 GT
DI = Deep Draft Vessels lengths up to 1000 feet, 20-40 feet of draft, greater than 10,000 GT
L= Light Draft Vessel up to 450 feet in length, draft up to 20 feet
S = A shallow draft vessel less than 300 Gross Tons, has a draft less than 15 ft., LOA less than 200 ft

Physical and Operational Characteristics for PPOR Zone 03 of the Bristol Bay Subarea					
	Perryville	Anchorage Bay	Aniakchak Bay	Chignik- Southern Dock	Chignik- Southeast Dock
ID Number	DII-03-01	DII-03-02	DII-03-03	L-03-01	L-03-02
Location *(In the general area)*	55°53.33'N 159°04.18'W	56°18.34'N 158°23.68'W	56°43.09'N 157°29.47'W	56°17.95'N 158°23.10'W	56°17.88'N 158°23.21'W
Maximum Vessel Size	Deep Draft Vessels-lengths to 1000 ft. or greater, 40-60 ft. of draft, greater than 10,000 GT			Deep Draft Vessels-lengths to 1000 ft. or greater, 20-40 ft. of draft, greater than 10,000 GT	
Type of Berthing	Anchorage			Dock	
Contact	N/A				
Navigational Approach	Approach from the S	Approach from the NE	Approach from the W	Approach from the N	Approach from the NW
Minimum Water Depths *(MLLW)*	52 Fathoms	18 Fathoms	16 Fathoms	33 ft. reported at dock face	
Maximum Vessel Draft	60 ft.	60 ft.	55 ft.	30 ft.	
Swing Room or Dock Face *(w/ dolphins)*	0.33 nm to shoal	0.33 nm to shoal	1.65 nm to shoal	N/A	
Bottom Type	Mud/ sticky	Mud/ soft	Mud	N/A	
Nearest Alternative Dock/Piers	75 nm to L-03-02	0.5 nm to L-03-02	52 nm to L-03-02	0.1 nm to L-03-02	0.1 nm to L-03-01
Nearest Alternative Anchorage	65 nm to DII-03-02	52 nm to DII-03-03	52 nm to DII-03-02	0.1 nm to DII-03-02	0.1 nm to DII-03-02
Prevailing Winds	Winter-northerly & southeasterly. Summer-westerly & southwesterly. Winds funneling through the bays and passes create dangerously high winds.				
Currents	Alaska Coastal current moves westerly offshore at 1-1.5 knots.				
Tides	Mean High 7.0 ft. (Higher 7.8) Mean Low 1.4 (Lower -3.5)	Mean High 8.1 ft. (Higher 8.9) Mean Low 1.4 (Lower -4.0)	Mean High 11.1 ft. (Higher 11.9) Mean Low 1.3 (Lower -4.0)	Mean High 8.1 ft. (Higher 8.9) Mean Low 1.4 (Lower -4.0)	
Sea Conditions	SW swell predominates throughout the year. It is generally gentle except when driven by southerly storms				
Shelter from Severe Storms	Exposed to S	Exposed to NE	Exposed to W, SW	Sheltered from most storms	
Fog	Fog is common in all seasons				
Ice	Ice may form in bays December-March				

NOTE: Sensitive resource information can be found on other maps which can be accessed through the sensitive area section of the Bristol Bay Subarea Contingency Plan: http://dec.alaska.gov/spar/perp/plans/scp_bb.htm

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POTENTIAL PLACES OF REFUGE: PART THREE – REFERENCES

Alaska Regional Response Team. October 2004. Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases, Annex O, Guidelines for Places of Refuge Decision-Making.

Dept of Commerce - National Oceanic & Atmospheric Administration (NOAA), National Ocean Survey can provide detailed hydrographic charts of PPOR locations upon request. Contact Dave Neander, Dave.Neander@noaa.gov, (206) 526-6949, NOAA/ORR, 7600 Sand Point Way, NE, Seattle, WA 98115.

Useful Websites

The "Guidelines for Places of Refuge Decision-Making" Annex O of the Unified Plan
http://dec.alaska.gov/spar/perp/plans/uc/Annex%20O%20(Jan%2010).pdf)

Alaska Dept. of Environmental Conservation, Bristol Bay GRS Information
http://www.dec.state.ak.us/spar/perp/grs/bb/home.htm

Alaska Dept. of Environmental Conservation, Bristol Bay Subarea Contingency Plan.
http://www.dec.state.ak.us/spar/perp/plans/scp_bb.htm

Alaska Dept. of Natural Resources. Bristol Bay Public Access Atlas.
http://www.dnr.state.ak.us/mlw/planning/easmtatlas/

Alaska Dept. of Natural Resources, Bristol Bay Subarea maps including, general maps, land use and
management maps, biologically sensitive area maps, most environmentally sensitive area maps, environmentally sensitive index maps, and geographic response strategies.
http://www.asgdc.state.ak.us/maps/cplans/subareas.html#bristol

U.S Bureau of Land Management. Alaska Land Information System.
http://www.ak.blm.gov/alis/

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