

**WESTERN ALASKA
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 Western Alaska Subarea Contingency Plan for Oil and Hazardous Substances Spills and Releases, commonly referred to as the Western Alaska 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 Western Alaska 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 Western Alaska.

The Western Alaska Subarea has over a thousand miles of environmentally sensitive coastline. In addition to sensitive shoreline habitats such as marshes, sheltered tidal flats, and exposed tidal flats, Western Alaska 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.

The Western Alaska Subarea is used for limited marine commerce. Primarily this commerce has been directed to resupplying the communities and industry during the ice-free period of the summer and fall months. 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 Western Alaska may become more routine.

Western Alaska is a unique operating environment, with limited infrastructure, few protected anchorages, extreme weather, and shallow waters that extend many miles offshore. 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 cruise ships, cannot be taken to most locations in

the subarea and would have to be anchored far offshore. 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 with drafts of 40-60 feet. The predominant deep draft vessels that may operate in Western Alaska 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 with drafts of 20-40 feet. The predominant deep draft vessels of this type that may operate in Western Alaska 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, and ocean-going tugs are the most common light draft vessels operating in Western Alaska.

Shallow Draft Vessels are less than 300 gross tons and have drafts less than 15 ft. 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. The shallow draft sites have been 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 Western Alaska 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
- 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 Administration
- Association of Village Council Presidents
- City of Bethel
- Orutsararmuit Native Council
- Kuskokwim River Watershed Council
- City of Hooper Bay
- The Village of Hooper Bay
- Sea Lion Corporation

First Step: Risk Identification

The first step of the PPOR process identified candidate sites (anchorage, moorings, docks/piers,) within the Western Alaska 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 bulk fuel facilities and pipelines (Figure H-2);
- Location of noncrude carrier routes (Figure H-3);
- Locations of communities with spill response agreements, spill response hubs and equipment depots (Figure H-4);
- Locations of major airports (Figure H-5);
- Locations of marine casualty events (Figure H-6)
- Locations of subsistence and nearshore fisheries (Figure H-7)

Second Step: Feasibility

The second step led to the identification of 16 PPOR sites within the Western Alaska Subarea. 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 Western Alaska Subarea.

[http://dec.alaska.gov/spar/perp/plans/uc/Annex%20O%20\(Jan%2010\).pdf](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 Western Alaska Subarea. An index map (Figure hold for final document) 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

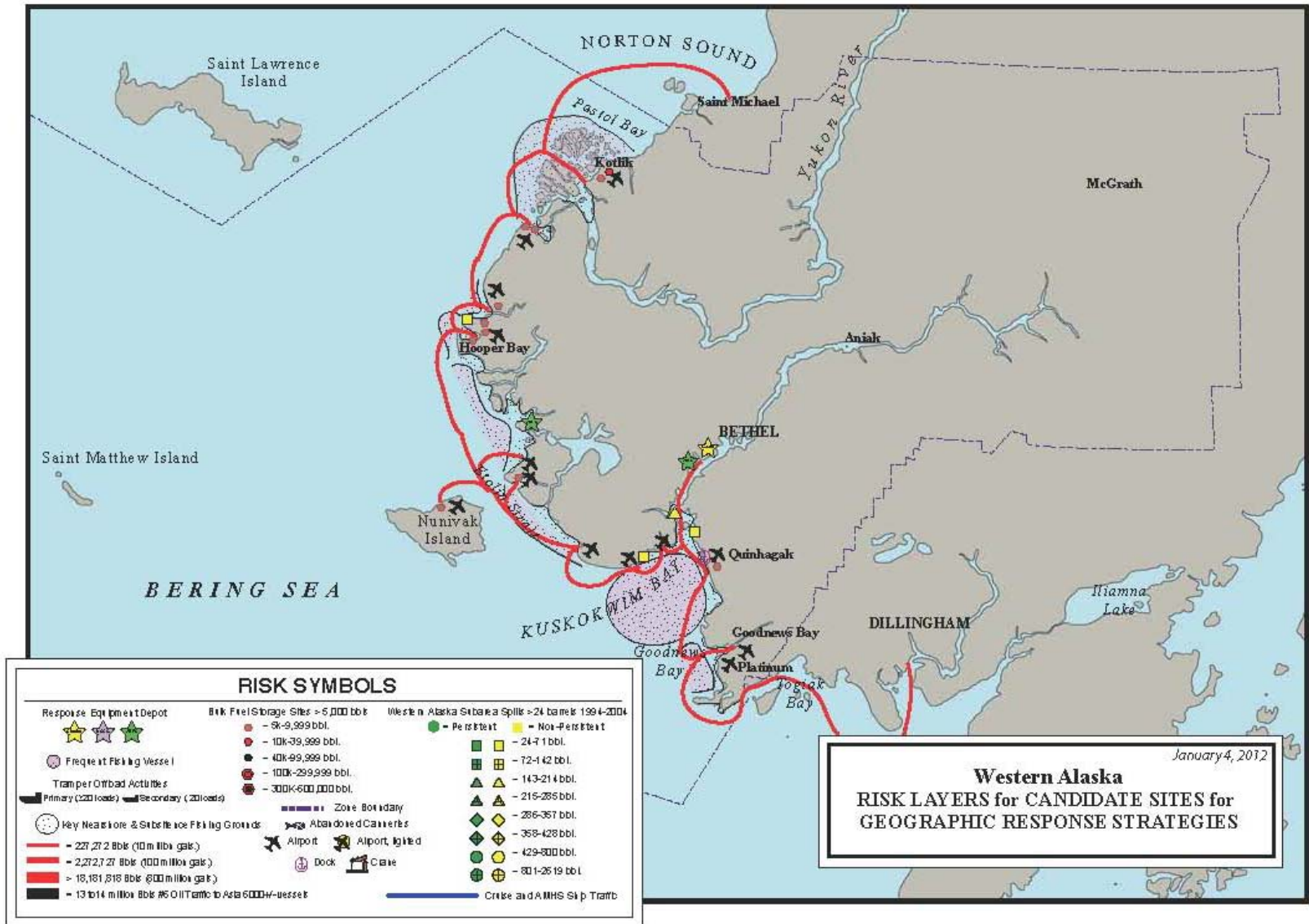


Figure H-2: Locations of Major Oil Spill Events

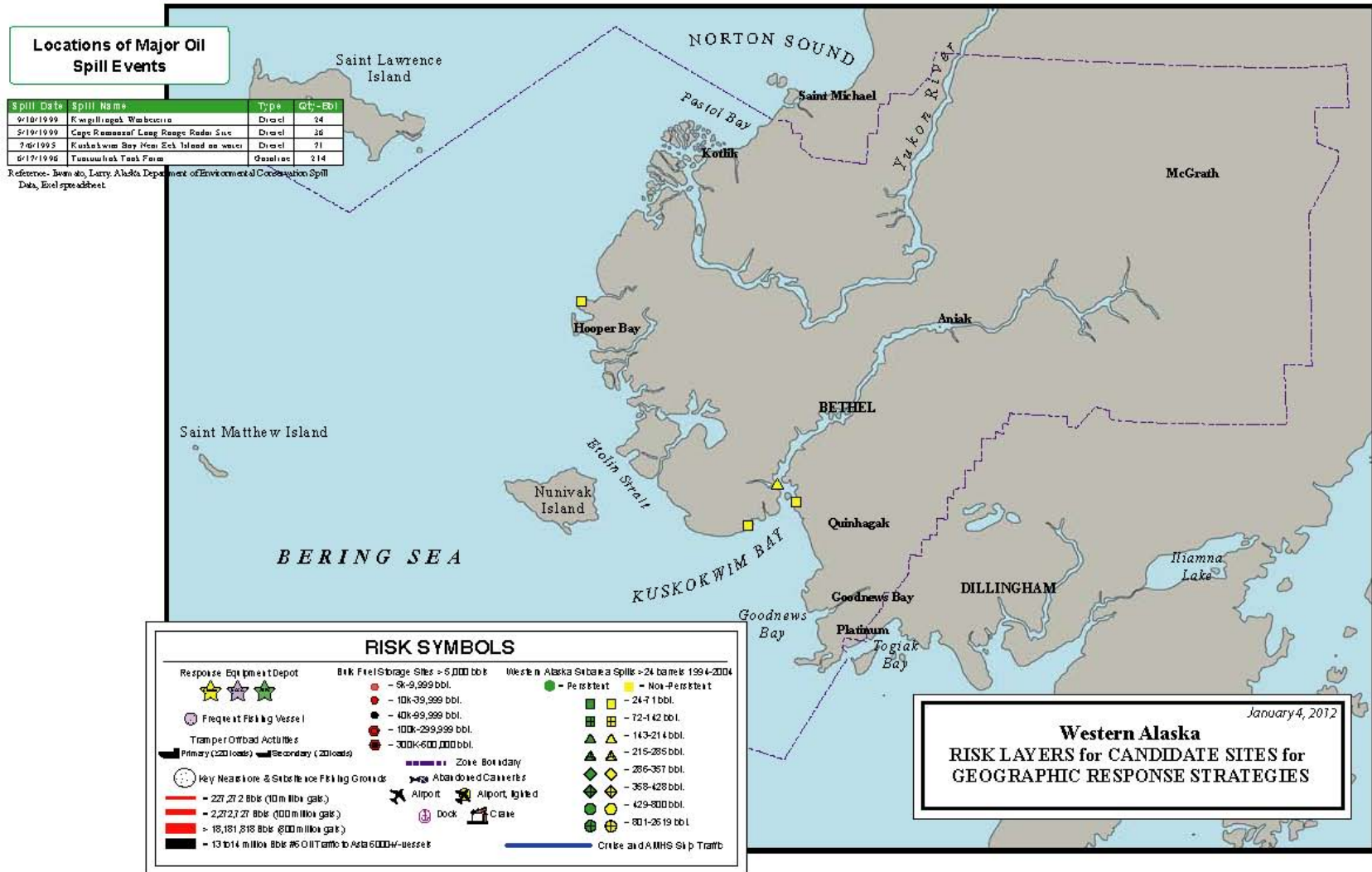


Figure H-3: Locations of Response Equipment

Locations of Response Equipment

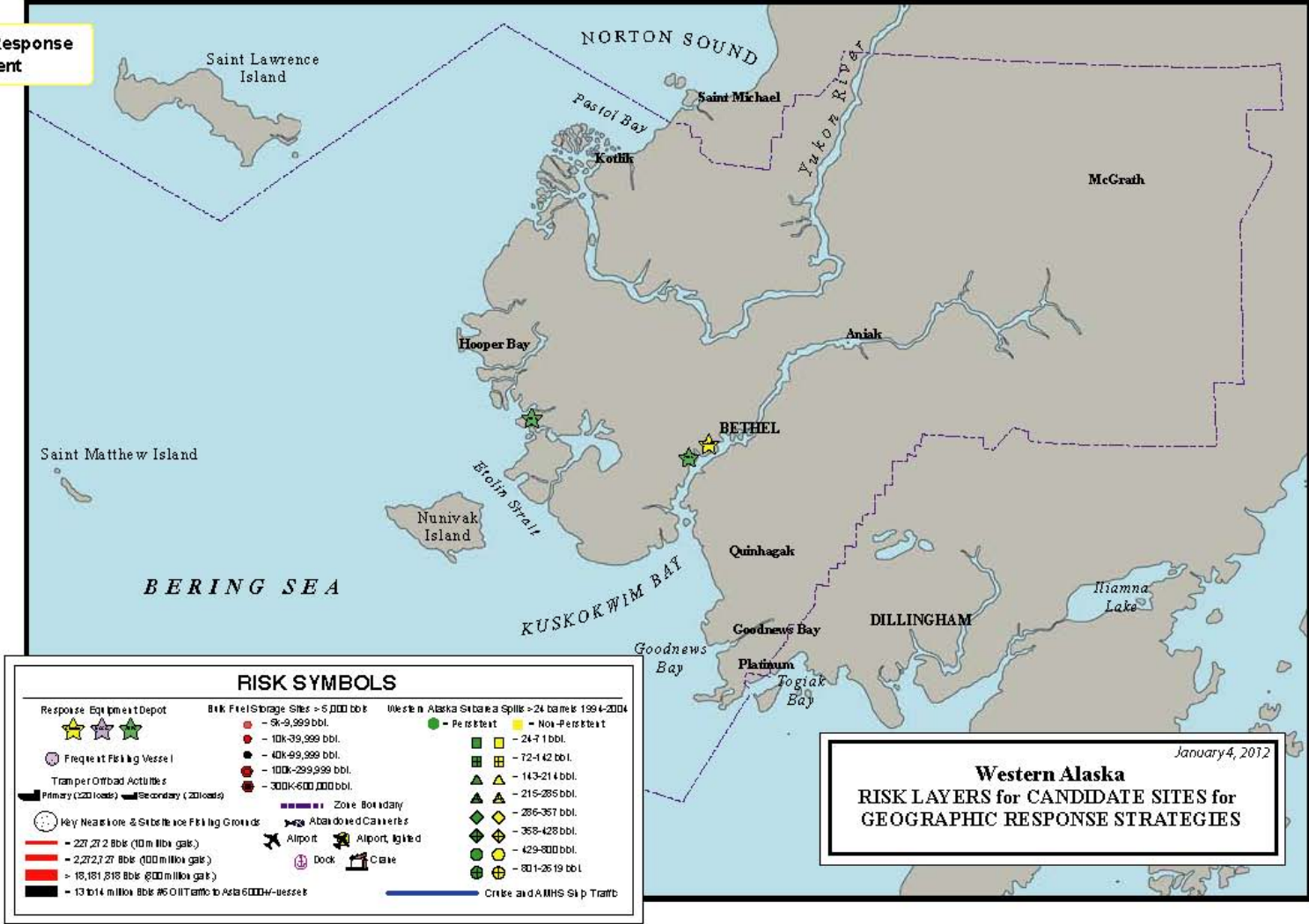


Figure H-4: Locations of Noncrude Carrier Routes

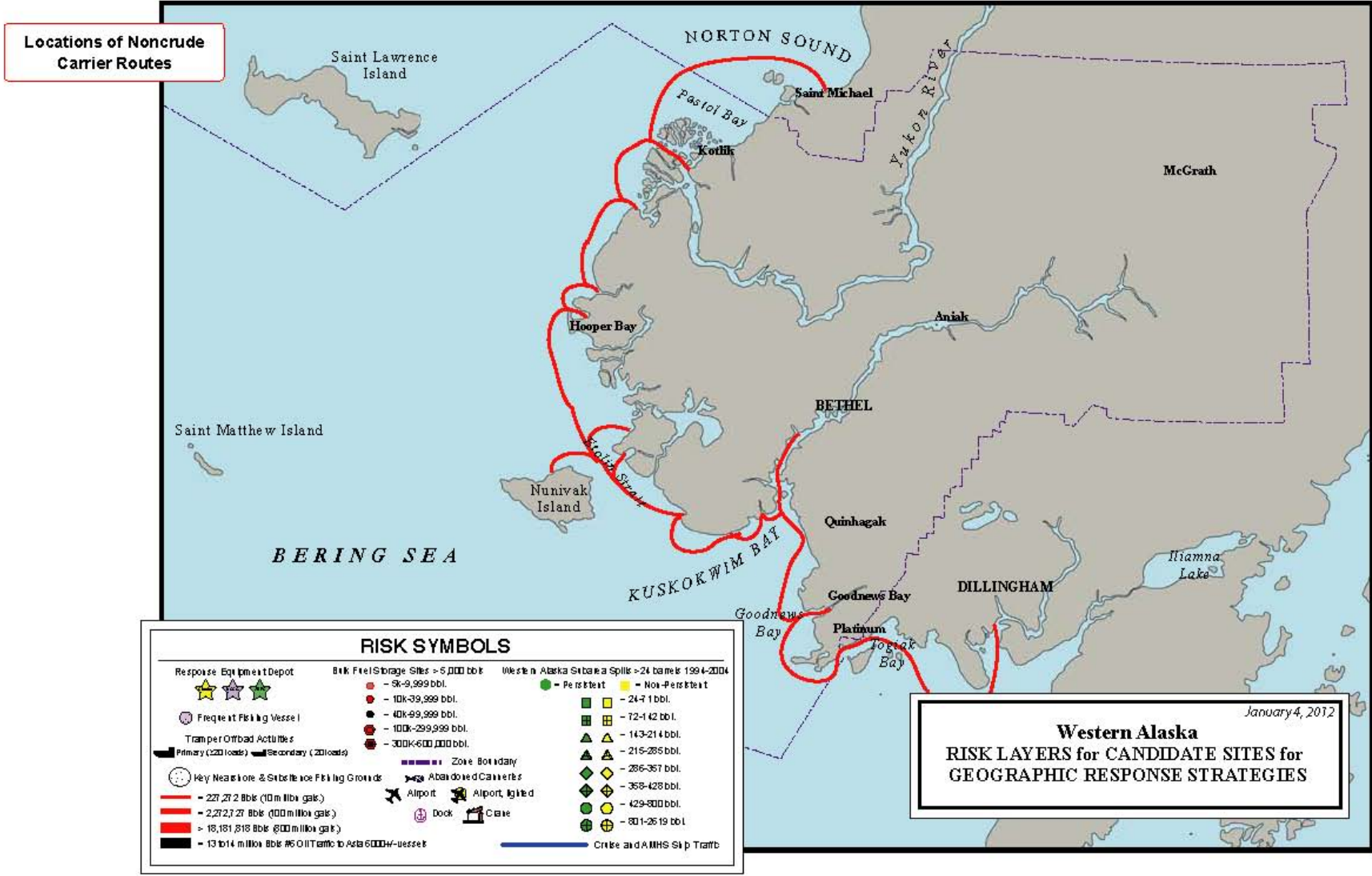


Figure H-5: Logistics

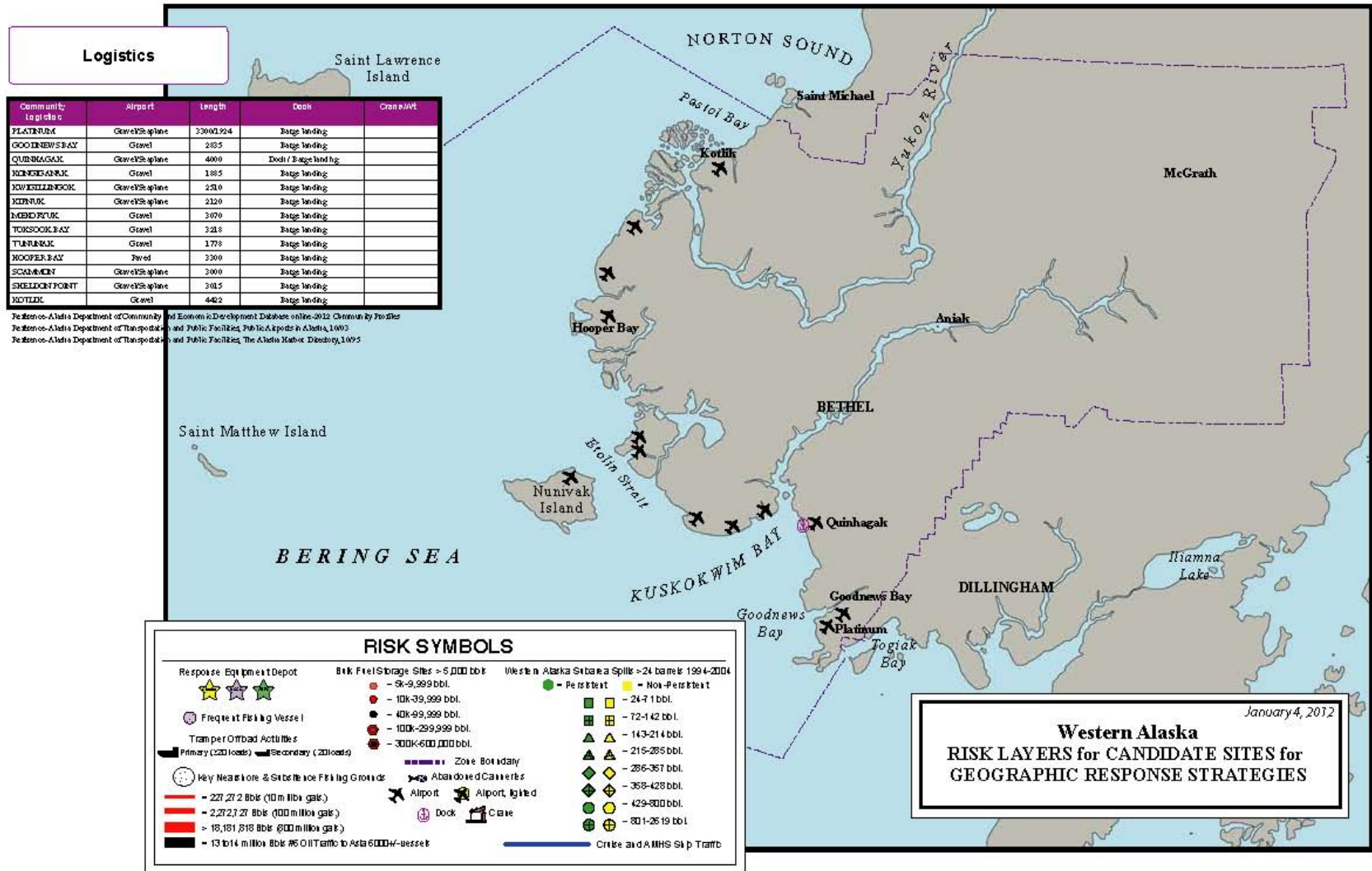


Figure H-6: Locations of Frequent Fishing Vessel Traffic

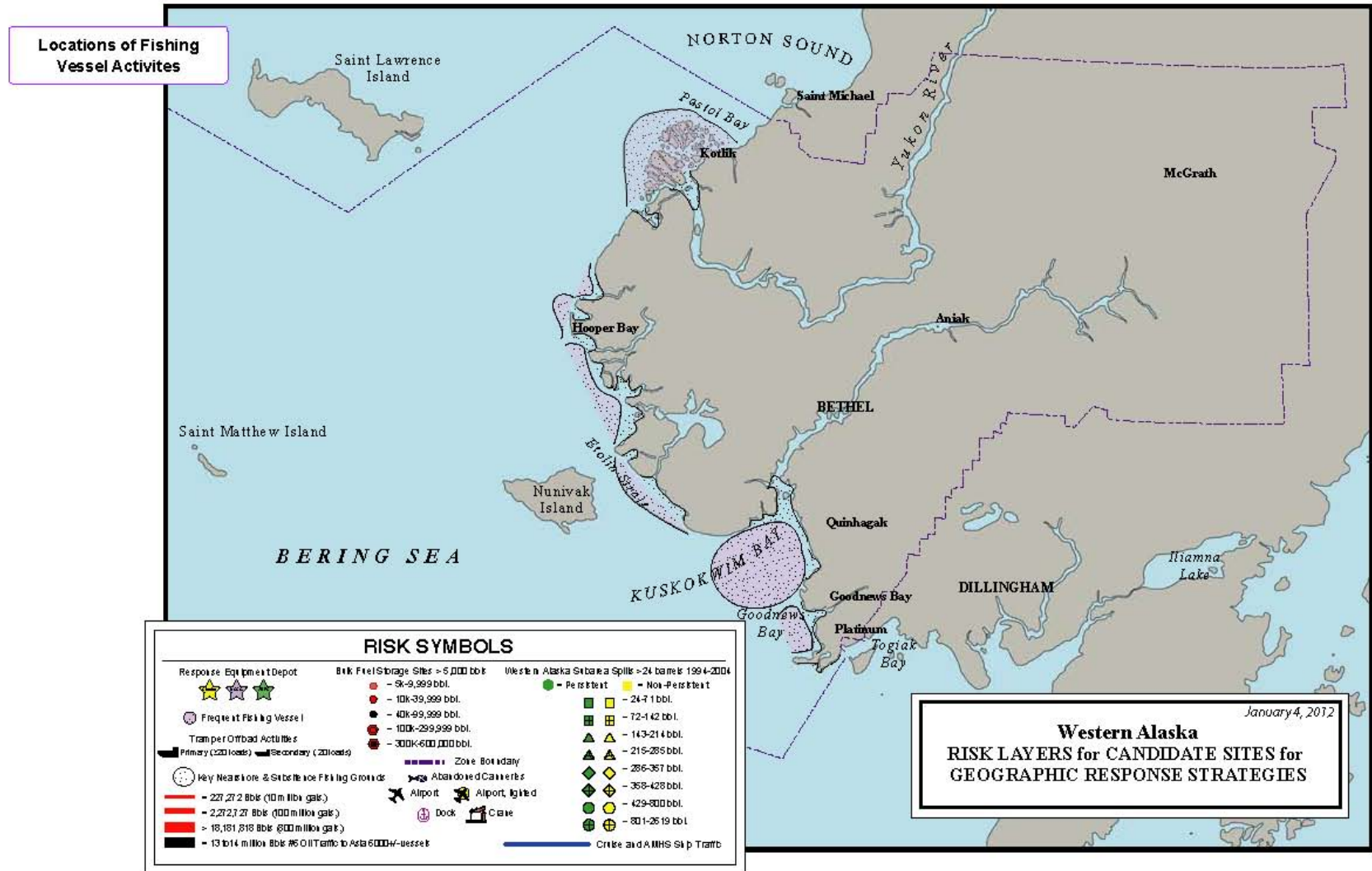


Figure H-7: Locations of Cruise Ship Traffic

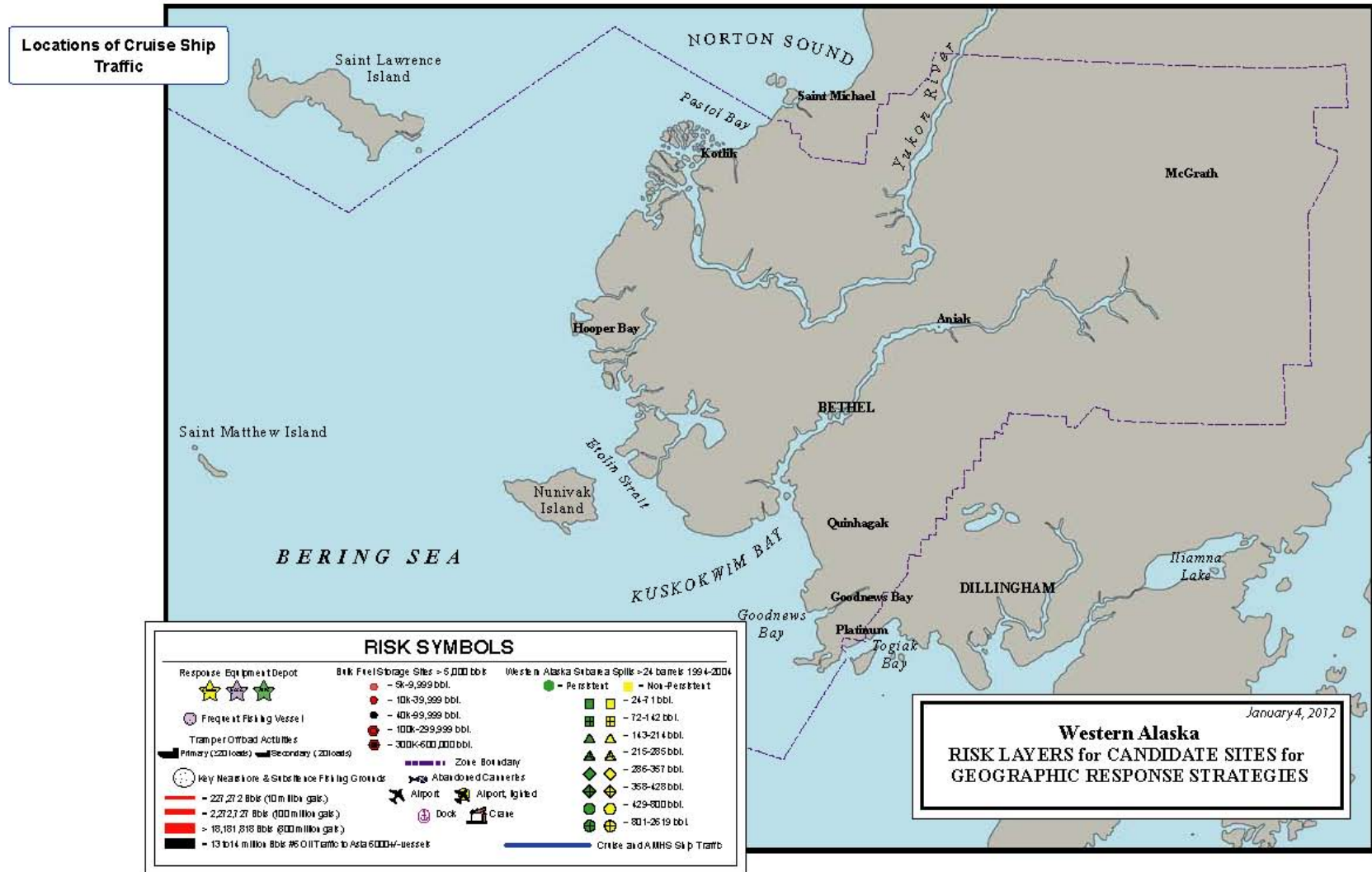


Figure H-8: Locations of Bulk Fuel Storage

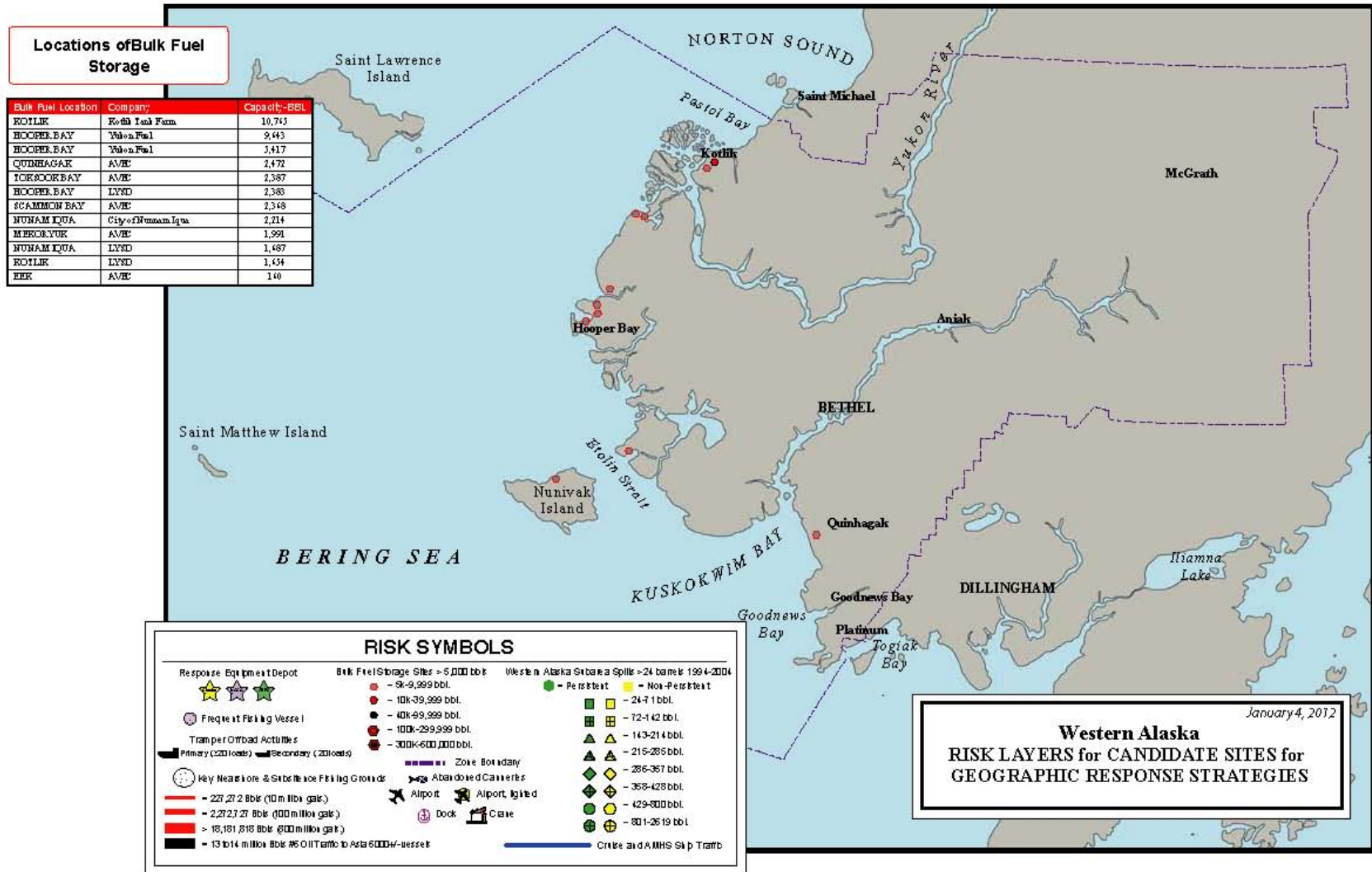


Table H-1: Site Assessment Matrix Key

PPOR ID#- Vessel Size	Type of berth	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	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	KW = Kwikpak
	D/P= Dock or Pier		Rky= Rocky		SF=Sport fishing	Y= Yes	CH=Critical Habitat for endangered species	KT=Kotlik
DI = Deep Draft Vessels lengths up to 1000 feet, 20-40 feet of draft, greater than 10,000 GT	M=Mooring		G= Gravel		AQ= Aquaculture	N = No	H=Highly Sensitive as designated by the WA Subarea GRS Workgroup	NI=Nunam Iqua
L= Light Draft Vessel up to 450 feet in length, draft up to 20 feet			Cl= Clay		R=Recreational			AL=Alakanuk
S = A shallow draft vessel less than 300 Gross Tons, has a draft less than 15 ft., LOA less than 200 ft.,			S= Sand		A= Anchorage			SB=Scammon Bay
			SH=Shells		WV=Wildlife Viewing			HB=Hooper Bay
			stk=Sticky		H=Hunting			TB=Tooksook Bay
			sft=Soft		CI= Commercial/Industrial			KP= Kipnuk
			St=silt					KN=Konggiginak
			SI=Shale					BT=Bethel
			N/A=Not Applicable					E= Eek
			NI=No Information					QK=Quinhagak
								GB= Goodnews Bay
								PL= Platinum
			EK=Emmonak					
			KW=Kwigillingok					
	TN=Tununak							

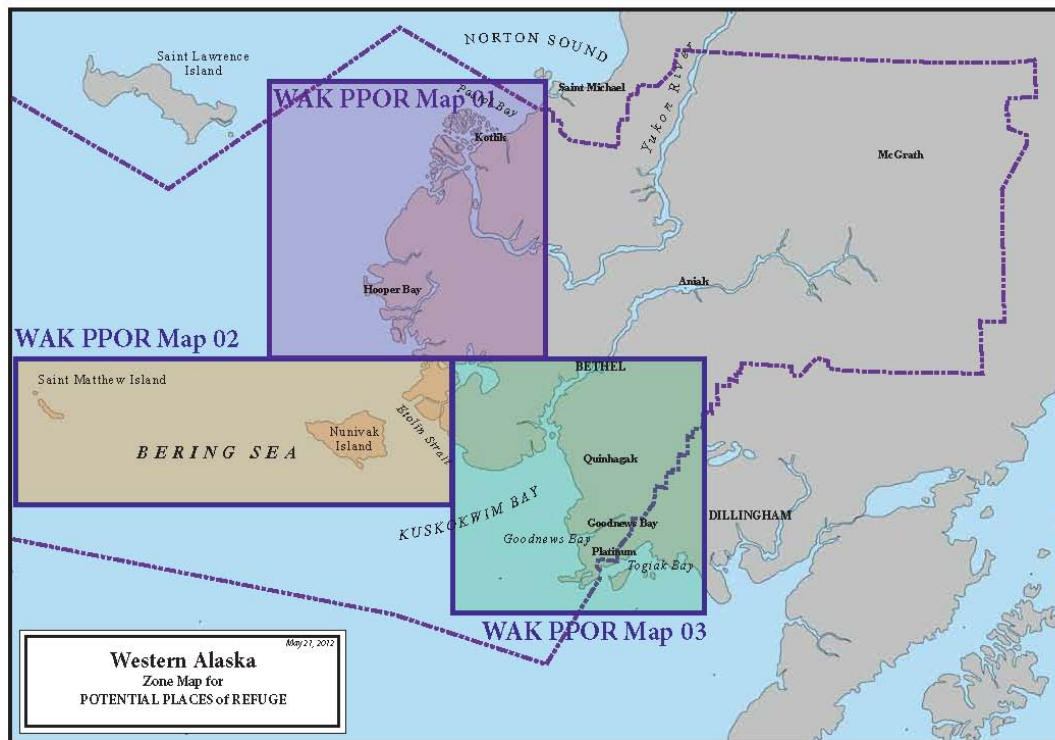
Table H-2: Site Assessment Matrix

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)
A	Pastol Bay	63°21.97'N	163°14.91'W	20	1.88 nm	NA	22	M	N, NW, W	S, CF	No	E, H, CH	12 to KT	65 nm to L-01-02
A	Kawanak Channel	62°59.46'N	165°10.70'W	25	1.4 nm	NA	30	H	W, SW, NW	CF, S	No	E, H, CH	25 to EK	65 nm to L-01-01
A	Taku Channel	62°29.31'N	165°31.56'W	15	0.5 nm	NA	20	S	W, SW, NW	S, CF	No	E, H, CH	34 to NI	33 nm to L-01-03
A	Scammon Bay	62°02.18'N	166°13.62'W	23	.95 nm	NA	28	S	N, NW, W, SW, S	S	No	E, H, CH	25 to SB	20 nm to L-01-04
A	Cape Romanzof	61°50.02'N	166°05.62'W	28	1.8 nm	NA	40	M	N, NW, W, SW, S	S	No	E, H, CH	20 to HB	16 nm to L-01-05
A	Hooper Bay	61°23.66'N	166°16.48'W	31	3.4 nm	NA	36	M	N, NW, W, SW, S	S, CF	No	E, H, CH, CH	14 to HB	20 nm to L-01-05
A	Nash Harbor	60°13.00'N	166°55.12'W	30	.5 nm	NA	36	S	N	S	No		55 to TN	33 nm to DII-02-01
A	Cape Etollin	60°25.04'N	165°59.47'W	60	.85 nm	NA	72	S	N	S	No	E	20 to MR	55 nm to DII-02-02
A	Cape Mendenhall	59°45.62'N	165°50.20'W	55	2.8 nm	NA	60	S	S, SW, SE, E	S	No		53 to TB	55 nm to DII-02-01
A	Lunda Head	60°25.04'N	172°31.47'W	60	.95 nm	NA	86	G	N, NE, E		No	E	218 to MR	13 nm to DII-02-04
A	Glory of Russia Cape	60°34.17'N	172°53.04'W	60	.67 nm	NA	86	G	N, NE, E		No	E	230 to MR	10 nm to DII-02-05
A	Hall Island	60°40.33'N	173°01.88'W	60	.3 nm	NA	86	G	N, NE, E		No	E	235 to MR	10 nm to DII-02-04
A	Cape Upright	60°17.14'N	172°25.24'W	60	.88 nm	NA	102	G	W, SW, S, SE, E		No	E	215 to MR	21 nm to DII-02-03
A	Eek Channel	59°49.36'N	162°21.40'W	25	.39 nm	NA	30	M	S	S	No		24 to KW	67 nm to L-03-02
A	Security Cove	58°42.91'N	161°59.38'W	30	1.25 nm	NA	35	GP	W, NW, N	S, CF	No		30 to GB	67 nm to L-03-01
D	Port of Bethel	60°47.47'N	161°44.72'W	13	200 ft	16	N/A	N/A	None	CF, S, H	Yes		0.0 to B	71 nm to L-03-01

POTENTIAL PLACES OF REFUGE: PART TWO – INDEX & MAPS

Index of PPOR Maps

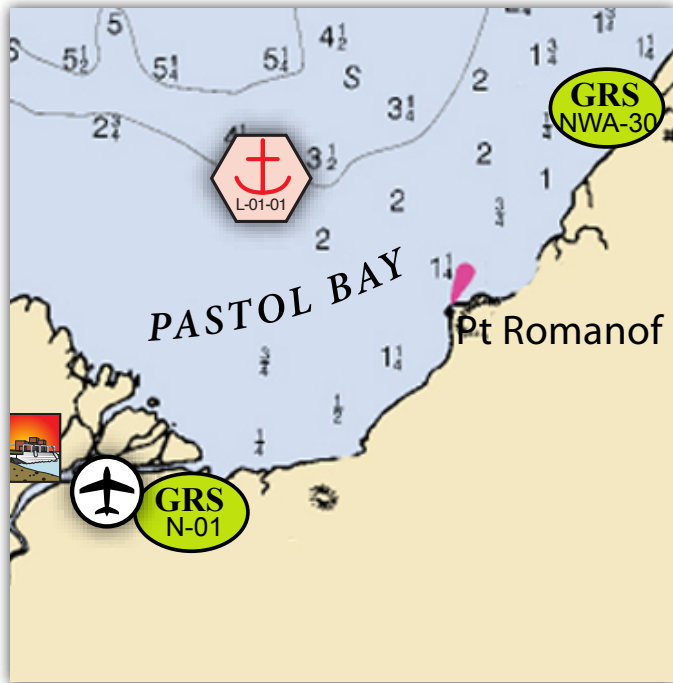
The Workgroup developed three PPOR Maps within the Bristol Bay Subarea. These maps aid in the site assessment process. These maps are larger in scale, showing a small portion of the Subarea in more detail than the maps in Part One. Each PPOR Map has been assigned an identifying number, which has no relevance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



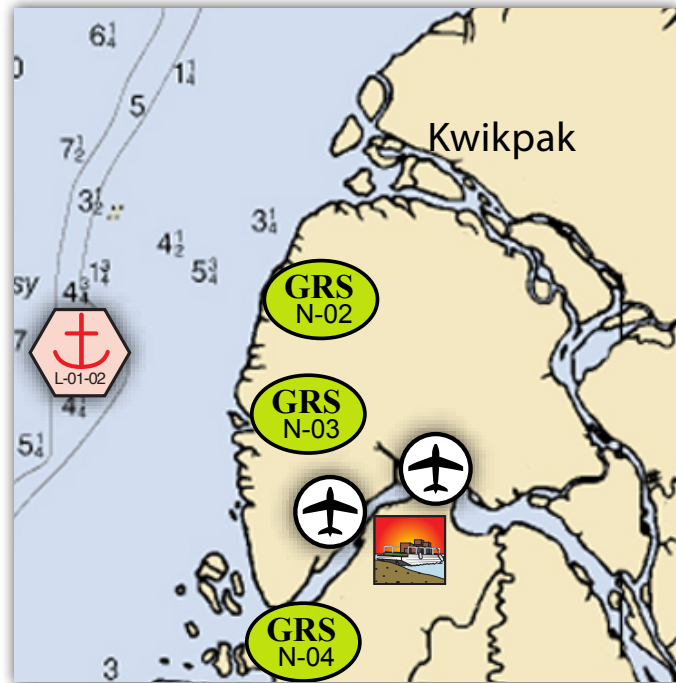
PPOR Maps

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.

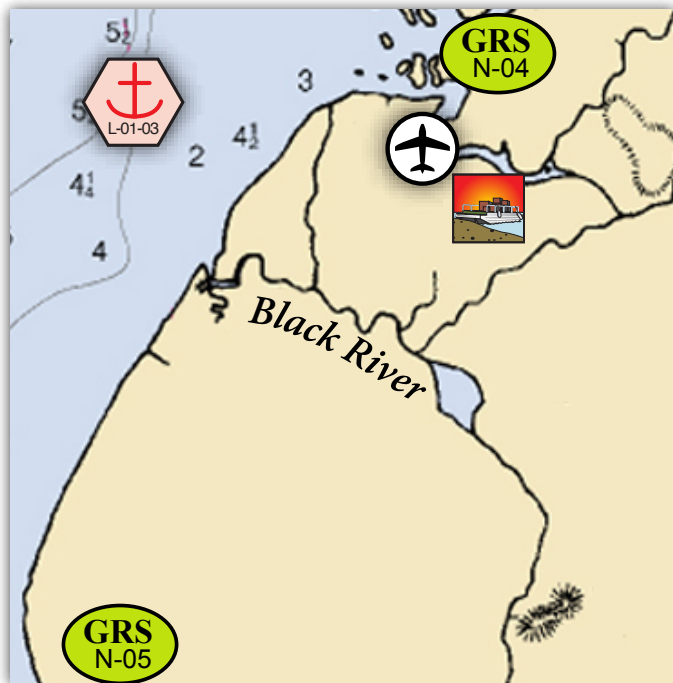
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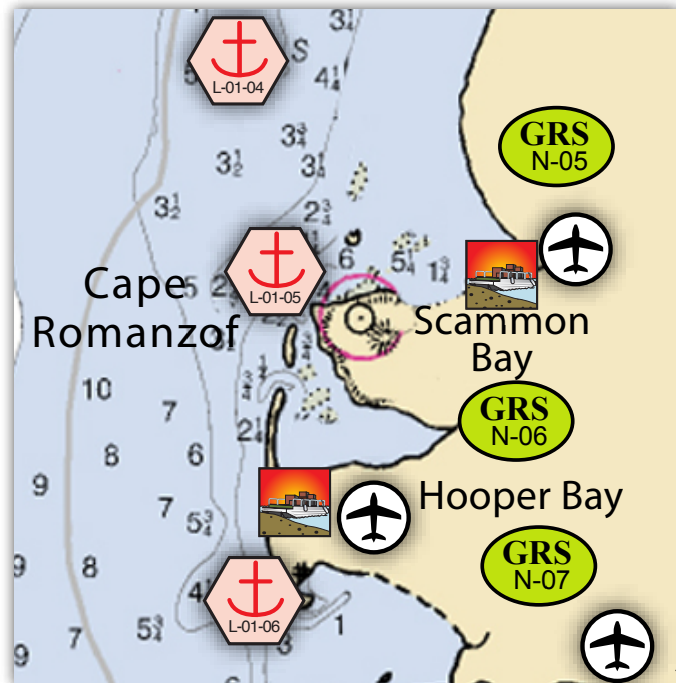
L-01-01, Pastol Bay.



L-01-02, Kwanak Channel.



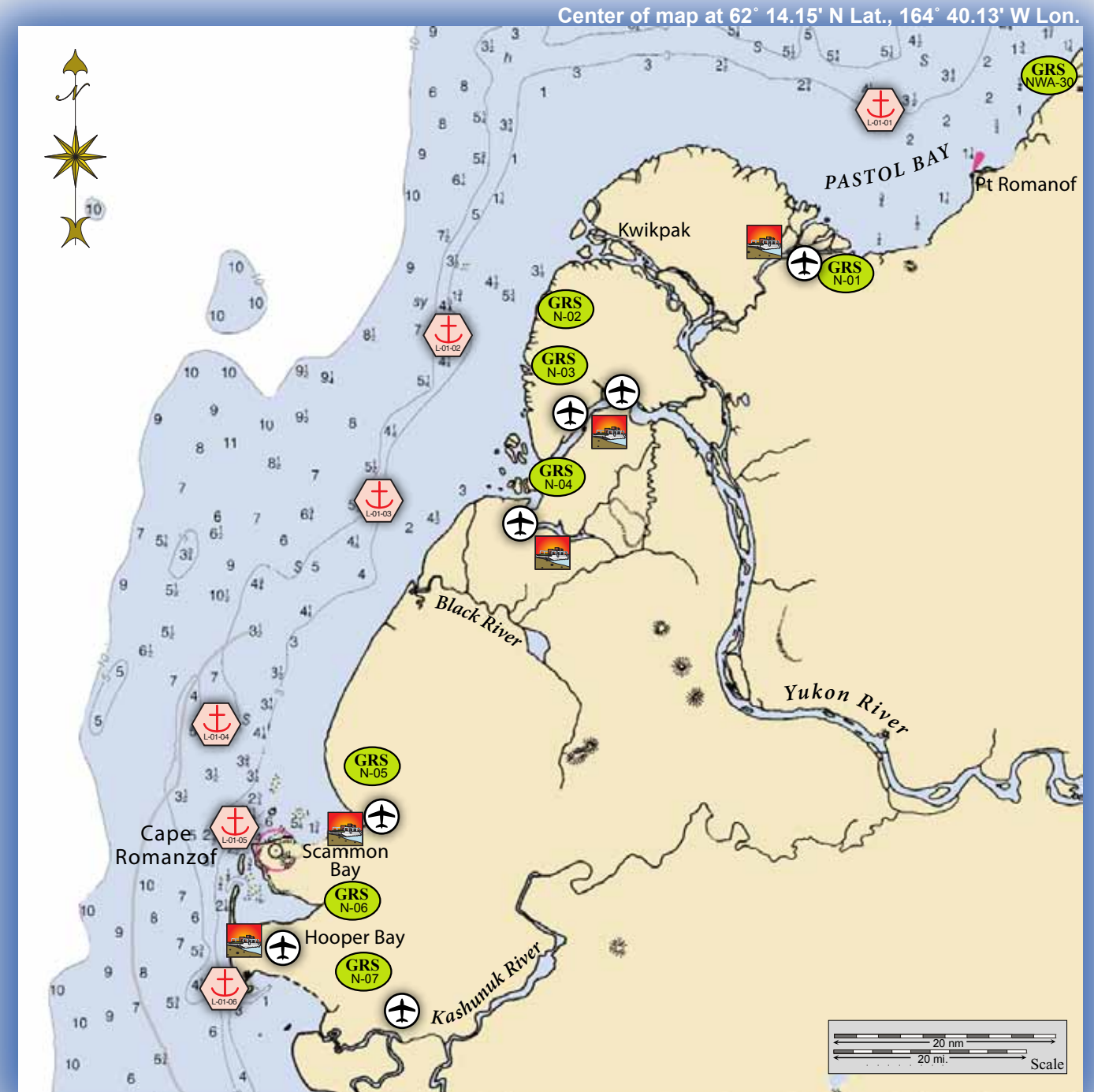
L-01-03, Taku Channel.



L-01-04 Scammon Bay, L-01-05 Cape Romanzof, and L-01-06 Hooper Bay.

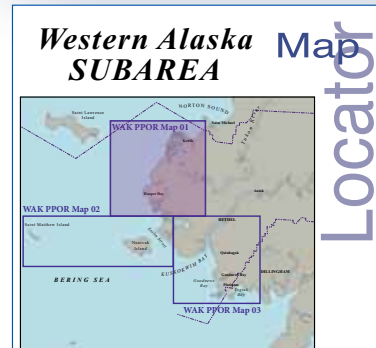
Stakeholders for PPOR Zone 01 of the Western Alaska Subarea							
Landowner (year 2012)	Contact	Landowner (year 2012)	Contact	Landowner (year 2012)	Contact	Landowner (year 2012)	Contact
Alakanuk Native Corporation	President	City of Emmonak	Mayor	Village of Kotlik	President	City of Scammon Bay	Mayor
Village of Alakanuk	President	Emmonak Corporation	President	City of Kotlik	Mayor	Sea Lion Corporation	President
City Alakanuk	Mayor	Swan Lake Corporation	President	Kotlik Yupik Corporation	President	Alaska Department of Natural Resources	State Historic Preservation Officer
Askinuk Corporation	President	City of Nunam Iqa	Mayor	City of Hooper Bay	Mayor	Native Allotments	Dept of the Interior-Regional Environmental Officer
Calista Corporation	President / CEO	Native Village of Nunam Iqa	President	Native Village of Hooper Bay	Chief	Yukon Delta National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer
Emmonak Village	President	Calista Corporation	President	Native Village of Scammon Bay	President	Bureau of Land Management	Dept of the Interior-Regional Environmental Officer

Potential Places of Refuge for Western Alaska Subarea



This is not intended for navigational use.

Soundings in fathoms



Legend

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

Western Alaska PPOR Map 01

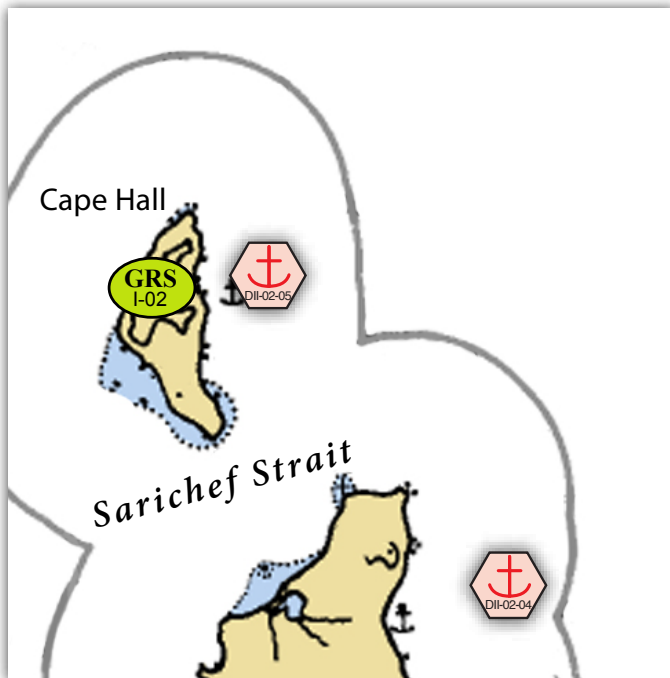
USGS 1:1,534,076 Quadrangle Map Reference - Bering Sea Eastern Part 16606_1

Physical and Operational Characteristics for PPOR Map Northern Zone for Western Alaska Subarea							
	Pastol Bay	Kawanak Channel	Taku Channel	Scammon Bay	Cape Romanzof	Hooper Bay	
ID Number	L-01-01	L-01-02	L-01-03	L-01-04	L-01-05	L-01-06	
Location (In the general area)	63°21.97'N 163°14.91'W		62°59.46'N 165°10.70'W	62°29.31'N 165°31.56'W	62°02.18'N 166°13.62'W	61°50.02'N 166°05.62'W	61°23.66'N 166°16.48'W
Maximum Vessel Size	Light Draft Vessels - up to 450 ft. in length, up to 20 ft. draft						
Type of Berthing	Anchorage						
Contact	N/A		None				
Navigational Approach	Approach from the N, NW, W	Approach from the SW, W, NW, N, NE	Approach from the N, NW, W, SW	Approach from the SW through N	Approach from the SW through N	Approach from the SE through N	
Minimum Water Depths (MLLW)	22 ft.	30 ft.	20 ft.	28 ft.	40 ft. at anchorage, 28 ft. on approach	36 ft.	
Maximum Vessel Draft	20 ft.	25 ft.	15 ft.	23 ft.	28 ft.	31 ft.	
Swing Room or Dock Face (w/ dolphins)	1.88 nm to shoal	1.4 nm to shoal	0.5 nm to shoal	.95 nm to shoal	1.8 nm to shoal	3.4 nm to shoal	
Bottom Type	Mud	Hard		Sand	Mud	Mud	
Nearest Alternative Dock/Piers	89 nm to Nome	91 nm to Nome	120 nm to Nome	150 nm to Nome	170 nm to Nome	187 nm to Nome	
Nearest Alternative Anchorage	65 nm to L-01-02	65 nm to L-01-01	33 nm to L-01-04	20 nm to L-01-05	17 nm to L-01-06	17 nm to L-01-05	
Prevailing Winds	The prevailing winds in summer are NE, E, and SE. The strong blows are from the same directions.	The prevailing winds in summer are NE, E, and SE. The strong blows are from the same directions.			Wind effects are important at this location. Continued strong S winds will cause the current to set N continuously for days at a time, and a similar S current results from N winds. The greatest velocities during nearly a month of hourly surface observations were 2.2 knots N and 2 knots S; in each case the current was setting approximately with a wind of about 40 knots.		
Currents	Most reports indicate that during the open season there is a general drift N along the Bering coast and thence through the Bering Strait into the Arctic Ocean.						
Tides (winds may effect water depth more significantly than tidal influence)	Mean High 0.0 ft. (Higher 4.0) Mean Low 0.0(Lower -3.0)	Mean High 1.5 ft. (Higher 2.3) Mean Low 0.0(Lower -3.0)	Mean High 2.0 ft. (Higher 2.6) Mean Low 0.0(Lower -0.0)	Mean High 3.6 ft. (Higher 4.3) Mean Low 0.0(Lower -3.0)	Mean High 5.9 ft. (Higher 6.8) Mean Low 0.7(Lower -3.0)	Mean High 3.6 ft. (Higher 4.3) Mean Low 0.0(Lower -3.0)	
Sea Conditions	Exposed anchorage offering little protection. Seas will be less with storms from the S, SW, and E.	Exposed anchorage offering little protection. Seas will be less with winds from the easterly direction.			Seas will be less with winds from the S and SE.		
Shelter from Severe Storms	Sheltered from S, E storms / Exposed to N, NW, W	Sheltered from S, E storms / Exposed to SW, W, NW, N, NE	Sheltered from S, E storms / Exposed to N, NW, W	Sheltered from E / Exposed to swells S, SW, W, N, NW	Sheltered from E / Exposure to S, SW, W, NW, N	Sheltered from E / Exposure to S, SW, W, NW, N	
Fog	Fog is common during the navigation season. July and August are usually the worst months.						
Ice	Ice form in late October and is present until mid to late June.						

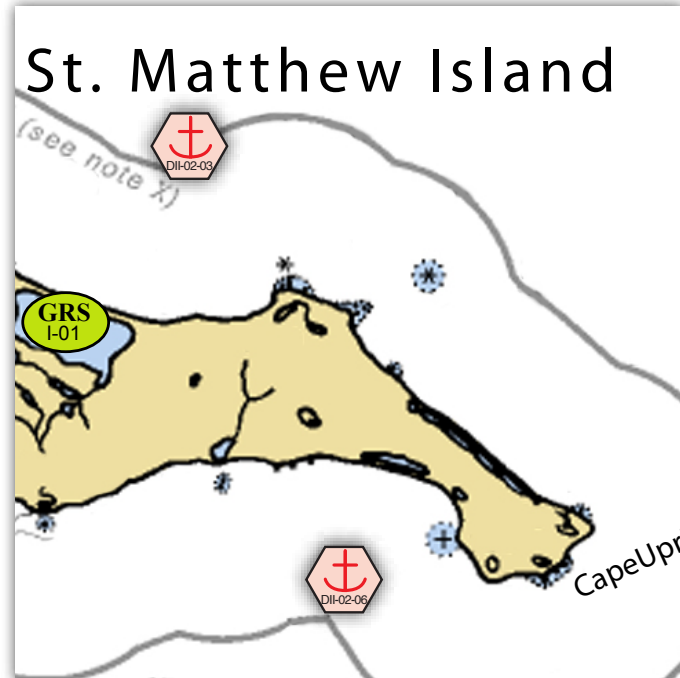
Site ID Number & Vessel Size Classification
DII = Deep Draft Vessels lengths up to 1000 feet, 40-60 feet of draft, greater than 10,000 GT
DI = Deep Draft Vessels lengths up to 1000 feet, 20-40 feet of draft, greater than 10,000 GT
L= Light Draft Vessel up to 450 feet in length, draft up to 20 feet
S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

Site Considerations for PPOR Zone 01 of the Western Alaska Subarea						
	Pastol Bay	Kawanak Channel	Taku Channel	Scammon Bay	Cape Romanzof	Hooper Bay
ID Number	L-01-01	L-01-02	L-01-03	L-01-04	L-01-05	L-01-06
Human Health & Safety						
Community-distance to (nm)	Kotlik 12 nm / pop. 577	Emmonak - 25 nm (up river) / pop. 796	Nunam Iqua - 20 nm (some up river) / pop. 190	Scammon Bay - 25 nm / pop. 498	Hooper Bay - 20 nm / pop. 1,137	Hooper Bay - 14 nm / pop. 1,137
Health Care Facilities	Kotlik Clinic: 907-899-4511	Pearl E. Johnson Sub-Regional Clinic: 907-949-3500	Nunam Iqua Clinic: 907-498-4228	Scammon Bay Clinic: 907-558-5511	Hooper Bay Sub-Regional Clinic: 907-758-4519	
Natural Resources Considerations						
Fish & Wildlife	Waterfowl concentrations, shorebird concentrations, beluga whale concentrations, anadromous fish populations	Waterfowl concentration, shorebird concentration, anadromous fish		Shorebird concentration, waterfowl concentration, seabirds nesting, anadromous fish populations, seals	Shorebird concentration, waterfowl concentration, seabird nesting, seals	Shorebird concentration, waterfowl, seabird nesting, anadromous fish, seals, beluga whales
Threatened & Endangered Species	Steller's eider (threatened),spectacled eider (threatened), polar bear (threatened)					
Sensitive Areas	Spectacled eider & polar bear critical habitat					
Other Stakeholder Considerations						
Fisheries	Salmon					
Historic Properties	Historic properties are present throughout the area.					
Subsistence	High level of subsistence activity.					
Tourism/Recreation	None					
Waterfront Public Facilities/Parks	Yukon Delta National Wildlife Refuge					
Waterfront Private Facilities	None					
Response and Salvage Resource Consideration						
Ability to Boom Vessel	No					
Geographic Response Strategies	WA-N-01	WA-N-02	WA-N-04	WA-N-05	WA-N-06	WA-N-07
Closest Alternative Place of Refuge for same sized vessel	65 nm to L-01-02	65 nm to L-01-01	20 nm to L-01-05	17 nm to L-01-05	17 nm to L-01-05	20 nm to L-01-05

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



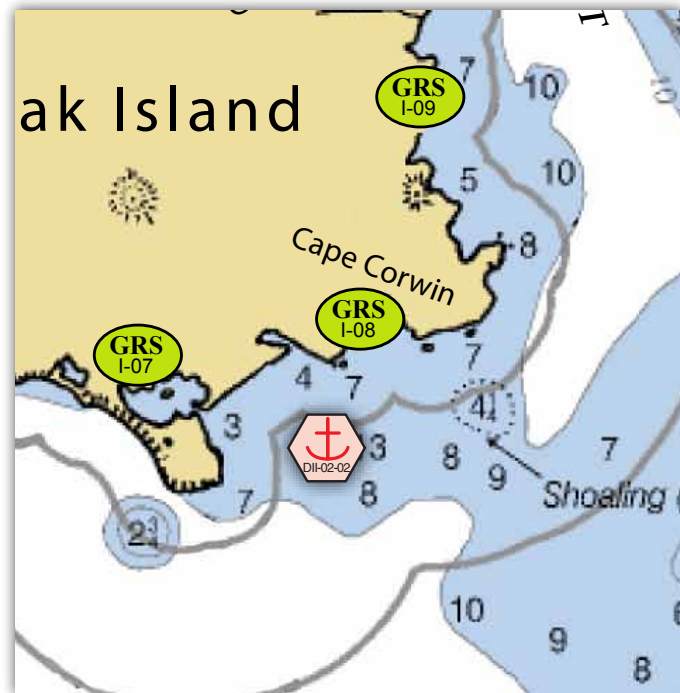
DII-02-05, and DII-02-04.



DII-02-03, and DII-02-06.



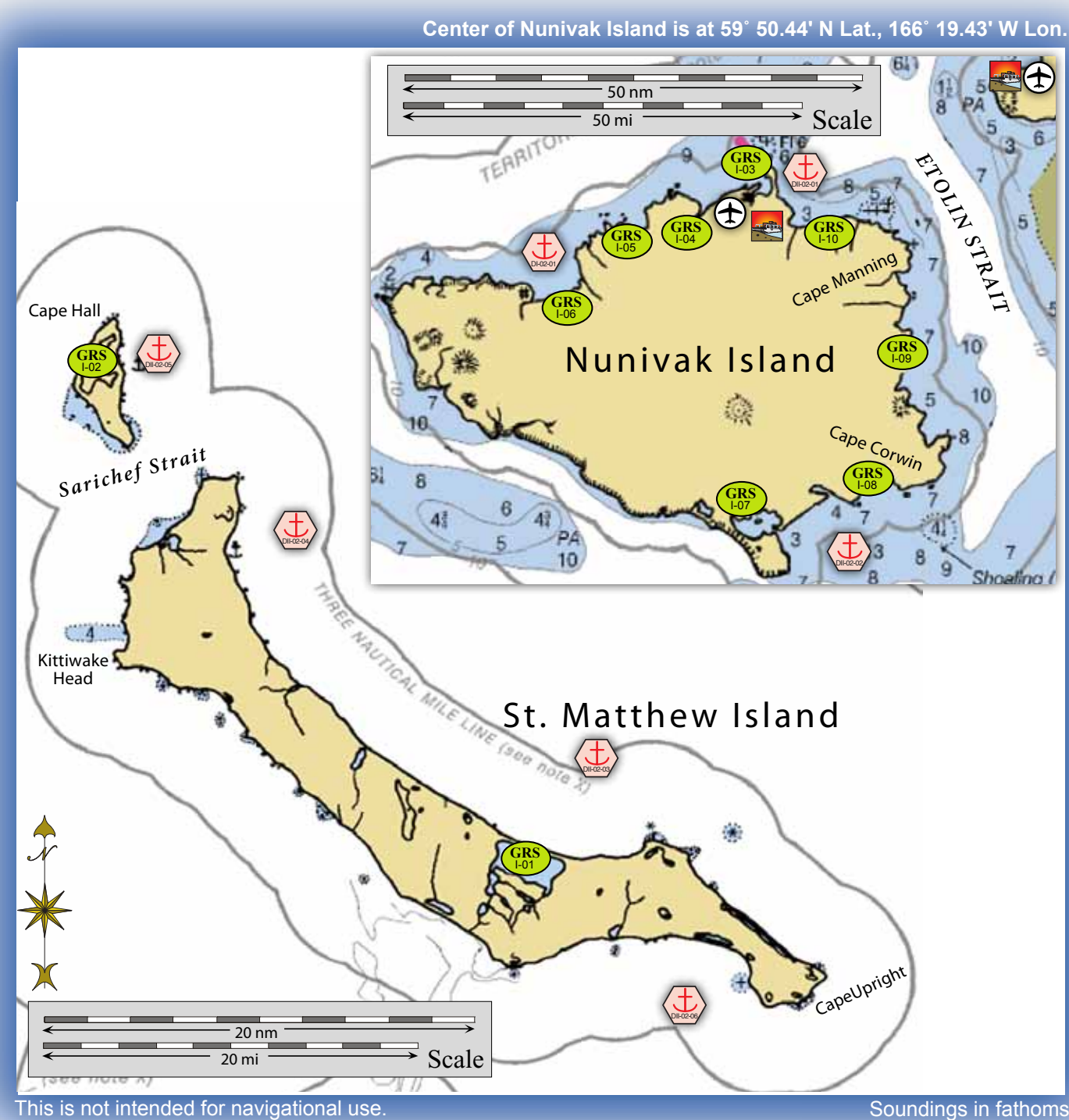
DI-02-01, and DII-02-01.



DII-02-02.

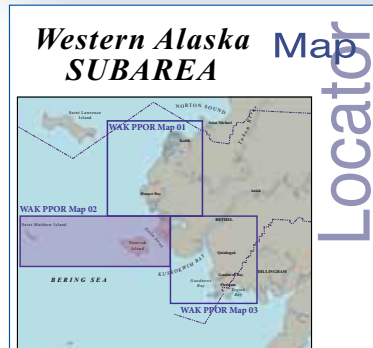
Stakeholders for PPOR Zone 02 of the Western Alaska Subarea			
Landowner (year-2012)	Contact	Landowner (year-2012)	Contact
Bureau of Land Management	Dept of the Interior-Regional Environmental Officer	City of Mekoryuk	Mayor
Alaska Maritime National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer	Nima Corporation	Chairman
Alaska Department of Natural Resources	State Historic Preservation Officer	Native Village of Mekoryuk	President
Yukon Delta National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer	Calista Corporation	President

Potential Places of Refuge for Western Alaska Subarea



This is not intended for navigational use.

Soundings in fathoms



Legend

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

Western Alaska PPOR Map 02

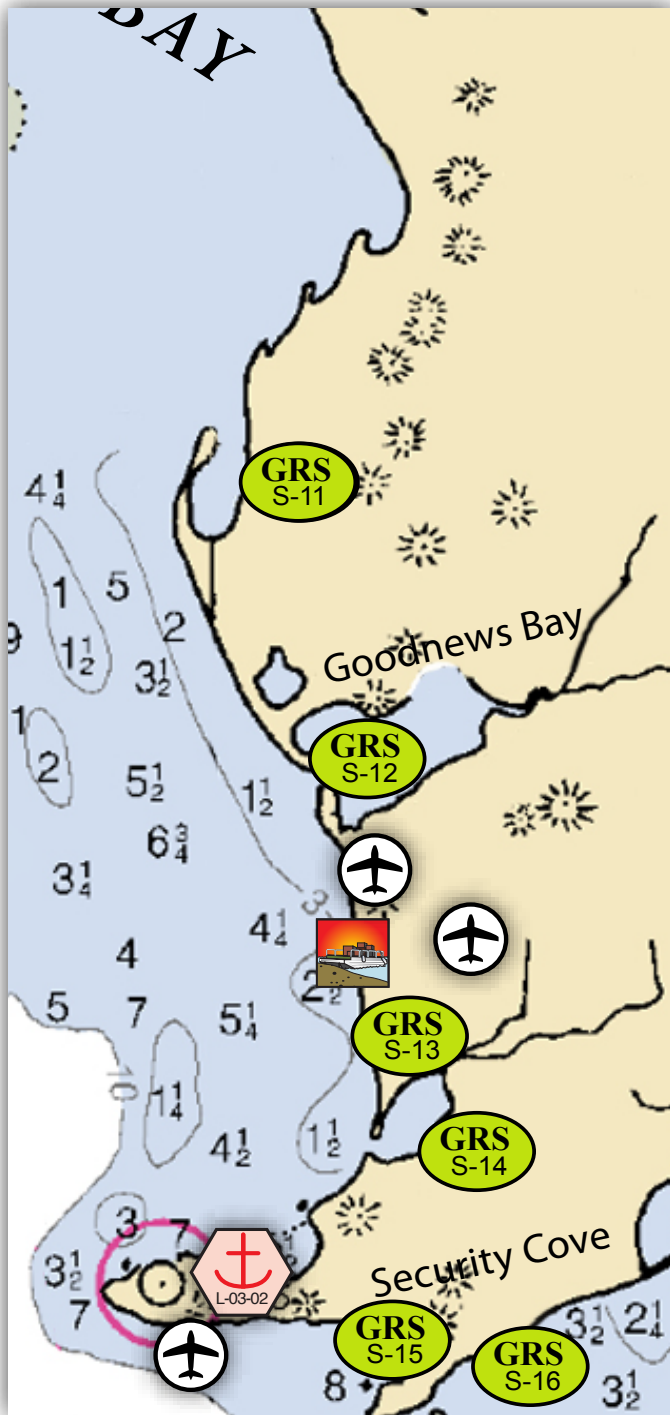
USGS 1:1,534,076 Quadrangle Map Reference - Bering Sea Eastern Part 16606_1

Physical and Operational Characteristics for PPOR Zone 02 of the Western Alaska Subarea								
	Cape Etolin	Cape Mendenhall	Lunda Head	Glory of Russia Cape	Hall Island	Cape Upright	Nash Harbor	
ID Number	DII-02-01	DII-02-02	DII-02-03	DII-02-04	DII-02-05	DII-02-06	DI-02-01	
Location (In the general area)	60°25.04'N 165°59.47'W	59°45.62'N 165°50.20'W	60°25.04'N 172°31.47'W	60°34.17'N 172°53.04'W	60°40.33'N 173°01.88'W	60°17.14'N 172°25.24'W	60°13.00'N 166°55.12'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							
Contact	None							
Navigational Approach	Approach from the NW, N, NE	Approach from the S, SE	Approach from the N, NE	Approach from the N, NE, E	Approach from the N, NE, E	Approach from the S, SE	Approach from the N, NW	
Minimum Water Depths (MLLW)	12 fathoms	10 fathoms	14 fathoms	14 fathoms	14 fathoms	17 fathoms	6 fathoms	
Maximum Vessel Draft	60 ft.	55 ft.	60 ft.	60 ft.	60 ft.	60 ft.	30 ft.	
Swing Room or Dock Face (w/ dolphins)	0.85 nm to shoal	2.8 nm to shoal	0.95 nm to shoal	.67 nm to shoal (1.25 nm to shore)	0.3 nm to shore	0.88 nm to shoal	0.5 nm to shoal (shore)	
Bottom Type	Sand	Sand	Gravel	Gravel	Gravel		PD	
Nearest Alternative Dock/Piers	240 nm to Nome	275 nm to Dillingham	313 nm to Nome	312 nm to Nome	336 nm to Nome	350 nm to Nome	255 nm to Nome	
Nearest Alternative Anchorage	55 nm to DII-02-02	55 nm to DII-02-01	13 nm to DII-02-04	10 nm to DII-02-05	10 nm to DII-02-04	21 nm to DII-02-03	33 nm to DII-02-01	
Prevailing Winds	The prevailing winds in summer are NE, E, and SE. The strong blows are from the same directions.							
Currents	Currents set along shore at approx. 1 kt.	Between St. Matthew Island and Nunivak Island, the current sets NW with prevailing NE winds during the navigation season and NE with NW or SW winds.						
Tides (winds may effect water depth more significantly than tidal influence)								
Sea Conditions	Sheltered from swells from the S through W	Sheltered from swells from the N	Sheltered from swells from the S through W			Sheltered from swells from the N	Exposed to Northerly swells	
Shelter from Severe Storms	Exposed to N, NE	Exposure to SW, S, SE	Sheltered from S, W storms / Exposed to N, E	Sheltered from S, W storms / Exposed to N, E	Exposure to N, NE, E	Exposed to S, SE, SW, W	Exposure to NW, N, NE	
Fog	Fog is common during the navigation season. July and August are usually the worst months.							
Ice	Ice forms in rivers and bays in October. Navigation in open waters is suspended December to May							

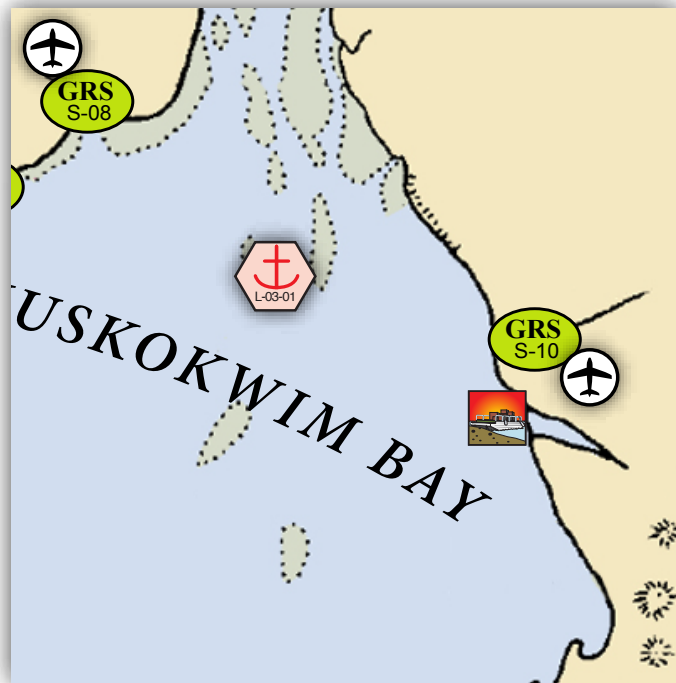
Site ID Number & Vessel Size Classification
DII = Deep Draft Vessels lengths up to 1000 feet, 40-60 feet of draft, greater than 10,000 GT
DI = Deep Draft Vessels lengths up to 1000 feet, 20-40 feet of draft, greater than 10,000 GT
L= Light Draft Vessel up to 450 feet in length, draft up to 20 feet
S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

Site Considerations for PPOR Zone 02 of the Western Alaska Subarea							
	Cape Etolin	Cape Mendenhall	Lunda Head	Glory of Russia Cape	Hall Island	Cape Upright	Nash Harbor
ID Number	DII-02-01	DII-02-02	DII-02-03	DII-02-04	DII-02-05	DII-02-06	DI-02-01
Human Health & Safety							
Community-distance to (nm)	Mekoryuk - 20 nm / pop. 215	Toksook Bay - 53 nm / pop. 598	Mekoryuk - 218 nm / pop. 215	Mekoryuk - 230 nm / pop. 215	Mekoryuk - 235 nm / pop. 215	Mekoryuk - 215 nm / pop. 215	Mekoryuk - 30 nm / pop. 215
Health Care Facilities	Mekoryuk Health Clinic: 907-453-6000	Toksook Bay Sub-Regional Clinic: 907-427-7810	Mekoryuk Health Clinic: 907-453-6000				
Natural Resources Considerations							
Fish & Wildlife	Anadromous fish, seabird nesting, waterfowl concentration	Waterfowl concentrations, shorebird concentrations, anadromous fish	Waterfowl concentrations, shorebird concentrations, anadromous fish, Steller Sea Lion, walrus			Anadromous fish, seabird concentrations, waterfowl concentration	
Threatened & Endangered Species	Spectacled Eider (threatened)	None	Steller sea lion, polar bear				None
Sensitive Areas	Etolin Strait Habitat Conservation Area	Nunivak Island Habitat Conservation Area	St. Matthew Island Habitat Conservation Area				Nunivak Island Habitat Conservation Area
Other Stakeholder Considerations							
Fisheries	No commercial fisheries nearshore						
Historic Properties	Historic properties are present throughout the area.						
Subsistence	High level of subsistence activity.			None			High level of subsistence activity.
Tourism/Recreation	None						
Waterfront Public Facilities/Parks	None						
Waterfront Private Facilities	Yukon Delta National Wildlife Refuge			Alaska Maritime National Wildlife Refuge			Yukon Delta National Wildlife Refuge
Response and Salvage Resource Consideration							
Ability to Boom Vessel	No						Weather Dependent
Geographic Response Strategies	WA-I-10	WA-I-07 & 08	WA-I-02	None	WA-I-02	None	WA-I-05 & 06
Closest Alternative Place of Refuge for same sized vessel	55 nm to DII-02-02	55 nm to DII-02-01	13 nm to DII-02-04	10 nm to DII-02-05	10 nm to DII-02-04	21 nm to DII-02-03	33 nm to DII-02-01

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



L-03-02, Security Cove.



L-03-01, West Channel.



S-03-01, Port of Bethel.

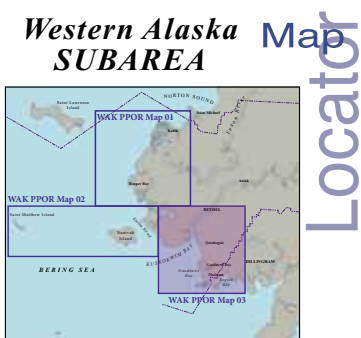
Stakeholders for PPOR Zone 03 of the Western Alaska Subarea			
Landowner (year-2012)	Contact	Landowner (year-2012)	Contact
City of Quinhagak	Mayor	Iqijouaq Company	President
Native Village of Kwinhagak	President	Calista Corporation	President
Qanirtuuq, Incorporated	President	Alaska Department of Natural Resources	State Historic Preservation Officer
Bethel Native Corporation	President	Native Allotments	Dept of the Interior-Regional Environmental Officer
City of Bethel	Mayor	Bureau of Land Management	Dept of the Interior-Regional Environmental Officer
Orutsaramuit Native Village	President	Yukon Delta National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer
City of Eek	Mayor	Togiak National Wildlife Refuge	Dept of the Interior-Regional Environmental Officer
Native Village of Eek	Mayor		

Potential Places of Refuge for Western Alaska Subarea



This is not intended for navigational use.

Soundings in fathoms



Legend

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

Western Alaska PPOR Map 03

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

Physical and Operational Characteristics for PPOR Zone 3 of the Western Alaska Subarea

	Eek Channel	Security Cove	Port of Bethel
ID Number	L-03-01	L-03-02	S-03-01
Location (In the general area)	59°49.36'N 162°21.40'W	58°42.91'N 161°59.38'W	60° 47.47'N 161° 44.72'W
Maximum Vessel Size			Shallow Draft
Type of Berthing	Anchorage		Dock
Contact	N/A		Port Director- 907-543-2310
Navigational Approach	Approach from the SW	Approach from the W, NW, N	
Minimum Water Depths (MLLW)	30 ft.	35 ft.	13 ft. on approach
Maximum Vessel Draft	25 ft.	30 ft.	13 ft.
Swing Room or Dock Face (w/ dolphins)	.37 nm to shoal	1.25 nm to shoal	200 ft.
Bottom Type	Mud bottom with multi-sandbars	Soft	N/A
Nearest Alternative Dock/Piers	71 nm to Bethel (shallow draft)	140 nm to Bethel (shallow draft)	380 nm to False Pass Ferry Dock
Nearest Alternative Anchorage	67 nm to L-03-02	67 nm to L-03-01	71 nm to L-03-01
Prevailing Winds	The prevailing winds in summer are NE, E, and SE. The strong blows are from the same directions.		NW are common March-June. S-SW are predominant in midsummer.
Currents	Tidal currents 2-2.5 kts. General current drifts N at 0.5	Minimal currents at anchorage.	River currents up to 5 kts, varies throughout the year.
Tides (winds may effect water depth more significantly than tidal influence)	Mean High 10.2 ft. (Higher 12.3) Mean Low 0.5 (Lower -3.0)	Mean High 6.8 ft. (Higher 8.9) Mean Low 0.6 (Lower -3.0)	Tidal influence minimal at dock face
Sea Conditions	Exposed anchorage, sea swell will be diminished with winds from the N through S	Protected from seas from E-S	None
Shelter from Severe Storms	Exposure to SW, S, SE	Exposed to W, NW	Sheltered
Fog	Fog is common during the navigation season. July and August are usually the worst months.		Fog is common early in the navigational season; diminishes later in summer.
Ice	Ice forms in rivers and bays in October. Navigation in open waters is suspended December to May		Ice forms in late October. Ice typically breaks up in early May.

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

Site Considerations for PPOR Zone 03 of the Western Alaska Subarea

	West Channel	Security Cove	Port of Bethel
ID Number	L-03-01	L-03-02	S-03-01
Human Health & Safety			
Community-distance to (nm)	Quinhagak - 11 nm / pop. 675	Quinhagak - 65 nm / pop. 675	Bethel - 0.0nm / pop. 6522
Health Care Facilities	Quinhagak (Kwinhagak) Clinic: 907-556-8113 / Quinhagak EMA Quick Response Team: 907-556-8448		Yukon-Kuskokwim Delta Regional Hospital 907-543-6300
Natural Resources Considerations			
Fish & Wildlife	Shorebird concentrations, seabird concentrations, waterfowl concentrations, anadromous fish		Waterfowl concentration, anadromous fish
Threatened & Endangered Species	None		
Sensitive Areas	None		
Other Stakeholder Considerations			
Fisheries	Salmon	Salmon, herring	Salmon
Historic Properties	Historic properties are present throughout the area.		
Subsistence	High level of subsistence activity.		
Tourism/Recreation	None		Local recreation and seasonal tourism
Waterfront Public Facilities/Parks	Togiak National Wildlife Refuge		Port of Harbor / Togiak National Wildlife Refuge
Waterfront Private Facilities	None		None
Response and Salvage Resource Consideration			
Ability to Boom Vessel	No		Yes
Geographic Response Strategies	None	WA-S-15	None
Closest Alternative Place of Refuge for same sized vessel	67 nm to L-03-02	67 nm to L-03-01	71 nm to L-03-01

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

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](http://dec.alaska.gov/spar/perp/plans/uc/Annex%20O%20(Jan%2010).pdf)

Alaska Dept. of Environmental Conservation, Western Alaska GRS Information
<http://dec.alaska.gov/spar/perp/grs/wa/home.htm>

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

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

Alaska Dept. of Natural Resources, Western Alaska 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#western>

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

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