

POTENTIAL PLACES OF REFUGE: PART ONE – INTRODUCTION

Purpose and Scope

This Potential Places of Refuge (PPOR) section supplements information found elsewhere in the Aleutian Subarea Contingency Plan for Oil and Hazardous Substances Spills and Releases, commonly referred to as the Aleutian 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 collection of mussels, commercial fishing, recreational boating). A place of refuge may include constructed harbors, ports, natural embayments, potential grounding sites, or offshore waters. This section identifies potential docking, anchoring, mooring, and grounding locations that may be selected as Places of Refuge in the Aleutian 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 for Western Alaska.

The Aleutian Subarea has many miles of environmentally sensitive coastline. In addition to sensitive shoreline habitats such as marshes, sheltered tidal flats, and exposed tidal flats, Aleutian supports a number of sensitive biological resources including birds, fish and shellfish, and marine mammals. 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 Aleutian Subarea lands are managed under a variety of land use management plans including;

- Comprehensive Conservation Plan for the Alaska Maritime National Wildlife Refuge, 1988
- Aleutian East Borough Coastal Management Plan, June, 2005.
- Bristol Bay Area Plan, Alaska Department of Natural Resources, April, 2005

The Aleutian Subarea is also widely used for marine commerce. Oil tanker vessels, log transport ships, fuel barges, freighters, container ships, ferries, and cruise ships make routine stops at Aleutian ports. Also, commercial fishing boats, sport fishing charter boats, and privately-owned vessels regularly use local harbors and docks.

There is no perfect docking, mooring, anchoring, or grounding site for all vessels in all situations. Deep draft vessels, such as oil tankers and cruiseships, cannot be taken to certain locations. Some ports may have shallow approaches or small bays, and deep draft ships cannot enter these locations. However, shallow draft vessels, such as fishing vessels and charter vessels, may be able to utilize these shallower ports. For the purposes of this section, vessels have been divided into three categories: deep draft, light draft and shallow draft.

Deep Draft Vessels are vessels that exceed 20,000 Gross Tons. These vessels have drafts of 25 to 60 feet and range in size from 450 to 1,000 feet long. Cruiseships and container ships and tank vessels are the predominant deep draft vessels operating in the Aleutian Subarea.

Light Draft II Vessels are vessels of 10,000 to 19,999 Gross Tons. These vessels have drafts

of up to 25 feet and range in size from 350 to 450 feet in length. Freighters, ferries, small cruiseships are the most common light draft vessels operating in the Aleutian Subarea.

Light Draft I Vessels are vessels of 300 to 9,999 Gross Tons. These vessels have drafts of up to 25 feet and range in size from 200 to 350 feet in length. Catcher-processors, fishing vessels, local freighters, ferries, are the most common light draft vessels operating in the Aleutian Subarea.

Shallow Draft Vessels are less than 300 Gross Tons, generally draw less than 15 feet and are less than 200 feet in length. Fishing vessels, fishing tenders, tour boats, and pleasure craft make up the majority of the shallow draft vessels operating in the Aleutian Subarea.

The information in this section may be used for a vessel of any size that has suffered an incident that creates need for a temporary place of safe refuge, but it is focused on deep draft and light draft size vessels, since there are more potential places of refuge for shallow draft vessels. Some potential places of refuge appropriate only for shallow draft vessels are designated, however many more potential places of refuge for shallow draft vessels exist in the Aleutian Subarea.

How the Document Was Developed

This section was developed in 2007 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 Aleutian 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
- Aleutian East Borough
- Aleut Marine Mammal Commission
- City of Unalaska
- City of Akutan
- Crowley Maritime Corporation
- Magone Marine Services
- U.S. Coast Guard, Sector Anchorage
- U.S. Department of the Interior – Office of Environmental Policy and Compliance,
Fish and Wildlife Service

The first step of the PPOR process was to identify candidate sites (anchorage, moorings, docks/piers, and potential grounding sites) within the Aleutian Subarea. The Workgroup began by researching available information to determine major risk factors in the Aleutian Subarea. Maps were developed, depicting the following risk and logistical information:

- Locations of community logistics (Figure H-1);
- Locations of spill response hubs and equipment depots (Figure H-2);
- Locations of bulk fuel facilities (Figure H-3);
- Locations of major spill events (Figure H-4);
- Locations of fishing grounds and tramper activities (Figure H-5);
- Locations of non-crude carrier routes (Figure H-6);
- Primary traffic routes for State ferries and cruise ships (Figure H-7).

The second step was to identify the total of 80 PPOR within the Aleutian Subarea. A site assessment matrix (Table H-2) and key (Table H-1) was developed. This 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;
- Name;
- Location;
- Maximum vessel size;
- Swing room or dock face length;
- Bottom type;
- Exposure/protection;
- Conflicting uses;
- Sensitive resources;
- Response options;
- Distance to population centers; and
- Distance to alternate PPOR.

PPOR identification method consists of a number which is a unique site identifier with no importance attached to the magnitude of the number. The letter which follows indicates the appropriate size vessel for the site. "D" will correspond to deep draft vessels, "LII" is for larger light draft, "LI" is for smaller light draft and "S" is shallow draft vessels.

The site assessment matrix contains potentially suitable emergency anchorage and docking locations based on operational factors such as water depth, swing room, exposure/protection, and navigational approach. Sites are grouped by the maximum vessel size category suitable for the site. The PPOR sites identified for shallow draft vessels should only be considered a partial list as there are many suitable sites available in the Aleutian Subarea for the shallow draft vessel category (less than 300 gross tons).

Step 3 was to identify 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, mariculture sites, tourism and recreational use, subsistence 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.

Figure H-8 is a composite map of all PPOR and risk factors combined.

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 Aleutian Subarea. As outlined in the guidelines, when the U.S. Captain of the Port (COTP) receives a request from a vessel master or his/her representative to move a vessel to a place of refuge--or in the event there are no individuals on board the vessel authorized to make the request, or the vessel has been abandoned and the COTP needs to consider moving the vessel to a place of refuge--the COTP will initiate the decision-making process in Appendix 1 of Annex O. As outlined in Steps 2 and 3 in Appendix 1, if the COTP/ Unified Command determines that places of refuge should be considered for an incident-specific response, the

information in the Aleutian PPOR document may be used to provide background information to help expedite the incident-specific place of refuge decision. The steps of the decision-making process are summarized as:

1. Place of refuge assistance requested,
2. Immediate action required by COTP,
3. COTP/Unified Command evaluates vessel options,
4. COTP/Unified Command selects vessel option,
5. COTP/Unified Command evaluates potential places of refuge based on operational criteria,
6. COTP/Unified Command selects potential places of refuge based on operational criteria,
7. Stakeholders provided with places of refuge options,
8. Stakeholders provide ranking of places of refuge options,
9. COTP/Unified Command selects places of refuge, and
10. COTP/Unified Command prepares documentation of decision.

The information provided in this document should help decision-making by providing site-specific information to the COTP/Unified Command.

Part Two of this document contains site-specific information for some of the PPOR in the Aleutian Subarea. An index map (Figure H-9) 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, picture, 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.

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, Western Alaska
510 L Street, #100
Anchorage, Alaska, 99501

POTENTIAL PLACES OF REFUGE: PART TWO – PPOR MAPS

Index of PPOR Maps

The Workgroup developed 10 PPOR Maps within the Aleutian Subarea to 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. Figure H-8 provides an overview of the Subarea, identifying the location of each PPOR Map. 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, moorings, potential grounding sites 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.

POTENTIAL PLACES OF REFUGE: PART THREE – REFERENCES

Alaska Dept. of Natural Resources and Alaska Dept. of Fish and Game. December 2004. Bristol Bay Area Plan for State Lands.

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.

International Maritime Organization (IMO). July 17, 2003. Draft Assembly Resolutions Finalized by Nav. 49, Annex 1 Guidelines On Places Of Refuge For Ships In Need of Assistance.

Pacific States/British Columbia Task Force. December 2004. Guidelines for Places of Refuge

Useful Websites

Alaska Dept. of Environmental Conservation, Aleutian Island GRS Information.
<http://www.dec.state.ak.us/spar/perp/grs/ai/home.htm>

Alaska Dept. of Natural Resources. Aleutian Island Public Access Atlas.
<http://www.dnr.state.ak.us/mlw/planning/easmatlas/Aleutian/indexmap.htm>.

Alaska Dept. of Natural Resources, Aleutian 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>

Alaska Regional Response Team, Aleutian Island Subarea Contingency Plan,
<http://www.akrrt.org/AIPlan/aitoc.shtml>

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

Aleutians Subarea, Alaska

RISK LAYERS for CANDIDATE SITES for GEOGRAPHIC RESPONSE STRATEGIES

DRAFT: This map is a draft work product of the Aleutians Subarea GRS Workgroup. The information represented here has not been approved by the Workgroup and should not be considered final. If you have questions or comments please contact us by email at contact@nukaresearch.com.

RISK SYMBOLS

Response Equipment Depot 	Bulk Fuel Storage Sites > 5,000 bbls 	Aleutian Subarea Spills >24 barrels 1994-2004
Tramper Offload Activities 	Aleutian Subarea Noncrude Carrier Routes 	Other Infrastructure

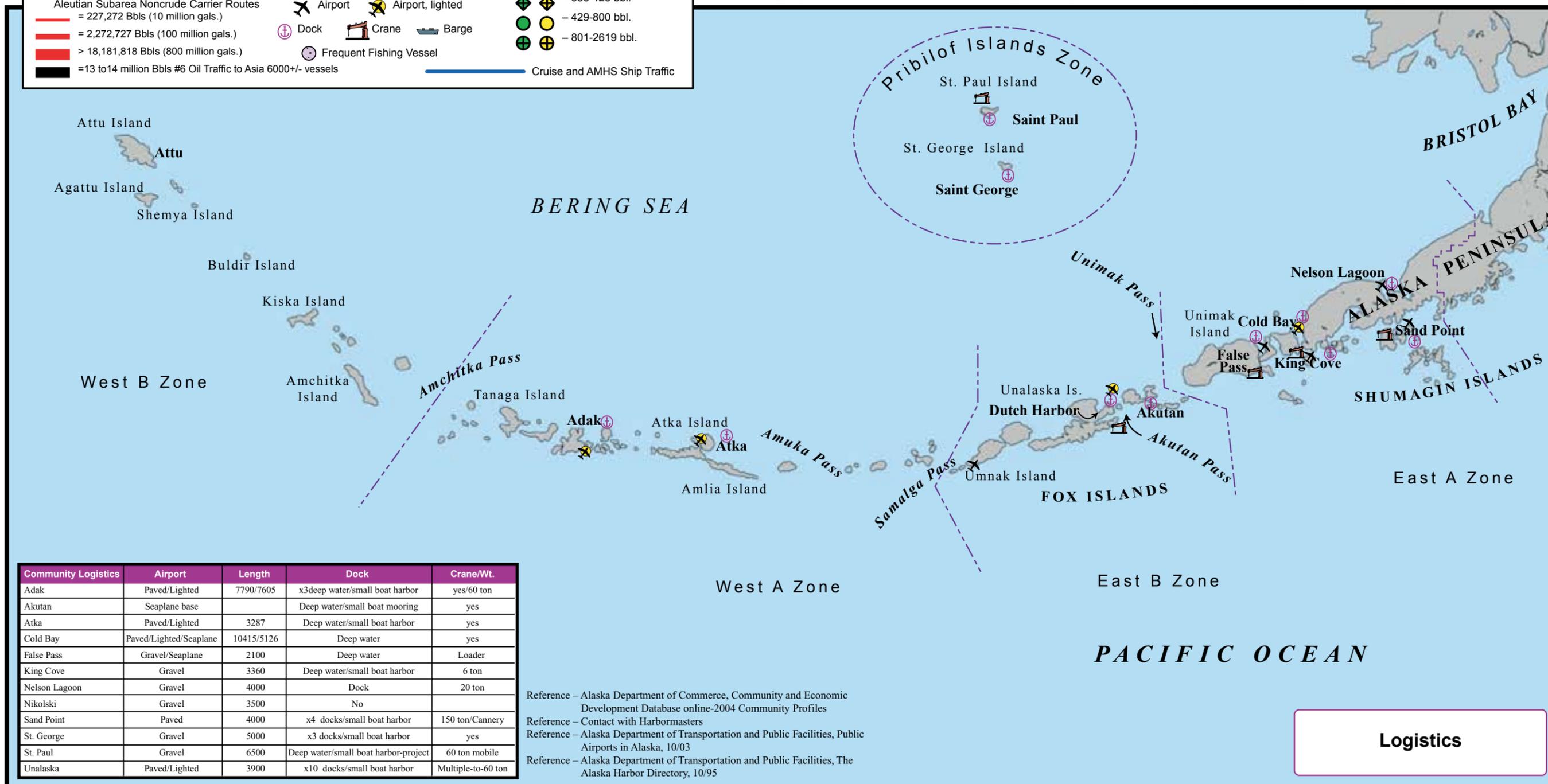


Figure H-1. Locations of Community Logistics.

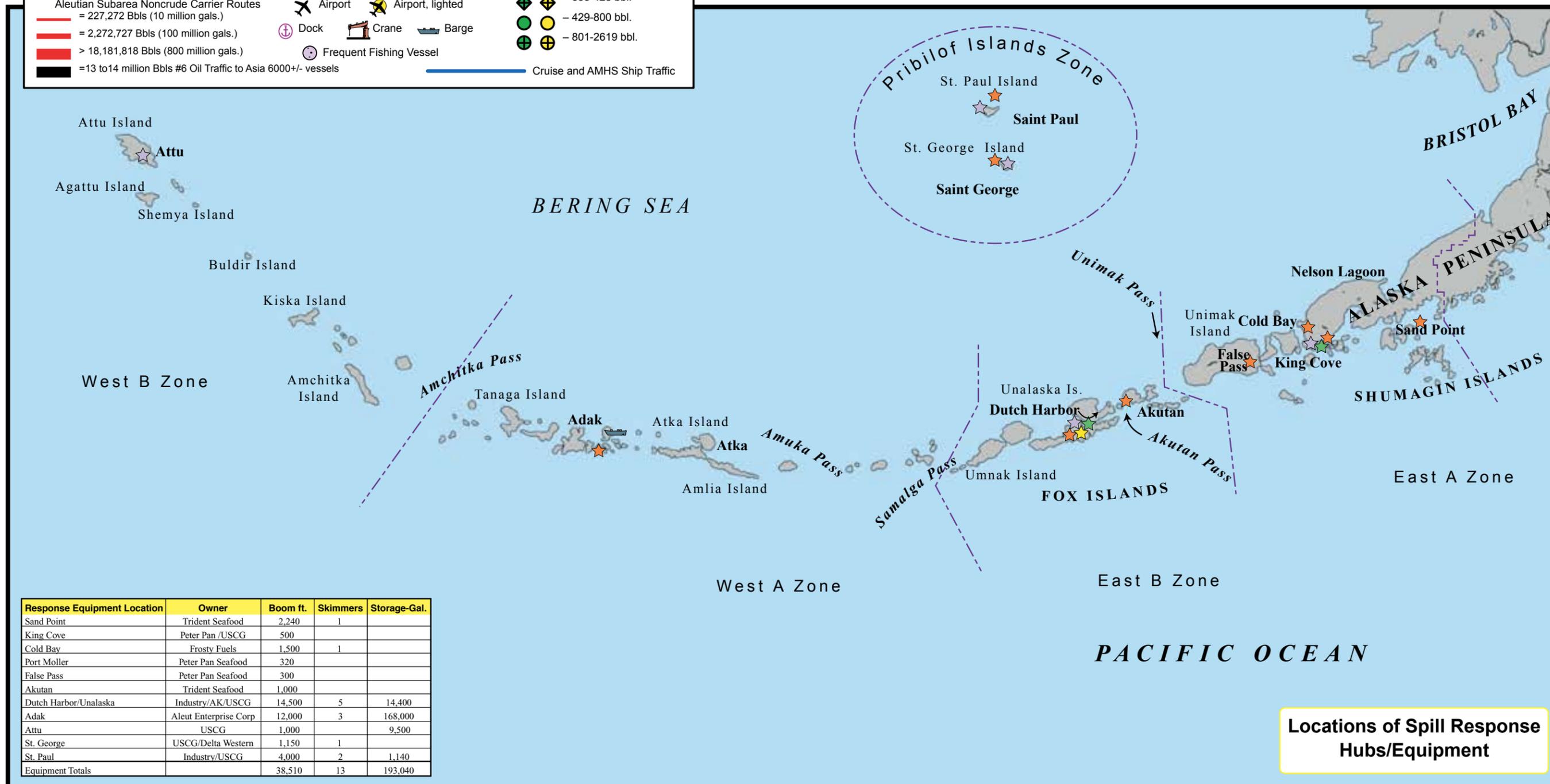
Aleutians Subarea, Alaska

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RISK SYMBOLS

Response Equipment Depot Tramper Offload Activities Primary (≥300 loads) Primary (≥20 and < 300 loads) Secondary (≤20 loads) Key Nearshore Fishing Grounds	Bulk Fuel Storage Sites > 5,000 bbls - 5k-9,999 bbl. - 10k-39,999 bbl. - 40k-99,999 bbl. - 100k-299,999 bbl. - 300K-500,000 bbl.	Aleutian Subarea Spills >24 barrels 1994-2004 = Persistent = Non-Persistent - 24-71 bbl. - 72-142 bbl. - 143-214 bbl. - 215-285 bbl. - 286-357 bbl. - 358-428 bbl. - 429-800 bbl. - 801-2619 bbl.
Aleutian Subarea Noncrude Carrier Routes = 227,272 Bbls (10 million gals.) = 2,272,727 Bbls (100 million gals.) > 18,181,818 Bbls (800 million gals.) =13 to14 million Bbls #6 Oil Traffic to Asia 6000+/- vessels	--- Zone Boundary Abandoned Canneries Airport Airport, lighted Dock Crane Barge Frequent Fishing Vessel Cruise and AMHS Ship Traffic	



Locations of Spill Response Hubs/Equipment

Figure H-2. Locations of Spill Response Hubs and Equipment Depots.

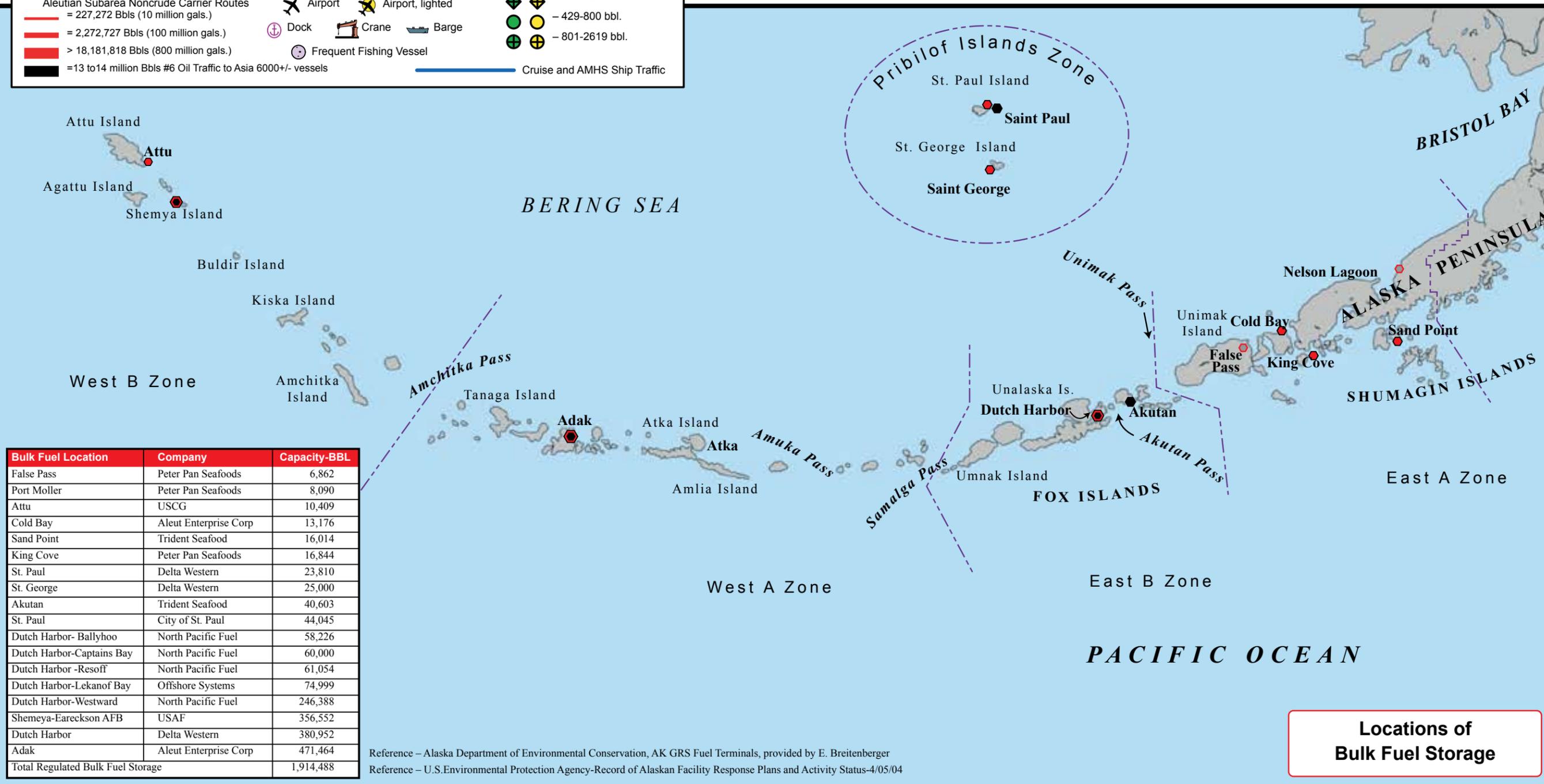
Aleutians Subarea, Alaska

RISK LAYERS for CANDIDATE SITES for GEOGRAPHIC RESPONSE STRATEGIES

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Locations of Bulk Fuel Storage

Figure H-3. Locations of Bulk Fuel Facilities.

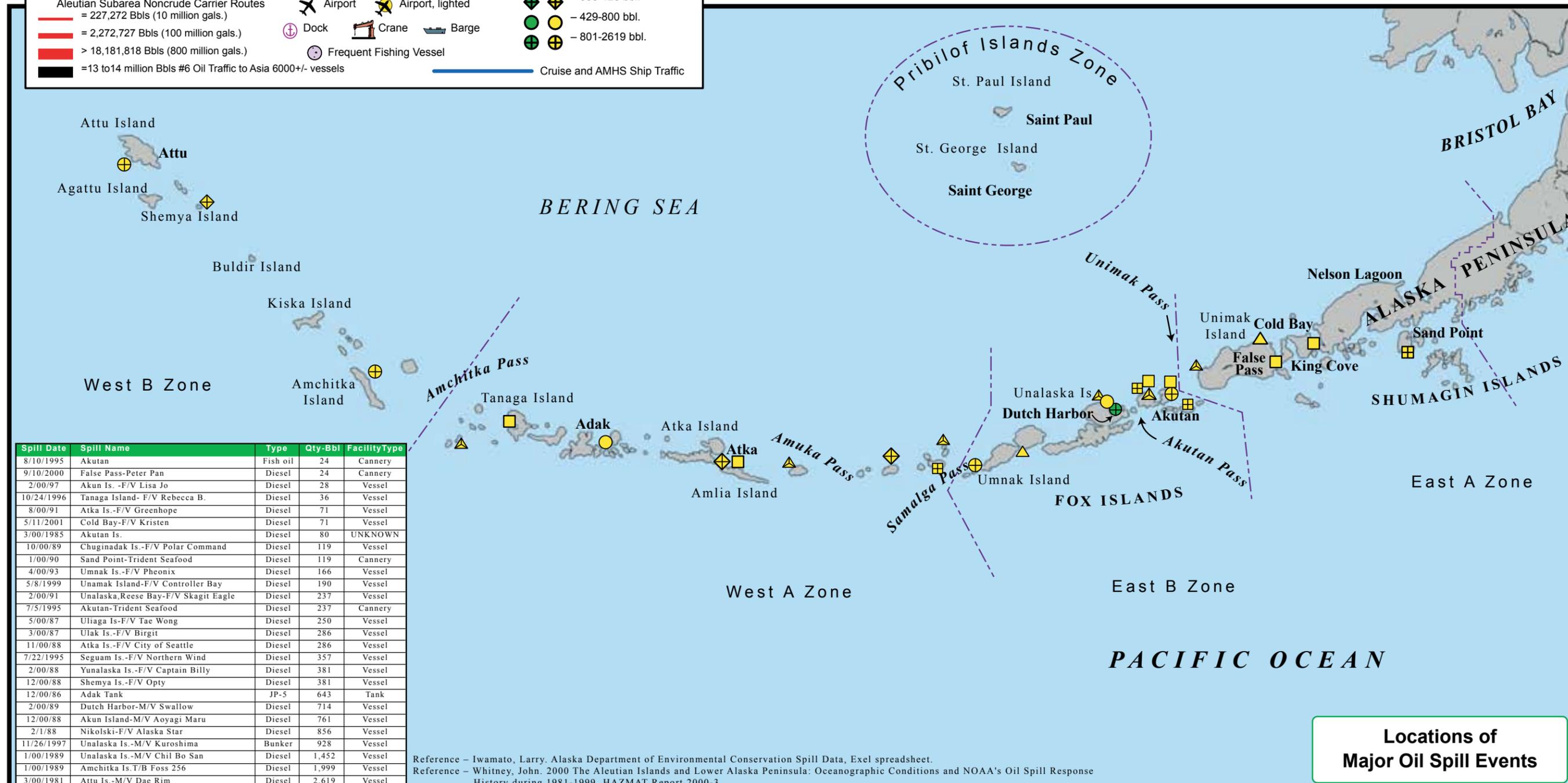
Aleutians Subarea, Alaska

RISK LAYERS for CANDIDATE SITES for GEOGRAPHIC RESPONSE STRATEGIES

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Response Equipment Depot Yellow Star Purple Star Green Star Orange Star Tramper Offload Activities Primary (≥300 loads) Primary (≥20 and < 300 loads) Secondary (≤20 loads) Key Nearshore Fishing Grounds Aleutian Subarea Noncrude Carrier Routes = 227,272 Bbls (10 million gals.) = 2,272,272 Bbls (100 million gals.) > 18,181,818 Bbls (800 million gals.) =13 to14 million Bbls #6 Oil Traffic to Asia 6000+/- vessels	Bulk Fuel Storage Sites > 5,000 bbls - 5k-9,999 bbl. - 10k-39,999 bbl. - 40k-99,999 bbl. - 100k-299,999 bbl. - 300K-500,000 bbl. Zone Boundary Abandoned Canneries Airport Airport, lighted Dock Crane Barge Frequent Fishing Vessel Cruise and AMHS Ship Traffic	Aleutian Subarea Spills >24 barrels 1994-2004 = Persistent = Non-Persistent - 24-71 bbl. - 72-142 bbl. - 143-214 bbl. - 215-285 bbl. - 286-357 bbl. - 358-428 bbl. - 429-800 bbl. - 801-2619 bbl.
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Spill Date	Spill Name	Type	Qty-Bbl	Facility Type
8/10/1995	Akutan	Fish oil	24	Cannery
9/10/2000	False Pass-Peter Pan	Diesel	24	Cannery
2/00/97	Akun Is. -F/V Lisa Jo	Diesel	28	Vessel
10/24/1996	Tanaga Island- F/V Rebecca B.	Diesel	36	Vessel
8/00/91	Atka Is.-F/V Greenhope	Diesel	71	Vessel
5/11/2001	Cold Bay-F/V Kristen	Diesel	71	Vessel
3/00/1985	Akutan Is.	Diesel	80	UNKNOWN
10/00/89	Chuginadak Is.-F/V Polar Command	Diesel	119	Vessel
1/00/90	Sand Point-Trident Seafood	Diesel	119	Cannery
4/00/93	Umnak Is.-F/V Pheonix	Diesel	166	Vessel
5/8/1999	Unamak Island-F/V Controller Bay	Diesel	190	Vessel
2/00/91	Unalaska, Reese Bay-F/V Skagit Eagle	Diesel	237	Vessel
7/5/1995	Akutan-Trident Seafood	Diesel	237	Cannery
5/00/87	Uliaga Is.-F/V Tae Wong	Diesel	250	Vessel
3/00/87	Ulak Is.-F/V Birgit	Diesel	286	Vessel
11/00/88	Atka Is.-F/V City of Seattle	Diesel	286	Vessel
7/22/1995	Seguam Is.-F/V Northern Wind	Diesel	357	Vessel
2/00/88	Yunalaska Is.-F/V Captain Billy	Diesel	381	Vessel
12/00/88	Shemya Is.-F/V Opty	Diesel	381	Vessel
12/00/86	Adak Tank	JP-5	643	Tank
2/00/89	Dutch Harbor-M/V Swallow	Diesel	714	Vessel
12/00/88	Akun Island-M/V Aoyagi Maru	Diesel	761	Vessel
2/1/88	Nikolski-F/V Alaska Star	Diesel	856	Vessel
11/26/1997	Unalaska Is.-M/V Kuroshima	Bunker	928	Vessel
1/00/1989	Unalaska Is.-M/V Chil Bo San	Diesel	1,452	Vessel
1/00/1989	Amchitka Is. T/B Foss 256	Diesel	1,999	Vessel
3/00/1981	Attu Is.-M/V Dae Rim	Diesel	2,619	Vessel

Reference - Iwamoto, Larry. Alaska Department of Environmental Conservation Spill Data, Exel spreadsheet.
 Reference - Whitney, John. 2000 The Aleutian Islands and Lower Alaska Peninsula: Oceanographic Conditions and NOAA's Oil Spill Response History during 1981-1999. HAZMAT Report 2000-3.

Locations of Major Oil Spill Events

Figure H-4. Locations of Major Spill Events.

Aleutians Subarea, Alaska

RISK LAYERS for CANDIDATE SITES for GEOGRAPHIC RESPONSE STRATEGIES

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RISK SYMBOLS

Response Equipment Depot Tramper Offload Activities Primary (≥300 loads) Primary (≥20 and < 300 loads) Secondary (≤20 loads) Key Nearshore Fishing Grounds Aleutian Subarea Noncrude Carrier Routes = 227,272 Bbls (10 million gals.) = 2,272,727 Bbls (100 million gals.) > 18,181,818 Bbls (800 million gals.) =13 to14 million Bbls #6 Oil Traffic to Asia 6000+/- vessels	Bulk Fuel Storage Sites > 5,000 bbls - 5k-9,999 bbl. - 10k-39,999 bbl. - 40k-99,999 bbl. - 100k-299,999 bbl. - 300K-500,000 bbl. Zone Boundary Abandoned Canneries Airport Airport, lighted Dock Crane Barge Frequent Fishing Vessel Cruise and AMHS Ship Traffic	Aleutian Subarea Spills >24 barrels 1994-2004 = Persistent = Non-Persistent - 24-71 bbl. - 24-71 bbl. - 72-142 bbl. - 72-142 bbl. - 143-214 bbl. - 143-214 bbl. - 215-285 bbl. - 215-285 bbl. - 286-357 bbl. - 286-357 bbl. - 358-428 bbl. - 358-428 bbl. - 429-800 bbl. - 429-800 bbl. - 801-2619 bbl. - 801-2619 bbl.
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Tramper Locations:
Adak
Akutan
Beaver Inlet-Unalaska
Dutch Harbor
Kiska
Tanaga
Other Roadsteads*

*Atka, Gusty Bay, Makushin Bay
Reference - Woodley, Chris-USCG-Document provided-3/25/04

Locations of Key Nearshore Fishing Grounds & Tramper Offload Activities

Figure H-5. Locations of Fishing Grounds and Tramper Activities.

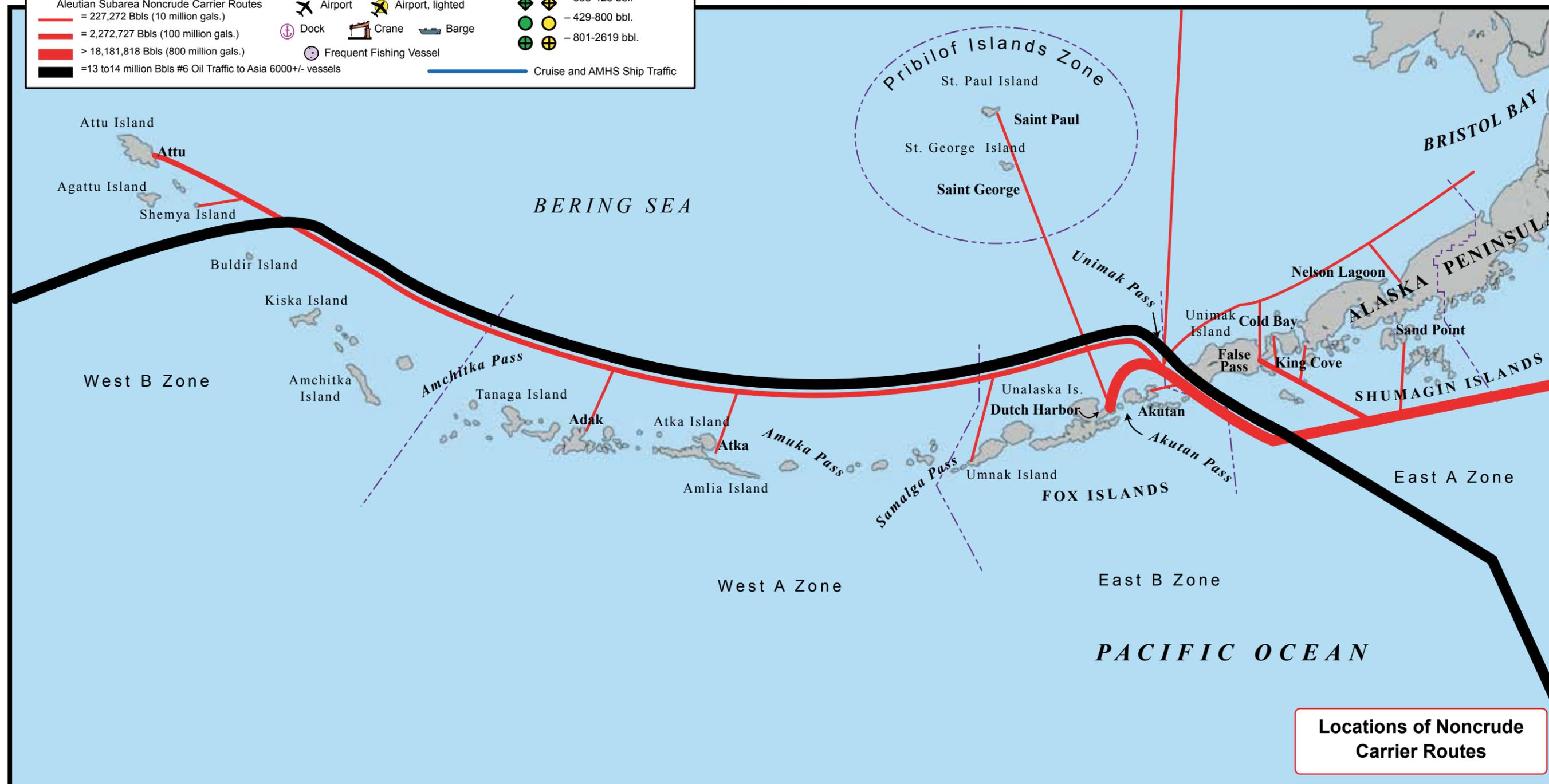
Aleutians Subarea, Alaska

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RISK SYMBOLS

<p>Response Equipment Depot</p>	<p>Bulk Fuel Storage Sites > 5,000 bbl.</p> <ul style="list-style-type: none"> - 5k-9,999 bbl. - 10k-39,999 bbl. - 40k-99,999 bbl. - 100k-299,999 bbl. - 300K-500,000 bbl. 	<p>Aleutian Subarea Spills >24 barrels 1994-2004</p> <ul style="list-style-type: none"> = Persistent = Non-Persistent - 24-71 bbl. - 72-142 bbl. - 143-214 bbl. - 215-285 bbl. - 286-357 bbl. - 358-428 bbl. - 429-800 bbl. - 801-2619 bbl.
<p>Tramper Offload Activities</p> <ul style="list-style-type: none"> Primary (≥300 loads) Primary (≥20 and < 300 loads) Secondary (≤20 loads) 	<p>Aleutian Subarea Noncrude Carrier Routes</p> <ul style="list-style-type: none"> = 227,272 Bbls (10 million gals.) = 2,272,727 Bbls (100 million gals.) > 18,181,818 Bbls (800 million gals.) = 13 to 14 million Bbls #6 Oil Traffic to Asia 6000+/- vessels 	<p>Aleutian Subarea Spills >24 barrels 1994-2004</p> <ul style="list-style-type: none"> Zone Boundary Abandoned Canneries Airport Airport, lighted Dock Crane Barge Frequent Fishing Vessel Cruise and AMHS Ship Traffic



Locations of Noncrude Carrier Routes

Figure H-6. Locations of Non-crude Carrier Routes.

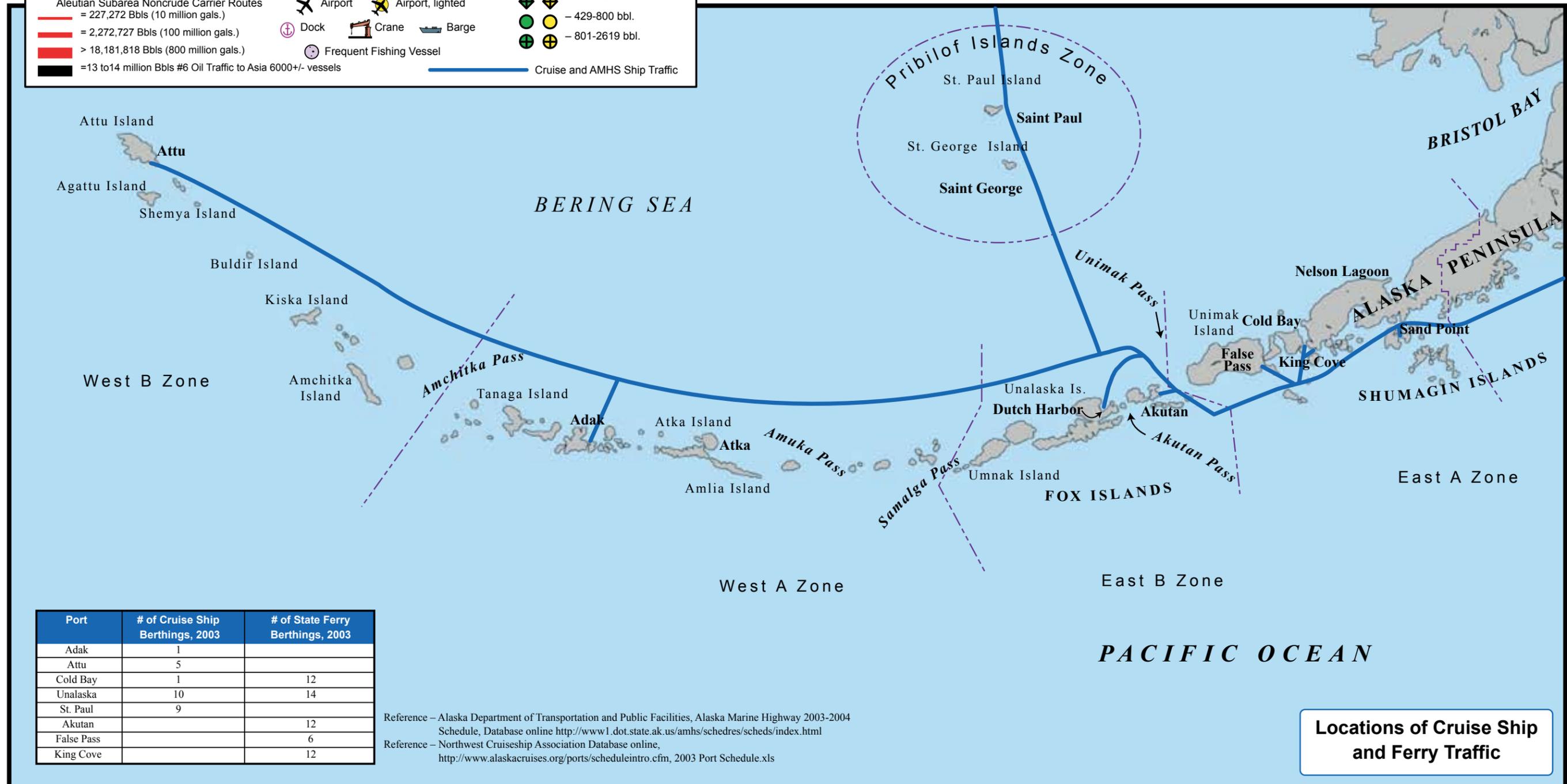
Aleutians Subarea, Alaska

RISK LAYERS for CANDIDATE SITES for GEOGRAPHIC RESPONSE STRATEGIES

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Port	# of Cruise Ship Berthings, 2003	# of State Ferry Berthings, 2003
Adak	1	
Attu	5	
Cold Bay	1	12
Unalaska	10	14
St. Paul	9	
Akutan		12
False Pass		6
King Cove		12

Reference - Alaska Department of Transportation and Public Facilities, Alaska Marine Highway 2003-2004 Schedule, Database online <http://www1.dot.state.ak.us/amhs/schedres/scheds/index.html>
 Reference - Northwest Cruiseship Association Database online, <http://www.alaskacruises.org/ports/scheduleintro.cfm>, 2003 Port Schedule.xls

Locations of Cruise Ship and Ferry Traffic

Figure H-7. Primary Traffic Routes for State Ferries and Cruise Ships.

Aleutians Subarea, Alaska

RISK LAYERS for CANDIDATE SITES for GEOGRAPHIC RESPONSE STRATEGIES

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Response Equipment Depot 	Bulk Fuel Storage Sites > 5,000 bbls 	Aleutian Subarea Spills >24 barrels 1994-2004
Tramper Offload Activities 	Aleutian Subarea Noncrude Carrier Routes 	Zone Boundary
Key Nearshore Fishing Grounds 	Abandoned Canneries 	Aleutian Subarea Spills >24 barrels 1994-2004 (continued)
Aleutian Subarea Noncrude Carrier Routes (continued) 	Airport 	Aleutian Subarea Spills >24 barrels 1994-2004 (continued)
	Airport, lighted 	Aleutian Subarea Spills >24 barrels 1994-2004 (continued)
	Dock 	Aleutian Subarea Spills >24 barrels 1994-2004 (continued)
	Crane 	Aleutian Subarea Spills >24 barrels 1994-2004 (continued)
	Barge 	Aleutian Subarea Spills >24 barrels 1994-2004 (continued)
	Frequent Fishing Vessel 	Aleutian Subarea Spills >24 barrels 1994-2004 (continued)
		Cruise and AMHS Ship Traffic

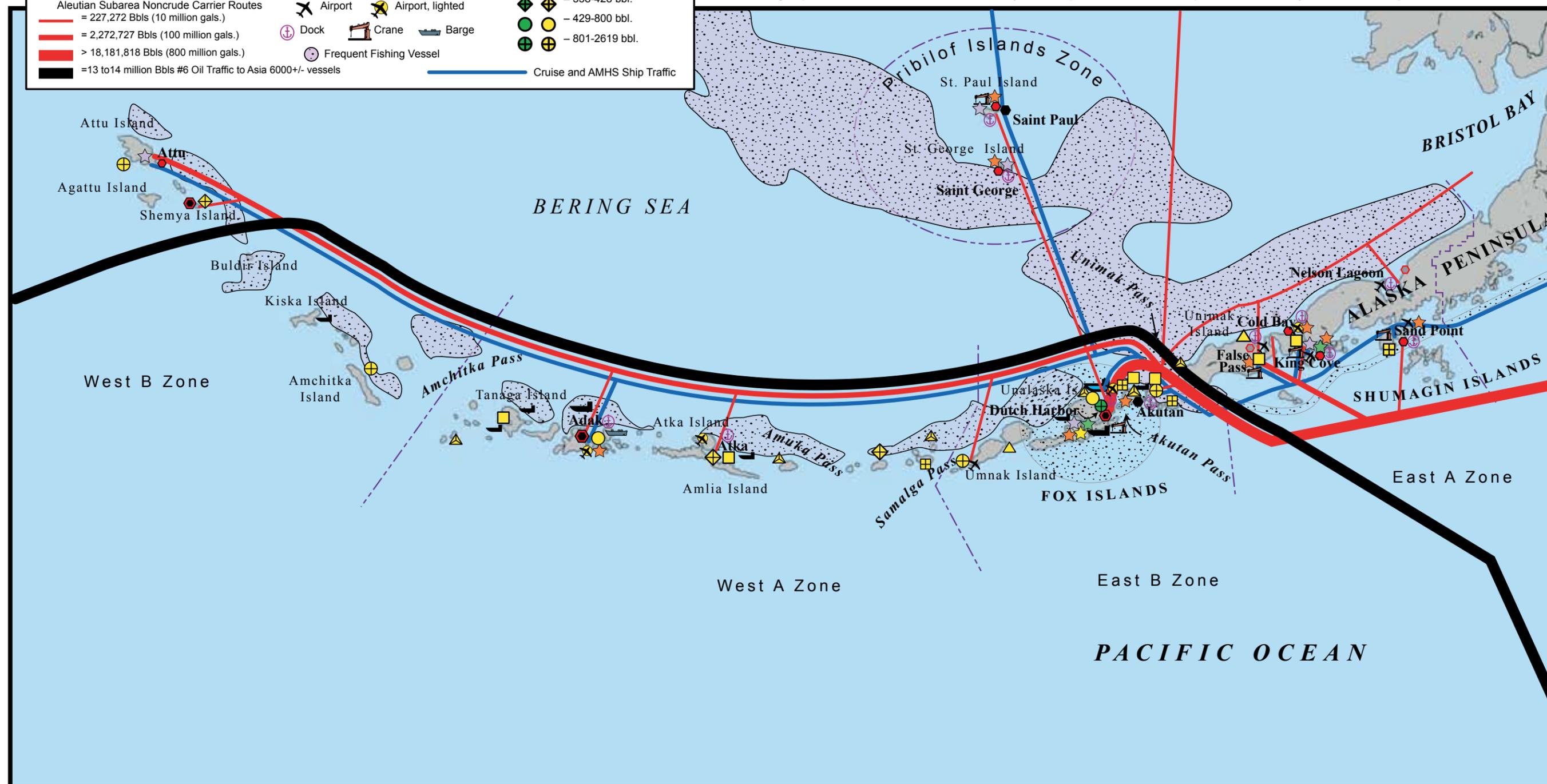


Figure H-8. Composite Map of All Risk Factors Combined.

Aleutians Subarea
Potential Places of Refuge
Site Assessment Matrix KEY

D = A deep draft vessel that exceed 20,000 Gross Tons, has drafts of 25-60 ft. and range from 450 ft.- 1000 ft. LOA, typical of Tankers/Cruiseships	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	SP=Sand Point
	D/P= Dock or Pier		Rky= Rocky		SF=Sport fishing	Y= Yes	H=Highly Sensitive as designated by the AI Subarea GRS Workgroup	NL=Nelson Lagoon
LII= A light draft vessels of 10,000 to 19,999 Gross Tons, has drafts up to 25 ft., LOA of up to 450 ft., typical of Ferrys/Trampers			G= Gravel		AQ= Aquaculture	N = No	MESA # = Designated as a "Most Environmentally Sensitive Area" & map number	FP=False Pass
			Cl= Clay		R=Recreational			CB=Cold Bay
S= Sand			CI=Commercial/Industrial		KC=King Cove			
LI= A light draft vessels of 300 to 10,000 Gross Tons, has drafts up to 25 ft., LOA of up to 450 ft., typical of Ferrys/Trampers			SH=Shells		A= Anchorage	UA=Unalaska		
			H= Hard		S=Subsistence Activities	AN=Akutan		
S = A shallow draft vessel less than 300 Gross Tons, has a draft less than 15 ft., LOA less than 200 ft., typical of Excursion/Fishing vessels			stk=Sticky		WV=Wildlife Viewing	NI=Nikolski		
			sft=Soft		H=Hunting	AA=Atka		
			St=silt			AK=Adak		
			Sl=Shale			AU=Attu Station		
			N/A=Not Applicable			StP=St. Paul		
	NI=No Information		SG=St. George					

Table H-1. Key to Site Assessment Matrix.

PPOR ID# (number size)	Type of berth	Overview Map #	Location Name	Lat.	Lon.	Anchoring SwingRoom or Dock Face(w/ Dolphins) in ft.	Depth MLLW in fathoms (approach)	Max Vessel Depth	Bottom Type	Exposure to	Conflicting uses	Ability to Boom	GRS#	Sensitive Resources	Dist. to Population Center(nm)	Dist. Alt. PPOR
Potential Places of Refuge for DEEP DRAFT large vessel exceeding 20,000 Gross Tons																
01-D	A	1	Stepovak Bay	55°47.57'N	159°45.26'W	6000	37	60	M,S	S,SE	CF	N	No	E	42 to SP	42 to 02-D
02-D	A	1	Balboa Bay	55°32.08'N	160°36.75'W	6000	38	60	M,Sh	S,W	CF	N	No	E	15 to SP	42 to 01-D
03-D	A	2	Ikatan Bay	54°46.38'N	163°16.06'W	5400	33	60	S,M	W	CF	WD	No	E	8 to FP	26 to 04-D
04-D	A	2	Otter Cove	54°42.13'N	163°21.48'W	6200	26	60	M, SI	S	CF	WD	No	E	34 to FP	26 to 03-D
05-D	A	2	Slime Bank/Urilia Bay Anchorage	54°58.76'N	164°18.12'W	6000	18	60	M, SI, stk	N,E,W	CF	WD	No	E	44 to FP	105 to 06-D
06-D	M	3	Wide Bay	53°56.94'N	166°36.69'W	900	30	60	S,h	S	CI,R,S	WD	AEB-13	H, MESA 28b, E	4.5 to UA	1.5 to 07-D
07-D	A	3	Broad Bay	53°55.50'N	166°37.75'W	1800	38	60	M	S,SW	CI,R,S	WD	AEB-13	H, MESA 28b, E	4 to UA	1.5 to 06-D
08-D	A	4	Summer Bay	53°54.85'N	166°27.42'W	1800	9	50	Rky	N, NW	CI,R,S	WD	AEB-19	H, MESA 28b, E	3 to UA	4 to 10-D
09-D	D/P	4	Dutch Harbor-APL dock	53°53.00'N	166°31.86'W	540 (965)	7.5(7)	40	N/A	None	CI, R	Y	AEB-17	H, MESA 28b, E	0.0 to UA	1.5 to 10-D
10-D	D/P	4	Dutch Harbor-UMC/USCG Wharf Positions #1-7	53°54.12'N	166°31.76'W	1420 ft.	7	24-39	N/A	None	CI, R	Y	AEB-17	H, MESA 28b, E	0.0 to UA	1.5 to 09-D
11-D	A	5	Hot Springs Bay	54°10.84'N	165°51.04'W	3000	25	60	M,S	N, NE	CF,R,S	WD	AEB-04	H, MESA 28b, E	8 to AN	36 to 06-D
12-D	A	5	Makushin Bay	53°45.43'N	166°57.68'W	2800	36	60	H, M	W, SW	CF	WD	AEB-09	E	52 to UA	47 to 06-D
13-D	A	5	Inanudak Bay	53°17.68'N	168°25.87'W	6000	32	60	S	NW	CF	N	AEB-20	E	1 to NI	60 to 15-D
14-D	A	6	Applegate Cove	52°52.24'N	169°53.62'W	4200	34	60	S	N	CF	WD	No	MESA 29, E	38 to NI	17 to 16-D
15-D	A	6	South Cove	52°48.28'N	169°51.10'W	3000	44	60	Rky	S	CF	WD	No	MESA 29, E	40 to NI	17 to 15-D
16-D	A	6	Nazan Bay-1	52°12.12'N	174°06.35'W	6000	43	60	M,S	E	CF,R,S	N	No	E	3.5 to AA	125 to 15-D
17-D	A	7	Sand Bay	51°58.58'N	176°07.97'W	4200	25	60	S,M,rky	W	CF	WD	No	E	20 to AK	17 to 19-D
18-D	A	7	Kuluk Bay	51°53.10'N	176°34.51'W	6000	40	60	S	E	CF, CI, R	WD	No	E	2.5 to AK	17 to 18-D
19-D	A	7	North Kanaga Island	51°46.46'N	177°25.05'W	3000	40	60	S	N,W	CF	WD	No	E	60 to AK	47 to 21-D
20-D	A	7	Tanaga Bay	51°44.50'N	178°01.83'W	6000	25	60	G	W	CF	WD	No	E	110 to AK	47 to 20-D
21-D	A	9	Sarna Bay-Attu Island	52°52.84'N	173°21.19'E	6000	34	60	S, H	N, E	CF	No	No	E	16 to AU	26 to 25-D
22-D	A	9	Abraham Bay-Attu Island	52°50.55'N	172°40.89'E	4800	28	60	Rky, G	S,SW	CF	No	No	E	25 to AU	39 to 22-D
23-D	A	9	Otkriti Bay-Agattu Island	52°21.67'N	173°33.88'E	3600	18	60	S, Sh	S,E,W	CF	No	No	MESA 33, E	38 to AU	22 to 25-D

Table H-2. Aleutian Subarea Site Assessment Matrix (Page 1 of 4).

PPOR ID# (number size)	Type of berth	Overview Map #	Location Name	Lat.	Lon.	Anchoring SwingRoom or Dock Face(w/ Dolphins) in ft.	Depth MLLW in fathoms (approach)	Max Vessel Depth	Bottom Type	Exposure to	Conflicting uses	Ability to Boom	GRS#	Sensitive Resources	Dist. to Population Center(nm)	Dist. Alt. PPOR
24-D	A	9	Binnacle Bay- Agattu Island	52°30.11'N	173°33.04'E	3000	28	60	Rky	N,W	CF	No	No	MESA 33, E	24 to AU	22 to 24-D
25-D	A	10	North Point- St. Paul	57°14.84'N	170°10.88'W	3600	10	50	S,Rky	N,NE,W	CF,R,S	WD	No	MESA 27, E	18 to SP	4.5 to 27-D
26-D	A	10	English Bay-St. Paul	57°08.46'N	170°18.74'W	1800	5	30	S,Rky	S	CF, CI, R, S,A	WD	No	MESA 27, E	1 to SP	1.3 to 30-D
27-D	A	10	Lukanin Bay-St. Paul	57°08.05'N	170°13.58'W	2100	9	25	M,S	NE, E,S	CF, CI, R, S,A	WD	No	MESA 27, E	2 to SP	6 to 30-D
28-D			UNASSIGNED PPOR NUMBER													
29-D	A	10	Zapadni Bay- St George	56°34.10'N	169°42.40'W	3000	12	50	S	SE	CF, CI, R, S,A	WD	No	MESA 27, E	13 to SG	9 to 34-D
30-D	A	10	North Anchorage-St. George Is	56°37.11'N	169°33.61'W	2400	22	60	S	S,W	CF, CI, R, S,A	WD	No	MESA 27, E	0.5 to SG	1 to 31-D
31-D	A	10	Garden Cove- St.George	56°33.10'N	169°30.83'W	3600	20	60	NI	S, E	CF, CI,CF, CI, R, S,A R	WD	No	MESA 27, E	7 to SG	8.5 to 32-D
Potential Places of Refuge for LIGHT DRAFT II vessels 10,000 to 19,999 Gross Tons																
32-LII	A	1	Lefthand Bay-Balboa Bay	55°32.37'N	160°42.80'W	3000	12	40	M,Sh	E	CF	WD	No	E	16 to SP	15 to 33-LII
33-LII	A	1	Popof Strait-Sand Point	55°18.77'N	160°32.88'W	3000	27	40	stk, S	S, N	CF, CI, R	WD	No	E	.5 to SP	15 to 32-LII
34-LII	A	1	Entrance Point Anchorage-Port Moller	55°59.42'N	160°37.52'W	2300	8	35	S	N,NE,NW	CI,R,S	WD	No	MESA 25b,E	19 to NL	145 to 05-D
35-LII	D/P	2	Cold Bay Dock	55°12.47'N	162°41.70'W	450	6	32	N/A	E, SE	CF, CI, R	WD	No	MESA 25ab, E	0.0 to CB	1 to 38-LII
36-LII	A	2	Volcano Bay	55°12.84'N	161°59.05'W	3000	40	40	S	S	CF	WD	No		28 to KC	20 to 39-LII
37-LII	A	2	Fox Island Anchorage	54°57.42'N	162°23.96'W	3000	13	30	Stk	SW	CF	WD	No	MESA 35,E	7 to KC	5 to 39-LII
38-LII	A	2	Cold Bay Anchorage	55°12.74'N	162°40.90'W	3000	13(4.5)	40	S	SE	CF, CI, R	WD	No	MESA 25ab, E	1 to CB	1. to 35-LII
39-LII	A	2	King Cove Anchorage	55°02.27'N	162°19.19'W	1800	15	40	M	S	CF, CI, R	WD	No	H	0.5 to KC	5 to 37-LII
40-LII	A	3	Captain's Bay	53°51.55'N	166°34.64'W	3000	45(14)	60	M	None	CI,R,S	WD	AEB-15,16	H, MESA 28b, E	1 to UA	.5 to 41-LII
41-LII	M	3	Captain's Bay Moorings (3 possible)	53°50.89'N	166°35.24'W	3000	45(14)	60	N/A	None	CI,R,S	WD	AEB-15,16	H, MESA 28b, E	1 to UA	.5 to 40-LII
42-LII	D/P	4	Dutch Harbor-Delta Western	53°53.50'N	166°32.06'W	485	7	30	N/A	None	CI, R	WD	No	MESA 28b, E	0.0 to UA	1.3 to 44-LII
43-LII	D/P	4	Magones Marine Services	53°54.30'N	166°31.38'W	625	35	35	N/A	None	CI, R	Y	No	H, MESA 28b	0.0 to UA	.5 to 44-LII
44-LII	D/P	4	Dutch Harbor-Western Pioneer	53°54.58'N	166°30.78'W	565	6	27	N/A	None	CI, R	Y	No	MESA 28b, E	0.0 to UA	0.3 nm to 43-LII
45-LII	A	3	Hog Island Anchorage	53°53.59'N	166°33.59'W	1200	20	30	M	None	CF, CI, R, A	Y	AEB-18	H, MESA 28b, E	0.5 to UA	2.5 nm to 46-LII
46-LII	D/P	3	Captains Bay-N. Pac Fuel	53°51.09'N	166°34.40'W	510	30	36	N/A	N, NW	CI, R	No	AEB-15,16	H, MESA 28b	0.0 to UA	2.5 nm to 45-LII

Table H-2. Aleutian Subarea Site Assessment Matrix (Page 2 of 4).

PPOR ID# (number size)	Type of berth	Overview Map #	Location Name	Lat.	Lon.	Anchoring SwingRoom or Dock Face(w/ Dolphins) in ft.	Depth MLLW in fathoms (approach)	Max Vessel Depth	Bottom Type	Exposure to	Conflicting uses	Ability to Boom	GRS#	Sensitive Resources	Dist. to Population Center(nm)	Dist. Alt. PPOR
47-LII	A	5	Akutan Harbor	54°07.74'N	165°44.03'W	2500	31	35	M	E	CF, CI, R, A	WD	AEB-03	H, MESA 28a	4.5 to AN	7 to 12-D
48-LII	A	6	Korovin Bay	52°14.95'N	174°19.14'W	6000	48	60	M	W	CF,R,S	No	No	E	35 toAA	33 to 17-D
49-LII	A	7	Tanaga Island-Gusty Bay	51°51.94'N	177°52.31'W	3600	40	60	Rky	N, NE	CF	No	No	E	98 TO AK	53 to 20-D
50-LII	D/P	7	Adak Fuel Pier 10	51°51.24'N	176°39.16'W	280 (760)	5	25	N/A	E	CF, CI, R	WD	No	E	0.0 TO AK	0.5 to 53-LII
51-LII	D/P	7	Adak Supply Pier #5	51°51.67'N	176°38.25'W	600	5	27	N/A	None	CF, CI, R	WD	No	E	0.5 TO AK	0.1 to 54-LII
52-LII	D/P	7	Adak Berthing Pier #3	51°51.68'N	176°38.06'W	500	5	25	N/A	None	CF, CI, R	WD	No	E	0.5 TO AK	0.1 to 53-LII
53-LII	A	9	Holtz Bay-Attu Island	52°57.36'N	173°12.38'E	6000	32	35	S	N,NE	CF	WD	No	E	23 to AU	34 to 56-LII
54-LII	D/P	9	Alcan Harbor-Shemya Island	52°44.05'N	174°04.36'E	250	5	25	N/A	NE	CF	WD	No	E	33 to AU	34 to 55-LII
Potential Places of Refuge for LIGHT DRAFT I vessels 300 to 9,999 Gross Tons																
55-LI	D/P	1	Sand Point Dock	55°19.93'N	160°30.06'W	350	5	30	N/A	S	CF, CI, R	WD	No	MESA 25b,E	0.0 to SP	2 to 32-LII
56-LI	D/P	2	King Cove City Dock	55°03.38'N	162°19.36'W	150(330)	5	27	N/A	S	CF, CI, R	WD	No	H	0.0 to KC	1 to 57-LI
57-LI	D/P	2	King Cove Cannery Dock	55°03.57'N	162°19.14'W	400	5	29	N/A	S	CI, R	WD	No	H	0.0 to KC	1 to 56-LI
58-LI	D/P	2	False Pass Ferry Dock	54°51.34'N	163°24.37'W	175	4.5	20	N/A	SE,NE	CI	WD	No	H	0.0 to FP	7 to 03-D
59-LI	M	4	Dutch Harbor Mooring Buoys	53°53.94'N	166°31.28'W	800	17	35	N/A	None	CI, R	Y	No	MESA 28b, E	0.0 to UA	0.2 to 62-LI
60-LI	D/P	4	Dutch Harbor-W.P. Aux. Dock	53°54.67'N	166°30.65'W	350	7	29	N/A	None	CI, R	Y	No	MESA 28b, E	0.0 to UA	0.3 to 62-LI
61-LI	D/P	4	Light Cargo Dock	53°54.28'N	166°30.73'W	190 (370)	5	25	N/A	None	CI, R	Y	No	H, MESA 28b	0.0 to UA	.5 to 59-LI
62-LI	M	4	Iliuliuk Bay Mooring	53°52.76'N	166°31.84'W	1200	6	25	N/A	N	CF, CI, R, A	No	No	H, MESA 28b	0.25 to UA	.3 to 63-LI
63-LI	A	4	Iliuliuk Bay Anchorage	53°52.77'N	166°33.05'W	1200	15	30	St	N	CF, CI, R, A	No	No	H, MESA 28b	0.25 to UA	.3 to 62-LI
64-LI	D/P	4	Iliuliuk Harbor Docks	53°52.77'N	166°33.05'W	540	4(3.75)	24	N/A	None	CI, R	Y	AEB-19	H, MESA 28b, E	0.5 to UA	.75 to 62-LI
65-L I	D/P	3	Westward Seafood Dock Captains Bay	53°51.49'N	166°33.22'W	800	4	20	N/A	None	CI, R	WD	AEB-15,16	H, MESA 28b, E	0.0 to UA	1.5 to 66-LI
66-LI	D/P	3	OSI Facility	53°50.42'N	166°34.91'W	450	5	26	N/A	None	CI, R	WD	AEB-15,16	H, MESA 28b, E	0.0 to UA	1.5 to 65-LI
67-LI	D/P	5	Akutan City Dock	54°07.99'N	165°46.70'W	350	5	28	N/A	E	CF, CI, R	WD	AEB-03	H, MESA 28a	0.0 AN	.5 66-L I
68-LI	D/P	5	Akutan Cannery	54°08.00'N	165°46.43'W	450	5	25	N/A	E	CF, CI, R	No	AEB-03	H, MESA 28a	0.0 AN	.5 to 65-LI
69-LI	A	5	Lost Harbor	54°13.55'N	165°36.78'W	1200	6	25	M,S	W	CF	No	EB-02, AEB-0	H, MESA 28a	4.5 to AN	7.5 to 65-LI

Table H-2. Aleutian Subarea Site Assessment Matrix (Page 3 of 4).

PPOR ID# (number size)	Type of berth	Overview Map #	Location Name	Lat.	Lon.	Anchoring SwingRoom or Dock Face(w/ Dolphins) in ft.	Depth MLLW in fathoms (approach)	Max Vessel Depth	Bottom Type	Exposure to	Conflicting uses	Ability to Boom	GRS#	Sensitive Resources	Dist. to Population Center(nm)	Dist. Alt. PPOR
70-LI	A	6	Nazan Bay-2	52°12.73'N	174°10.47'W	5600	28	60	M	E	CF, CI, R	No	No	E	1 to AA	1 to 69 LI
71-LI	D/P	6	Atka	52°13.88'N	174°10.51'W	100	6	25	N/A	SE	CF, CI, R	No	No	E	1.5 to AA	1 to 68 LI
72-LI	A	7	Tanaga Island-Hotsprings Bay	51°46.94'N	177°45.85'W	2800	21	40	Rky	S,NE	CF	No	No	E	96 TO AK	22 TO 51-LII
73-LI	D	8	Constantine Harbor	51°23.75'N	179°16.95'E	1800	16	40	M,S	N	A	WD	No	E	178 to AK	75 to 72-LI
74-LI	A	8	Kiska Harbor	51°57.84'N	177°34.11'E	2400	14	40	Rky	E	CF	WD	No	MESA 31, E	230 to AK	75 to 71-LI
An incomplete list of Potential Places of Refuge for SHALLOW DRAFT small sized vessel less than 300 Gross Tons																
75-S	D/P	1	Port Moller	55°59.28'N	160°34.50'W	300	3	12	N/A	SW	CF, CI, R	WD	No	MESA 25b,E	20 to NL	19 to 76-S
76-S	D/P	1	Nelson Lagoon	56°00.23'N	161°09.49'W	200	2	10	N/A	None	CF, CI, R	Y	No	H,MESA 25b,E	0.0 to NL	19 to 75-S
77-S	A	5	Anderson Bay	53°40.03'N	166°50.61'W	2800	67	25	M,stk	None	CF	WD	AEB-10	E	53 to UA	43 to 77-S
78-S	A	5	Chernofsky Harbor	53°23.92'N	167°30.89'W	1200	13	25	M	None	CF	Y	No	E	73 to UA	43 to 76-S
79-S	D/P	10	Village Cove Harbor-St Paul	57°07.63'N	170°16.95'W	200	3	12	N/A	None	CF, CI	Y	No	MESA 27, E	4.5 to SP	40 to 79-S
80-S	D/P	10	St. George Harbor	56°34.21'N	169°39.92'W	100	3	12	N/A	None	CF, CI	Y	No	MESA 27, E	14 to SG	40 to 78-S

Table H-2. Aleutian Subarea Site Assessment Matrix (Page 4 of 4).