

North Slope, Alaska

RISK LAYERS for CANDIDATE SITES for
GEOGRAPHIC RESPONSE STRATEGIES &
POTENTIAL PLACES OF REFUGE

May 31, 2004

Locations of Bulk Fuel
Storage

Bulk Fuel Location	Company	Capacity-BBL
Point Hope	School/Corp./City/Borough/DOT	30,297
Point Lay	North Slope Borough	13,952
Wainwright	North Slope Borough/Corp/Private	35,664
Barrow	Eskimos, Inc.	74,452
Barrow	North Slope Borough	27,285
Kaktovik	North Slope Borough/Corp/USAF/Private	32,709
Prudhoe Bay	BP Exploration	241,119

RISK SYMBOLS

Response Equipment Depot

Chukchi

ALCS

Arctic

AD&E

Key Nearshore Subsistence and Fishing Grounds

North Slope Subarea Noncrude Carrier Routes

= Non-crude route

Landing Craft / Shallow Water 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.

North Slope 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.

Zone Boundary

Abandoned Canneries

Airport

Airport, lighted

Dock

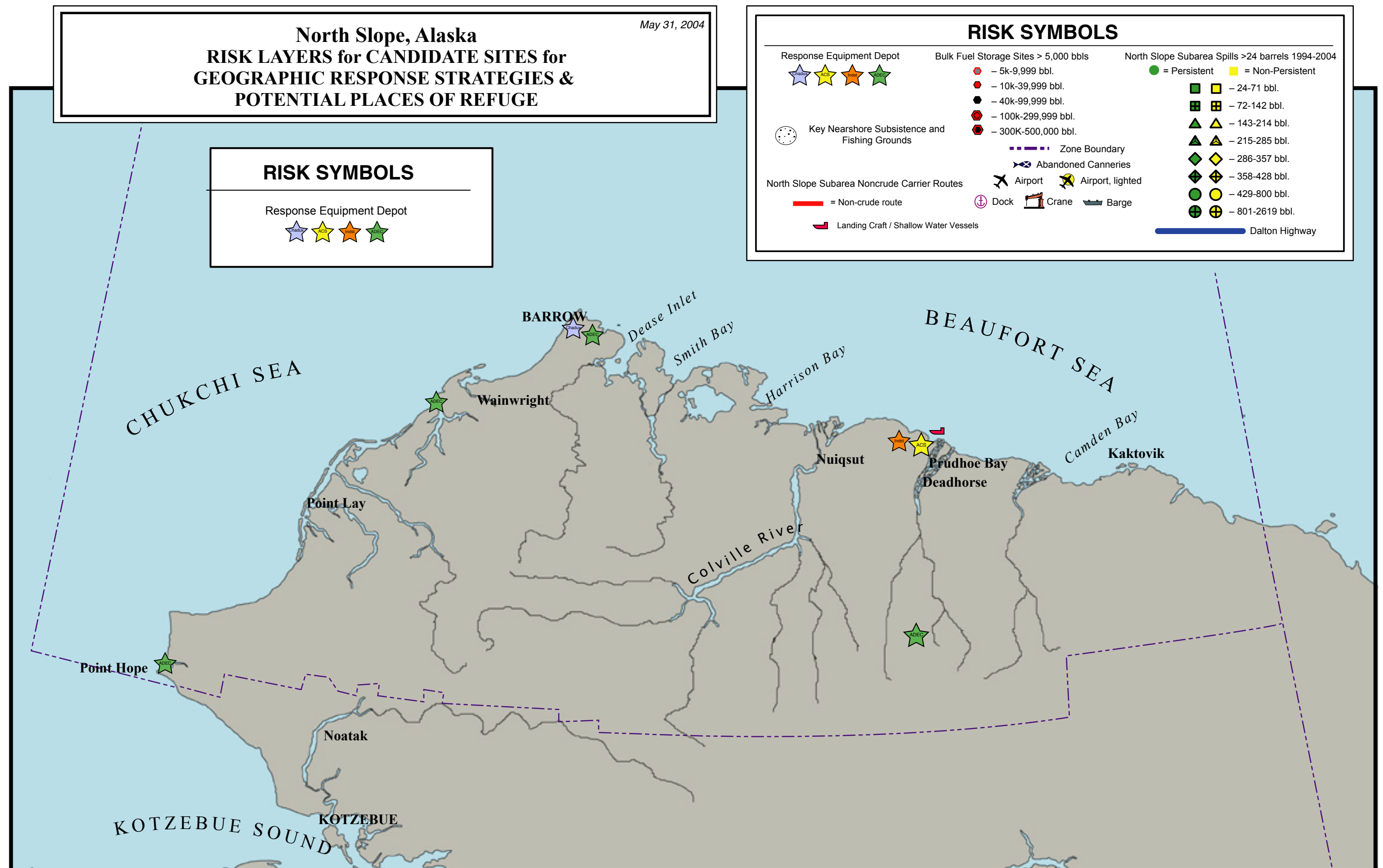
Crane

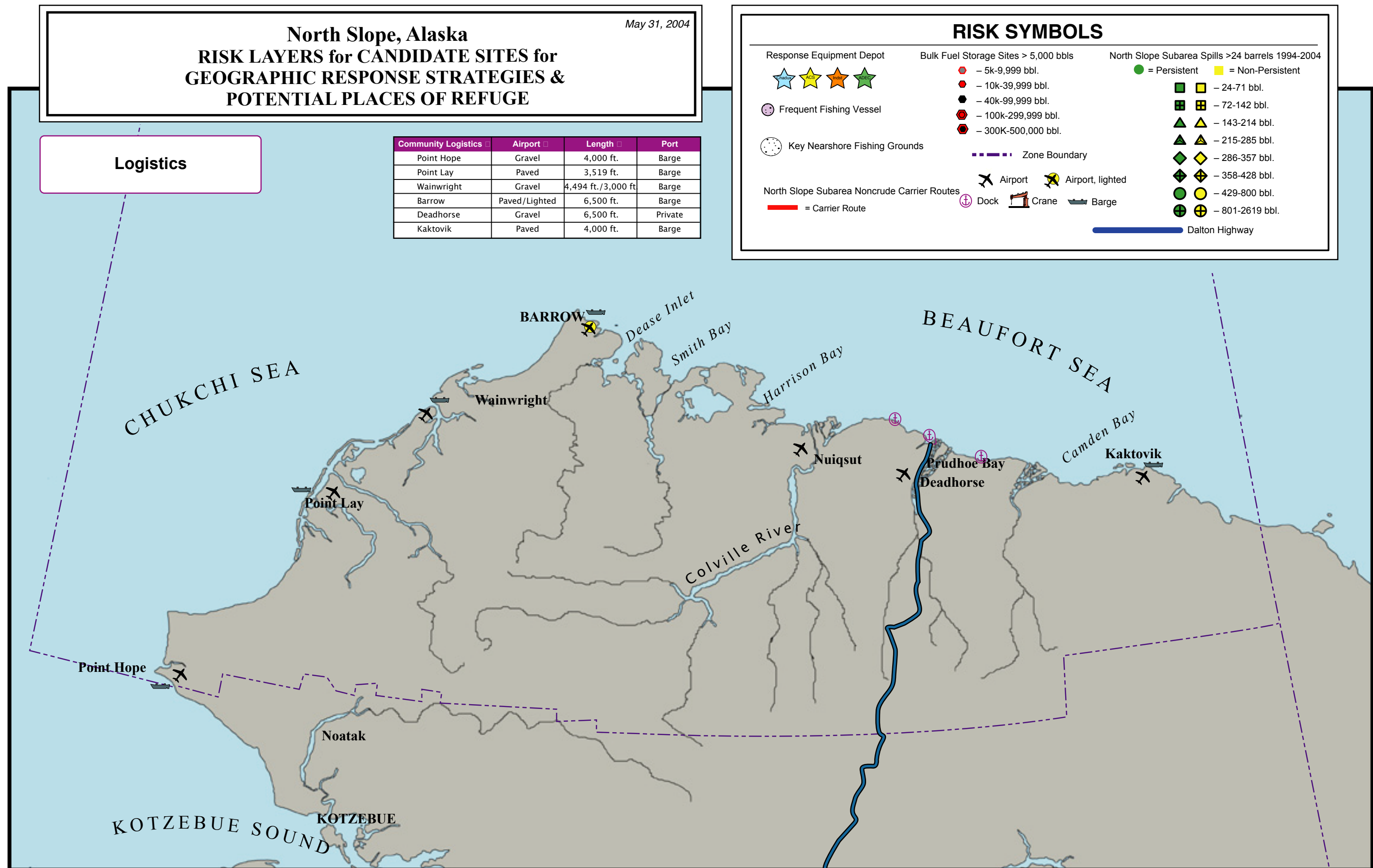
Barge

Dalton Highway



Figure H-1. Locations of bulk fuel facilites and pipelines.





June 17, 2004

Spill Date	Spill Name	Type	Qty-Bbl
12/24/2000	East Prudhoe Bay, BULK FUEL FACILITY, TANK #3	Diesel	36
6/30/1996	West Prudhoe Bay, MUKLUK PAD	Diesel	26
2/28/2003	East Prudhoe Bay, MCC FUEL DOCK	Diesel	85
5/25/1998	Wainwright City	Diesel	238

Response Equipment Depot
 TUESDAY WEDNESDAY THURSDAY FRIDAY

Frequent Fishing Vessel

Tramper Offload Activities
 Primary (≥20 loads) Secondary (≤20 loads)

Key Nearshore Fishing Grounds

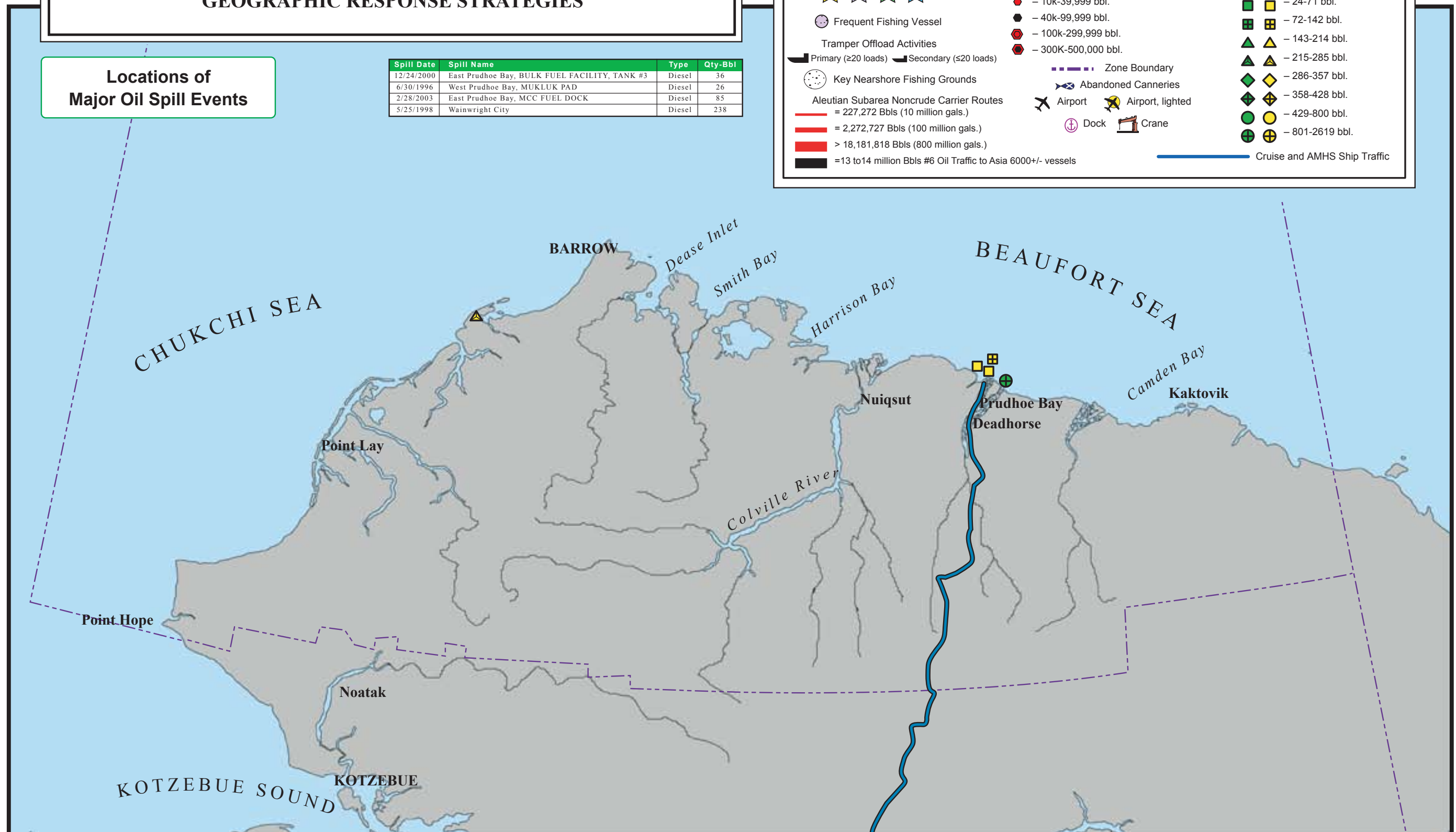
Aleutian Subarea Noncrude Carrier Routes
 = 227,272 Bbls (10 million gals.)
 = 2,272,727 Bbls (100 million gals.)
 > 18,181,818 Bbls (800 million gals.)
 =13 to14 million Bbls #6 Oil Traffic to Asia 6000+/- vessels

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

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.

Cruise and AMHS Ship Traffic



North Slope SCP: PPOR, Part One

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Response Equipment Depot

Key Nearshore Subsistence and Fishing Grounds

North Slope Subarea Noncrude Carrier Routes

= Non-crude route
 Landing Craft / Shallow Water Vessels

Bulk Fuel Storage Sites > 5,000 bbls

- 5k-9,999 bbl.
 - 10k-39,999 bbl.
 - 40k-99,999 bbl.
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 - 300K-500,000 bbl.

North Slope Subarea Noncrude Carrier Routes

Zone Boundary
 Abandoned Canneries
 Airport
 Airport, lighted
 Dock
 Crane
 Barge

North Slope Subarea Spills >24 barrels 1994-2004

= Persistent

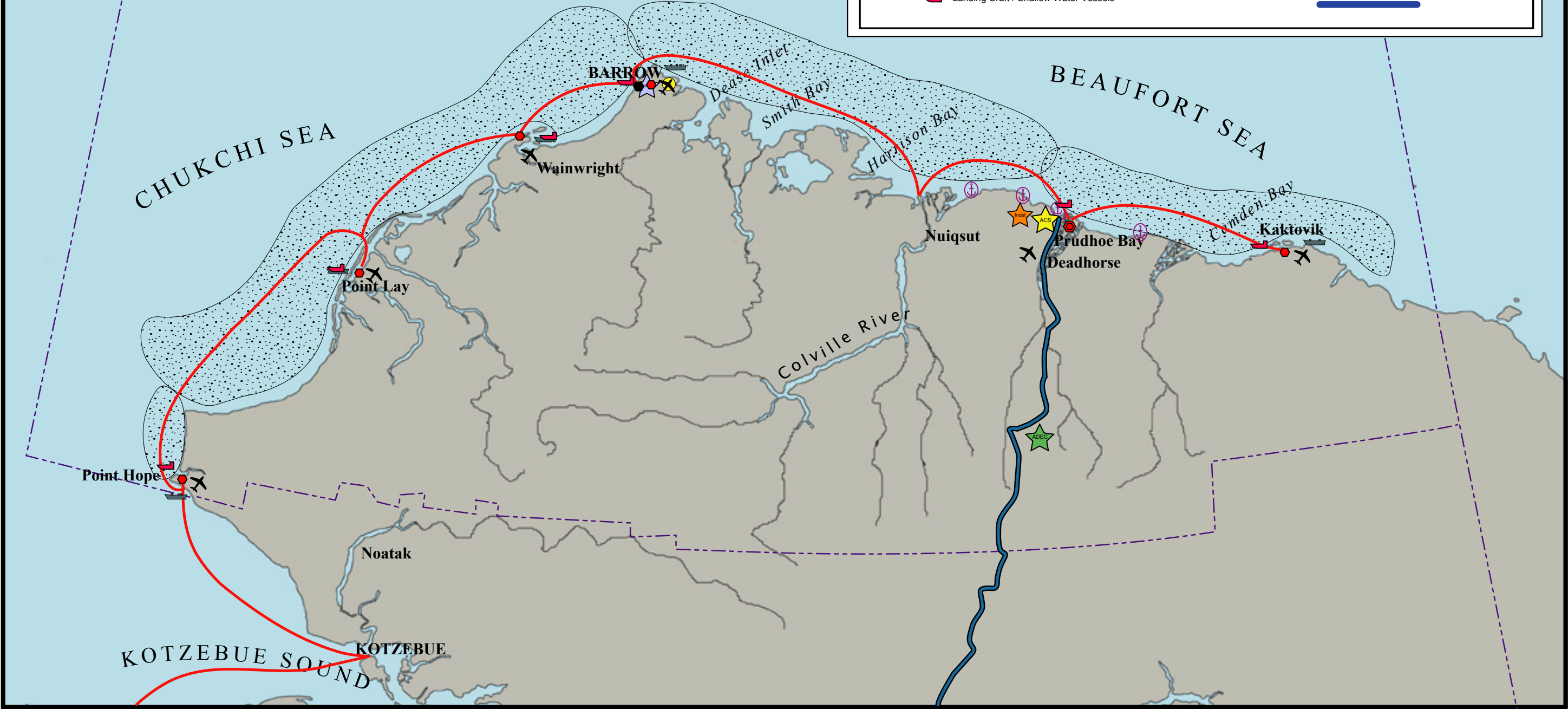


Figure H-5. Composite map of all risk factors combined.

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 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.,	A= Anchorage D/P= Dock or Pier M=Mooring	Distance measured to nearest shoal waters or hazard NR=Not restricted/open anchorage where vessel can be moored based on draft.	M= Mud Rky= Rocky G= Gravel Cl= Clay S= Sand SH=Shells H= Hard stk=Sticky sft=Soft St=silt Sl=Shale N/A=Not Applicable NI=No Information	Exposed to winds/seas from the direction noted	CF=Commercial Fishing SF=Sport fishing AQ= Aquaculture R=Recreational CI=Commercial/Industrial A= Anchorage S=Subsistence Activities WV=Wildlife Viewing H=Hunting	WD=Weather Dependent Y=Yes N=No	E= Threatened or Endangered Species present H=Highly Sensitive as designated by the NWA Subarea GRS Workgroup CH=Critical Habitat for endangered species	B = Barrow K = Kaktovik N = Nuiqsut P = Prudhoe W= Wainwright PL = Point Lay PH = Point Hope SM = St. Michaels KZ = Kotzebue RD= Red Dog Mine SH = Shishmaref WA = Wales BM = Brevig Mission NM = Nome G = Golovnin GB = Gambell SV = Savoonga T=Tuktoyaktuk

Table H-1. Key to Site Assessment Matrix.

North Slope and Northwest Arctic
Potential Places of Refuge
Site Assessment Matrix

PPOR ID# (size-zone-number)	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 FATHOMS	Bottom Type	Exposure to	Conflicting uses	Ability to Boom	Sensitive Resources	Dist. to Population Center(nm)	Dist. To the next Alternative PPOR (nm)
Northwest Arctic Potential Places of Refuge																
			Zone-01 Saint Lawrence Island													
DII-01-01	1	Anchorage	Gambell Anchorage	63°40.57'N	171°33.62'W	60	NR		8	Rky	N-E / S-N	S	N	E	7 to GB	25 to DII-01-02
DII-01-02	1	Anchorage	Savoonga Anchorage	63°42.80'N	171°34.27'W	60	NR		13	NI	W-E	S	N	E	1.3 to SV	25 to DII-01-01
DII-01-03	1	Anchorage	Powooliak Bay	63°13.07'N	170°49.88'W	60	NR		13	M,Rky	S-W	S	N	CH	50 to GB	60 to DII-01-04
DII-01-04	1	Anchorage	Manik Lagoon	62°59.42'N	169°14.27'W	60	NR		12	S,Sh	E-S	S	N	CH	70 to SV	60 to DII-01-03
			Zone-02 Norton Sound													
DII-02-01	2	Anchorage	Nome Anchorage	64°26.48'N	165°27.10'W	60	5000		10	S,G	E-W	CF	N		3 to NM	20 to DI-02-02
DI-02-01	2	Anchorage	St. Michael Bay	63°30.73'N	161°49.71'W	40	NR		5	Hrd	N-NW	CF, S	WD	CH	6 to SM	110 to DII-02-01
DI-02-02	2	Anchorage	Sledge Island	64°31.94'N	166°11.30'W	40	3800		3	Rky	WD		N	CH	20 to NM	20 to DII-02-01
L-02-01	2	Anchorage	Golovnin Bay	64°32.99'N	163°06.96'W	20	2100		4 (2-approach)	Hrd,Stky	S	CF, S	WD	CH	1 to G	110 to DI-02-01
L-02-02	2	Dock	City Dock-Port of Nome	64°29.65'N	165°26.33'W	20	200	22.5	N/A	NA	S	CI	Y		.75 to NM	3.8 to DII-02-01
L-02-03	2	Dock	Westgold Dock-Port of Nome	64°29.76'N	165°26.24'W	20	190	22.5	N/A	NA	S	CI	Y		.75 to NM	3.8 to DII-02-01
			Zone-03 Seward Peninsula													
DII-03-01	3	Anchorage	Cape York	65°29.10'N	167°43.27'W	60	4000		12	M,G,Rky	SE-W	S	WD	CH	14 to WH, 32 to BM	7.5 to DII-03-02
DII-03-02	3	Anchorage	Tin City	65°32.59'N	167°57.86'W	60	6000		14	S	SE-W	S	WD	CH	6 to WH, 39 BM	7.5 to DII-03-01
DII-03-03	3	Anchorage	Little Diomede	65°47.41'N	168°54.11'W	60	NR		20	Rky	WD	S	N	CH	75 to SH, 22 to WH	27 to DII-03-02
DI-03-01	3	Anchorage	Port Clarence	65°14.62'N	166°40.28'W	35	6000		6	M,Stky	Sheltered	S	WD	CH	8 to BM	28 to DII-03-02
DI-03-02	3	Anchorage	Shishmaref Anchorage	66°16.43'N	166°18.01'W	40	NR		6	M	N-E	S	N	CH	6 to SH	70 to DII-03-03
			Zone-04 Kotzebue Sound													
DI-04-01	4	Anchorage	Goodhope Bay	66°13.12'N	168°54.11'W	40	1800		6	M	N-E	S	WD	CH	46 to KZ	36 to DI-04-02
DI-04-02	4	Anchorage	Sea Buoy Anchorage	66°48.08'N	163°14.90'W	40	NR		8	M,S	W	S	WD	CH	17 to KZ	36 to DI-04-02
L-04-01	4	Dock	Red Dog Mine Port	67°36.17'N	164°04.06'W	15	350	15	NA	M,S	S-W	CI	WD	CH	3 to RD	60 to DI-04-02
North Slope Potential Places of Refuge																
			Zone-01 Pt. Hope to Wainwright													
DII-01-01	1	Anchorage	Pt Hope	68°26.14'N	166°38.89'W	60	12000		6	M	N-W	S	Y	CH	.8 to PH	98 to DII-01-02
DII-01-02	1	Anchorage	Point Lay Anchorage	69°46.06'N	163°21.88'W	60	24000		6	M	N-W-SW	S	Y	CH	1.3 to PL	54 to DII-01-03
DII-01-03	1	Anchorage	Icy Cape Anchorage	70°22.47'N	161°28.28'W	60	24000		8	M	N-W	S	N	CH	31 to W	30.5 to DII-01.-4
DII-01-04	1	Anchorage	Wainwright Anchorage	70°39.26'N	160°14.27'W	60	7500		9	M	N-W	S	N	CH	7 to W	6 to S-01-01
S-01-01	1	Anchorage	Wainwright Inlet	70°35.84'N	160°02.94'W	8	4500		?	M	NW	S	Y	CH	4 to W	6 to DII-01-04
			Zone-02 Peard Bay to Harrison Bay													
DII-02-01	2	Anchorage	Barrow	71°19.97'N	156°50.30'W	60	6500		8	M	N-W	S	N	CH	2 to P	12 to DI-02-02
DI-02-01	2	Anchorage	Peard Bay	70°53.99'N	158°25.10'W	40	15700		6	M, CI	N	S	N	CH	35 to W	38 to DII-02-01
DI-02-02	2	Anchorage	Point Barrow	71°24.10'N	156°17.61'W	40	17300		5.5	M	N-E-W	S	N	CH	11 to B	12 to DII-02-01
L-02-01	2	Anchorage	Dease Inlet	71°13.83'N	155°53.35'W	20	3000		1	M	N-E-W	S	WD	CH	16 to B	15 to DI-02-02
L-02-02	2	Anchorage	Harrison Bay	70°37.52'N	151°26.88'W	20	12150		5.5	M,S	N- E	S	WD	CH	105 to B	64 to DI-03-01
			Zone-03 North Slope													
DII-03-01	3	Anchorage	Camden Bay	70°10.88'N	144°38.67'W	60	12000		10	M,S	N-E-W	S	N	CH	20 to K	66 to DI-03-02
DI-03-01	3	Anchorage	Midway Island Anchorage	70°35.62'N	148°13.13'W	40	20000		8	M	N-E-W	S	N	CH	16 to P	7.5 to DI-03-02
DI-03-02	3	Anchorage	Cross Island Anchorage	70°31.96'N	147°52.56'W	40	7590		6.5	G - reef	N-E-W	S	N	CH	17 to P	7.5 to DI-03-01
S-03-01	3	Dock	Oliktok Dock	70°30.21'N	149°53.50'W	4	18225	4	N/A	N/A	N-W	CI	WD	CH	30 to P	32 to L-02-02
S-03-02	3	Dock	West Dock	70°23.52'N	148°29.86'W	4	10600	4	N/A	N/A	N-W	CI	WD	CH	3 to P	13.5 to DI-03-01
S-03-03	3	Dock	Badami-Runway/Dock	70°09.19'N	146°53.73'W	4	6000	4	N/A	N/A	N-W	CI	Y	CH	30 to p	30 to DI-03-02
			Canada													
	Canada	Anchorage	Herschel Island	69°31.18'N	138°57.10'W	50	5000		9	M	W	S	WD	CH	130 to K	150 to Tuktoyaktuk
	Canada	Anchorage	Tuktoyaktuk	69°27.82'N	133°14.16'W	20	3000		5	M	N	CI	N	CH	2 to T	10 to the Tuktoyaktuk Dock
	Canada	Dock	Tuktoyaktuk	69°25.66'N	133°59.15'W	15	200	16	N/A		Sheltered	CI	Y	CH	0 to T	10 to the Tuktoyaktuk Anch.

Table H-2. North Slope and Northwest Arctic Subarea Site Assessment Matrix.