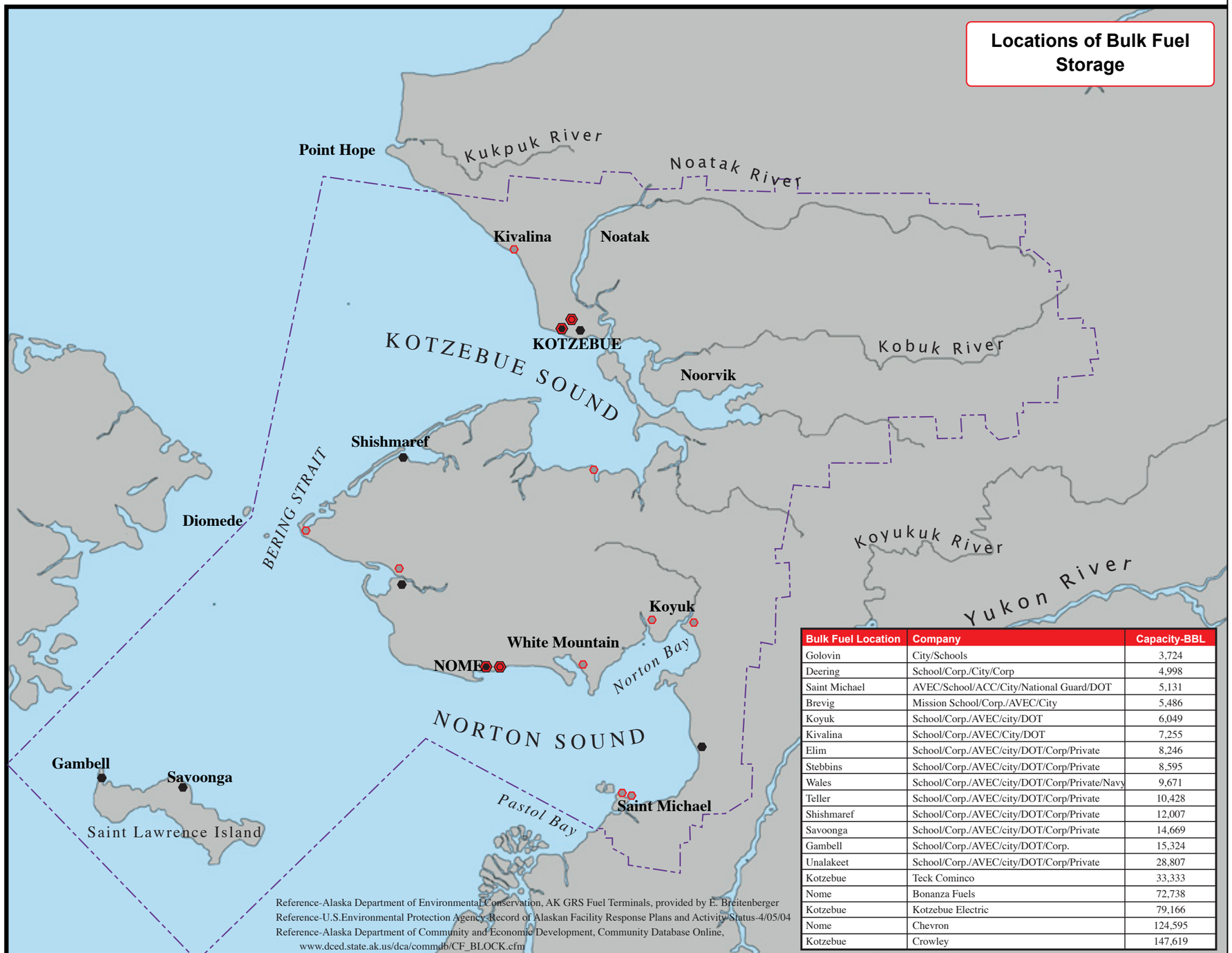

Bulk Fuel Location	Company	Capacity-BBL
Golovin	City/Schools	3,724
Deering	School/Corp./City/Corp	4,998
Saint Michael	AVEC/School/ACC/City/National Guard/DOT	5,131
Brevig	Mission School/Corp./AVEC/City	5,486
Koyuk	School/Corp./AVEC/city/DOT	6,049
Kivalina	School/Corp./AVEC/City/DOT	7,255
Elim	School/Corp./AVEC/city/DOT/Corp/Private	8,246
Stebbins	School/Corp./AVEC/city/DOT/Corp/Private	8,595
Wales	School/Corp./AVEC/city/DOT/Corp/Private/Navy	9,671
Teller	School/Corp./AVEC/city/DOT/Corp/Private	10,428
Shishmaref	School/Corp./AVEC/city/DOT/Corp/Private	12,007
Savoonga	School/Corp./AVEC/city/DOT/Corp/Private	14,669
Gambell	School/Corp./AVEC/city/DOT/Corp.	15,324
Unalakeet	School/Corp./AVEC/city/DOT/Corp/Private	28,807
Kotzebue	Teck Cominco	33,333
Nome	Bonanza Fuels	72,738
Kotzebue	Kotzebue Electric	79,166
Nome	Chevron	124,595
Kotzebue	Crowley	147,619

Reference-Alaska Department of Environmental Conservation, AK GRS Fuel Terminals, provided by E. Breitenberger
Reference-U.S.Environmental Protection Agency-Record of Alaskan Facility Response Plans and Activity Status-4/05/04
Reference-Alaska Department of Community and Economic Development, Community Database Online, www.dced.state.ak.us/dca/commdb/CF_BLOCK.cfm

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

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Northwest Arctic,Alaska

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

RISK SYMBOLS

Response Equipment Depot

Airport — Airport, lighted

Dock — Crane — Abandoned Canneries

Frequent Fishing Vessel — Barge

Tramper Offload Activities

Primary (20 loads) — Secondary (20 loads)

Key Nearshore Fishing Grounds

NW Arctic Subarea Noncrude Carrier Routes

Carrier route

Bulk Fuel Storage Sites > 5,000 bbls

- 3k-9,999 bbl.
- 10k-39,999 bbl.
- 40k-99,999 bbl.
- 100k-299,999 bbl.
- 300K-500,000 bbl.

NW Arctic 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

Zone Boundary

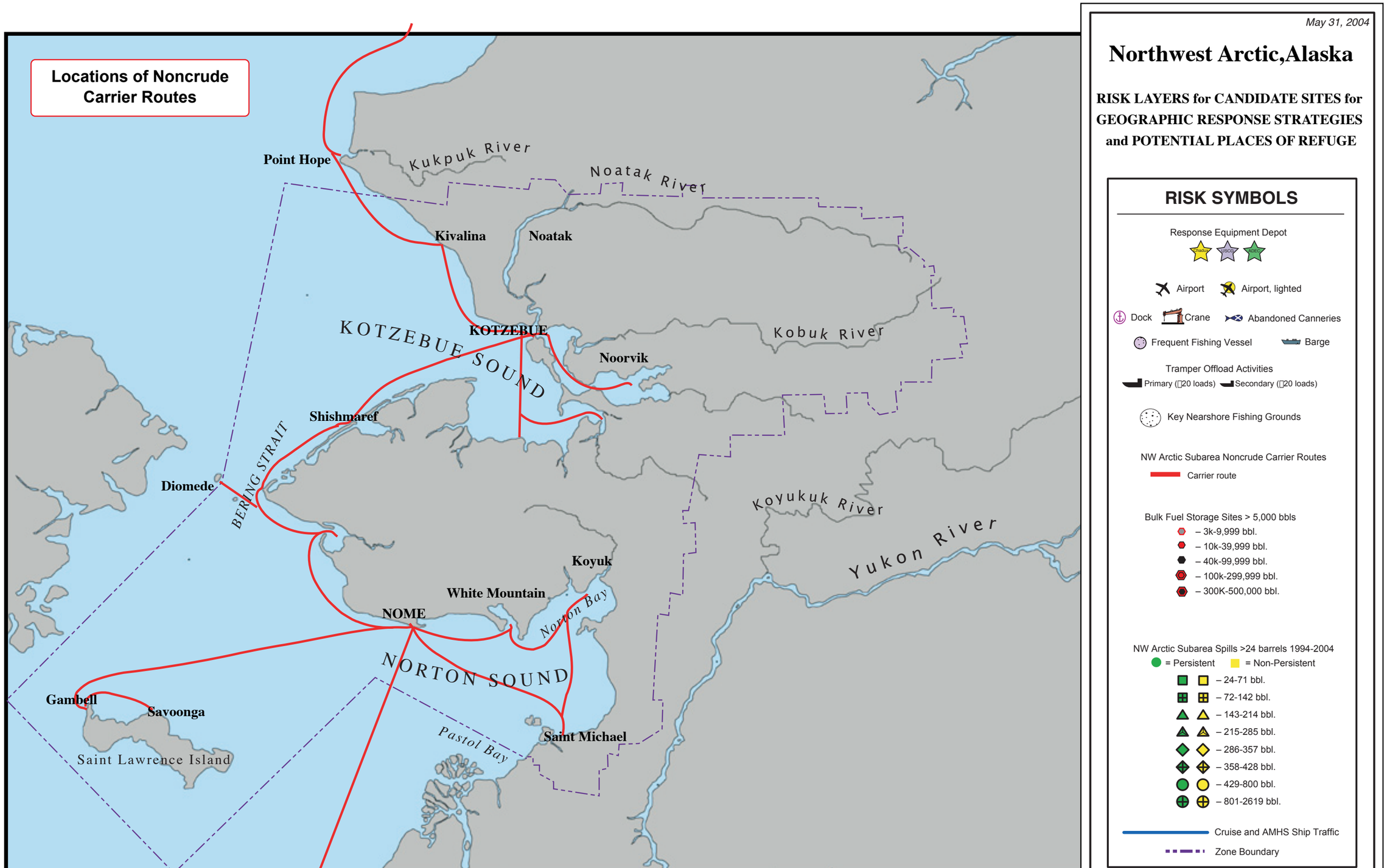
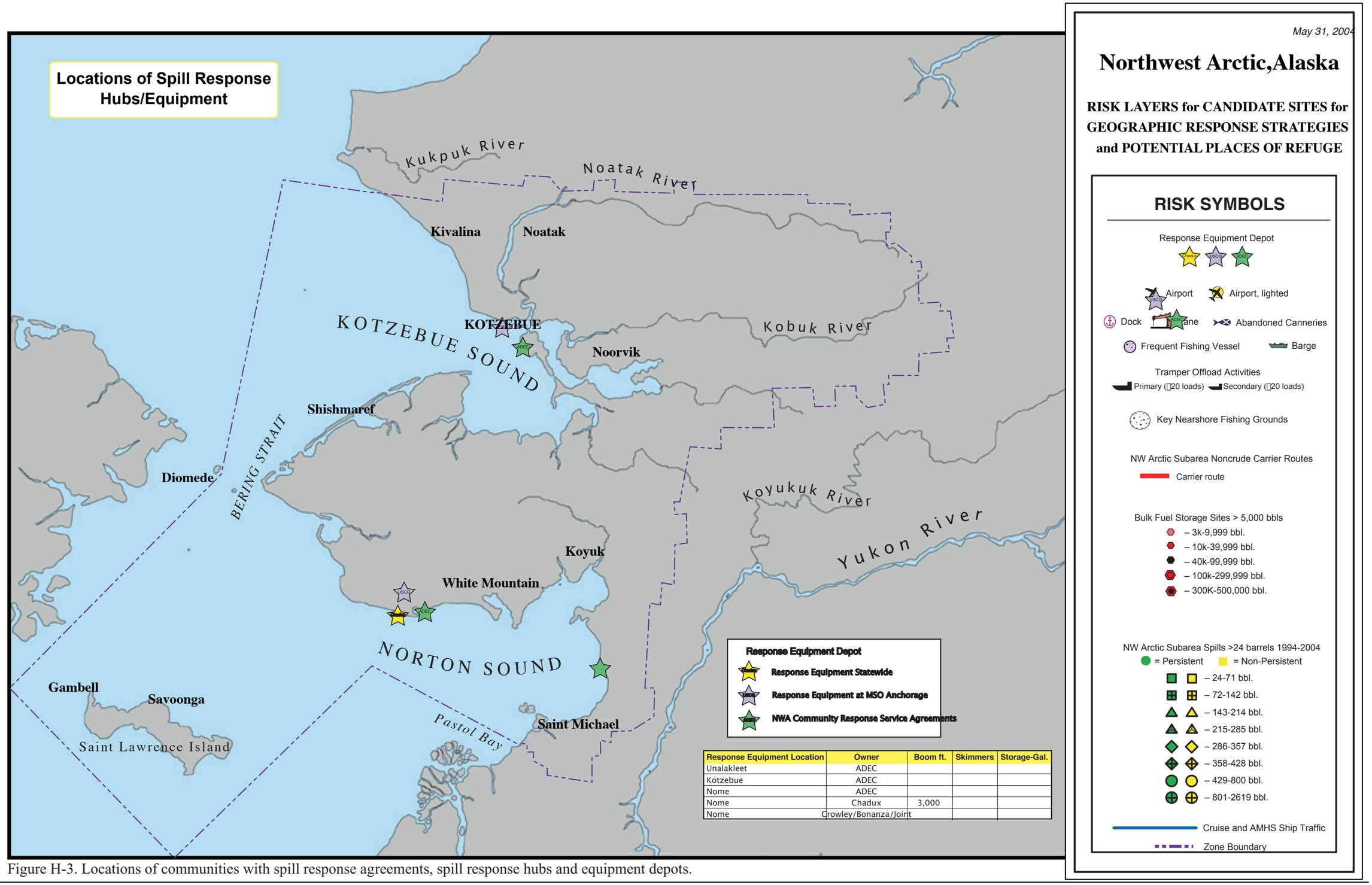
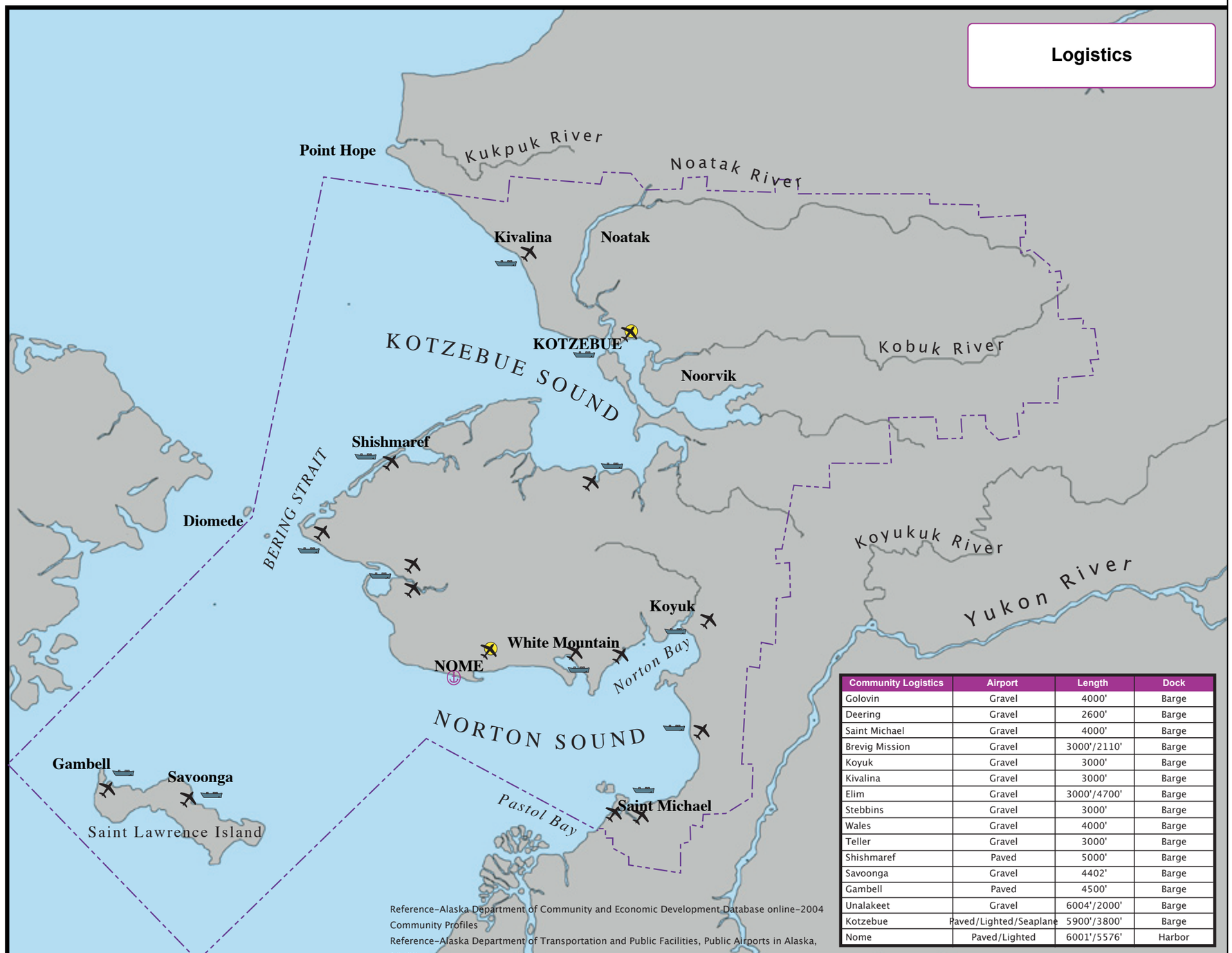


Figure H-2. Location of noncrude carrier routes.



Response Equipment Location	Owner	Boom ft.	Skimmers	Storage-Gal.
Unalakleet	ADEC			
Kotzebue	ADEC			
Nome	ADEC			
Nome	Chadux	3,000		
Nome	Crowley/Bonanza/Joint			

Figure H-3. Locations of communities with spill response agreements, spill response hubs and equipment depots.



Community Logistics	Airport	Length	Dock
Golovin	Gravel	4000'	Barge
Deering	Gravel	2600'	Barge
Saint Michael	Gravel	4000'	Barge
Brevig Mission	Gravel	3000'/2110'	Barge
Koyuk	Gravel	3000'	Barge
Kivalina	Gravel	3000'	Barge
Elim	Gravel	3000'/4700'	Barge
Stebbins	Gravel	3000'	Barge
Wales	Gravel	4000'	Barge
Teller	Gravel	3000'	Barge
Shishmaref	Paved	5000'	Barge
Savoonga	Gravel	4402'	Barge
Gambell	Paved	4500'	Barge
Unalakeet	Gravel	6004'/2000'	Barge
Kotzebue	Paved/Lighted/Seaplane	5900'/3800'	Barge
Nome	Paved/Lighted	6001'/5576'	Harbor

Figure H-4. Locations of major airports.

May 31, 2004

Northwest Arctic,Alaska

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

RISK SYMBOLS

Response Equipment Depot

Airport

Airport, lighted

Dock

Crane

Abandoned Canneries

Frequent Fishing Vessel

Barge

Tramper Offload Activities

Primary (20 loads)

Secondary (20 loads)

Key Nearshore Fishing Grounds

NW Arctic Subarea Noncrude Carrier Routes

Carrier route

Bulk Fuel Storage Sites > 5,000 bbls

- 3k-9,999 bbl.
- 10k-39,999 bbl.
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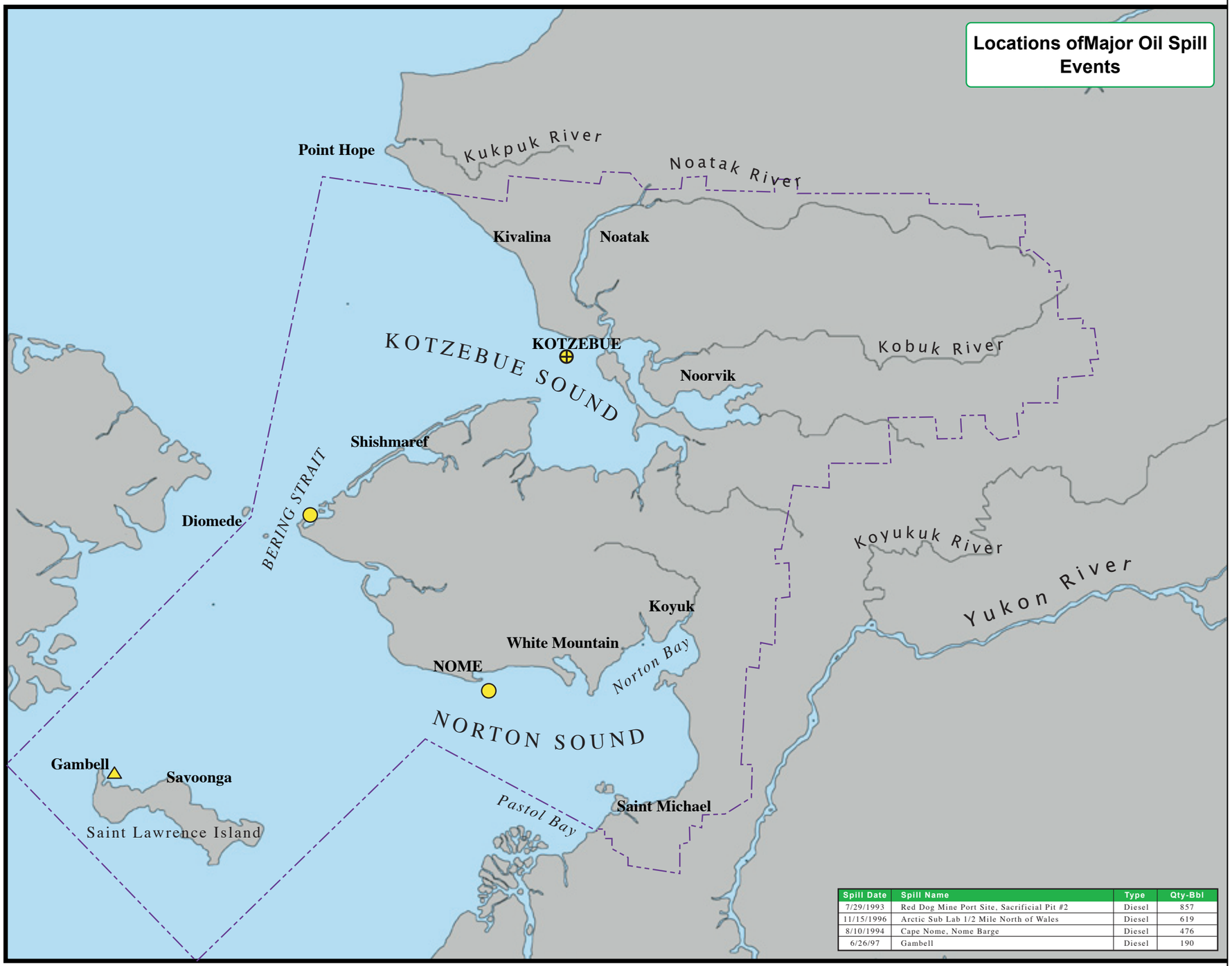
- 215-285 bbl.
- 286-357 bbl.
- 358-428 bbl.
- 429-800 bbl.
- 801-2619 bbl.

Cruise and AMHS Ship Traffic

Zone Boundary



Spill Date	Spill Name	Type	Qty-Bbl
7/29/1993	Red Dog Mine Port Site, Sacrificial Pit #2	Diesel	857
11/15/1996	Arctic Sub Lab 1/2 Mile North of Wales	Diesel	619
8/10/1994	Cape Nome, Nome Barge	Diesel	476
6/26/97	Gambell	Diesel	190

Figure H-5. Locations of marine casualty events.

May 31, 2004

Northwest Arctic,Alaska

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

RISK SYMBOLS

Response Equipment Depot

Airport

Airport, lighted

Dock

Crane

Abandoned Canneries

Frequent Fishing Vessel

Barge

Tramper Offload Activities

Primary (20 loads)

Secondary (20 loads)

Key Nearshore Fishing Grounds

NW Arctic Subarea Noncrude Carrier Routes

Carrier route

Bulk Fuel Storage Sites > 5,000 bbls

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- 429-800 bbl.
- 801-2619 bbl.

Cruise and AMHS Ship Traffic

Zone Boundary

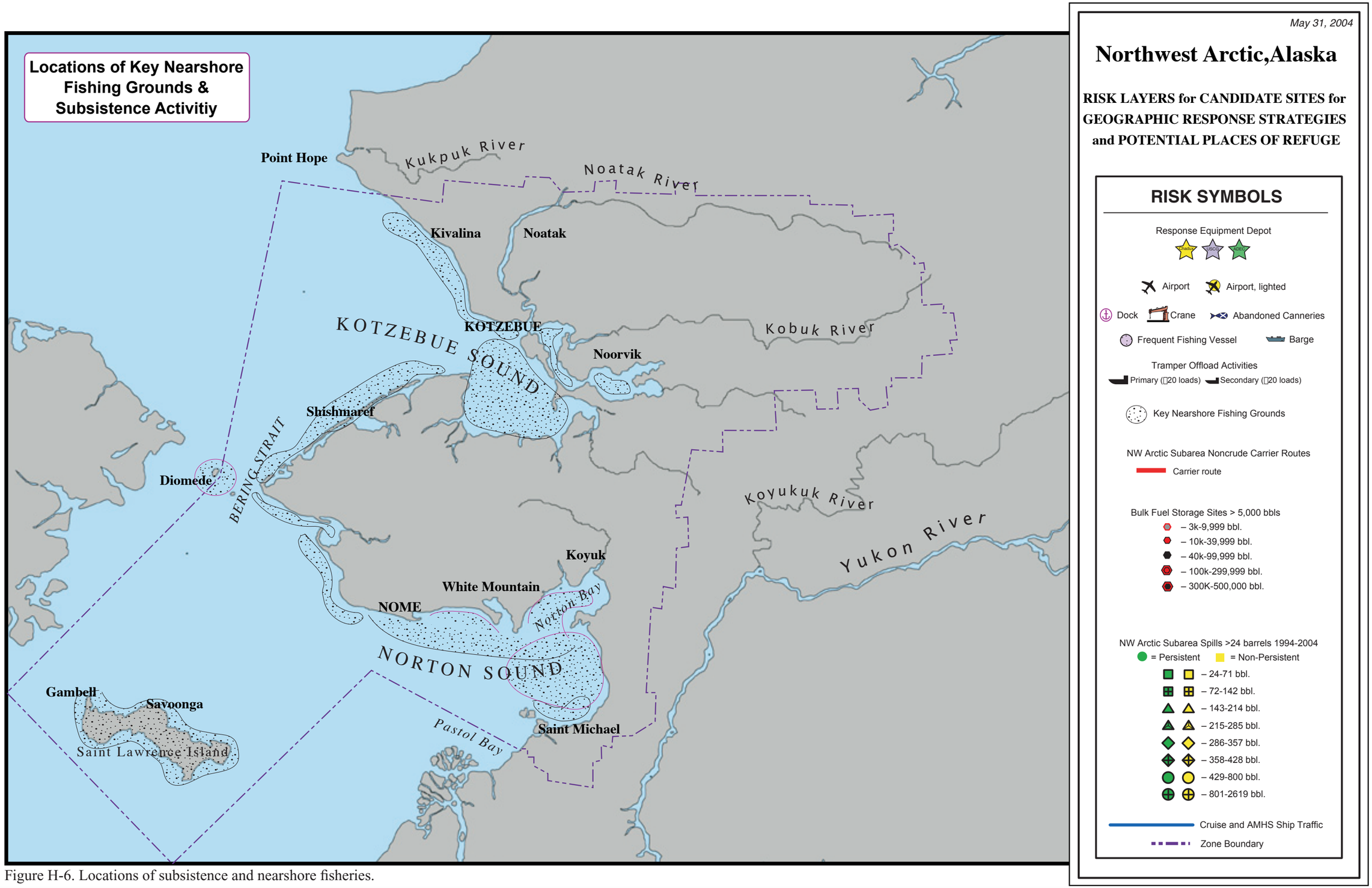

Figure H-6. Locations of subsistence and nearshore fisheries.

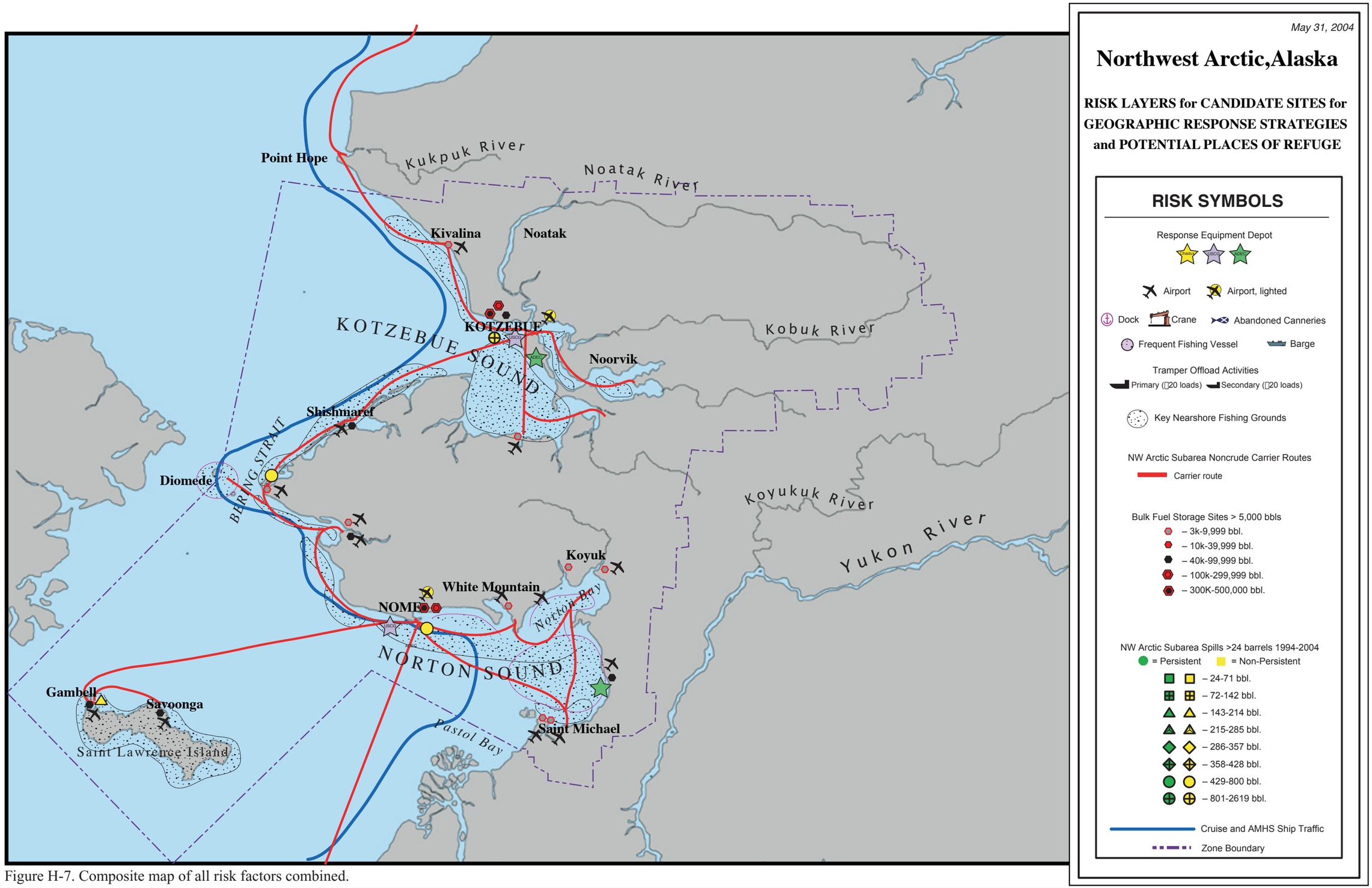

Figure H-7. Composite map of all risk factors combined.

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	63º40.57'N	171º33.62'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	63º42.80'N	171º34.27'W	60	NR		13	NI	W-E	S	N	E	1.3 to SV	25 to DII-01-01
DII-01-03	1	Anchorage	Powooiliak Bay	63º13.07'N	170º49.88'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	62º59.42'N	169º14.27'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	64º26.48'N	165º27.10'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	63º30.73'N	161º49.71'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	64º31.94'N	166º11.30'W	40	3800		3	Rky	WD		N	CH	20 to NM	20 to DII-02-01
L-02-01	2	Anchorage	Golovnin Bay	64º32.99'N	163º06.96'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	64º29.65'N	165º26.33'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	64º29.76'N	165º26.24'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	65º29.10'N	167º43.27'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	65º32.59'N	167º57.86'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	65º47.41'N	168º54.11'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	65º14.62'N	166º40.28'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	66º16.43'N	166º18.01'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	66º13.12'N	168º54.11'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	66º48.08'N	163º14.90'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	67º36.17'N	164º04.06'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	68º26.14'N	166º38.89'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	69º46.06'N	163º21.88'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	70º22.47'N	161º28.28'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	70º39.26'N	160º14.27'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	70º35.84'N	160º02.94'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	71º19.97'N	156º50.30'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	70º53.99'N	158º25.10'W	40	15700		6	M, Cl	N	S	N	CH	35 to W	38 to DII-02-01
DI-02-02	2	Anchorage	Point Barrow	71º24.10'N	156º17.61'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	71º13.83'N	155º53.35'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	70º37.52'N	151º26.88'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	70º10.88'N	144º38.67'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	70º35.62'N	148º13.13'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	70º31.96'N	147º52.56'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	70º30.21'N	149º53.50'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	70º23.52'N	148º29.86'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	70º09.19'N	146º53.73'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	69º31.18'N	138º57.10'W	50	5000		9	M	W	S	WD	CH	130 to K	150 to Tuktoyaktuk
	Canada	Anchorage	Tuktoyaktuk	69º27.82'N	133º14.16'W	20	3000		5	M	N	CI	N	CH	2 to T	10 to the Tuktoyaktuk Dock
	Canada	Dock	Tuktoyaktuk	69º25.66'N	133º59.15'W	15	200	16	N/A		Sheltered	CI	Y	CH	0 to T	10 to the Tuktoyaktuk Anch.

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