Overview of Select Oil Spill Preparedness, Prevention, & Response Initiatives

Alaska Department of Environmental Conservation
Division of Spill Prevention and Response

Rick Bernhardt, PhD

ADEC Spill Prevention & Response

- Approx 2,000 spills reported to ADEC each year
- ADEC maintains a response network through program development and coordination

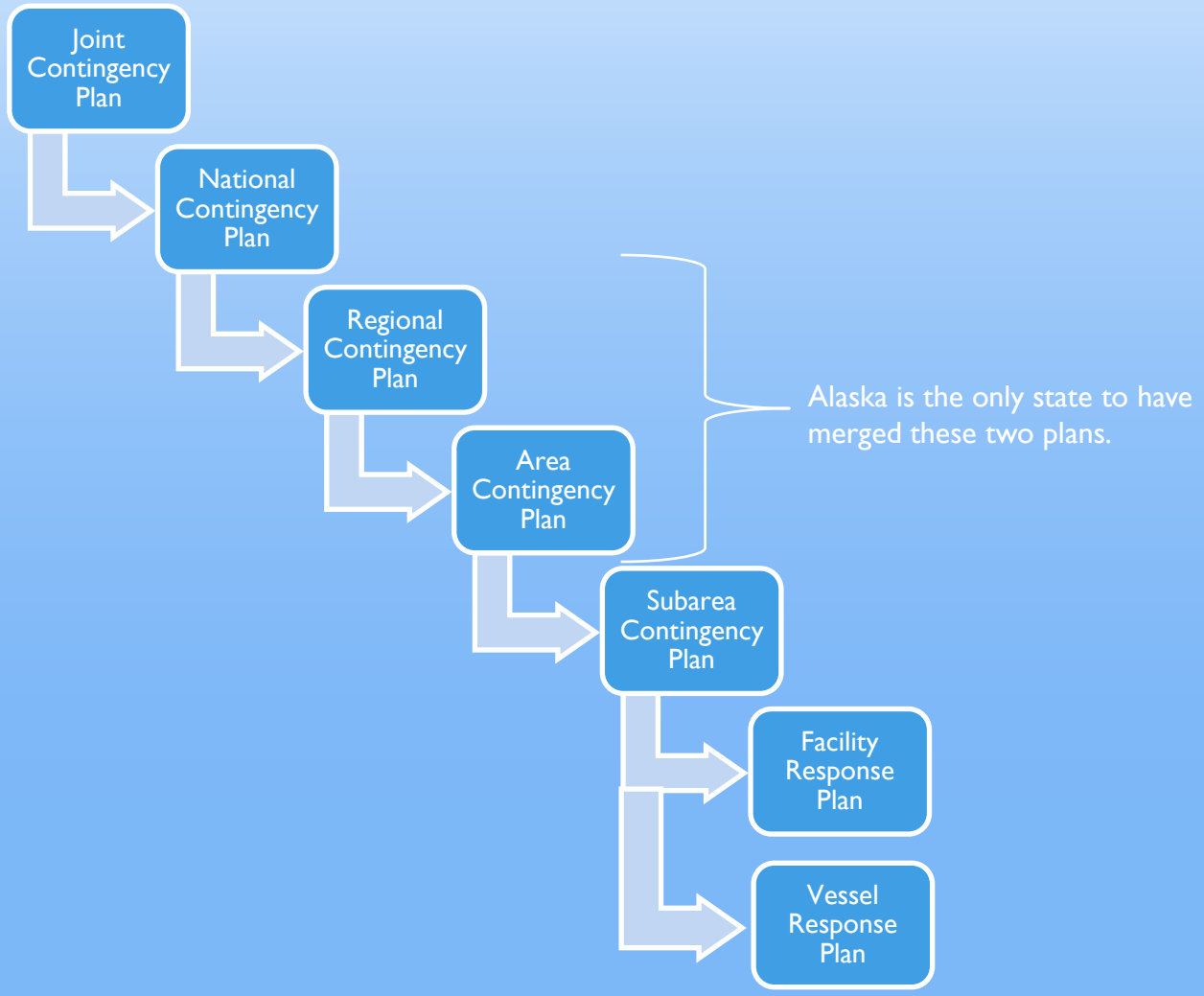
Prevention

- State Reviews, Validates, & Approves Industry Contingency Plans
- Conducts Site Inspections to Ensure Regulatory Compliance
- Shares Expertise About Best Management Practice Among Plan-Holders
- Participates in Readiness Drills to Gauge Ability to Respond According to C-Plan
- Seven Emergency Towing Systems

Preparedness

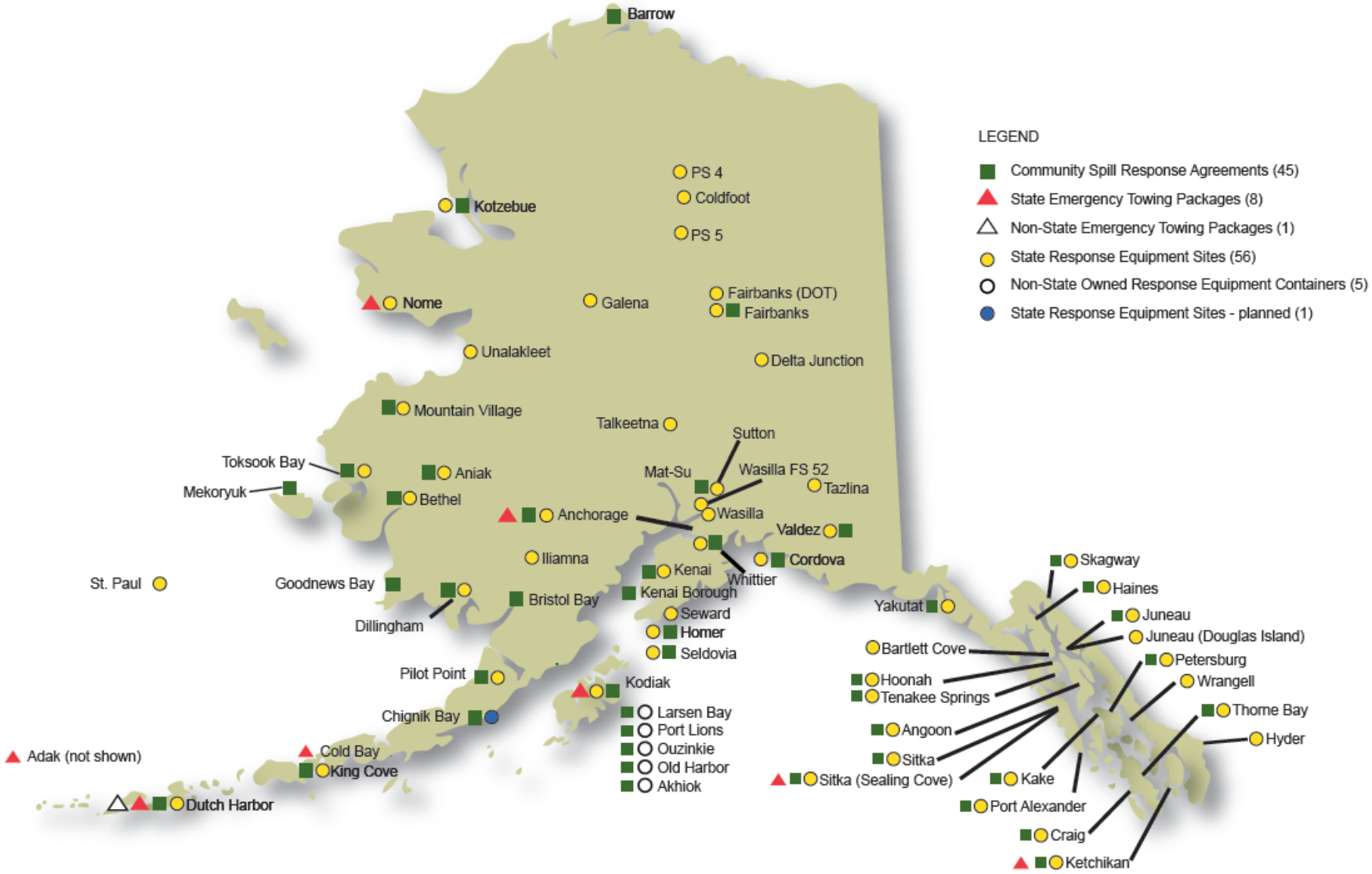
- State Engaged in ~50 Major Initiatives Over Past Decade
  - Unified Plan
  - Subarea Contingency Plans
  - Community Spill Response Agreements
  - Potential Places of Refuge
  - Readiness Drills and Incident Command System

Contingency Plan Hierarchy



Unified and Subarea Plans

Community Spill Response Program



Community Spill Response Program

Alaska Department of Environmental Conservation

Kotzebue Pre-Positioned Spill Response CONEXES

(Updated October 2013)

Response Conex #1 and Conex #2 is located at the airport. *(See Map Below)*

Contacts for access to these conexes:

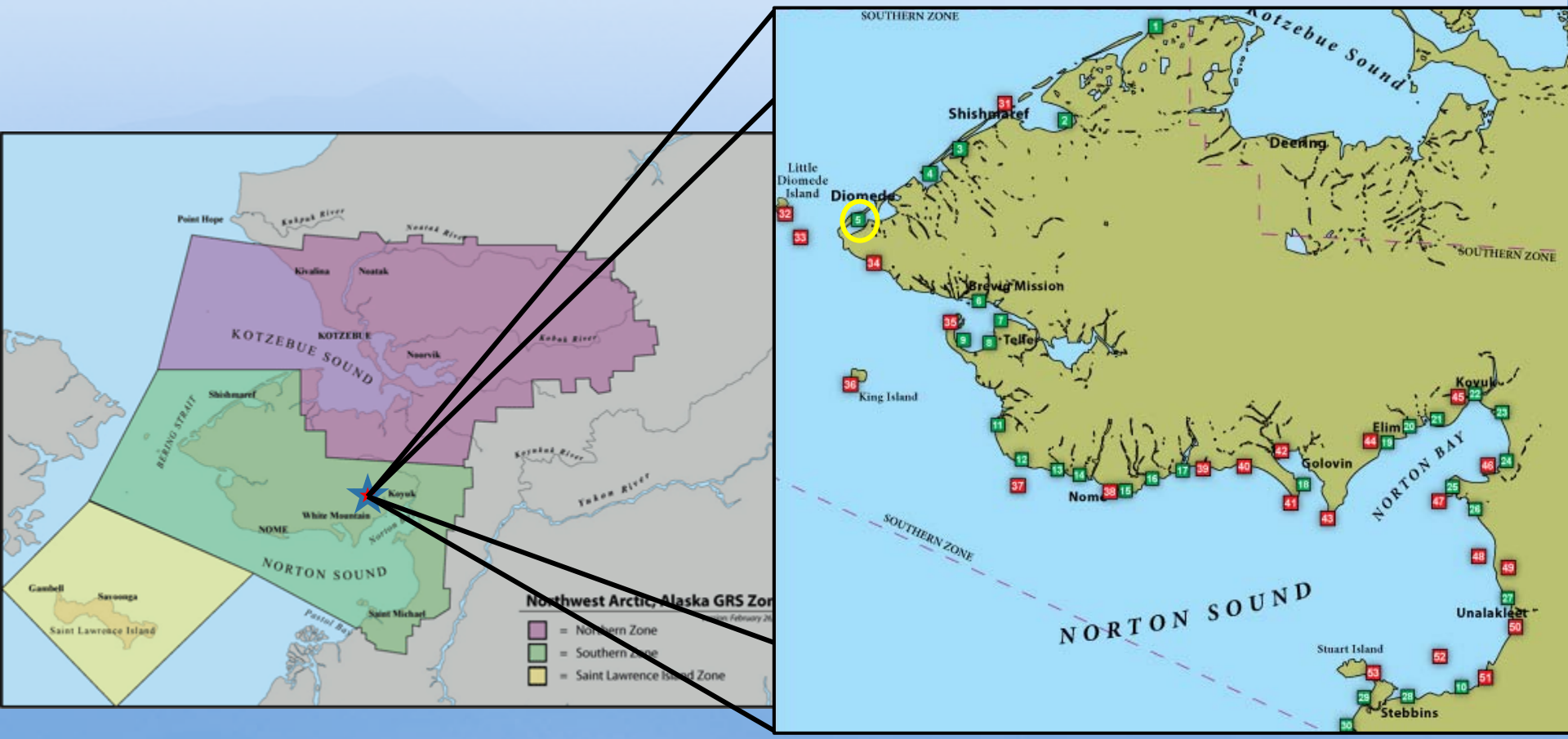
Calvin Schaeffer (ADOT)	(907) 412-1946 (Cell)
	(907) 442-3147 (Office)
Kenny Gallahorn (NWAB)	(907) 412-1024 (Cell)
	(907) 442-2500, ext. 106 (Office)
Wes Ghormley (ADEC)	(907) 451-2164
Fairbanks Responders (ADEC)	(907) 451-2121
After Hours Call	1-800-478-9300

LOCATION MAP

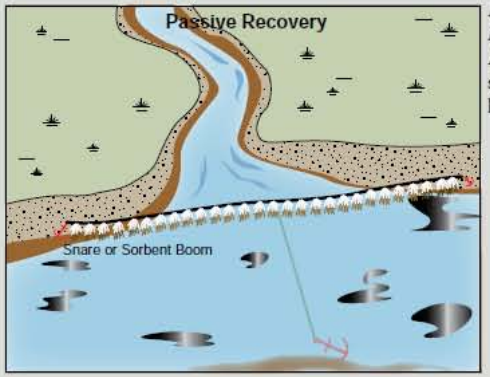
KOTZEBUE RESPONSE CONEX #1

QTY	UNIT	DESCRIPTION	USED DATE	QTY
PPE (PERSONAL PROTECTION EQUIPMENT)				
SECURITY/LIGHTING				
CONTAINMENT				
RECOVERY				
2	ea	Rope mop skimmer Crucial C13E - 110 volt		
2	ea	100' Lengths of oleophilic rope mop		
2	ea	15" Floating skimmer pulleys		
RECOVERY Other:				
0	bale	19" X 100' Petrosorb sweep		
12	roll	Petrosorb sorbent roll 38" X 144"		
0	bags	Dri-sorb, loose absorbent material		
0	ea	Sorbent pad hand wringer		
6	ea.	Pom-Poms (Assorted Sizes-Smaller)		
5	ea.	Pom-Poms (10' X 10')		
20	bundles	Sorbent Boom, STWB510SN, 5" X 10' (bundles) (4 lengths per bundle)		
PUMP/TRANSFER LINE				
2	ea	Transfer Pumps, 110 Volt (Submersible)		
1	ea	5/8" X 150' Rubber garden hose		
1	ea	Lot 5/8" Garden hose M/F fittings, SS clamps		
STORAGE				
2	roll	100' X 20' - 6 mil poly sheeting		
4	ea	50 X 50 X 20 mil black poly pit liner		
5	ea	85 Gallon overpack poly drums		
30	ea	85 Gallon overpack drum liners - 6mil		
1	ea	Standard non-sparking drum plug wrench		
4	ea	25' X 25' - 20 mil poly liners		
2	ea	New 55-gallon open top steel drums		
1	ea	500 gallon Storage tank, poly, skid mounted		
TREATMENT/DISPOSAL				
3	roll	6-mil clean-up bags (50 count)		
SMALL TOOLS				
CONEX CARGO STORAGE				
8	ea	2" X 27' Nylon ratchet cargo straps		
1	ea	Grade AA, As new container (Conex) - 8' X 8' X 20' - One time use		
2	ea,	8"X8"X8' Treated Timber Cribbing underneath		
Misc.				
1	case	MREs		

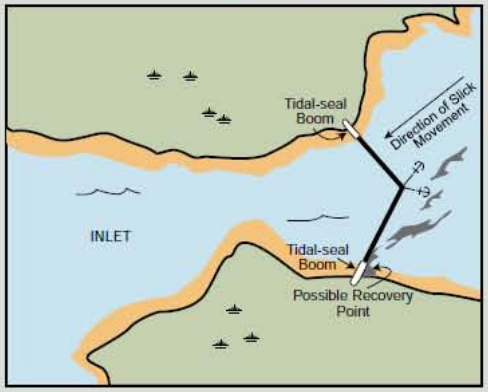
Sensitive Areas with GRS in the Northwest Arctic Subarea



Sample GRS in Lopp Lagoon



An example of the ***Passive Recovery Tactic***. Actual deployment should be adjusted for local conditions.



An example of the ***Exclusion Booming Tactic***. Actual deployment should be adjusted for local conditions.

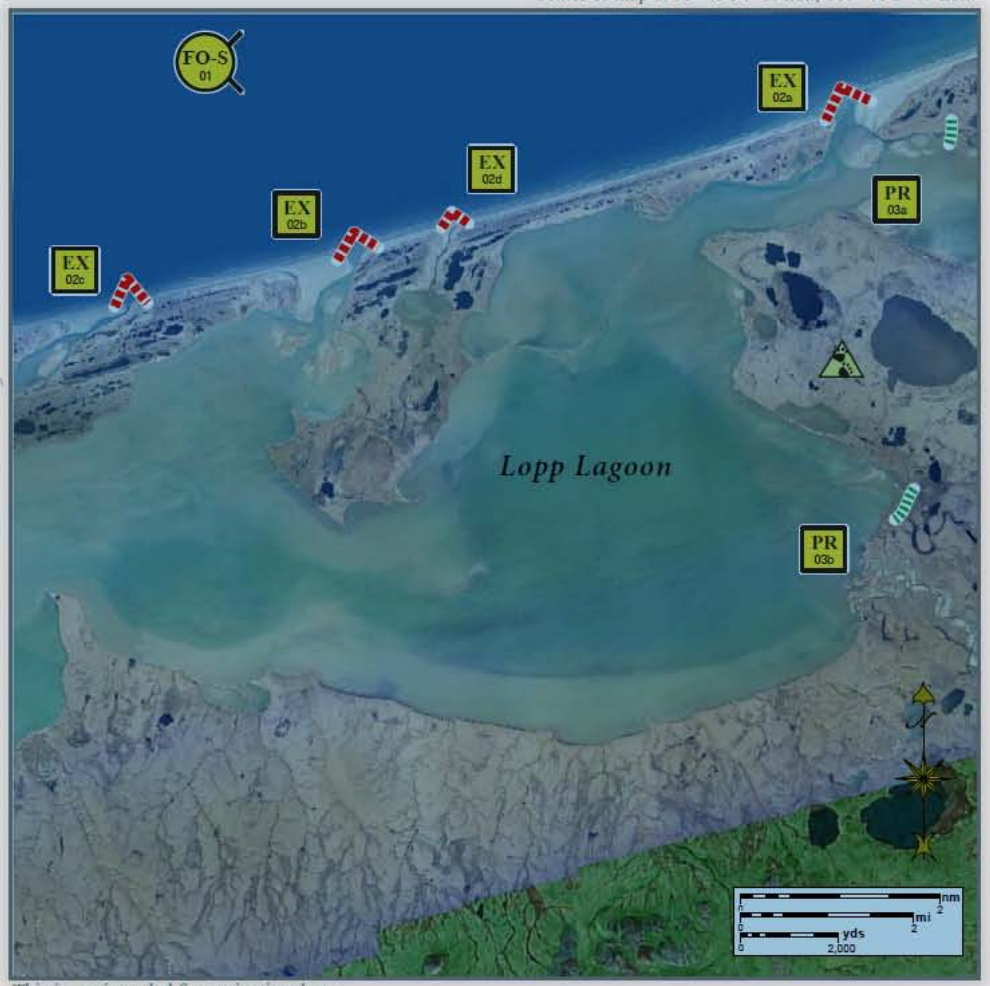
Map Legend

- FO-S — Free-oil Recovery
- PR — Passive Recovery
- EX — Exclusion Booming
- Protected-water Boom
- Snare or Sorbent Boom
- Bears in Area, Guards Recommended

Aerial photography of this area is unavailable at this time, but may be included as it becomes available.

Geographic Response Strategies for Northwest Arctic Subarea, Southern Zone

Center of map at 65° 45'34" N Lat., 167° 41'2" W Lon.

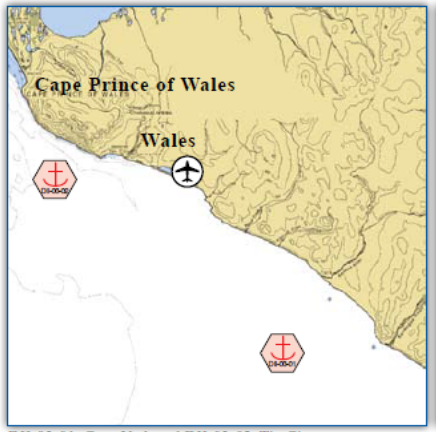


This is not intended for navigational use.

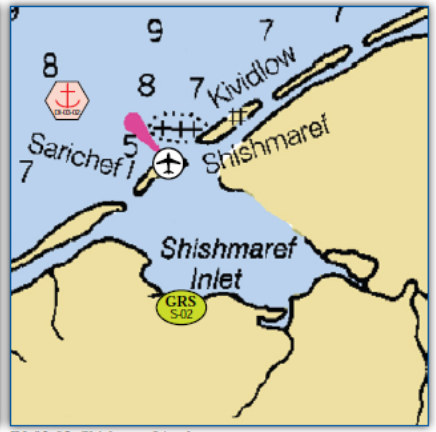
Resources Associated with Lopp Lagoon GRS

ID	Location and Description	Response Strategy	Implementation	Response Resources	Staging Area	Site Access	Resources Protected (months)	Special Considerations
S-05-01 FO-S	**Lopp Lagoon** Nearshore waters in the general area of: Lat. 65° 48.60 N Lon. 167°51.57 W	**Free-oil Recovery** Maximize free-oil recovery in the offshore & nearshore environment of Lopp Lagoon depending on spill location and trajectory.	Deploy free-oil recovery strike teams upwind and up current of Lopp Lagoon. Use aerial surveillance to locate incoming slicks.	Deploy multiple free-oil recovery strike teams as required to maximize interception of oil before it impacts sensitive areas.	Wales	Via marine waters Chart 16006	Same as S-05-02	Vessel master should have local knowledge. Use extreme caution, shoal waters with numerous reefs and rocks.
S-05-02 EX	**Lopp Lagoon** a. Lat. 65° 49.00 N Lon. 167°32.22 W b. Lat. 65° 46.20 N Lon. 167°43.42 W c. Lat. 65° 45.35 N Lon. 167°49.58 W d. Lat. 65° 47.07 N Lon. 167°41.04 W	**Exclusion** Exclude oil from entering and impacting Lopp Lagoon. Barrier beach may have breached in different locations. Aerial survey recommended prior to deployment. Adjust equipment requirements to reflect additional breaches.	Deploy anchors and boom with skiffs (class 6). Place 5300 ft. of protected-water boom in a chevron pattern in front of the entrance to the lagoon. If the sea state does not allow this deployment, move further inside the entrance. Tend throughout the tide. <u>Boom Lengths:</u> a. 2800 ft. b. 3000 ft. c. 1000 ft. d. 200 ft.	**Deployment** **Equipment** 7000 ft. protected-water boom 26 ea. anchor systems 8 ea. anchor stakes **Vessels** 2 ea. class 6 1 ea. helicopter (for S-03-03, if needed) **Personnel/Shift** 4 ea. vessel crew **Tending** **Vessels** 1 ea. class 6 **Personnel/Shift** 2 ea. vessel crew	Wales	Via marine waters Chart 16006	Fish- herring spawning, dolly varden, char, white fish, saffron cod, pink chum salmon Birds-waterfowl concentration, shorebird concentration, seabird nesting Marine mammals- seal, polar bear Habitat- marsh, low lying tundra, exposed tidal flats, exposed rocky shore, gravel beaches	Vessel master should have local knowledge. FOSC Historic Properties Specialist should MONITOR on-site operations. Threatened or endangered species/habitat is present or possible in the area. Consult with NOAA and DOI prior to deployment. Site surveyed: Not surveyed Tested: not yet
S-05-03 PR	**Lopp Lagoon** a. Lat. 65° 48.19 N Lon. 167°26.20 W **Mint River** b. Lat. 65° 44.51 N Lon. 167°29.39 W	**Passive Recovery** Use local knowledge and navigation to place passive recovery across the channels of the streams in the Lopp Lagoon.	Place and anchor 800 ft. of snare line or sorbent boom at each location across the channels of streams in Lopp Lagoon. The lagoon is very shallow. Unless local knowledge is available to navigate the lagoon, helicopter deployment should be utilized. Replace as necessary to maximize the recovery.	**Deployment** **Equipment** 1600 ft. snare line or sorbent boom 8 ea. anchor systems 8 ea. anchor stakes **Vessels/Personnel/Shift** Same as S-05-02 **Tending** **Vessels/Personnel/Shift** Same as S-05-02	Vessel platform	Via marine waters Chart 16005	Same as S-05-02	Vessel master should have local knowledge. Title 41 permitting required from ADNR. A population of bears may be present in the area. A bear guard is required during shore operations. Tested: not yet

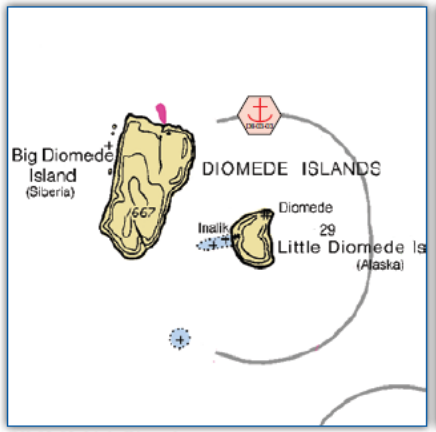
Potential Places of Refuge



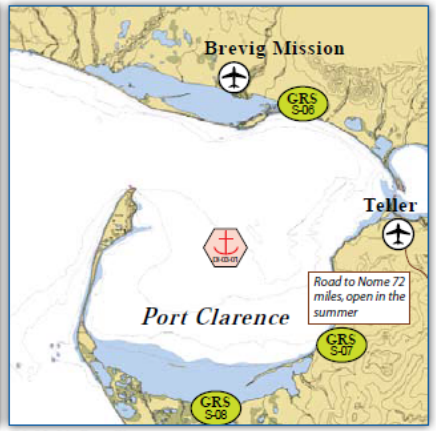
DII-03-01, Cape York and DII-03-02, Tin City.



DI-03-02, Shishmaref Anchorage.



DII-03-03, Little Diomede.



DI-03-01, Port Clarence.

Stakeholders for PPOR Zone 03 of the Northwest Arctic Subarea					
Year-2011	Contact	Year-2011	Contact	Year-2011	Contact
Alaska Department of Natural Resources	State Historic Preservation Officer	City of Shismaref	Mayor	City of Teller	Mayor
Native Allotments	Dept of the Interior-Regional Environmental Officer	City of Wales	Mayor	Bering Straits Native Corporation	President
National Park Service - Bering Straits N.P.	Dept. of the Interior-Regional Environmental Officer	City of Diomede	Mayor	Kawerak, Incorporated	Executive Director
Alaska Eskimo Whaling Commission	Executive Director	City of Brevig Mission	Mayor	Alaska Dept. of Fish & Game	Resource Manager

Potential Places of Refuge *for Northwest Arctic Subarea*

Center of map at 65° 51.83' N Lat., 166° 59.59' W Lon.

This is not intended for navigational use.

Soundings in fathoms

Northwest Arctic, SUBAREA Map Locator

Map Legend

- Anchorage
- Airport
- Mooring
- Existing GRS
- Dock/pier
- Boat Harbor
- Crane

Northwest Arctic PPOR

Map 03

USGS 1:1,534,076 Quadrangle Map Reference - Bering Sea Eastern Part Map 16006_1

PPOR Site Characteristics

Site Information for *Northwest Arctic PPOR Map 03*

Physical and Operational Characteristics for PPOR Map 03 of the Northwest Arctic Subarea-Seward Peninsula

	Cape York	Tin City	Little Diomede	Port Clarence	Shishmaref Anchorage
ID Number	DII-03-01	DII-03-02	DII-03-03	DI-03-01	DI-03-02
Location *(In the general area)*	65°29.10'N 167°43.27'W	65°32.59'N 167°57.86'W	65°47.41'N 168°54.11'W	65°47.41'N 168°54.11'W	66°14.62'N 166°40.28'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., 20-40 ft. of draft, greater than 10,000 GT	
Type of Berthing	Anchorage				
Contact	N/A				
Navigational Approach	Approach from W, SW, S	Approach from W, SW, S	Approach from N, NE, E	Approach from W	Approach from W, NW, N
Minimum Water Depths *(MLLW)*	12 Fathoms	14 Fathoms	20 Fathoms	6 Fathoms	6 Fathoms
Maximum Vessel Draft	60 ft.			40 ft.	
Swing Room or Dock Face *(w/ dolphins)*	1.5 nm to shoal	1.2 nm to shoal	1 nm to shore	4 nm to shore	4 nm to shoal
Bottom Type	Mud, Gravel, Rocky	Sand	Rocky	Rocky	Muddy Sand
Nearest Alternative Dock/Piers	75 nm to L-02-02	100 nm to L-02-02	123 nm to L-02-02	95 nm to L-02-02	95 nm to LI-04-01
Nearest Alternative Anchorage	7.5 nm to DII-03-02	7.5 nm to DII-03-01	27 nm to DII-03-02	28 nm to DII-03-02	70 nm to DII-03-03
Prevailing Winds	Summer SW, W / Winter E				
Currents	W 1 to 2 knots	1.0+ knots	General ocean current runs south to north, local currents vary.	Seldom exceeds 0.5 knots in entrance	No data noted
Tides	Mean High 4.49 ft. (Higher 4.50) Mean Low 3.84 (Lower 3.89)			Mean High 11.16 ft. (Higher 11.28) Mean Low 10.36 (Lower 10.10)	Mean High 4.44 ft. (Higher 4.60) Mean Low 3.67 (Lower 3.57)
Sea Conditions	The area from Cape York to Port Clarence has been surveyed with no depth less than 6 fathoms being found 1.5 miles from the shore. The general depths fall off to a submarine valley about 2 miles offshore, extending E, with depths of not less than 10 fathoms, to within 6 miles of the entrance to Port Clarence. A rock is reported about 0.8 mile from the shore SE of York village.	The bight off Tin City affords N weather anchorage in depths of 10 fathoms a mile from a sand beach which is steep enough for good landing	Vessels approaching Little Diomede Island from the S and E may run close along the S shore, keeping in depths greater than 14 fathoms until the village is sighted, and anchor S of the sandspit. Approach from E also has been made along N shore at distances decreasing from 1 mile to 0.4 mile and anchorage in depths of 17 fathoms 0.7 mile N of the spit.	In a S approach to Port Clarence in fog or mist, the low sand and shingle spit forming the W side is not visible until close-to. The best procedure is to make landfall on King Island from the E in depths greater than 10 fathoms (foul ground N of Cape Rodney). Then set course just E of Cape York to 3 miles of coast, change to 096 degrees for the entrance to Port Clarence.	The navigable channel into Shishmaref Inlet rounds the NE end of Sarichef Island; a dangerous bar extends 0.5 mile from the point on the N side of the channel. Vessels drawing as much as 7 feet may be beached on the channel side of the sandy NE end of Sarichef Island; drafts of 3 feet may be taken to within 100 yards of the inner beach SW of Shishmaref, and native skiffs have followed unmarked channels completely around the island.
Shelter from Severe Storms	Sheltered from N winds / Exposed to SE, W	Sheltered from N winds / Exposed to SE, W	Weather Dependent	Sheltered from N, S, E, W	Sheltered from S, W winds / Exposed to N, E
Fog	Frequent throughout the year. Heaviest from June-July.			Surface fog after spring break up, increasing in prevalence as season advances	Frequent throughout the year. Heaviest from June-July.
Ice	December to June				Mid-November to Mid-June

Site Considerations for PPOR Zone 03 of the Northwest Arctic Subarea-Seward Peninsula

	Cape York	Tin City	Little Diomede	Port Clarence	Shishmaref Anchorage
ID Number	DII-03-01	DII-03-02	DII-03-03	DI-03-01	DI-03-02
Human Health & Safety					
Community-distance to (nm)	Wales - 14 nm/ pop. 145 Brevig Mission - 32 nm/ pop. 388	Wales - 6 nm/ pop. 145 Brevig Mission 39 nm/ pop. 388	Shishmaref 75 nm/ pop. 563 Wales - 22 nm/ pop. 145	Brevig Mission - 8 nm/ pop. 388	Shishmaref 6 nm/ pop. 563
Health Care Facilities	Toby Anungazuk, Sr. Memorial Health Clinic: 907-443-3311 / Brevig Mission Clinic: 907-642-4311 / Katherine Miksruaq Olanna Health Clinic: 907-649-3311			Brevig Mission Clinic: 907-642-4311	Katherine Miksruaq Olanna Health Clinic: 907-649-3311
Natural Resources Considerations					
Fish & Wildlife	Waterfowl concentrations		High density waterfowl & seabird migration & nesting, Polar bears, Walrus	High density waterfowl & seabird migration & nesting, Polar bear	High density waterfowl & shorebird migration & nesting, Polar bears, Salmon spawning
Threatened & Endangered Species	Spectacled eider (threatened)		Polar Bears (threatened), Walrus (candidate)	Spectacled Eiders & Polar bears (threatened)	
Sensitive Areas	Spectacled eider critical habitat		Polar bear critical habitat	Spectacled eider & Polar bear critical habitat, extensive eelgrass beds	
Other Stakeholder Considerations					
Fisheries	Herring, Crab, Salmon		None	Herring, Salmon, Crab	None
Historic Properties	Historic properties are present throughout the area.				
Subsistence	High-level local subsistence				
Tourism/Recreation	Local recreation				
Waterfront Public Facilities/Parks	None				
Waterfront Private Facilities	None				
Response and Salvage Resource Consideration					
Ability to Boom Vessel	Weather dependent		No	Weather dependent	No
Geographic Response Strategies	None (2011)			S-6, S-7, S-8, S-9	S-02
Closest Alternative Place of Refuge for same sized vessel	7.5 nm to DII-03-02	7.5 nm to DII-03-01	27 nm to DII-03-02	28 nm to DII-03-02	70 nm to DII-03-03

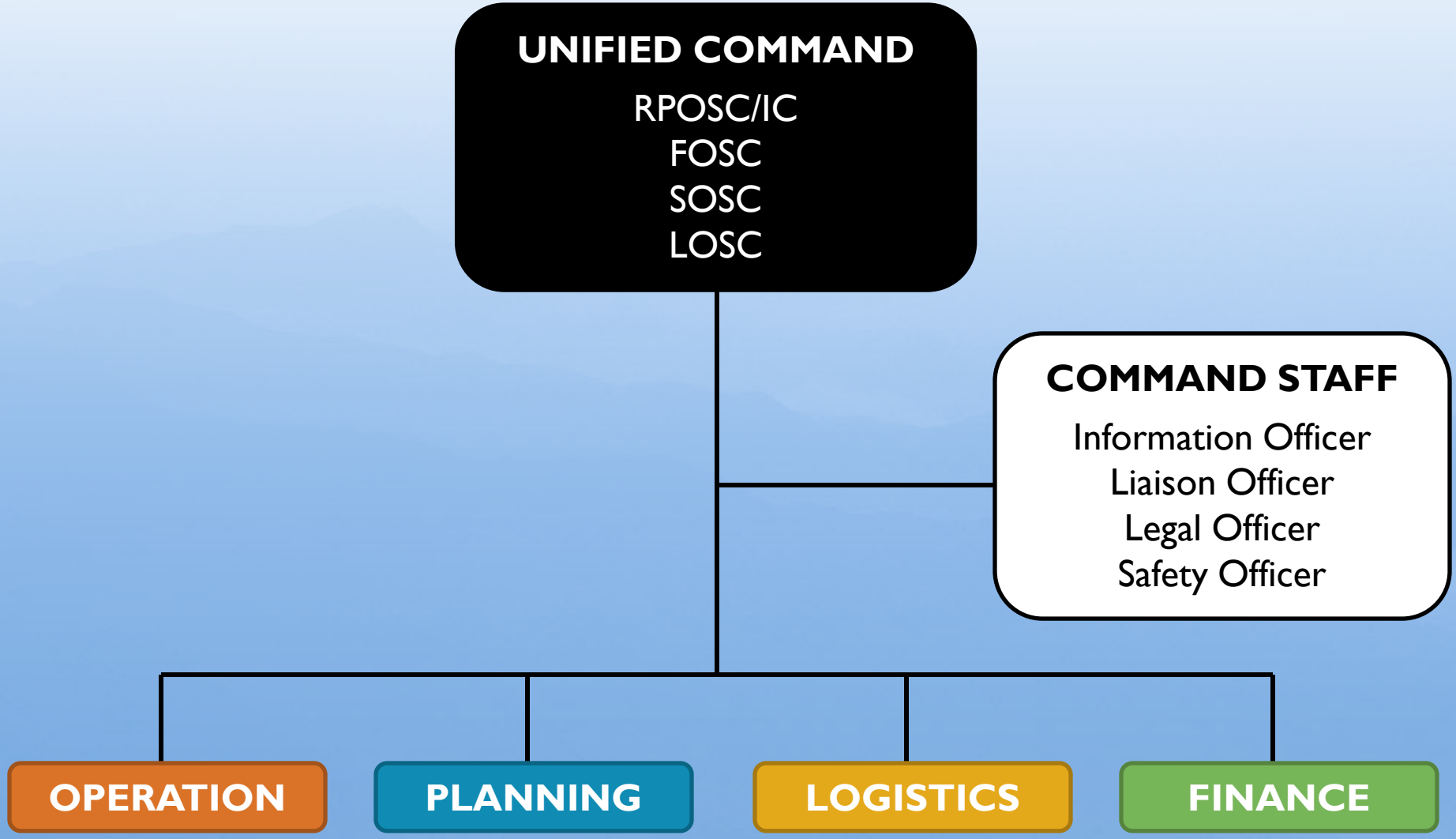
Site ID Number & Vessel Size Classification

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

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

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

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


UNIFIED COMMAND
RPOSC/IC
FOSC
SOSC
LOSC
COMMAND STAFF
Information Officer
Liaison Officer
Legal Officer
Safety Officer
OPERATION
PLANNING
LOGISTICS
FINANCE

Key Roles for Local Responders

- Report all spills immediately
- Augment the Response with Trained Workers
- Provide Local On-Scene Coordinator
- Participate in Regional Stakeholder Committee
- Remain engaged throughout response & remediation process
- Provide Local Knowledge in work groups & during responses

North Slope Borough Village Response Team – GC-2 Spill (March 2006)

Local-Hire Worker – *Selendang Ayu* Spill (April 2005)

QUESTIONS?

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