COOK INLET
SUBAREA CONTINGENCY PLAN

BACKGROUND
SECTION

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BACKGROUND: PART ONE – SUPPORT INFORMATION

A. SUBAREA PLAN

This Subarea Contingency Plan (SCP) supplements the Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases (the **Unified Plan**). The SCP in conjunction with the Unified Plan describes the strategy for a coordinated federal, state and local response to a discharge or substantial threat of discharge of oil or a release of a hazardous substance from a vessel, offshore facility, or onshore facility operating within the boundaries of the Cook Inlet Subarea. For its planning process, the federal government has designated the entire state of Alaska as a planning "region" and the western half of the state as a planning "area." The State of Alaska has divided the state into ten planning regions of which one is the "Cook Inlet Region." As part of the Unified Plan, this SCP addresses this Cook Inlet Region or, to avoid confusion with federal terms, Subarea.

The SCP shall be used as a framework for response mechanisms and as a pre-incident guide to identify weaknesses and to evaluate shortfalls in the response structure before an incident. The plan also offers parameters for vessel and facility response plans under OPA 90. Any review for consistency between government and industry plans should address the recognition of economically and environmentally sensitive areas and the related protection strategies, as well as a look at the response personnel and equipment (quantity and type) available within the area (including federal, state, and local government and industry) in comparison to probable need during a response.

As defined by Alaska regulations, the Cook Inlet Subarea encompasses the boundaries of the Kenai Peninsula Borough, the Municipality of Anchorage, and the Matanuska-Susitna Borough, including adjacent shorelines, waters of Cook Inlet and waters having as their seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from which the territorial sea is measured. Figure E-1 depicts this area.

The subarea encompasses a very diverse array of topographical features, including: extremely mountainous terrain; ice fields; tidewater and piedmont glaciers; river deltas and broad tidal mudflats; rocky shoreline; and vast fields of muskeg.

B. SUBAREA DESCRIPTION

Cook Inlet is a large, elongated body of water oriented in a SW-NE direction in southcentral Alaska. It is approximately 150 miles long, and its width ranges from about 10 miles between the East and West Forelands, toward the north, to approximately 80 miles between the Kenai Peninsula and the mouth of the McNeil River in Kamishak Bay, toward the south. The inlet experiences the second largest tidal fluctuations in the world, frequently exceeding twenty feet, with tidal current velocities as fast as 8 knots (Sienkiewicz et al, 1992). Tidal flats are a dominant coastal feature along Cook Inlet, although marshes, rocky shores, sand and gravel beaches, and wave-cut platforms are also quite common.

Sea ice is normally present in upper Cook Inlet from December through March, and occasionally from November to as late as April (NOAA, 1977). During winter, 100 percent ice coverage may be found in some areas in upper Cook Inlet, and substantial amounts of ice may be present as far south as Kamishak Bay (NOAA, 1977).

The prevailing winds in Cook Inlet are generally from the north and northeast during the fall, winter, and spring, with common speeds between 0 and 11 knots. Conversely, southerly winds are more frequent during the summer months (NOAA, 1977).

As with all areas within Alaska, the Cook Inlet region supports a wide range of wildlife. During the period when the ocean, lakes and rivers are thawed, the inland and shoreline areas become a haven for migratory waterfowl and other birds.

Several communities rely on marine mammals as a traditional food source, and these mammals are present in concentrated areas during certain times of the year. Some residents engage in a subsistence lifestyle and rely heavily on the availability of the resources in the area. Any spill of significance could devastate the subsistence food harvest and seriously threaten the normal means of existence for many residents. Long-term impacts to these food resources could have a disastrous effect on Native and subsistence lifestyles. The Sensitive Areas Section provides detailed information on the specific resources vulnerable to spills and the locations of these resources within the subarea.

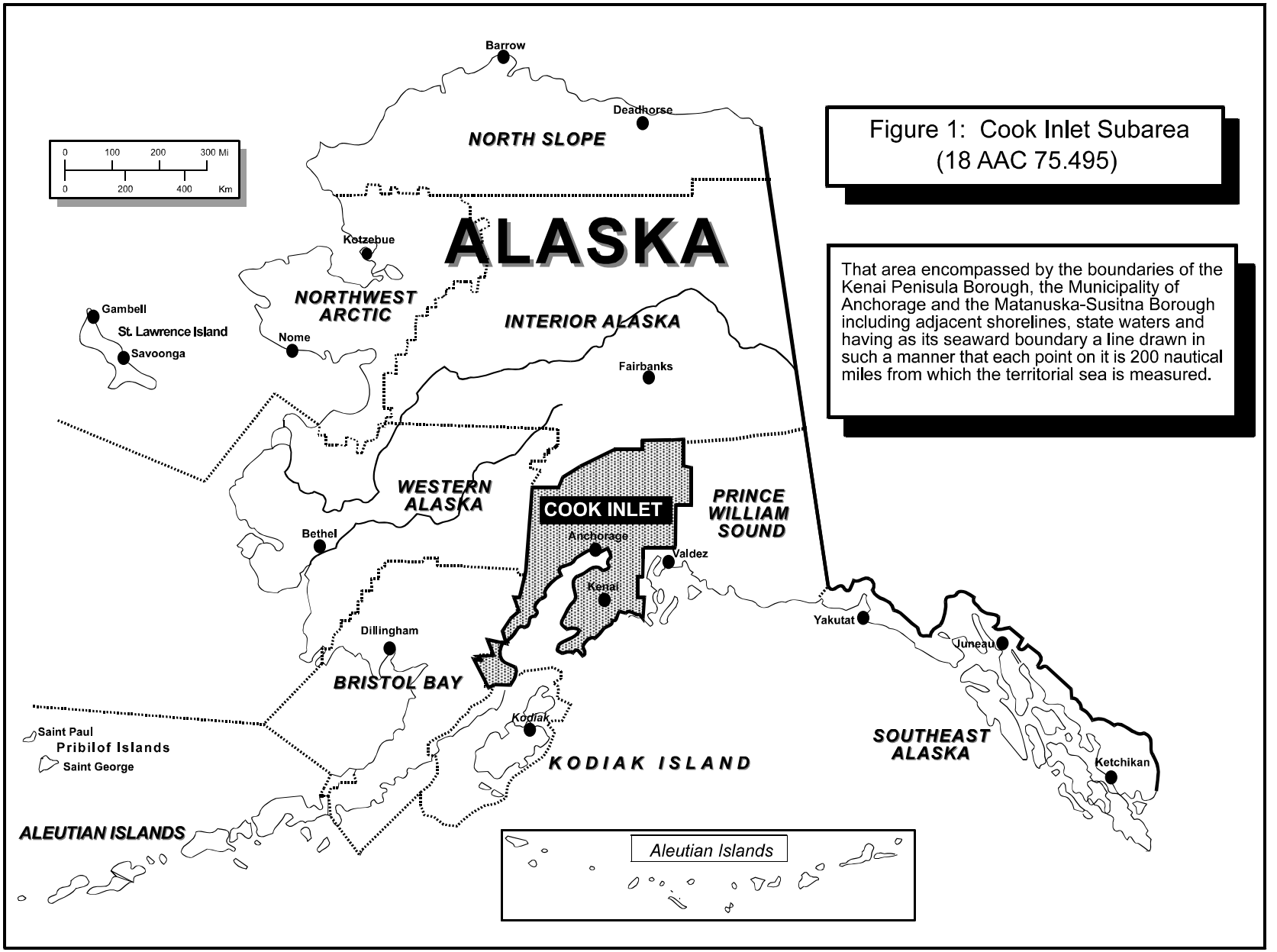


Figure 1: Cook Inlet Subarea
(18 AAC 75.495)

That area encompassed by the boundaries of the Kenai Penisula Borough, the Municipality of Anchorage and the Matanuska-Susitna Borough including adjacent shorelines, state waters and having as its seaward boundary a line drawn in such a manner that each point on it is 200 nautical miles from which the territorial sea is measured.

Figure E-2: Cook Inlet Detailed Subarea Map

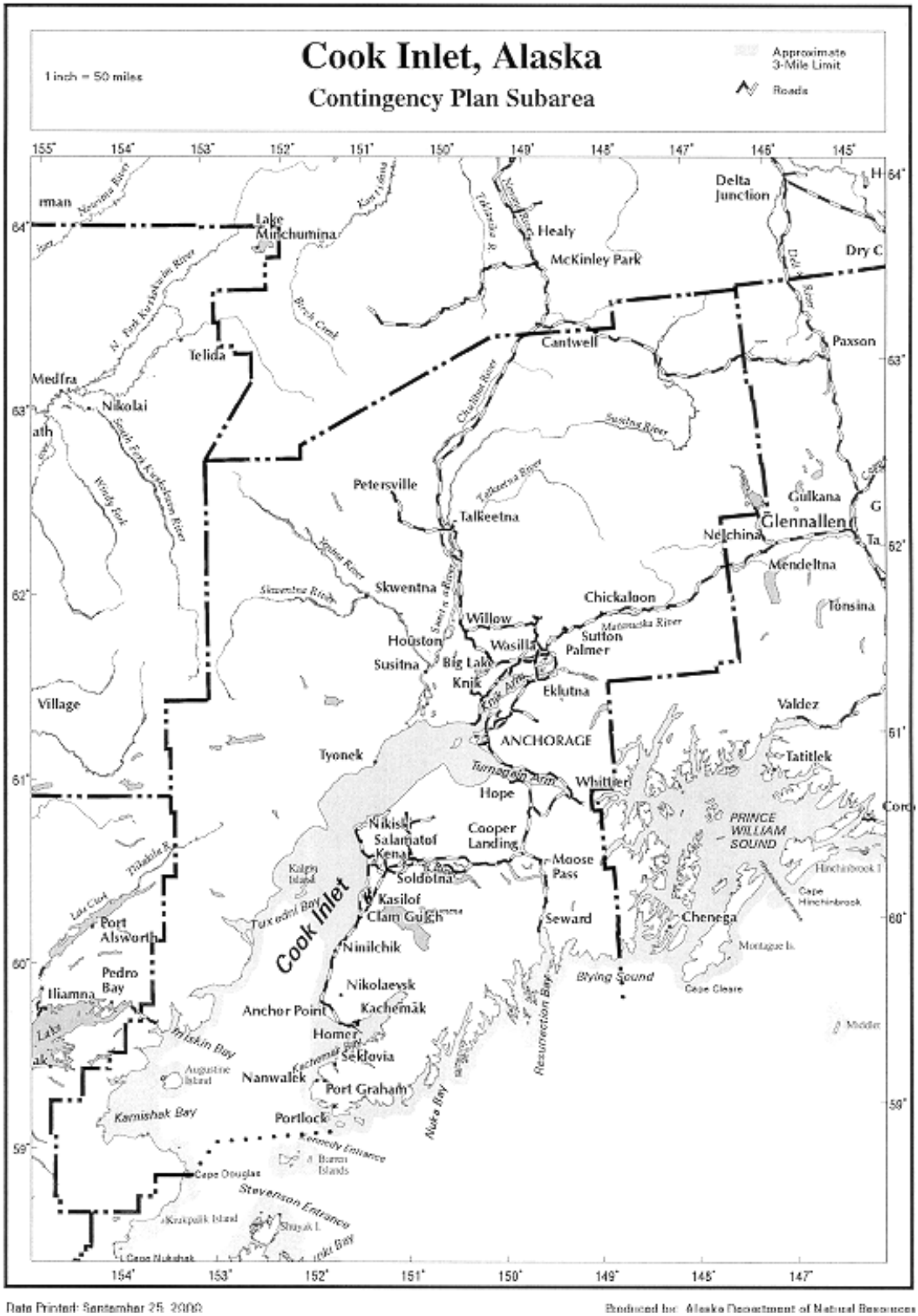


Figure E-3: Cook Inlet USGS Topo Map Index

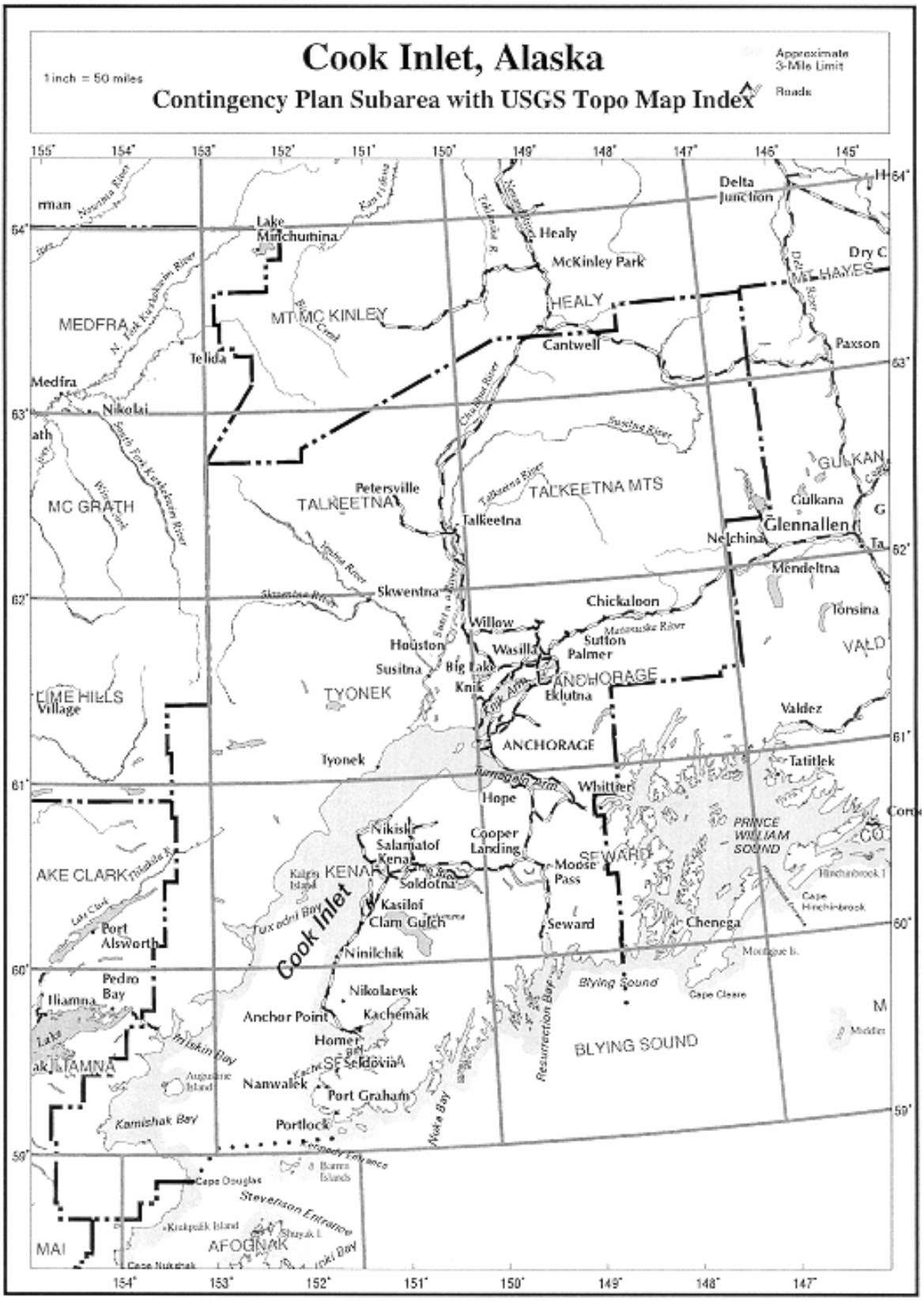
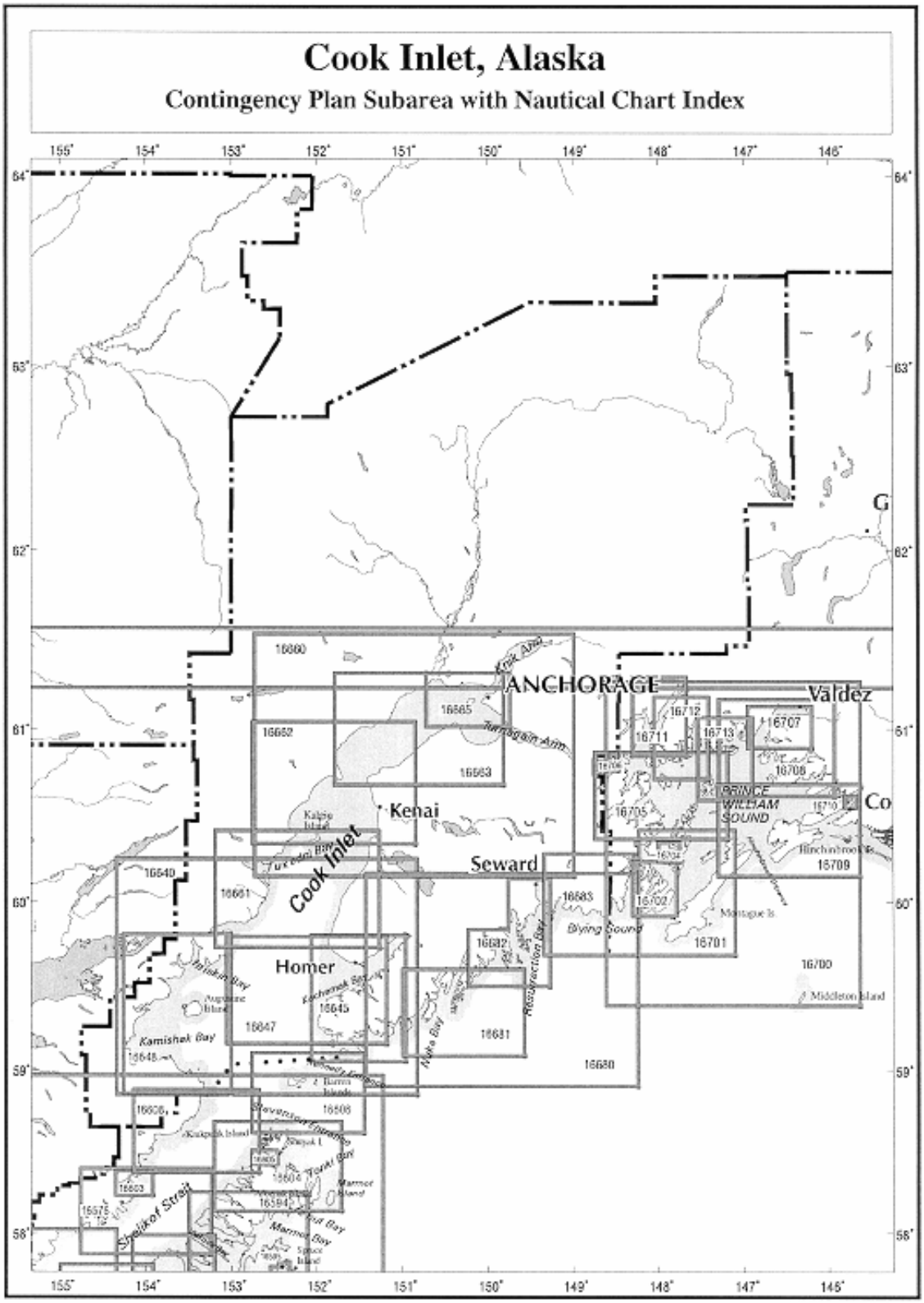


Figure E-4: Cook Inlet Nautical Chart Map Index



NOAA navigational charts indicate the depths in Cook Inlet range between 30 and 60 fathoms (180 and 360 feet) in the lower portion of the Inlet, between 20 and 30 fathoms (120 and 180 feet) in the middle section (between Anchor Point and the Forelands), and between 5 and 15 fathoms (30 and 90 feet) in the upper portion of the Inlet. However, the charts also indicate the presence of reefs, mud flats, and shoals along the middle section of Cook Inlet, particularly around Kalgin Island and near Trading Bay. Hydrographic surveys have indicated a net inflow of relatively clear, saline water from the Gulf of Alaska along the eastern side of the lower Inlet, while relatively fresh, silt-laden water flows out the Inlet on the west side.

There are many tidal rips in Cook Inlet, including three major ones that are persistently found east of Kalgin Island between Anchor Point and the Forelands. These major tide rips are known as the East Rip, the Mid-Channel Rip, and the West Rip (See Figure E-5). A tide rip, as defined by David Burbank in Environmental Studies of Kachemak Bay and Lower Cook Inlet (1977), is a:

> "frontal zone (separating different water masses) along which convergence of surface water occurs. Such convergence generally results in the more dense water mass flowing underneath the less dense, leaving floating debris behind at the surface and thereby producing the accumulations of debris found along the rips. These zones of convergence are also normally accompanied by considerable horizontal shear, manifested by sharply differing current velocities on either side of the frontal zone. The major rips (frontal zones) thus constitute natural tracers delineating the boundaries between differing surface currents."

Tide rips are significant features of Cook Inlet that can affect an oil spill response, for not only do they vary throughout a 24-hour period, but they extend from north of the Forelands to lower Cook Inlet. In fact, the dominant rip, the Mid-Channel Rip, may extend as far south as Shelikof Strait. The Mid-Channel Rip, in the region south of Ninilchik, generally forms the dividing line between clear oceanic water in the eastern inlet and the relatively fresh, silt-laden water in the western inlet (Burbank, 1977). During flood tides, these rips strengthen, and debris is consolidated by the strong surface water convergence, especially along the major rips. Along the zone of the Mid-Channel Rip, a turbulent region of boiling water and large waves is produced. The intensity of the convergence is such that the roaring noise produced by the turbulence can be heard up to 1/4 nautical mile away. Fishing nets and logs are sometimes observed to be pulled under, surfacing again some distance away. During ebb tide, however, the energy is reduced, allowing for collected debris to be spread out as far as 1• nautical miles (3 km). This debris can be entrapped for days in this cycle.

Figure E-5: Major Tide Rips (Frontal Zones) in Lower Cook Inlet

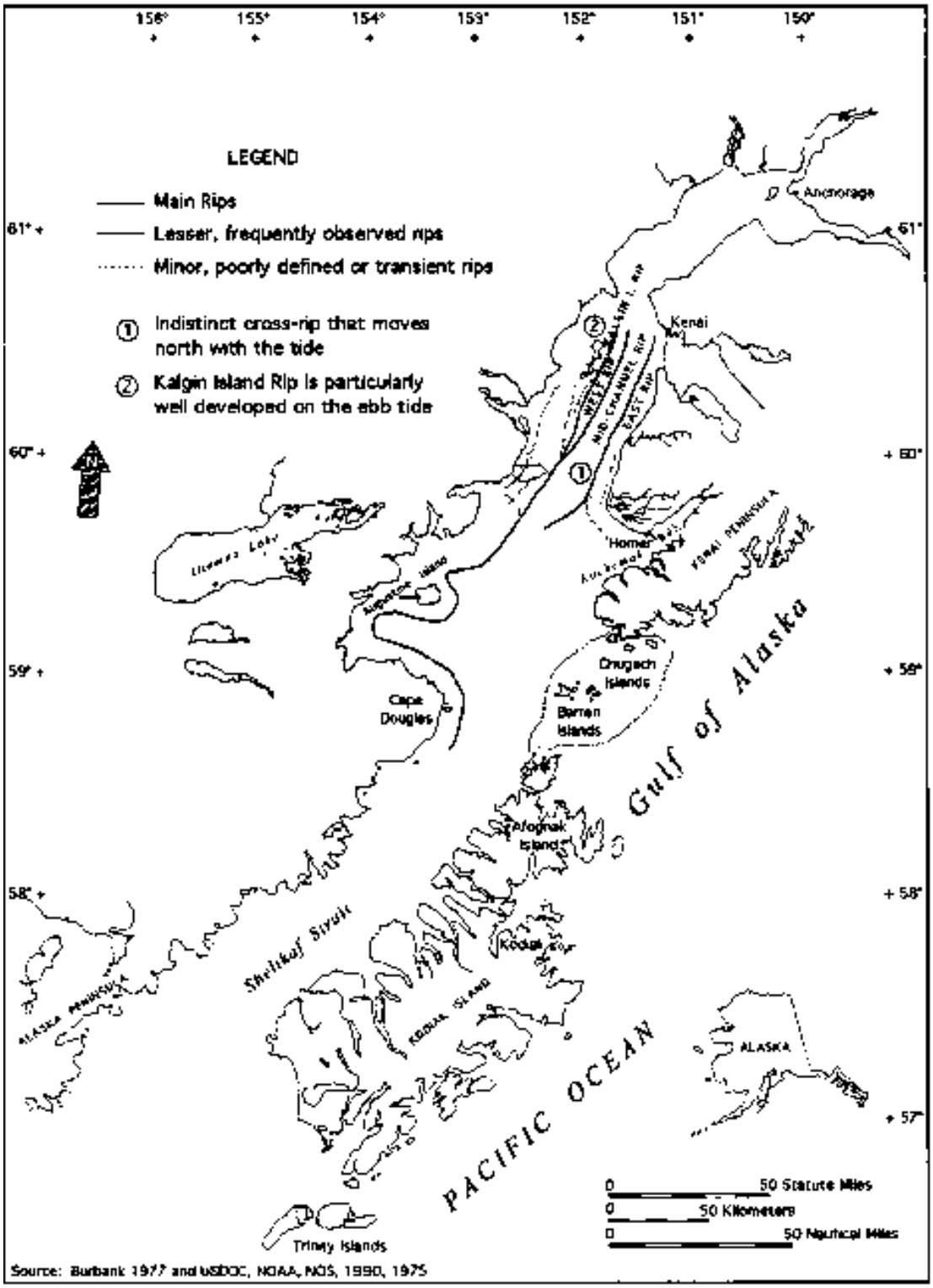
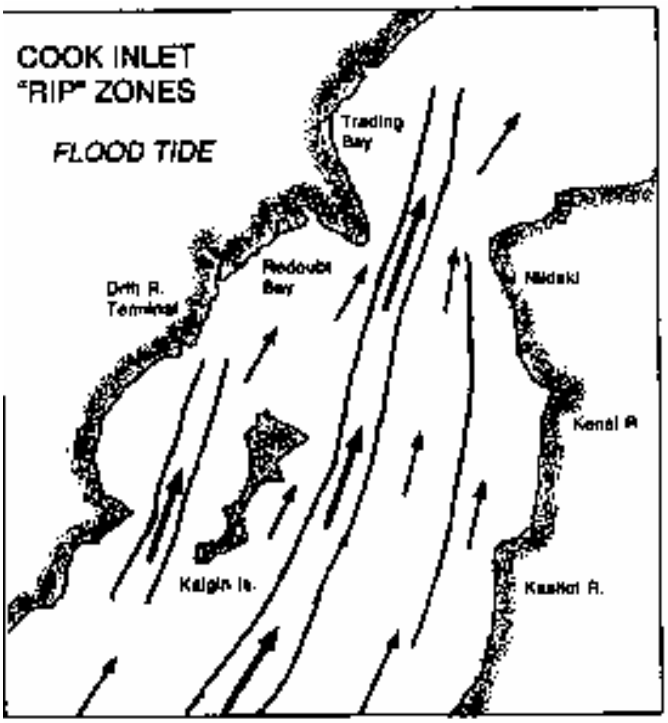


Figure E-6: Major Tide Rips (Flood and Ebb Tides) in Lower Cook Inlet
(Source: "Proceedings: Cook Inlet Oceanography Workshop" OCS Study MMS 2000-043, Final Report, June 2000)



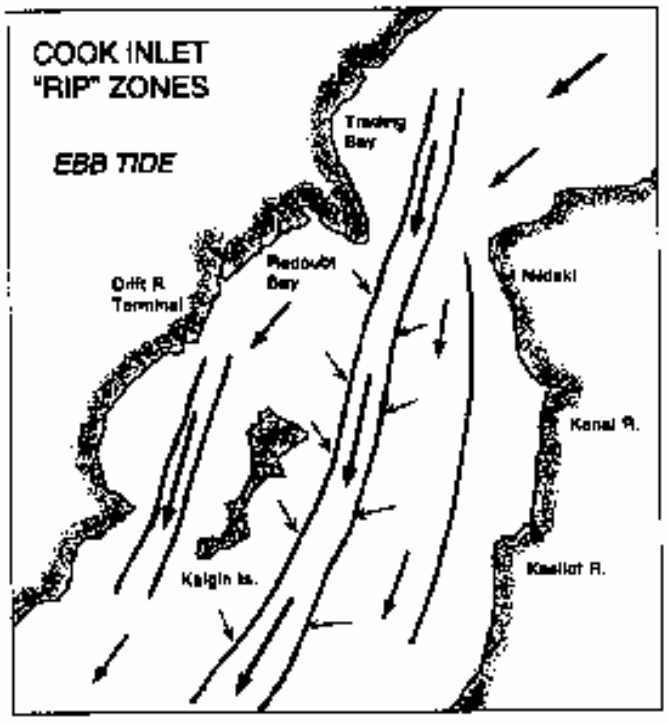
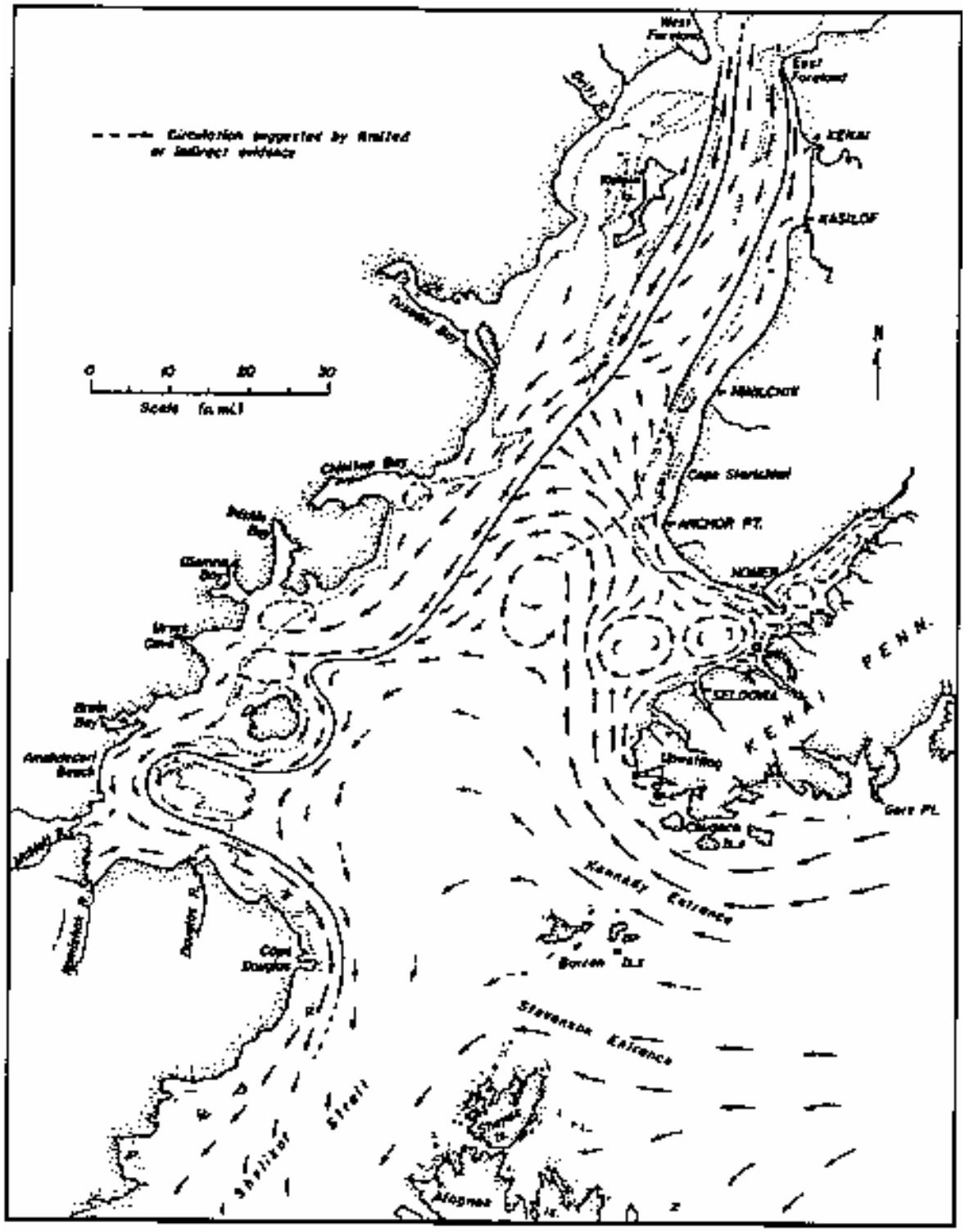


Figure E-7: Net Surface Circulation in lower Cook Inlet
(based primarily on data collected during the spring and summer seasons. Burbank 1977)



The oil industry is quite active in the Cook Inlet Subarea. Most activities are concentrated in the East Forelands area, between Kenai and Nikiski, and along Trading Bay, between West Foreland and North Foreland. Offshore platforms are also located in Trading Bay and in the upper portions of Cook Inlet. Several submerged pipelines cross the Inlet in this area as well. Refined products are stored in tank farms in Anchorage and other areas of upper Cook Inlet. The area includes onshore and offshore crude oil production facilities, major crude oil and non-crude oil storage, and terminal facilities in Anchorage, Nikiski, and Redoubt Bay.

The subarea also contains the southern half of the Alaska Railroad system, which transports passengers and cargo, including oil and hazardous substances, from Seward and Whittier to Anchorage and Fairbanks. The majority of the State's highway system is also located in this subarea with major roadways linking Anchorage with communities to the south on the Kenai Peninsula and to the north in the Matanuska-Susitna Borough and beyond.

A high probability of spills of refined products occurs during fuel transfer operations at remote villages. Historically, the occurrence of spills from facilities during these operations is not significant. Spills of refined product that enter the water will rapidly disperse and evaporate making cleanup difficult. Crude oil or bunker fuel will be affected by the same natural degradation factors but to a much lesser degree. Crude oil and bunker fuel spills will be persistent and will require aggressive actions and innovative techniques in the harsh subarctic environment.

C. AREA OF RESPONSIBILITY

This subarea contingency plan covers the region outlined above in subpart B. The USCG Captain of the Port (COTP) is the predesignated FOSC for the Coastal Zone which encompasses all navigable waters seaward of the mean high tide line and an area of shoreline 1,000 yards inland of the coastline. The Environmental Protection Agency is the predesignated FOSC for the Inland Zone which encompasses all lands, rivers, streams, and drainages inland of the 1000-yard wide band that parallels the Alaskan coastline. These zones are clearly defined in the Unified Plan. It is possible that incidents may occur in locations that do not fall under federal jurisdiction and there will be no FOSC in these instances.

The State of Alaska places jurisdiction of spill response for the Cook Inlet Subarea under the Central Alaska Response Team (CART) of the Department of Environmental Conservation. The SOSC for the CART is the predesignated SOSC for the entire Cook Inlet Subarea.

Memoranda of Understanding/Agreement (MOU/MOA) between the USCG/USEPA and the USEPA/ State of Alaska further delineate the OSC responsibilities. **Annex K of the Unified Plan** includes copies of these MOUs/MOAs.

D. REGIONAL STAKEHOLDER COMMITTEE

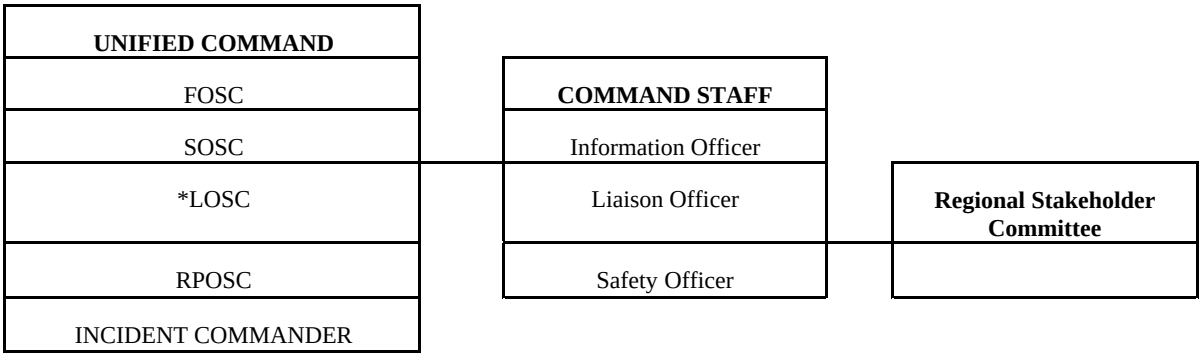
A Regional Stakeholder Committee (RSC) will normally be activated for significant incidents that involve resources under the jurisdiction of several agencies. The RSC was previously referred to as the Multi-Agency Coordination Committee (MAC). Unlike the MAC defined in the ICS of the National Interagency Incident Management System, the RSC for a spill response does not play a direct role in setting incident priorities or allocating resources. The RSC can advise the Unified Command (under the guidance of the Community Liaison Officer) and provide comments and recommendations on incident priorities, objectives and action plans.

Figure 3 provides the general location of the regional RSC in relation to the Unified Command organizational structure. Additionally, the suggested/potential membership of the RSC is provided in Figure 3. Membership on the RSC is dependent upon the location of the incident and the interests or jurisdiction of the affected communities, landowners, and special interest groups. During incidents where there is no FOSC, federal agencies with jurisdictional responsibilities for resources at risk could participate as a member of the RSC, thus retaining their input on containment, oversight, and cleanup.

As indicated above, the RSC is not directly involved in tactical operations, though some of its members may be. The RSC's role is to convey to the Unified Command information relating to the authority, concerns and expertise of its members. RSC members recommend to the Unified Command overall objectives and priorities and review the Incident Action Plans.

RSC activities will be coordinated by the Community Liaison Officer. RSC discussions will be documented and recommendations and dissenting opinions occurring outside of RSC meeting with the Unified Command will be communicated to the Unified Command through the Liaison Officer. The RSC will be chaired initially by the Community Liaison Officer. After convening, the RSC will then elect its own chair.

Figure E-8: Cook Inlet Regional Stakeholder Committee ICS Organizational Position and Membership



Suggested Membership:

- Cook Inlet Regional Citizens Advisory Council
- Representatives or Community Emergency Coordinators from affected communities. These may include:
  - Alexander Creek
  - Anchorage
  - Big Lake
  - Butte
  - Chase
  - Chickaloon
  - Clam Gulch
  - Cohoe
  - Cooper Landing
  - Crown Point
  - Fox River
  - Fritz Creek
  - Funny River
  - Girdwood
  - Halibut Cove
  - Happy Valley
  - Homer
  - Hope
  - Houston
  - Jakolof Bay
  - Kachemak
  - Kalifonsky
  - Kasilof
  - Kenai Peninsula Borough
  - Kenai
  - Knik/Fairview
  - Lazy Mountain
  - Matanuska-Susitna Borough
  - Meadow Lakes
  - Moose Pass
  - Nanwalek
  - Nikiski
  - Nikolaevsk
  - Ninilchik
  - Palmer
  - Port Graham
  - Primrose
  - Ridgeway
  - Salamatof
  - Seldovia
  - Seward
  - Skwentna
  - Soldotna
  - Sterling
  - Sutton
  - Talkeetna
  - Trapper Creek
  - Tyonek
  - Wasilla
  - Willow
- Federal/state/local or private landowners and leaseholders (e.g., National Parks Service, Alaska Dept of Natural Resources)
- Federally-recognized tribes, Native corporations, organizations and communities
- Special interest groups affected by the incident

* The Local On-Scene Coordinator is part of the Unified Command and serves as the Incident Commander during an incident as long as there is an immediate threat to life, health and safety.

E. REGIONAL CITIZENS ADVISORY COUNCIL

The Cook Inlet Regional Citizens Advisory Council (RCAC) is a local citizens group with an Oil Pollution Act of 1990-mandated role in Cook Inlet spill response activities. In this role, the RCAC participates with the incident management team at the emergency operations center and monitors on-water activities during a spill. The RCAC has four primary tasks to perform during a spill: observe, verify, inform, and advise.

By observing and verifying emergency spill response and cleanup efforts, the RCAC is able to properly inform local residents, communities and concerned groups. The RCAC also provides information on local knowledge and concerns to incident commanders that can prove valuable to operational decisions. The RCAC is a resource for the Unified Command and participates in the Regional Stakeholder Committee when it is established and functioning for a spill response.

Specific responsibilities of the RCAC include:

- Providing a voice for local communities and citizens in the policies and decisions that affect them.
- Advising the oil industry and the public on oil spill prevention and response, and ways to mitigate the environmental impact of terminal, offshore oil facilities, and tanker operations.
- Monitoring terminal, tanker, and offshore oil facilities operations and implementation of spill prevention and response plans.
- Increasing public awareness of private oil industry's current capabilities in spill prevention and response, and the environmental impacts of oil transportation.
- Fostering long term partnership between industry, government and local communities.
- Conducting independent research.
- Participating in, monitoring, and critiquing actual spill responses, spill drills, deployment exercises, and spill simulations conducted by industry. The RCACs also assist industry and regulatory agencies in drill planning and post-drill evaluations.
- Participating in the Regional Stakeholder Committee.
- Preparing and maintaining an RCAC Emergency Response Plan outlining the Council's role and operating procedures in the event of a major spill.

F. SUBAREA COMMITTEE

The primary role of the Subarea Committee is to act as a preparedness and planning body for the subarea. The Subarea Committee consists of the predesignated FOSCs and SOSC for the subarea and, depending upon the event or the issues to be addressed, local government representatives. Each member is empowered by their own agency to make decisions on behalf of the agency and to commit the agency to carrying out roles and responsibilities as described in this plan and the Unified Plan. The predesignated Federal On-Scene Coordinators for the area (EPA & USCG) will serve as chairpersons of the committee.

The Subarea Committee is encouraged to solicit advice, guidance or expertise from all appropriate sources and establish work groups as necessary to accomplish the preparedness and planning tasks. Work group participants may include facility owners/operators, shipping company representatives, cleanup contractors, emergency response officials, marine pilot associations, academia, environmental groups, consultants, response organizations and representatives from regional citizens' advisory councils.

Subarea Committee Members
The Cook Inlet Subarea Committee is comprised of the following:

U.S. Coast Guard, COTP Western Alaska
U.S. Environmental Protection Agency
Alaska Department of Environmental Conservation
Kenai Peninsula Borough
Matanuska-Susitna Borough
Municipality of Anchorage

The Cook Inlet Subarea Committee also seeks advice and expertise concerning environmental and economic issues from local agencies and private industries such as:

Tesoro Alaska Petroleum Co.
Unocal Corporation
Alaska Railroad Corporation
Cook Inlet Spill Prevention and Response Inc.
Alaska Chadux Corporation
Local Emergency Planning Committees
Cook Inlet Regional Citizens Advisory Council
Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Department of Military and Veteran Affairs
U.S. Department of the Interior
U.S. Forest Service
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

Subarea Work Groups
The Cook Inlet Subarea Committee relies on the input from the three work groups listed below. The Subarea Committee welcomes interested participants to serve on work groups in accordance with each individual's area of expertise and the particular needs of the work groups.

The Sensitive Areas Work Group is chaired by a representative from the Department of Interior. The

primary purpose of the Sensitive Areas Work Group is to develop and maintain the Sensitive Areas section of the plan.

The Logistics Work Group is chaired by a representative from the ADEC. The primary purpose of the Logistics Work Group is to develop and maintain the Resources Section of the plan.

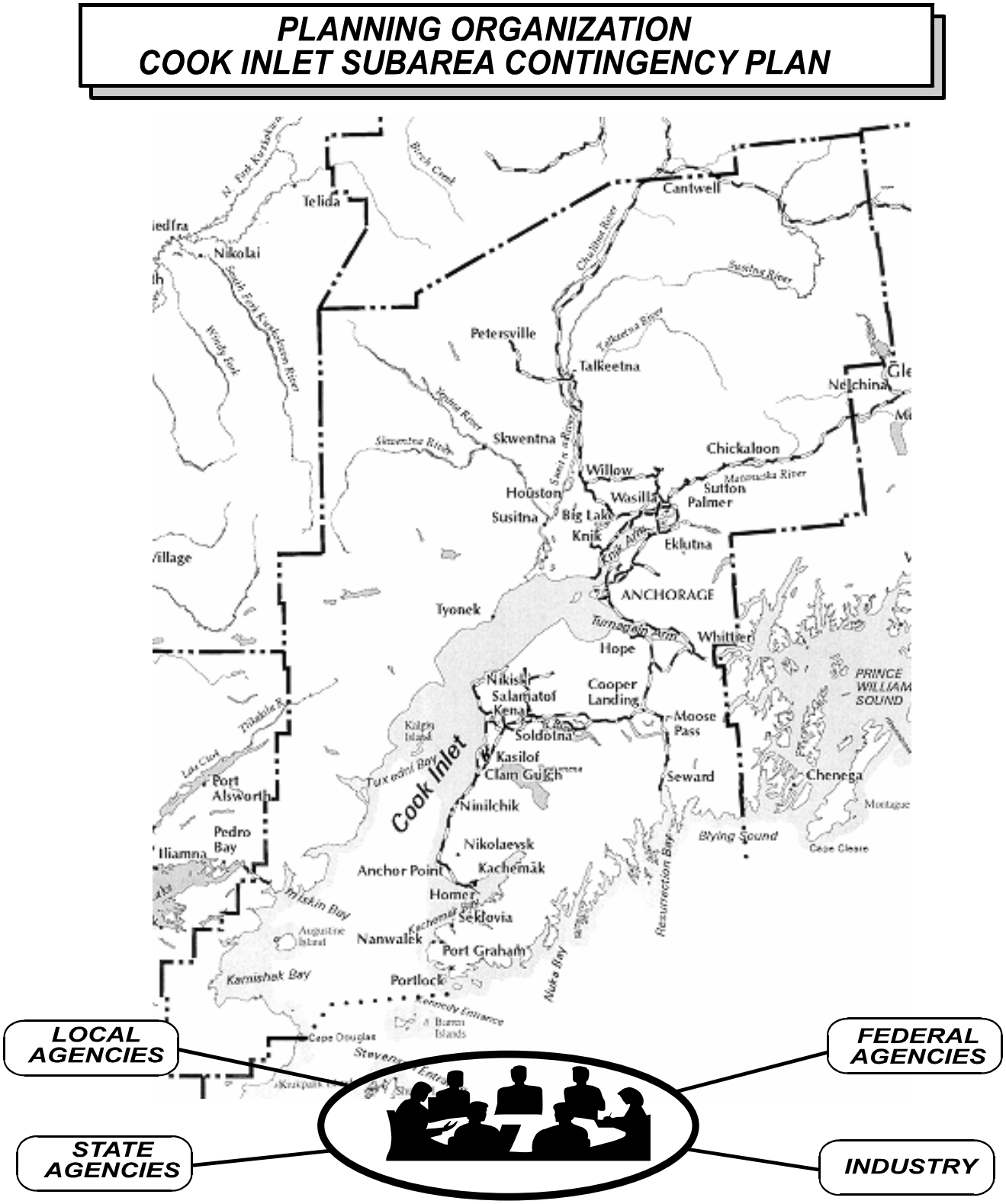
The Operations Work Group is chaired by representatives from the U.S. Coast Guard and EPA. The primary purpose of the Operations Work Group is to develop and maintain the Response Section, the Hazmat Section, and the Scenarios Section of the plan.

Each of the above work groups are also involved in reviewing and providing comments on the other sections of the plan (including the Geographic Response Strategies section.)

Membership on the work groups can vary and fluctuate but the list below provides some of the regular participants:

Matanuska-Susitna Borough
Kenai Peninsula Borough
Municipality of Anchorage
representatives from LEPCs and other local governments
Alaska Railroad Corp.
Alaska Chadux Corp.
CISPRI
Cook Inlet Regional Citizens Advisory Council
Tesoro Corp.
Unocal Corp.
Agrium U.S. Inc.
Crowley Maritime
Forty-Niner Remediation and Oilspill Group
Representatives from other industry and commercial concerns
U.S. Coast Guard, COTP Western Alaska
USCG 17th District
U.S. Coast Guard Marine Safety Detachment Kenai
U.S. Department of Defense
U.S. Department of Interior
U.S. Environmental Protection Agency
U.S. Forest Service
National Marine Fisheries Service
NOAA Scientific Support Coordinator
Alaska Department of Environmental Conservation
Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Department of Military and Veterans Affairs

Figure E-9:


PLANNING ORGANIZATION
COOK INLET SUBAREA CONTINGENCY PLAN
Telida
Nikolai
Cantwell
Petersville
Talkeetna
Nelchina
Skwentna
Willow
Houston
Wasilla
Palmer
Sutton
Chickaloon
Susitna
Big Lake
Knik
Eklutna
ANCHORAGE
Tyonek
Whittier
Hope
Cooper Landing
Moose Pass
Seward
Chenega
PRINCE WILLIAM SOUND
Nikiski
Salamatof
Kenai
Soldotna
Kasilof
Clam Gulch
Cook Inlet
Port Alsworth
Pedro Bay
Iliamna
Ninilchik
Nikolaevsk
Anchor Point
Kachemak
Homer
Seldovia
Nanwalek
Port Graham
Portlock
Kamishak Bay
Iniskin Bay
Resurrection Bay
Nuka Bay
Cape Douglas
LOCAL AGENCIES
FEDERAL AGENCIES
STATE AGENCIES
INDUSTRY

BACKGROUND: PART TWO – RESPONSE POLICY AND STRATEGIES

The strategy for responding to a specific spill or hazmat incident depends upon numerous factors. The strategy can change as the situation changes. As a general rule, the strategies listed below should be used as a guide in developing an effective response. Consider all factors that may affect the particular situation and revise/modify/expand these priorities as the situation dictates. The strategies are further delineated in the procedures contained in the Response Section. Additional information can be found in the **Unified Plan**.

A. FEDERAL RESPONSE ACTION PRIORITIES/STRATEGIES

The following priorities are general guidelines for response to a pollution incident within the COTP Western Alaska zone. They are based on the premise that the safety of life is of paramount importance in any pollution incident, with the protection of property and the environment, although important, being secondary. Nothing in this part is meant to indicate that higher priority items must be completed before performing a lower priority task. They may be carried out simultaneously or in the most logical sequence for each individual incident.

Priority One - Safety of Life - for all incidents which may occur, the safety of personnel, including response personnel, must be given absolute priority. No personnel are to be sent into an affected area without first determining the hazards involved and that adequate precautions have been taken to protect personnel.

Priority Two - Safety of Vessel/Facility and Cargo - the facility and/or vessel and its cargo shall become the second priority.

Priority Three - Protection of the Environment by elimination of the pollution source - containment and recovery of oil in the open water must be effected expeditiously to preclude involvement of the beaches and shorelines. Due to remote locations and restricted accessibility, it is extremely difficult to protect the majority of the coastline by diversion or exclusion methods. Therefore, securing the source and open water containment and recovery is especially critical and should normally be the first line of defense to protect the environment. Likewise, spills which occur on land or in upland water courses will be dammed, boomed, diked, etc., as feasible to prevent the spread of the pollutant downstream. NOTE: *In situ* burning (Unified Plan, Annex F for checklist) of a vessel and its pollutant may be an alternative considered by the OSCs; this strategy places environmental protection priorities above saving the vessel and its cargo.

Priority Four - Protection of the Environment by diversion/exclusion, dispersion, or in-situ burning. In the event that the location of a spill or the weather conditions do not permit open water recovery, protection of the shoreline becomes paramount, especially areas of greatest sensitivity. It is not possible to protect some areas entirely or even in part. It may be necessary to sacrifice some areas in order to achieve the best overall protection of the environment. The OSC may consider *in situ* burning as a response option. Refer to the **Unified Plan** for an *in situ* burning checklist. The use of dispersants must be considered early in the response phase while the oil is in the open water. Subpart J of the NCP and the **Unified Plan (Annex F)** address in detail the responsibilities of the OSC in the use of chemicals.

Priority Five - Protection of the Environment by beach cleanup and the use of Sacrificial Areas. It may not be possible to protect the entire shoreline from oil. In fact, it may be allowed purposely to come ashore in some areas as an alternative to damaging others. Selection of the proper shoreline cleanup

technique depends on many different factors including the following:

- Type of substrate
- Amount of oil on the shoreline
- Depth of oil in the sediment
- Type of oil (tar balls, pooled oil, viscous coating, etc.)
- Trafficability of equipment on the shoreline
- Environmental or cultural sensitivity of the oil shoreline
- Prevailing oceanographic and meteorological conditions

The best way to minimize debate over the most appropriate response is to involve all interested government and private agencies. The shoreline assessment groups shall attempt to agree on the amount and character of the oil that is on the shorelines, anticipate interactions between the stranded oil and the environment, and the geological and ecological environment of the involved shorelines. Once a consensus is met, a process is necessary to determine the proper treatment required.

Shoreline cleanup options may include the use of physical and/or chemical processes. Chemical shoreline cleanup products may increase the efficiency of water-washing during the cleanup of contaminated shorelines. However, the product must be listed on the EPA National Contingency Plan Product Schedule and authorization must be obtained from the ARRT and the government on-scene coordinator at the spill. Physical shoreline cleaning methods include techniques such as: natural recovery, manual sorbent application, manual removal of oiled materials, low pressure flushing (ambient temperature), vacuum trucks, warm water washing, high pressure flushing, manual scraping, mechanical removal using heavy equipment. Bioremediation is also considered as a shoreline cleaning method. Bioremediation is the application of nutrients to the shoreline to accelerate the natural biodegradation of oil. The OSC shall request the RRT to provide site-specific guidelines for source protection measures required during shoreline cleanup operations.

B. STATE OF ALASKA RESPONSE PRIORITIES

1. **Safety:** Ensure the safety of persons involved, responding, or exposed to the immediate effects of the incident.

2. **Public Health:** Ensure protection of public health and welfare from the direct or indirect effects of contamination of drinking water, air, and food.

3. **Environment:** Ensure protection of the environment, natural and cultural resources, and biota from the direct or indirect effects of contamination.

4. **Cleanup:** Ensure adequate containment, control, cleanup and disposal by the responsible party or supplement or take over when cleanup is inadequate.

5. **Restoration:** Ensure assessment of contamination and damage and restoration of property, natural resources and the environment.

6. **Cost Recovery:** Ensure recovery of costs and penalties to the Response Fund for response, containment, removal, remedial actions, or damage.

BACKGROUND: PART THREE – AREA SPILL HISTORY

A. NAVIGABLE WATERS OIL SPILL HISTORY

Cook Inlet supports a wide variety of vessel traffic ranging from the smallest fishing vessel to crude oil tankers. Refined products and crude oil are routinely shipped in and out of the Inlet. In addition, Liquefied Natural Gas (LNG) tankers call at the Kenai Pipeline dock facility. Many crude oil development and production platforms operate in the area. Crude oil and natural gas pipeline crossings exist in Cook Inlet and Turnagain Arm in several locations.

Numerous probabilities exist for spills to occur due to the volume of oil product transported in the region. Listed below is a brief synopsis of significant or notable spills in the region from 1987 to present. This information was collected from the ADEC spill database; a complete list is available through ADEC.

Date	Incident
02 July 87	T/V Glacier Bay, Kenai Up to 210,000 gallons of ANS crude oil released.
22 June 88	Mystery spill, Pickworth Dock, Anchorage Approximately 300 gallons refined product released.
05 Aug 88	Mystery spill, Upper Cook Inlet Approximately 100 gallons of heavy product released.
02 Nov 88	M/V Alaska Constructor, Trading Bay, Upper Cook Inlet An explosion aboard the vessel, resulting in the loss of approximately 10,000 gallons gasoline and 30,000 gallons of diesel fuel; heavy sheening observed.
14 Nov 88	Marathon Spark Platform, Upper Cook Inlet Approximately 23,000 to 46,000 gallons of Cook Inlet crude oil released.
12 Dec 88	T/V Oriental Crane, Nikiski Approximately 7,600 gallons of Bunker C fuel oil spilled.
31 Jan 89	Amoco Platform Anna, Upper Cook Inlet Approximately 4,600 gallons of crude oil released.
19 Aug 89	M/V Lorna B, Upper Cook Inlet Vessel sank with 80,000 gallons diesel fuel on board; no recovery.
17 Dec 90	T/V Coast Range, Cook Inlet Approximately 700 gallons of crude oil released.
01 Aug 91	Port Graham fuel facility, Cook Inlet Unknown quantity of diesel fuel.
13 Aug 91	M/V Atlantic Seahorse, Cook Inlet

	Approximately 4000 gallons diesel released.
26 Apr 92	ARCO King Salmon Platform, Upper Cook Inlet. Approximately 336 - 420 gallons crude oil released.
28 Aug 92	F/V Loon, Outer Kenai Coast Approximately 1,500 gallons diesel fuel released.
05 Dec 95	Tesoro Tank Farm (Nikiski). Approximately 2,500-2,900 gallons of crude oil released due to a mechanical failure. Some of the product escaped secondary containment and entered Cook Inlet.
06 Mar 97	Structural Mechanical leak at Cook Inlet Steelhead Platform (Trading Bay). Approximately 9,000 gallons of diesel released.
06 Feb 99	T/V Chesapeake Trader, between Nikiski and Homer. 420 gallons of crude oil spilled.
01 Oct 02	Trading Bay facility. Tube failure; crude oil release of 525 gallons.

B. INLAND OIL SPILL HISTORY

The Cook Inlet planning region supports a well-developed road and rail system that connects many of the region's communities. Major communities include the Municipality of Anchorage and surrounding communities, the cities of Kenai and Soldotna on the Kenai Peninsula, and Wasilla and Palmer in the Matanuska-Susitna Borough. The region hosts the majority of industrial activity in the state as well as the majority of the state's population. With access by water, rail and road, the Port of Anchorage is a major trans-shipment point. The Kenai Peninsula supports much of the Cook Inlet oil production activity as well as refinery and urea production facilities.

Many spills occur in this region due to the industrial/commercial nature of the area. Listed below is a brief synopsis of significant fuel product spills in the region from 1989 to present. This information was collected from the ADEC spill database; a complete list is available through ADEC.

Date	Incident
01 Mar 90	Cook Inlet Pipeline, Drift River Terminal. Approximately 2,000 barrels of crude oil spilled within a containment dike. No oil was released to the water and no injuries were sustained as a result of this incident.
16 Aug 91	Shell Western ENP (onshore, Nikiski). Approximately 2,000 barrels of crude oil spilled on the ground. Report did not specify details of spill.
22 Feb 95	Whittier, Defense Fuels Supply Center. 113,000 gallons of JP-5 (jet fuel) released, but contained within the lined, diked containment area. Cause of the release was a severed pressure relief line (the line was severed by a chunk of falling ice).
28 Jul 95	East Kenai, Unocal Swanson River Field. Approximately 840 gallons of crude released from a ruptured line.
02 May 97	Anchorage International Airport. Over 3000 gallons of Jet A fuel released after a backhoe struck a buried 2" valve.
17 Jul 97	Elmendorf Air Force Base. 13,600 gallons of jet fuel (JP-8) released from a ruptured six-inch buried pipeline.
04 Sep 97	Elmendorv AFB Flightline. Pipeline ruptured; 6,300 gallons of aviation fuel released.
27 Oct 97	Elmendorf AFB. Unknown cause of release from pipeline; 100,000 gallons of aviation fuel released.
02 Aug 98	Mat-Su Palmer Correctional Facility. Leak in underground feeder line to day tank; 10,000 gallons of diesel released.
22 Jun 99	Glenn Hwy MP 84/85 on Long Lake side of Road. Truck rollover; 4,500 gallons of Jet B fuel released.

31 Oct 99	Alaska Railroad MP 268.5 (Canyon Creek). Train derailment; 15,000 gallons of Jet A diesel fuel released.
21 Nov 99	Kenai Swanson River Field. Pipeline leak; 10,500 gallons of produced water released.
22 Dec 99	Alaska Railroad MP 262 (near Gold Creek). Train derailment; 120,000 gallons of jet fuel spilled.
06 Jan 99	Swanson River Field. Tank pipeline release; loss of 2520 gallons of crude oil.
13 Apr 00	Port of Anchorage Tesoro Pipeline Terminal. Leak in pipeline; 5082 gallons of diesel released.
29 Jun 01	Junction of the Seward Highway and the Sterling Highway. Truck rollover; 4000 gallons of asphalt spilled.
29 Oct 01	Mile 52 Sterling Hwy near Gwin's Lodge. Truck rollover; loss of 7000 gallons of gasoline.

C. HAZMAT RELEASE HISTORY

Numerous releases occur in this region due to the industrial/commercial nature of the area. Listed below is a brief synopsis of significant releases of hazardous substances in the region from 1986 to present. This information was collected from the ADEC spill database; a complete list is available through ADEC.

Date	Incident
27 Feb 86	Alaska Railroad, Crown Point transfer station near Moose Pass. A tank car of urea formaldehyde was accidentally heated twice in Anchorage before its trip south to Crown Point. The manufacturer of the chemical was contacted and expressed no alarm at the situation. However, the chemical went through an exothermic reaction and began venting the product shortly after arrival at Crown Point. The area was evacuated and, over the course of approximately two days, 50 tons of urea formaldehyde was released. Several people reported ill effects and one dog died.
13 Mar 89	Tesoro Alaska Petroleum Company. Spill of approximately 2 tons SO_2 due to a false indication from a high level shutdown mechanism, which caused a shutdown of hydrocracker unit.
14 Mar 89	Tesoro Alaska Petroleum Company. Release of nearly one ton ammonia to the air; shutdown of the sulphur recovery unit caused release.
25 May 89	Unocal, Chemical plant. Pressure release of 6,500 pounds of ammonia vapor. Specific cause not listed.
21 Jun 89	Unocal, Chemical plant. Release of 600 pounds of ammonia to the air. Ammonia dissipated to air. Cause: Unocal was tearing down the system and replacing indicator. By the end of June 1989, Unocal's ammonia releases were being addressed under RCRA compliance agreement. Further releases regulated under this agreement.
15 Nov 89	ARCO, Swanson River 41-33. Three barrels of 15% hydrochloric acid spilled during acidizing job. The acid ate a hole in the line. Soda was spread on gravel to neutralize the acid; the contaminated gravel was taken to a solid waste facility (location not specified).
03 Dec 89	Unocal, Chemical plant. Approximately 100 pounds of ammonia released to the air and onto ground; cause attributed to a lost gasket.
29 Jan 90	VECO, at Swanson facility. While filling a truck-mounted tank, 21 gallons of xylene tinted with crude and water spilled. The xylene burped out of vent pipe onto ground. Contaminated soil and snow collected and transported to a waste pit.
20 Mar 90	Unocal, Chemical plant, on the wharf. An unknown amount of sulfuric acid (estimated at 65 gallons) spilled due to leak in off-loading line.

30 Jun 90	Unocal, Chemical plant. 500 gallons of sulfuric acid spilled while off-loading an acid line. The hose became loose while clearing an improperly blocked-off line.
14 Sep 90	Tesoro, North Kenai Plant. Just under one ton of sulfur released into the atmosphere as a result of a power shutdown.
07 Sep 91	Unocal, Chemical plant. 2,670 pounds of hot ammonia released during transfer to a storage tank as a result of a pressure overload and subsequent venting for a duration of 15 minutes.
11 Sep 91	OSI/Great Western Chemical. 100 gallons of sodium hypochlorite (12.5% NaOCl by volume, pH 11.4) released while off-loading from truck. The 250 gallon plastic chemical tote fell off forklift, which caused the container to split. The incident occurred 100 feet from the water.
27 Nov 91	Dowell-Schlumberger. Approximately 70-80 gallons of 15% hydrochloric acid (HCl) released at the shop yard. Specific details were not listed.
10 Jul 92	Union, Chemical plant. Approximately 5,400 pounds of ammonia were released for 40 minutes due to operator error/mechanical failure at No. 5 plant.
03 Aug 93	Unocal, Chemical plant. 1500 pounds of anhydrous ammonia released due to malfunctioning valve in area plant.
17 Sept 93	Unocal, Kenai plant. 100 gallons of sodium hydroxide (unspecified concentration) released from a pinhole leak.
08 Jun 96	Kenai Unocal Chemical Plant. 8943 pounds of anhydrous ammonia released. Cause unknown.
18 Jun 96	Kenai Unocal Chemical Plant. 6006 pounds of anhydrous ammonia released. Cause unknown.
25 Jan 97	Crowley Barge Oregon capsized six miles offshore of Ninilchik. The barge was struck by a tug, became unbalanced after taking on water, and overturned. The entire cargo of urea (approximately 12,500 tons) was lost.
16 Sep 97	Ninilchik River. Truck accident. 34,000 pounds of solid sulfur spilled.
31 Oct 97	Kenai Unocal Chemical Plant. Valve left open. 20,000 pounds of anhydrous ammonia released.
21 Apr 98	Kenai Unocal Chemical Plant. Faulty valve. 49,605 pounds of anhydrous ammonia released.
01 Jul 98	Homer Icicle Seafood Plant. Explosion. 35,000 pounds of ammonia released.

21 Sep 98	Kenai Unocal Chemical Plant. Unknown cause. 6,500 gallons of methydiethanolamine released.
20 Aug 99	Kenai Unocal Chemical Plant. Explosion. 9,000 gallons of methydiethanolamine released.
23 Dec 99	Between Tacoma, WA and Anchorage. Faulty valve on ISO Tank. 44,000 pounds of methanol meruptan released.
05 Nov 00	Ben Boeke Ice Arena, Anchorage. Release of 4000 gallons of Freon (Dichlorodifluoromethane).
27 Sep 02	Alaska Pacific University swimming pool, Anchorage. A release of chlorine (approximately 3 gallons) forced the evacuation of the pool and sent more than 30 children and adults to local hospitals, including a critically injured pool worker.

D. CLOSER LOOK AT SOME NOTEWORTHY SPILLS

January 21, 1984 T/V Cepheus

Location: Cairn Pt, mile and half northwest of Port of Anchorage
Product: 188,000 gallons of aviation fuel

A 535' Greek tanker grounded across Knik Arm from Anchorage. A tug pulled the loaded tanker (209,000bbls) to the Anchorage dock where it continued to leak. The waters were 90% ice-infested. A large percentage of the product evaporated. The rest quickly mixed in with the ice-laden waters, making recovery of fuel an unlikely proposition, so no on-water recovery was attempted. Within days all evidence of the spill had disappeared, mostly due to evaporation and grinding/dispersion action of the strong currents and ice-infested waters. Low tide sediment samples from surrounding shoreline turned up negative.

July 2, 1987 T/V Glacier Bay

Location: East side of Cook Inlet, just south of Kenai River mouth
Product: 130,200 gallons of ANS crude oil

The tanker, carrying more than 16 million gallons of crude, ran aground and then moved off to deeper water, increasing the bottom tear in the vessel and releasing more product. Initial low estimates of product loss of 4000 gallons were later revised upwards, and by July 9 the FOSC had declared the spill to be "major." Due to the strong currents of 4 to 6 knots, recovery operations were extremely difficult. The oil tended to accumulate in rip currents and carried along and/or down with the flotsam and jetsam. Several times oil was boomed, only to "disappear" before it could be collected, and then reappear hundreds of meters away due to the intense currents and tide rips. The spill was eventually "federalized" due to the poor efforts by the responsible party: cleanup personnel did not arrive on-scene until two days after the grounding, and their operations were neither adequate nor effective.

March 24, 1989 T/V Exxon Valdez

Location: Near the mouth of the Valdez Arm, off Bligh I. in Prince William Sound
Product: Over 11 million gallons of ANS crude oil

Just after midnight, the supertanker Exxon Valdez, containing more than 53 million gallons of oil, ran aground on the charted rocks of Bligh Reef after exiting the prescribed tanker navigation lanes in an effort to avoid icebergs from nearby Columbia Glacier. The impact ruptured eight of the eleven cargo tanks. Oil spewed out of the tanker in such quantities that, for a while, the slick stood at over two feet thick in places. Within 36 hours after the grounding, and with the weather holding calm, air reconnaissance reported the oil slick to be 10 miles long and 3 to 7 mile wide. Despite calm weather for the first three days, spill response efforts were stymied by confusion, lack of equipment, and misunderstandings over proper response and control. A major storm, boasting winds up to 73mph, blasted through the Sound on Sunday night, March 26, spreading oil in all directions and coating the first of many miles of shoreline. Eventually, over 1200 miles of coastline would be impacted by oil, including the outer Kenai coast and islands, reaching the mouth of Kachemak Bay, and out to Kodiak Island and the Alaskan Peninsula. Exxon mounted a major shoreline cleanup effort during the summer of 1989, and similar but much reduced cleanup activities during the summers of 1990 and 1991. Recent studies report various parts of the coastal ecosystem still exhibiting negative effects from the oil spill.

August 23 1993 M/V Sun Tide
Location: between the North Forelands and Possession Point
Product: 6000 gallons of diesel fuel
A spill response vessel, the Sun Tide, ran into an ARCO drilling rig rupturing its fuel tank, leading to a one-by-two mile sheen. The diesel evaporated far more rapidly than predicted. Response efforts were in effectual, and the incident was virtually over in 12 hours.

September 9, 1994 Tug Barge Annahootz
Location: Port of Anchorage
Product: 500 gallons of diesel fuel
While unloading fuel at the Port, oil overflowed through an expansion tube. Containment booms and sorbents were deployed, and approximately 100 gallons of oil/water mix were recovered. The diesel sheen rapidly evaporated and dispersed in the high-energy environment of the Cook Inlet waters. Interestingly, the sheen moved north along the coast from the Port during an ebb tide, apparently in response to a large back eddy.

December 22, 1999 Alaska Railroad
Location: Alaska Railroad Milepost 262, near Gold Creek, 36 miles north of Talkeetna
Product: 120,000 gallons of jet fuel (JP 8)
A southbound freight train with 4 locomotives and 53 tank cars suffered a partial derailment north of Talkeetna on its route from Fairbanks to Anchorage. Three locomotives and 15 loaded tank cars derailed. Heavy snow on the rail tracks had built up under the locomotives, and this hardened snow lifted one of the locomotives completely off the tracks, leading to the derailment. Deep snow hampered response efforts. Industry responders mistakenly assumed that the frozen ground would prevent spilled product from seeping through the earth and contaminating the water table. Test wells revealed an expansive spread of the product to groundwater, which raised fears that the nearby Susitna River might see contamination. Recovery efforts collected 16,570 gallons of spilled product. A Soil Vapor Extraction system was placed in operation the last week of October, 2000, but proved effective for only a few months. In December, 2000, a University of Alaska technical review team reported there was no longer an appreciable human health risk through the consumption of contaminated groundwater, and that contamination of the Susitna River would be mitigated by the large flow volumes of the river. Long-term monitoring of the groundwater and contaminate continues; no significant changes have occurred since December, 2000.

BACKGROUND: PART FOUR – ABBREVIATIONS and ACRONYMS

ACP	Area Contingency Plan
ACS	Alaska Clean Seas (North Slope industry cooperative)
ADEC	Alaska Department of Environmental Conservation
ADF&G	Alaska Department of Fish and Game, also as ADFG
ADNR	Alaska Department of Natural Resources
ADOT&PF	Alaska Department of Transportation and Public Facilities; also as ADOTPF
AFB	Air Force Base
ANS or ANSC	Alaska North Slope crude oil
ARRT	Alaska Regional Response Team; also as AKRRT
BBLS	Barrels
BLM	US Bureau of Land Management
BOA	Basic Ordering Agreement (for federal contractors)
CART	Central Alaska Response Team (ADEC)
CCGD 17	Commander, Coast Guard District 17
CISPRI	Cook Inlet Spill Prevention and Response Inc. (industry cooperative)
COTP	Captain of the Port (USCG)
CTAG	Cultural Technical Advisory Group
DOA	US Department of Agriculture
DOC	US Department of Commerce
DOD	US Department of Defense
DOI	US Department of the Interior
DRAT	District Response Advisory Team (USCG)
DRG	District Response Group (USCG)
EPA	Environmental Protection Agency; also as USEPA
ESI	(Alaskan) Environmental Sensitivity Index
F/V	Fishing Vessel
FAA	Federal Aviation Administration
FOSC	Federal On-Scene Coordinator
GIS	Geographic Information System
GRS	Geographic Response Strategies
GSA	General Services Administration
HAZMAT	Hazardous Materials; also as hazmat
HAZWOPER	Hazardous Waste Operations and Emergency Response
ICS	Incident Command System
IDLH	Immediate Danger to Life and Health
INMARSAT	International Maritime Satellite Organization
JPO	Joint Pipeline Office (gov't agencies involved with managing/regulating TAPS)
LEPC	Local Emergency Planning Committee
LEPD	Local Emergency Planning District
LNG	Liquefied Natural Gas
M/V	Motor Vessel
MLT	Municipal Lands Trustee Program
MOA	Memoranda of Agreement, or Municipality of Anchorage
MOU	Memoranda of Understanding
MSO	Marine Safety Office (USCG)
MSRC	Marine Spill Response Corp. (national industry cooperative)

NART	Northern Alaska Response Team (ADEC)
NCP	National Contingency Plan
NIST	National Institute of Standards and Technology
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOTAMS	Notice to All Mariners; also, Notice to Airmen
NPDES	National Pollution Discharge Elimination System
NPFC	National Pollution Fund Center
NRC	National Response Center
NRT	National Response Team
NRDA	(Federal/State) Natural Resource Damage Assessment
NSF	National Strike Force
NSFCC	National Strike Force Coordinating Center
NWR	NOAA Weather Radio
OHMSETT	Oil and Hazardous Material Simulated Environment Test Tank
OPA 90	Oil Pollution Act of 1990
OPCEN	Operations Center
OSC	On-Scene Coordinator
OSRO	Oil Spill Response Office
PIAT	Public Information Assist Team
PIO	Public Information Officer
POLREP	Pollution Report (USCG)
PWS	Prince William Sound
RCAC	Regional Citizens Advisory Council
RCRA	Resource Conservation and Recovery Act of 1978
RP	Responsible Party
RRT	Regional Response Team
RSC	Regional Stakeholder Committee
RV	Recreational Vehicle
SART	Southeast Alaska Response Team (ADEC)
SCBA	Self-Contained Breathing Apparatus
SCP	Subarea Contingency Plan
SERVS	Ship Escort Response Vessel Service (for Alyeska terminal in Valdez)
SHPO	State Historic Preservation Officer (ADNR)
SITREP	Situation Report (ADEC)
SONS	Spill of National Significance
SOSC	State-On Scene Coordinator
SSC	Scientific Support Coordinator (NOAA)
SUPSALV	U.S. Navy Superintendent of Salvage, also as NAVSUPSALV
TAPS	Trans Alaska Pipeline System
T/V	Tank Vessel
USCG	United States Coast Guard
VIRS	Visual Information Response System
VTS	Vessel Traffic Separation System/Scheme