PRINCE WILLIAM SOUND
SUBAREA CONTINGENCY PLAN

GEOGRAPHIC RESPONSE STRATEGIES
SECTION

The following pages, with the exception of "Part 5 Draft Copper River Delta and Flats GRS Information" are available on the ADEC Website at http://dec.alaska.gov/spar/perp//grs/pws/home.htm. Part 5 is include for information purposes, however, final GRS's have not yet been completed for this region. Any new GRS's will be added to the above website as they are approved and available.

GEOGRAPHIC RESPONSE STRATEGIES: PART ONE - INTRODUCTION

The GRS Introduction pages are available on the ADEC Website at http://dec.alaska.gov/spar/perp/grs/pws/home.htm.

A. PURPOSE AND SCOPE

These Geographic Response Strategies (GRS) are designed to be a supplement to the Prince William Sound (PWS) Subarea Contingency Plan for Oil and Hazardous Substances Spills and Releases, commonly referred to as the PWS Subarea Contingency Plan (SCP). GRS provide response strategies for the protection of selected sensitive areas to aid first responders to an oil spill. The strategies here serve as the federal and state on-scene coordinators' "orders" during an oil spill in the area covered by this GRS. As such, they have been approved by the U.S. Coast Guard Marine Safety Office and the Alaska Department of Environmental Conservation.

Implementation of these Geographic Response Strategies is the third phase of an oil spill response. The first and primary phase of the response is to contain and remove the oil at the scene of the spill or while it is still on the open water, thereby reducing or eliminating impact on shorelines or sensitive habitats. If some of the spilled oil escapes this tactic, the second phase, which is no less important, is to intercept, contain and remove the oil in the nearshore area. The intent of phase two is the same as phase one: remove the spilled oil before it impacts sensitive environments. If phases one and two are not fully successful, phase three is to protect sensitive areas in the path of the oil. The purpose of phase three is to protect the selected sensitive areas from the impacts of a spill or to minimize that impact to the maximum extent practical.

The sites selected for development of Geographic Response Strategies are not meant to be exclusive; other sensitive sites may require protection during any given spill. The fact that a GRS may not have been developed for a certain sensitive site does not mean that site should not be protected if it is threatened by an oil spill.

These strategies are intended to be flexible to allow the spill responders to modify them, as necessary, to fit the prevailing conditions at the time of a spill. Seasonal constraints, such as ice or weather, may preclude implementation of some of the strategies in the winter months. It is not intended that all the sites be automatically protected at the beginning of a spill, only those that are in the projected path of the spill. The strategies developed for the selected sites were completed with a focus on minimizing environmental damage, leaving as small a footprint as possible to support the response operations. Equipment deployment strategies were developed that will not cause more damage than the spilled oil. To test these GRS, each site will be visited and equipment may be deployed according to the strategy, to ensure that the strategy is the most effective in protecting the resources at risk at the site. Revisions will be made to the strategies, and this document, if changes are indicated by site visits, drills or actual use during spills.

The PWS Subarea has been divided into five Geographic Response Zones (Figure G-1-1). The Copper River Delta Flats Zone strategies were developed through a separate Work Group process and are not

included in this document. The Copper River Delta Flats GRS are considered a separate annex to the PWS Subarea Contingency Plan at this time.

B. HOW TO USE THESE GEOGRAPHIC RESPONSE STRATEGIES

The information provided here supplements information provided in the Prince William Sound SCP and the Alaska Federal/State Preparedness Plan for Response to Oil & Hazardous Substances Discharge/Releases (commonly referred to as the Unified Plan). Information provided in either of those plans is not duplicated herein. This document is intended for use by response professionals already familiar with spill response techniques.

Part 2 contains a general description of the protection/recovery tactics utilized throughout the GRS. Each general description contains the tactic objective, deployment depictions, resource sets required to implement the tactic, and deployment considerations and limitations. These general tactics may be adapted to produce a protection scheme for any site in Prince William Sound.

Part 3 contains site-specific response strategies. An index at the beginning of each sub-section shows the location of the selected sites. Each GRS consists of two parts: 1) a graphic showing a map, deployment diagram, picture and implementation notes; and 2) a matrix giving the location description, response strategy, response resources, staging area, site access, natural resources being protected and special considerations.

C. WHO TO CONTACT FOR INPUT

Comments and recommendations on these GRS are welcomed. Please send your comments to either of the following agencies:

Alaska Department of Environmental Conservation
Prevention and Emergency Response Program
555 Cordova Street
Anchorage, AK 99501

United States Coast Guard
Captain of the Port, Valdez, Alaska
Marine Safety Office Valdez
PO Box 486
Valdez, AK 99686

D. HOW THE DOCUMENT WAS DEVELOPED

These GRS were developed through a cooperative, work group process involving federal, state, and local spill response experts working with representatives from the oil production and transportation industry, citizens' groups, and natural resource agencies. The Prince William Sound GRS Work Group developed the GRS for the Northwest, Northeast, Southeast, and Southwest Zones. The Copper River Delta Flats zone GRS were developed by a separate work group.

Work Group participants identified sensitive areas with potential to be classified as "Areas of Major Concern" under the criteria established in the PWS Subarea Plan. These potential sites were evaluated by the additional criteria of 1) risk of being impacted from a water borne spill; and 2) feasibility of successfully protecting the site with existing technology. Using this process, the work group selected a preliminary list of sites that was released for public input. Feedback on site selection was solicited from tribal representatives, user groups, environmental organizations and the general public. Based on the feedback received, the work group made the final site selections for the zone. Additional sites may be selected in the future.

A PWS Tactics committee, composed of spill response professionals, was formed to develop draft strategies for each site selected. The draft strategies were reviewed and approved by the entire Work Group and the final draft was forwarded to the PWS Subarea Committee with the recommendation that it be adopted as part of the Prince William Sound SCP.

1. PRINCE WILLIAM SOUND GRS WORKGROUP

The Prince William Sound GRS Work Group developed GRSs for the Northwest (NW), Northeast (NE), Southeast (SE), and Southwest (SW) GRS zones. The work group consisted of representatives from the following organizations:

Alaska Chadux Corporation
*Alaska Department of Environmental Conservation
Alaska Department of Fish and Game
Alaska Department of Natural Resources
Alaska Tanker Company
Alyeska Pipeline Service Company – Ship Escort and Vessel Response Service
British Petroleum
Conoco/Phillips
Cook Inlet Spill Prevention and Response, Inc.
Chenega Village IRA Council
ChevronTexaco
Crowley Marine Services
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Polar Tanker Company
Prince William Sound Regional Citizens' Advisory Council
SeaRiver Maritime
Tatitlek Village IRA Council
*Tesoro Alaska Company
United States Coast Guard
United States Environmental Protection Agency
United States Department of the Interior
United States Fish and Wildlife Service
United States Forest Service

* = co-chairs

The work group developed the site selection matrix key, page G-1-5, to aid in the selection of sites from within the four PWS GRS Zones. The resulting tables, tables G-1-1, G-1-2, G-1-3, and G-1-4, consist of identified sites in each row, with information about resources at each site that could qualify the site as an area of major concern detailed in the columns.

Figures G-1-2 through G-1-5 show the location of GRS sites in the Northwest, Northeast, Southeast, and Southwest zones. GRS for the Copper River Delta Flats are contained in the Copper River Delta Flats GRS document.

To view these table please visit Part 1. Introduction on DEC's website
http://dec.alaska.gov/spar/perp/grs/pws/home.htm

GEOGRAPHIC RESPONSE STRATEGIES: PART TWO - GENERAL PROTECTION/RECOVERY TACTICS

The GRS General Protection/Recovery Tactics are available on the ADEC Website at http://dec.alaska.gov/spar/perp/grs/pws/home.ht

DEFLECTION BOOMING
DIVERSION BOOMING
EXCLUSION BOOMING
SHORESIDE RECOVERY
MARINE RECOVERY
FREE-OIL RECOVERY
PASSIVE RECOVERY AND DEBRIS REMOVAL
COLD WATER DELUGE
UNDERFLOW DAMMING

GEOGRAPHIC RESPONSE STRATEGIES: PART THREE - SITE-SPECIFIC GEOGRAPHIC RESPONSE STRATEGIES

The GRS Site Specific Response Strategies Introductory Text and Index Maps are available on the ADEC Website at http://dec.alaska.gov/spar/perp/grs/pws/home.htm.

A. NORTHWEST PRINCE WILLIAM SOUND RESPONSE ZONE

Little Axil Lind Island	PWS-NW01
Fool Island	PWS-NW02
Storey Island	PWS-NW03
Cabin Bay	PWS-NW04
Outside Bay	PWS-NW05
Agnes Island	PWS-NW06

The GRS Introduction pages are available on the ADEC Website at **http://dec.alaska.gov/spar/perp/grs/pws/zonenw.htm**.

B. NORTHEAST PRINCE WILLIAM SOUND RESPONSE ZONE

Tatitlek Harbor	PWS-NE01
West Boulder Bay	PWS-NE02
West Tatitlek Narrows	PWS-NE03
Virgin Bay	PWS-NE04
Head of Boulder Bay	PWS-NE05
Cloudman Bay-Bligh Island	PWS-NE06
West Bay-Bligh Island	PWS-NE07
Jack Bay	PWS-NE08
Hells Hole	PWS-NE09

The GRS Introduction pages are available on the ADEC Website at **http://dec.alaska.gov/spar/perp/grs/pws/zonene.htm**.

C. SOUTHWEST PRINCE WILLIAM SOUND RESPONSE ZONE

Seal Island	PWS-SW01
Green Island	PWS-SW02
Port Chalmers	PWS-SW03
Iktua Bay	PWS-SW04
Horseshoe Bay	PWS-SW05
Unnamed Bay	PWS-SW06
Pleiades Islands	PWS-SW07
Chenega Cove	PWS-SW08

The GRS Introduction pages are available on the ADEC Website at **http://dec.alaska.gov/spar/perp/grs/pws/zonesw.htm**.

D. SOUTHEAST PRINCE WILLIAM SOUND RESPONSE ZONE

Constantine Harbor	PWS-SE01
Nuchek Creek	PWS-SE02
Zaikof Bay	PWS-SE03
Rocky Bay	PWS-SE04
Hartney Bay	PWS-SE05
Canoe Passage	PWS-SE06

The GRS Introduction pages are available on the ADEC Website at **http://dec.alaska.gov/spar/perp/grs/pws/zonese.htm**.

GEOGRAPHIC RESPONSE STRATEGIES: PART FOUR - REFERENCES

SENSITIVE AREAS

The Alaska Federal/State Preparedness Plan for Response to Oil and Hazardous Substance Discharges/Releases, Unified Plan Volume 1, May 1994 ..... ADEC, USCG, EPA

Alaska Habitat Management Guide, Southcentral Region, Vols. 1 and 2, 1985 .....ADF&G

Alaska Habitat Management Guide, Southcentral Region Map Atlas, 1985 .....ADF&G

An Atlas to the Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes, Southcentral Region, 1989 ....ADF&G

State of Alaska Game Refuges, Critical Habitat Areas and Game Sanctuaries, 1991 .....ADF&G

Prince William Sound Area Plan for State Lands (includes data element reports for cultural resources, fish and wildlife, recreation and tourism, subsurface resources, timber), 1988 ..... ADF&G

Gulf of Alaska: Physical Environment and Biological Resources, 1986 ..... Hood and Zimmerman (eds)

Guidelines for Developing Digital Environmental Sensitivity Index Atlases and Databases, 1993 .....NOAA

Climatic Atlas, Volume 1: Gulf of Alaska, 1988 .....National Climatic Data Center (NCDC) and Arctic Environmental Information and Data Center (AEIDC)

Environmental Sensitivity Mapping for Developing and Evaluating Spill Response Plans a Working Paper for the Regional Workshop on Designing a Geographic Information System for Oil Spills, 1994 ..... NOAA, EPA

Sensitivity of Coastal Environments and Wildlife to Spilled Oil Prince William Sound/Copper River Delta, Alaska an Atlas of Coastal Resources, 1993 ..... RPI

Prince William Sound Sensitive Areas (four seasonal summary maps) ..... RPI

A Working Guide to the Sensitive Plants of the Alaska Region, 1994 ..... US Forest Service

Tidal Current Tables: Pacific Coast of North America and Asia (Current year's edition).....US Department of Commerce

LAND OWNERSHIP

Prince William Sound Area Plan for State lands at http://wwwdnrstateakus/mlw/planning/areaplans/prince/indexcfm .....ADNR

Municipality of Anchorage Property Maps at http://giswebcianchorageakus/website/anchorage/application/maphtm..... Alaska State Geo-Spatial Data Clearinghouse (ASGDC)

EQUIPMENT & TECHNIQUES

Mechanical Protection Guidelines, June 1994 ..... NOAA, USCG
Field Guide for Oil Spill Response in Arctic Waters, 1998, at http://wwwarctic-councilorg/fldguide/ ..... Arctic Council
International Oil Spill Control Directory, 19th Edition, 1999-2000 ..... Cutter Information Corp
Oil Containment Boom: Design, Deployment, Use Recovery & Cleaning ..... Clean Sound Cooperative
Oil Spill Response in Fast Currents, A Field Guide, Coast Guard Report #CG-D-01-02, 2001 ..... US Coast Guard
USCG Commandant (G-M) Letter 16465, Revised Guidelines for Conducting the USCG's OSRO Program, December 28, 1995 ..... US Coast Guard
World Catalog of Oil Spill Response Products, 1998/1999 ..... Robert Schulze

GIS DATABASES

Alaska Department of Natural Resources ..... Alaska Geospacial Data Center, Anchorage
Alyeska Pipeline Service Company, Geographic Resource Database (GRD) ..... Sharon Marchant, Valdez
City of Cordova ..... Planning Department, GIS project
National Oceanic and Atmospheric Administration ..... John Whitney, Anchorage
National Park Service ..... George Dickison, Anchorage
Prince William Sound Science Center ..... Walter Cox, Cordova
US Fish and Wildlife Service ..... Catherine Berg, Anchorage
US Forest Service ..... Paula Smith or Karin Preston, Anchorage

GEOGRAPHIC RESPONSE STRATEGIES: PART FIVE - DRAFT COPPER RIVER DELTA AND FLATS GRS INFORMATION

"Part 5 Draft Copper River Delta and Flats GRS Information" is available on the ADEC Website at http://dec.alaska.gov/spar/perp//grs/pws/home.htm.

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