Recommendations for Geographic Response Plan (GRP) Approaches

Background: Use and Development of Geographic Response Plans

Geographic Response Plans (GRPs) are site-specific strategies for the initial response to a spill of oil or oil products on water. They are created to provide guidelines for responders in the event of a spill, which significantly reduces the time needed to make decisions during the initial response. A GRP provides the responders with essential information about the site, the equipment needed to carry out an effective response, access details, and other information. The goal of a GRP is to ensure that the response to a spill is fast and effective, and that sensitive resources are protected.

A GRP contains a set of planned response strategies that are designed to give responders important information about particular sites so that damage to sensitive resources is minimized in the first few hours following a spill. These can be actions to control, contain, redirect, or collect the spilled material. The strategies are designed to be flexible, letting responders adjust actions to meet the needs of current conditions, such as water levels or weather. Responders should keep in mind when using GRPs that they are not a substitute for communicating with natural resources managers/trustees during a response.

A GRP is developed as a planning process. Representatives from various levels of government, responders, resource specialists, and industry work together to identify spill risks and sensitive resources. Participants identify resource priorities and possible strategies for particular locations. Then potential sites are visited in the field to verify the preliminary approaches. Many factors are considered, such as river conditions, shoreline and resource sensitivity to oil, seasonal weather changes, equipment availability, site access, and more. Modifications are made as needed, and further details can be added to hone the strategy. Some sites may be added or dropped from the list of strategies as a part of the field verification.

Many factors are considered when locations are identified for the development of possible response strategies. To begin, there must be sensitive resources present that would be at risk in the event of a spill. The potential exposure to a spill should be considered. For example, plant species living in

estuarine areas are at greater risk than those living above the water line. There must also be some significant risk of the occurrence of a spill. Various potential sources should be identified, such as pipelines or oil transfer facilities. Once an area is identified for consideration, planners can evaluate site-specific qualities that can determine what type of response would be effective. This can include resource qualities such as habitat sensitivity to oil, presence of threatened and endangered species, or presence of a drinking water intake; or practical qualities such as accessibility, hydrologic conditions, or responder safety.

Purpose of Making Recommendations Regarding GRPs in This Document

An opportunity exists to pursue more consistency in GRPs. A comparison of various approaches to presenting response strategies has revealed numerous elements shared by all. These common elements provide the core information upon which to build a more standardized and consistent format for presenting GRPs. Other data and information is also considered useful, but may not be available for all areas.

This document suggests recommended standard features for GRP format and content. A common format must contain at least the core information that is crucial to responders in the field. The content must also be presented so that the key information is easily read. A balance must be found between the amount of information being conveyed and how succinctly it is presented. The suggested format also allows for the inclusion of additional information that is only available in some areas. Suggestions will also be made for general information pertinent to spill response, but not specific to a particular site.

Elements Common to Existing GRPs

Review of five different approaches to presenting response strategies (US EPA Region 5, US EPA Region 10, US EPA Region 9, US Coast Guard, Florida Department of Environmental Protection) has shown a number of elements that are included by all. These elements form the basis of recommendations for what should be included in a standard format.

All of the various approaches begin with a regional overview map. This places the location of the strategies in a regional context and references the location of the more detailed map tiles. These map tiles are, at a minimum, referred to on the overview map. In three examples, the GRP contains hyperlinks to them, as well. In all but one case, the map tiles show the locations of the prepared strategies. The same GRPs with hyperlinks from overview map to tiles also contain hyperlinks from map tiles to strategies.

The spill response strategies differ in the amount of information that is included. All those reviewed have a number of features that form the core elements of a strategy. The most basic part of all strategies is the recommended action to be taken in the event of a spill. As a part of this, all of the reviewed GRPs include the length of boom that may be needed to carry out the response action. The GRPs also include directions to the site, though with varying degrees of detail. At a minimum, the location is described. More frequently, some description of access to the site is included. Where applicable, the target sensitive resources are also listed in each of the GRPs. Finally, latitude and longitude coordinates are included in all but one of the approaches.

Several elements are present in some, but not all, of the strategies. For example, the inclusion of photos, site contact information, staging areas, monthly or current stream flow data, stream width, and related resource data are of this type. Some of the approaches also present tabular information about strategies. In some approaches, this information duplicates what is on the more graphic strategy page, in others it gives additional details that are of interest.

Additional information is common to the GRPs, but not necessarily included with the strategies themselves. For example, the listing of shore types is common, but varies greatly. It ranges from being a site-specific detail of each strategy in one GRP to being a generalized paragraph in the associated Area Contingency Plan (ACP) in another. More broadly applicable information typically appears in the associated ACP, not with the specific strategies. This includes emergency contact information and generalized spill response tactics.

Elements to Include in a Standardized Format

There are two components of a strategy that are essential: the recommended response action to be taken and the place it should be carried out. Although other information is not necessary for a strategy to exist, it should be included to ensure that the strategy is carried out effectively.

The most basic element common to all strategies is the recommended action to be taken in case of a spill. A detailed strategy description provides responders with guidance about how to approach a spill at that particular location. When possible, it should also include information about conditions during the field visit or possible conditions that would limit the effectiveness of a response.

Responders need to know where to go to implement a strategy, so detailed directions or a location description are necessary. A field visit may reveal unforeseen access difficulties. Having this described beforehand saves time in implementing the response action. Maps can be used effectively to identify both directions to a site and location of the recommended response action. If possible, latitude and longitude coordinates should be included to provide responders with the exact location to carry out the response.

When boom is used in the strategy, the GRP should record the amount needed to effectively implement the recommended action. This will ensure that responders are prepared with the proper equipment. It can also aid in prioritizing actions when resources are limited.

Putting a strategy into action may endanger some resources such as sensitive plants or habitat. For example, dragging boom across a shore populated by rare plants may do more harm than good. Describing the resources to protect provides a reason for implementing the strategy and gives responders information that may affect how it is carried out.

Basic features to include in all strategies:

- Locator map and detailed map tiles
- Detailed strategy description
- Directions and location description, including latitude and longitude coordinates
- Boom requirements
- Resources to protect or consider
- Resource manager/trustee contact information

Other information, where available, can be useful to responders. A standardized format should also allow for these elements to be included when available or desired, as well. Some information is available nationwide, such as the USGS quadrangle map on which the strategy location can be found. Including the nearest equipment caches and staging areas should be included whenever possible. Some information is only available in select areas, but would be of use. Daily or monthly flow rates are available for many rivers. Current chip logs are sometimes available and provide responders with flow velocity data. When possible, site contact information can be included.

Additional features to include when possible

- USGS Quadrangle or reference map
- Nearest equipment cache
- Nearest staging area
- River or stream width and flow data
- Photographs of the site
- Relative site priority
- River miles

Basic Features: Recommended Presentation and Content

The features listed above are presented in this section with greater detail.

Locator Map

A regional locator map is recommended to put the strategies in the appropriate broad context. The extent and scale of this map can vary depending on the agencies responsible, the geographic extent of the strategies, or other factors. Its second purpose is to guide the user to the next level of detail, the map tile. As such, the locator map should contain at least regional geographic reference features and the locations of the more detailed map tiles. If the organization creating the maps has the appropriate capability, it is recommended to create links to take the user to each map tile.

Map Tiles

The map tiles move the user from the broad context to the area of concern addressed by the response strategies. These maps display the locations of the strategies. Whenever possible, they should provide a visual representation of the location description. Roads, hydrologic features, populated places, and other important features should be included and named. When data is available and can be shared, sensitive resources would be included on the map tiles. Depending on the scale of the maps and availability of data, orthorectified imagery is suggested as a good backdrop. It is recommended, when possible, to create links from these maps to the strategy pages.

Strategy Page

Strategy pages list the remaining core information about the response strategies. These should present the information in a visually accessible manner. Core components should be included as follows:

<u>Detailed Strategy Description:</u> This is the description of the response actions recommended for the site. The information can be contained in a single field, or in multiple fields that break the information into more organized pieces. Details should include the general type of strategy to use, the length and type of boom needed, where it should be set, anchor points, and any other information

relevant to carrying out the strategy. This should also be where access points and staging areas are listed, as well as any resources being protected by the strategy.

It is recommended to include a Comments field to store information that does not fall neatly into the other categories. This might be notes about possible conditions or hazards, presence of outfalls, alternate access points, or any other information that could be useful in a response situation.

Directions and Location Description: Directions to the strategy site should contain as much detail as possible. List turns, distances, and landmarks as needed. Include latitude and longitude coordinates when possible.

Boom Requirements: Although this can be found in the strategy description, it is useful to have it listed in a separate field both for display and query of the information.

Resources to Protect or Consider: List water intakes, marinas, protected lands, sensitive species or habitat, or other targets being protected by the strategy.

Resource manager/trustee contact information: The development of strategies does not replace interagency communication in a response event. Provide contact information to ensure that the appropriate resource managers or trustees are notified and involved in the response action.

Finally, space should be made to accommodate additional information. This should be readily accessible, but not clutter the key elements. While a separate page is an effective way to visually present each strategy, there is benefit to having a series or the whole database of strategies available. Some or all of the basic and additional features can be summarized in tabular form. This offers planners and responders a list of strategies and their characteristics, ordered intuitively for easy reference. It is recommended that the strategies be kept in a database, as both a graphic display of strategy information and tables can be populated with data from a single source. Also, the data can then be queried if needed.

Summary

The following table summarizes recommendations for standardized GRP content and format:

GRP Component	Basic Features (Minimum Standard)	Additional Features (Where Available/Feasible/Desired)
Locator Map	Geographic reference features for broad context. Locations of more detailed map tiles.	Links from locator map to map tiles. USGS Quadrangle or reference map (?)
Map Tiles	Display of roads, hydrologic features, populated places and other important features.	Display of sensitive resources, where data available. Aerial imagery as backdrop. USGS Quadrangle or reference map Links to strategy pages.
Strategy Page	***Detailed Strategy Description:*** Type of strategy, length and type of boom needed, anchor points, access points, staging areas. ***Directions and Location Description:*** Turns, distances, and landmarks. **Boom Requirements:** Length and type of boom needed. **Resources to Protect or Consider:** Water intakes, marinas, protected lands, sensitive species or habitats, other targets being protected by the strategy. Contact information associated with these resources. ***Resource Trustee Contact Info:*** Include both standard telephone contact information and 24-hour emergency information when available.	***Comments Field:*** Site conditions/hazards, outfalls, alternate access points, etc. Latitude and longitude coordinates. Nearest equipment cache. Nearest staging area. River or stream width and flow data. Photographs of site. Relative priority of site. River mile location.