

## CHAPTER 17.

# HAZARDOUS MATERIALS AND WASTE

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### 17.1 INTRODUCTION

The potential impacts of hazardous materials and waste on human health and the environment is largely dependent upon their types, quantities, toxicities, and management practices. This chapter contains a discussion of potential environmental consequences associated with implementation of the alternatives within the region of influence (ROI) under the proposed action. For a description of the affected environment for all resources, including current hazardous substance handling, storage, transportation, and management plans, techniques, approaches, and potential mitigation measures refer to the respective chapter of Volume 2 (Marine Corps Relocation – Guam). The locations described in that Volume include the ROI for the aircraft carrier berthing component of the proposed action (Apra Harbor), and the chapters are presented in the same order as the resource areas contained in this Volume.

### 17.2 ENVIRONMENTAL CONSEQUENCES

#### 17.2.1 Approach to Analysis

##### 17.2.1.1 Methodology

This section describes potential hazardous materials and waste impacts and proposed mitigation measures as they relate to the proposed increase in the number of days for aircraft carrier berthing in Apra Harbor. This berthing is planned to be increased from an average of 16 to 63 days annually. Specifically, these potential impacts were assessed for the general public as well as various media (i.e., soils, surface water, groundwater, air, and biota) relative to offshore and onshore activities.

##### 17.2.1.2 Determination of Significance

The determination of significance was based upon existing hazardous substance management practices, proposed mitigation measures, and expected or potential impacts and environmental consequences of the proposed action. This determination evaluated the overall ability to mitigate or control environmental impacts and consequences to soils, surface water, groundwater, air, and biota. This determination considered current conditions and potential consequences relative to the anticipated ability of the hazardous substance management infrastructure system to accommodate added hazardous substance demand on the overall system. Specifically, for hazardous substances to be considered a significant impact, the following would have to occur:

- Leaks, spills, or releases of hazardous substances to environmental media (i.e., soils, surface water, groundwater, air, and/or biota) resulting in unacceptable risks to human health and/or the environment
- Violation of applicable federal, state, or local laws or regulations regarding the transportation, storage, handling, use, or disposal of hazardous substances

##### 17.2.1.3 Issues Identified During Public Scoping Process

As part of the analysis, concerns relating to hazardous substances that were mentioned by the public, including regulatory stakeholders, during the public scoping meetings were addressed.

These include:

- Address management practices for hazardous substances including hazardous wastes, toxic substances, hazardous materials, and munitions and explosives of concern (MEC)
- Describe the potential overall impacts of hazardous substances from construction and operation of proposed projects
- Identify the projected hazardous waste types and volumes
- Identify expected hazardous substance storage, disposal, and management plans
- Evaluate measures to mitigate generation of hazardous waste including pollution prevention
- Discuss how hazardous substances on land and from ships would be managed
- Discuss the potential for impacts to environmental media from spills, accidents, and/or releases of hazardous substances
- Identify existing installation restoration sites

### **17.2.2 Alternative 1 Polaris Point (Preferred Alternative)**

#### **17.2.2.1 Hazardous Materials**

The proposed increase in aircraft carrier berthing days would result in increased opportunities for adverse environmental consequences related to petroleum, oils, and lubricants (POL) hazardous materials. POL includes gasoline, aviation fuels, diesel, oil and grease, kerosene, and other related products. It is expected that these products primarily would be used as part of ongoing operation and maintenance functions. The quantity of hazardous materials generated by these activities over a cumulative total of approximately 63 days per year is estimated to be 160 pounds (lbs) (73 kilograms [kg]).

- Due to the projected increase in the volume of hazardous materials, Alternative 1 Polaris Point (referred to as Alternative 1) would have the potential to result in an impact (i.e., to soils, surface water, groundwater, air, or biota). However, the increase in hazardous materials would be handled and disposed of per applicable Best Management Practices (BMPs) and Standard Operating Procedures (SOPs) (see Volume 7); therefore, the increase in volume would result in less than significant impacts. Note that BMPs and SOPs are not considered “mitigation measures” thus no proposed mitigation measures are identified in this chapter.

#### **17.2.2.2 Toxic Substances**

The primary toxic substances being addressed on Guam prior to any Department of Defense (DoD) expansion include: asbestos containing materials (ACM), lead-based paint (LBP), polychlorinated biphenyls (PCB), and radon. LBP and PCBs in Guam are transported by licensed transporters and disposed of in accordance with applicable federal, state, and local laws and regulations. ACM is disposed of at federal facilities on Guam. The collection, transportation, and disposal of these toxic substances is arranged for by the Defense Reutilization and Marketing Office (DRMO).

There would be negligible environmental consequences because in 1979, the USEPA banned most uses of PCBs and LBP was banned in 1978. In addition, ACM would not be generated during the increased aircraft carrier berthing events. If existing toxic substances are encountered during Alternative 1 activities, licensed contractors would be used to ensure that all DoD, federal, state, and local PCB, ACM, and LBP testing, handling, and disposal protocol, procedures, and requirements are followed. Therefore, toxic substances would result in less than significant impacts as a result of Alternative 1 activities and no potential mitigation measures would be required.

### 17.2.2.3 Hazardous Waste

Increased days of aircraft carrier berthing would result in an increase in the transport and/or transfer of hazardous waste. Increases in the transport/transfer of solvents, adhesives, lubricants, corrosive liquids, aerosols, and other hazardous wastes would be expected. The volume of hazardous wastes generated from Alternative 1 activities is estimated to be 1,500 lbs (680 kg) per year. Due to this projected increase in the volume of hazardous waste generated, Alternative 1 would have the potential to result in significant impacts (i.e., to soils, surface water, groundwater, air, or biota). However, the increase in hazardous waste would be handled and disposed of per applicable regulations and BMPs and SOPs (see Volume 7); therefore, the increase in volume would result in less than significant impacts.

### 17.2.2.4 Radiological Material Operation

Emergency response, emergency repair, and radioactive waste management capabilities exist at Polaris Point. There would be less than significant impacts on the existing operations, and the slight increases in hazardous substances would be managed in accordance with existing BMPs and SOPs (Volume 7). All radioactive waste management operations would be in conformance with Naval Sea Systems Command (NAVSEA) regulations. No radioactive waste would be brought ashore on Guam, therefore, these activities would result in less than significant impacts.

### 17.2.2.5 Summary of Alternative 1 Impacts

Table 17.2-1 summarizes Alternative 1 impacts.

**Table 17.2-1. Summary of Alternative 1 Impacts**

<i>Area</i>	<i>Project Activities</i>	<i>Project Specific Impacts</i>
Onshore	Construction	Less than significant impacts to soils, surface water, groundwater, air, and/or biota related to construction activities
	Operation	Less than significant impacts to soils, surface water, groundwater, air, and/or biota related to operation activities
Offshore	Construction	Less than significant impacts to soils, surface water, groundwater, air, and/or biota related to construction activities
	Operation	Less than significant impacts to soils, surface water, groundwater, air, and/or biota related to operation activities

### 17.2.2.6 Alternative 1 Proposed Mitigation Measures

No mitigation measures are identified for potential hazardous materials impacts. Potential BMPs and SOPs include, but are not limited to those summarized in Table 17.2-2 and Table 17.2-3 which also summarizes potential effects and impacts, related to Alternative 1. Volume 7 contains a complete list of applicable BMPs and SOPs.

The BMPs and SOPs would be used to:

- Prevent, contain, and/or clean up spills and leaks to protect human health and the environment
- Provide personnel training and operational protocol and procedures to protect human health and the environment
- Ensure DMRO ability to properly manage and dispose of anticipated hazardous materials
- Protect overall human health, welfare, and the environment
- Properly identify, manage and dispose of MEC associated with construction and operation of the expanded mission facilities

**Table 17.2-2. Hazardous Materials Consequences, BMPs, and SOPs**

<i>Potential Activity (Cause)</i>	<i>Potential Effect</i>	<i>Potential Impacts</i>	<i>BMPs and SOPs</i>
<ul style="list-style-type: none"> <li>• Hazardous materials associated with increased aircraft carrier berthing days</li> </ul>	<ul style="list-style-type: none"> <li>• Increased transport of hazardous materials to Guam</li> <li>• Increased hazardous materials transfer and use on Guam</li> </ul>	<ul style="list-style-type: none"> <li>• Spill, leak, or release impacts during transport/transfer between DoD locations resulting in increased risks of environmental media contamination (soil, surface water, and groundwater)</li> <li>• Adverse impacts and increased risks to human health and/or the environment including terrestrial and marine ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>• Update/implement hazardous materials management plans and facility response plans</li> <li>• Update/implement spill prevention, control and countermeasure (SPCC) plans (training, spill containment and control procedures, cleanup, notifications, etc.). Also, ensure personnel are trained in accordance with spill prevention, control, and cleanup methods</li> <li>• Implement aggressive hazardous materials minimization plans that substitute hazardous materials for non-hazardous materials as applicable</li> <li>• Ensure DoD and contractor personnel are trained as to proper labeling, container, storage, staging, and transportation requirements for hazardous materials</li> <li>• As necessary, expand DRMO’s sufficient hazardous materials storage, transportation, and disposal capacity prior to any expected increases</li> <li>• Verify through surveillance and inspections full compliance with federal, state and local, regulations and adherence to DoD requirements. Implement corrective actions as necessary</li> <li>• Minimize the risk of uncontrolled leaks, spills, and releases through industry accepted methods for spill prevention, containment, control, and abatement</li> </ul>

*Legend:* DRMO = Defense Reutilization and Marketing Office, HMMP = Hazardous Material Management Plan, SPCC = Spill Prevention Control and Countermeasures.

**Table 17.2-3. Hazardous Waste Consequences, BMPs, and SOPs**

<i>Potential Activity (Cause)</i>	<i>Potential Effect</i>	<i>Potential Impacts</i>	<i>BMPs and SOPs</i>
<ul style="list-style-type: none"> <li>Hazardous waste transport to Guam and transfer on Guam</li> </ul>	<ul style="list-style-type: none"> <li>Increased transport of hazardous waste to Guam</li> </ul>	<ul style="list-style-type: none"> <li>Spill, leak, or release impacts during transport/transfer between DoD locations resulting in increased risks of environmental media contamination (soil, surface water, and groundwater)</li> <li>Adverse impacts and increased risks to human health and/or the environment including terrestrial and marine ecosystems</li> </ul>	<ul style="list-style-type: none"> <li>Update/implement hazardous waste management programs and facility response plans</li> <li>Update/implement SPCC plans (training, spill containment and control procedures, cleanup, notifications, etc.) Also, ensure personnel are trained in accordance with spill prevention, control, and cleanup methods</li> <li>Ensure DoD and contractor personnel are trained as to proper labeling, container, storage, staging, and transportation requirements for hazardous waste</li> <li>Implement aggressive hazardous waste minimization plans that substitute hazardous waste for non-hazardous waste as applicable</li> <li>As necessary, expand DRMO's sufficient hazardous materials storage, transportation, and disposal capacity prior to any expected increases</li> <li>Verify through surveillance and inspections full compliance with federal, state and local, regulations, and adherence to DoD requirements. Implement corrective actions as necessary</li> <li>Minimize the risk of uncontrolled leaks, spills, and releases through industry accepted methods for spill prevention, containment, control, and abatement</li> </ul>

*Legend:* DRMO = Defense Reutilization and Marketing Office, HMMP = Hazardous Materials and Management Plan, SPCC = Spill Prevention Control and Countermeasures.

### 17.2.3 Alternative 2 Former Ship Repair Facility (SRF)

The potential increased opportunity for adverse impacts relative to hazardous materials, toxic substances, and hazardous waste primarily would be a function of the number of aircraft berthing days and not a function of the various berthing options. Variances between the alternatives would result in negligible differences in the overall potential hazardous substance impacts.

#### 17.2.3.1 Summary of Alternative 2 Impacts

The impacts for Alternative 2 would be the same as for Alternative 1.

#### 17.2.3.2 Alternative 2 Proposed Mitigation Measures

Because the impacts for Alternative 2 would be the same as for Alternative 1, the same BMPs and SOPs would be used for Alternative 2 that would be used for Alternative 1. Due to the use of BMPs and SOPs, no mitigation measures are identified for Alternative 2.

#### 17.2.4 No-Action Alternative

The no-action alternative means that there would be no increase in aircraft carrier visits and the current tempo would continue at Kilo Wharf. Hazardous materials and wastes, toxic substances, and emergency response to radioactive incidents would be comparable to the action alternatives, but the volume of waste generated would be less.

#### 17.2.5 Summary of Impacts

Table 17.2-4 summarizes the potential impacts of each action alternative and the no-action alternative. A text summary is provided below.

**Table 17.2-4. Summary of Impacts**

<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No-Action Alternative</i>
<b>Soils, Surface Water, Groundwater, Air, and/or Biota Impacts</b>		
LSI <ul style="list-style-type: none"> <li>• Less than significant adverse impacts would occur</li> <li>• As with all operations using hazardous substances, there is a possibility for an inadvertent leak, spill, or release</li> </ul>	LSI <ul style="list-style-type: none"> <li>• The impacts would be the same as for Alternative 1</li> </ul>	NI <ul style="list-style-type: none"> <li>• No added impacts</li> </ul>

*Legend: LSI = less than significant impact; NI = no impact.*

The proposed increase in aircraft carrier berthing days would result in increased opportunities for adverse environmental impacts. These potential impacts could occur due to increased transportation, handling, use, and disposal of hazardous materials and hazardous wastes. However, there are various BMPs and SOPs (Volume 7) in place to prevent unintended releases of these substances. These include, but are not limited to:

- Spill prevention control and countermeasures plans
- Facility response plans
- Waste management plans
- Pollution prevention plans
- Hazardous material/waste management plans
- Mandatory personnel hazardous material and hazardous waste training
- Waste minimization plans
- Waste labeling, storage, packaging, staging, and transportation procedures
- DoD hazardous materials/hazardous waste management requirements
- Federal, state, and local laws and regulations
- Ensure that site planning and activities are conducted in accordance with Naval Ordnance Safety and Security Activity (NOSSA) Instruction 8020.15B Explosives Safety Review, Oversight, and Verification of Munitions Responses (Navy 2009).

Despite expected increases in hazardous materials and hazardous wastes, less than significant impacts are anticipated as long as the BMPs and SOPs discussed above and in Volume 7 are implemented and related plans and procedures updated and modified as appropriate to meet the potential increased demand upon

DRMO regarding hazardous substance transportation, handling, storage, use, and disposal. Note that a Joint Military Master Plan provides specific details regarding several new facilities. These new facilities will be required to store, handle, and dispose of the estimated increases in hazardous substances that would occur from the potential DoD unit transfers to Guam.

**17.2.6 Summary of Proposed Mitigation Measures**

No mitigation measures are identified. Potential BMPs and SOPs are not considered “mitigation measures” and include, but are not limited to those summarized in Table 17.2-5 that may be used for both offshore and onshore aircraft carrier activities. A comprehensive listing of BMPs and SOPs is included in Volume 7.

**Table 17.2-5. Summary of BMPs and SOPs**

<i>Alternative 1</i>	<i>Alternative 2</i>
<b>Onshore and Offshore Activities</b>	
<ul style="list-style-type: none"> <li>• Update/implement HMMP’s and HWMP’s.</li> <li>• Update/implement facility response plans.</li> <li>• Update/implement SPCC plans (training, spill containment and control procedures, clean up, notifications, etc.).</li> <li>• Ensure DoD personnel are trained as to proper labeling, container, storage, staging, and transportation requirements for hazardous substances. Also, ensure they are trained in accordance with spill prevention, control, and clean-up methods.</li> <li>• Implement aggressive hazardous waste minimization plans that substitute hazardous waste for non-hazardous or less toxic waste as applicable and use LEEDS criteria.</li> <li>• As necessary, expand DRMO’s sufficient hazardous materials storage, transportation, and disposal capacity prior to any expected increases.</li> <li>• Verify through surveillance and inspections full compliance with federal, state and local, regulations and adherence to DoD requirements. Implement corrective actions as necessary</li> <li>• Minimize the risk of uncontrolled leaks, spills, and releases through industry accepted methods for spill prevention, containment, control, and abatement.</li> <li>• Ensure that site planning and activities are conducted in accordance with Naval Ordnance Safety and Security Activity (NOSSA) Instruction 8020.15B Explosives Safety Review, Oversight, and Verification of Munitions Responses (Navy 2009).</li> </ul>	<ul style="list-style-type: none"> <li>• The BMPs and SOPs would be the same as for Alternative 1.</li> </ul>

*Legend:* HMMP = Hazardous Materials Management Plan; HWMP = Hazardous Waste Management Plan; SPCC = Spill Prevention Control and Countermeasures

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