# CHAPTER 17. HAZARDOUS MATERIALS AND WASTE

## 17.1 INTRODUCTION

The potential impacts that hazardous materials and waste have 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 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 region of influence 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 potential 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 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, potential mitigation measures, and expected or potential impacts and environmental consequences with the planned actions. 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 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

Major issues identified during the public scoping process, which also involves input from regulatory stakeholders, included the desire to:

- Address management practices for hazardous substances including hazardous wastes, toxic substances, hazardous materials, and ordnance

- 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) could 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 regulations and best management practices (BMPs) (see Volume 7); therefore, the increase in volume would not result in significant impacts.

#### 17.2.2.2 Toxic Substances

The primary toxic substances being addressed on Guam prior to any 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, specialty contractors would be used to dispose of these substances in accordance with applicable laws and regulations. Therefore, toxic substances would not result in 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 could 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 not result in significant impacts.

#### 17.2.2.4 Radiological Material Operation

Emergency response, emergent 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. 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 a less than significant impact.

#### 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**

| *Area* | *Project Activities* | *Project Specific Impacts* |
|---|---|---|
| Onshore | Construction | No significant adverse impacts to soils, surface water, groundwater, air, and/or biota related to construction activities |
| | Operation | No significant adverse impacts to soils, surface water, groundwater, air, and/or biota related to operation activities |
| Offshore | Construction | No significant adverse impacts to soils, surface water, groundwater, air, and/or biota related to construction activities |
| | Operation | No significant adverse impacts to soils, surface water, groundwater, air, and/or biota related to operation activities |

#### 17.2.2.6 Alternative 1 Potential Mitigation Measures

No potential mitigation measures are identified. Table 17.2-2 summarizes effects, impacts, and potential BMPs and SOPs related to Alternative 1.

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

| *Potential Activity (Cause)* | *Potential Effect* | *Potential Impacts* | *BMPs and SOPs* |
|---|---|---|---|
| • Hazardous materials associated with increased aircraft carrier berthing days | • Increased transport of hazardous materials to Guam<br>• Increased hazardous materials transfer and use within Guam | • Spill or release impacts during transport/transfer between DoD locations resulting in increased risks of environmental media contamination (soil, surface water, and groundwater)<br>• Adverse impacts and increased risks to human health and/or the environment including terrestrial and marine ecosystems | • Update/implement hazardous materials management plans and facility response plans<br>• Update/implement spill prevention, control and countermeasure plans (training, spill containment and control procedures, cleanup, notifications, etc.). Also, ensure personnel are trained in accordance with spill prevention, control, and cleanup methods<br>• Implement aggressive hazardous materials minimization plans that substitute hazardous materials for non-hazardous materials as applicable<br>• Ensure DoD personnel are trained as to proper labeling, container, storage, staging, and transportation requirements for hazardous materials<br>• As necessary, expand DRMO's hazardous materials storage, transportation, and disposal capacity prior to any expected increases<br>• Verify through surveillance and inspections |

| *Potential Activity (Cause)* | *Potential Effect* | *Potential Impacts* | *BMPs and SOPs* |
|---|---|---|---|
| | | | full compliance with federal, local, and DoD laws and regulations and implement corrective actions as necessary |

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

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

Table 17.2-3 summarizes potential hazardous waste impacts associated with proposed increased berthing. No potential mitigation measures are identified; however, BMPs and SOPs would be used to reduce the possibility of hazardous waste impacts.

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

| *Potential Activity (Cause)* | *Potential Effect* | *Potential Impacts* | *BMPs and SOPs* |
|---|---|---|---|
| Hazardous waste transport to Guam and transfer within Guam | • Increased transport of hazardous waste to Guam | • Spill or release impacts during transport/transfer between DoD locations resulting in increased risks of environmental media contamination (soil, surface water, and groundwater)<br>• Adverse impacts and increased risks to human health and/or the environment including terrestrial and marine ecosystems | • Update/implement hazardous waste management programs and facility response plans<br>• Update/implement spill prevention, control and countermeasure plans (training, spill containment and control procedures, cleanup, notifications, etc.) Also, ensure personnel are trained in accordance with spill prevention, control, and cleanup methods<br>• Ensure DoD personnel are trained as to proper labeling, container, storage, staging, and transportation requirements for hazardous waste<br>• Implement aggressive hazardous waste minimization plans that substitute hazardous waste for non-hazardous waste as applicable<br>• As necessary, expand DRMO's hazardous materials storage, transportation, and disposal capacity prior to any expected increases<br>• Verify through surveillance and inspections full compliance with federal, local, and DoD laws and regulations and implement corrective actions as necessary |

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

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 waste
- Protect overall human health, welfare, and the environment

### 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

Refer to Alternative 1 above for an assessment of potential impacts that are applicable to Alternative 2 Former SRF (referred to as Alternative 2.)

#### 17.2.3.2 Alternative 2 Potential Mitigation Measures

Refer to Alternative 1 above for an assessment of potential mitigation measures that are applicable to 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**

| *Alternative 1* | *Alternative 2* | *No-Action Alternative* |
|---|---|---|
| **Soils, Surface Water, Groundwater, Air, and/or Biota Impacts** | | |
| LSI<br>• No significant adverse impacts are anticipated<br>• As with all operations using hazardous substances, there is a possibility for an inadvertent leak, spill, or release<br>• BMPs and SOPs would keep the frequency and magnitude of the potential leaks, spills, and releases low | LSI<br>• No significant adverse impacts are anticipated<br>• As with all operations using hazardous substances, there is a possibility for an inadvertent leak, spill, or release<br>• BMPs and SOPs would keep the frequency and magnitude of the potential leaks, spills, and releases low | NI<br>• No impacts |

*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 controls in place to prevent unintended releases of these substances. These controls include:

- Spill prevention control and countermeasures plans
- Facility response plans
- Waste management plans
- Stormwater pollution prevention plans
- Hazardous material/waste management plans (e.g., asbestos management plans and lead-based management plans, etc.)
- Mandatory personnel hazardous material and hazardous waste training
- Waste minimization plans
- Waste labeling, storage, packaging, staging, and transportation procedures
- DoD waste regulations
- Federal and territorial laws and regulations

Despite expected increases in hazardous materials and hazardous wastes, no significant impacts are anticipated as long as the controls discussed above are properly 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.

### 17.2.6 Summary of Potential Mitigation Measures

No potential mitigation measures are identified. Table 17.2-5 summarizes the BMPs and SOPs that would be used for both offshore and onshore aircraft carrier activities.

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

| *Alternative 1* | *Alternative 2* |
|---|---|
| **Onshore and Offshore Activities** | |
| • Update/implement HMMP's and HWMP's.<br>• Update/implement facility response plans.<br>• Update/implement SPCC plans (training, spill containment and control procedures, clean up, notifications, etc.).<br>• 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.<br>• Implement aggressive hazardous waste minimization plans that substitute hazardous waste for non-hazardous or less toxic waste as applicable and use LEEDS criteria.<br>• As necessary, expand DRMO's sufficient hazardous materials storage, transportation, and disposal capacity prior to any expected increases.<br>• Verify through surveillances and inspections that federal, local, and DoD laws and regulations are being observed and implement corrective actions as necessary.<br>• Minimize the risk of uncontrolled spills and releases through industry accepted methods for spill prevention, containment, control, and abatement. | • Update/implement HMMP's and HWMP's.<br>• Update/implement facility response plans.<br>• Update/implement SPCC plans (training, spill containment and control procedures, clean up, notifications, etc.).<br>• 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.<br>• Implement aggressive hazardous waste minimization plans that substitute hazardous waste for non-hazardous or less toxic waste as applicable and use LEEDS criteria.<br>• As necessary, expand DRMO's sufficient hazardous materials storage, transportation, and disposal capacity prior to any expected increases<br>• Verify through surveillances and inspections that federal, local, and DoD laws and regulations are being observed and implement corrective actions as necessary.<br>• Minimize the risk of uncontrolled spills and releases through industry accepted methods for spill prevention, containment, control, and abatement. |

*Legend:* HMMP = Hazardous Materials Management Plan; HWMP = Hazardous Waste Management Plan

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