

CHAPTER 14.

MARINE TRANSPORTATION

14.1 INTRODUCTION

This chapter contains the discussion of the potential environmental consequences associated with implementation of the alternatives within the region of influence for marine transportation resources as it relates to the aircraft carrier berthing. For a description of the affected environment, refer to Volume 2, Chapter 14 (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 sections here are presented in the same order as the resource areas contained in Volume 2.

14.2 ENVIRONMENTAL CONSEQUENCES

For a full description of the affected environment and environmental consequences for on-base and off-base road traffic, refer to Volume 6: Related Actions – Utilities and Roadway Projects. Although this Chapter focuses on marine transportation, a brief discussion is included on additional truck traffic that would occur from transportation of dredged material from barges to upland disposal sites. Detailed analysis of potential impacts to biological resources is presented in Chapter 11 of this Volume. Analysis of the potential environmental impacts as they relate to the physical and chemical composition of the materials to be dredged and the potential dewatering and beneficial reuse of the dredged materials are addressed in Chapter 4 of this Volume and Volume 9, Appendix D.

14.2.1 Approach to Analysis

14.2.1.1 Methodology

The primary military, commercial, and recreational port facilities on Guam are located in Apra Harbor. It is critical that navigational access to the channels be maintained for these users. The consequences of the alternatives for the proposed project and the no-action alternative were evaluated based upon the magnitude and duration of impacts to navigation. For activities within an alternative that would have an adverse impact on marine transportation (navigation), appropriate measures to minimize the impact to marine transportation have been identified. The analysis of the alternatives addresses the potential impacts to navigation from the proposed berthing of the aircraft carrier.

14.2.1.2 Determination of Significance

For marine transportation, the significance of impacts is determined by the potential interference to marine vessel navigation from the proposed berthing of the aircraft carrier.

14.2.1.3 Issues Identified during Public Scoping Process

As part of the analysis, the concerns relating to navigation that were identified by the public, including regulatory stakeholders, during scoping meetings were reviewed. These concerns related to the potential restrictions to access areas in Outer Apra Harbor as a result of the movement of military vessels.

14.2.2 Alternative 1 Polaris Point (Preferred Alternative)

14.2.2.1 Onshore and Offshore

Construction

Activities proposed in Outer Apra Harbor associated with Alternative 1 Polaris Point (referred to as Alternative 1) include: construction of a new wharf at Polaris Point; dredging of about 608,000 cubic yards (cy) (464,850 cubic meters [m^3]) from the berthing area, the turning basin, and the channel bend; relocation of a buoy and range lights; installation of floating security barriers around the aircraft carrier while it is at the wharf; and a change in the number and duration of visits by the aircraft carrier and its associated Carrier Strike Group (CSG). The proposed activities that would have an impact on navigation are: 1) the dredging that would be conducted in or adjacent to the main channel, 2) the relocation of the buoys, 3) the relocation of the range lights for Outer Apra Harbor, 4) the security barrier installed around the aircraft carrier, and 5) restrictions on navigation during aircraft carrier transits into and out of Apra Harbor in accordance with security requirements.

There are alternatives being considered for the design of the new wharf at Polaris Point. The Record of Decision (ROD) would not include a decision on structural design, because it is unlikely that the final design would be available for inclusion in the Final Environmental Impact Statement (EIS). It is likely that construction of the wharf would result in less than significant impacts to marine transportation.

Dredging could be conducted by hydraulic or mechanical dredge. The environmentally most conservative case is generally believed to be mechanical dredging. The daily work cycle (24 hours per day), weather, and other variables affect the efficiency of the dredging operation. The total duration of dredging would be between 8 months to 18 months. Dredging is not required in the east-west aligned navigation channel or Outer Apra Harbor. In the sharp southward bend in the channel, there is a discrete area of dredging that would take approximately a week to complete. During that period, use of certain sections of the main navigation channel would be restricted due to the presence of the dredging equipment; this would result in less than significant impacts to marine transportation. The majority of the dredging would occur just north of Inner Apra Harbor and there would be impacts to ship traffic transiting to/from Inner Apra Harbor. To minimize impacts of the proposed dredging on the maritime community, a Notice to Mariners would be published prior to the start of the dredging to identify the location and duration of dredging, and temporary navigational aids may be deployed.

The proposed widening of the Outer Apra Harbor shipping channel to 600 feet (ft) (183 meters [m]) would require relocation of three buoys and range lights. A Notice to Mariners would be published prior to the relocation of the buoys and range lights to identify the new locations and the dates when the buoys and range lights would be moved. The relocation of the buoys and range lights would result in no impact to marine transportation.

Five dredged material disposal options are considered in this EIS: 100% ocean disposal, 100% upland placement, 100% beneficial reuse, 50% beneficial reuse/50% ocean disposal, and 20-25% beneficial reuse/75-80% ocean disposal. For the 100% ocean disposal option, one tugboat would tow a 4,000 cy (3,058 m^3) scow filled with dredged material to the ocean disposal site and then return to the dredging site. One to two trips per day is estimated based on an anticipated dredge production rate of 1,800 cy (1,376 m^3) per 24-hr construction day. This rate is based on recent dredging of similar material near Bravo Wharf (Volume 9, Appendix E, Section E). The tugboat and scow transporting the dredged material from the project site would travel along existing shipping lanes and be subject to United States Coast Guard (USCG) rules and regulations. A total of about 150 trips to the ocean disposal site would be

conducted to transport the dredged material from Polaris Point. Additional ship traffic would be addressed through scheduling and communications between Port Operations and the contractors.

Assuming 100% upland placement of the dredged material, the dredged material from the scow would likely be offloaded to sealed-end dump trucks at an Inner Apra Harbor wharf; Uniform Wharf has historically been used for this purpose. If the Polaris Point upland placement site is selected, the material would likely be offloaded at Polaris Point with surface transport limited to the Polaris Point area. The remaining candidate sites for upland placement are located on the Orote side of Naval Base Guam. The travel distance to these sites from Uniform Wharf is shown Table 14.2-1. The routes from Uniform Wharf to the upland placement sites are paved. The Sumay Drive portion is in an industrial waterfront area. The route to Field 3 would require additional transport through the central retail area of the base. Assuming a dump truck capacity of 18 cy (14 m³), there would be 100 round-trip truck trips per 24-hour period. Approximately half of these trips would occur during retail business hours and there would be impacts to retail traffic. If Field 3 is the designated upland placement site, then there are opportunities to use a less direct route to the site to avoid impacts to retail shoppers. There would be traffic impacts to the submarine compound personnel that would be addressed through scheduling. Supply trucks and shuttle bus schedules would avoid peak morning and afternoon traffic through the security gate.

Recent preliminary information from the Navy's upland placement study supplemental review has indicated that there may be substantially less upland capacity available on the five confined disposal facilities on Navy lands. Due to land use changes, Field 4, the PWC Compound, and the Polaris Point upland placement site may not be available for upland placement. Capacity may be reduced in Field 5 due to cell construction to separate different types of materials. Field 3 remains a suitable option for upland placement.

Table 14.2-1. Travel Distance to Upland Placement Sites

<i>Upland Placement Site</i>	<i>Distance miles (m)/(kilometers [km])</i>	<i>Route from Uniform Wharf</i>
Field 3	1.7 (2.7)	Sumay Drive, cross Marine Drive to road between the Commissary and the Exchange
Field 4	1.2 (1.9)	Sumay Drive
Field 5	1.2 (1.9)	Sumay Drive
PWC	0.5 (0.8)	Sumay Drive

Operation

Under the proposed action for a transient aircraft carrier wharf, there would be a cumulative total of up to 63 visit days per year, with an anticipated length of 21 days or less per visit. The 2008 CSG visiting schedule was 4 visits of 4 days duration for a total of 16 days in Apra Harbor with the aircraft carrier berthed at Kilo Wharf.

As is currently the case during aircraft carrier visits, the movement of the aircraft carrier to the Polaris Point wharf would require up to four assist tugboats to maneuver the aircraft carrier that would provide its own forward propulsion. Aircraft carriers transiting through Outer Apra Harbor restrict other uses in the channel for security and safety reasons. The movement of the aircraft carrier would result in less than significant impacts to marine transportation.

While the aircraft carrier is at the wharf, there would be floating security barriers placed to prevent an attack on the aircraft carrier by a boat. The recommended minimum barrier standoff from the aircraft carrier hull is 250 ft (76 m) at the lowest threat level. This security barrier would restrict access to Inner

Apra Harbor. The floating security barrier would result in a less than significant impact to marine transportation in Outer Apra Harbor.

When high security alerts force protection condition (FPCON) Charlie and Delta are declared, the security barriers would be deployed 450 ft (137 m) from the aircraft carrier hull. There would be a significant impact to marine transportation and access to Inner Apra Harbor. This restriction to navigation would only affect military operations since access to the inner harbor is restricted to military vessels controlled by Naval Base Guam. FPCON Charlie describes a situation when an instance occurs or when intelligence reports that there is terrorist activity imminent. FPCON Delta describes a situation when a terrorist attack is taking place or has just occurred. FPCON Delta usually occurs only in the areas that are most vulnerable to or have been attacked. The primary difference between FPCON Charlie, and FPCON Delta, is that FPCON Delta references a specific, known threat, whereas FPCON Charlie is used to prepare for imminent threats of a general, non-targeted nature. FPCON Charlie can also be maintained for a significant length of time, several weeks, while FPCON Delta is generally only maintainable for several days. It is understood that Navy and U.S. Coast Guard security boats would be positioned in Apra Harbor less than two nautical miles from either of the alternative carrier locations for security response.

Under Alternative 1, there would be a cumulative total of up to 63 visit days per year, with an anticipated length of 21 days or less per visit. The aircraft carrier would berth at Polaris Point. This would allow additional access to Kilo Wharf for the loading of ammunition by other ships. The change in the number and duration of the visits by the CSG would result in no impacts to marine transportation.

In addition to the approximately 150 trips by tugboats and scows over an 8 to 18 month period to transport dredged material to the ocean disposal site, there would be 145 container vessels above the average (124 container ships) visiting the Port of Guam over the peak activity year (2015) to transport the equipment and supplies for the relocation of the Marines to Guam. There would be an increase in the shipment of break-bulk cargo to the Port of Guam. During the peak year of break-bulk cargo shipment (2012), there would be an additional 242 break-bulk ships above the average of 290 break-bulk ships (Port Authority of Guam 2008a, 2008b, and 2008c). If all of these vessel movements were to occur in the same year, the 150 vessel trips by tugboats and scows, 145 additional container ships, and 242 break-bulk ships would be added to the number of vessels that visit the Port of Guam each year (1,022 vessels in the year 2008). Because the annual number of vessels visiting the Port of Guam has decreased by 1,902 vessels over the period of 1995 to 2008, it is expected that the addition of about 537 vessels per year would have a less than significant impact on marine transportation in Apra Harbor.

14.2.2.2 Summary of Alternative 1 Impacts

Table 14.2-2 summarizes the impacts for Alternative 1.

Table 14.2-2. Summary of Alternative 1 Impacts

<i>Area</i>	<i>Project Activities</i>	<i>Impacts to Transportation</i>	<i>Impacts</i>
Onshore and Offshore	Construction	Construction of a new wharf at Polaris Point	LSI
		Dredging of about 608,000 cy (464,850 m ³) from the berthing area, the turning basin, and the channel bend	LSI
		Relocation of buoys and range lights	NI
		Transport of dredged material from the dredging site within the harbor	LSI
		Transport of dredged material from the harbor to the ocean disposal site	LSI
		Transport of equipment and supplies by ship	LSI
		Shoreside Traffic	LSI
	Operation	Installation of floating security barriers around the aircraft carrier while it is at the wharf	LSI
		Movement of the aircraft carrier to the Polaris Point wharf	LSI
		Change in number and duration of visits by the Carrier Strike Group	NI

Legend: LSI = Less than significant impact, NI = No impact

14.2.2.3 Alternative 1 Proposed Mitigation Measures

No mitigation measures would be required.

14.2.3 Alternative 2 Former Ship Repair Facility (SRF)

14.2.3.1 Onshore and Offshore

Activities proposed in Apra Harbor associated with Alternative 2 Former SRF (referred to as Alternative 2) include: construction of a new wharf at the SRF; dredging of about 479,000 cy (366,222 m³) from the berthing area, the turning basin, and the channel bend; relocation of a buoy and two range lights; installation of floating security barriers around the aircraft carrier while it is at the wharf; and a change in the number and duration of visits by the CSG. The proposed activities that would have an impact on navigation are: the dredging that would be conducted in or adjacent to the main channel, the relocation of the buoy and range lights for Outer Apra Harbor, and the security barrier installed around the aircraft carrier (Table 14.2-3).

Construction

Construction impacts on navigation would be as described for Alternative 1 except there would be less dredged volume generated. The number of trips by the tugboat and scow to transport the dredged material would be about 120 trips over a 8 to 18 month period. The impacts to Inner Apra Harbor traffic are as described under Alternative 1. To minimize impacts of the proposed dredging on the maritime community, a Notice to Mariners would be published prior to the start of the dredging to identify the location and duration of dredging, and temporary navigational aids may be deployed.

If Field 3 is the designated upland placement site, then there are opportunities to use a less direct route to the site to avoid impacts to retail shoppers. There would be traffic impacts to the submarine compound personnel that would be addressed through scheduling. Supply trucks and shuttle bus schedules would avoid peak morning and afternoon traffic through main base gates and Guam Shipyard access routes.

Therefore, Alternative 2 would result in less than significant impacts to marine transportation.

Operation

Marine transportation impacts under Alternative 2 would be similar to those under Alternative 1. Therefore, Alternative 2 would result in less than significant impacts to marine transportation.

Traffic generated under Alternative 1 would be similar to that under Alternative 2. The differences include more on-base traffic and main gate traffic. In addition, because of the proximity to main base amenities there is likely to be an increase in pedestrian traffic. There would be no impact on Polaris Point operations. The shipyard repair facilities at the Former SRF would be consolidated and segregated from the aircraft carrier area. The access routes would be shared and there would be impacts on workers at the shipyard.

Additional ship traffic would be addressed through scheduling and communications between Port Operations and the contractors. With implementation of these measures, Alternative 2 would have less than significant impact to marine transportation.

14.2.3.2 Summary of Alternative 2 Impacts

Table 14.2-3 Summary of Alternative 2 Impacts

<i>Area</i>	<i>Project Activities</i>	<i>Impacts to Navigation</i>	<i>Impacts</i>
Onshore and Offshore	Construction	Construction of a new wharf at the Former SRF	LSI
		Dredging of about 479,000 cy (366,222 cubic meters) from the berthing area, the turning basin, and the channel bend	LSI
		Transport of dredged material from the dredging site within the harbor	LSI
		Transport of dredged material from the harbor to the ocean disposal site	LSI
		Relocation of a buoy and two range lights	NI
		Transport of equipment and supplies by ship	LSI
		Shoreside Traffic	LSI
	Operation	Movement of the aircraft carrier to the new wharf	LSI
		Installation of floating security barriers around the aircraft carrier while it is at the wharf	LSI
		Change in number and duration of visits by the Carrier Strike Group	NI

Legend: LSI = Less than significant impact, NI = No impact

14.2.3.3 Alternative 2 Proposed Mitigation Measures

No mitigation measures would be required.

14.2.4 No-Action Alternative

Under the no-action alternative the new wharf would not be constructed, and there would be no dredging or relocation of the buoys or range lights. Transient aircraft carrier visits to Apra Harbor could not be accommodated. Therefore, the no-action alternative would have no impact to marine transportation.

14.2.5 Summary of Impacts

Table 14.2-4 summarizes the potential impacts of each action alternative and the no-action alternative. A text summary is provided below.

Table 14.2-4 Summary of Impacts

<i>Alternative 1</i>	<i>Alternative 2</i>	<i>No-Action Alternative</i>
Apra Harbor-Offshore		
• LSI	• LSI	• NI
Apra Harbor-Onshore		
• LSI	• LSI	• NI

Legend: LSI = Less than significant impact, NI = No impact

Under all alternatives including the no-action alternative, there are less than significant operational impacts to navigation and onshore traffic. The construction activities under the two action alternatives would be the same, except for less volume of dredged material under Alternative 2.

14.2.6 Summary of Proposed Mitigation Measures

No mitigation would be required for Alternative 1 or Alternative 2.

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