

quality. Well M-21 has a permitted extraction capacity of 1.8 million gallons per month in 2024 (J. Aldieri, NAVFAC Marianas, Personal Communication, 2024), or 21.6 million gallons per year. All water from this well is used exclusively for construction purposes.

The construction contractors are responsible for obtaining non-potable water used in construction. Construction of the Tinian Divert Infrastructure Improvements would be completed prior to starting construction of the Proposed Action. It is anticipated that the contractors for the Proposed Action would make arrangements with the Tinian Mayor's Office to use Well M-21 for construction water if sufficient water is unavailable closer to the construction site.

The Proposed Action is substantially smaller in size and scope than the Tinian Divert Infrastructure Improvements and would use less water during construction. To be conservative, it is assumed that the same quantity of water, 21.6 million gallons (81.8 million liters) per year, would be used in construction of the Proposed Action. The groundwater model included this demand at Well M-21 in the analysis and there was no impact. Groundwater extraction limits are also set annually based on field testing to protect groundwater quality; therefore, there would be no impacts to groundwater quality from construction.

4.13.4 Alternative 2

The training tempo under Alternative 2 would increase by approximately 5 percent over training already approved to occur on Tinian, which is approximately 10 percent less than Alternative 1, resulting in a proportional decrease in water use by 10 percent. As a result, the average annual water demand under Alternative 2 would be 7,174,296 gallons per year. This would be a less than significant impact to groundwater availability. Impacts to groundwater quality would also be lower than Alternative 1 and would remain less than significant.

4.14 Surface Waters and Wetlands

4.14.1 Approach to Analysis

This analysis considers Proposed Action impacts to the quality and quantity of surface waters and wetlands within the Military Lease Area as compared to existing conditions. Conditions that may directly affect the quality of surface waters and wetlands include increased pollutant or sediment loads from training and construction. Quantity, defined as the volume of water stored in wetlands, is affected by changes to surface water area, or other physical changes from excavation, adding fill, or expanding impervious surfaces. These changes may result in different drainage patterns or flood susceptibility or effects to hydrology, soils, or vegetation that support a wetland. Note that because there is no proposed training or construction at the former USAGM Saipan site, the site is not included in the analysis.

This analysis assumes that the required National Pollutant Discharge Elimination System Construction General Permit would be obtained before construction activities commence. The National Pollutant Discharge Elimination System Construction General Permit is a key regulatory framework designed to manage stormwater discharges associated with construction activities. Under the Clean Water Act, this permit is mandatory for construction sites that disturb one or more acres of land, requiring operators to implement a Stormwater Pollution Prevention Plan.

4.14.2 No Action Alternative

Under the No Action Alternative, training events would continue in the Military Lease Area with the same or similar type of activities and at the same tempo as described in previous NEPA documents (DON 2010a, 2015b). In addition, because TNI improvements that are part of the U.S. Air Force Divert project would be completed prior to the Proposed Action, the existing environment includes the U.S. Air Force Divert project improvements (U.S. Air Force 2016, 2020). It should be noted that the wetlands, including Lake Hagoi, are currently identified as no training areas under the No Action Alternative. No change would occur under the No Action Alternative; therefore, there would be no impact to surface waters and wetlands.

4.14.3 Alternative 1

4.14.3.1 Training

In total, the training tempo under Alternative 1 would increase by approximately 15 percent over training already approved to occur on Tinian under the No Action Alternative. Under Alternative 1, training involving people physically training on foot or in vehicles would avoid the four surface waters and wetlands areas in the Military Lease Area (Figure 4.14-1). Live-fire training operations at the Multi-purpose Maneuver Range and the Explosives Training Range would have the potential to impact surface waters or wetlands by introducing residual heavy metals such as lead into the environment. However, the potential impact is small due to several factors including the relatively large distances between the live-fire ranges and surface waters and wetlands as shown in Table 4.14-1; the generally flat and rolling terrain; and general absence of surface waters and wetlands on Tinian (Figure 4.14-1).

USMC ranges are designed with strict safety measures, including Surface Danger Zones that limit projectile escape to a 1 in 1,000,000 chance. Most projectiles remain near targets due to range design, weapon accuracy standards, and operator qualifications. Even in rare cases where a projectile might leave the immediate target area, natural barriers like vegetation and uneven terrain, along with loss of energy through ricochets and water resistance, substantially reduce the chance of bullets reaching the ocean. As a result, the risk of lead entering ocean waters and affecting water quality is considered extremely low.

To further reduce the risk of introducing heavy metals into surface water or wetland features, upon the conclusion of a training event, units are required to remove all trash, debris, and ammunition dunnage (including bullet casings, packaging, etc.), restoring the land to its original state to the maximum extent possible. Range Control is responsible for ensuring unit compliance for cleanup of the ranges and training areas. The USMC would be responsible for cleaning up after its own activities to the maximum extent practicable, but not for remediating legacy issues in the Military Lease Area, such as World War II-era munitions.

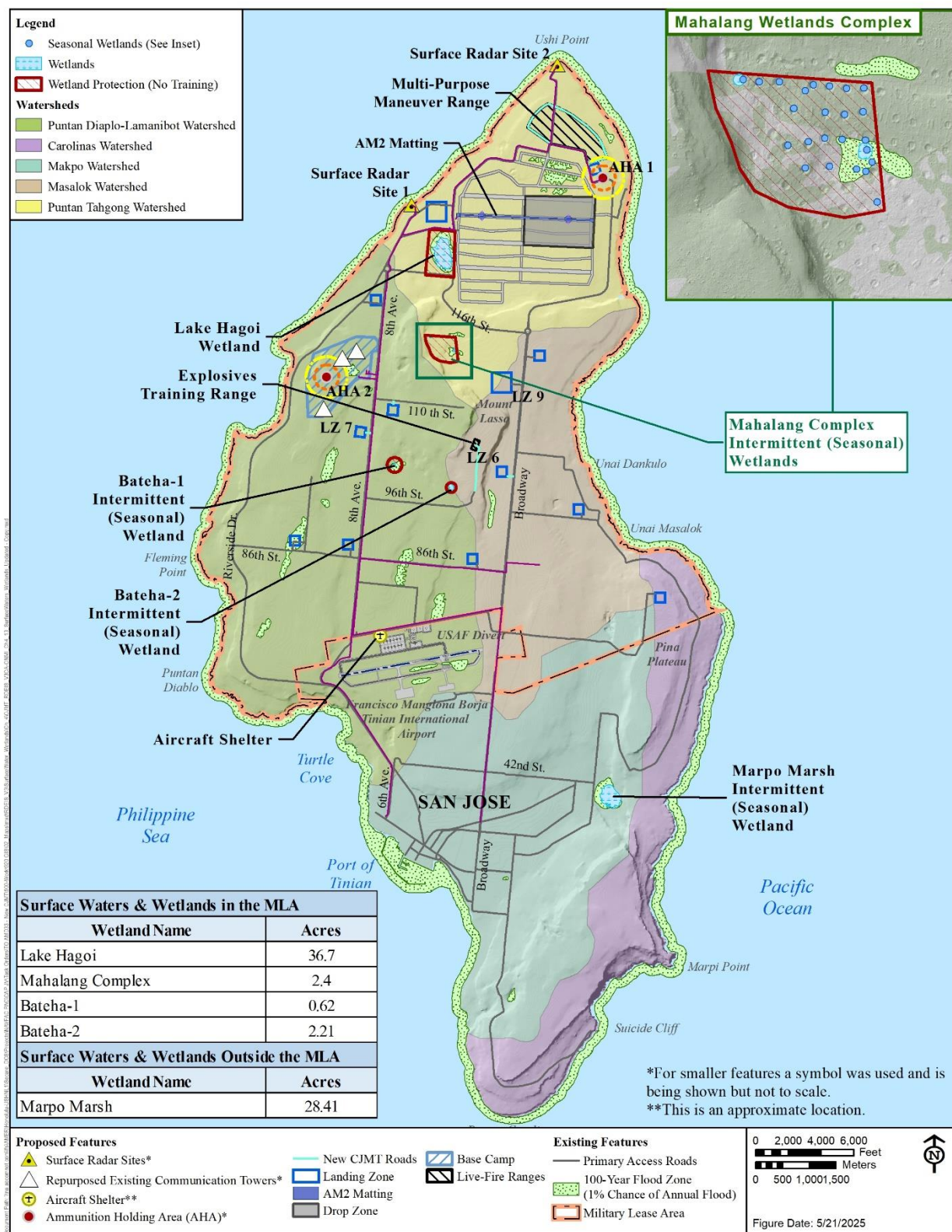


Figure 4.14-1 Tinian Surface Water and Wetland Features, Flood Zones, and Watersheds

For long-term sustainability of the ranges and training areas, Range Control implements the Operational Range Clearance Program. This program periodically conducts thorough clearances of any remaining ammunition, casings, projectiles, dunnage, and other debris resulting from military activities. Responsibilities and policies regarding the Marine Corps Operational Range Clearance Program must adhere to MCO 3550.12A. Additionally, a Range Environmental Vulnerability Assessment would be conducted one year after the range begins operations and reassessed every five years. This program serves as a proactive and comprehensive approach to ensure the environmental sustainability of USMC operational ranges. It aims to mitigate environmental impacts from active ranges and complies with the requirements outlined in DoD Instruction 4715.14, *Operational Range Assessments*. The application of best management practices would further minimize the possible release of contaminants.

The primary condition that would influence the movement or mobility of lead in an environment is the pH of the soil. The geology of Tinian is predominantly karst, and the soils are derived from limestone bedrock with abundant carbonates and are naturally neutral (pH 6.5–7.0) to alkaline (greater than 7.0). At neutral pH, heavy metals, like lead, become relatively insoluble and the potential for lead to be transported to the ground water or in surface water runoff would be very low (Weil and Brady 2017). Because of the relative scarcity of surface waters on Tinian, best management practices, stormwater management systems, and the natural adsorption of Tinian's soils, training events under Alternative 1 would have less than significant impacts to surface waters and wetlands.

As discussed in Section 4.12 Topography, Geology, Soils, disturbance of soils from training events has the potential to result in increased soil erosion, which may indirectly impact water quality from sediment deposition. Such impacts would be partially minimized by ensuring that all vehicle traffic occur only on new, existing and previously disturbed areas. Additionally, no training is allowed to occur in or near wetlands or Lake Hagoi, as described in Section 4.4 Biological Resources.

While the use of military vehicles and equipment throughout the Military Lease Area would slightly increase the risk for an accidental release of pollutants, as discussed above, training would not take place near any surface waters or wetlands. In addition, were a spill to occur, it would be cleaned up immediately in accordance with the Stormwater Pollution Prevention Plan. As there are no permanent streams on Tinian and the geology is principally karst (i.e., slightly alkaline), should a release occur, the possibility of pollutants traveling more than a few feet overland from the release site is low.

Lastly, best management practices, such as using a sediment basin and/or diversion swales, would be employed to mitigate potential stormwater impacts to surface and nearshore waters and wetlands per the CNMI and Guam Stormwater Management Manual (Horsley Witten Group, Inc. 2006). Through a combination of the unique environment on Tinian (i.e., karst geology) and best management practices, the risk of water quality becoming degraded from training events is less than significant.

Table 4.14-1 Nearest Distances from Surface Waters and Wetlands to Proposed Infrastructure and Training Facilities

<i>From</i>	<i>To</i>	<i>Nearest Distance (feet)¹</i>
Bateha-1 Intermittent (Seasonal) Wetland	Landing Zone 7	2,700
	Explosives Training Range	4,400
Bateha-2 Intermittent (Seasonal) Wetland	Explosives Training Range	2,400
	New Road to Explosives Training Range	1,300
Mahalang Complex Intermittent (Seasonal) Wetland	Explosives Training Range	4,900
	Landing Zone 9	2,300
	Base Camp Inhabited Building Perimeter	2,900
Lake Hagoi Intermittent (Seasonal) Wetland	Runway Baker	1,600
	Landing Zone 12	1,000
	Multi-purpose Maneuver Range	10,000
Marpo Marsh Wetland	Landing Zone 1	11,000

Note: ¹ Nearest distance measured from closest edge to closest edge in a Geographic Information System and rounded to nearest 100 feet.

4.14.3.2 Construction

Under Alternative 1, impervious surface in the Military Lease Area would increase by approximately 12 acres from the construction of new facilities and other impervious surfaces such as concrete pads or roads resulting in increased precipitation run-off. These new surfaces would be designed to minimize surface water runoff through implementation of low-impact development and best management practices for stormwater management systems as described in Appendix D. In addition, a metal matting surface would be used on North Field to create an 8,000 by 96-foot-wide airfield surface on runway Baker. The AM2 matting would also include 200-foot by 200-foot stakes at each end of the runway to secure the matting. Metal matting would also be installed in an approximately 500 by 500-foot area at Landing Zone 9. This matting is pervious and thus would not increase the area of impervious surfaces.

Under Alternative 1, there would be no placement of fill or excavation of surface waters or wetlands, and construction would occur more than 1,000 feet away from any surface water, wetland, or nearshore waters (Figure 4.14-1 and Table 4.14-1). In addition, use of the already developed USAGM site for Base Camp would reduce the amount of new impervious surfaces required to develop the Base Camp, which would limit additional stormwater runoff from development in that area.

The disturbance of soils during construction activities could lead to erosion and increased sediment in stormwater that could affect surface waters, wetlands, and nearshore waters. The proposed construction activities would minimize runoff through implementation of best management practices for construction, such as silt fences and other stormwater management systems described in Appendix D. In addition, the already disturbed areas within the USAGM site would not introduce new flows that could impact surface waters or wetlands, and stormwater flow in this area is toward the ocean and away from the lake and wetlands. Therefore, given the distance from construction areas to surface waters, implementation of construction best management practices and stormwater management systems, and compliance with the Stormwater Pollution Prevention

Plan and conditions in the National Pollutant Discharge Elimination System Construction General Permit, impacts to surface and nearshore water quality would be less than significant.

4.14.4 Alternative 2

Alternative 2 training would increase over the No Action Alternative by approximately 5 percent, which is approximately 10 percent less than Alternative 1. The training events under Alternative 2 would continue to be located the same distance away from surface waters and wetlands, training would remain restricted away from wetland areas (Figure 4.14-1), and Range Control actions would be the same as Alternative 1. Training under Alternative 2 would not result in any change from Alternative 1 impacts to surface water and wetlands and would be less than significant.

Because there would be no difference in the proposed facilities between Alternative 1 and Alternative 2, construction impacts would be the same for Alternative 2 as described for Alternative 1.

4.15 Cumulative Impacts

Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. It is the combination of these effects that is the focus of cumulative impact analysis. While impacts can be differentiated by direct, indirect, and cumulative, the concept of cumulative impacts takes into account all disturbances since cumulative impacts result in the compounding of the effects of all actions over time.

This analysis looks at the cumulative impacts from ongoing and future projects on Tinian and in the CNMI. A future action is considered reasonably foreseeable in this EIS if it is (1) included in a federal, state, or local planning document; (2) likely (or reasonably certain) to occur based on the recommendations of federal, state, or local planning agencies; (3) an existing permit application; or (4) a fiscal appropriation that is likely (or reasonably certain) to occur.

There are a number of planning documents that have been developed by CNMI agencies or are under development, where there is not sufficient detail available related to the implementation plan or timeline for the projects to be considered reasonably foreseeable, such as:

- Comprehensive Integrated Solid Waste Management Plan for the CNMI (2025): Future projects to include Development of Atgidon Landfill (development timeline still in planning stages, with goal to begin operations within 10 years of 2023, to coincide with the closure of the Puntan Diablo Small Community Exempt Landfill); Hardfill Site for Construction and Demolition waste (new planned facility); Recycle Center / Loose Waste Transfer; Recycle Center Expansion; Organics Processing Site – Emergency Green Debris Staging Area.
- Roadway Improvement Plans from CNMI 20-Year Highway Master Plan Final Report (2023): Future projects to include general roadway improvements; near-term recover conditions improvements; long-term (2040) improvements.
- Tinian Harbor Master Plan (2018): 20-year planning period for full build out with the goal to create a flexible terminal layout that can be used for both military and commercial vessel calls. The plan defines projects that could occur in three phases throughout planning period but the timeline for each phase and individual projects have not been fully defined or funded. In July 2023, the Commonwealth Ports Authority Board adopted a Resolution and Letter of Intent for a construction, repair, and maintenance project by the U.S. DoD at the