

4.13.3.2 Construction

Industrial demands during construction would include mixing concrete, earthwork compaction, dust control, hydrostatic pressure testing, and cleaning. The U.S. Air Force is currently constructing the Tinian Divert Infrastructure Improvements at TNI. The contractor purchases all water for that construction from the Tinian Mayor's Office at Well M-21. The CNMI Bureau of Coastal Quality requires annual well testing and sets extraction limits to protect groundwater 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 practicable. 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.

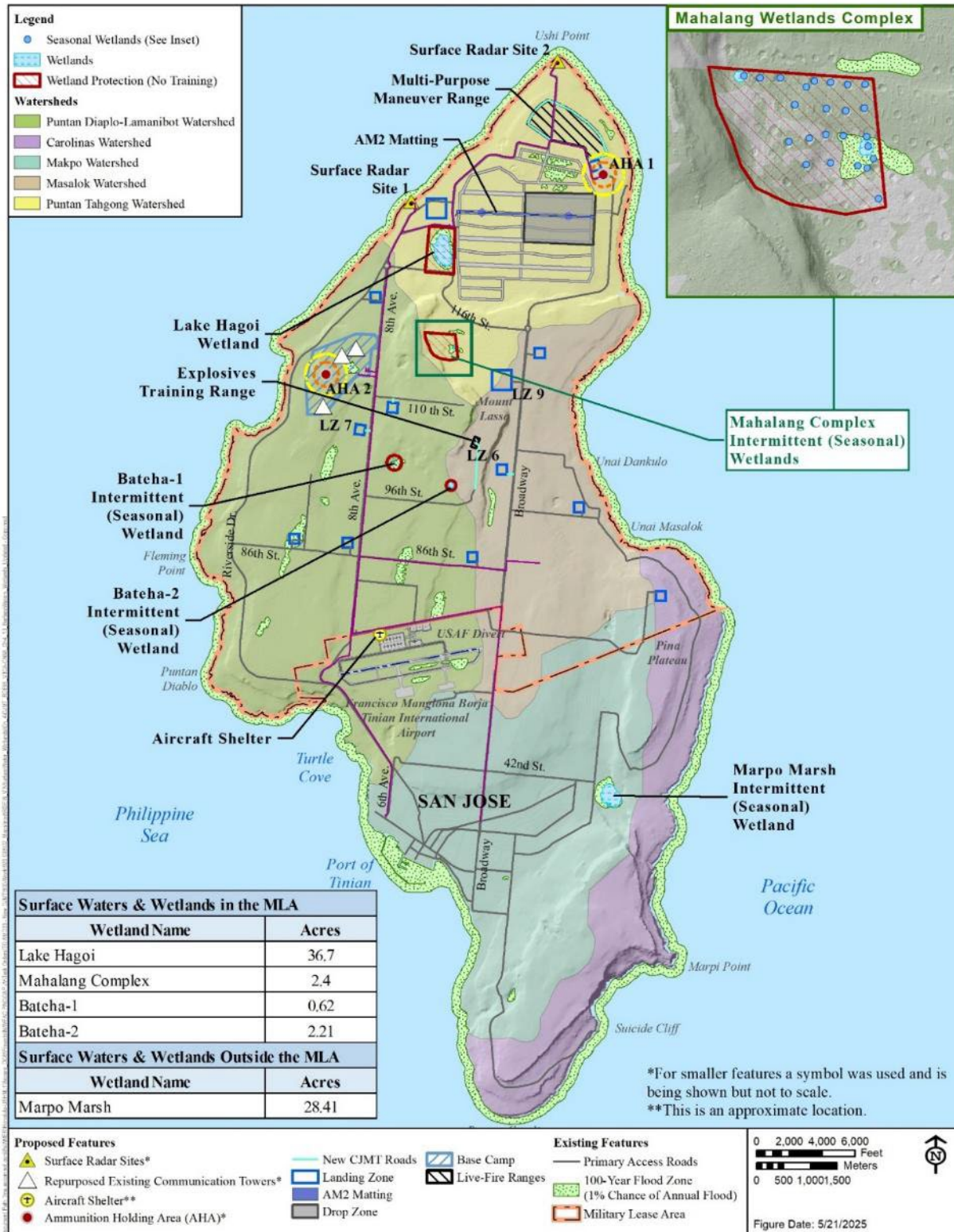


Figure 4.14-1 Tinian Surface Water and Wetland Features, Flood Zones, and Watersheds

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* (see Section 4.10.3.1 for additional information on 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 a 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 the 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

Table 4.15-1 Present and Reasonably Foreseeable Future Actions

<i>Reasonably Foreseeable Future Action</i>	<i>Time Frame and Status</i>
<p>USAGM Closure Actions for Facilities on Tinian and Saipan USAGM would be responsible for the demolition and disposal of communications towers and other infrastructure from the Tinian and Saipan properties. This would include infrastructure not proposed for reuse by the USMC for the Proposed Action described in this Final EIS.</p>	<p>Current. Ongoing.</p>
<p>U.S. Air Force Agile Combat Employment (ACE) projects at North Field and in the Military Lease Area:</p> <ul style="list-style-type: none"> • Vegetation clearing and pavement improvements to runways at North Field. • Road improvements as needed. 	<p>Current. Vegetation clearance at North Field runway Baker began in late 2023⁵.</p>
<p>U.S. Air Force Divert Activities and Exercises</p> <ul style="list-style-type: none"> • Divert would conduct up to 720 operations (360 landings and 360 take-offs) during up to 8 weeks of the year with up to 265 temporary personnel. These activities would be included in the large training events that are included in the Proposed Action described in this Final EIS. • Construction underway for an underground fuel pipeline from the Tinian seaport to the Tinian International Airport and construct and operate support infrastructure at the seaport including, if needed, transfer of fuel via tanker truck. Construction anticipated to conclude in 2026. 	<p>Current. Record of Decision for Final Supplemental EIS/OEIS signed in December 2022.</p>
<p>Mariana Islands Training and Testing Activities – Ongoing (through 2027) and Future (beyond 2027)</p> <ul style="list-style-type: none"> • At-sea training and testing activities would continue to occur in the Mariana Islands Training and Testing Study Area as described through 2027. 	<p>Current. Ongoing. Supplemental EIS being prepared.</p>
<p>Joint Region Marianas Integrated Natural Resources Management Plan (2024)</p> <ul style="list-style-type: none"> • This plan addresses natural resources management of Navy and former U.S. Air Force holdings and leased lands on Guam, Tinian, and Farallon de Medinilla. Naval Facilities Engineering Systems Command, Marianas is responsible for the management of natural resources covered under this plan. • Reviews for operation and effect are required every 5 years per the Sikes Act, as amended. • The Plan includes a priority list of strategies and projects for natural resources management for a 5-year period. 	<p>Current. Plan signed in January 2025.</p>
<p>Projects in the process of being implemented from the Comprehensive Integrated Solid Waste Management Plan for the CNMI¹</p> <ul style="list-style-type: none"> • Conversion of Puntan Diablo current open dump site to a Small Community Exempt Landfill that is permitted to accept municipal solid waste. The project is anticipated to take approximately 5 years to complete. Conversion may include closure of some acreage currently part of the open dump. Once permitted, the Puntan Diablo landfill would be anticipated to operate for no more than 10 years. 	<p>Current and Future. Plan Approved by U.S. EPA September 2025.</p>

<i>Reasonably Foreseeable Future Action</i>	<i>Time Frame and Status</i>
<p>Tinian Route 205 Extension Road Improvements⁶</p> <ul style="list-style-type: none"> • Major siting permit issued by the CNMI Bureau of Environmental and Coastal Quality, Division of Coastal Resources Management in June 2024. • Project area is located at the southside of Tinian, just east of the former Tinian Dynasty Hotel and Casino. • Total length: 0.7 mi, includes paving the existing gravel road from the intersection with Route 206 intersection to Route 27 intersection. • Includes improvements to the drainage system and conveyance to ponding basin, and utility adjustments. 	<p>Current. Department of Public Works issued an invitation to bid for this project in February 2025.</p>
<p>Harbor Improvement Projects being Implemented from the Tinian Harbor Master Plan⁷</p> <ul style="list-style-type: none"> • The Navy’s underwater construction teams have been conducting improvements related to these projects on the harbor since 2020. In September 2020, the CNMI Bureau of Environmental and Coastal Quality posted the Consistency Determination and received comments from the Division of Coastal Resources Management Marine Monitoring Team, and Division of Environmental Quality Water Quality Branch. These comments were incorporated into conditions for concurrence of the Consistency Determination. • In 2023, a project involved welding zinc anodes on the port’s north quay wall to provide cathodic protection and extend the lifespan of the strategic divert port, which is the only port for both military and commercial craft to access the island. • Additional near-term (e.g., within 5 years) DoD improvement projects in the near term would include additional work on the quay wall, berths 1 and 2, and the roll-on roll-off ramp. • Tinian Breakwater; Removing Finger Pier and Dredging, Wharf Improvements. 	<p>Current. Upcoming DoD improvement projects anticipated to begin in fiscal year 2027 or 2028.</p>

Legend: CNMI = Commonwealth of the Northern Mariana Islands; DoD = Department of Defense; EIS = Environmental Impact Statement; OEIS = Overseas Environmental Impact Statement; Port of Tinian = Honorable Jose Pangelinan San Nicolas Commercial Port of Tinian; U.S. = United States; U.S. Agency for Global Media.

Sources: ¹ Office of Planning and Development 2023; ² Marianas Variety 2023z; ³ Marianas Variety 2023y; ⁴ Marianas Variety 2022; CNN 2023; ⁶ Marianas Variety 2022 ⁷ NAVFAC Marianas 2020, Joint Region Marianas 2023, Saipan Tribune 2023.

4.15.1 Public Access

Both Alternative 1 and Alternative 2 would result in less than significant impacts to public access due to temporary access controls implemented to preserve safety during training events. Development projects such as the improvements to existing roadways around the island of Tinian, and the U.S. Air Force Agile Combat Employment projects at North Field included in the reasonably foreseeable future actions would provide an overall benefit to public access within the Military Lease Area by improving roadway conditions and making the North Field National Historic Landmark more desirable to visit. As a result, the aggregate impacts of reasonably foreseeable future actions along with either alternative would not result in significant cumulative impacts to public access.

4.15.2 Land Use and Recreation

Proposed training and construction under Alternative 1 and Alternative 2 would have a less than significant impact on land use with successful adoption of new leases and agreements, as these activities would be compatible and consistent with existing land use plans and policies and would not result in changes to land use within or outside the Military Lease Area. Development projects such as the improvements to existing roadways around the island of Tinian (Route 205 by the Tinian Department of Public Works and projects implemented by the U.S. Navy Seabees), and the U.S. Air Force Agile Combat Employment projects at North Field would be consistent with the CNMI Comprehensive Land Use Plan. Additionally, the planned future development of the CNMI's small community exempt landfill at the Atgidon site within the Military Lease Area included in the CNMI Integrated Solid Waste Management Plan would be compatible with proposed military training. Thus, as a result, the aggregate impacts of reasonably foreseeable future actions along with either alternative would not result in significant cumulative impacts on land use.

Both Alternative 1 and Alternative 2 would result in less than significant impacts to recreation due to temporary restrictions during training events. As described for public access above, the development projects included in the reasonably foreseeable future actions listed in Table 4.15-1 draw additional visitors to Tinian and/or improve access to Tinian, which could result in additional visitors to the Military Lease Area. As a result, there may be additional recreational visitors affected by temporary public access restrictions during training events. However, such restrictions would be temporary and access for recreational activities within the Military Lease Area training areas would be maintained where it would be safe to do so while training is occurring. As a result, the aggregate impacts of reasonably foreseeable future actions along with either alternative would not result in significant cumulative impacts on recreation.

4.15.3 Socioeconomics

Temporary activation of surface danger zones in waters north of Tinian during live-fire training at the Multi-Purpose Maneuver Range would significantly affect fishing and boating under the Proposed Action. Military activities that temporarily limit access to popular fishing, recreational, or cultural sites as part of the Proposed Action would be communicated to the public in advance of events to allow time for alternate plans to be made, and Range Control would continue to work with the CNMI and Tinian Municipality to avoid and minimize impacts related to public access within the Military Lease Area, consistent with safety protocols. None of the reasonably foreseeable future actions listed in Table 4.15-1 would have the potential to incrementally increase or exacerbate these potential impacts. If multiple construction projects were to occur simultaneously, a temporary shortage of hotel rooms for workers could occur. Current and reasonably foreseeable projects would have slight impacts on public services due to the associated population increases. Population increases would increase demand for public services such as medical, law enforcement, and firefighting services. These services, particularly medical care, may not be able to manage additional demand adequately during periods of simultaneous project construction. Thus, the aggregate impacts of reasonably foreseeable future actions have the potential to result in minor cumulative impacts on certain socioeconomic resources and accessibility by residents, businesses, and tourists.

Some of the projects listed in Table 4.15-1 would be anticipated to contribute positively to socioeconomic conditions on Tinian, such as the improvements to the Port of Tinian and improved maintenance of the runways and roadways at the North Field National Historic Landmark that would encourage tourism. Indirect beneficial impacts would also likely result from secondary spending from construction workers and military personnel on Tinian as a result of Alternative 1 or Alternative 2. Thus, a cumulative minor to moderate beneficial economic impact would result.

4.15.4 Biological Resources

The Proposed Action includes vegetation clearing, construction, and periodic training activities that could affect terrestrial and marine biological resources, including habitat loss, noise disturbance, and temporary access restrictions. However, with the implementation of best management practices, avoidance and minimization measures, and continued coordination with regulatory agencies under the Endangered Species Act and Marine Mammal Protection Act, these effects would be less than significant. The reasonably foreseeable actions in Table 4.15-1 that involve construction or development, such as the U.S. Air Force's Agile Combat Employment projects at North Field, other roadway improvements that would occur on Tinian are unlikely to impact terrestrial biological resources important to the function of ecosystems, of special public importance, or protected under federal or state law, as they are focused around already disturbed areas such as roadways and the North Field runways. The development and use of the Puntan Diablo site as a permitted Small Community Exempt Landfill and its eventual closure over the next 10 years, would also be unlikely to have a negative impact on terrestrial biological resources, as the open dump currently exists and would be subject to management under the future permitting conditions.

Activities related to the Joint Region Marianas Integrated Natural Resource Management Plan projects and measures as well as current and future training related to the *Mariana Islands Testing and Training EIS/OEIS* have been ongoing in the region and would continue to be implemented in consultation with local stakeholders and regulatory agencies. These processes ensure monitoring and adaptive management would be applied for both terrestrial and marine biological resources on Tinian and in the surrounding waters. Therefore, the aggregate impacts of reasonably foreseeable future actions and either alternative would not result in cumulative impacts on biological resources.

4.15.5 Cultural Resources

The Proposed Action components that would affect the historic runways within the North Field National Historic Landmark include the installation of a temporary airfield surface called AM2 matting, use of mobile aircraft arresting gear, clearing of vegetation to create the proposed drop zone between runways Able and Charlie, and the construction of water wells and tanks along the district's northeast boundary, just south of the Multi-Purpose Maneuver Range. The reuse of the airfield is viewed as consistent with its historical use and the proposed water infrastructure would be designed to have a low profile that would allow it to be screened by existing vegetation and would be painted an inconspicuous color to further blend in with the surrounding landscape. Co-use of the airfield by the U.S. Air Force and the USMC via the activities described above would not result in adverse cumulative effects to the North Field National Historic Landmark or other adjacent cultural resources and their character-defining features. Range Control would continue to coordinate with the CNMI and Municipality of Tinian to schedule training events in designated

training areas within the Military Lease Area, and would provide advance notice of any temporary periods when access controls would be required to preserve a safe separation from the public.

The associated actions with the potential to impact cultural resources are the U.S. Air Force's Divert activities and exercises and the U.S. Air Force Agile Combat Employment projects at North Field and in the Military Lease Area. The U.S. Air Force executed a Programmatic Agreement in 2016 for its Divert Activities, which occurred at and around TNI, resulting in adverse effects to TN-6-0030, West Field. Training and construction under the Proposed Action would not result in impacts to TN-6-0030.

The U.S. Air Force undertaking to conduct projects within North Field and the Military Lease Area, including vegetation clearing and the rehabilitation of runways is undergoing concurrent Section 106 consultation. The U.S. Air Force is proposing to restore the runways to their historical appearance using similar materials, construction techniques, and designs. Thus, the reasonably foreseeable actions described in Table 4.15-1 would not cause additional impacts to cultural resources on Tinian.

The aggregate impacts of reasonably foreseeable future actions along with either alternative would not result in adverse physical, visual, or noise effects and would result in less than significant cumulative impacts to cultural resources.

4.15.6 Visual Resources

The Proposed Action would result in less than significant short-term impacts to visual resources during construction of training infrastructure. Long-term visual impacts from project components such as surface radar towers, live-fire ranges, and Landing Zones are anticipated to be less than significant due to design considerations, minimization measures, and natural screening by vegetation and topography. The U.S. Air Force's Agile Combat Employment projects at North Field is anticipated to provide a cumulative beneficial visual impact by clearing overgrown runways and roadways in and around the North Field National Historic Landmark which would restore the setting to an operational airfield. The other reasonably foreseeable projects described in Table 4.15-1 would occur in already developed areas or on previously disturbed land and roadways that are located outside of the Military Lease Area. Therefore, the aggregate impacts of reasonably foreseeable future actions would result in moderate cumulative impacts on visual resources.

4.15.7 Transportation

The reasonably foreseeable actions in Table 4.15-1 that involve maintenance to roadways would result in a long-term benefit to transportation by improving roadway quality and access to or within the Military Lease Area, such as the Route 205 project and the U.S. Air Force's Agile Combat Employment projects at North Field. With the exception of the projects that would occur at North Field, the majority of the trips would be distributed on the roadway network in the southern portion of Tinian, outside of the Military Lease Area. The training events that would occur under the Proposed Action may overlap and add additional short-term traffic impacts as service members arrive and leave through TNI and North Field, and the additional trips that would be added during the construction of training infrastructure. There is sufficient capacity on the local roadways to accommodate these short-term increases. As all roads would continue to operate at an acceptable

level of service, the aggregate impacts of reasonably foreseeable future actions would not result in cumulative impacts on transportation.

4.15.8 Noise

The aircraft and live-fire noise impact analysis included a quantitative analysis of potential cumulative impacts from existing operations (baseline) plus each alternative. The results of the modeling include noise contours which depict on a map the different noise levels associated with training-related activities under the Proposed Action (refer to the impact analysis in Section 4.8.3 Noise). Noise from current and ongoing training under the *Mariana Islands Testing and Training EIS/OEIS* would remain similar to existing training that occurs in the CNMI. In the future, when large or medium training under the Proposed Action would occur on Tinian, it may coincide with a larger regional training exercise such as those that have occurred in the past (i.e., Cope North or Valiant Shield), and aircraft would follow applicable course rules for using the Mariana Islands Range Complex that dictate where aircraft activity would occur to minimize or avoid impacts to human noise-sensitive receptors on Tinian and Saipan. Construction activities in the southern portion of Tinian south of the Military Lease Area, such as roadway improvements and the U.S. Air Force Agile Combat Employment projects at North Field and in the Military Lease Area comprise the majority of the reasonably foreseeable actions with the potential to contribute to Tinian's noise environment. For the Proposed Action, all activities take place in the Military Lease Area, and, with the exception of infrequent explosives training at the Multi-Purpose Maneuver Range and Explosives Training Range, the Proposed Action would result in a less than significant effect on noise outside the Military Lease Area. Range Control and the USMC would continue to work with the CNMI and Tinian Municipality to avoid and minimize impacts related to training and construction noise. The reasonably foreseeable actions, when considered with the Proposed Action, would not noticeably increase noise levels experienced by sensitive receptors from construction (short-term) or training (long-term) occurring in the Military Lease Area.

4.15.9 Air Quality

The reasonably foreseeable actions in Table 4.15-1 that involve construction or development, such as the U.S. Air Force's Agile Combat Employment projects at North Field, and Route 205 and other roadway improvements that would occur on Tinian have the potential to result in short-term, less than significant cumulative impacts to air quality and greenhouse gas emissions if the emissions were to occur at the same time as a training or any of the associated construction of range infrastructure. Additionally, periodic but also less than significant cumulative impacts to local and regional air quality would be anticipated to result from operational activities, including other military training events included in the *Mariana Islands Testing and Training EIS/OEIS* offshore study area. The Proposed Action would result in temporary, localized emissions of criteria air pollutants and greenhouse gases from construction equipment and vehicle use during range development and Base Camp construction, as well as from generators and vehicle use during training activities. These emissions are expected to be intermittent and dispersed. Because of the prevailing winds, phased construction scheduled over 10 years, intermittent training events, and distance of the Military Lease Area from populated areas, the contribution of the Proposed Action to cumulative air quality impacts would be minor and less than significant.

The greenhouse gases resulting on a local level contribute cumulatively to global greenhouse gas concentrations that could affect climate. However, these local emission sources make no meaningful contribution to the global atmospheric concentration of greenhouse gases.

4.15.10 Public Health and Safety

Under the Proposed Action, the public would continue to be notified regarding which areas of the Military Lease Area that are temporarily closed to avoid health and safety risks from training, and the areas where public access is compatible with military training. In addition, the safety zones for the live-fire ranges would be established to separate the public from any potential hazardous effects from training. The reasonably foreseeable projects in Table 4.15-1 have the potential to beneficially impact public health and safety, including the planned roadway maintenance projects, the U.S. Air Force's Agile Combat Employment projects to clear runways and roadways in and around North Field, and the project to convert the current unregulated open dump at Puntan Diablo into a permitted Small Community Exempt Landfill. Therefore, the aggregate impacts of reasonably foreseeable future actions would not result in cumulative impacts to public health and safety or a cumulative impact to the protection of children from environmental health risks or safety risks.

4.15.11 Utilities

The impact analysis for the Proposed Action summarized in Section 4.11 included considerations related to the cumulative activities that would occur on Tinian, which included projects listed in Table 4.15-1. Appendix M, *Utilities Studies*, details the assumptions related to the cumulative projects listed above and how they were incorporated into the analysis. The Proposed Action would install its own potable water wells, and the demand would not create a significant impact on groundwater availability or quality. The development and use of the Puntan Diablo Small Community Exempt Landfill would help to ensure there is sufficient capacity to accept increased levels of municipal solid waste on Tinian. Additionally, the potential management measures developed to minimize potential impacts anticipated from the Proposed Action related to utilities are provided in Table 4.15-2.

Table 4.15-2 Potential Management Measures Related to Utilities

<i>Resource Area</i>	<i>Potential Management Measure</i>
Utilities (Solid Waste)	The DoD would develop a solid waste management plan for military operations on Tinian within the Military Lease Area Range Complex and only dispose of waste from military operations in permitted and compliant landfills authorized to accept DoD waste.
Groundwater (Water Quality), Public Health and Safety	The DoD would install up to four (4) groundwater monitoring wells at each of the two live-fire ranges, establish a water monitoring plan, and include one year of baseline monitoring before ranges would become operational. The location of wells would be determined in collaboration with CNMI Bureau of Environmental and Coastal Quality.
Utilities (Potable Water), Groundwater (Water Availability and Water Quality)	The DoD would fund a one-time hydrogeological study to establish baseline data that could be used to support monitoring of Tinian’s aquifer. This study would consist of groundwater sampling at existing well locations and laboratory testing of water samples.
Utilities (Potable Water), Socioeconomics	The DoD would provide access to water for ranching needs at its tank dispensing sites.

Legend: CNMI = Commonwealth of the Northern Mariana Islands; DoD = Department of Defense; USMC = U.S. Marine Corps

Therefore, the aggregate impacts of reasonably foreseeable future actions would not result in cumulative impacts on utilities.

4.15.12 Topography, Geology, and Soils

The reasonably foreseeable actions in Table 4.15-1 are unlikely to impact topography, geology, and soils as they primarily involve construction and maintenance in disturbed areas outside of the Military Lease Area. Impacts associated with geological resources have the tendency to be site-specific and do not usually accumulate, other than erosion and sediment deposit. The training infrastructure projects related to the Proposed Action are physically distant from the other reasonably foreseeable projects that involve soil and ground disturbance, and thus, impacts would not be anticipated to overlap. Therefore, the aggregate impacts of reasonably foreseeable future actions would not result in cumulative impacts to topography, geology, and soils.

4.15.13 Groundwater and Hydrology

The Proposed Action would not impact groundwater quantity and quality. The Proposed Action would install its own potable water wells to support personnel during training events, for ongoing operations and maintenance needs, and for firefighting. The analysis in Section 4.13 demonstrated the demand associated with the proposed wells would have less than significant impact on water quality at existing Commonwealth Utilities Corporation Maui Well Number 2. Based on the data collected on historical demand and the resulting analysis from the groundwater study (refer to Appendix M, Utilities Studies), there would be sufficient capacity in the Commonwealth Utilities Corporation to support the reasonably foreseeable projects described in Table 4.15-1. Additionally, the conversion of the Puntan Diablo site into a Small Community Exempt Landfill would have a beneficial impact to protecting groundwater quality compared to existing conditions. The facility would be required to follow applicable permit conditions to retain its status, which may include groundwater monitoring requirements, which are not in place for the current open dump. Therefore, the aggregate impacts of reasonably foreseeable future actions would not result in cumulative impacts to groundwater and hydrology.

4.15.14 Surface Waters and Wetlands

Many of the reasonably foreseeable projects listed in Table 4.15-1 would occur outside of drainage basins where ground disturbance by the Proposed Action would occur. Thus, due to the lack of surface water connectivity between the Proposed Action and the reasonably foreseeable projects, there would be a less than significant potential for cumulative impacts related to surface waters and wetlands.

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