Construction best management practices for fire safety, such as fire risk evaluation and fire prevention training, would be implemented to reduce or eliminate the potential for construction-sparked fires. In addition, construction of training infrastructure would not occur in areas designated as Federal Emergency Management Agency flood zones and would not create additional flood areas. Construction would avoid known sinkholes, and fault lines. An engineering evaluation would be conducted before siting structures. Structures would be constructed to current UFC requirements including seismic standards and for withstanding high winds and rain.

Through the use of best management practices, monitoring, and coordination with Range Control, Alternative 1 would not increase public health and safety risks from construction.

4.10.3.6 Protection of Children

Construction and training events would take place in the Military Lease Area with infrequent transit of personnel and equipment on roads from the Port of Tinian or TNI. Children on Tinian reside in the village of San Jose, south of the Military Lease Area, where there is a concentration of housing, schools, parks, and playgrounds. All training events and construction would take place within the Military Lease Area. The closest training areas of the Base Camp and Landing Zone 1 are approximately 1.5 miles from the closest private property and approximately 3 miles from San Jose. Construction sites in the Military Lease Area would be secured with fencing or other barriers to prevent public access. As discussed above, all training events are managed through Range Control with appropriate notifications to the community. All sources of electromagnetic radiation, including radar and communication systems, would be operated in controlled areas and secured to prevent unauthorized access or incidental exposure, including to children. Given the distances of construction and training events away from populated areas, along with active controls at construction sites and during training events to protect the public, implementation of the Proposed Action would not result in health and safety risks that may disproportionately affect children.

4.10.4 Alternative 2

Under Alternative 2, training would continue and would increase over the No Action Alternative by approximately 5 percent, which is approximately 10 percent less than Alternative 1. All of the same precautions associated with Alternative 1, including that all scheduled training events would be coordinated and communicated through Range Control, would result in a less than significant impact to public health and safety from Alternative 2.

4.11 Utilities

4.11.1 Approach to Analysis

The analysis of potential impacts to utilities focuses on water supply (potable water, non-potable water, and groundwater), wastewater treatment, solid waste, hazardous materials, green waste, stormwater management, electrical power, and communications.

This analysis uses quantitative and qualitative assessments of changes to utilities capacity to determine the potential for training events and construction of the Proposed Action to exceed existing utility capacity or to disrupt existing utilities' services. Factors used to assess the impacts of the Proposed Action on utilities include the following:

- The capacity of existing and planned utilities to accommodate the Proposed Action.
- The extent of utilities disruption, if any, from the Proposed Action.

The analysis is based on training and operational needs, such as fire protection, a vehicle wash facility, and the maximum number of personnel anticipated to be on island at one time: 1,000 training personnel, approximately 30 to 50 operational personnel, and approximately 50 off-island construction workers. Of the 30 to 50 operational personnel, 20 are assumed to be from off-island and 30 are assumed to be current island residents. New or improved utilities would be designed to meet peak demand during training.

4.11.2 No Action Alternative

Under the No Action Alternative, ground and aviation training events would continue in the Military Lease Area with the same activities and at the same tempo as described in previous NEPA documents (DON 2015). Additionally, all actions related to the U.S. Air Force Divert Activities project (U.S. Air Force 2016, 2020) would be implemented. Under the No Action Alternative, no changes would occur and there would be no impact on utilities.

4.11.3 Alternative 1

No military training is proposed to occur on Saipan, but the DoD would negotiate a lease or use an agreement for the USAGM Saipan site and utilize existing towers for communication capabilities. Additional communication equipment would be added to existing towers. Consequently, there would be no impacts to utilities on Saipan.

4.11.3.1 Potable Water Supply

Training

Alternative 1 includes two new water systems at two locations within the Military Lease Area: one south of the Base Camp at either Well Field Option "A" or Well Field Option "B," and another at North Field south of the Multi-Purpose Maneuver Range (Figure 4.11-1). The Base Camp water system would comply with the Federal Safe Drinking Water Act and the CNMI Drinking Water Regulations. The North Field water system proposed for firefighting is not expected to comply with these regulations. No connection with the Commonwealth Utilities Corporation water system is proposed. No treatment of groundwater is anticipated to be needed, other than disinfection. Groundwater production from new wells would be metered and used according to terms of Bureau of Environmental and Coastal Quality issued permits. Excess capacity could be made available for agricultural or other uses approved by the USMC.

The Base Camp water system would consist of up to four new or rehabilitated groundwater wells, above ground storage of approximately 300,000 gallons, and a booster pump station. The system would be designed to convey a maximum of 241,376 gallons per day to supply both:

- Maximum estimated water use in a single day, which includes potable water for drinking, bathing, washing, cleaning, cooking for the maximum number of military trainees and operations staff on the island at one time, and the vehicle wash facility.
- Fire demands for firefighting and fire suppression in conformance with United Facilities Criteria 3-600-01, Fire Protection Engineering for Facilities and National Fire Protection Association 1, Fire Code.

The North Field water system is proposed to consist of up to two new or rehabilitated groundwater wells, each with approximately 100,000 gallons of aboveground storage, and a booster pump station. It would be designed to convey a maximum of 86,400 gallons per day to supply fire

demands for firefighting and fire suppression. The system would not operate continuously and would only be used for firefighting purposes. Based on wildland firefighting recommendations, the estimated annual volume of non-potable water used would not exceed 800,000 gallons per year.

These new water systems are sized to meet all potable and non-potable water demands of Alternative 1 within the Military Lease Area. As discussed in Section 4.13 Groundwater and Hydrology, there would be sufficient groundwater and recharge to meet both the existing and projected potable and non-potable water demands by Commonwealth Utilities Corporation, the military, and other users. As a result, Alternative 1 would have a less than significant impact to the Tinian potable water supply. See Appendix M, Utility Studies, for additional information and calculations.

It is anticipated that construction workers and permanent Range Management personnel would live outside the Military Lease Area in homes, apartments, or hotels. Table 4.11-1 summarizes the additional average daily domestic demands due to the Proposed Action under Alternative 1 that would be met by the Commonwealth Utilities Corporation.

Table 4.11-1 Average Day Water Demand on Commonwealth Utilities Corporation Water System from Training Events Under Alternative 1

Personnel Type	*Use Category*[1]	*Unit Demand (gpcd)*	*Population*	*Demand (gpd)*
Construction Workers (24-hour)	Family Housing	125	50	6,250
Off-Island Range Management Personnel (24-hour)[2]	Family Housing	125	20	2,500
			Total	**8,750**

Legend: gpcd = gallons per capita per day; gpd = gallons per day; UFC = Unified Facilities Criteria.
Notes: [1]Per UFC 3-230-03, Table 3-1.
[2]Only personnel relocating from off-island are included here.

A central biosecurity wash facility is proposed at the Port of Tinian. Military vehicles would be washed here after training is complete and prior to loading onto vessels for transport off-island. The wash facility would be a contained concrete structure where multiple vehicles can be washed simultaneously using permanently mounted cleaning equipment. Wash water would be contained during the washing cycle and recycled. Once the wash cycles are complete, wash water would be pumped out and disposed of in conformance with CNMI regulations. The water demand for the proposed wash facility would be 924 gallons per day.

A summary of water demands on the Commonwealth Utilities Corporation is provided in Table 4.11-2.

Table 4.11-2 Summary of Existing and Proposed Water Demands on Commonwealth Utilities Corporation Under Alternative 1

Category	*Average Day Demand (MGD)*
Existing CUC Production[1]	0.85
Proposed Additional Domestic Demand	0.0088
Proposed Additional Industrial Demand[2]	0.0009
Total Demand on CUC Water System	**0.86**

Legend: CUC = Commonwealth Utilities Corporation; MGD = million gallons per day.
Notes: [1]Average of production at Maui Well Number 2 from 2019 to 2023.
[2]Biosecurity Wash Facility at the Port of Tinian.

The average daily production from Maui Well Number 2 between 2019 and 2023 was 0.85 million gallons per day, which is less than the estimated aquifer drought capacity at Maui Well Number 2 of 1.0 million gallons per day (USMC 2016). The Proposed Action under Alternative 1 is estimated to increase water production at Maui Well Number 2 by 1.14 percent. The sum of existing water production and proposed water demand is approximately 0.86 million gallons per day, which results in 0.14 million gallons per day of remaining aquifer drought capacity. Because of this, Alternative 1 would have a less than significant impact to the Commonwealth Utilities Corporation water system.

Construction

Industrial demands during construction would include mixing concrete, earthwork compaction, dust control, hydrostatic pressure testing, and cleaning. All water for construction could be purchased from the Tinian Mayor's Office at Well M-21. The U.S. Air Force is currently constructing the Divert Activities project at TNI and Well M-21 is being used for construction of that project. Well M-21's extraction capacity was 1.8 million gallons per month in 2024 (J. Aldieri, NAVFAC Marianas, Personal Communication, 2024), or 21.6 million gallons per year, and all of that water is used for construction.

Construction of the U.S. Air Force Divert Activities project 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.

The Proposed Action is substantially smaller in size and scope than the U.S. Air Force Divert Activities project and would use much less water during construction. To be conservative, it is assumed that the same quantity of water, 21.6 million gallons per year, would be used in construction of the Proposed Action. The U.S. Air Force Divert Activities project use is within the capacity of the well. Therefore, Alternative 1 would have a less than significant impact to the Commonwealth Utilities Corporation water system during construction.

Figure 4.11-1 Water Infrastructure Included in Proposed Action

4.11.3.2 Wastewater Treatment

Training

Alternative 1 includes adding new septic tanks, leach fields, and sanitary sewer collection pipelines to treat wastewater. This new wastewater infrastructure would be sized to meet the needs of maximum personnel during a large training event (Table 4.11-3).

Table 4.11-3 Wastewater demand on Proposed Wastewater Infrastructure Under Alternative 1

Personnel Type	*Category*	*Unit Demand (gpcd)*	*Population*	*Average Day Demand (gpd)*
Military Personnel	Military Training Camps	50	1,000	50,000
Construction Workers (8-hour shift)	Nonresident Personnel and Civilian Employees (per 8-hour shift)	30	50	1,500
Permanent Support Personnel (8-hour shift)	Nonresident Personnel and Civilian Employees (per 8-hour shift)	30	50	1,500
Total Wastewater Demand				**53,000**

Legend: gpcd = gallons per capita per day; gpd = gallons per day.
Source: Appendix M, Utility Studies.

Wastewater service outside of the Base Camp would be provided using portable toilets. These portable toilets would be periodically emptied by licensed haulers and disposed of at the new septic system, at the existing DoD septic system, or at a septage disposal site approved by the CNMI Bureau of Environmental and Coastal Quality per section 65-120-1405 (CNMI Code of Regulations).

Sludge from the CNMI Joint Military Training septic tanks would also be emptied by licensed haulers and disposed of at a septage disposal site approved by the CNMI Bureau of Environmental and Coastal Quality per section 65-120-1405 (CNMI Code of Regulations). Septic sludge that contains free liquids cannot be disposed in the existing Puntan Diablo Landfill or at the planned Atgidon Landfill.

The Proposed Action includes construction of new wastewater infrastructure at the Base Camp, which would be operated and maintained by the USMC. The new wastewater infrastructure could include a sanitary sewer collection system, a sewer lift station, and one or more septic systems. Septic systems can accommodate the wide variation in wastewater flow anticipated between military training and non-training periods. Alternative 1 would have a less than significant impact on wastewater because the proposed Base Camp site does not appear to be within either a Class I or II Aquifer Recharge Area/Groundwater Protection Zone on Tinian (CNMI Bureau of Environmental and Coastal Quality 2025).

Construction

Wastewater generated during construction before the septic system is established would be collected in portable toilets. These portable toilets would be periodically emptied by licensed haulers and disposed of at the new septic system at the Base Camp, or at the existing Department of Navy septic system, or at a septage disposal site approved by the CNMI Bureau of Environmental and Coastal Quality per section 65-120-1405 (CNMI Code of Regulations).

Therefore, Alternative 1 would have a less than significant impact on wastewater during construction.

4.11.3.3 Solid Waste

Training

Proposed training events would result in additional solid waste generation. Quantities of waste generated would vary depending on the frequency of training events, duration of training events, and the number of personnel participating in training. Using the maximum of 1,000 personnel participating in training at any one time, the projected waste quantities generated during ongoing training and maintenance under Alternative 1 are presented below.

Current DoD policy mandates minimum diversion from disposal (landfilling and non-waste-to-energy incineration) of 40 percent of non-hazardous solid waste (excluding construction and demolition waste). The USMC is unlikely to meet the 40 percent solid waste diversion goal due to its remote location, which has limited recycling services and no domestic consumption of diverted materials. Based on local available recycling infrastructure, the waste material types that are anticipated to be generated and the variable and transient population participating in training, a diversion rate of 12 percent is assumed.

As shown in Table 4.11-4, training activity under Alternative 1 would generate an estimated 562 tons/year. During periods when no training is taking place and only the permanent facility staff and construction workers are present, the weekly solid waste generated is estimated to be approximately 1.2 tons/ week (63 tons/year) with an average daily generation of 0.17 tons/day. During periods of training, the maximum solid waste generation is estimated to be 3.67 tons/day. The CNMI proposed new solid waste facilities would be sized to manage the maximum projected weekly solid waste generated on the island.

Table 4.11-4 Solid Waste During Operations Under Alternative 1

Solid Waste	*Alternative 1*
Estimated Annual Solid Waste Generated (tons)	562
Diversion Rate	12%
Diverted from Disposal (tons)	67
Landfill or Incinerator Disposal (tons)	495

Legend: % = percent.
Source: Appendix M, *Utility Studies*.

The CNMI is currently developing a Draft Comprehensive Integrated Solid Waste Management Plan with community input, which includes coordination with the USMC. The *Solid and Hazardous Waste Study* for CJMT (See Appendix M, Utility Studies, for this study) identifies solid and hazardous waste management options that align with the CNMI Integrated Solid Waste Management Plan and presents additional option(s) for further consideration by CNMI.

The Puntan Diablo disposal facility does not currently comply with the CNMI Administrative Code Chapter 65-80 Solid Waste Management Regulations or the Resource Conservation and Recovery Act Subtitle D regulations applicable to solid waste landfills (40 C.F.R. Part 258.1(f)(1)) and is unavailable for USMC waste. The CNMI intends to permit the facility by demonstrating compliance with the small community exemption available in Resource Conservation and Recovery Act Subtitle D regulations. The anticipated timeline to complete the permitting process

is 6 to 12 months. USMC, contingent upon receiving authorization from the CNMI, would utilize the Puntan Diablo disposal facility once it is permitted.

Because the existing Puntan Diablo disposal facility has limited remaining capacity, the CNMI is initiating permitting efforts for a new landfill at Atgidon site, located north of 86th Street and between Riverside Drive and 10th Avenue. The CNMI anticipates permitting of this new landfill would take 5 years to complete. Only non-hazardous waste would be allowed at both the to-be permitted Puntan Diablo disposal facility and the planned Atgidon landfill. Septic sludge that contains free liquids cannot be disposed of in these landfills and would be disposed of at the septic disposal site discussed in the wastewater section above.

The Tinian Transfer Station and Recycling Center is currently permitted to receive only source-separated recyclable materials such as cardboard/paper, plastic bottles, and aluminum cans. Recyclable materials are shipped off the island for processing and sale, and the costs of handling and transportation exceed the revenue generated by the sale of the recyclables. According to the *CNMI Comprehensive Integrated Solid Waste Management Plan 2025-2030*, the transfer station is funded by tipping fees, a beautification tax, and general funds. If approved by the CNMI, the Tinian Transfer Station and Recycling Center would be available for use by USMC (CNMI Office of Planning and Development 2024).

All potential disposal locations have sufficient capacity to accept the waste generated by Alternative 1. Because solid waste would be disposed of at a facility that is permitted under Resource Conservation and Recovery Act Subtitle D and the anticipated waste quantities would not be substantial relative to capacity of any of the identified landfills, the operation would result in a less than significant impact to solid waste utilities.

If the planned permitting of the Puntan Diablo disposal facility and the proposed Atgidon landfill are not completed and landfill disposal capacity is not available, the alternate management methods for solid waste generated by the Proposed Action under Alternative 1 would include: 1) transport solid waste to Marpi Landfill on Saipan; 2) on-site incineration of waste to reduce the volume prior to the transport of the residual non-hazardous ash to Marpi Landfill; or 3) transport the waste to one or more off-island facilities authorized to accept DoD waste. If using incineration to minimize waste volume, the incinerator would be a commercially available solid waste incineration unit that meets U.S. EPA emissions guidelines with a capacity sufficient to handle the Proposed Action-generated waste, and would require approval and permitting by the CNMI before use. Potential impacts to the Marpi Landfill operation itself (projected disposal tonnage) have been evaluated and presented in the Solid and Hazardous Waste Study (refer to Appendix M, *Utility Studies*), and there would be sufficient capacity for use by USMC.

Construction

Current U.S. DoD Integrated Solid Waste Management policy sets a minimum diversion from landfilling or non-waste-to-energy incineration of 60 percent for construction and demolition waste (Office of the Assistant Secretary of Defense 2020). Given that the majority of construction and demolition waste to be generated is anticipated to be concrete and wood, the mandated diversion rate of 60 percent would be achievable by mandatory diversion and reuse requirements which would be included as performance requirements in all construction contracts. Based on the anticipated project development phasing and the 60 percent diversion rate, Alternative 1

construction activities would result in the quantities of construction and demolition waste generation, diversion and disposal shown in Table 4.11-5.

Table 4.11-5 Construction and Demolition Waste Generated During Alternative 1

Year	*Construction and Demolition Waste*					
	Total Generated		*Total Diverted/Recycled*		*Total Disposal*	
	Annual (tons)	*Daily Average (tons)*	*Annual (tons)*	*Daily Average (tons)*	*Annual (tons)*	*Daily Average (tons)*
2026	0	0	0	0	0	0
2027	0	0	0	0	0	0
2028	49	0.13	29	0.08	20	0.05
2030	47	0.13	28	0.08	19	0.05
2031	17	0.05	10	0.03	7	0.02
2033	78	0.21	47	0.13	31	0.09
2036	57	0.16	34	0.09	23	0.06
2038	27	0.07	16	0.04	11	0.03
2039	8	0.02	5	0.01	3	0.01

Legend: SF = square feet.
Note: Construction and demolition waste generation estimated to be 4.34 pounds/square foot (U.S. EPA 2003) of developed impervious area associated with new structures/buildings. Construction and demolition waste generation estimated to be 1.09 pounds/square foot of developed impervious area associated with new concrete surfacing.
Source: U.S. EPA 2003.

Construction personnel would also generate a maximum of 31 additional tons per year of solid waste. See Appendix M, *Utility Studies*, for detailed solid waste calculations. With construction projected to commence in 2026 and the CNMI's plans for landfill permitting and development, it is expected that on-island landfill capacity would be sufficient to manage the USMC solid waste generated through project construction. If planned permitting of the Puntan Diablo disposal facility and the proposed Atgidon landfill are not completed and landfill disposal capacity is not available, the alternate management methods for construction-related solid waste would be the same as described for training, above.

4.11.3.4 Hazardous Materials

Training

Training events are currently conducted in compliance with standard operating procedures and federal and CNMI laws governing management and disposal of hazardous materials. All training is coordinated with Joint Region Marianas environmental staff, who work with federal and CNMI agencies as required. As part of current training, temporary portable aboveground bulk diesel storage containers have been staged and used at North Field (DON 2014a). The military ensures proper storage and handling of hazardous materials inside areas equipped with impervious barriers and utilizes dual containment structures to further prevent spills or releases. Hazardous materials handling and storage areas are located away from catch basins, storm drains, and waterways. Spill response kits are located in close proximity to all areas where hazardous materials are handled. Personnel responsible for the handling and storage of hazardous materials receive regular training. The military also complies with the Tinian Spill Control Plan and has trained spill response teams

available during training events (M. Cruz, Joint Region Marianas, Personal Communication, December 2014).

Excess or unusable hazardous material such as grease and oil from training events and paint and cleaning products from Base Camp would be transported off-island for characterization and reuse or disposal in accordance with applicable regulations. Any disposal would be at an Environmental Protection Agency-permitted hazardous waste disposal facility. Transportation of all hazardous material would be coordinated through Defense Logistics Agency Disposition Services in compliance with U.S. Department of Transportation regulations and C.F.R. Title 49. Because all generated hazardous material would be removed from the island and disposed of according to relevant laws and regulations, the proposed training events for Alternative 1 would have a less than significant impact to hazardous materials disposal on Tinian.

Construction

Hazardous, industrial, universal wastes, and e-waste generated by construction on Tinian would be disposed of off-island in compliance with applicable U.S. Environmental Protection Agency regulations. Because all hazardous material generated would be removed from the island and disposed of according to relevant laws and regulations, the proposed construction activities for Alternative 1 would have a less than significant impact to hazardous materials disposal on Tinian.

4.11.3.5 Green Waste

Training

Regular cutting and/or mowing of cleared areas in the Military Lease Area Range Complex to prevent re-growth and re-establishment of bushes and trees would be the only source of green waste generated after construction projects are complete. Because cutting and/or mowing would be conducted regularly (typically weekly) the green waste generated would be minimal and left on the ground to naturally decompose, thereby eliminating the need to collect and manage the green waste. This practice to maintain landscaping has been used historically for the existing cleared areas within the proposed Base Camp when the site was formerly in use as the USAGM transmitting facility and would become the standard practice to maintain all newly cleared areas under Alternative 1. Training under Alternative 1 would result in no demand for or change in the green waste processing capacity at the Tinian Organics Processing Site, and therefore Alternative 1 would result in no impact associated with green waste processing or disposal.

Construction

Site development and construction would require clearing of trees, brush, and grasses, which would generate green waste. Green waste would be processed by the construction contractor through a grinder or chipper to size-reduce the material into a chipped product. USMC would coordinate with CNMI to determine where the chipped green waste would be stockpiled. The material would be available for use by the contractor in the development of project facilities and/or could be made available to the residents of Tinian. This process is being successfully implemented in the U.S. Air Force Divert construction. See Appendix M, Utility Studies for a discussion of management methods for mulch product if the presence of the coconut rhinoceros beetle is confirmed.

The U.S. Air Force is clearing vegetation under a separate project along some of the runways, taxiways, and roadways within North Field and this would be completed prior to construction of Alternative 1. The proposed drop zone at North Field overlaps this same area and vegetation that would be removed by the U.S. Air Force is not included in this analysis. Vegetation clearing required for other North Field proposed improvements, including the surface radar tower sites and water infrastructure is analyzed. Table 4.11-6 summarizes the estimated tons of green waste generated during construction of all project elements.

Table 4.11-6 Projected Green Waste Generation During Construction Under Alternative 1

Year	*Volume (cubic yards)*	*Weight (tons)*
2026	82,478	20,619
2027	82,478	20,619
2028	125,906	31,477
2030	35,325	8,831
2031	0	0
2033	0	0
2036	0	0
2038	6,964	1,741
2039	3,913	978

With CNMI approved processing of green waste from construction, Alternative 1 would create a less than significant impact from the generation of green waste.

4.11.3.6 Stormwater

Training

Alternative 1 includes maintaining cleared land. Best management practices would be employed to reduce potential impacts to stormwater per the *CNMI and Guam Stormwater Management Manual* (Horsley Witten Group, Inc. 2006) during operation. Best management practices include bioretention basins, swales, porous pavement, and hydrodynamic separators. See Appendix M, Utility Studies, for additional stormwater information and calculations.

Stormwater runoff from the proposed Multi-Purpose Maneuver Range would discharge to a tributary system that flows to the ocean. Best management practices approved for operational ranges and control of munitions constituents, such as the collection of spent munitions and brass at the conclusion of training events by the USMC, would be implemented. Given the potential for stormwater discharge to reach Waters of the U.S., National Pollutant Discharge Elimination System permit coverage would need to be obtained unless infiltration proves fully feasible across all discharge areas.

Provided that best management practices are implemented and National Pollutant Discharge Elimination System permit coverage is obtained where required, Alternative 1 would employ best management practices during training events and would have a less than significant impact on stormwater quality.

Construction

Alternative 1 would involve land clearing and the construction of impervious surfaces, including paved roads, parking areas, and buildings, which would increase stormwater runoff. To reduce potential stormwater-related impacts, temporary erosion and sediment control BMPs would be implemented during construction in accordance with the *CNMI and Guam Stormwater Management Manual* (Horsley Witten Group, Inc. 2006). Because the combined area of disturbance would exceed 1 acre, the project would obtain coverage under the EPA Region 9 Construction General Permit and prepare a project-wide Stormwater Pollution Prevention Plan These during-construction BMPs would include:

- Silt fences, sediment traps, and fiber rolls to prevent sediment from leaving the construction site.
- Temporary sediment basins to capture runoff and reduce turbidity in stormwater discharges.
- Stabilized construction entrances/exits to minimize sediment tracking onto paved roads.
- Watering and dust suppression to prevent airborne pollutant transport.
- Phased grading and revegetation to minimize exposed soil and erosion potential.

Additionally, post-construction stormwater BMPs, including bioretention basins, vegetated swales, porous pavement, and hydrodynamic separators, would be installed as part of the final site development to manage long-term stormwater runoff and water quality. These permanent BMPs are designed to mimic natural hydrology, reduce peak flows, and enhance infiltration.

The project would also adhere to the *Department of the Navy Low Impact Development (LID) Policy for Stormwater Management* (NAVFAC EXWC 2015), which establishes additional requirements to minimize post-construction stormwater impacts. Key LID strategies guiding the project include:

- Managing stormwater at its source through decentralized, small-scale controls.
- Integrating stormwater management features into site design for dual functionality and aesthetics.
- Utilizing structural stormwater controls, such as bioretention basins and infiltration basins, where appropriate.

By implementing temporary BMPs during construction and permanent Low Impact Development policy post-construction, Alternative 1 would effectively reduce stormwater impacts, ensuring compliance with regulatory requirements and minimizing potential water quality effects. As a result, stormwater quality impacts are expected to be less than significant.

4.11.3.7 Electrical Power System

Training

The proposed training operations would add an estimated 0.146 megawatts of peak electricity demand to operate facilities and supporting infrastructure and equipment. This increase in peak demand would represent 1.15 percent of the total system capacity. Table 4.11-7 provides a summary of existing and proposed electrical demands relative to the existing electrical system capacity. With this added electrical demand, the system would maintain a 9.55-megawatt capacity reserve, which is 75.2 percent of the total system capacity. As a result, the existing island-wide

power generation facility is sufficient to meet the increased power demand during proposed operations. Therefore, Alternative 1 would have a less than significant impact to electrical utilities.

Table 4.11-7 Annual Electrical Power System Peak Demand and Capacity Under Alternative 1

Item	*MW of Electricity*	*% of System Capacity*
Tinian Power Plant Effective Design Capacity	12.70	100
Peak Electrical Demand from Existing Customers	3.00	23.5
Additional Peak Electrical Demand from Proposed Action	0.146	1.15
Total Electrical Demand with Proposed Action	3.146	24.8
Remaining Electrical Generating Capacity with Alternative 1	9.51	75.2

Legend: % = percent; MW = megawatt.
Source: Appendix M, Utility Studies.

Replacement of existing high-powered shortwave transmission station tower with lower powered Radio Frequency antennas would either offset or result in a net increase in the existing electrical distribution capacity. It is anticipated that no modifications on the existing electrical distribution are required since construction activities would not increase load on the electrical system's capacity.

Construction

When a project includes construction of new on-site electrical infrastructure to support facilities, connecting this new infrastructure to the existing supply system requires a localized and temporary interruption of power to existing customers. These supply interruptions would be anticipated for not longer than 6-hour durations, scheduled to allow for advance notification to users, and timed to be least disruptive. This would minimize impacts to existing Commonwealth Utilities Corporation customers and result in less than significant impacts.

New underground, concrete-encased (3000 PSI) duct banks would be installed to support the 13.8/7.9 kilovolt electrical distribution. The existing Feeder 4 overhead line point of connection, north of the TNI to the existing USAGM would be maintained. The underground line to the existing medium voltage switchgear is anticipated to be used to support the proposed Base Camp facilities and existing Communications towers #1, #12 and #16. These Communications towers would be repurposed, provided with new equipment to support the new communications needs. Evaluation of the existing switchgear bus bar condition would be required; repair or replacement may be necessary for re-use. Existing overhead lines along 8th Ave to the former USAGM site would remain as overhead distribution. Emergency power to the Base Camp would be provided from the existing 1.2 megavolt-amperes generator that is currently used to support the USAGM Communications facilities. The use of the existing generator may require the installation of a new load bank to provide operational efficiency and reliability during loss of power or during maintenance. The Base Camp loads along with the communication towers and supporting facilities are anticipated to offset the demobilization of the former USAGM site.

The new underground infrastructure would be extended along 8th Avenue. The current USAGM Feeder 4 would be tapped, and a riser provided for the extension and lateral duct banks to distribute power to the support facilities including surface radar sites (1 and 2), wells located south of the Mult-Purpose Maneuver Range and AHA 1 Pad (Figure 4.11-2). Existing communications towers would require 200 kilovolt-amperes generators be installed to provide back-up power in the event

of power failure. A new underground duct bank would be constructed from the existing overhead line Feeder 4 at power pole, located at the corner of 8th Ave. and 86th St. This underground duct bank would be installed along 86th Street due east to support Base Camp Well Field - Option A or due west towards Base Camp Well Field – Option B, the preferred option. A new underground duct bank would be constructed from the existing overhead line Feeder 3 to support the Port Biosecurity facilities. A newly installed extension of Feeder 4 located north of the TNI, as part of the Tinian Divert Infrastructure Project, would be tapped and routed underground to feed the proposed aircraft shelter which is located just south of the Feeder 4 extension. The overhead line would be intercepted at the nearest power pole and riser down for transition to underground distribution. It is anticipated that an additional peak demand of 0.146 megawatts would be supported by the island electrical system for the aircraft shelter. The exact point of transformation for usable power would be coordinated with the aircraft shelter contractor. Site lighting is required and would use LED fixtures where applicable. Lighting levels would conform to UFC 3-530-01. Lighting loads would have minimal impacts on the electrical distribution system. Additional coordination regarding local wildlife and environmental conditions may be required when providing site lighting.

Alternative Energy Sources for the Base Camp or Supporting Infrastructure

The USMC is proposing to connect to the existing Commonwealth Utilities Corporation system as a rate payer and has verified that there is sufficient capacity for the estimated demand. The Commonwealth Utilities Corporation has plans to increase the amount of energy available from renewable generation over time, which would be supported by the fees paid into the system by the DoD. Diesel generators for this project are only proposed for emergency backup power.

As part of the military construction design process, the USMC would consider situations where renewable energy options could be feasible. Future alternative energy sources such as photovoltaics for both the Base Camp structures would be explored. Remote radar sites may be powered by temporary generators. Using photovoltaic energy, with diesel generators designated as backup, would also increase energy security and enhance the military mission.

Due to their low profiles, solar photovoltaics systems typically represent little risk of interfering with radar transmissions (National Renewable Energy Laboratory 2017). Site lighting would be required and would use LED fixtures where applicable. Lighting levels would conform to UFC 3-530-01.

4.11.3.8 Communications

Training

The proposed training operations under Alternative 1 would include installation of underground telecommunications infrastructure to support government communications systems (e.g., communication towers, surface radar towers, government telephone, government data, security, and closed-circuit television) and connection to commercial utility services, including commercial telephone and internet. Where required for proposed facilities, commercial telephone and internet services would be delivered through infrastructure provided by commercial utility providers. Small, short-term service interruptions may be necessary to facilitate new connections to the existing systems. Impacts associated with the installation and connection of telecommunications infrastructure to support Alternative 1 would be less than significant to utility systems on Tinian.

Military use of the existing information technology infrastructure would be limited to a leased line or a satellite connection to Guam. Because the existing systems have adequate capacity and because connection to the fiber optics system would be a dedicated line lease, the capacity of the existing civilian portion of that cable would not be reduced, and information technology and communication requirements would have no impact on existing utility systems.

Construction

Alternative 1 would include the construction of two new 45-foot-tall surface radar towers and repurposing three communication towers (towers #1, #12 and #16) at the USAGM site. New underground, concrete-encased duct banks would be installed to support the communications distribution. The new underground communications infrastructure would be extended along 8th Avenue. Conduit risers would be provided at the existing overhead lines for the extension and lateral duct banks to distribute the fiber optic system to the support facilities including CJMT wells and communication towers. Existing overhead communication lines to the Base Camp would remain as overhead distribution. The poles currently supporting the overhead lines to the USAGM site would be used to also support the new fiber optic system.

New underground communication lines would run along existing roads to support the North Field water wells and AHA 1.

4.11.4 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. Construction activities under Alternative 1 would also apply to Alternative 2. Therefore, the decrease in tempo would be a less than significant decrease and impacts to utilities under Alternative 2 would be the same as those described for Alternative 1.

Figure 4.11-2 Electrical Power Distribution for Proposed Action