3.9 Air Quality

In general, air quality is influenced by many factors, including the type and amounts of pollutants emitted into the atmosphere and local meteorological conditions. Most air pollutants originate from human-made sources, including mobile sources (e.g., vehicles), stationary sources (e.g., concrete batch plants, quarries, and power plants), indoor sources (e.g., certain building materials and cleaning solvents), and area sources (e.g., ground disturbance from construction and agricultural activities). Air pollutants are also released from natural sources such as volcanic eruptions and wildfires.

The Clean Air Act designates six pollutants as "criteria pollutants," for which the U.S. EPA has established National Ambient Air Quality Standards (Appendix E). These criteria pollutants are carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone, suspended particulate matter with a diameter less than or equal to 10 micrometers (PM_{10}), fine particulate matter less than or equal to 2.5 micrometers ($PM_{2.5}$), and lead (42 U.S.C. 7401, et seq.). The Northern Mariana Islands are classified as being in attainment of the National Ambient Air Quality Standards (40 C.F.R. 81.354), meaning the air quality complies with the standard for each criteria pollutant.

In addition to the "criteria pollutants," national emission standards exist for hazardous air pollutants (40 C.F.R. 61). Hazardous air pollutants include substances known or suspected to cause cancer or other adverse health effects at or above certain exposure levels. Unlike criteria pollutants, ambient air quality standards have not been established for hazardous air pollutants.

Greenhouse gases primarily consist of carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), and other fluorine-containing compounds. Greenhouse gas emissions resulting from human activities trap heat in the atmosphere, which can have global effects. Scientific evidence indicates a trend of increasing global temperature over the past century due to increased greenhouse gas emissions.

Tinian meets all federal air quality standards under the Clean Air Act. With a population of approximately 2,000 people, several factors contribute to this compliance, including its isolated location in the Pacific Ocean, prevailing east-to-west winds (Figure 3.9-1), a rural development pattern, and the absence of heavy industry. In accordance with the General Conformity regulations (40 C.F.R. 93.153(c)(2)(xxii)), the air quality analysis in this Revised Draft EIS analyzes criteria and hazardous air pollutant emissions in the air above the island and the nearshore environment from the ground surface up to 3,000 feet above ground level. These emissions generated at elevations above 3,000 feet have a minimal effect on ground level pollutant concentrations (U.S. EPA 1992).

3.9.1 Sources of Air Emissions

The CNMI Bureau of Environmental and Coastal Quality, Division of Environmental Quality (the Division going forward), does not monitor ambient air quality data for Tinian. The Division's Clean Air Program protects public health and the environment by enforcing local and federal environmental regulations that limit the release of air emissions. This includes issuing permits for sources of air pollution, conducting compliance inspections, responding to citizen complaints, and issuing notices of violations or administrative orders when necessary. Additionally, the Division conducts vehicle emission tests for diesel-powered motor vehicles (Bureau of Environmental and Coastal Quality 2023).

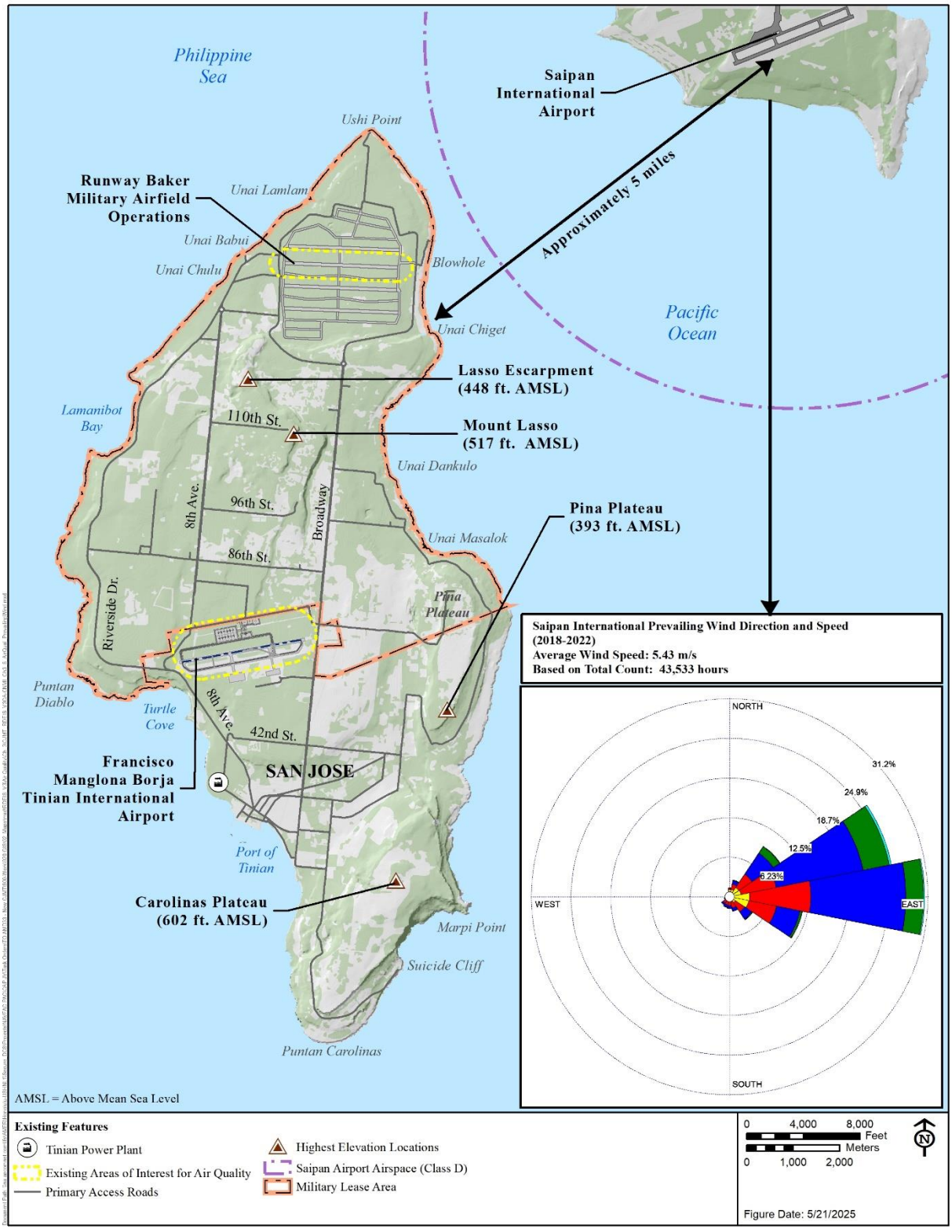

Figure 3.9-1 Prevailing Wind Patterns for Tinian, based on the Wind Rose for Saipan International Airport

Air emissions can come from stationary sources (e.g., power plants) or mobile sources (e.g., vehicles, aircraft). Stationary sources of air pollutants on Tinian include power generation units and distribution facilities that comprise the power system owned by the Commonwealth Utilities Corporation. This system consists of four 2.5-megawatt and two 5-megawatt diesel generators for a total of 20 megawatts of power generation (U.S. Energy Information Administration 2018). This facility is in San Jose about 1,000 feet west of the nearest residences. In addition to these stationary sources, various facilities including the Maui Well Number 2 and the U.S. Air Force Divert airfield facility use of fuel-burning backup generators that run intermittently.

The construction related to the U.S. Air Forces Divert facility at the TNI began in early 2022, and this activity represents a short-term, temporary source of air emissions on Tinian. Emissions from fuel-burning construction equipment and on-road vehicles are considered mobile sources of emissions.

The primary long-term source of mobile emissions on Tinian comes from vehicular traffic along major travel routes, such as Broadway, 8th Avenue, Grand Avenue, and Canal Street, which connect the village of San Jose to the Military Lease Area. Operations of aircraft at TNI and marine vessels at Tinian Harbor, including those used during current military training events on Tinian, also generate mobile source emissions.

Particulate matter emitted from non-point sources, such as unpaved or poorly paved surfaces, undeveloped land, or material storage piles – referred to as fugitive dust – comes from civilian and military vehicle travel and other activities that disturb the ground surface within the Military Lease Area. Existing agricultural activities that occur within the Military Lease Area and on public and private lands in the community south of the Military Lease Area also produce fugitive dust emissions through earth disturbance. Volcanic eruptions can also be a source of fugitive dust but the six Northern Mariana Islands that contain active volcanoes (Anatahan, Guguan, Pagan, Agrihan, Asuncion, and Uracus) are far enough away from Tinian that they are not a source of dust emissions in the project area.

3.9.2 Greenhouse Gas Emissions

Natural climate cycles and other factors, including human activities, influence temperatures and weather patterns at regional scales with major indicators of climate conditions include air temperature, sea level rise, and annual precipitation. Data observed at the Saipan International Airport show a trend of increasing air temperature during the day (90° Fahrenheit or warmer) and a decline in the annual number of cool nights (below 74° Fahrenheit) since 2006. Annual total rainfall data collected at the Saipan International Airport from 1989 to 2020 show little average change over the past 30 years. The sea level around the CNMI is rising, with Saipan's tide gauge recording a long-term sea level rise of 0.07 inches per year since 1978 (Pacific Islands Regional Climate Assessment 2021).

The CNMI released a 2024 Priority Climate Action Plan, which outlines five priority measures, each targeting a specific aspect of emissions reduction: electricity generation, transportation, solid waste management, wastewater treatment, and carbon removal. This plan also includes a priority greenhouse gas inventory for the CNMI for the base year of 2023, as shown in Table 3.9-1.

Table 3.9-1 CNMI 2023 Greenhouse Gas Emissions Inventory

Priority Sector for the CNMI Priority Climate Action Plan	*Annual CO_2e Emissions (Metric Tons)*
Electricity Generation (stationary combustion)	224,574
Transportation (mobile combustion from road vehicles, marine vessels, and aviation)	212,788
Wastewater Treatment	5,428
Solid Waste	377
Subtotal of Gross Emissions of Priority Sectors for the Priority Climate Action Plan	**443,167**
Forestry Carbon Sequestration	*-199,228*
Net Emissions of Priority Sectors for Priority Climate Action Plan	**243,939**

Legend: CNMI = Commonwealth of the Northern Mariana Islands; CO_2e = carbon dioxide equivalent.
Source: CNMI Climate Policy and Planning Program 2024.

Energy generation accounts for approximately 51 percent of the CNMI's priority greenhouse gas emissions, as the CNMI relies almost entirely on diesel fuel to generate electricity. Less than 1 percent of the CNMI's power supply comes from solar net-metered systems (CNMI Climate Policy and Planning Program 2024).

On April 15, 2024, Governor Palacios signed the Blue Planet Climate Agreement, committing the CNMI to achieving 100 percent renewable energy by 2045.

3.10 Public Health and Safety

This section describes current public health and safety conditions on the island of Tinian for the following categories: ground training, aviation training and civilian aviation, radio frequency and microwave emission, unexploded ordnance and discarded military munitions, hazardous materials and waste, natural hazards, wildfire, flood hazards, and protection of children from environmental health and safety risks.

The Proposed Action includes establishing a new lease for the USAGM property on Saipan and the repurpose of the existing facilities and communications towers. The use of the property would remain similar to the current use under this new lease to the DoD. The public is restricted from accessing the property by a perimeter fence. No military training occurs at this location. Due to the nature of the Proposed Action at the USAGM Saipan site, the existing environment is not described further in this section.

3.10.1 Ground Training

Training activities currently occur on Tinian within the Military Lease Area as described in previous NEPA documents (DON 2010, 2015), and in recent years have included large and medium events (e.g., Valiant Shield and Cope North), as well as smaller events. Ground-based activities include surveillance and reconnaissance, military operations in urban terrain, evacuation operations, command and control, logistics, camping, land navigation, convoy training, non-