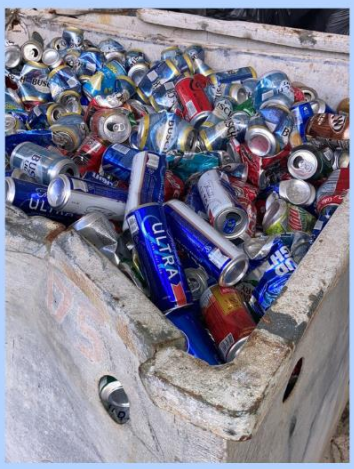
# COMPREHENSIVE INTEGRATED SOLID WASTE MANAGEMENT PLAN FOR THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS





*The Comprehensive Integrated Solid Waste Management Plan for the Commonwealth of the Northern Mariana Islands (CNMI CISWMP) was prepared under the leadership of the Office of the Governor by the Office of Planning and Development (OPD) in coordination with the Department of Public Works (DPW), the Offices of the Mayors of Tinian, Rota, Saipan, and the Northern Islands, the Bureau of Environmental and Coastal Quality (BECQ), and the U.S. Environmental Protection Agency (EPA).*

*This group of partnering agencies— OPD, DPW, the Offices of the Mayors of Saipan, Tinian and Aguiguan, Rota, and the Northern Islands, BECQ, and EPA— is collectively known as the Inter-Island Solid Waste Management Taskforce.*

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# A. Introduction

## I. Introduction

*Waste management data are critical to creating policy and planning for the local context. Understanding how much waste is generated—especially with rapid urbanization and population growth—as well as the types of waste being generated, allows local governments to select appropriate management methods and plan for future demand. This knowledge allows governments to design systems with a suitable number of vehicles, establish efficient routes, set targets for diversion of waste, track progress, and adapt as waste generation patterns change. With accurate data, governments can realistically allocate budget and land, assess relevant technologies, and consider strategic partners, such as the private sector or nongovernmental organizations, for service provision.*

- *World Bank 2050*

The residents of the CNMI have repeatedly identified the preservation of the islands' flora and fauna, its vistas and beaches, its marine life and intercoastal areas as very important to maintain and preserve.

Currently, increasing solid waste is a consequence of development throughout the Pacific. Solid waste management issues are exacerbated by the specific circumstances of Pacific islands. Small islands have limited space with limited freshwater resources. Islands import many goods (and services) which bring with them a host of packaging waste. The harsh environment combined with natural disasters decreases the life of many consumer goods.

Small islands are also vulnerable to various economic situations that larger economies may more readily absorb. Additionally, the long, arduous distances between islands, small populations, and limited infrastructure make "conventional" solid waste management solutions expensive.

Solid waste will continue to be an economic as well as an environmental issue. Most Pacific islands, including the CNMI, rely on the cohesion of their natural and built environments, to continually attract tourists. Solid Waste management, in its various forms, support this important economic driver.

Approximately 20 years ago, serious environmental issues associated with poor solid waste management issues like open fires and water pollution were addressed in the CNMI. The CNMI, with significant professional and financial help from the US, closed the Puerto Rico Dump and opened CNMIs first modern transfer station/recycling center and landfill. This infrastructure was a welcome and necessary change.

As Pacific Islands look forward, sustainable waste management is seen as a significant economic and social challenge considering the size of local economies, legacy pollutants, and new stresses on the environment from climatic changes.

So how do we turn this challenge, this difficult multi-faceted challenge of waste management, into an opportunity? Planning is a start, but people will make the difference – the people of the CNMI will be the agents of change progressing and improving the systems, like solid waste, to make a cleaner, more beautiful island called "home".

As we will see in this Plan, a new vision of integrated solid waste management will require collaboration with many Federal (US) and international partners as well as collaboration and partnership with local public and private sectors.

This Plan recognizes the high visibility of solid waste management, it embraces scrutiny, and hopefully drives the shared vision of a cleaner, robust, more sustainable CNMI for the next generation.

## II. Acronyms

Terms and Acronyms will be the same as 40 CFR 256 and 258 and BECQ Title 65. Acronyms used in this document are located in Table 1.

*Table 1 Solid Waste Glossary of Acronyms*

| Term/Acronym | Definition |
|---|---|
| ADC | Alternative Daily Cover |
| AO | Administrative Order |
| BECQ | Bureau of Environmental and Coastal Quality |
| C&D | Construction and Demolition (Debris) |
| CCC | Citizen Convenience Center |
| CFR | Code of Federal Regulations |
| CHCC | Commonwealth Health Care Corporation |
| CJMT | Commonwealth Joint Military Training |
| CPA | Commonwealth Port Authority |
| CSDP | Comprehensive Sustainable Development Plan |
| CUC | Commonwealth Utility Corporation |
| cy | Cubic yard(s) |
| DoD | Department of Defense |
| DPW | Department of Public Works |
| EA | Environmental Assessment |
| EIS | Environmental Impact Statement |
| EPA | Environmental Protection Agency |
| FTE | Full Time Equivalent |
| HHM | Household Hazardous Material |
| lb / lbs | Pound / Pounds |
| mgd | Millions of Gallons per Day |
| MINA | Mariana Island Nature Alliance |
| MSW | Municipal Solid Waste |
| NOV | Notice of Violation |
| OEIS | Overseas Environmental Impact Statement |
| O&M | Operation and Maintenance |
| OPD | Office of Planning and Development |
| OSHA | Occupational Safety and Health Administration |
| PICTs | Pacific Island Countries and Territories |
| POL | Petroleum, Oil, and Lubricants |
| SCEL | Small Community Exempt Landfill |
| SHMO | State Hazard Mitigation Officer |
| SIDS | Small Island Developing States |
| SSG | Smart, Safe Growth |
| SWD | Solid Waste Division |

## III. Contacts

A list of Solid Waste Management Plan Points of Contact is in Table 2.

*Table 2 Solid Waste Management Plan Contacts*

| TITLE | OFFICE | EMAIL |
|---|---|---|
| **Acting Director** | **CNMI Office of Planning and Development (OPD)** | elizabeth.balajadia@gov.mp |
| **Administrator** | **CNMI Bureau of Environmental and Coastal Quality (BECQ)** | eli.cabrera@becq.gov.mp |
| **Secretary** | **CNMI Department of Public Works (DPW)** | ryumul.sec@dpw.gov.mp |
| **Chairperson** | **Planning and Development Advisory Council (PDAC)** | *See OPD for Current Chair* |
| **CEO** | **Office of the Mayor of Tinian** | Allen Perez |
| **Mayor** | **Office of the Mayor of Rota** | Mayor Aubrey Hocog |
| **Mayor** | **Office of the Mayor of the Northern Islands** | Mayor Valentino Nicky Taisacan |
| **Acting Executive Director** | **Commonwealth Utilities Corporation (CUC)** | Betty G. Terlaje |
| **Executive Director** | **Commonwealth Ports Authority (CPA)** | Christopher Tenorio |
| **CEO** | **Commonwealth Healthcare Corporation** | esther.muna@chcc.health |
| | | |
| **Environmental Resources, ADF&G/Habitat** | **Army Corps of Engineers (U.S.) Representative, Alaska District** | jason.d.brewer@usace.army.mil |
| **Director, Division of Environmental Quality** | **Clean Air Act Representative** | Justin Pangelinan, DEQ Clean Air Program Manager justin.pangelinan@becq.gov.mp |

| | | |
|---|---|---|
| **Director, Division of Environmental Quality** | **Clean Water Act (with NPDES) Representative** | Ellen Blake, EPA R9 NPDES blake.ellen@epa.gov Elizabeth Sablad, EPA R9 NPDES sablad.elizabeth@epa.gov |
| **Special Assistant** | **Commonwealth Bureau of Military Affairs Representative** | daniel.aquino@gov.mp |
| **CNMI Field Representative** | **Department of the Interior (U.S.) Representative Office of Insular Affairs** | Harry_Blanco@ios.doi.gov |
| **Director, Division of Environmental Quality** | **Federal Insecticide, Fungicide, and Rodenticide Act Representative** | Zabrina Cruz, DEQ Director zabrina.shai@becq.gov.mp |
| **Director, Division of Environmental Quality** | **Marine Protection, Research and Sanctuaries Act Representative** | Zabrina Shai, zabrina.shai@becq.gov.mp |
| **CNMI CRCP and CZM Management Liaison** | **National Oceanic Atmospheric Administration (U.S.) Representative** | Janice Castro janice.castro@noaa.gov |
| **Director, Division of Environmental Quality** | **Safe Drinking Water Act Representative** | Travis Spaeth, DEQ Safe Drinking Water Manager travis.spaeth@becq.gov.mp |
| **Director, Division of Environmental Quality** | **Toxic Substances Control Act Representative** | Zabrina Cruz, DEQ Director zabrina.shai@becq.gov.mp |
| **Director, Bureau of Environment and Coastal Quality** | **Resource Conservation and Recovery Act Representative** | Zabrina Cruz, DEQ Director zabrina.shai@becq.gov.mp |
| **Director, Division of Environmental Quality** | **Water Resources Representative** | Zabrina Cruz, DEQ Director zabrina.shai@becq.gov.mp |

| | | |
|---|---|---|
| **Director, Division of Environmental Quality** | **U.S. Bureau of Mines and Office of Surface Mining Representative** | |

## IV. Federal Regulatory Framework

### 1) Federal Regulatory Guidance

This Commonwealth of the Northern Mariana Islands (CNMI Solid Waste Management Plan (Plan) was developed using 40 CFR Part 256 – Guidelines for Development and Implementation of State Solid Waste Management Plans (Guidelines) written in 1979.

This CNMI Plan is addressing required components in the Federal Guidelines (See Section E); additionally, this Plan is addressing solid waste management through a more modern lens including climate change initiatives such as composting organics and circular economy systems included within a zero-waste framework. 40 CFR 256 was not written to address specific solid waste management techniques; for example, the words "composting" or "zero waste" are not written in the text.

Other documents/regulations are attached and/or referenced that compliment this plan.

Other documents referenced in this plan are located at www.opd.gov.mp.

**40 CFR 256, 40 CFR 257, and 40 CFR 258**

For links to these Parts of Federal Code – please see https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I

### 2) CNMI Regulatory Guidance

CNMI Administrative rules are located at https://cnmilaw.org – Title 65 contains the Administrative Rules for the Division of Environmental Quality (Bureau of Environmental and Coastal Quality).

Within the CNMI, the CNMI Bureau of Environmental and Coastal Quality (BECQ) is the administrative authority for the Resource Conservation and Recovery Act and several other Federal regulations (see "Contacts" for a list of specific Federal regulations and the responsible agency).

Other federal departments, such as the Department of Defense, follows BECQ (State) rules and adheres to other regulatory requirements; including, Executive Orders and specific design standards such as the Unified Facilities Criteria which provides planning, design, construction, sustainment, restoration, and modernization criteria, to the Military Departments, the Defense Agencies, and the DoD Field Activities. Executive Orders related to solid waste management are Executive Order 13514 and Executive Order 13693) . These Executive Orders established a federal agency environmental performance goal of diverting at least 50% of non-hazardous solid waste, and at least 50% of construction and demolition waste.

## V. CNMI Solid Waste Management Supporting Documents

The intention of this section is not to mention all laws, regulations, and documents that the CNMI has written or adopted; the documents below are highlighted because they provide foundational support for the CNMI's integrated solid waste planning efforts. These documents are "right-sized" for the CNMI and were peer-reviewed in the CNMI with extensive public input from residents of the CNMI.

### 1) Comprehensive Sustainable Development Plan (CSDP)

The CSDP was endorsed by the Planning and Development Advisory Council June 6, 2021, with final approval on October 26, 2021.

The CSDP includes multiple planning elements and "right-sized" sustainable development goals (SDG). SDG 12 - "Responsible Consumption and Production" within the Section entitled "Planning Elements, Goals, and Actions" contained the action step of developing and incorporating an integrated solid waste management plan with recycling stream tracking and reporting protocols. The planning team that developed goals and metrics for this section set a goal that at least 50% of the recyclable waste stream will be diverted from environmentally compliant landfills by 2030. An implementation goal in the CSDP is that by 2025, the CNMI will incorporate recycling stream tracking and reporting protocols to support future CSDP updates. Page 123/255 provides a summary of the SDG 12 implementation plan.

See link in Attachment 5.

### 2) CNMI Guidance Manual for Smart, Safe, Growth

Smart, Safe Growth (SSG) is a set of development strategies focused on improving the resiliency of the built environment. SSG strategies are developed from the intersection of three key areas of practice: hazard mitigation, climate change adaptation, and smart growth. The manual includes many appendices that provide additional tools and useful information.

See link in Attachment 5.

### 3) EPA and BECQ Letters Related to Small Community Exempt Landfills

Three letters, two from EPA and one from BECQ, provide foundational support for the investigation into small community exempt landfills in the CNMI, specifically Tinian, Rota, and the Northern Islands. These letters are in Attachment 8.

## VI. Other Guiding Principles

### 1) Zero Waste Principles

CNMI Governor Palacios' 2023 "Zero Waste Proclamation", said the following:

***WHEREAS**, the Zero Waste International Alliance defines "Zero Waste" as the conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging and materials without burning and with no discharges to land, water, or air that threaten the environment or human health; and*
***WHEREAS** decisions about how goods such as food, packaging, and building materials are produced, transported, used, and disposed of can make a big difference in the amount of the resources used, greenhouse gases emitted, environmental impacts created, and waste produced; and*
***WHEREAS,** the Commonwealth of the Northern Mariana Islands (CNMI) is committed to taking the necessary action and expanding our Commonwealth's efforts in ensuring wise resource use and combating climate change by reducing, reusing, and recycling waste, which will create more jobs for our people and unlock economic development opportunities here in our islands; and*
***WHEREAS,** the CNMI's 2021-2030 Comprehensive Sustainable Development Plan (CSDP) supports the 10-year Sustainable Development Goal that by 2030, 50% of the recyclable waste stream will be diverted from CNMI's environmentally-compliant waste management facilities on Saipan, Tinian, Rota, and the Northern Islands with diverted waste composted, reused, or sold to support sustainable waste management systems; and*
***WHEREAS,** the CNMI's Comprehensive Integrated Solid Waste Management Plan will solidify a clear and realistic path forward for the CNMI government to follow that will include strategies for the prevention, collection, and processing of residential and commercial waste, as well as benchmark metrics to track progress towards management goals; and*
*WHEREAS, the island of Tinian has been leading efforts to assess and implement Zero Waste management opportunities to protect people, the environment, and support economically diverse and sustainable growth; and*
***WHEREAS**, the Tinian Zero Waste Study and Pilot Project will solidify a clear and realistic path forward for the Tinian leadership to follow that will include strategies for the prevention, collection, and processing of residential and commercial waste, as well as benchmark metrics to illustrate the progress towards management goals; and*
*WHEREAS, since 2020, the Inter-Island Solid Waste Management Taskforce, comprised of representatives from Department of Public Works, Office of Planning and Development, Bureau of Environmental and Coastal Quality, and the Offices of the Mayors of the Northern Islands, Saipan, Tinian, and Rota and supported by the United States Environmental Protection Agency aims to have a completed comprehensive integrated solid waste management plan that includes "Zero Waste" initiatives ready for incorporation into the next CSDP update by 2025; and*
***WHEREAS**, all community members of the CNMI can play a part in envisioning improved resource management planning through upcoming visioning workshops, plan development, and implementation efforts which will include increasing options for waste disposal that respond to community needs.*

## 2) Other CNMI Sources of Information and Solid Waste Management Work with the Public

The Office of Planning and Development has developed a CNMI data library that is updated periodically. The library contains plans, reports, geospatial data, and other useful information of which can be utilized in the development of the planning process, research, and public interest. The CNMI data library can be accessed online by visiting the Office of Planning and Development website at opd.gov.mp.

The Bureau of Environmental and Coastal Quality's Division of Environmental Quality Solid Waste Management Program establishes the requirements and criteria for new and existing solid waste management facilities including the municipal solid waste landfills and other landfilling operations, incineration, solid waste collection and transfer, material processing, recycling, composting, and salvage. These requirements and criteria ensure the protection of human health and the environment.

The Mariana Islands Nature Alliance (MINA) is a community-based environmental conservation nonprofit organization that fosters community and science-based conservation programs to enhance and sustain the CNMI's environments and cultures. Dedicated programs to help mitigate waste include the Marine Debris Prevention, Tasi Watch Community Ranger Program, Schools for Environmental Conservation, Adopt-a-Bin program, and the Community Recycles Plastics pilot project. These initiatives help promote waste reduction, increase recycling and upcycling, community engagement, strengthen local capacity, and empower environmental stewardship.

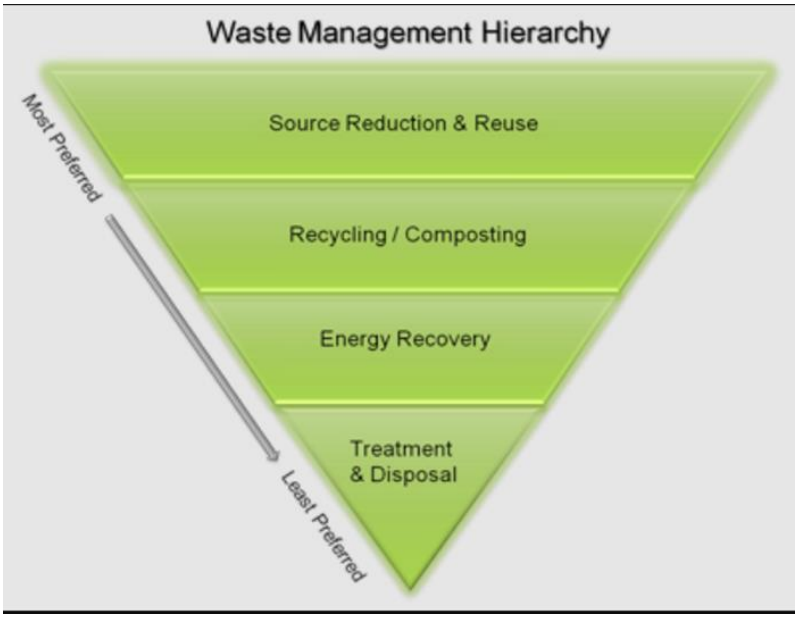
## 3) EPA Waste Management Hierarchy

EPA developed the non-hazardous materials and waste management hierarchy in recognition that no single waste management approach is suitable for managing all materials and waste streams in all circumstances.

The hierarchy ranks the various management strategies from most to least environmentally preferred. The hierarchy places emphasis on reducing, reusing, recycling and composting as key to sustainable materials management. These strategies reduce greenhouse gas emissions that contribute to climate change.

These hierarchies provide a visual representation and support for the solid waste work the CNMI is developing in this Plan.

See EPA website at https://www.epa.gov/smm/sustainable-materials-management-non-hazardous-materials-and-waste-management-hierarchy




## VII. CNMI Background Data

Background data topics were selected for this section due to the data's potential effect on municipal solid waste management.

**1) Brief Description of the Four Municipalities (including Major Institutions and Commercial Establishments)**

**SAIPAN**

Saipan is the largest of the fourteen islands within the CNMI. Saipan is located 120-miles north of Guam and 3.3-miles northeast of Tinian; it is approximately 12-miles (north-south), 5.6-miles (east-west) and has a total area of 44.5-square miles. Saipan has a population of 43,385 with a median household income of $24,232 (US 2020 Census data).

Major Commercial Establishments on Saipan include:

- 178 Accommodation and Foodservice Establishments
- 298 Retail Trade Establishments
- Approximately 25% of the population (10,750 people) were school-aged (between 5 and 19 years old) in 2020.

## TINIAN AND AGUIGUAN

Tinian island is located 3.3-miles south of Saipan and 55-miles north of Rota; Tinian is 12.5 miles (north-south), 6-miles (east-west), has a total area of 41-square miles.

Tinian has a population of 2,044 with a median household income of $35,139 in 2020. Municipality of Tinian includes the nearby uninhabited island of Aguiguan.

Major Commercial and Institutional Establishments on Tinian:

The Divert Activities and Exercises Project ("Divert Airfield") is on-going major construction project on the island. The Divert Airfield is intended to provide resiliency, training resources, and mission capabilities that could be called upon if access to Guam's Andersen Air Force Base is limited or unavailable for weather or other reasons. It includes two primary components: (1) airfield improvements providing additional capacity for military aircraft in training activities, humanitarian assistance, and support for disaster relief; and (2) facilities and infrastructure to support KC-135 tanker aircraft.

The Tinian Diamond Casino is under construction and is expected to be complete in fiscal year 2023-2024. An associated hotel with 36 rooms is already operating. This hotel is also planning to operate a roll-on/roll-off ferry that will transport people to and from Saipan.

- 5 Accommodation and Foodservice Establishments including golf courses.
- 9 Retail Trade Establishments.
- Approximately 25% of the population (516 people) were school-aged (between 5 and 19 years old) in 2020.

## ROTA

Rota is 58-miles south of Saipan, and 54-miles from Guam; Rota is approximately 10.5 miles long, and 3.0 miles wide having a total area of 32.8-square miles.

Rota has a population of 1,893 and a median household income of $31,289 in 2020.

Major Commercial and Institutional establishments on Rota include:

- 4 Accommodation and Foodservice Establishments
- 8 Retail Trade Establishments
- Approximately 25% of the population (467 people) were school-aged (between 5 and 19 years old) in 2020.

**NORTHERN ISLANDS**

The Northern islands collectively are one municipality representing ten islands of which only three are sparsely inhabited. The 2020 Census reported the population of the Northern Islands at seven people (living on Agrihan, Alamagan, and Pagan). Twelve or more people may inhabit the islands raising livestock such as pigs and goats; however, volcanic activities have displaced several families from several islands over the last 20 years.

The Northern Islands currently have no commercial or institutional establishments. The Northern Islands have no utility service, healthcare service, or formal port (dock, mooring buoy, or airstrip/airport).

## 2) CNMI Population

Solid waste generation is correlated with both population and economic activity. Consequently, larger economies like Australia and the United States tend to produce more municipal solid waste, construction and demolition debris, and industrial wastes.

*Table 3 – CNMI Population by Municipality*

| PLACE | POP. 2020 | POP. 2010 | % CHANGE |
|---|---|---|---|
| **Saipan** | 43,385 | 48,220 | 10.0% |
| **Tinian** | 2,044 | 3,136 | 34.8% |
| **Rota** | 1,893 | 2,527 | 25.1% |
| **Northern Islands** | 7 | 0 | |

## 3) CNMI Socio-Economic and Population Data

The CNMI experienced significant population loss from 2010 to 2020 due in part to natural disasters and economic downturns that began in the latter half of that decade.

According to the 2020 US Census, Tinian and Rota would have some of the lowest Median Household Incomes in the USA if the municipalities are considered counties. Table 4 provides population and socio-economic data for American Samoa, Guam and the CNMI.

*Table 4 – Demographic Comparisons*

| PLACE | MEDIAN HOUSEHOLD INCOME | MEAN HOUSEHOLD INCOME | POPULATION |
|---|---|---|---|
| **American Samoa** | $28,352 | $41,752 | 49,710 |
| **CNMI** | $31,362 | $43,905 | 47,329 |
| **Guam** | $58,289 | $74,309 | 153,836 |

The three largest municipalities in the CNMI have the following Median Household Income.

- Median Household Income in the CNMI: $31,362.
- Median Household Income on Tinian: $36,065.
- Median Household Income on Rota: $31,289.

For the CNMI, median income (full time – year-round work) for males was $18,857 and for females the median income was $20,090. These figures represent and hourly wages averaging under $10.00 per hour).

According to the 2020 US Census, of the 18,759 employed workers, 4,821 were listed as government workers (26%). Arts, entertainment, and recreation employed 20% of people.

### 4) Government/Local Administration

The Northern Mariana Islands have a multiparty presidential representative democratic system. The executive branch is headed by the governor of the Northern Mariana Islands; legislative power is vested in the bicameral Northern Mariana Islands Commonwealth Legislature and the judicial power is vested in the CNMI Supreme Court and the trial courts inferior to it.

Administratively, the CNMI is divided into four municipalities each with an elected Mayor:

- Saipan,
- Tinian with uninhabited Aguiguan,
- Rota, and
- The Northern Islands

The CNMI Bureau of Environmental and Coastal Quality (BECQ) serves as the CNMI's counterpart to the U.S. Environmental Protection Agency (EPA) and is a regulatory agency that provides environmental oversight and compliance within the CNMI. BECQ is comprised of two divisions, the Division of Environmental Quality and the Division of Coastal Resource Management. The BECQ is directed by the Administrator and the divisions are led by the two (2) Division Directors. The BECQ is a regulatory agency providing environmental oversight and compliance within the CNMI.

The CNMI Office of Planning and Development (OPD) is the CNMI's main government office for guiding future development and ensuring that government projects and initiatives are sustainable for decades to come. Within the CNMI Comprehensive Sustainable Development Plan prepared by OPD and adopted by the CNMI Office of the Governor in 2021 are ten-year goals for solid waste management that include the creation of this plan and a target of diverting 50% of the CNMI's recyclables and compostables away from the CNMI's landfills and towards sustainable systems.

The CNMI Planning and Development Advisory Council (PDAC) is the guiding and decision-making body for all of OPD's projects and initiatives. Its membership comprises of representatives from the CNMI's government offices that oversee areas of interest such as critical CNMI infrastructure, economic development, the environment, and the tourism industry, among others.

The CNMI Inter-Island Solid Waste Management Taskforce (ISWMT) oversees the permitting, planning, implementation, and regulation of the CNMI's critical solid waste infrastructure investments and initiatives. Its members include representatives from the Bureau of Environmental and Coastal Quality, DPW, EPA, the Offices of the Mayors of the Northern Islands, Saipan, Tinian, and Rota, and the Office of Planning and Development.

The CNMI Department of Public Works (DPW) is directed by the Secretary of Public Works. The CNMI DPW operates permitted solid waste management facilities on Saipan, Tinian, and Rota. The Mayors of Tinian and Rota appoint the Resident Director of Public Works in their municipalities.

The Commonwealth Utility Corporation (CUC) is an autonomous agency and has responsibility for providing electricity, water, and waste-water management in the CNMI.

The Commonwealth Port Authority (CPA) is an autonomous agency and has responsibility for ports and airports in the CNMI.

The Commonwealth Health Care Corporation (CHCC) is an autonomous agency and has responsibility to provide healthcare services in the CNMI.

CNMI Office of Homeland Security and Emergency Management provides information on natural disasters as well as security risks. Hazard mitigation activities are the responsibility of the State Hazard Mitigation Officer (SHMO). The SHMO provides expertise, guidance, coordination, advice, and assistance to the various components of the community, which include governmental agencies as well as representatives from the private sector that include business associations and community members. The SHMO helps other agencies identify, coordinate, and obtain technical and financial resources.

More specific information about contacts for Departments can be found in the section titled "Contacts"; information on regulated waste management provided by the autonomous agencies can be found in the Section B "CNMI Supporting Documents and Solid Waste Management Data", Subsection II "CNMI MSW Tonnage and Per Capita Generation Rate Estimates".

**5) Severe Weather: Typhoons / Volcanoes / Earthquakes / Tsunamis**

Severe weather can have widespread economic impacts and create significant quantities of solid waste/debris in a short period of time with an array of waste streams that require separation and proper management. Severe weather can also disrupt transportation, especially air travel.

**Typhoons:** Typhoons can cause catastrophic destruction damaging or destroying buildings, trees, recreational infrastructure (beaches/walkways), and critical infrastructure requiring local, state, and federal partners to be mobilized to address widespread power outages, severed water lines, homeless population, and extensive debris removal. Tropical cyclones hit the CNMI regularly with category 5 storms possible.

One recent Category 5 storm was Super Typhoon Yutu (October 24 and 25, 2018) which had 10-minute sustained winds of 134 miles per hour [mph]), 1-minute sustained winds of 174 mph, and gusts of up to 190 mph. After Yutu, the EPA collected, sampled, consolidated, shipped and disposed of over 31,000 items of electronic waste, white goods such as refrigerators and washers, and hazardous wastes from schools and public buildings. BECQ and other local stakeholders conducted curbside pickup of hazardous materials such as paints, solvents, herbicides, e-waste, appliances and other goods from residential properties while EPA operated public waste drop-off locations for these items. Residential collection and drop-off stations collected over 42,000 items for disposal. EPA also collected 1,263 damaged electric transformers on Saipan and 184 on Tinian and sent most of the associated materials for recycling. In addition, EPA excavated contaminated soil associated with transformer spills at 260 locations on Saipan and 63 locations on Tinian. In total, EPA transported 193 shipping containers of waste material off island for appropriate recycling and/or disposal.

Other typhoons reaching the CNMI in the past 10 years include Typhoon Hagibis (2019) and Typhoon Soudelor (2015).

**Earthquakes and Tsunamis:** Earthquakes and tsunamis are a concern in the CNMI (small earthquakes are regularly felt on Saipan, Tinian, and Rota).

Modeling has indicated that the CNMI is at greater risk from other earthquake-prone parts of the Pacific. According to Japanese seismologists, an 8.5-9.0 magnitude earthquake is expected to occur in the Nankai Trough subduction zone of southeast Japan. That is expected to generate a large tsunami oriented directly toward the Mariana Islands.

**Volcanoes:** Volcanoes are a consistent threat in the Northern Islands and eruptions have required careful planning for the resettlement of Agrihan, Alamagan, and Pagan.

In May 1981, volcanic eruptions led to evacuation of the island of Pagan.

In April 1990, the inhabitants of the western coast of Anatahan were evacuated after earthquake swarms and active fumaroles indicated that an eruption might be imminent, but no eruption occurred at that time. The first historical eruption of Anatahan was in May 2003, causing an ash plume 7.5 mi high which impaired air traffic to Saipan and Guam.

### 6) Regional/Inter-Island Transportation

Tinian, Rota, and Saipan are not connected by bridges/roads but may be accessed via air or by boat.

Intra-island air transportation to Saipan or Rota is provided by commercial carriers originating from east Asia (Korea, Japan), and Guam.

Inter-island air travel in the CNMI is currently available via 4-9 passenger planes. There are no regularly scheduled ferry services (passenger or vehicle). However, passenger ferry charters may operate from Saipan to Tinian during various festivals.

Private vessels (and crew) capable of hauling up to 70-tons (WWII era landing craft with shallow drafts) are available for hire – this is a primary method of moving heavy equipment and supplies from Saipan to the other CNMI municipalities.

The ports of Tinian and Rota are 22- 24 feet and 16-22 feet respectively. The DoD began a multi-year project to improve facilities and infrastructure at the Tinian Port.

There are no runways, harbors, or ports in the Northern islands. A grant in 2022 provided funding for a mooring buoy to be constructed in the Municipality of the Northern Islands.

**7) Tourism**

Tourism for the next 2-5 years is expected to be between 350,000-500,000 visitors annually. The CNMI is slowly recovering tourism that declined during the 2019-2022 COVID pandemic. Visitor arrivals in 2018 (pre-pandemic and pre-Yutu) were 607,593 people. Most tourists are thought to remain in the CNMI for 3-5 days.

**8) Military Activity**

Saipan, Rota, and Tinian all have military influences; however, the municipality of Tinian tends to have proportionally more military activity than Saipan or Rota.

Tinian is expected to receive changes in the number of military personnel on the island. The solid waste generation figures and the solid waste handling requirement for the proposed military action on Tinian were most recently reported in a solid waste study “FINAL (VERSION 4), COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS JOINT MILITARY TRAINING SOLID WASTE STUDY”. This study was released in August 2014. Data in this report identified 3-4 tons per day of solid waste (average over 1 year) to be generated by the proposed military training.

A new or updated Commonwealth Joint Military Training (CJMT) Solid Waste Study and/or an updated CJMT EIS/OEIS is expected in the fall of 2024. This new solid waste data would be part of the “Current Proposed Training Concept 2.0” which is fundamentally different than the work presented in 2014.

## VIII. Shared Circumstances and Strategies in the West Pacific

### A. Small Island Developing States (SIDS) and Pacific Island Countries and Territories (PICTs)

Several reports investigating waste management systems within SIDS/PICTs found issues that were common in each off the islands, these can be consolidated into the following categories:

- Economic issues – cost-effective systems and/or services that are financially stable.
- Integrated communication/stakeholder engagement- specifically through a comprehensive consultative and participatory approach.
- Infrastructure – sites, buildings, and equipment.
- Data - including data showing historical trends.
- Policy/laws – requirements and systems providing both incentives and disincentives.
- Training (capacity building).
- Off-Island Markets - recycling experiences high transport costs, which exceed the current value of most recyclable materials.

Although not defined as a specific "system" the development of a personal and corporate responsibility for waste segregation and minimization (behavior change) was also identified as very important. This thought also included "buy in" of a shared vision and plan.

This Plan attempts to recognize the system challenges unique to PICTs.

# B. Solid Waste Management Data – CNMI, USA, Pacific Islands

## I. CNMI MSW Tonnage and Per Capita Generation Rate Estimates

### 1) Availability/Limitations of Data

The depth and breadth of the CNMI's data collection efforts related to solid waste management (commercial, residential, institutional, and industrial sources) is limited to scaled data at two locations on Saipan. Scaled data at the Lower Base Transfer Station and scaled data at the Marpi Landfill in addition to the scaled data from brokers/processors handling recyclables from the Lower Base Transfer Station constitute the foundation for most solid waste data. Data from broker/processors is captured from invoices (which include original bills of lading).

The scales at Lower Base and Marpi have had recent (2023) malfunctions, consequently data in this fiscal year will be calculated from both scaled data and volume estimates taken at the scale houses and then converted to tons. Rota and Tinian do not have scales at their dump sites and staffing limitations currently make daily volume estimates difficult to obtain.

Rota and Tinian operators provided 2-4 weeks of volume estimates in 2023 for waste being received at their landfills. This data was gathered after the teams on Rota and Tinian received specific volume estimating training from OPD staff. The training attempted to gather consistent data between the two locations.

There is no specific data in the CNMI regarding recycling participation rates (the percentage of businesses or households engaging in recycling cardboard, paper, bottles, cans, electronics, etc.). There is no specific data in the CNMI about commodity specific per capita generation or recycling participation rates for tires, e-waste, white goods, or derelict cars. Commodity specific generation rates are extrapolated from average weights per unit divided by total tons, this unit figure is then divided by the total population. Although these numbers are best estimates – they provide some figures for planning purposes.

### 2) MSW Tons - Other Places

**<u>Around the World</u>**

The report, **"What A Waste 2.0 – A Global Snapshot of Solid Waste Management to 2050**" published by the World Bank estimates that over 90% of waste in low-income countries is openly dumped or burned with poorly managed wastes clogging drains, waterways and creating various health hazards.

"Countries that advance from open dumping and other rudimentary waste management methods are more likely to succeed when they select locally appropriate solutions. Globally, most waste is currently dumped or disposed of in some form of a landfill. Some 37 percent of waste is disposed of in some form of a landfill, 8 percent of which is disposed of in sanitary landfills with landfill gas collection systems. Open dumping accounts for about 33 percent of waste, 19 percent is recovered through recycling and composting, and 11 percent is incinerated for final disposal."

"Waste management can be the single highest budget item for many local administrations in low-income countries, where it comprises nearly 20 percent of municipal budgets, on average. In middle-income countries, solid waste management typically accounts for more than 10 percent of municipal budgets, and it accounts for about 4 percent in high-income countries."

"Based on the volume of waste generated, its composition, and how it is managed, it is estimated that 1.6 billion tonnes of carbon dioxide (CO2) equivalent greenhouse gas emissions were generated from solid waste treatment and disposal in 2016, driven primarily by open dumping and disposal in landfills without landfill gas capture systems. This is about 5 percent of global emissions. Solid waste–related emissions are anticipated to increase to 2.6 billion tonnes of CO2-equivalent per year by 2050 if no improvements are made in the sector."

See https://openknowledge.worldbank.org/entities/publication/d3f9d45e-115f-559b-b14f-28552410e90a

**Other Pacific Islands:**

Pacific Islands with much smaller economies were calculated 18-20 years ago to generate about 0.4 to 2.4 lbs/person/day.

The research showed economic activity and urbanization positively correlated with higher waste generation rates; meaning, the more economic activity and/or urbanization the more garbage is produced.

**USA Mainland:**

According to the EPA website, "Per capita MSW generation increased from 4.5 pounds per person per day in 2017 to 4.9 pounds per person per day in 2018."

"Paper and paperboard products made up the largest percentage of all the materials in MSW, at 23.1 percent of total generation."

### 3) MSW Tons – Saipan

The Marpi Landfill and the Lower Base Transfer Station combined to receive 32,205 tons of MSW in fiscal year ending September 2022.

Recycling activities diverted 775 tons leaving 31,431 tons landfilled. Other recent tonnage data is presented in Table 5.

*Table 5 Monthly MSW Tonnage Comparison 2020-2022 (Marpi Landfill - Saipan)*

| MONTH | FY 2020 | FYE 2021 | FYE 2022 |
|---|---|---|---|
| **October** | 3,642.00 | 2,794.00 | 2,575.00 |
| **November** | 3,261.00 | 2,306.00 | 2,193.00 |
| **December** | 3,064.00 | 2,753.00 | 2,036.00 |
| **January** | 3,156.00 | 2,343.00 | 2,829.00 |
| **February** | 2,879.00 | 2,086.00 | 2,524.00 |
| **March** | 2,445.00 | 2,357.00 | 2,555.00 |
| **April** | 1,752.00 | 2,726.00 | 2,977.00 |
| **May** | 2,798.00 | 2,846.00 | 3,145.00 |
| **June** | 2,465.00 | 2,528.00 | 3,022.00 |
| **July** | 2,417.00 | 245.00 | 2,424.00 |
| **August** | 2,642.00 | 2,668.00 | 2,796.00 |
| **September** | 2,284.00 | 2,379.00 | 3,125.00 |
| | | | |
| **Total Tons Received** | 32,810.38 | 30,241.41 | 32,205.73 |
| **Total Revenue** | $ 1,145,164.59 | $ 1,011,485.24 | $ 1,007,052.06 |
| **Avg. Tip Fee*** | $ 34.90 | $ 33.45 | $ 31.27 |

**Tipping fees may vary as some materials and some generators (government offices) are charged different rates.*

### 4) Saipan - MSW Tonnage Decline after COVID

In fiscal year ending September 30, 2018, Marpi Landfill received 43,143 tons of which 4,569 tons were recycled. This was before COVID was identified and before Typhoon Yutu. These 4,569 tons of recycled materials were identified as backfill material from construction activity on Saipan. After subtracting the backfill, 38,574 tons of MSW were landfilled.

The total waste landfilled in 2021 compared to total waste in fiscal year ending 2018 showed a 21.6% reduction in tons landfilled in 2021. During this same period, waste labelled "Construction and Demolition" (C&D) debris decreased from 4,075.3 tons in 2018 down to 1,649.15 tons in 2021 - a decrease of 59.5%. The 2020 census showed a 12% decline in population from 2010 to 2020 and tourism was reduced to less than 10,000 annual arrivals. Population decline, a significant decline in tourists plus the accompanying economic slowdown attributed to Yutu and COVID were likely the three significant contributors to the reduction in solid waste received at Marpi between 2018 and 2021.

### 5) Estimated MSW Tons – Tinian and Rota

For this report, the per capita generation for the resident population of Tinian and Rota will be the same as the per capita generation rate on Saipan (3.8 lbs/person/year). Saipan has a much larger and more diverse economy than Tinian or Rota but scaled solid waste data is not available on these two islands.

Tinian is estimated to generate 1,400 tons per year or 3.8 tons per day. Rota is estimated to generate 1,300 tons per year or 3.5 tons per day.

*Table 6 Annual Tonnage Estimates – Saipan, Tinian and Rota*

| | Tons per Year | Tons per Day | Vehicles per Day |
|---|---|---|---|
| **SAIPAN** | 31,431 | 86 | N/A* |
| **TINIAN** | 1,400 | 3.8 | 29** |
| **ROTA** | 1,300 | 3.5 | 27** |

*The Lower Base Transfer Station received 35,556 cars in fiscal year ending 2021 representing 3,935 tons or 257 pounds per vehicle load.

**If the loads represent 257 pounds on average as they did on Saipan, then the Tinian landfill would expect to host 29 cars per day and Rota would host 27.

There is much variability in these loads/day estimates. The size of trucks and trailers, local construction/clean-up activity, 24-hr vehicle access, and many other variables make daily vehicle traffic fluctuate. However, these average vehicles per day estimates support conversations with landfill operators/spotters on Tinian and Rota; operators/spotters noted that Saturdays tend to have noticeably more traffic than weekdays.

<u>Projected Military Waste on Tinian</u>

As mentioned previously in Section III. “CNMI Background Data” subsection 8 in this Plan, a new or updated Commonwealth Joint Military Training (CJMT) Solid Waste Study and a new or updated CJMT EIS/OEIS is expected in the fall of 2024.

The previous CJMT, released August 2014, identified approximately 12.8 tons per day after the military recycled about 40% of their municipal solid waste. This tonnage was only to be generated during peak periods of training that would last 20 weeks per year. This is a conservative number (meaning it is on the “high” side”). The training periods were only expected for 20 weeks per year (or 38% of the year). Averaging this waste over 52 weeks, this

military training would generate an estimated average of 4.9 tons per day from military personnel. This is 129% of the waste expected per day on Tinian without military training waste.

**6) Estimated Northern Islands MSW Tons**

The Northern Islands has between 5 and 15 homesteaders spread across two islands. Organic waste is fed to hogs and/or composted. Non-compostable waste is burned.

Due to the nature of homesteading life and the lack of docks, cranes, or booms, deliveries of supplies are not on pallets or in large "bulk" containers. Landing craft beach on the shore and materials are off-loaded by hand via the rear ramp.

Supplies like 50 lb bags of rice or drums of fuel must be of- loaded by hand while the ship is beached. Those living on the Northern Islands containers used for food packaging are often re-used as supplies are often limited.

During inclement weather the ship may not be able to beach; then supplies are delivered / people and commodities are picked up using smaller skiffs or more creative solutions.

Northern Island homesteaders are thought to produce less than 0.5 pounds per day of non-organic waste. Larger bulk items, such as fuel drums, are off-loaded by hand, returned to Saipan via ship, and re-used.

The re-establishments of homesteading on Pagan could increase the number of homesteaders by 20 or 30.

Recently cruise ships from Australia have made daytrip stops to Pagan. All waste from tourists are returned to the ship.

**7) CNMI and USA Waste Generation Rates (Saipan, Tinian, Rota Combined)**

The CNMI generated approximately 4 lbs/person/day - using the population of Saipan in 2020 (43,385 people) and the FY 2022 landfill data.

The US mainland is estimated to generate about 4.9 lbs/person/day.

*(Please note: It is very difficult to compare generation rates from one country to another or the CNMI to the US mainland since the calculations may exclude different categories of waste.)*

## 8) CNMI Tourism – Estimated MSW Generation Rates

The CNMI experienced over 600,000 arrivals in FY 2017-2018; arrivals in 2021 were reduced to less than 10,000 people due in large part to international travel restrictions implemented during COVID 19. Additionally, typhoon Yutu (October 2018) contributed to decreased tourism in the CNMI.

Estimating waste generated by tourists is a difficult figure to capture; however, some researchers have estimated tourism to generate 2.4 – 3.7 lbs/visitor/day*. The 2.4 -3.7 lbs/visitor/day is less than the per capita generation rate calculated for Saipan in 2022 (approximately 4 lbs/person/day).

Besides pounds per day, length of stay and the type of activities the tourists participate in are other significant variables affecting tourism solid waste generation rates.

If visitors are assumed to be 200,000 people/year and visitors are assumed to stay 3 days while generating 3.7 lbs/person/day, then the total tons would be approximately 1,100 tons per year or 3-4% of the total waste received at the Marpi Landfill in 2022.

** Estimates from http://www.urban-waste.eu/wp-content/uploads/2017/08/D2.1-Literature-Review-on-Urban-Metabolism-Studies-and-Projects.pdf , Pg. 74/127*

## 9) CNMI Public School System – Estimated MSW Generation Rates from Foodservice on Saipan

The Saipan Public School System (PSS) enrolled 9,430 students across 20 different schools and 17 Head Start Centers.

In 2023, PSS (Saipan) recycled 40 pallets of used books (approximately 40 tons), 1,913 used electronics, and scrap metal at the Lower Base Transfer Station.

The Mariana Island Nature Alliance (MINA) researched the total number of meals provided per school year in the Saipan Public School System for the 2021-2022 school year. MINA's research did not include private schools.

MINA calculated that 3,392,820 meals are served per school year. See Table 7 "Saipan Public School System Foodservice.

*Table 7 Saipan PSS Foodservice*

| | Daily | Per Week | Per School Year |
|---|---|---|---|
| **Distribution of Meals and Snacks (breakfast, lunch, and snacks)** | 18,849 sets | 94,245 sets | 3,392,820 sets |

These meals consisted of the following waste items:

- Meal container and lid
- Fruit container and lid
- Forks and spoons with wrappers
- Plastic water bottle with cap and wrap
- Milk carton with straw and straw wrapper
- Snack wrappers
- Data provided by Micronesia Island Nature Alliance (MINA)
- Nine (9) elementary schools and eleven (11) secondary Schools (Middle Schools, Jr. Highs, and High Schools)

**10) CNMI Tires – Recycled Quantities and Estimated Generation Rates**

In Fiscal Year ending 2022, the Lower Base Transfer Station received 190.82 tons of which 3.59 were tires with rims. In Fiscal Year ending 2021 Lower Base received 193.66 tons of tires. If the 2022 tonnage is assumed to represent one year's worth of generation, and an assumption is made that the average vehicle tire is 25-27 pounds, then the CNMI generates about 0.3 tires per person per year.

The USA mainland generates about 1 tire per person per year – but it is thought that those on the mainland drive significantly more miles per year than those living in the CNMI.

Tires are currently marketed to facilities in Asia that burn the tires for energy.

**11) CNMI Used Electronics – Recycled Quantities and Estimated Generation Rates**

The Lower Base Transfer Station received 25.89 tons of used electronics in fiscal year ending September 30, 2022. If this amount can be assumed to be one year of e-waste generation, then Saipan (acting as a surrogate for data in the entire CNMI) generates about 1.2 pounds of e-waste per person per year. This data requires closer monitoring as the EU reports significantly higher e-waste generation rates.

In 2023 the EU stated that, “E-waste is one of the fastest growing waste streams in the EU…”.

E-waste (AKA Used Electronics) is a waste category not as much discussed as say scrap metal or tires. The growth of e-waste can be attributed in part to rapid changes in technology and standards rendering some items obsolete. For example, 20 years ago, flat screens dropped in price enough to begin domination in the marketplace; this drop in price led to a swap from one technology (cathode ray tube screens [CRTs]) to another (flat screens). In 2023, flat screens are being swapped for “smart” televisions with Internet access and other connectivity. The wholesale exchange of older televisions and computer screens from cathode ray tube (CRT) technology continues today especially in the hospitality industry. As prices drop and technology increases there is a steady stream of e-wastes generated in the CNMI. The lack of re-use store also creates no donation/re-sale access for usable electronics.

In the EU, large household appliances, such as dryers, washing machines and stoves, are the most collected, making up more than half of all collected e-waste. This is followed by consumer equipment like video and music equipment and solar panels, then IT and telecommunications equipment (laptops, printers), and small household appliances (vacuum cleaners, toasters, and fans). This data is from the European Union (https://www.europarl.europa.eu/resources/library/images/20201210PHT93524/20201210PHT93524_original.jpg).

Marketing E-waste from the CNMI requires the e-waste to be handled gently as recyclers are after useable parts. Additionally, keeping used electronics dry (out of the rain) increases the marketability of these items. Currently e-waste is marketed to brokers in Korea.

## 12) CNMI Derelict Vehicles - Recycled Quantities and Estimated Generation Rates

Cars are abandoned in the CNMI for several reasons. They are either abandoned as people leave the island or because they are unable to replace the parts that make it operable again. Sometimes, people purchase "project" vehicles assuming they would be able to get it in an operable state, but then either do not find the parts or realize that it's more costly to do so. This leads to broken-down cars being left abandoned around the islands as owners do not have the means to pay such high costs of movement for said broken down "project" vehicles into the scrap yard.

The Office of the Mayor of Saipan works with the CNMI Zoning Office to identify and remove derelict or “junk” cars; which removed and salvaged 128 cars in the first four months of 2023. These cars were taken to a local salvage yard.

The total number of derelict vehicles on Saipan is unknown but is estimated to be in the “1,000s”.

Based on field observation, Rota and Tinian are estimated to have at least 300-400 derelict vehicles each. These vehicles are on both public and private land. Tinian and Rota do not have permitted scrap metal yards capable of managing cars as scrap; consequently, the vehicles accumulate.

Careful draining and disassembly of vehicles is required before crushing and shipping off island; this disassembly or "draining" removes regulated chemicals and parts (antifreeze, fuel, batteries, tires, etc.).

**13) Drink Containers – Estimated Generation Rates**

In 2019, the CNMI imported 55,200,000 soft drink containers and 4,500,000 alcohol containers. The CNMI generated $831,370 of beverage container tax in 2019.

Because containers come in different sizes and materials (PET, aluminum cans, glass) and consequently different weights) it is hard to project total weight with the data the CNMI collects. For example, an aluminum beverage can weigh about 19.7 grams, a PET soda bottle weighs an average of 22.2 grams, and a beer bottle weighs 300 grams. (www.bottledwater.org/environmental-fottprint/).

If an "average weight" for beverage containers is used, then it is possible to predict that containers are 4%-6% of the total landfill tonnage in the CNMI. Additionally, plastic beverage containers are continually being light-weighted so the grams per unit figures evolve as the industry decreases the amount of plastic resin used in each container.

**14) Scrap Metal - – Recycled Quantities and Estimated Generation Rates**

In Fiscal Year 2020-2021, Lower Base Transfer Station and Recycling Center on Saipan processed 332.45 tons of scrap metal shipping 254.30 ton and retaining (in inventory) 78.15 tons.

Rota has 2,944 cubic yards of scrap metal staged at the landfill. Additionally, 690 cubic yards of white goods and 130 compressed gas cylinders (empty) are at the landfill.

Tinian recently removed approximately 420 tons of scrap metal staged at their Yutu Disaster Debris site. This material was removed by a third-party contractor in 2022 and 2023 after the pile burned. The scrap metal included metal from white goods, steel belting in tires, tire rims, metal from appliances, box springs, bicycles, and other miscellaneous scrap metal.

## 15) Organics – Estimated Staged Cubic Yards and Generation Rates

### Saipan

Over 6,000 cubic yards staged at the now closed yard waste collection site near the Saipan International Airport.

The Marpi Landfill has over250 cubic yards of green waste staged at the “back 40”.

### Tinian

Approximately 660 cubic yards of yard waste is staged near the permitted Tinian Green Waste Processing Center.

### Rota

The Rota Landfill has about 1,950 cubic yards of green waste staged. The permitted Rota Green Waste Processing Center has about 50-100 cubic yards of green waste staged, most of which came from the 2023 Typhoon Mawar.

## II. Other Materials in the CNMI

**Hazardous Waste:**

The CNMI DEQ Hazardous and Solid Waste Management Branch regulates hazardous wastes generated within the CNMI. The Division adopted the 1984 federal hazardous waste regulations under RCRA including the adoption of its hazardous and solid waste amendments and updates. The CNMI hazardous waste regulations follow the RCRA regulations which give the USEPA the authority to control hazardous wastes including its generation, transportation, treatment, storage and disposal of hazardous wastes.

Hazardous wastes from industries, factories, hospitals, schools and other institutions as well as government offices are regulated by CNMI through the BECQ Toxic Waste Management Branch permitting processes. The Branch handles the enforcement and compliance inspections of generators of Used Oil and Hazardous Waste as defined by BECQ.

There are an estimated 70-80 generators of hazardous waste within the CNMI. The majority of these generators are very small quantity generators or small quantity generators. Hazardous waste generators communicate directly with certified hazardous waste contractors to meet disposal requirements. The CNMI does not have a disposal facility; therefore, all hazardous waste generators must procure disposal services off-island.

**Wastewater Treatment Sludge:**

One of the categories of solid waste sources from the CNMI is sewage sludge from its wastewater treatment plants and septage from septic tanks. The CNMI's Comprehensive Integrated Solid Waste Management Plan (CISWMP) includes the promotion of waste diversion from the Marpi Landfill on Saipan and the landfills of the other islands through technologies such as the development of composting systems.

The Commonwealth Utilities Corporation (CUC), a state government corporation, operates the water and wastewater services on the three main islands of Saipan, Tinian, and Rota. Only Saipan provides wastewater treatment from two facilities, Sadog Tasi (5.2 mgd) and Agingan (3.0 mgd). Rota and Tinian rely exclusively on septic systems and lagoons. However, Tinian Is preparing a feasibility study for its own WWTP at present.

The two Saipan facilities are in the process of getting upgrades (Screw Presses) to return them to their original condition when they were first built. The full design capacity of the two plants are not completely utilized at present. The plants' operating range vary from 30% to 50% of their capacity. For the planning period of five (5) years, it is estimated that reaching 60% to 70% of capacity would be an achievable goal depending on the scale of rehabilitation the plants can reach and the growth of population In the next 5 years. The current plans are to gradually

expand with new modular technology sites to the North end of Saipan (incorporating surface aeration technology) where in-filling sites will be targeted for added treatment capacity.

The WWT Plant discharges are presently permitted to the National Pollution Discharge Elimination System (NPDES) as follows:

1) **Sadog Tasi WWTP Sludge Management (5.2 MGD)**

WWTP discharge permit: NPDES Permit MP0020010

- Effective on Aug. 1, 2023
- Permit re-application Feb. 2028
- Permit expires: July 31, 2028 (submit a new application at least 180 days before expiration of the permit

Permit re-application in compliance with the provisions of the Clean Water Act (Public Law 92-500, as amended, 33 U.S.C. §§ 1251 et seq.)

2) **Agingan WWTP Sludge Management (3.0 MGD)**

WWTP discharge permit: NPDES Permit MP0020028 issued on November 1, 1999
Subject to federal secondary treatment review prior to renewal

The CISWMP integrates the planning for composting systems as a means to waste diversion – from the household level to the municipal level. Data/information about CUC's systems and processes of sludge management (for de-watered cake composting as well as the destination of septic sludge pumping) shall be continuously compiled to assess the viability of the options available for composting or some other useful product like organic fertilizer. Data obtained from CUC key personnel indicated that the Plants are operating much below the capacities at between 30% -50% of capacities established from way back during the peak of the garments industry. On average, it has been observed that a well-operated dewatering process can typically achieve a solids content of around 15% to 35% in the dewatered sludge cake. However, the number of solids generated from a sewage sludge dewatering process can vary widely depending on several factors, such as the characteristics of the incoming sludge, the dewatering method used, and the efficiency of the process.

These values are general estimates, and the actual solids content can vary significantly based on the specific circumstances and technologies employed at a wastewater treatment facility. The goal of the dewatering process is to reduce the moisture content in the sludge and increase the concentration of solids, making it more manageable for disposal or beneficial reuse. Actual results will depend on the efficiency of the dewatering equipment and the characteristics of the sludge being processed. As a general rule, for every 100 pounds (or approximately 0.05 tons) of incoming wet sewage sludge, you might obtain 15 to 35 pounds (or approximately 0.0075 to 0.0175 tons) of dry solids. Data from septage or sludge from septic tanks have not been

available but can be compiled by CUC based on their service records and estimated separately as special waste for possible recovery as compost. Depending on their properties after treatment, these can be evaluated as possible organic fertilizer for plants and other vegetation.

On Saipan, the CUC has not hauled sludge to the Marpi landfill on a regular basis since 2018 but since the current improvements of the treatment facilities are being carried out, it is anticipated that the haulage will continue in the coming years. With the improvements planned to start in 2022-2023, the two (2) Wastewater Treatment Plants in Sadog Tasi and Agingan should have notable improvements in operations starting in 2024 and shall be expected to regularly haul treated sewage or biosolids to facilities that may considered as additional resources for compost waste recovery.

**Agricultural Waste:**

Agriculture involving vegetable and fruit crop production in the CNMI is not known to generate organic waste streams of any consequence. The permitted and proposed green waste processing sites on the three most populated islands are expected to assist farmers with organic debris management.

**Pollution Control Waste:**

Pollution Control waste is not a significant contributor to the MSW waste stream in the CNMI. The CUC burns diesel fuel in generators to produce power. CUC produces used oil from the generators, but it is burned as a fuel.

**Mining Waste:**

Although there are quarries (open pit) mines on the three primary islands of the CNMI, mining waste is not thought to be a significant contributor to the solid waste management stream. Some of the Northern Islands have had pozzolan mining operations and these old defunct mining operations left some derelict equipment behind. There is no inventory of this derelict equipment.

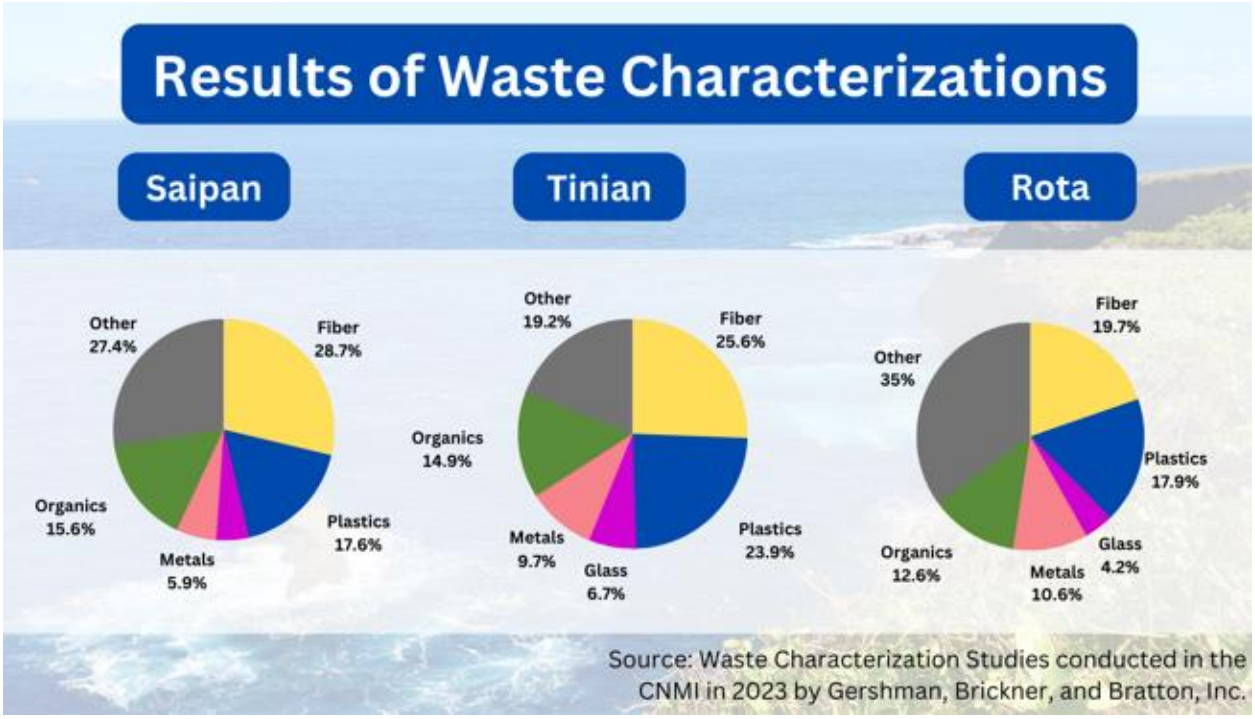
## III. Waste Characterization Data

### 1) CNMI

A waste characterization study was completed on Saipan as part of the December 2019 CNMI Department of Public Works Solid Waste Management Feasibility Study. A second waste characterization study was completed on Saipan, Tinian, and Rota in April 2023.

The CNMI 2023 Solid Waste Management Study performed by GBB is in Attachment 4. This study provides a detailed explanation of the methodology used to collect the CNMI waste characterization data as well as a narrative on the data for each municipality.

*Chart 1 – Results of 2023 Waste Characterization: Saipan, Tinian, Rota*




Generally, The Small sample on Rota had a disproportionate amount of Rubber and textiles which likely drove the remaining categories.

Looking at the figures for Tinian and Rota 25.6% to 28.7% of the waste stream is “fiber” (paper and cardboard, with another 14.9% to 15.6% “Organics”. From this data, 40%-45% of the waste in the landfill would compost. This amount is lower than the USA mainland. This difference is

likely due to socio-economic reasons and the prevalence of a strong food diversion program centered on diverting food for animal (pig) feed.

**2) USA Mainland**

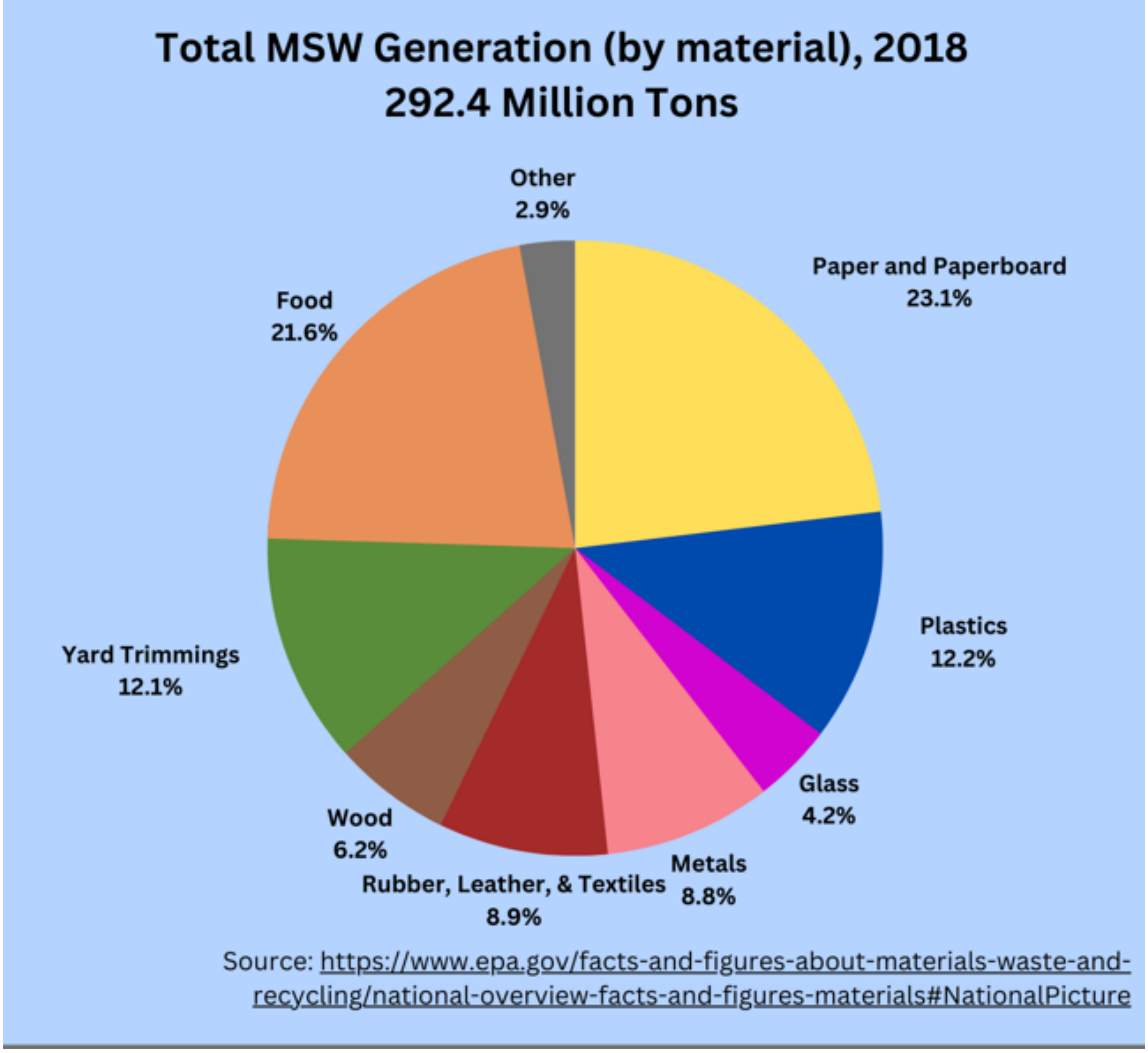
Paperboard in the USA was 23.1% and "Other Organics" including Food (21.6%), Wood (6.2%), and Yard Trimmings (12.1%) was and additional 39.9% for a total organics at 63%.

In comparison, the CNMI's "Other Organics" was significantly lower at about 15%.

*Please see the US EPA website at:*

*https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/us-state-and-local-waste-and-materials*

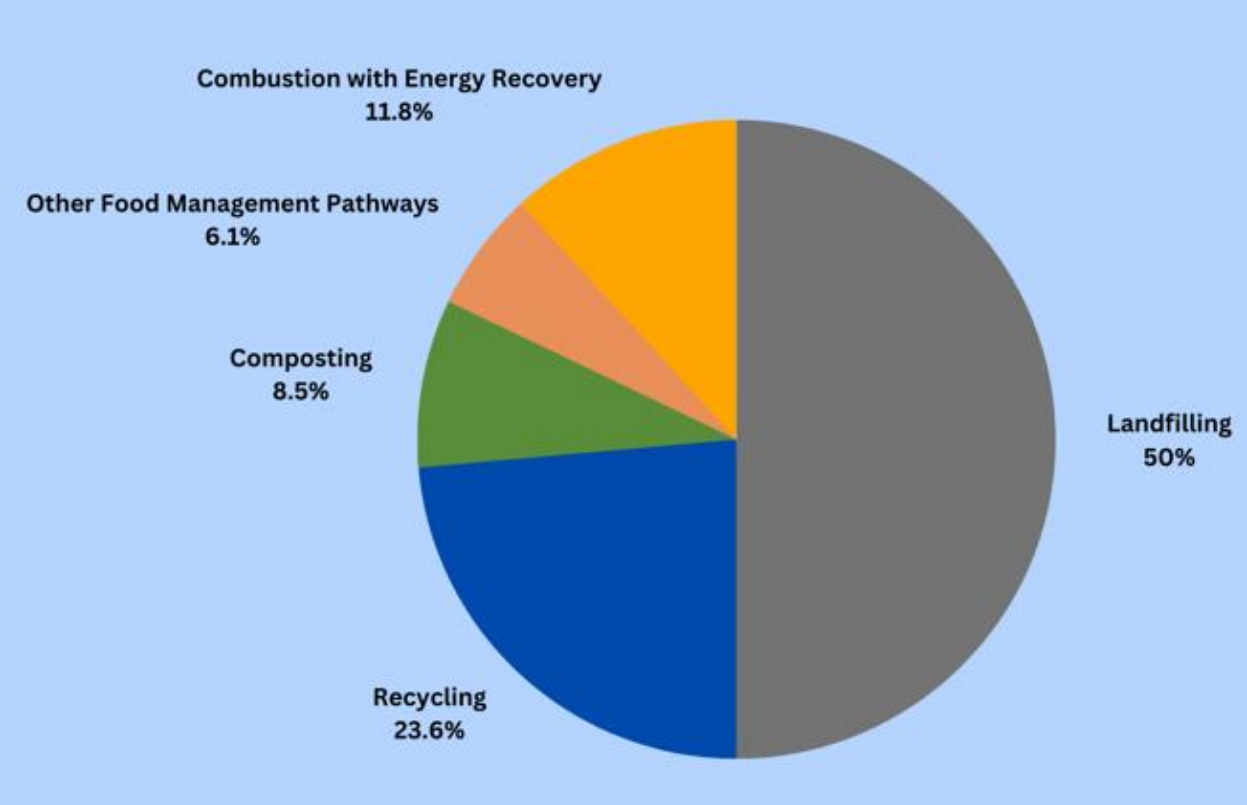
*Chart 2 – United States MSW Generation (Source USEPA)*




**General Overview of Solid Waste Management Systems in the USA**

The USA used landfilling and combustion for energy systems to manage approximately 61% of Municipal Solid Waste (derelict automobiles and heavy equipment, disaster debris, construction and demolition debris, biohazardous wastes, and hazardous waste, are not counted in this estimate) in 2018. See Chart 1 – "Solid Waste Management Systems in the USA Mainland - 2018" below.

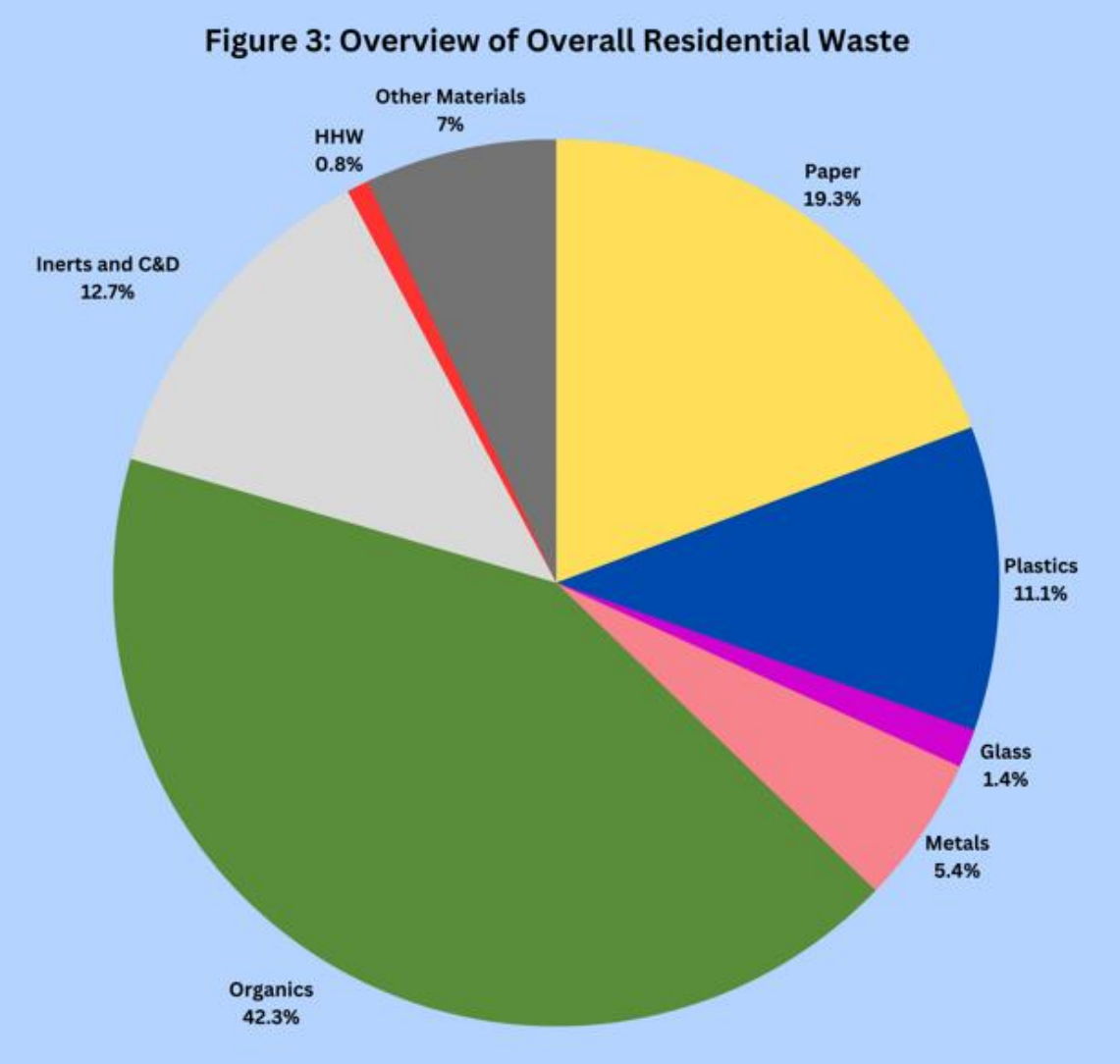
*Chart 3 – Solid Waste Management Systems in the USA Mainland - 2018*




**3) Hawaii**

The 2017 Hawaiian residential waste characterization study also showed an organics portion at 61.6% which is very close to the USA average for organics at 63%. Hawaii showed paper and paperboard at 19.3%. The USA paperboard amount was 23.1% and the CNMI paper and paperboard was 25-28%. Pie Chart is from Hawaii Residential Waste – 2017.

*Chart 4 – Hawaii Residential Waste - 2017*




**4) A Note on the Limitations of Pie Charts**

*Regarding charts and their use: Pie charts are created during waste characterization studies based upon weight – they have an inherent weight bias; materials that are lighter by nature have lower figures even though the volume might be much higher, conversely heavier materials like metal and glass become elevated. It is possible that the overall composition of plastic in a modern landfill might be much higher based on a volume conversion.*

*Additionally, pie graphs are not intended to display progress over time – they show relative composition or proportions of a whole. For example, reducing cardboard at a landfill by 80% will reduce the cardboard pie slice but other slices will increase so the pie equals 100%.*

*Since Pie graphs may not show specific changes related to reduced overall waste received, clustered bars might be better used to show values across categories using two sets of data collected over time (multiple series of data).*

# C. CNMI – Existing Waste Management System

## I. Overview of Current CNMI Waste Management Systems

### 1) Overview of Current CNMI Solid Waste Management Systems

Based on scaled data from Marpi and the Lower Base Transfer Station, in fiscal year 2021-2022 the CNMI used landfilling systems to manage approximately 85% of municipal solid waste generated.

Derelict vehicles, derelict heavy equipment, scrap metal, disaster debris, biohazardous wastes, household hazardous waste, and hazardous waste, are not used in this CNMI estimate.

Recycling system "maturity" varies in the CNMI, with many programs in the very earliest development stages.

There is no curbside collection of recyclables in the CNMI from residential homes. The municipalities do not have mandatory, or "universal" garbage collection". There are no landfill material bans in the CNMI.

Specific facility information within each municipality is located in Section II. "CNMI Existing Solid Waste Management Facilities" below.

A Note on School-generated Solid Waste (Saipan)

MINA reviewed eleven secondary schools and nine elementary schools on Saipan in February 2022 for a review of the total packaging wastes generated, specifically from meal distribution. MINA identified 94,245 sets of meal containers distributed per week (3,392,820 per school year). These meal containers used 14 separate items including containers, plastic wraps, lids, cartons, caps, and bottles.

### 2) CNMI Food Collection / Animal Feed Systems

The Commonwealth's food waste diversion program for swine has existed for many decades with food waste being diverted for hogs in Rota and Tinian.

There is currently no centralized data collection regarding food waste diversion.

The following information was obtained in September 2023 from one individual with first-hand knowledge of the animal feed / food waste recovery process on Saipan.

SAIPAN – Animal Feed Collections

Hotel A - 80 gallons per day Monday-Saturday and 200 gallons per day on Sunday, or 680 gallons per week. At 3.8 pounds per gallon the food waste is approximately 2,584 pounds per week, or 67 tons of food waste diverted per year.

Hotel B – 200 gallons per day Monday-Saturday and 160 gallons per day on Sunday, or 1,360 gallons per week. At 3.8 pounds per gallon the food waste is approximately 5,168 pounds per week, or 134 tons of food waste diverted per year.

Hotel C - 120 gallons per day or 840 gallons per week. At 3.8 pounds per gallon the food waste is approximately 3,192 pounds per week, or 83 tons of food waste diverted per year.

Restaurant A - 40-50 gallons per day or 280-350 gallons per week. At 3.8 pounds per gallon the food waste is 1,064-1,330 pounds per week or about 36 tons of food waste diverted per year.

Please note that Saipan has many additional hotels, resorts, restaurants, and golf courses that may also collect food waste; however, specific food diversion data is not available for those outlets.

Food waste diversion on Saipan for those entities listed above only totals 320 tons per year.

TINIAN and ROTA – Animal Feed Collections

- Total for Tinian is approximately 17.3 tons of food waste diverted per year.
    - Tinian High School approximately 7 gallons per day Monday-Friday (35 gallons per week)
    - Tinian Elementary - 14 gallons per day (70 gallons per week)
    - JC Cafe Tinian -10-15 gallons per day (70-105 gallons per week)
- Rota is estimated to feed approximately 50 gallons of food waste to hogs per day

A conservative estimate could be made that 600-700 tons of food waste is collected for animal feed each year in the CNMI.

### 3) CNMI Non-municipal Composting / Mulching Systems

Saipan has no permitted mulching or composting sites open to the public. However, as of September 2023, two new organic processing sites are being reviewed for permitting.

CPA has a permit to create mulch from 6,000 cubic yards of staged green waste on a piece of land near the airport. This site is permitted by the BECQ, but it is not accepting new materials.

Green waste from disaster debris may be stored at several sites in the municipalities during an emergency and/or disaster. Some green wastes generated from disasters and emergencies are often incinerated in air curtain burners.

### 4) Other CNMI Recycling Systems (not Municipal Facilities)

*Permitted facilities operated by DPW accept several source-separated materials (some materials require a per unit fee for processing and recycling). See Section II. "CNMI Existing Solid Waste Management Facilities" below. Currently, Rota does not have a public or private recycling center.*

Private recycling companies on Saipan, Tinian and Rota accept vehicle batteries and scrap metal.

Private recycling companies on Saipan accept derelict vehicles and derelict heavy equipment on a case-by-case basis. There are no businesses on Tinian or Rota accepting derelict vehicles for scrap.

A short-term recycling program – the 2023 beverage container buy-back program - recycled thousands of aluminum cans.

MINA sponsors recycling bins at several outdoor gathering areas (beaches).

Public and private entities work to clean beaches and public areas throughout the CNMI.

### 5) CNMI Incineration and Burning Systems

The CNMI has one MSW incinerator operated by the Commonwealth Port Authority (CPA).

CPA incinerated approximately 40,000 pounds in 2022 and approximately 70,000 pounds in the first 10 months of 2023.

Currently, there are three permitted used oil commercial burners in the CNMI. Two are located on Saipan and one on Tinian. Yearly permits are coordinated with BECQ.

## 6) Landfilling Tipping Fee System Overview

The CNMI relies on landfilling for 85-90% of all materials generated in the Commonwealth.

CNMI Administrative Code Subchapter 155-30.1 describes the allowable Tipping Fees in the CNMI. This Subchapter was last updated with amendments Apil 28, 2019.

A note on inflation: According to the Bureau of Labor Statistics (see) One dollar ($1) has the same buying power as $1.83 in July 2023. If the commercial tipping fee is $37.50 per ton in July 2023, then a tipping fee keeping up with inflation would be $44.86 per ton. This "lost" $7.36/ton equates to approximately $240,000 in 2023.

The figures above are for CPI for regular consumer goods.

The charts below from the Bureau of Labor Statistics https://beta.bls.gov/dataViewer/view/timeseries/PCU236500236500;jsessionid=4F6663129FD029420313A8DC70460007 ) shows a more dramatic price increase through 2023 for non-residential building construction.

*PPI Industry data for New nonresidential building construction by region, not seasonally adjusted*

*New nonresidential building construction by region*


Inflationary influences have an impact on operating budgets and construction costs. Administrators and support staff (engineers and planners) must be aware of inflationary pressures changes when developing budgets for projects.

The Subchapter states, *"The tipping fees for Commonwealth solid waste facilities not equipped with operable vehicle scales are based on base fee rates of approximately $37.50 per ton for municipal and household waste, $70.00 per ton for garment waste, and standard volumetric solid waste conversions of 250 lbs/cu yd for uncompacted waste and 500 lbs/cu yd for compacted waste. For loads above 2 cubic yards, the charges above will be imposed based on the capacity of the vehicle regardless of whether it is fully loaded or not. The tipping fees for Commonwealth solid waste facilities equipped with vehicle scales are based on base fee rates of $37.50 per ton for municipal and household waste, $70.00 per ton for garment waste. Separate fees shall be assessed for a trailer and the vehicle towing it if both the trailer and the towing vehicle are carrying solid waste."*

The Subchapter does not have information to adjust for inflationary pressures.

The Subchapter does provide a single "minimum fee" for pick-up trucks or other passenger vehicles carrying less than one cubic yard, 1-2 cubic yards, and 2-4 cubic yards.

Although the Subchapter has a separate fee for garment waste, this specific waste stream has ceased to be a significant contributor to the Marpi landfill in the late 2000s since the World Trade Organization's (WTO) Agreement on Textiles and Clothing 10-year transitional program began in 1995 and ended in 2005. The WTO was in turn influenced by the General Agreement for Tariffs and Trade (GATT).

The sections referring to pre-purchased coupons are also not used at Lower base or Marpi.

## II. Saipan - Existing Solid Waste Management Facilities

**Saipan – Existing Solid Waste Management Facilities – Summary of Services**

*Table 8 Lower CCC and Recycling Center (AKA Lower Base Transfer Station) Summary of Services*

| | | | |
|---|---|---|---|
| **NAME** | Lower Base Transfer Station | | |
| **OPERATOR** | DPW | | |
| **LOCATION** | Lower Base Saipan | | |
| **YEAR BUILT** | | | |
| **INITIAL COST** | | | |
| **ANNUAL BUDGET** | | | |
| **REVENUE SOURCES** | | | |
| **BENCHMARK A** | Small Vehicles per Year: | | |
| **BENCHMARK B** | Tons of MSW per Year: | | |
| **BUILDINGS** | Transfer Station Bays | Main Office/Recycling | Scalehouse |
| **GROUNDS** | Acres: 10, wetlands nearby | | |
| **EQUIPMENT** | Baler (2) | Roll-off Containers (3) | Generator |
| | Baler | Generator | Roll-off Trucks (2) |
| | Baler | Generator | Scales |
| | Tire Shredder | Glass Crusher | |
| **PERSONNEL** | 12 FTE (DPW), 2 FTE (OPD) | | |
| **MATERIALS ADDRESSED** | ***Scrap Metal*** | ***Plastic Containers*** | ***Tires*** |
| | ***Appliances*** | ***Metal Containers*** | ***Used Electronics*** |
| | ***Cardboard*** | ***Glass Containers*** | ***HHM*** |
| | ***MSW*** | ***Books/Paper*** | ***Used Motor Oil*** |
| | ***Vegetable Oil*** | ~~Surplus Equipment~~ | ~~Vehicle batteries~~ |
| | ~~Autos~~ | ~~Confidential E-Media~~ | ~~Organic Waste~~ |
| | ~~C&D~~ | ***Dimensional Lumber*** | ***Bulky Items*** |
| **SOLID WASTE SOURCES** | ***Residential*** | ***Commercial*** | ***Institutional*** |
| | ~~Hazardous Waste~~ | ~~Wastewater Treatment Sludge~~ | ~~Pollution Control Residual~~ |
| | ~~Industrial Wastes~~ | ~~Mining Wastes~~ | ~~Agricultural Wastes~~ |
| | ~~Water Treatment Sludge~~ | ~~Septic Tank Pumpings~~ | |
| **SOLID WASTE ASPECTS** | ***Resource Conservation*** | ***Source Separation*** | ~~Collection~~ |
| | ~~Transportation~~ | ***Storage*** | ***Transfer*** |
| | ***Processing*** | ~~Treatment~~ | ~~Disposal~~ |
| | | | |

*Table 9 Marpi Landfill – Summary of Services*

| | | | |
|---|---|---|---|
| **NAME** | Marpi Landfill | | |
| **OPERATOR** | DPW | | |
| **LOCATION** | Marpi Point - Saipan | | |
| **YEAR BUILT** | 2002 | | |
| **INITIAL COST** | Site Development with Cell 1 | | |
| **ANNUAL BUDGET** | | | |
| **REVENUE SOURCES** | Tipping Fees, Beautification Tax, General Funds | | |
| **BENCHMARK A** | Expected years left in all designed cells: | | |
| **BENCHMARK B** | Tons of MSW per Year: (2022) | | |
| **SIGNIFICANT UPDATES** | 2023: Cell 2 Rehabilitation with new liner and two new leachate pumps | | |
| **BUILDINGS** | Maintenance Building | Main Office | Scalehouse |
| **GROUNDS** | XX Acres, As of Sept. 2023 - placing waste in Cell 1 of 5, vegetated submerged bed, generator power only, Wood Debris and Organic Waste on top of future Cell 5 (much from Typhoon Yutu), Mattresses and Box Springs staged separately. Small vehicles drop off area. | | |
| **EQUIPMENT** | Scales | Roll-off Containers | Generator |
| | | | |
| **PERSONNEL** | Contracted Operations. 2 FTE from DPW work in the Scale House | | |
| **MATERIALS ADDRESSED** | ***MSW*** | ***Bulky Items*** | ~~Tires~~ |
| | ~~Appliances~~ | ~~Metal Containers~~ | ~~Used Electronics~~ |
| | ~~Cardboard~~ | ~~Glass Containers~~ | ~~HHM~~ |
| | ~~Scrap Metal~~ | ~~Books/Paper~~ | ~~Used Motor Oil~~ |
| | ~~Vegetable Oil~~ | ~~Surplus Equipment~~ | ~~Vehicle Batteries~~ |
| | ~~Autos~~ | ~~Confidential E-Media~~ | ~~Organic Waste~~ |
| | ~~C&D~~ | ~~Dimensional Lumber~~ | ~~Plastic Containers~~ |
| **SOLID WASTE SOURCES** | ***Residential*** | ***Commercial*** | ***Institutional*** |
| | ~~Hazardous Waste~~ | ~~Wastewater Treatment Sludge~~ | ***Pollution Control Residual*** |
| | ***Industrial Wastes*** | ***Mining Wastes*** | ***Agricultural Wastes*** |
| | ~~Water Treatment Sludge~~ | ~~Septic Tank Pumpings~~ | |
| **SOLID WASTE ASPECTS** | ***Resource Conservation*** | ~~Source Separation~~ | ~~Collection~~ |
| | ~~Transportation~~ | ***Storage*** | ~~Transfer~~ |
| | ~~Processing~~ | ~~Treatment~~ | ***Disposal*** |
| | | | |

*Table 10 Puerto Rico Dump Site – Closed Landfill – Summary of Services*

| | | | |
|---|---|---|---|
| **NAME** | Puerto Rico Dump Site, Pedro P. Tenorio Peace Park | | |
| **OPERATOR** | DPW | | |
| **LOCATION** | Marpi Point - Saipan | | |
| **YEAR CLOSED** | February 2003 | | |
| **INITIAL COST to CLOSE** | $29,000,000 | | |
| **ANNUAL BUDGET** | | | |
| **INITIAL FUNDS** | 702 CIP Funding (Department of Interior-Office of Insular Affairs) | | |
| **REVENUE SOURCES** | Beautification Tax, General Funds, CIP Funding (Department of Interior-Office of Insular Affairs) | | |
| **BENCHMARK A** | Expected years left in 30-year closure cycle: 10 | | |
| **BENCHMARK B** | | | |
| **SIGNIFICANT UPDATES** | | | |
| **BUILDINGS** | | Bathrooms | Covered Shelter |
| **GROUNDS** | 19.5 Acres, Walking Trails on three levels, concrete stormwater let down structure, armoring near water's edge for storm surge, 80 feet total height | | |
| **EQUIPMENT** | **N/A** | | |
| | | | |
| **PERSONNEL** | **N/A** | | |
| **MATERIALS ADDRESSED** | **N/A** | | |
| | | | |
| **SOLID WASTE SOURCES** | **N/A** | | |
| | | | |
| **SOLID WASTE ASPECTS** | **N/A** | | |
| | | | |

*Table 11 Kagman Composting Center – Summary of Services*

| | | | |
|---|---|---|---|
| **NAME** | Kagman Composting Center | | |
| **OPERATOR** | Division of Agriculture | | |
| **LOCATION** | Kagman - Saipan | | |
| **YEAR 1st Permitted** | (Estimated: October 2023) | | |
| **INITIAL COST** | | | |
| **ANNUAL BUDGET** | | | |
| **REVENUE SOURCES** | | | |
| **BENCHMARK A** | Loose Volume Received: Cubic Yards | | |
| **BENCHMARK B** | Finished Compost: Cubic Yards | | |
| **SIGNIFICANT UPDATES** | Site is New | | |
| **BUILDINGS** | Maintenance Building | Main Office | |
| **GROUNDS** | 1 Acre | | |
| **EQUIPMENT** | Wheel Loader | Chipper | Truck |
| | | | |
| **PERSONNEL** | 2 FTE from Division of Agriculture | | |
| **MATERIALS ADDRESSED** | ~~MSW~~ | ~~Bulky Items~~ | ~~Tires~~ |
| | ~~Appliances~~ | ~~Metal Containers~~ | ~~Used Electronics~~ |
| | ~~Cardboard~~ | ~~Glass Containers~~ | ~~HHM~~ |
| | ~~Scrap Metal~~ | ~~Books/Paper~~ | ~~Used Motor Oil~~ |
| | ~~Vegetable Oil~~ | ~~Surplus Equipment~~ | ~~Vehicle Batteries~~ |
| | ~~Autos~~ | ~~Confidential E-Media)~~ | **Organic Waste** |
| | ~~C&D~~ | ~~Dimensional Lumber~~ | ~~Plastic Containers~~ |
| **SOLID WASTE SOURCES** | **Residential** | **Commercial** | **Institutional** |
| | ~~Hazardous Waste~~ | ~~Wastewater Treatment Sludge~~ | ~~Pollution Control Residual~~ |
| | ~~Industrial Wastes~~ | ~~Mining Wastes~~ | ~~Agricultural Wastes~~ |
| | ~~Water Treatment Sludge~~ | ~~Septic Tank Pumpings~~ | |
| **SOLID WASTE ASPECTS** | **Resource Conservation** | **Source Separation** | **Collection** |
| | **Transportation** | **Storage** | ~~Transfer~~ |
| | **Processing** | ~~Treatment~~ | ~~Disposal~~ |
| | | | |

*Table 12 CPA Green Waste Mulching Site*

| | | | |
|---|---|---|---|
| **NAME** | CPA Green Waste Processing Site | | |
| **OPERATOR** | Commonwealth Port Authority | | |
| **LOCATION** | CPA land near the airport - Saipan | | |
| **YEAR 1st Permitted** | (Estimated: October 2023) | | |
| **INITIAL COST** | N/A | | |
| **ANNUAL BUDGET** | | | |
| **REVENUE SOURCES** | CPA General Funds | | |
| **BENCHMARK A** | Finished Mulch: Cubic Yards | | |
| **BENCHMARK B** | | | |
| **SIGNIFICANT UPDATES** | Site is New | | |
| **BUILDINGS** | None | | |
| **GROUNDS** | 1 Acre | | |
| **EQUIPMENT** | Wheel Loader | Chipper | Truck |
| | | | |
| **PERSONNEL** | 2 FTE from CPA | | |
| **MATERIALS ADDRESSED** | ~~MSW~~ | ~~Bulky Items~~ | ~~Tires~~ |
| | ~~Appliances~~ | ~~Metal Containers~~ | ~~Used Electronics~~ |
| | ~~Cardboard~~ | ~~Glass Containers~~ | ~~HHM~~ |
| | ~~Scrap Metal~~ | ~~Books/Paper~~ | ~~Used Motor Oil~~ |
| | ~~Vegetable Oil~~ | ~~Surplus Equipment~~ | ~~Vehicle Batteries~~ |
| | ~~Autos~~ | ~~Confidential E-Media)~~ | **Organic Waste** |
| | ~~C&D~~ | ~~Dimensional Lumber~~ | ~~Plastic Containers~~ |
| **SOLID WASTE SOURCES** | **Residential** | **Commercial** | **Institutional** |
| | ~~Hazardous Waste~~ | ~~Wastewater Treatment Sludge~~ | ~~Pollution Control Residual~~ |
| | ~~Industrial Wastes~~ | ~~Mining Wastes~~ | ~~Agricultural Wastes~~ |
| | ~~Water Treatment Sludge~~ | ~~Septic Tank Pumpings~~ | |
| **SOLID WASTE ASPECTS** | **Resource Conservation** | **Source Separation** | **Collection** |
| | **Transportation** | **Storage** | ~~Transfer~~ |
| | **Processing** | ~~Treatment~~ | ~~Disposal~~ |
| | | | |

## III. Tinian - Existing Solid Waste Management Facilities

**Tinian – Existing Solid Waste Facilities**

*Table 13 Tinian Dump Site at Puntan Diablo (AKA Nasarino)*

| | | | |
|---|---|---|---|
| **NAME** | Tinian Landfill – "Existing Dump" | | |
| **OPERATOR** | DPW | | |
| **LOCATION** | Tinian Puntan Diablo | | |
| **YEAR BUILT** | First used in the 1940s | | |
| **INITIAL COST** | N/A | | |
| **ANNUAL BUDGET** | N/A | | |
| **REVENUE SOURCES** | Beautification Tax, General Funds | | |
| **BENCHMARK A** | Small Vehicles per Year: | | |
| **BENCHMARK B** | Tons of MSW per Year: | | |
| **BUILDINGS** | Scale House | | |
| **GROUNDS** | Landfill Area and Tangantangen Forest | | |
| **EQUIPMENT** | Excavator | | |
| | Wheel Loader | | |
| | Dump Truck | | |
| | | | |
| **PERSONNEL** | | | |
| **MATERIALS ADDRESSED** | Scrap Metal | Plastic Containers | Tires |
| | Appliances | Metal Containers | Used Electronics |
| | Cardboard | Glass Containers | HHM |
| | MSW | Books/Paper | Used Motor Oil |
| | Vegetable Oil | ~~Surplus Equipment~~ | Vehicle batteries |
| | ~~Autos~~ | ~~Confidential E-Media~~ | ~~Organic Waste~~ |
| | C&D | Dimensional Lumber | Bulky Items |
| **SOLID WASTE SOURCES** | Residential | Commercial | Institutional |
| | | | |
| **SOLID WASTE ASPECTS** | Resource Conservation | Source Separation | ~~Collection~~ |
| | ~~Transportation~~ | Storage | Transfer |
| | Processing | ~~Treatment~~ | Disposal |
| | | | |

*Table 14 Tinian Organics Processing Site (AKA Compost Center)*

| | | |
|---|---|---|
| **NAME** | "Tinian Composting Site" | |
| **OPERATOR** | DPW | |
| **LOCATION** | Tinian | |

| | | | |
|---|---|---|---|
| **YEAR BUILT** | Used for green waste disaster debris staging in 2018/2019. Permitted June 2022 | | |
| **INITIAL COST** | N/A | | |
| **ANNUAL BUDGET** | N/A | | |
| **REVENUE SOURCES** | Beautification Tax, General Funds | | |
| **BENCHMARK A** | Cubic Yards Received/Year: ~660 CY | | |
| **BENCHMARK B** | Cubic Yards of Compost Made/ Year: | | |
| **BUILDINGS** | Small Field Office | | |
| **GROUNDS** | Mowed Grass, Water Hydrant | | |
| **EQUIPMENT** | Shared Wheel Loader | | |
| | Chipper | | |
| | | | |
| | | | |
| **PERSONNEL** | Shared Staff – DPW – one FTE | | |
| **MATERIALS ADDRESSED** | Organic Waste | | |
| | | | |
| | | | |
| **SOLID WASTE SOURCES** | Residential | Commercial | Institutional |
| | Agricultural Wastes | | |
| | | | |
| | | | |
| **SOLID WASTE ASPECTS** | ***Resource Conservation*** | ***Source Separation*** | ~~Collection~~ |
| | ~~Transportation~~ | ***Storage*** | ~~***Transfer***~~ |
| | ***Processing*** | ~~Treatment~~ | ~~***Disposal***~~ |

*Table 15 Tinian Recycling Center*

| | | | |
|---|---|---|---|
| **NAME** | "Tinian Recycling Center" | | |
| **OPERATOR** | DPW | | |
| **LOCATION** | Tinian | | |
| **YEAR BUILT** | 2019 – originally designed to be a transfer station to move waste to Saipan. Permitted as a Recycling Center in June 2022. | | |
| **INITIAL COST** | $2,200,000 | | |
| **ANNUAL BUDGET** | N/A | | |
| **REVENUE SOURCES** | Beautification Tax, General Funds | | |
| **BENCHMARK A** | Tons of material processed/Year: | | |
| **BENCHMARK B** | Tons of material received/Year: ~10 tons | | |
| **BUILDINGS** | Offices, recycling corrals, baler, compactor and receiver boxes | Office Building, Scalehouse, Processing Building, Stormwater bioswale, | Paved driveway, aprons and parking, perimeter fence and gate. |
| **GROUNDS** | 3 acres – concrete and mowed grass, water, 3-phase power, bathroom/septic | | |
| **EQUIPMENT** | Compactor and receiver boxes | | |
| | Baler | | |
| | Scale and software | | |
| | Skid loader | | |
| **PERSONNEL** | | | |
| **MATERIALS ADDRESSED** | Organic Waste | | |
| | | | |
| | | | |
| **SOLID WASTE SOURCES** | Residential | Commercial | Institutional |
| | Agricultural Wastes | | |
| | | | |
| | | | |
| **SOLID WASTE ASPECTS** | ***Resource Conservation*** | ***Source Separation*** | ~~Collection~~ |
| | ~~Transportation~~ | ***Storage*** | ~~***Transfer***~~ |
| | ***Processing*** | ~~Treatment~~ | ~~***Disposal***~~ |

## IV. Rota - Existing Solid Waste Management Facilities

**Rota – Existing Solid Waste Facilities**

*Table 16 Rota Dump Site at Tatachok – Summary of Services*

| | | | |
|---|---|---|---|
| **NAME** | Rota Landfill / "Dump" at Tatachok | | |
| **OPERATOR** | DPW | | |
| **LOCATION** | | | |
| **YEAR BUILT** | | | |
| **INITIAL COST** | | | |
| **ANNUAL BUDGET** | | | |
| **REVENUE SOURCES** | | | |
| **BENCHMARK A** | Small Vehicles/Year: | | |
| **BENCHMARK B** | Tons of MSW/Year: | | |
| **BUILDINGS** | | | Scalehouse |
| **GROUNDS** | Source separated materials for recycling, native forest nearby, private lots nearby | | |
| **EQUIPMENT** | Excavator | | |
| | Wheel Loader | | |
| | Dump Truck | | |
| | | | |
| **PERSONNEL** | | | |
| **MATERIALS ADDRESSED** | Scrap Metal | ~~Plastic Containers~~ | Tires |
| | Appliances | ~~Metal Containers~~ | ~~Used Electronics~~ |
| | ~~Cardboard~~ | ~~Glass Containers~~ | ~~HHM~~ |
| | MSW | ~~Books/Paper~~ | ~~Used Motor Oil~~ |
| | ~~Vegetable Oil~~ | ~~Surplus Equipment~~ | ~~Vehicle batteries~~ |
| | ~~Autos~~ | ~~Confidential E-Media~~ | ~~Organic Waste~~ |
| | ~~C&D~~ | Dimensional Lumber | Bulky Items |
| **SOLID WASTE SOURCES** | Residential | Commercial | Institutional |
| | ~~Hazardous Waste~~ | ~~Wastewater Treatment Sludge~~ | ~~Pollution Control Residual~~ |
| | Industrial Wastes | Mining Wastes | Agricultural Wastes |
| | ~~Water Treatment Sludge~~ | ~~Septic Tank Pumpings~~ | |
| **SOLID WASTE ASPECTS** | Resource Conservation | Source Separation | ~~Collection~~ |
| | ~~Transportation~~ | Storage | Transfer |
| | Processing | ~~Treatment~~ | Disposal |
| | | | |

*Table 17 Rota Organics Processing Site at Sinapalo – Summary of Services*

| | | | |
|---|---|---|---|
| **NAME** | "Rota Composting Site" (Sinapalo) | | |
| **OPERATOR** | DPW | | |
| **LOCATION** | Rota – Old Sinapalo Quarry | | |
| **YEAR BUILT** | Used for green waste disaster debris staging in 2023. Permitted March 2023. | | |
| **INITIAL COST** | N/A | | |
| **ANNUAL BUDGET** | | | |
| **REVENUE SOURCES** | Beautification Tax, General Funds | | |
| **BENCHMARK A** | Cubic Yards Received/Year: | | |
| **BENCHMARK B** | Cubic Yards of Compost Made/ Year: | | |
| **BUILDINGS** | | | |
| **GROUNDS** | Bottom of quarry | | |
| **EQUIPMENT** | Shared Wheel Loader | | |
| | Chipper | | |
| | | | |
| | | | |
| **PERSONNEL** | Shared Staff – DPW – one FTE | | |
| **MATERIALS ADDRESSED** | Organic Waste | | |
| | | | |
| | | | |
| **SOLID WASTE SOURCES** | Residential | Commercial | Institutional |
| | Agricultural Wastes | | |
| | | | |
| | | | |
| **SOLID WASTE ASPECTS** | Resource Conservation | Source Separation | ~~Collection~~ |
| | ~~Transportation~~ | Storage | ~~Transfer~~ |
| | Processing | ~~Treatment~~ | ~~Disposal~~ |
| | | | |

## I. Northern Islands

None – N/A

# D. Public Participation - CNMI

## I. Regular Meetings – Solid Waste Team Members 2022, 2023

OPD hosts regular weekly meetings on Tuesdays with Tinian and Solid Waste Staff. Solid waste topics are discussed including RFPs, ongoing project updates, and the work of consultants.

## II. Task Force Monthly Meetings

The Task Force members, representing each municipality and many Departments and Divisions within the CNMI, receive monthly updates from OPD and other organizations both Local and Federal on topics concerning solid waste management and solid waste projects. Grant submittals in 2022 and 2023 are often introduced with task force members given time to review and comment.

## III. March 2023 – Zero Waste Kick-Off, Visioning and Survey

In March 2023, members of the Inter-Island Solid Waste Management Taskforce (ISWMT) hosted a CNMI Zero Waste Visioning Kick-Off event and two days of CNMI Zero Waste Visioning Workshops, where the CNMI's Zero Waste advocates and solid waste management stakeholders came together to share their goals, priorities, and vision for working towards and achieving Zero Waste in the CNMI.

Some of the ideas shared by the group during the Visioning event included:

DAY 1

- Education and Outreach for school-aged children and adults
- Legislation
- New Facilities and Infrastructure to support re-use, recycling, composting and other activities that might come along. Ideas included re-fillable water bottle stations, redemption centers supporting a Bottle Bill, and salvage stores.

DAY 2

- Re-using materials for construction aggregates (glass, tires, brick, block, etc.,
- Using discarded food for animal feed,
- Developing a re-use/repair/share store for clothing, electronics, miscellaneous small equipment, etc.

- Developing a habitat or entrepreneur center for business ideas focusing on re-using, repairing, recycling, etc.

Throughout the month, the ISWMT also ran an online survey where community input was sought on their outlook on a variety of topics such as curbside collection of recyclables, materials bans, education and outreach on "Zero Waste" and sustainable practices. The data collected from this survey was used to support the development of this CNMI solid waste Plan.

## IV. August 2023 – Meeting – Tinian Leadership

Tinian Legislative and municipal leadership met with DPW and OPD staff to review the solid waste planning to date including options for landfill development – both inside the leaseback area and outside the area. Other discussions involved the influence of BECQ acceptance of the SCEL groundwater sample and DPL release of previously leased lands. Discussions also focused on the Solid Waste Plan Contents, recent grants and their integration with the Solid Waste Plan, and the management of sewage sludge.

## V. September 2023 – Meeting – Rota Leadership

Rota Legislative and municipal leadership met with OPD staff to review the solid waste planning to date including landfill development, recycling center, household hazardous waste management and chemical fire training. Staff discussed recent grant awards and their integration into the solid waste management plans developed specifically for Rota.

## VI. October 2023 - Public Meetings

Over a proposed three-month period, the Office of Planning and Development (OPD) and Bureau of Environmental and Coastal Quality (BECQ) on behalf of the Department of Public Works (DPW) will conduct public hearings on Saipan, Tinian, and Rota to garner input from the public and private sector, the community, and all other stakeholders who will and may be involved with the implementation of the CISWMP.

After each point that OPD, BECQ, and DPW consults with the public, responsiveness summaries will be prepared that describe the matters on which the public was consulted, summarize the public's views, and set forth the agency's response to the public input.

Reserved for a summary of comments and responses.

## VII. Summary

This CNMI Public Participation Work Plan (PPWP) outlines how OPD and BECQ on behalf of DPW will comply with 40 CFR 256.60: Requirements for Public Participation in State and Substate Plans, and all other portions of federal code relevant to public outreach activities for plans such as the CNMI CISWMP.

The PPWP outlines the proposed schedule of outreach activities and proposed schedule for the preparing of responsiveness summaries, identifies the consultation and information mechanisms to be used, and the segments of the public that will be targeted for involvement. Please see Attachment 6 – “Public Participation Work Plan”.

Please note the public notice and comment period described in CNMI law under PL20-20) will be initiated once the "final draft plan" is prepared.

# E. Five-Year Integrated Solid Waste Management Action Plan – CNMI

## I. Introduction to Action Plan Components: Opportunities & Justification

This Plan has taken a detailed look at MSW data in Saipan as well as the thoughts and priorities of those who call the CNMI home. The Plan has also reviewed data from other Pacific Islands and the USA. The data from these other areas helps "fill in the gaps" in CNMI data and provides a broader understanding of regional MSW management challenges.

The focus in this section is to combine the knowledge and data previously gathered to make meaningful strides toward an integrated solid waste management system that fits the specific goals and aspirations of the CNMI.

The following sections discuss both the opportunities available and the justification for the equipment and services proposed. Opportunities will be reviewed for:

- Existing facilities and services
- New facilities and services
- Training
- Community Outreach and Education

Other specific considerations will be discussed in this section, including:

- Environmental Justice
- Climate Change Action
- Coastal / Beach Area Stewardship

Additionally, a toolkit of common tools used for legislation and financing solid waste initiatives.

- Suggested Legislative Tools
- Suggested Financial Tools

This Action Plan will conclude with:

- Final Table of Proposed Tasks with Priorities, and Timing for Action
    - Facilities
    - Non-Facility Centered
- Timeline for Open Dump Closures.

**BRIEF BACKGROUND DATA – SOLID WASTE DIVISIONS**

Saipan DPW manages most of the integrated solid waste management facilities via the DPW Solid Waste Divisions (SWD) on Saipan, Tinian, and Rota.

The Saipan SWD had a budget of $2,455,216 in 2021 and a budget of $4,385,275 in 2022 (including $2,765,224 for contract-related encumbrances). These figures do not include $6.8 million in financial assurance required for Marpi Landfill Cell 1.

Saipan SWD revenue in 2021 was $1,287,924 (52.4% of expenses). Revenue in 2022 was $907,180 (56.0% of expenses without the financial assurance encumbrance).

Saipan SWD has 16 employees (16 FTE) (Saipan) including office/administration, heavy equipment operators, and scale/house attendants.

Tinian SWD has a 2023 budget of $694,000 including a personnel budget for 8 employees. Tinian does not have a tipping fee and so does not have tipping fee revenue.

Rota SWD has a 2023 solid waste budget of $731,000 including a personnel budget for 10 employees (which includes fringe benefits and hazard pay). Rota does not have a tipping fee and so does not have tipping fee revenue.

The Mayors of Tinian and Rota have the authority to manage solid waste disposal in their respective senatorial districts to adequately address the solid waste issues in their senatorial district.

The CNMI cancelled earmarks for the 7% Excise Tax in Fiscal years 2020, 2021 and 2022 which had some specific language to assist the Saipan SWD, Tinian DPW, and Rota DPW with operating expenses. Consequently, revenue is below expenses, funds to cover revenue shortfalls in the SWD come from the CNMI General Fund.

The 5-year Integrated Solid Waste Action Plan establishes and justifies priorities and timing for actions. See Section XII – “Final Table of Priorities and Timing for Action.”

This CNMI Action Plan addresses solid wastes that pose potential adverse effects of health or the environment or provide opportunity for resource conservation or resource recovery as listed in 40 CFR 256 .02(a).

Per 40 CFR 256.05(b) - this Solid Waste Action Plan represents the CNMI’s obligation incurred by acceptance of financial assistance.

## II. Saipan Existing and New/Proposed Solid Waste Management Facilities and Services

### 1) Summary –Saipan Facility Plans

On Saipan, contractors are used to operate the Marpi Sanitary Landfill and the Lower base Citizen Convenience Center.

The following section identifies six sites; two sites are existing, and four sites are being discussed/proposed and or planned:

- Saipan: Marpi Landfill - existing
- Saipan: Lower Base Transfer Station - existing
- Saipan: Kagman CCC
- Saipan: As Gorno CCC Tinian
- Saipan: Kagman Organics Processing Site – Division of Agriculture
- Saipan: X (As Gorno?) Organics Processing Site - DPW

### 2) Marpi Landfill Site Priorities

**HIGH Priority**

- Monitoring Well Rehabilitation – NOV/AOs issued by BECQ in 2022 and 2023.
- Vegetated Submerged Bed Maintenance and Possible Expansion – These beds should be maintained according to BMPs; they are critical for leachate management. Cell II may require an expansion of the beds.
- Yutu Woody Disaster Debris and Bulky Waste – material rests on cell 5 (the "Back 40") and must be processed.
- Generators.
- Cell 2 Stormwater Basin – a necessary component of the Cell 2 design.
- Contracted Landfill Operations.

**MEDIUM Priority**

- Cell 3 Stormwater
- Scale Repair/Replacement
- Alternative Energy installations (solar and wind) – report completed January 2024.

**Staff Training Capacity Building**

**HIGH Priority Training**

- Landfill Operations
- First Aid
- Heavy Equipment Preventative Maintenance
- OSHA 40 hr.

**MEDIUM Priority Training**

- Peer to peer – Pacific (Guam)

**DPW Solid Waste Division - Staff Additions**

HIGH Priority

- SW Manager Assistant/Contractor Management

Additional Notes: If the work on the Yutu Debris pile is subcontracted then labor and some of the maintenance and spare parts, POL, and equipment (such as a loader) would be provided by the contractor.

*Table 18 Marpi Landfill – Planned Improvements*

| **NAME** | **Marpi Landfill** | |
|---|---|---|
| **OPERATOR** | DPW | |
| **LOCATION** | Marpi Point Saipan | |
| **BUILDING & GROUNDS REPAIR/IMPROVEMENTS** | Generators | Est. Price*: $70,000<br>Total Units: 2<br>Total Price: $140,000 |
| | Scales | Est. Price: $225,000<br>Total Units: 2<br>Total Price: $500,000 |
| | Cell 3 (multi-step cell construction) | Est. Total Price: $10,000,000** |
| | Disaster Debris Processing ("Back 40") labor - 2 people 4 years | Est. Total Price: $580,397 |
| | Vegetated Submerged Bed Rehabilitation and Expansion | Est. Total Price: $850,000 |
| | Cell 2 Stormwater Basin | Est. Total Price: 850,000 |
| | Monitoring Well Rehabilitation | Est. Total Price: |
| | Alternative Energy | Est. Price: $2,500,000 |
| | Disaster debris processing: Multi shredder | Est. Price $800,000 |
| **NEW / REPLACEMENT EQUIPMENT** | Disaster debris processing: Water tank for disaster debris Processing | Est. Price: $30,000 |
| | Disaster debris processing: Generator | Est. Price: $80,000 |
| | Disaster debris processing: POL | Est. Price: $30,000 |
| | Disaster debris processing: Spare parts/maintenance | Est. Price: $30,000 |
| | Disaster debris processing: Loader with attachments | Est. Price: $285,000 |
| | Assistant to the Solid Waste Manager (Contract and Project Management) | Est. Price: $164,000<br>Total years: 3-4 |
| **NEW PERSONNEL** | If the work on the Yutu Debris Pile is contracted to a third party then no additional DPW staff is needed. | |
| **TRAINING AND STAFF DEVELOPMENT** | Disaster debris in the "back 40" is mostly wood waste (pallets, furniture, dimensional lumber) | |
| | Dimensional lumber and various engineered wood products). The shredder | |

| | | | |
|---|---|---|---|
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | will also manage bulky waste like mattresses, box springs, and bulky furniture. | | |
| | Alternative Daily Cover will be created from ground material. | | |
| **NEW SOLID WASTE SOURCES** | | | |
| | | | |
| **NEW SOLID WASTE ASPECTS** | | | |
| | | | |

***Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

****** Cell 3 Construction may not begin for another 8 or more years. Decreases in projected tonnage and improved compaction density at the landfill has allowed Cell One to remain open longer than previously predicted.**

### 3) Lower Base Transfer Station and Recycling Center Site Priorities

**HIGH Priority**

- Roll-Off Containers
- Contracted Recycling Operations
- Scales
- Horizontal Balers (3) (metal, plastic/paper, and tires)
- Skid Loader with Two Attachments: Clamshell Bucket and Forklift Attachment
- Bay Repair (3 Bays) including oil water separator
- Fire Suppression Systems Repair
- Commodity Shipping – Backlogged Materials
- Cardboard Shredder (for use as compost feedstock and/or ADC)
- Degausser for electronic media
- Cross-Cut Paper Shredder (Confidential Material Management)
- Cover for HHM and Used Electronics
- Cover for Tire Baler
- Cover for Metal Baler
- Electrical Hookups for Tire Baler and Metal Baler
- Secondary Containment Pallets for HHM

**MEDIUM Priority**

- Road Maintenance: Magnet and Backpack Blower
- Used Oil Gasoline Vapor Detector
- Tire Shredder Repair
- Tire De-rimmer Repair
- Bulk Vegetable Oil Tank and Sprayer
- Perimeter Fence Repair
- Pyrolysis Equipment – Ancillary Additions Including Electrician and Plumber

**<u>Staff Training Capacity Building</u>**

**HIGH Training Priority**

- Recycling Operations
- Heavy Equipment Preventative Maintenance
- First Aid
- Waste Screening and Waste Exclusion

*Table 19 Lower Base CCC and Recycling Center – Planned Improvements*

| **NAME** | **Lower Base Transfer Station** | |
|---|---|---|
| **OPERATOR** | DPW | |
| **LOCATION** | Lower Base Saipan | |
| **BUILDING & GROUNDS REPAIR/IMPROVEMENTS** | Cover for Used Electronics Storage Area | Est. Total Price*: $200,000 |
| | Contracted Recycling Operations | Est. Price: $200,000<br>Total Units (Years): 4<br>Total Price: $800,000 |
| | Cover for Metals Processing Area | Est. Total Price: $125,000 |
| | Cover for Tire Processing | Est. Total Price*: $200,000 |
| | Perimeter Fence Repair | Est. Total Price: $300,000 |
| | Bay Repair and Tip Floor Fire Suppression Systems Repair | Est. Total Price: 600,000 |
| | Electrical Hookups – Tire Baler and Metal Baler | Est. Total Price: 100,000 |
| | Commodity Shipping: Backlogged Materials | Est. Total Price: $500,000 |
| **NEW EQUIPMENT** | Magnet and Backpack Blower for Roadways | Est. Total Price: $2,000 |
| | Horizontal Baler (metal and plastic) | Est. Total Price: $170,000 |
| | Horizontal Baler (tires) | Est. Total Price: $170,000 |
| | Roll-off Containers | Est. Price: $41,666<br>Total Units: 6<br>Total Price: $250,000 |
| | Used Oil “Sniffer” (see used oil CA report) | Est. Total Price: $800 |
| | Skid loader with clamshell bucket | Est. Total Price: $80,000 |
| | Cardboard Shredder | Est. Price: $250,000<br>Total Units: 1 |
| | Tire Shredder Repair | Est. Price: $75,000 |
| | Bulk Electric Sprayer – for Spraying Vegetable Oil on Compost from Bulk Drum | Est. Price: $8,000<br>Total Units: 1<br>Total Price: |
| | Degausser machine | Est. Total Price: $10,000 |
| | Secondary Containment Pallets for HHW including Used Motor Oil | Est. Price: 300<br>Total Units: 8<br>Total Price: $2,400 |
| | Pyrolysis Equipment | Est. Price:<br>Total Units: TBD |

| | | |
|---|---|---|
| | | Total Price: |
| | Scales and Software/Computer | Est. Price: $250,000<br>Total Units: 2<br>Total Price: $500,000 |
| | Cross shredder (confidential paper document destruction) – meets stringent standards for destruction | Est. Total Price: $150,000 |
| | Cover for HHM and Used Electronics | Est. Total Price: $200000 |
| | Bay Repair including oil/water separator | Est. Total Price: $600,000 |
| | Sprinkler System Repair | |
| | Perimeter Fence Repair | Est. Total Price: $300,000 |
| | Commodity Shipping: backlog | |
| **NEW PERSONNEL** | 2 FTE (OPD), Running pyrolysis unit and Degausser, and cardboard shredder, used Oil separation and Vegetable Oil bulking | Est. Total Price: $164,770 |
| | Assistant to Director | Est. Total Price: $500,000 |
| | | |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | Est. Total Price: $5,000 |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | Pyrolysis machine to manufacture petroleum products and/or Diesel from plastic containers. | |
| | Cardboard shredder for composting cardboard and other paper. | |
| | “Sanitized” electronic media available for recycling. | |
| | Destroyed confidential documents – available for composting. | |
| | Tire Derived Aggregate – replaces aggregate from CNMI or off-island locations. | |
| | Vegetable oils composted. | |
| | Roof over used electronics improves acceptability and recyclability. | |
| **NEW SOLID WASTE SOURCES** | | |
| | | |
| **NEW SOLID WASTE ASPECTS** | | |
| | | |

***Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

****** Degausser may be held by Office of Information Technology rather than DPW, sanitized electronics will then come to Lower Base.**

***Note: metal baler may be too big for plastic containers – talk to manufacturers. Covers protect the equipment and workers. Lower Base uses diesel generators to run metal balers and the tire baler; getting these machines hooked to the grid would eliminate generators.***

**4) Kagman Citizen Convenience Center Site Priorities – Planned Improvements for Recycling**

A site design for the Kagman Citizen Convenience center has been completed; this design does not currently have designated space to receive recyclable materials.

- Priority Level: High
- Estimated Price Available: TBD
- Permitted: No
- Operator: Saipan DPW

Planned Improvements - O&M including Buildings and Grounds:

- Cover for recyclables/recycling/sorting (keeping fiber material dry)

Planned Equipment (including POL):

- Smaller containers to move loose (unbaled) recyclables from CCC to Lower Base Recycling Center

Planned Training – Capacity Building of Staff:

- 2 FTE
- Training Module: Equipment Operations/Maintenance, Basic First Aid, Peer to Peer. OSHA.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- 2 FTE
- Training Module: Equipment Operations/Maintenance, Basic First Aid, Peer to Peer.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to provide basic first aid in case of an accident.

Planned New Materials to be Added or New Products Produced:

- No new material; approximately the same suite of materials addressed as Lower Base location.

*Table 20 Kagman CCC and Recycling Center – Planned Improvements*

| NAME | Kagman CCC and Recycling Center – New Site | |
|---|---|---|
| **OPERATOR** | DPW | |
| **LOCATION** | Kagman Saipan | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | |
| **BUILDING & GROUNDS IMPROVEMENTS** | Cover for Recycling and Re-use Area | Est. Total Price*: $250,000 |
| **NEW EQUIPMENT** | POL | Est. Total Price: $5,000 |
| | Misc. smaller containers, hand tools, signs need for receiving recyclables | Est. Total Price*: $20,000 |
| | Roll-off Boxes for Recyclables | Est. Total Price*: $40,000 |
| | | |
| **NEW PERSONNEL** | Two People | Est. Total Price: $164.770<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | Est. Total Price: $5,000 |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | Approximately the same suite of materials addressed at Lower Base – more convenient location | |
| | | |
| | | |
| | | |
| | | |
| **NEW SOLID WASTE SOURCES** | | |
| | | |
| **NEW SOLID WASTE ASPECTS** | | |
| | | |

***Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

**Conceptualized as MSW and MSW Recycling – could serve as Redemption Center if Bottle Bill passes.**

**This price does not include facility construction.**

Note: this price for construction does not include the full price of the CCC's design and construction.

**5) As Gorno Citizen Convenience Center Site Priorities – Improvements for Recycling**

A design for the As-Gorno Citizen Convenience site has been completed; this design does not currently have designated space to receive recyclable materials.

- Priority Level: High
- Estimated Price Available: TBD
- Permitted: No
- Operator: Saipan DPW

Planned Improvements - O&M including Buildings and Grounds:

- Cover for recyclables/recycling/sorting (keeping fiber material dry)

Planned Equipment (including POL):

- Smaller containers to move loose (unbaled) recyclables from CCC to Lower Base Recycling Center

Planned Training – Capacity Building of Staff:

- 2 FTE
- Training Module: Equipment Operations/Maintenance, Basic First Aid, Peer to Peer, OSHA
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- 2 FTE
- Training Module: Equipment Operations/Maintenance, Basic First Aid, Peer to Peer.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to provide basic first aid in case of an accident.

Planned New Materials to be Added or New Products Produced:

- No new material; approximately the same suite of materials addressed as Lower Base location.

*Table 21 As Gorno CCC and Recycling Center – Planned Improvements*

| NAME | As Gorno CCC Site | |
|---|---|---|
| **OPERATOR** | DPW | |
| **LOCATION** | As Gorno - Saipan | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | |
| **BUILDING & GROUNDS REPAIR** | Cover for Recycling and Re-use Area | Est. Total Price*: $250,000 |
| **NEW EQUIPMENT** | POL | Est. Total Price: $5,000 |
| | Misc. smaller containers, hand tools, signs need for receiving recyclables | Est. Total Price*: $20,000 |
| | Receiver Boxes for Recyclables | Est. Total Price*: $40,000 |
| | | |
| **NEW PERSONNEL** | Two People 2 years | Est. Total Price: $164,770<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | Est. Total Price: $5,000 |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | Same suite of materials addressed at Lower Base – more convenient location | |
| | | |
| | | |
| | | |
| | | |
| **NEW SOLID WASTE SOURCES** | | |
| | | |
| **NEW SOLID WASTE ASPECTS** | | |
| | | |

***Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

**Conceptualized as MSW and MSW Recycling – could serve as Redemption Center if Bottle Bill passes.**

### 6) Kagman Organics Processing Center Site Priorities

This site is only in the planning stages as of August 2023. One green waste site near the airport closed in June 2023. The Division of Agriculture would like to begin the composting process slowly and build capacity/experience.

- Priority Level: High
- Estimated Price Available: TBD
- Permitted: No
- Operator: Division of Agriculture

Planned Improvements - O&M including Buildings and Grounds:

- Truck to haul 8,000 pound chipper and chipped green waste when a need arises to chip off-site.
- Current site has access to water, but a longer hose may be required to reach all compost/mulch piles.

Planned Equipment (including POL):

- Truck to pull 8,000-pound chipper
- Spare parts
- Metal detector with conveyor (if other materials are chipped)

Planned Training – Capacity Building of Staff:

- 2 FTE
- Training Module: Equipment Operations/Maintenance, Composting, Basic First Aid, Peer to Peer, OSHA.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the composting site within regulatory requirements.

Planned Changes to Management/Personnel:

- 2 FTE – to manage green waste sites.
- Justification/Rationale: Heavy equipment operations needed to run equipment and manage customer drop-off and pick up.

Planned New Materials to be Added or New Products Produced:

- There is no permitted and open composting sites on Saipan as of August 2023.

*Table 22 Kagman Organics Processing Site– Planned Improvements*

| NAME | Kagman Organics Processing Site | | |
|---|---|---|---|
| **OPERATOR** | Division of Agriculture | | |
| **LOCATION** | Kagman - Saipan | | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | | |
| **BUILDING & GROUNDS REPAIR** | | | |
| **NEW EQUIPMENT** | POL | | Est. Total Price: $25,000 |
| | Truck (After current truck is sold – current truck is too small for existing 8,000 lb chipper) | | Est. Total Price*: $60,000 |
| | Spare Parts | | Est. Total Price*: $60,000 |
| | Magnet with exit Conveyor | | Est. Total Price*: $68,000 |
| **NEW PERSONNEL** | Two People | | Est. Total Price: $164,770<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | | Est. Total Price: $5,000 |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | Compost and mulch will be generated as well as ADC for the landfill. | | |
| | | | |
| | | | |
| | | | |
| | | | |
| **NEW SOLID WASTE SOURCES** | Organics | | |
| | | | |
| **NEW SOLID WASTE ASPECTS** | | | |
| | | | |

***Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

## 7) Saipan Organics Processing Center Site Priorities

This site is only in the planning stages as of August 2023. Currently, there are few convenient options for green waste disposal beside the Landfill. One green waste site near the airport closed in June 2023. This site would be operated by the Department of Public Works. Note: stumps, large trees and smaller trees/brush will likely arrive at the site.

- Priority Level: High
- Estimated Price Available: TBD
- Permitted: No
- Operator: DPW Saipan

Planned Improvements - O&M including Buildings and Grounds:

Access to water (hydrant/spigot and hose or mobile tank) for fire suppression and to add water during the dry season.

Planned Equipment (including POL):

- Front end loader
- Multi shredder
- Hand tools
- Log splitter

Planned Training – Capacity Building of Staff:

- 2 FTE
- Training Module: Equipment O&M, Composting, Basic First Aid, Peer to Peer, OSHA.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- 2 FTE – to manage recyclables and waste.
- Justification/Rationale: Heavy equipment operations needed to run equipment and manage customer drop-off and pick up.

Planned New Materials to be Added or New Products Produced:

- Compost and mulch

*Table 23 Saipan Organics Processing Site – Planned Improvements*

| NAME | Saipan Organics Processing Site | | |
|---|---|---|---|
| **OPERATOR** | DPW | | |
| **LOCATION** | As Gorno - Saipan | | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | | |
| **BUILDING & GROUNDS REPAIR** | Equipment shed to secure equipment | | Est. Total Price*: $150,000 |
| **NEW EQUIPMENT** | POL | | Est. Total Price: $25,000 |
| | Loader with multi-shredder and log/stump splitter | | Est. Total Price*: $550,000 |
| | Spare Parts | | Est. Total Price*: $40,000 |
| | Hand Tools | | Est. Total Price*: $2,000 |
| **NEW PERSONNEL** | Two People | | Est. Total Price: $164,770<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | | Est. Total Price: $5,000 |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | Compost and mulch will be generated as well as ADC for the landfill. | | |
| | | | |
| | | | |
| | | | |
| | | | |
| **NEW SOLID WASTE SOURCES** | Organics | | |
| | | | |
| **NEW SOLID WASTE ASPECTS** | | | |
| | | | |

***Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

## III. Tinian New/Proposed Solid Waste Management Facilities

# SUMMARY – TINIAN – ONE TIME CLEAN UP EVENT & FACILITY ACTION PLANS FOR NEW/PROPOSED PERMITTED SOLID WASTE MANAGEMENT FACILITIES

Tinian has been proposing a new landfill site since at least the early 2000's. Siting a new landfill that meets the various Federal siting requirements requires critical thought and planning. The physical, natural, and built environment within the Municipality of Tinian, including the leaseback property must be considered as well as local planning such as future homestead sites, local recreational and conservation sites, etc.

DPW Tinian staff operate their own solid waste management facilities.

Note: Equipment and personnel are often shared within DPW systems depending on need.

Tinian solid waste management facilities include:

- **Tinian Atgidon Landfill**
- **Tinian Puntan Diablo Landfill (Dump) – the existing landfill site**
- **Tinian Hardfill**
- **Tinian Recycle Center with HHM**
- **Tinian Recycle Center Expansion**
- **Tinian Organics Processing Site**

## TINIAN PROPOSED ONE TIME CLEAN UP EVENT

A Tinian "One-Time Bulk Material Clean Up Event" event is proposed to manage derelict vehicles and green waste that have accumulated for many years. Tinian has fewer commodities requiring clean-up compared to Rota because Tinian had a major material pile clean-up in 2022.

It is estimated that over 350 derelict vehicles have accumulated on Tinian. Additionally, over 650 cy of green waste have accumulated.

Depending on the assessment of the Puntan Diablo dump site, there may be bulky wastes which need to be ground/processed (and/or compacted with a heavy, wheeled landfill compactor). This analysis for Puntan Diablo wastes has not yet been completed. Bulky wastes include mattresses, box springs, furniture, dimensional lumber, and pallets.

Priority Level: Medium

- Estimated Price: TBD
- Operator: Third Party

Planned Equipment (including POL):

- Third Party to be contracted

Planned Training – Capacity Building of Staff:

- Solid Waste Managers need project management training to assist in managing this type of work.

Planned Changes to Management/Personnel:

- No changes foreseen.

# TINIAN NEW/PROPOSED PERMITTED SOLID WASTE MANAGEMENT FACILITIES

## 1) Atgidon Landfill Site Priorities

Due to Federal and Local siting criteria, this landfill campus has been identified in the military leaseback area. A landfill siting study can be found in **Attachment 14 – Tinian Landfill Comprehensive Study.**

Tinian's solid waste landscape is influenced by the Department of Defense activity on Tinian. Since the Summer of 2021 several key decisions and documents have provided clarity on the available solid waste systems available to the Municipality of Tinian. These documents include clarification and application of the Federal small community exempt landfill (SCEL) rules on Tinian and Rota (See Attachment 8), new BECQ issued Solid Waste Management Facility Permits, the Commonwealth Joint Military Training (CJMT) plan (Version 2) and related communication (see Attachment 10), and clarification of financial assurance obligations for state-owned landfills (See Attachment 16).

- Priority Level: High
- Estimated Price Available: No (EA and SCEL design is not yet complete)
- Permitted: No
- Operator: Tinian DPW

Planned Improvements - O&M including Buildings and Grounds:

The Atgidon landfill would be a new landfill; the individual components needed for such a site are substantial; consequently, the list below should not be seen as a complete/exhaustive list nor should it be seen as items listed in a specific chronological order.

- Environmental Assessment Update
- Option and Financial Analysis of hauling all waste all year to Saipan via transfer station and ship
- Basis of Design with:
  - Site Layout
  - Design Capacity
  - Regulatory Review with Discussion of Necessary Permits
  - Site Description: Geologic, Hydrogeologic, Surface Water/Stormwater
  - Design Components
- Final Design and Construction Plans with:
  - Land Clearing and Debris Management Plan

- MEC Management Plan
- Culturally Significant Discovery Plan
- Endangered or Threated Species Discovery Plan
- Closure Plan
- Soil Balance Plan
- Operations Plan
- Wastewater Treatment Operating Plans
- Solid Waste Management Facility Permit Documents

Planned Equipment (including POL):

Once again, the individual pieces of equipment needed for such a site are substantial; especially since the site will most likely include wastewater treatment facilities. Consequently, the list below should not be seen as a complete/exhaustive list. Some equipment is already available but in need of repair and or replacement.

- Excavator
- Dump Truck
- Wheel Loader
- Pick-up Truck with Trailer
- Multi-shredder for bulky wastes and organics (shared with Tinian Organics Processing Site).
- Scale

Planned Training – Capacity Building of Staff:

- 2 FTE
- Training Module: Equipment Operations/Maintenance, Basic First Aid, Peer to Peer, Landfill Operations, Waste Screening and Waste Exclusion.], OSHA.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- 2 FTE – to manage landfill operations
- 1 FTE additional to staff the scalehouse if/when new tipping fees are implemented
- Justification/Rationale: Heavy equipment and scale house operations require human operators.

Planned New Materials to be Added or New Products Produced:

- No New materials accepted or produced

*Table 24 Tinian Atgidon Landfill – Planned Improvements*

| **NAME** | **Atgidon Landfill** | |
|---|---|---|
| **OPERATOR** | Tinian DPW | |
| **LOCATION** | Atgidon - Tinian | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | |
| **BUILDING & GROUNDS REPAIR** | New Site | Est. Total Price*: |
| **EQUIPMENT: NEW AND/OR REPIARED** | POL | Est. Total Price: $ |
| | Excavator | Est. Total Price*: $ |
| | Spare Parts | Est. Total Price*: $ |
| | Wheel Loader | Est. Total Price*: $ |
| | Dump Truck | Est. Total Price*: $ |
| **NEW PERSONNEL** | Two People | Est. Total Price: $ |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | No new materials to be addressed | |
| | | |
| | | |
| **NEW SOLID WASTE SOURCES** | | |
| | | |
| **NEW SOLID WASTE ASPECTS** | | |
| | | |

**A. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

### 2) Puntan Diablo Small Community Exempt Landfill

This is a primary focus/task because the development of the Atgidon Landfill site is projected to take longer than 5 years to develop (from October 2023).

The operation of this site beyond 5 years depends on the development schedule of the Atgidon landfill. To remain open as a State-owned small community exempt landfill, the Puntan Diablo site will need a Solid Waste Management Facility permit from BECQ.

To receive this permit, this State-owned SCEL will still require a Closure and Post Closure Plan that includes a Final Cover Design developed with BECQ (see 40 CFR 258.6(b)3.

Additionally, all components of 40 CFR 258.2 will need to be designed, constructed, and be fully operational; the following components might be developed within a revised Facility Operations Plan that includes (but is not limited to):

- Routine methane monitoring program,
- Surface water requirements (NPDES permit), and
- Monitoring for non-point discharge of pollutants.

Additionally, the Puntan Diablo state-owned SCEL Revised Facility Operations Plan could include other content/requirements so that trained staff can be trained to:

- Control vectors (via daily cover),
- Stop all open fires or “flame ups”,
- Control access to the site,
- Collect any fees,
- Safely operate equipment,
- Identify and exclude banned and restricted materials, and
- Keep/submit specific operating records.

This Facility Action Plan as described would be for continued operations as a permitted small community exempt landfill owned by the State (CNMI).

- Priority Level: High
- Estimated Price: TBD
- Operator: Tinian DPW

<u>Planned Equipment (including POL):</u>

- Current landfill equipment has 18,000 to 23,000+ hours and is recommended to be replaced. Landfill Heavy Equipment includes:

    - F750 Dump Truck (23,285 miles),
    - M318D Excavator (23,000 hours),
    - 930K CAT Wheel Loader (Payloader)(21,409 hours), and
    - D-6 CAT Dozer (19,712 hours).

Planned Training – Capacity Building of Staff:

- Landfill operations specific to State-owned SCEL, first aid, preventative maintenance (Heavy Equipment, Waste Screening and Waste Exclusion, OSHA Training.

Planned Changes to Management/Personnel:

- No changes staff are already assigned, if the landfill charges a tipping fee, a scalehouse attendant would need to be added.

Planned New Materials to be Added or New Products Produced: None

*Table 25 Puntan Diablo Landfill – Operating Site – Planned Improvements*

| | | |
|---|---|---|
| **NAME** | **Puntan Diablo Landfill – Operate as State-Owned SCEL** | |
| **OPERATOR** | Tinian DPW | |
| **LOCATION** | Puntan Diablo Area - Tinian | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 – 10 Year Planned Operating Life – Closes when Atgidon SCEL is ready to receive wastes. | |
| **BUILDING & GROUNDS REPAIR** | Note costs will likely involve closing some ground while prepping other areas for SCEL functions / SCEL permitting. | Est. Total Price*: $800,000 – Assessment and SCEL Design – Construction costs are unknown until Design is complete. |
| **NEW EQUIPMENT** | POL | Est. Total Price New*: $ |
| | Dump Truck | Est. Total Price Repair*: $30,000 |
| | Excavator | Est. Total Price New*: $140,000 |
| | Wheel Loader | Est. Total Price New*: $120,000 |
| | Spare Parts/Maintenance | Est. Total Price New*: $10,000 |
| **NEW PERSONNEL** | Two to Three People | Est. Total Price: $<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | No new materials | |

***Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

**2B) Puntan Diablo Dump Closure**

The closure of Puntan Diablo Dump is planned to happen within 2 years from October 2023 as the site converts to a RCRA Small Community Exempt Landfill (see #2 above - Puntan Diablo Small Community Exempt Landfill).

Conversion of an Open Dump to a Small Community Exempt Landfill (SCEL) and a landfill owned and operated by the State (CNMI) will require an assessment, design, and construction activities as well as various plans required for a permitted SCEL (see #2 above).

Currently, the assessment of the 10-15-acre site is not complete; it is possible some acres that historically received waste will need to be covered and closed while other acres remain open for SCEL activity.

This Summarized Facility Action Plan outlined below is for closure activities and not continued operations as a permitted State-owned small community exempt landfill. The list below should not be seen as a complete/exhaustive list.

- Closure and Post Closure Plan Includes Final Cover Design developed with BECQ for an Open Dump.
- Site prep work needed to prepare for site closure; these tasks might include site survey, compaction of waste, filling/grading, seeding, construction of stormwater management systems like vegetated swales, debris pile removal or disposal, construction of final approved cover systems, and other site controls (fence, gate, signs, cameras).
- Justification/Rationale: This work prepares the site for closure and works together with the surrounding properties/geography to better support for future development.
- Closure activities could be performed by a combination of public and private third-party contractors.

<u>Planned Equipment (including POL) for Closing Acres:</u>

- Closure activities – likely by third party contractor(s); however, a dozer, excavator, dump truck and possibly a wheeled garbage compactor would be needed.

<u>Planned Training – Capacity Building of Staff:</u>

- Closure activities - likely by third party contractor(s). However, DPW staff should be trained to inspect closed areas for erosion issues, ponding issues, and similar problems that commonly occur as waste settles.

Planned Changes to Management/Personnel:

- None. A third-party contractor will likely perform some closure activities.

Planned New Materials to be Added or New Products Produced:

- None:

**See Table 26 for estimated costs and equipment.**

**2) Tinian Hardfill Site – C&D**

As of October 2023, an old quarry site has been selected by Tinian leadership as a municipally owned hardfill site. Site assessment and planning stages are scheduled to commence in October, November, and December of 2023.

- Priority Level: High
- Estimated Price Available: No
- Estimated Price: TBD
- Operator: Tinian DPW

Planned Improvements - O&M including Buildings and Grounds:

To be sited in an old borrow pit or quarry. Site prep work needed to: clear trees/brush, grade for access, stormwater drainage, etc.

No buildings. Site will require a gate or similar site access controls.

Planned Equipment (including POL):

Track or wheel loader to visit site periodically to push piles of waste C&D and cover with soil or an approved ADC.

Planned Training – Capacity Building of Staff:

- Part of one FTE.
- Training Module: Equipment Operations/Maintenance, OSHA, Basic First Aid, Peer to Peer, Site Operations Plan.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- Part of one FTE – to manage site.
- Justification/Rationale: Heavy equipment requires human operators.

Planned New Materials to be Added or New Products Produced:

- Historically C&D has been placed in the landfill.
- Specific wastes associated with brick, block, rock, and rubble, roadwork material, demolition waste, construction waste, and site clearance waste.
- Justification/Rationale: A new C&D area will save airspace in the permitted landfill.

*Table 26 Tinian Hardfill Site – Planned Improvements*

| **NAME** | **Tinian Hardfill Site** | |
|---|---|---|
| **OPERATOR** | Tinian Municipality | |
| **LOCATION** | Tinian | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | March 1, 2024 | |
| **BUILDING & GROUNDS REPAIR** | | Est. Total Price*: |
| **NEW EQUIPMENT** | Shared from other Sites | Est. Total Price: $ |
| | | Est. Total Price*: $ |
| | | Est. Total Price*: $ |
| | | |
| **NEW PERSONNEL** | Shared from other sites | Est. Total Price: $<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Personnel shared from other sites | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | Previously, most hardfill materials would go to the open dump. | |
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**B. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

### 3) Tinian Recycling Center and Recycling Center Expansion Site - Site Priorities

The Tinian Recycling Center was constructed to serve as a Transfer Station but never received a Solid Waste Management Facility permit from BECQ. The site shares duty as a field house and office for the Department of Public Works as the previous field house and office space building was significantly damaged in 2018 by Typhoon Yutu.

The Tinian Recycling Center is about 3 acres with a matching 3 acres adjacent to and "behind" or southwest of the existing property. Tinian leadership wants to use the additional 3 acres to stage derelict vehicles and scrap metal. Currently, there are no balers or auto disassembly systems on Rota; consequently, scrap metal from both regular economic cycles and scarp metal from weather emergencies/disasters simply collects on public and private property. From time to time and as money becomes available piles are removed by a third party contracted at high expense.

This site is in the initial planning stages and is not yet designed or permitted.

- Priority Level: High
- Estimated Price Available: No
- Permitted: No
- Operator: Tinian DPW

Planned Improvements: O&M including Buildings and Grounds:

- Existing Recycling Center will need a horizontal baler capable of managing scrap metal.
- Industrial heavy equipment attachments like shears and clamshell bucket attachments are needed to load scrap metal and move bales.
- Baler might need additional professional installation – 3-phase 220 volt power already exists for the garbage compactor currently on site.
- Garbage compactor might need to be removed/moved.
- Site prep work needed to clear tangantangen (trees/brush), stormwater drainage.
- No buildings; 40 x 40 concrete pad; perimeter fence and gate.
- Justification/Rationale: This site is adjacent to current recycling site and will provide the necessary ground to consolidate and manage scrap metal including derelict vehicles.
- Existing Recycling Facility needs secondary containment pallets for household hazardous waste and used oil

Planned Equipment (including POL):

- Excavator with shear or similar attachment for metal recycling

- Cardboard shredder
- Concrete pad
- Justification/Rationale: equipment needed to manage scrap metal and derelict vehicles.

Planned Training – Capacity Building of Staff:

- 1 FTE for baling scrap metal and properly recycling and disposing of various regulated and unregulated vehicle components.
- Training Module: Equipment Operations/Maintenance, Metal Recycling Operations with emphasis on vehicle management, Basic First Aid, Peer to Peer, OSHA (with emphasis on HHM)
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- 1 FTE – to manage cutting and baling of metal metal.
- Justification/Rationale: Heavy equipment requires human operators.

Planned New Materials to be Added or New Products Produced:

- Historically metals and derelict have been stockpiled until money is available for a third party to recycle it.
- Justification/Rationale: Processing metals and vehicles on island (including baling the metal is expected to reduce costs associated with using third parties

**Regarding Household Hazardous Material and Used Motor Oil Management**

Planned Improvements and Equipment:

Spill containment and spill prevention equipment, personal protective equipment, material handling equipment, and miscellaneous appurtenances and supplies required for managing HHM safely. Equipment needed to start accepting HHM and to be prepared for an emergency is $25,000-$30,000.

Planned Training:

OSHA 24 hr. with emphasis on HHM.

Planned New Materials to be Added or New Products Produced:

HHM (flammable wastes, corrosives, poisons/toxic materials, reactive waste, and used motor oil)

Justification/Rationale:

Tinian does not have major industry that might produce contaminants that enter the landfill. One of the next most likely sources of contamination that could impact groundwater would be household hazardous waste and/or very small quantity (VSQ) generators of hazardous wastes.

Planned Changes to Management/Personnel:

At this time HHM is not anticipated to require 1 FTE exclusively dedicated to HHM management, but the staff that does assist with HHM must be properly trained and equipped.

*Table 27 Tinian Recycling Center – Planned Improvements*

| NAME | Tinian Recycling Center and Recycling Center Expansion | |
|---|---|---|
| **OPERATOR** | Tinian DPW | |
| **LOCATION** | Atgidon - Tinian | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | |
| **BUILDING & GROUNDS REPAIR** | | Est. Total Price*: TBD |
| **NEW EQUIPMENT** | POL | Est. Total Price: $ |
| | Excavator with attachments (or similar equipment) that can manage scrap metal and vehicles | Est. Total Price*: $ |
| | Spare Parts | Est. Total Price*: $ |
| | Cardboard Shredder | Est. Total Price*: $ |
| **NEW PERSONNEL** | Two People | Est. Total Price: $<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | Derelict cars/ scrap metal | |
| | | |
| | | |
| | | |
| | | |

**C. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

**4) Tinian Organics Processing Site - Site Priorities**

This Permitted site will need an equipment shed to keep equipment out of the weather and protected from vandalism. The site has a CUC water spigot already in place; however, the site will need the necessary hose, etc. to address any hot areas/fires. The site will likely use a multi-shredder (borrowed from the Tinian Landfill), a woodchipper, log splitter, hand tools, small power tools, and a payloader with proper attachment to manage green waste debris. A stump/log splitter is required for larger stumps and logs.

| | |
|---|---|
| Priority Level: | Medium. |
| Estimated Price Available: | $284,000 for the Building (January 2022 pricing, FOB Tinian). |
| Permitted: | Yes. |
| Operator: | Tinian DPW |

Site preparation work necessary for small equipment shop/scalehouse, stormwater drainage. Justification/Rationale: Green waste and other organics are a significant portion of the municipal waste stream and disaster debris. Diverting green waste produces usable compost and keeps green waste from piling up and/or filling the permitted landfill space. Operating sites and trained operators provide a necessary service after storm events while storm debris is being collected.

Planned Improvements: O&M including Buildings and Grounds:

- Site grading, drainage
- Equipment shop/scalehouse,
- Stormwater drainage
- Fence and entrance gate
- Exit conveyor with magnet

Planned Equipment (including POL):

- Loader with clamshell bucket to grab and move green waste.
- Chipper/grinder
- Exit conveyor with magnet
- Power tools and hand tools
- Safety equipment (PPE, first aid kit, etc.)
- Justification/Rationale: This is basic equipment along with hand tools to manage bulk green waste.

Planned Training – Capacity Building of Staff:

- 2 FTE – First Aid, Equipment Operations/Maintenance, Compost Operations, Waste Screening and Waste Exclusion, Peer to Peer, OSHA.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- 2 FTE – to manage grinding/chipping/loading and customer service.
- Justification/Rationale: Heavy equipment requires human operators.

Planned New Materials to be Added or New Products Produced:

- Compost and mulch available as alternative daily cover and/or as compost for government or public use.
- Justification/Rationale: Finished mulch and compost helps us develop a circular economy.

*Table 28 Tinian Organics Processing Site – Planned Improvements*

| NAME | Tinian Compost Site | | |
|---|---|---|---|
| **OPERATOR** | Tinian DPW | | |
| **LOCATION** | Atgidon - Tinian | | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | | |
| **BUILDING & GROUNDS REPAIR** | Equipment shed and break room (portable restroom to be used on site) | | Est. Total Price*: 240,000 |
| **NEW EQUIPMENT** | Wheel loader with attachment | | Est. Total Price: $81,000 |
| | Woodchipper (new or repaired) | | Est. Total Price*: $80,000 |
| | POL | | Est. Total Price*: $5,000 |
| | Log/stump splitter | | Est. Total Price*: $25,000 |
| | Exit Conveyor with Magnet | | Est. Total Price*:$ |
| **NEW PERSONNEL** | Two People | | Est. Total Price: $ |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | | | |
| | As of Aug. 2023, organics are not processed only staged | | |
| | | | |
| **NEW SOLID WASTE SOURCES** | | | |
| | | | |
| **NEW SOLID WASTE ASPECTS** | Compost | | |
| | | | |

**D. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

## IV. Rota New/Proposed Solid Waste Management Facilities

# SUMMARY – ROTA – ONE TIME CLEAN UP EVENT AND FACILITY ACTION PLANS FOR NEW/PROPOSED PERMITTED SOLID WASTE MANAGEMENT FACILITIES

Rota's environment was spared from much of the destruction that befell other islands, and the native ecosystems are highly valued by the local community. Protecting the mammals, plants, birds, and other creatures is a high priority for residents of Rota.

Rota does not currently have the infrastructure for recycling any materials so the development of a recycling center is very important. Additionally, the State-owned Rota dump/landfill will operate as a Small Community Exempt Landfill and will require planning, design, construction activities, personnel, and equipment before final permitting.

Solid Waste Facilities in this section include:

- **Rota State-owned Small Community Exempt Landfill Improvements**
- **Rota Organics Center Improvements**
- **Rota Environmental Education and Recycling Center - Planned**
- **Rota Hardfill - Planned**

## ROTA PROPOSED ONE TIME CLEAN UP EVENT

A Rota "One-Time Bulk Pile Clean Up Event" event is proposed to manage various materials that have accumulated for many years.

Several materials have accumulated on Rota, these include derelict vehicles, scrap metal, green waste, compressed gas cylinders, bulky waste (including mattresses, box springs, furniture, dimensional lumber, and pallets) and white goods.

In the month of June 2023 OPD staff performed a field survey of these materials. The following material pile volumes and material counts were calculated:

*Table 29 Rota Stockpiles*

| MATERIAL | VOLUME | COUNT |
|---|---|---|
| Scrap Metal | 3,000 cy | |
| Compressed Gas Cylinders | | 130 |
| Bulky C&D | 1,400 cy | |
| Green Waste | 1,900 cy | |
| Vehicle Tires | 80 cy | |
| Vehicle Lead Acid Batteries | | 120 |
| White Goods | 680 cy | |
| Derelict Vehicles | | 300 vehicles (includes estimates made for vehicles on private property) |

- Priority Level: High
- Estimated Price: estimated at $1,500,000 - $3,000,000.
- Price dependent upon number of derelict vehicles that will be managed
- Operator: Third Party Contractor

Planned Equipment (including POL):

- Third Party to be contracted.

Planned Training – Capacity Building of Staff:

- Solid Waste Managers need project management training to assist in managing this type of work.

Planned Changes to Management/Personnel:

- No changes foreseen.

# ROTA NEW/PROPOSED PERMITTED SOLID WASTE MANAGEMENT FACILITIES

## 1A) ROTA Landfill – As a Small Community Exempt Landfill (SCEL)

To remain open as a State-owned small community exempt landfill, the Rota landfill site will need to be designed, constructed and receive a Solid Waste Management Facility permit from BECQ.

To be designated as a Small Community Exempt Landfill (SCEL) a ground water sample will need to be taken and the water analyses showing that the landfill site is not contaminating the groundwater.

To receive this permit, this State-owned SCEL will still require a site design that includes appropriate SCEL design. This design should also include the sub plans that are required: including Closure and Post Closure Plan that includes a Final Cover Design. These designs and plans can be developed with regulators. See 40 CFR 258.6(b)3.

Additionally, a SCEL requires designs for all components of 40 CFR 258.2. The following components might be developed within a revised Facility Operations Plan that includes (but is not limited to):

- Routine methane monitoring program,
- Surface water requirements (NPDES permit), and
- Monitoring for non-point discharge of pollutants.

Additionally, the Rota Landfill, as a state-owned SCEL, could use a Revised Facility Operations Plan that includes other content/requirements so that trained staff can:

- Control vectors (via daily cover),
- Stop all open fires or “flame ups”,
- Control access to the site,
- Collect any fees,
- Safely operate equipment,
- Identify and exclude banned and restricted materials, and
- Keep/submit specific operating records.

Then construction is required before the site is a fully operational and permittable SCEL. This Facility Operations Plan as described would be for continued operations as a permitted small community exempt landfill owned by the State (CNMI).

- Priority Level: High
- Estimated Development Price: SCEL $900,000
- Operator: Rota DPW or private contractor

Planned Equipment (including POL):

- Current landfill equipment has high hours and is recommended to be replaced. Landfill Heavy Equipment includes:
    - F750KL Dump Truck (16,362 miles),
    - M318D Excavator (hours unavailable),
    - 930K CAT Wheel Loader (Payloader)(5,129 hours), and
    - D-6TXL CAT Dozer (hours unavailable).

Planned Training – Capacity Building of Staff:

- Landfill operations specific to State-owned SCEL, first aid, preventative maintenance (Heavy Equipment), Waste Screening and Waste Exclusion, OSHA Training – 40 hr., disaster material management training, chemical firefighting training. Note: Rota staff should receive a minimum of 80 hours of hazardous material management (including HHM) and chemical fire training.

Planned Changes to Management/Personnel:

- No changes staff are already assigned, if the landfill charges a tipping fee, a scalehouse attendant would need to be added.

Planned New Materials to be Added or New Products Produced:

- None

*Table 30A Rota Landfill at Tatachok – Planned Improvements*

| **NAME** | **Rota Landfill as State-owned SCEL** | |
|---|---|---|
| **OPERATOR** | Rota DPW | |
| **LOCATION** | Tatachok - Rota | |
| **PROPOSED DATE TO COMMENCE FACILITY PERMITTING AND IMPROVEMENTS** | October 1, 2023 | |
| **BUILDING & GROUNDS REPAIR** | Groundwater sample at beach seep to determine if SCEL is possible | Est. Total Price* for Groundwater Sample: $35,000 |
| **NEW EQUIPMENT** | Dump Truck | Est. Total Repair Price: $30,000 |
| | Excavator | Est. Total Price*: $140,000 |
| | Payloader | Est. Total Price*: $120,000 |
| | Spare Parts / Maintenance Services | Est. Total Price*: $10,000 |
| **NEW PERSONNEL** | Two to Three People | Est. Total Price: $<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | No new materials | |
| | | |
| | | |
| | | |
| | | |

**E. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

### 1B) ROTA Landfill – NOT Small Community Exempt Landfill

This is the landfill option if the water shows some form of contamination that is attributed to the landfill and consequently the SCEL option is not available. This option (1B) would replace option 1A (for a SCEL as described above).

To be constructed and re-open as a State-owned landfill, the Rota landfill site will need a Solid Waste Management Site Design - which has been completed. This design has all the design requirements and groundwater monitoring components required in 40 CFR 258. This site would require a Closure and Post Closure Plan that includes a Final Cover Design developed with BECQ (see 40 CFR 258.6(b)3.

Additionally, a non-SCEL landfill requires designs and operational plans for all components of 40 CFR 258.2. The following components might be developed within a revised Facility Operations Plan that includes (but is not limited to):

- Routine methane monitoring program,
- Stormwater sampling program - surface water requirements (NPDES permit), and Monitoring for non-point discharge of pollutants.

Construction is required before the site is a fully operational and permittable.

The Rota Landfill, could use a Revised Facility Operations Plan that includes other content/requirements so that trained staff can:

- Control vectors (via daily cover),
- Stop all open fires or "flame ups",
- Control access to the site,
- Collect any fees,
- Safely operate equipment,
- Identify and exclude banned and restricted materials, and
- Keep/submit specific operating records.

This Facility Operations Plan as described would be for continued operations as a permitted landfill owned by the State (CNMI).

- Priority Level: High
- Estimated Construction Price: Non-SCEL - $3,500,000 (with monitoring wells, leachate collection systems, pumps, generators, lines, etc.)
- Operator: Rota DPW or Private Contractor

Planned Equipment (including POL):

- Current landfill equipment has high hours and is recommended to be replaced. Landfill Heavy Equipment includes:
    - F750KL Dump Truck (16,362 miles),
    - M318D Excavator (hours unavailable),
    - 930K CAT Wheel Loader (Payloader)(5,129 hours), and
    - D-6TXL CAT Dozer (hours unavailable).

Planned Training – Capacity Building of Staff:

- Landfill operations specific to State-owned SCEL,
- First aid,
- Preventative maintenance (Heavy Equipment,
- Waste Screening and Waste Exclusion,
- OSHA Training.
- OSHA Training – 40 hr.,
- disaster material management training,
- chemical firefighting training.
- Note: Rota staff should receive a minimum of 80 hours of hazardous material management (including HHM) and chemical fire training.

Planned Changes to Management/Personnel:

- No changes, staff are already assigned, if the landfill charges a tipping fee, a scalehouse attendant would need to be added.

Planned New Materials to be Added or New Products Produced:

- None

*Table 30B Rota Landfill at Tatachok – Planned Improvements (NOT SCEL)*

| NAME | Rota Landfill as State-owned Landfill (Not SCEL) | |
|---|---|---|
| **OPERATOR** | Rota DPW | |
| **LOCATION** | Tatachok - Rota | |
| **PROPOSED DATE TO COMMENCE FACILITY PERMITTING AND IMPROVEMENTS** | October 1, 2023 | |
| **BUILDING & GROUNDS REPAIR** | No initial groundwater sample at a beach is needed as groundwater monitoring wells will be required. | Est. Total Price - Sample*: $35,000<br><br>Est. Total Price – Design and Construction: $3,500,000 |
| **NEW EQUIPMENT** | Dump Truck | Est. Total Repair Price: $30,000 |
| | Excavator | Est. Total Price*: $140,000 |
| | Payloader | Est. Total Price*: $120,000 |
| | Spare Parts / Maintenance Services | Est. Total Price*: $10,000 |
| **NEW PERSONNEL** | Two to Three People | Est. Total Price: $<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | No new materials | |
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**F. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

### 2) Rota Organics Processing Site - Site Priorities

Organics are a major component of the Waste Stream and a major component of emergency/disaster waste streams. This permitted site will receive and process organic debris into mulch and/or finished compost using a woodchipper, multi-shredder, log splitter, hand tools, small power tools, and a payloader with proper attachment to manage green waste.

- Priority Level: High
- Estimated Price: TBD (similar to the needs of Tinian's organics site)
- Permitted: Yes
- Operator: Rota DPW

Planned Improvements O&M including Buildings and Grounds:

- Site grading, drainage
- Equipment shop/scalehouse,
- Stormwater drainage
- Fence and entrance gate
- Exit conveyor with magnet
- Water on site

Planned Equipment (including POL):

- Loader with clamshell bucket to grab and move green waste.
- Chipper/grinder
- Power tools and hand tools
- Exit conveyor with magnet
- Safety equipment (PPE, first aid kit, etc.)
- Shared use of mobile multi shredder with Landfill and Recycling Center
- Water buffalo or municipal water supply for firefighting/hot piles
- Compost Thermometer
- Justification/Rationale: This is basic equipment along with hand tools to manage bulk green waste.

Planned Training – Capacity Building of Staff:

- 2 FTE
- First Aid,
- Equipment Operations/Maintenance,

- Compost Operations,
- Waste Screening and Waste Exclusion,
- Peer to Peer,
- OSHA Training.
- OSHA Training – 40 hr.,
- Disaster material management training,
- Chemical fire firefighting training.
- Note: Rota staff should receive a minimum of 80 hours of hazardous material management (including HHM) and chemical fire training.

Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- 2 FTE – to manage grinding/chipping/loading and customer service.
- Justification/Rationale: Heavy equipment requires human operators. Rota has about 3,000 cubic yards of green waste stockpiled.

Planned New Materials to be Added or New Products Produced:

- Finished compost and mulch.

*Table 31 Rota Organics Processing Site – Planned Improvements*

| **NAME** | **Rota Organics Processing Site** | | |
|---|---|---|---|
| **OPERATOR** | Rota DPW | | |
| **LOCATION** | Sinapalo - Rota | | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | | |
| **BUILDING & GROUNDS REPAIR** | Equipment Shed / Maintenance Building (no bathroom) | | Est. Total Price*: $150,000 |
| **NEW EQUIPMENT** | Wheel loader with attachment | | Est. Total Price: $81,000 |
| | Woodchipper (new or repaired) | | Est. Total Price*: $80,000 |
| | POL | | Est. Total Price*: $5,000 |
| | Log/stump splitter | | Est. Total Price*: $25,000 |
| | Exit conveyor with magnet | | Est. Total Price*: $ |
| **NEW PERSONNEL** | Two People | | Est. Total Price: $<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Two People 2 years | | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | As of August 2023, 3,000 cy of organics are staged at the landfill | | |
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| **NEW SOLID WASTE SOURCES** | | | |
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| **NEW SOLID WASTE ASPECTS** | Compost | | |
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**G. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

### 3) ROTA Environmental Education and Recycling Site – Site Priorities

This project will transform Rota's environmental education and post-consumer recycling infrastructure through the construction of Environmental Education and Recycling Center (Center). The Center will process recyclables traditionally via baling (plastics, rubber, and metal) and by on-island composting (fibers and wood). Rota's desire to retain and use as much material as possible on island is innovative compared to systems reliant upon overseas markets and layers of intermediate brokers.

Rota has a unique environment, and there are pressures on the marine and terrestrial environments from human activity and rapid climate change. These are critical issues of our times, and the Center will serve as a central information and education hub leading residents of Rota into a more sustainable future.

Rota will also use the Center during times of disaster as another point for material sorting and processing.

This site still needs A&E services. The recycling area may not be fully enclosed with four walls; however, paper products, HHM, and machinery needs to be kept out of the rain/weather.

| | |
|---|---|
| Priority Level: | High. (Including HHM management) |
| Estimated Price Available: | Yes. $2,400,000 (January 2022 pricing, FOB Rota). |
| Permitted: | No |
| Operator: | Rota DPW |

Planned Improvements: O&M including Buildings and Grounds:

- Site grading, drainage
- Equipment shop
- Recycling Center
- Classroom
- Office space with bathroom and parking

Planned Equipment (including POL):

- Loader
- Excavator with shear or similar attachment
- Multi-shredder/Grinder
- Horizontal baler
- Power tools and hand tools

- Safety equipment (PPE, first aid kit, etc.)
- Spill containment pallets for HHM and Used Oil
- Office furniture
- Classroom furniture and A/V equipment
- Educational displays
- Bins for various recyclables like sorted E-waste
- POL
- Justification/Rationale: This is basic equipment along with hand tools to manage recyclables including plastic, metal, vehicles, paper, white goods, bulky items, pallets, and e-waste.

Planned Training – Capacity Building of Staff:

- 2 FTE – First Aid, Equipment Operations/Maintenance, Compost Operations, Waste Screening and Waste Exclusion, Peer to Peer, OSHA.
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

- 2 FTE – to manage materials and provide direction to those unloading materials.
- 1 FTE – to provide environmental education including zero waste and conservation.

Planned New Materials to be Added or New Products Produced:

- Compost and mulch available as alternative daily cover and/or as compost for government or public use.
- Justification/Rationale: Finished mulch and compost helps us develop a circular economy.

**ROTA – Special Emphasis on household Hazardous Waste Management**

Planned Improvements and HHM Equipment:

Spill containment and spill prevention equipment, personal protective equipment, material handling equipment, and miscellaneous appurtenances and supplies required for managing HHM safely. Equipment needed to start accepting HHM and to be prepared for an emergency is $25,000-$30,000.

Planned HHM Training:

OSHA 24 hr. or OSHA 40 hr. with emphasis on HHM.
Chemical Fire Firefighting
Note Rota staff should receive a minimum of 80 hours of hazardous material and chemical fire training.

Planned New Materials to be Added or New Products Produced:

HHM (flammable wastes, corrosives, poisons/toxic materials, reactive waste, and used motor oil)

Justification/Rationale:

Rota does not have major industry that might produce contaminants that enter the landfill. One of the next most likely sources of contamination that could impact groundwater would be household hazardous waste and/or very small quantity (VSQ) generators of hazardous wastes.

Planned Changes to Management/Personnel:

At this time, HHM is not anticipated to require 1 FTE exclusively dedicated to HHM management, but the staff that does assist with HHM must be properly trained and equipped.

*Table 32 Rota Environmental Education and Recycling Center at Tatachok – Planned Improvements*

| NAME | Rota Environmental Education and Recycling Site | |
|---|---|---|
| **OPERATOR** | Rota DPW | |
| **LOCATION** | Tatachuk - Rota | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | |
| **BUILDING & GROUNDS** | Building with office, classroom, parking, recyclable processing space | Est. Total Price*: $2,200,000 |
| **NEW EQUIPMENT** | POL | Est. Total Price: $ |
| | Grinder/Shredder | Est. Total Price*: $420,000 |
| | Skid Steer with forks and clamshell attachments | Est. Total Price*: $ |
| | Horizontal Baler | Est. Total Price*: $ $80,000 |
| | Excavator with Shear or similar attachment | Estimated Cost to Repair: $35,000 |
| **NEW SERVICE (Local or Third Party)** | Environmental Education | |
| | Processing Recyclables and bulky material for use as ADC | |
| **NEW PERSONNEL** | 3People | Est. Total Price: $<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | X People X years | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | | |
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| **NEW SOLID WASTE SOURCES** | | |
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| **NEW SOLID WASTE ASPECTS** | | |
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**H. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

**4) Rota Hardfill Site – C&D Landfill Site Priorities**

As of August 2023, this site has only been in the discussion/planning stages and no new site has been decided upon.

a. Priority Level: Medium
b. Estimated Price Available: $100,000 for grading and land clearing
c. Estimated Price: TBD
d. Operator: Tinian DPW

Planned Improvements - O&M including Buildings and Grounds:

To be sited in an old borrow pit or quarry. Site prep work needed to: clear trees/brush, grade for access, and grade for stormwater drainage.

No buildings. Site will require gate and site access controls.

Planned Equipment (including POL):

Track or wheel loader to visit site periodically to push piles of waste C&D and cover with soil or approved ADC.

Planned Training – Capacity Building of Staff:

- Part of one FTE
- Training Modules: Equipment Operations/Maintenance, OSHA, Basic First Aid, Peer to Peer, Site Operations Plan, Chemical Fire Fighting, Spill Prevention and Clean-up
- Justification/Rationale: Heavy equipment operators need regular training to be safe, to maintain expensive equipment and to operate the site within regulatory requirements.

Planned Changes to Management/Personnel:

e. Part of one FTE – to manage site.
f. Justification/Rationale: Heavy equipment requires human operators.

Planned New Materials to be Added or New Products Produced:

g. Historically C&D has been placed in the landfill.
h. Specific wastes associated with brick, block, rock, and rubble, roadwork material, demolition wastes, construction waste, and site clearance waste.
i. Justification/Rationale: A new C&D area will save expensive airspace in the permitted landfill.

*Table 33 Rota Hardfill – Planned Improvements*

| NAME | Rota Hardfill | |
|---|---|---|
| **OPERATOR** | DPW - Rota | |
| **LOCATION** | Rota | |
| **PROPOSED DATE TO COMMENCE FACILITY OPERATIONS** | October 1, 2023 | |
| **BUILDING & GROUNDS REPAIR** | Site has not been selected nor assessed | Est. Total Price*: $100,000 for grading and land clearing |
| **NEW EQUIPMENT** | Shared from other sites | Est. Total Price: $ |
| | | Est. Total Price*: $ |
| | | Est. Total Price*: $ |
| | | |
| **NEW PERSONNEL** | Personnel shared from other sites | Est. Total Price: $<br>Total People:<br>Total Price |
| **TRAINING AND STAFF DEVELOPMENT** | Personnel shared from other sites | Est. Total Price: $ |
| **NEW MATERIALS TO BE ADDRESSED/NEW PRODUCTS MADE** | Most hardfill materials go to the landfill. | |
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| **NEW SOLID WASTE SOURCES** | | |
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| **NEW SOLID WASTE ASPECTS** | | |
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**J. *Estimated Price is FOB Saipan including ancillary equipment needed for identified task/purpose.**

# V. Northern Islands New/Proposed Solid Waste Management Facilities

## 1) Summary – Northern Islands Plans

There is not a specific solid waste management facility planned for the Northern Islands at this time due to the limited number of people homesteading on the islands. De minimis wastes, which are not organic, are burned. Waste which cannot be burned should be removed as s hips arrive to drop-off and pick-up people and supplies.

However, some tourism is beginning to develop on the Northern Islands. The Municipality of the Northern Islands may want to review some of the policies and social contract schemes introduced in other Pacific Islands such as Palau. These systems encourage people to leave wildlife, pack out all waste, and to be respectful of the natural world they are visiting.

## VI. Other Zero Waste/Circular Economy Initiatives

The following ideas fall within Zero Waste Initiatives that reduce unsustainable resource flows and switch from long-term waste management through disposal or incineration to value-added resource recovery systems that will help build a more sustainable economy in the CNMI.

Saipan's population size (under 45,000 people) and its geographic location make it difficult to efficiently take advantage of regional population centers. Consequently standard "bale and ship" systems of collection and intermediate processing (which is that is often identified as "recycling") becomes a cost center and not revenue generating.

Often artisan centers are not able to move the volume necessary to "put a dent" in the volume of a particular material, but diversion figures may be only one part of the overall equation. Retaining materials on island, employing local people, replacing mined materials, and re-using or making new value-added products that might replace imported products may make economic sense. The CNMI may need assistance from other partners to use or develop calculations that capture the true savings of these programs.

The following ideas could be evaluated for their support in the CNMI and their inclusion in the CNMI's overall zero waste strategy. The opportunities described briefly described below may be organized as private or public enterprises.

ARTISAN CENTER

- Glass Blowing/Glass Design
- Metal Forging/Casting
- Plastic Extrusion – injection molding (including building blocks), sheet extrusion, and dimensional lumber products.

RE-USE STORE WITH PROCESSING/REFURBISHING

- Re-use Processing Factory
  - Motor Oil Processing
  - Electronics/Phones
  - Privacy Protection Service - Degausser / Shredder
  - Vegetable Oil Products

ELECTRONIC MATERIAL EXCHANGE

- Surplus Equipment/Furniture Sales (books, computers, monitors, etc.)

**An Example of a Pilot Plastic Recycling Program:**

A pilot project developed by MINA was designed to collect plastic bottles as a resource to manufacture new materials and products that will introduce a circular economy, the first of its kind in the CNMI.

This project was initially based on data collected from the Nutritional Office of the Public School System that showed the number of meals distributed to the students in the CNMI over a period of 180 days. As Saipan does not have potable water, each meal is accompanied by an 8oz PET bottle of water, which amounts to 3,392,800 bottles of water distributed to the students. This number doesn't take the consumption of bottled water in the general community. This data led to MINA's interest in searching for a solution to begin to address plastic pollution in the CNMI.

Through a funding opportunity, MINA was able to research and purchase plastics upcycling equipment. Through Memorandums of Understanding, MINA now has the equipment installed at four school locations around Saipan; DanDan Middle School, Saipan Community School, Northern Marianas College currently house what are known as the 3 in 1 upcycling machines. Additionally, Northern Marianas Technical Institute is housing one 3-in-1 upcycling machine, as well as a shredder pro, a sheet press and cooling table that produces sheet plastic and timber blocks. Trainers were on Saipan for period of two weeks and trained the MINA staff in the operation of the equipment, who now "train the trainers" at the school locations.

Over the summer months, MINA has hosted outreach activities to more than 300 students from summer school and camp programs and were able to engage the students in the production of sample products made with the 3-in-1 machines. The program will continue throughout the school year, with participating schools and collection sites of plastics at four additional school sites and one church parish, with transporting of the plastics to the hosting schools for processing.

Further funding will be needed for logistics and to keep the project on track.

## VII. Training – Institutional Strengthening

1) **CNMI Wide – All Municipalities**

- Solid Waste Operations

  Solid Waste Operations includes composting and recycling: vehicles, refrigerant-bearing appliances, and electronics.

  Solid waste operations are highly regulated and have the potential to cause nuisance and or human health issues. Maintaining landfills according to applicable regulations is of primary importance. Formal solid waste operations training/education is one tool used to improve operations at landfills.

  The Solid Waste Association of North America (SWANA) is recognized in the USA and outside the USA as a premier producer of solid waste management training materials. Training courses cover landfill management, recycling, composting, etc. Trainers are not usually SWANA employees; trainers come from the public and private sectors.

  This plan recommends operator training for anyone regularly working at a permitted solid waste management facility, including landfills, transfer stations, and organic processing facilities.

- White Goods and E-Waste Disassembly and Preparation/Storage

  White good disassembly is primarily concerned with refrigerant bearing appliances and mercury device bearing appliances (freezer lids, refrigerator doors, and thermocouple or flame sensors in gas ranges). Plastics might be removed before the metal is recycled. E waste may not have materials requiring evacuation or removal (except for some removable batteries.) Higher value items might be removed depending on labor costs and market value.

- Household Hazardous Material Management

  Although household hazardous waste (HHW) is generally exempt from RCRA, individuals with the responsibility to receive, sort, bulk, and otherwise manage household hazardous waste should have specific training. HHW has the ability, if handled improperly, to injure people, cause fires, or damage the environment. The Occupational Safety and Health Administration (OSHA) is the primary regulatory body that has promulgated rules for training people in the workplace.

This Plan recommends OSHA 24-hr training or OSHA 40-hr training to individuals who receive, handle, bulk, stage, or otherwise work with household hazardous materials.

- Waste Screening and Waste Exclusion

  Waste screening and waste exclusion is specifically identified in 40 CFR 258 subsection C. This Plan recommends annual waste screening and load checking training to all individuals who work at a permitted solid waste management facility including scale house attendants. This training may be produced "internally" in the CNMI.

- Equipment Operations and Preventative Maintenance

  Could be included with equipment purchases. Training manuals and or videos are welcome reference tools to help re-train existing staff and/or train new staff.

- Basic First Aid

  People working in or around solid waste facilities are exposed to an environment that utilize heavy equipment, power tools, and are exposed to sharp or hot objects. Many solid waste facilities are outdoors and expose workers to natural elements like mud, rain, heat, etc. Medical professionals that provide the training should be consulted regarding the frequency of training. This Plan recommends basic first-aid training to all individuals who work at a permitted solid waste management facility including landfills, transfer stations, organic processing facilities, recycling centers, and hardfill sites.

- Responding to Spills - Spill Prevention and Spill Response

  Developing situational awareness and rapid response to inhibit major environmental problems is an important part of solid waste management, especially around household hazardous wastes.

- Operating Citizen Convenience Centers

  Small vehicles create a different set of challenges than large commercial trucks. CCC operations training reviews permit requirements, good neighbor policies, and reviews waste screening and waste exclusion materials.

- Project Management

  People working with grants should have training specific to the grantor and the CNMI regulations.

- Peer to Peer

  Very few Training systems work as well as face-to-face meetings between operators who do the work every day. This type of training between the CNMI and Guam was performed in 2022 and is highly recommended.

## VIII. Considerations for Shared Mechanic

Landfill, recycling, and compost operations share similar equipment such as wheeled or track loaders, dump trucks, excavators, chippers and shredders.

Maintaining heavy equipment requires specific knowledge and skills. This skill set is often difficult to maintain for extended periods on Tinian and Rota. Equipment sidelined due to inadequate service is unacceptable; especially for landfills that receive waste 5-6 days per week and have requirements for daily cover, etc.

The economics of sharing a heavy equipment operator should be reviewed; it is possible a shared mechanic is more cost effective than trying to keep a heavy equipment mechanic on each island. Logistical concerns with travel, housing, etc. would need to be reviewed.

Similar/same make and model of equipment used on Tinian and Rota would also simplify the knowledge and inventory of spare parts (including filters and regular maintenance parts) required for each piece of heavy equipment.

## IX. Considerations of Possible Legislation – Examples

The intention of this section is not to expressly dictate legislation to be developed; but rather, it has the intention to identify topical legislation used in other geographic regions, especially the Pacific Island region, that can help reduce waste and lead communities toward their zero waste goals.

It is not the intention of this section to list all the examples of legislation in the Pacific region. From bottle bills to bag bans several different tools are used singularly or in combination to reach individualized goals. Each country and State have developed their "right-sized" legislation for their communities and their goals.

Previous sections have already identified the socio-economic factors at work currently in the CNMI so these will not be repeated in this section. Without repeating the data – it is worth mentioning that the economic impact of legislation on both the residential sector and business sector are a major concern for municipal leaders. Even tipping fees, which are commonly applied at landfills, are a major concern for decision makers who understand their constituents. It is the hard work of municipal and state leaders to find the proper balance of acceptable revenue streams required to meet regulatory requirements, maintain expected levels of operational efficiency, and provide zero waste and disposal services to the community.

Legislation to generate solid waste operating revenue and or behavior change can take several forms, including disposal bans, taxes and tax-incentives, unit-based disposal fees, tonnage or pound-based fees, pre-disposal fees, bans/restrictions, redemption programs, and social contracts/pledges.

The following ideas for legislation are in no order.

- Updated Tipping Fee schedule
- Automobile Registration / Pre-disposal Fee
- Beautification Taxes/Import Fees
- Financial Incentives for Businesses with Documented Program Participation
- Container/Bottle Redemption
- Disposable/Single Use Plastic Ban (Bags, Cutlery, etc.)
- Disposal Bans (Cardboard, Organics, etc.)
- Environmental Pledges for Visitors/Guests
- Extended Producer Responsibility (E-waste, Motor Oil, Appliances, Tires, etc.)
- Fines for Various Infractions (Littering, Illegal Dumping, etc.)
- Advanced Disposal Fees
- Permit and Licensing Fees
- Tax Incentives for On-island Material Reprocessing (Used Motor Oil, Vegetable Oil, Tires, Plastics, etc.)
- Tourist Entrance/Exit Fees
- Universal Garbage Collection with or without Curbside Collection of Recyclables

## X. Considerations for Sustainable Financial Tools

In the CNMI, many of the possible Financial Tools are closely associated with required legislation. The CNMI is not unique in that the financing of ongoing operational costs continues to be a challenge. Like many states, sustainable financing is often tied closely to legislation.

The World Bank 2050 Report had the following statement regarding financing:

*"Financing solid waste management systems is a significant challenge, even more so for ongoing operational costs than for capital investments, and operational costs need to be taken into account upfront. In high-income countries, operating costs for integrated waste management, including collection, transport, treatment, and disposal, generally exceed $100 per tonne."*

Development grants from various CNMI partners can be used to build infrastructure like new facilities or new landfill cells, but the cost to maintain equipment and various appurtenances associated with modern integrated solid waste management systems is often more difficult to identify from outside sources and so local funds are needed.

Operational costs can significantly fluctuate month to month depending on environmental sampling schedules, equipment maintenance, transportation costs, weather related events, etc.

Consequently, facilities need operational reserves to keep facilities functioning. These reserves can be a "target" when State and municipal budgets become stretched.

Using private contractors to operate facilities reduces some of this uncertainty and fluctuation but contract services require different levels of management and oversight.

The CNMI has excellent Federal partners that have been working together to modernize the CNMI's waste management infrastructure, but the high cost of shipping supplies, the high cost of shipping commodities off-island, and high cost for professional services (like laboratory analysis) is a financial challenge.

It is the recommendation of this Plan that CNMI leadership work to find long-term, dedicated, sustainable financial tools that provide the necessary operating capital for the various solid waste facilities in the CNMI. It is also recommended that the CNMI continue to partner with Federal Agencies to build and maintain the solid waste infrastructure.

## XI. Considerations for Equity and Environmental Justice

### 1) CNMI Socio-economic Characteristics

A barrier in solid waste planning is trying to find waste-related data from Pacific islands with similar socio-economic characteristics.

For example, Guam's generation rate data is difficult to correlate because of the economic disparity between Guam and the CNMI. For example, Guam has a median household income of $58,289 and a mean household income of $74,309; whereas, the CNMI has a median household income of $31,362 and a mean household income of $43,905. The Guam figures are 46% and 41% above the CNMI figures respectively (Source: 2020 US Census). American Samoa is much more closely aligned economically with the CNMI, but the CNMI is 1,000s of miles from American Samoa.

### 2) CNMI Demographics and Economics

The CNMI has a very small population, and the economy can be very sensitive to international agreements, business decisions, severe weather, and US (federal) policies that can work together to decrease tourism, reduce private investment capital, and slow the CNMI economy. The CNMI's history of economic "booms and busts" since the 1980's is well documented. Some "booms and busts" were due to international agreements like the General Agreement for Tariffs and Trade by the World Trade Organization (affecting the growth and demise of the garment industry), or business decisions (direct flights from Japan ending in 2018).

More recently, gambling activity and increased tourism reached a crescendo in 2017 when over 650,000 people visited the CNMI, infusing the local economy and government accounts through hotel occupancy tax and business tax collection. But recent "bust causing" variables have included severe weather events, federal policies, and a global health crisis. For example: Typhoons Mangkhut and Yutu brought widespread damage to the CNMI in 2018. The discretionary parole visa (2009-2019) requirements significantly changed decreasing Russian and Chinese tourists. The EB-5 immigrant investor program changed in 2019, and Covid-19 restrictions were implemented for most of 2020 and into 2021. These factors together with other factors created a drastic reduction in tourism, a reduction in private investment capital, and a 12% reduction in population in 10 years. On a positive note: recent (Fall 2023) negotiated increases in weekly round-trip flights from China to the USA could help increase tourism in the CNMI.

### 3) Rota and Tinian

Rota and Tinian's small island populations isolated by miles of open Pacific Ocean does not allow for solid waste management efficiencies inherent in high volumes, regionalization, use of efficient wheeled transportation networks, and/or high-density populations.

Rota does not have a recycling center capable of managing paper, cardboard, aluminum beverage cans and other commonly recycled commodities. This community, as it relates to solid waste management infrastructure, appears to be underserved.

Rota has multiple socioeconomic and economic characteristics that might contribute to a lag in solid waste infrastructure development (compared to many cities in the US mainland or other islands in the CNMI). The Island of Rota is 95% persons of color. Of the 1,893 total people on Rota, 1,212 are Native Hawaiian and Other Pacific Islanders of which 1,129 are Chamorro. (Data Source: 2020 US decennial data). Median family income on Rota is $31,908 and per capita income is $13,154. The socioeconomic indicator "Low Income" is 41%-73% depending on the specific geo-spatial data selected in EPA's EJScreen GIS-based system (source: 2020 US Census data and EPA's website: ejscreen.epa.gov). On Rota, approximately 25%-45% of the population have limited English speaking skills complicating training and workforce development initiatives (source: ejscreen.epa.gov). Rota has approximately 912 households.

### 4) Fair Treatment and Meaningful Involvement with Respect to Development, Implementation, and Enforcement of Solid Waste Planning Activities

Please see Section D - Public Participation

## XII. Considerations for Protecting Privacy in Solid Waste Management

### 1) **Protection of Private Information – Including Document Destruction**

Multiple Federal laws (Acts) require certain private information to remain private requiring private and public entities to take reasonable measures to safeguard information before and during final disposal.

Fields such as insurance, education, medicine, law enforcement and many other areas within government are required to properly manage personal information (electronic or physical copies) al the way from data storage through final disposal. Some electronic media and printed materials require a greater degree of "destruction" that is currently available in the CNMI.

Landfilling is considered an insufficient manner of destruction for some confidential material.

Currently, hard drives with confidential information is in dry storage because machinery is not available to adequately de-magnetize and "wipe" clean the information.

Proper material management will lead toward additional opportunities for recycling.

Degaussing and proper shredding should be reviewed as systems adequate to protect privacy, reduce storage requirements, and increase opportunities for recycling.

[A Degausser machine was acquired via non-competitive SWIFR Grant via USEPA in the Summer of 2023. The portable machine is expected to be in Saipan and ready for use by March 2024.]

## XIII. Considerations for Open Dump Closures

Open dumping is primarily a problem on Tinian and Rota since both Tinian and Rota have garbage receiving areas (known locally as “landfills” or “dumps”) are unpermitted sites and therefore are illegal dump sites.

Please see **Section E** for a description of the Five-year Integrated Solid Waste Management Action Plan – specifically Proposed Solid Waste Management Facilities on Tinian and Rota. Also, **Section E** has a Summary of Proposed Tasks, Priorities, and Timing for Action.

Illegal dumping happens on all the islands and laws and systems are in place to punish those who are found guilty/responsible.

Please note that Illegal dumping and open dumps (regularly identified as the place to take municipal solid wastes) are two different problems.

## XIV. Community Education and Outreach

- CNMI Wide

  The number are type of education and outreach systems vary widely in the USA and in the territories. The CNMI might benefit from an experienced consulting that could provide specific tools based on the CNMI economic and demographic characteristics as well as CNMI solid waste management priorities. What type of appeal most motivates people in the CNMI? Is it climate change, coastal beautifications, wildlife, energy? Because budgets are limited understanding the education and outreach systems most likely to work best in the islands would help best direct our limited funds.

  Several of the education and outreach ideas currently in use and/or previously discussed with stakeholders include.

  - OPD newsletter
  - OPD website with list of resources
  - Other social media
  - Coastal Area Clean-ups – Various sponsored events
  - Volunteer Programs (Example: Tinian Rangers, Miss NMI Earth, etc.)
  - Government Office Paper and Container Recycling
  - School Office Paper and Container Recycling
  - School …. Other Waste Reduction Programs
  - Expanded Recycling/Zero Waste Education at DPW Facilities

- Saipan

  - Micronesia Islands Nature Alliance (MINA), a non-profit organization in Saipan, has collected very precise data about the wastes associated with food service in the Saipan public school system. Schools and similar institutions do not report total recycling or solid waste disposal figures.

  - MINA also collects some data during beach cleanups and has been leading nearshore cleanup efforts with a focus on marine debris collection and quantification of debris from recent typhoons.

- Tinian

  - Junior Reserve Officer Training Corps (JROTC) cadets are actively participating in the collection of aluminum cans and plastics bottles on community events – these

events serve as reminds to the community that aluminum beverage container recycling is available on Tinian for no additional charge.

- Tinain recently initiated a Zero Waste Study to determine the cost of universal garbage collection, curbside recycling, community/school education and outreach, as well as the necessary labor and equipment needed for these tasks. This repot is expected in the first half of 2024.
- The Mayor of Tinian uses Facebook to announce news, festivals, events, and recycling opportunities.

- Rota

  - Rota has a unique environment, and there are pressures on the marine and terrestrial environments from human activity and rapid climate change. These are critical issues of our times, and the proposed Environmental Education and Recycling Center will serve as a central information and education hub leading residents of Rota into a more sustainable future.
  - Events and promotions (including school outreach for recycling activities) are limited as there are no facilities to manage collected recyclable materials.

## XV. Other Proposed Solid Waste Management Facilities

**SAIPAN**

A more complete explanation of the current wastewater management system on Saipan is in Section B "Solid Waste Management Data"; Subsection II "Other Materials in the CNMI."

- Sadog Tasi WWTP Sludge Management Site (5.2 MGD)

- Agingan WWTP Sludge Management Site (3.0 MGD)

- Sludge periodically dewatered and taken to Marpi Landfill.

- The CISWMP integrates the planning for composting systems as a means to waste diversion – from the household level to the municipal level. Data/information about CUC's systems and processes of sludge management (for de-watered cake composting as well as the destination of septic sludge pumping) could be continuously compiled to assess the viability of the options available for composting or some other useful product like organic fertilizer.

**TINIAN**

- There is not a municipal wastewater treatment facility on Tinian.
- Wastewater comes from septic tank pumpings:
    - Tinian Diamond Casino has a permitted wastewater facility. Tinian Leadership understands from Tinian Diamond Casino that wastewater could go into that facility.
    - No formal agreements between the Municipality and Tinian Diamond Casino are currently active for the management of wastewater (sewage).
    - DPW would manage sludge and/or cake at a permitted landfill.
    - The original plans for Atgidon included a wastewater tank that could also be used by military personnel. Further investigation into the need for this tank should be evaluated.
    - The Department of Defense is likely to construct bathroom facilities using acceptable an septic tank and leach field system.
- Pollution Control Residuals – N/A
- Mining Wastes – N/A

**ROTA**

- There is not a municipal wastewater treatment facility on Rota.
- Wastewater comes from septic tank pumpings
- Septic Tank Pumpings are hauled to a private tank
- Pollution Control Residuals – N/A
- Mining Wastes – N/A

**NORTHERN ISLANDS**

Islands with homesteading sites use septic systems.

## XVI. Considerations for Conservation and Climate Change Issues

Conservation, keeping the coastal areas clean of litter and waste, and protecting recreational areas like beaches has consistently ben communicated as a priority for residents in the CNMI. The following ideas fall into two primary categories: conservation/beautification and climate impact reductions.

Conservation and beautification ideas include slowing the consumption of natural resources and reduce the impact of people and development on or near selected natural areas. The list of ideas here is not exhaustive. These ideas should serve as a launching point of discussion and ultimately deeper analysis regarding feasibility, etc. These ideas include:

- Coastal and Beach Clean-up – with specific attention provided to picnic litter and ocean plastics and other marine debris that wash onto the shores of the CNMI. Various organizations in the CNMI host beach-clean up events where hundreds of pounds of litter and marine debris (mostly plastic) is collected and disposed of.

- Recycling vs Raw Material Extraction – Applying the EPA WARM Model can help educate people, in easily understood terms, on the positive impacts recycling can make especially when compared to raw material extraction. CNMI numbers would be used o provide a more "local" figure. The EPA model can also help calculate methane reductions via recycling vs. organics decomposition (such as food waste or cardboard disposed of in a landfill).

- Conserving Landfill Airspace – Although landfill airspace is not on the top of everyone's priority list, landfills have a place in integrated solid waste management systems and the limited space on islands where landfill scan be sited necessitates an austere approach toward the consumption of permittable landfill space.

- Conserving Soil – Cover soils are extracted to cover putrescible wastes at landfills. Cover soils must be extracted from cleared ground – the more dirt needed the more ground must be cleared. The use of Alternative Daily Cover from materials recovered on-island is a way that landfills can reduce their use of soil-based covers.

  Potting Soil and Soil Amendments – Currently energy is spent to import potting soils, small enterprises could be developed that use local compost and growing media from marijuana production to replace imported potting soil and soil amendments.

- Used Motor Oil is currently burned on Saipan to generate heat for laundry services – replacing other forms of fuel that would be burned instead (such as diesel to generate heat from electrical appliances). As in other countries, new used oil products might be created – after filtering and blending – reducing imported oils.

Climate related impacts are projected to be especially noticeable to the CNMI in the coastal areas where erosion from higher/warmer waters.

- Coastal Erosion – Coastal Erosion and methods to minimize damage to infrastructure was discussed at length in the *2022 CNMI Smart, Safe Growth Plan*

- The CNMI has developed a committee/task force to write a Priority Climate Action Plan. This plan follows EPA guidelines and is designed to assist the CNMI in its development of grants such as EPA's Climate Pollution Reduction Grants.

- The CNMI completed an Alternative Energy Feasibility Study in 2023 focused on the energy needs and options for alternative energy sources at the Marpi Landfill (which is and "off-grid" site running on Diesel powered generators. Additional tasks to this report are scheduled to begin in October 2023 to compliment the data already provided – one task is the identification of grants to help build the necessary infrastructure. This report has a review of some of the solar systems already deployed on Saipan. The Alternative Energy Feasibility Study is available at the Office of Planning and Development website (www.opd.gov.mp).

- The EPA WARM MODEL is a national tool based on data that represents the national average and common practices across the country. The tool provides a Life-cycle assessment of greenhouse gas emissions (GHGs) and energy impacts from raw material acquisition through manufacturing and waste management. It allows users to see the greenhouse gases saved via zero waste initiatives like composting and recycling. waste management systems. The CNMI has not yet used the model on a CNMI recycled commodity.

## XVII. Summary of Proposed Tasks, Considerations, Priorities, and Timing for Action

**CNMI-Wide**

- Solid Waste Management Legislation particular to Revenue Generation (Sustainable Financing Schemes).
    - Fifteen legislative ideas were presented in Section E Subsection IX.
    - These would be state rules universally applied to all the Municipalities as applicable.

- Solid Waste Management Training.
    - Solid Waste Operations (Landfills, Hardfills, Recycling, Composting).
    - E-waste and White Goods.
    - OSHA/Household Hazardous Waste.
    - Waste Screening and Waste Exclusion.
    - Basic First Aid.
    - Peer to Peer (Site Visits)
    - Project Management.

- Privacy and Confidentiality.
    - Printed and Electronic Media (hard drives, USB drives, magnetic tape, disks, etc.).
    - Via degausser and shredder.

- Education and Outreach.

- Conservation and Climate Change Adaptability.

- Equity and Environmental Justice.

- Solid Waste Management Facilities.
    - Expanding and outfitting existing facilities and building new facilities.
    - Including facilities for wastewater sludge/cake.
    - Includes Open Dump Closure and conversion of Open Dumpsites to Small Community Exempt Landfills.

**Saipan**

Facilities (7) - Each Facility has multiple action items.

- Marpi Landfill
- CCC - Lower Base
- CCC – As Gorno
- CCC - Kagman
- Organics Processing – As Gorno
- Organics Processing – Kagman
- Hardfill

Non-Municipal - Other SW Materials

- Wastewater Treatment Sludge
- Pollution Control Residuals - anything from the diesel generators?

Zero Waste / Circular Economy Initiatives

- Artisan Center
- Re-use Store
- Bulk Material Exchange

Conservation

- Coastal and Beach Clean-up –
- Recycling vs Raw Material Extraction:
  - Creating Fuel from Plastics – Pyrolysis
  - Conserving Landfill Airspace
  - Conserving Soil
  - Creating Potting Soil and Soil Amendments
  - Creating Used Motor Oil Community Education and Outreach

**Tinian**

Facilities (6) - Each Facility has multiple action items.

- Current Landfill – Puntan Diablo - conversion from open dump to SCEL
  - Possible closure of some acres
  - Limited cell life (10 years)
  - Closed when Atgidon is fully permitted for MSW and available for use.
- Development of New Landfill – Atgidon – new location
- Hardfill Site for C&D - New
- Recycle Center / Loose Waste Transfer
- Recycle Center Expansion - New
- Organics Processing Site – Emergency Green Debris Staging Area
- Shared Mechanic

Non-Municipal - Other SW Materials

- Wastewater Treatment Sludge

Circular Economy

- x

Conservation

- x

Community Education and Outreach

- x

Opportunities for Local Revenue Generation

- Tipping Fees
- Unit Fees (White Goods, used oil, electronics, tires, etc.)

**Rota**

Facilities (4) - Each Facility has multiple action items.

- Landfill – conversion from open dump to SCEL or build as Non-SCEL
- Organics Processing Site (Compost Center) – Emergency Green Debris Staging Area
- Environmental Education and Recycling Center - New
- Hardfill Site for C&D - New
- Shared Mechanic

Non-Municipal - Other SW Materials

- Wastewater Treatment Sludge

Circular Economy

- x

Conservation

- x

Community Education and Outreach

- x

Opportunities for Local Revenue Generation

- Tipping Fees
- Unit Fees (White Goods, used oil, electronics, tires, etc.)

## 2) Timeline of Proposed Tasks, Priorities, Etc.

**SAIPAN**

Community Outreach, Education, Conservation, and Related Services

New Facilities

Existing Facilities

**TINIAN**

Community Outreach, Education, Conservation, and Related Services

New Facilities

Existing Facilities

**ROTA**

Community Outreach, Education, Conservation, and Related Services

New Facilities

Existing Facilities

**NORTHERN ISLANDS**

Community Outreach, Education, and Related Services

New Facilities

Existing Facilities

# F. U.S. Guidelines for Development & Implementation of State Solid Waste Mngmnt. Plans

## Subpart A Purpose, General Requirements, Definitions

### I. § 256.01 Purpose of the Federal Guidelines

**§ 256.01(a)**

The purpose of the Guidelines in 256.01(a) is to aid in the development and implementation of State solid waste management plans, following section 4002(b) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6942(b)) (the "Act"). These Guidelines hold methods for achieving the goals of environmentally sound management and disposal of solid and hazardous waste, resource conservation, and maximum use of valuable resources.

**§ 256.01(b)**

This CNMI Plan addresses the minimum requirements for approval of plans as set forth in section 4003 of the Act.

1) This Plan identifies, in accordance with section 4006(b):

    (i) The responsibilities for the implementation of this Plan, include levels at the state and local municipality level as well as regional autonomous organizations/authorities.

    (ii) Solid Waste Task Force was formed to communicate developments in integrated solid waste management planning and implementation.

    (iii) Solid Waste Task Force members represent State agencies, municipalities, and regional autonomous agencies.

    (iv) The responsibilities for the distribution of Federal funds to the authorities responsible for development and implementation of this Plan reside with the Governor.

    (v) The responsibilities for the means for coordinating regional planning and implementation under this CNMI Plan reside with the Office of Planning and Development which is within the Office of the Governor.

2) This Plan, in accordance with section 4005(c), prohibits the establishment of new open dumps within the CNMI,
This plan requires compliance with BECQ code stating that all solid waste (including solid waste originating in other States, but not including hazardous waste) SHALL be (i) utilized for resource recovery or (ii) disposed of in sanitary landfills (within the meaning of section 4004(a)) or otherwise disposed of in an environmentally sound manner.

   Please see Attachment 1 “BECQ Solid Waste Code”.

   Please see Section B of this report, specifically Section 256.20.

3) The plan provides for the closing or upgrading of all existing open dumps within the State pursuant to the requirements of section 4005.
This plan requires compliance with BECQ code stating that all existing open dumps shall be closed or upgraded within the CNMI pursuant to the requirements of section 4004.

   Please see Attachment 1 “BECQ Solid Waste Code”.

   Please see Section 256.20.

4) This Plan provides copies of the document that establishes State regulatory powers as may be necessary to implement the plan.
Please see Attachment 2 “BECQ Regulatory Powers”.

5) This Plan provides that no local government within the CNMI shall be prohibited under CNMI or local law from entering into long-term contracts for the supply of solid waste to resource recovery facilities.
Please see Attachment 3 “Contract Prohibitions: Supplying Solid Waste to Resource Recovery Facilities”.

6) This CNMI Plan provides for resource conservation or recovery and for the disposal of solid waste in sanitary landfills or for any combination of practices so as may be necessary to use or dispose of such waste in a manner that is environmentally sound.

**§ 256.01(c)**

This Plan establishes for any CNMI municipality which demonstrates that it has considered other public or private alternatives for solid waste management to comply with the prohibition on open dumping.

If the CNMI municipality is unable to utilize such alternatives they are to comply with the prohibition on open dumping, including providing BECQ a timetable or schedule of compliance including a schedule of remedial measures.

BECQ provides, as necessary, an enforceable sequence of actions or operations leading to compliance with the prohibition on open dumping of solid waste within a reasonable time (not to exceed five years from the date of publication of the inventory).

Please see Section XII – Timeline for Open Dump Closure.

Please see Attachment 1 "BECQ Solid Waste Code".

## II. § 256.02 Scope of the State Solid Waste Management Plan

**§ 256.02 (a)**

1) This CNMI Plan addresses the following solid wastes that pose potential adverse effects on health or the environment or provides opportunity for resource conservation or resource recovery in Section E of this report.

   (i) Hazardous wastes management
   (ii) Residential, commercial and institutional solid waste
   (iii) Wastewater treatment sludge
   (iv) Pollution control residuals
   (v) Industrial wastes
   (vi) Mining wastes
   (vii) Agricultural wastes
   (viii) Water treatment sludge
   (ix) Septic tank pumpings

2) This CNMI Plan considers the following aspects of solid waste management in Section D of this report:

   (x) Resource Conservation
   (xi) (Source Separation
   (xii) Collection

(xiii) Transportation
(xiv) Storage
(xv) Transfer
(xvi) Processing (including resource recovery)
(xvii) Treatment
(xviii) Disposal

**§ 256.02(b)**

This Plan establishes and justifies priorities and timing for actions. These priorities are based on the current level of solid waste management planning and implementation within the CNMI, the extent of the solid waste management problem, the health, environmental and economic impacts of the problem, and the resources and management approaches available.

See Attachment 6 - Public Participation Work Plan

**§ 256.02(c)**

This CNMI Plan sets forth an orderly and manageable process for achieving the objectives of the Act and meeting the requirements of the guidelines located in 40 CFR 256.

The process for achieving stated objectives, including activities to be undertaken and detailed schedules and milestones are located in Section D – Subsection XII.

These proposed schedules and milestones were discussed in Public meetings – see Section C – Public Participation Results and Attachment 6 - Public Participation Work Plan.

**§ 256.02(d)**

This CNMI Plan covers a minimum of a **five-year period** from the date submitted to EPA for approval.

This CNMI Plan is expected to initiate on Monday, April 15, 2024 (Earth Day).

**§ 256.02(e)**

The CNMI's legal authority for solid waste management is in Attachment 2 – BECQ Regulatory Powers. This attachment and other CNMI regulations provide BECQ and the executive and legislative branches of CNMI government a system to make modifications to regulations necessary to meet the requirements of these and future solid waste management rules/guidelines.

## III. § 256.03 CNMI Plan Submission, Adoption, and Revision

**§ 256.03(a)**

This CNMI Plan was not submitted to EPA within a reasonable time after final promulgation of these guidelines.

**§ 256.03(b)**

Prior to submission to EPA, this CNMI Plan was adopted by the CNMI pursuant to CNMI and OPD administrative procedures.

See Also Attachment 6 - Public Participation Work Plan

**§ 256.03(c)**

This CNMI Plan was developed in accord with public participation procedures required by Subpart G of this part. See Attachment 6 - Public Participation Work Plan.

**§ 256.03(d)**

This CNMI Plan will be revised by the CNMI, after notice and public hearings, when the EPA Administrator, by regulation, or the State determines, that:

(1) This CNMI Plan is not in compliance with the requirements of these guidelines;

(2) Information has become available which demonstrates the inadequacy of the plan; or

(3) Such revision is otherwise necessary.

**§ 256.03(e)**

This CNMI Plan will be reviewed by the Office of the Governor or his/her designated Agency/Office (such as the Office of Planning and Development) and, where necessary, be revised and readopted not less frequently than every three years.

## IV. § 256.04 CNMI Plan Approval, Financial Assistance

### § 256.04(a)

The Administrator shall, within six months after a CNMI Plan has been submitted for approval, approve or disapprove the plan.

## V. § 256.05 Annual Work Program

### § 256.05(a)

The Annual Work Program submitted for financial assistance under section 4008(a)(1) and described in the grant regulations (40 CFR part 35) shall be reviewed by the Administrator in order to determine whether this CNMI Plan is being implemented by the CNMI. MN 35.104, 35.107

### § 256.05(b)

The Administrator and the CNMI shall agree on the contents of the Annual Work Program. The Administrator will consider CNMI initiatives and priorities, in light of the goals of the Act, in determining annual work programs for each State. The annual work program represents a State's obligation incurred by acceptance of financial assistance.

### § 256.05(c)

Annual guidance for the development of the CNMI's work programs will be issued by EPA. While this guidance will establish annual national priorities, flexibility will be provided in order to accommodate differing State priorities.

### § 256.05(d)

The following documents developed under this CNMI Plan shall be included by reference in the annual work program:

1) Substate (CNMI municipality) solid waste management plans,
2) Plans for the development of facilities and services, including hazardous waste management facilities and services, and
3) Evidence of actions or steps taken to close or upgrade open dumps.

### § 256.05(e)

The annual work program shall allocate the distribution of Federal funds to agencies responsible for the development and implementation of this CNMI Plan.

## Subpart B Identification of Responsibilities; Distribution of Funding

## VI. § 256.10

### § 256.10 (a)

In accordance with sections 4003(1) and 4006 and the interim guidelines for identification of regions and agencies for solid waste management (40 CFR part 255), this CNMI Plan shall provide for:

1) The identification of the responsibilities of State and substate (municipal level) authorities in the development and implementation of this CNMI Plan;
2) The means of distribution of Federal funds to the authorities responsible for development and implementation of this CNMI Plan; and
3) The means for coordinating municipal-level planning and implementation.

### § 256.10(b)

Responsibilities in the CNMI shall be identified for the classification of disposal facilities for the inventory of open dumps.

### § 256.10(c)

Responsibilities shall be identified for development and implementation of the CNMI's regulatory program described in subpart C of this part.

### § 256.10(d)

Responsibilities shall be identified for the development and implementation of the CNMI's resource conservation and resource recovery program described in subpart D of this part.

### § 256.10(e)

State, substate and private sector responsibilities shall be identified for the planning and implementation of solid and hazardous waste management facilities and services.

### § 256.10(f)

Financial assistance under sections 4008(a) (1) and (2) shall be allocated by the CNMI to State and substate authorities carrying out development and implementation of this CNMI Plan. Such allocation shall be based on the responsibilities of the respective parties as determined under section 4006(b).

## Subpart C Solid Waste Disposal Programs

### VII. § 256.20

In order to comply with sections 4003 (2) and (3), this CNMI Plan assures that the State has adequate legal authority to prohibit the establishment of new open dumps and to close or upgrade existing open dumps. The prohibition of the establishment of new open dumps shall take effect no later than six months after the date of promulgation of the criteria or on the date of approval of this CNMI Plan, whichever is later.

### VIII. § 256.21

### § 256.21(a-d)

In order to comply with section 4003(4), this CNMI Plan identifies State regulatory powers. Please see Attachment 2: BECQ Regulatory Powers.

These powers are adequate to enforce solid waste disposal standards which are equivalent to or more stringent than the criteria for classification of solid waste disposal facilities (40 CFR part 257). Such authority is as definitive as possible and clearly establish the means for compliance.

These powers include surveillance capabilities necessary to detect adverse environmental effects from solid waste disposal facilities. Such capabilities include access for inspection and monitoring by regulatory officials and the authority to establish operator monitoring and reporting requirements.

These powers make use of a permit program which ensures that the establishment of new open dumps is prohibited. Please see Attachment 1: BECQ Solid Waste Code.

These powers shall have administrative and judicial enforcement capabilities, including enforceable orders, fines or other administrative procedures, as necessary to ensure compliance.

## IX. § 256.23

### § 256.23(a)

This CNMI Plan provides for the classification of existing solid waste disposal facilities according to the criteria. This classification shall be submitted to EPA, and facilities classified as open dumps shall be published in the inventory of open dumps.

### § 256.23(b)

This CNMI Plan provides for an orderly time-phasing of the disposal facility classifications described in paragraph (a) of this section. The determination of priorities for the classification of disposal facilities is based upon:

(1) The potential health and environmental impact of the solid waste disposal facility;

(2) The availability of CNMI regulatory and enforcement powers; and

(3) The availability of Federal and State resources for this purpose.

### § 256.23(c)

For each facility classified as an open dump the CNMI will take steps to close or upgrade the facility. Evidence of that action shall be incorporated by reference into the annual work program and be made publicly available. When the CNMI's actions concerning open dumps are modified, the changes shall be referenced in subsequent annual work programs. See Section D – Subsection XI – Timeline for Open Dump Closure.

### § 256.23(d)

In providing for the closure of open dumps the CNMI will take steps necessary to eliminate health hazards and minimize potential health hazards. These steps shall include requirements for long-term

monitoring or contingency plans where necessary. See Section D – Subsection XI – Timeline for Open Dump Closure.

### X. § 256.26

Requirement for schedules leading to compliance with the prohibition of open dumping.

In implementing the section 4005(c) prohibition on open dumping, this CNMI Plan provides that any entity which demonstrates that it has considered other public or private alternatives to comply with the prohibition on open dumping and is unable to utilize such alternatives to so comply, may obtain a timetable or schedule for compliance which specifies a schedule of remedial measures, and an enforceable sequence of actions, leading to compliance within a reasonable time (not to exceed 5 years from the date of publication of the inventory).

## Subpart D Resource Conservation and Resource Recovery Programs

### XI. § 256.30

**§ 256.30(a)**

In order to comply with sections 4003(2) and (6) as they pertain to resource conservation and recovery, this CNMI Plan provides for a policy and strategy for encouragement of resource recovery and conservation activities. Please See Attachment 4 – CNMI Comprehensive Sustainable Development Plan and Section D – 5-year Integrated Solid Waste Action Plan.

**§ 256.30(b)**

In order to comply with section 4003(5), CNMI rules provide that no local government within the State is prohibited under State or local law from entering into long-term contracts for the supply of solid waste to resource recovery facilities. TRUE?

## Subpart E Facility Planning and Implementation

### XII. § 256.40

In order to comply with section 4003(6), this CNMI Plan identifies current and future resource conservation, recovery, storage, treatment and disposal facilities and practices necessary to use or dispose of solid and hazardous waste in an environmentally sound manner. Please see Section D – 5-year Integrated Solid Waste Action Plan.

## Subpart F Coordination with Other Programs

For another example of inter-agency coordination, please See Attachment 8 – CNMI "One Start" Commercial Permit Application.

## XIII. § 256.50

### § 256.50(a)

Section 4003(1) requires the CNMI's Solid Waste Management Plan to identify means for coordinating regional planning and implementation under this CNMI Plan. Section 1006 requires the Administrator to integrate all provisions of this Act (including approval of CNMI Plans) with other Acts that grant regulatory authority to the Administrator in order to prevent duplication of administrative and enforcement efforts. In order to meet these requirements:

Description of OPD PL20/20,

Solid Waste Task Force, and

Other systems of coordination

### § 256.50(b)

The CNMI Solid Waste Management permitting program provides for coordination with programs under section 208 of the Clean Water Act, as amended (33 U.S.C. 1288). In identifying agencies for solid waste management planning and implementation, the CNMI reviews the solid waste management activities being conducted by water quality planning and management agencies designated under section 208 of the Clean Water Act. Where feasible, identification of such agencies should be considered during the identification of responsibilities under subpart B of this part. Where solid waste management and water quality agencies are separate entities, necessary coordination procedures shall be established.

Describe systems of coordination with:

Public Works,

OPD, and

BECQ – entity implementing the Clean Water Act .

### § 256.50(c)

The CNMI Solid Waste Management permitting program provides for coordination the National Pollutant Discharge Elimination System (NPDES) established under section 402 of the Clean Water Act, as amended (33 U.S.C. 1342). The issuance of State facility permits and actions taken to close or

upgrade open dumps shall be timed, where practicable, to coordinate closely with the issuance of a new or revised NPDES permit for such facility.

Describe systems of coordination with

Public Works,

OPD, and

BECQ

### § 256.50(d)

The CNMI Solid Waste Management permitting program provides for coordination with activities for municipal sewage sludge disposal and utilization conducted under the authority of section 405 of the Clean Water Act, as amended (33 U.S.C. 1345), and with the program for construction grants for publicly owned treatment works under section 201 of the Clean Water Act, as amended (33 U.S.C. 1281).

Describe systems of coordination with CUC and BECQ.

### § 256.50(e)

The CNMI Solid Waste Management permitting program provides for coordination with State pretreatment activities under section 307 of the Clean Water Act, as amended (33 U.S.C. 1317).

Describe systems of coordination with CUC and BECQ.

### § 256.50(f)

The CNMI Solid Waste Management permitting program provides for coordination with agencies conducting assessments of the impact of surface impoundments on underground sources of drinking water under the authority of section 1442(a)(8)(C) of the Safe Drinking Water Act (42 U.S.C. 300j-1).

Describe systems of coordination with CUC and BECQ.

## § 256.50(g)

The CNMI Solid Waste Management permitting program provides for coordination with State underground injection control programs (40 CFR Parts 122, 123, 124, and 146) carried out under the authority of the Safe Drinking Water Act (42 U.S.C. 300f et seq.) and with the designation of sole source aquifers under section 1424 of that Act.

Describe systems of coordination between BECQ and CUC.

## § 256.50(h)

The CNMI Solid Waste Management permitting program provides for coordination with State implementation plans developed under the Clean Air Act (42 U.S.C. 7401 et seq.; incineration and open burning limitations; and, State implementation plan requirements impacting resource recovery systems).

Describe systems of coordination between BECQ.

## § 256.50(i)

The CNMI Solid Waste Management permitting program provides for coordination with the Army Corps of Engineers permit program (or authorized State program) under section 404 of the Clean Water Act, as amended (33 U.S.C. 1344) for dredge and fill activities in waters of the United States.

Describe systems of coordination between BECQ and ACOE (Alaska) and CNMI Office of Military Affairs.

## § 256.50(j)

The CNMI Solid Waste Management permitting program provides for coordination with the Office of Endangered Species, Department of the Interior, to ensure that solid waste management activities, especially the siting of disposal facilities, do not jeopardize the continued existence of an endangered or threated species nor result in the destruction or adverse modification of a critical habitat.

Describe systems of coordination between BECQ and EPA and OIA.

## § 256.50(k)

The CNMI Solid Waste Management permitting program provides for coordination, where practicable, with programs under:

1) The Toxic Substances Control Act (15 U.S.C. 2601 et seq.; disposal of chemical substances and mixtures).

   Describe systems of coordination between BECQ and EPA

2) The Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. 1362 et seq.; disposal and storage of pesticides and pesticide containers).

   Describe systems of coordination between BECQ and EPA

3) The Marine Protection, Research and Sanctuaries Act (33 U.S.C. 1420 et seq.; disposal in ocean waters).

   Describe systems of coordination between BECQ and EPA

**§ 256.50(l)**

The CNMI Solid Waste Management permitting program participants are encouraged to coordinate, where practicable, with programs of other Federal agencies, including:

1) Department of the Interior.
   (i) Fish and Wildlife Service (wetlands),

   (ii) Bureau of Mines and Office of Surface Mining (mining waste disposal and use of sludge in reclamation), (iii) U.S. Geological Survey (wetlands, floodplains, ground water);

2) Department of Commerce, National Oceanic and Atmospheric Administration (coastal zone management plans);

3) Water Resources Council (floodplains, surface and ground waters);

4) Department of Agriculture, including Soil Conservation Service (land spreading solid waste on food chain croplands);

5) Federal Aviation Administration (locating disposal facilities on or near airport property);

6) Department of Housing and Urban Development (701 comprehensive planning program, flood plains mapping);

7) Department of Defense (development and implementation of State and subCNMI Plans with regard to resource recovery and solid waste disposal programs at various installations);

8) Department of Energy (State energy conservation plans under the Energy Policy and Conservation Act (42 U.S.C. 6321)); and

9) Other programs.

Describe systems of coordination between groups mentioned.

### § 256.50(m)

This CNMI Plan provides for training, where practicable, with other organizations' solid waste management teams in neighboring territories.

Describe here

## Subpart G Public Participation

## XIV. § 256.60

### § 256.60(a)

The CNMI planning agencies will:

1) Maintain a current list of agencies, organizations, and individuals affected by or interested in the plan, which shall include any parties that request to be on the list, the owner or operator of each facility classified as an open dump and any other parties which the State determines to be affected by or interested in the plan;

    a. Please see Attachment 6 – "Public Participation Work Plan"

2) Provide depositories of relevant information in one or more convenient locations; and

    a. Please see Attachment 6 – "Public Participation Work Plan"

3) Prepare a responsiveness summary, in accord with 40 CFR 25.8, where required by this subpart or by an approved public participation work plan, which describes matters on which the public was consulted, summarizes the public's views, and sets forth the agency's response to the public input.

    a. Please see Attachment 6 – "Public Participation Work Plan"

## § 256.60(b)

CNMI planning agencies will provide information and consult with the public on plan development and implementation. Provision of information and consultation shall occur both early in the planning process (including the preparation and distribution of a summary of the proposed plan) and on major policy decisions made during the course of plan development, revision and implementation. To meet this requirement, planning agencies shall:

1) Publicize information in news media having broad audiences in the geographic area;

2) Place information in depositories maintained under paragraph (a)(2) of this section;

3) Send information directly to agencies, organizations and individuals on the list maintained under paragraph (a)(1) of this section; and

4) Prepare and make available to the public a responsiveness summary in accord with 40 CFR 25.8.

Please see Attachment 6 – "Public Participation Work Plan"

## § 256.60(c)

CNMI Planning agencies will conduct public hearings (and public meetings, where the agency determines there is sufficient interest) in accord with 40 CFR 25.5 and 25.6. The purpose of the hearings and meetings is to solicit reactions and recommendations from interested or affected parties and to explain major issues within the proposed plan. Following the public hearings, a responsiveness summary shall be prepared and made available to the public in accord with 40 CFR 25.8.

Please see Attachment 6 – "Public Participation Work Plan"

## XV. § 256.61

### § 256.61(a)

A public participation work plan in accord with 40 CFR 25.11 shall be included in the annual CNMI Work Plan.

Please see Attachment 6 – "Public Participation Work Plan"

### § 256.61(b)

The CNMI will consult with the public in the development of the annual work program. One month prior to submission of the draft work program to the Regional Administrator, as required by 40 CFR part 35, the draft work program will be made available to the public at the State information depositories maintained under § 256.60(a)(2). The public will be notified of the availability of the draft work program, and a public meeting will be held if the planning agency determines there is sufficient interest.

Please see Attachment 6 – "Public Participation Work Plan"

### § 256.61(c)

The CNMI will attempt to comply with the requirements of Office of Management and Budget Circular No. A-95. (NOTE: OMB Circular A–95 was revoked in compliance with Executive Order 12372. - https://www.govinfo.gov/content/pkg/FR-1996-02-20/pdf/96-3221.pdf).

### § 256.61(d)

Copies of the final work program will be placed in the State information depositories maintained under § 256.60(a)(2).

This is the where… Public Library?/OPD website?/Mayor's Offices??

## XVI. § 256.63

### § 256.63(a) & (b)

Before approving a permit application (or renewal of a permit) for a resource recovery or solid waste disposal facility the CNMI shall hold a public hearing to solicit public reaction and recommendations on the proposed permit application if the State determines there is a significant degree of public interest in the proposed permit. This hearing shall be held in accord with 40 CFR 25.5.

See BECQ permit requirements/CNMI Code

## XVII. § 256.64

### § 256.64(a)

The CNMI will provide an opportunity for public participation prior to submission of any classification of a facility as an open dump to the Federal Government. The CNMI shall accomplish this by providing notice as specified in § 256.64(b) or by using other administrative procedures which provide equivalent public participation.

### § 256.64(b)

The CNMI may satisfy the requirement of § 256.64(a) by providing written notice of the availability of the results of its classifications to all parties on the list required under § 256.60(a)(1) at least 30 days before initial submission of these classifications to the Federal Government. For those parties on the list required under § 256.60(a)(1) who are owners or operators of facilities classified as open dumps, such notice shall indicate that the facility has been so classified.

# Attachment 1 – BECQ Solid Waste Code

# Attachment 2 – BECQ Regulatory Powers

# Attachment 3 – Contract Prohibition

# Attachment 4 – CNMI 2023 Solid Waste Management Study (GBB)

# Attachment 5 – CNMI Key Supporting Documents

*2021 CNMI Comprehensive Sustainable Development Plan (2021-2030)*

*2021 CNMI Disaster Debris Management Plan*

*2022 CNMI Smart, Safe Growth Plan*

# Attachment 6 – Public Participation Work Plan

# Attachment 7 – CNMI “One Start” Commercial Permit Application

# Attachment 8 – EPA and BECQ Letters Regarding Small Community Exempt Landfills

# Attachment 9 – Landfill Closure and New Landfill Site Evaluation

# Attachment 10 – DoD 2023-2024 CJMT

# Attachment 11 – Zero Waste Initiatives Study – Tinian

# Attachment 12 – Planned CNMI Solid Waste Infrastructure with Cost Estimates

# Attachment 13 – Tinian Landfill Comprehensive Study – 2005

When/Why was Carolinas Area rejected as a potential landfill location?

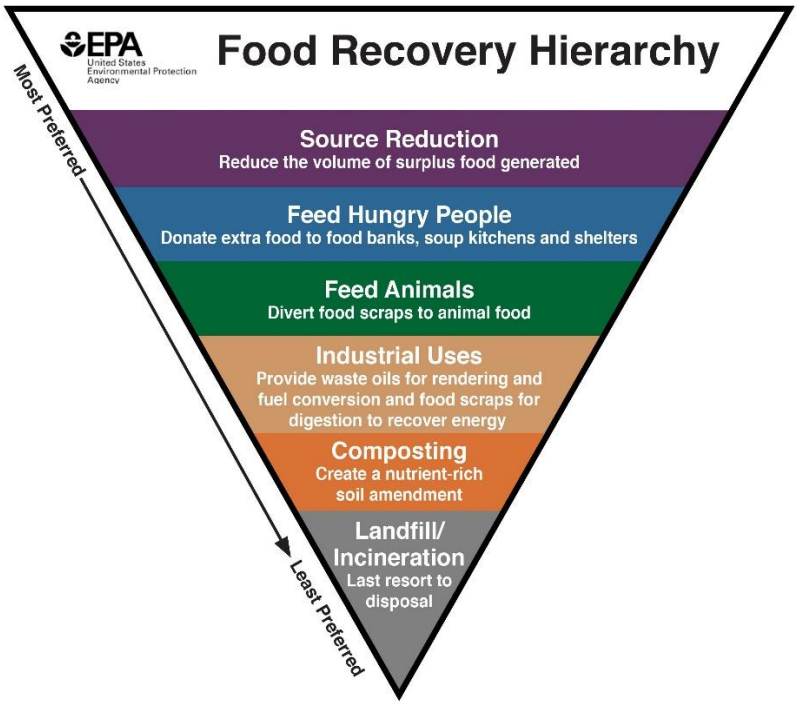
# Attachment 14 – 2008 Environmental Assessment – Proposed Atgidon Landfill

# Attachment 15 – Phase II ESA: Pina Landfill Site Data Evaluation (Executive Summary)

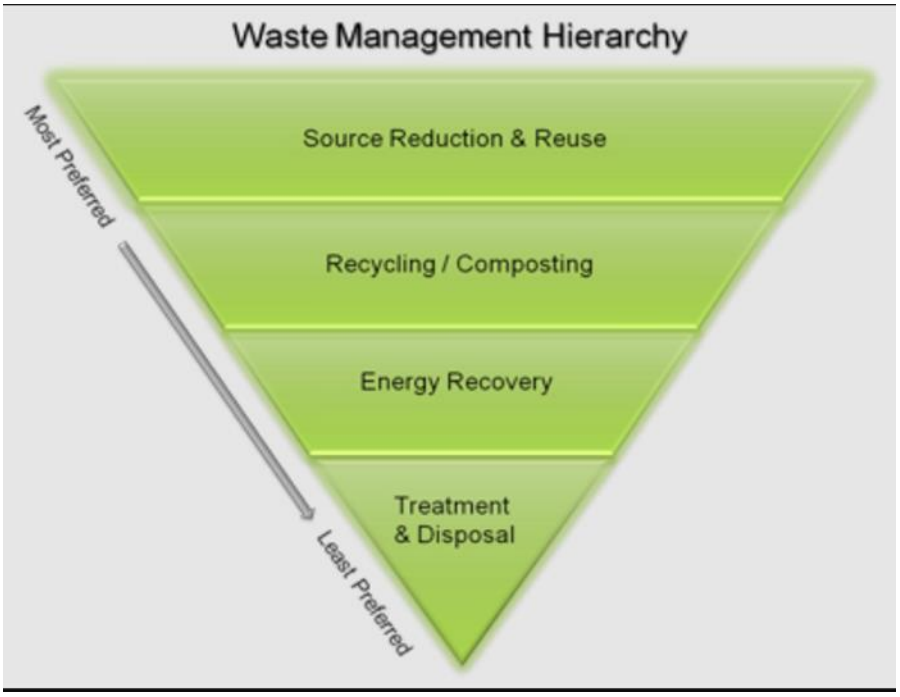
$65,500,000 to $194,500,000 estimated MEC/UXO and soil contamination clean-up costs.

# Attachment 16 – Waste Management Hierarchies

Food Waste Hierarchy




Waste Management Hierarchy



# Attachment 17 – Financial Assurance Requirements for State-owned Landfills