I MINA'BENTE OCHO NA LIHESLATURAN GUÅHAN
2006 (SECOND) Regular Session

Bill No. 349 (EC)

Introduced by: R.J. Respicio
B.J.F. Cruz

AN ACT TO DISAPPROVE THE 2006 INTEGRATED SOLID WASTE MANAGEMENT PLAN FILED BY THE GUAM ENVIRONMENTAL PROTECTION AGENCY

BE IT ENACTED BY THE PEOPLE OF GUAM:

Section 1. Legislative Intent. *I Liheslaturan Guahan* finds that the 2006 Integrated Solid Waste Management Plan submitted by the Guam Environmental Protection Agency and received by the Speaker of *I Liheslatura* on October 2, 2006 (Document No. 28-06-1097) does not meet the requirements of the Administrative Adjudication Law pursuant to 5 GCA §9301. Specifically, the 2006 Integrated Solid Waste Management Plan does not include an economic impact statement as required by 5 GCA §9301. According to the Administrator's Determination on Compliance with Economic Impact Statement Requirements of Administrative Adjudication Law for the Guam 2006 Integrated Solid Waste Management Plan, "it has been determined that regulations and fees will not have an annual

pm 4 23

economic impact to the general public of Five Hundred Thousand Dollars ($500,000) or less." However, the proposed regulations include provisions for the establishment and operations of a landfill at Dandan in Malojloj. The establishment of a landfill at this site will definitely have an economic impact greater than Five Hundred Thousand Dollars ($500,000). The plan does not include any reasonable analysis of the economic impact to the quality of life for the people living in Southern Guam. It is the intent of *I Liheslaturan Guahan* to expressly mandate the Guam Environmental Protection Agency to conduct an economic impact statement for any changes to the Integrated Solid Waste Management Plan.

Section 2. The proposed 2006 Integrated Solid Waste Management Plan received by *I Liheslaturan Guåhan* on October 2, 2006 by the Guam Environmental Protection Agency and attached as *'Appendix I'* to this Act is hereby disapproved.

Section 3. Item (2) of §51103(a) of Title 10 of the Guam Code Annotated is hereby amended as follows:

"(2) prepare and adopt in accordance with the Administrative Adjudication Law a final Solid Waste Management Plan, consistent with the provisions of this Act, within three hundred (300) days of the effective date of this Act. The Plan shall be revised at least every five (5) years, or sooner as needed <u>and shall always include an economic impact statement</u>;"

GUAM ENVIRONMENTAL PROTECTION AGENCY

AHENSIAN PRUTEKSION LINA'LA GUAHAN

P.O. Box 22439 GMF • BARRIGADA, GUAM 96921 • TEL: 475-1658/9 • FAX: 477-9402

SEP 29 2006

rec'd 9/29/06

Mrs. Helen Kennedy
Assistant Attorney General
Office of the Attorney General
Guam Judicial Center, Suite 2-200E
120 West O'Brien Drive
Hagatna, Guam 96910

SUBJECT: Guam's 2006 Integrated Solid Waste Management Plan

Buenas yan Saluda! As required by Section 51103 Chapter 51 of 10 Guam Code Annotated, the Guam Environmental Protection Agency is required to update Guam's Integrated Solid Waste Management (ISWMP) Plan in accordance with the Administrative Adjudication Law, 5 GCA §9301. This *Guam 2006 Integrated Solid Waste Management Plan (Guam 2006 ISWMP)* is an update to the *Integrated Solid Waste Management Plan for the Island of Guam* as amended and adopted by the Legislature under Public Law 25-175.

In conformance with the Administrative Adjudication Law, 5 GCA §9303(a), as amended by Public Law 24-27 (1997), Guam EPA hereby requests your review and approval of the following:

1. The Original approved copy and one duplicate copy (electronic format) of the above *Guam 2006 ISWMP* ;
2. One copy of the entire record of the public notices, public information meetings, and public hearing held during the public comment period of September 15, 2006 – September 26, 2006.

Should you have any comments or questions, please contact Ms. Barbara Torres, Solid Waste Management Program Manager at 475-1658/9.

Dangkolo na Si Yu'os Ma'ase.

JOHN M.U. JUCSON
Acting Administrator

Enclosure(s)

CC: Governor of Guam
Legislative Secretary, 28th Guam Legislature
Vice-Speaker of the 28th Guam Legislature and Committee on Natural Resources

Douglas B. Moylan
Attorney General

Joseph A. Guthrie
Deputy
Solicitors Division

Office of the Attorney General

September 29, 2006

Memorandum

TO: Acting Administrator, Guam Environmental Protection Agency Ref GEPA 06-0855

FROM: Assistant Attorney General

SUBJECT: Guam EPA 2006 Integrated Solid Waste Management Plan

Buenas! This office has reviewed as to form, the 2006 Integrated Solid Waste Management Plan ("Plan"). We find the Plan was adopted in accordance with the rule-making procedures of the Administrative Adjudication Law("AAL"), specifically 5 GCA § 9303 and Public Law 25-175. The Agency has authority under Public Law 25-175 to modify the 2000 Integrated Solid Waste Management Plan, pursuant to the AAL, consistent with Public Law 25-175, and under 10 GCA § 51103(a). The statutes do not require that the Governor approve the Plan adopted by the Agency's Board of Directors. Therefore, you may file the Plan directly with the Legislative Secretary. However, we recommend that the Agency provide a copy to the Governor's Office.

Under the AAL, 5 GCA § 9303(b), the Agency must file the following with the Legislative Secretary:

1. The Original approved copy and one duplicate copy (electronic format) of the above subject Plan;

2. One copy of the entire record of any public notices, meetings, and hearings held during the public comment period of September 14, 2005 – September 26, 2006.

The Agency should keep a copy of the entire administrative record. We also recommend that the Agency provide a copy of the Plan to the Compiler of Laws along with proof of the filing with the Office of Legislative Secretary. Please be advised that the AAL provides that no rule shall become effective until after ninety (90) calendar days have elapsed from the date of filing with the Legislative Secretary, during which time the Legislature may approve, disapprove or amend the rule.

Dangkolo na agradesimiento!

OFFICE OF THE ATTORNEY GENERAL
Douglas B. Moylan, Attorney General

By:
HELEN M. KENNEDY
ASSISTANT ATTORNEY GENERAL

Appendix I

GUAM ENVIRONMENTAL PROTECTION AGENCY

AHENSIAN PRUTEKSION LINA'LA GUAHAN

P.O. Box 22439 GMF • BARRIGADA, GUAM 96921 • TEL: 475-1658/9 • FAX: 477-9402

SEP 29 2006

Office of the Speaker
MAIL ROOM
Date: 10/2/06
Time: 8:00 AM
Rec'd by:
Print Name:
28-06-1097

Honorable Edward J.B. Calvo
Senator and Legislative Secretary
Twenty-Eighth Guam Legislature
155 Hessler Place
Hagatna, Guam 96910

SUBJECT: Adoption of Guam's 2006 Integrated Solid Waste Management Plan

Buenas yan Saluda! As required by Section 51103 Chapter 51, of 10 Guam Code Annotated, the Guam Environmental Protection Agency is required to update Guam's Integrated Solid Waste Management (ISWMP) Plan in accordance with the Administrative Adjudication Law, 5 GCA §9301. This *Guam 2006 Integrated Solid Waste Management Plan (Guam 2006 ISWMP)* is an update to the *Integrated Solid Waste Management Plan for the Island of Guam* as amended and adopted by the Legislature under Public Law 25-175.

In conformance with the Administrative Adjudication Law, 5 GCA §9303(b), as amended by Public Law 24-27 (1997), Guam EPA hereby files the following with the office of Legislative Secretary:

1. The Original approved copy and one duplicate copy (electronic format) of the above subject plan;
2. One copy of the entire record of the public notices, public information meetings, and public hearing held during the public comment period of September 15, 2006 – September 26, 2006.

Subject documents have been reviewed and approved by the Office of the Attorney General. A copy of Assistant AG Helen Kennedy's letter is attached for your information.

Should you have any comments or questions, please contact Ms. Barbara Torres, Solid Waste Management Program Manager at 475-1658/9.

Dangkolo na Si Yu'os Ma'ase.

JOHN M.U. JOCSON
Acting Administrator

Senator Edward J.B. Calvo
SECRETARY OF THE LEGISL
ACKNOWLEDGEMENT RECEI
Rcv'd by: Nikki
Print Name & Initial
Time: 3:30 Date: 9/29/06

Enclosure(s)

CC: Governor of Guam
Vice-Speaker of the 28th Guam Legislature, and Committee on Natural Resources

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"ALL LIVING THINGS OF THE EARTH ARE ONE"

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GUAM ENVIRONMENTAL PROTECTION AGENCY

AHENSIAN PRUTEKSION LINA'LA GUAHAN

P.O. Box 22439 GMF • BARRIGADA, GUAM 96921 • TEL: 475-1658/9 • FAX: 477-9402

FOR IMMEDIATE RELEASE
September 25, 2006
Contact: Tammy Anderson, 475-1663 or 688-9800

Guam EPA to have public hearing for Draft Guam 2006 Integrated Solid Waste Management Plan

The Guam Environmental Protection Agency (Guam EPA) will have a public hearing tomorrow regarding the Draft Guam 2006 Integrated Solid Waste Management Plan (ISWMP).

The hearing will begin at 5 p.m. in the conference room of Guam EPA's main office located at 17-3304 Mariner Avenue in Tiyan. The hearing concludes the public comment period on the Draft Guam 2006 ISWMP. All written comments regarding the ISWMP must be submitted by 5 p.m. tomorrow.

Under Chapter 51 of Title 10 Guam Code Annotated, the Guam 2000 Integrated Solid Waste Management Plan (ISWMP) must be updated every five years, or sooner if needed. The ISWMP was updated in 2005 and is now being updated again to stay current with Guam's quickly-changing solid waste situations, including complying with the federal consent decree. The new draft includes updated timelines as well as recommendations from the recent Public Utilities Commission Audit Report.

Copies of the Draft Guam 2006 ISWMP, Administrator's Economic Impact Determination and fact sheet are available at the Guam EPA office weekdays between 8 a.m. and 5 p.m. The documents are also available at Guam EPA's Web Site, www.guamepa.net under the Public Notices and News Releases section.

Comments can be dropped off at the Guam EPA main office or mailed to:

Acting Administrator
Guam Environmental Protection Agency
PO Box 22439, GMF
Barrigada, Guam 96921
Attn: Ms. Barbara F. Torres

For further information, please contact Tammy Anderson at 475-1663 or 688-9800.

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GUAM ENVIRONMENTAL PROTECTION AGENCY

AHENSIAN PRUTEKSION LINA'LA GUAHAN

P.O. Box 22439 GMF • BARRIGADA, GUAM 96921 • TEL: 475-1658/9 • FAX: 477-9402

FOR IMMEDIATE RELEASE
September 15, 2006
Contact: Tammy Anderson, 475-1663 or 688-9800

Guam EPA announces public hearing and comment period for the Draft Guam 2006 Integrated Solid Waste Management Plan

The Guam Environmental Protection Agency (Guam EPA) today announced the opening of the public comment period for the Draft Guam 2006 Integrated Solid Waste Management Plan (ISWMP). The public comment period closes Tuesday, September 26. All written comments must be submitted by 5 p.m. that day. There will also be a public hearing September 26 beginning at 5 p.m. in the conference room of Guam EPA's main office located at 17-3304 Mariner Avenue in Tiyan.

"The ISWMP is a critical document that outlines how the island will deal with solid waste for the next five years. The plan shows how Guam will reduce solid waste by recycling and composting while preparing to open a new landfill," Guam EPA Acting Administrator John Jocson said. "We are hoping the public will comment and provide input to finalize this important document."

Under Chapter 51 of Title 10 Guam Code Annotated, the Guam 2000 Integrated Solid Waste Management Plan (ISWMP) must be updated every five years, or sooner if needed. The ISWMP was updated in early 2005 and is now being updated again to stay current with Guam's quickly-changing solid waste situations, including complying with the federal consent decree. The new draft includes updated timelines as well recommendations from the recent Public Utilities Commission Audit Report.

Copies of the Draft Guam 2006 ISWMP and fact sheet are available at the Guam EPA office weekdays between 8 a.m. and 5 pm. The documents are also available at Guam EPA's Web Site, www.guamepa.net.

Comments can be dropped off at the Guam EPA main office or mailed to:

Acting Administrator
Guam Environmental Protection Agency
PO Box 22439, GMF
Barrigada, Guam 96921
Attn: Ms. Barbara F. Torres

For further information, please contact Tammy Anderson at 475-1663 or 688-9800.

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"ALL LIVING THINGS OF THE EARTH ARE ONE"

TO: Administrator, GEPA
17-3304 Mariner Avenue
Tiyan, Guam 98913

FROM: Alicia Diego
HCR – Box 17183
Inarajan, Guam 96915

SUBJECT: Guam 2006 Integrated Solid Waste Management Plan Sept. 2006

In reference to 8.3.4: School Recycling Centers

I think that each elementary school should decide whether or not they want to become a local collection point for certain recyclable materials. I suggest that the aluminum can collection site at the Guam public schools be piloted by schools who want to participate. Any school will need additional manpower to manage the bin, clean the bin, and to open the gate for pick up.

I suggest that subsequent hearings be held in the southern village of Inarajan.

I suggest that the Board of Members tour the area of the possible Layon Landfill ~~before~~ while reviewing the solid waste management plan of Sept. 2006.

Recycling Association of Guam

c/o PO Box 47, Hagatna, Guam, 96932
Tel: 477.7579 Email: tobiasonp@teleguam.net
Web site: www.guam.net/pub/rag/

26.Sep.2006
Guam Environmental Protection Agency
17-3304 Mariner Ave.
Tiyan, Guam, 98913

Greetings:

As a member of the Recycling Association of Guam, I would like to offer the following comments regarding the Guam 2006 ISWMP draft.

This seems to be a comprehensive, excellent for Guam. Making it actually work in our day-to-day island life may be difficult. Guam has often been criticized for having laws that are winked at and are not enforced.

Of paramount importance to the entire waste problem on our small island home is to prevent recyclable and compostable material from entering the new landfill.
I have seen such material continue to be added to the Ordot dump even during this year.

While this plan is aggressive, it is really what our island needs. Our modern lifestyle brings with it a tidal wave of waste. It must be solved and elected leaders must make our community take the necessary medicine.....even if it doesn't taste good. With the GSWA thus relieving DPW of having to provide solid waste services will allow DPW to concentrate on other problems.

Page 15: "The prepaid system would use a combination of prepaid stickers for residential containers and bags for self hauls and extra (*e.g.*, holiday, moving) garbage."
R.A.G. has previously suggested "bag-tags" and this is a good and efficient idea.

Page 35: "This Plan advocates universal source separation and collection **to the greatest extent possible.** There are two approaches to achieve source separation: mandatory requirements and market incentives."
Both mandatory and incentives should be used.

Page 36: "Passing legislation that will require the source separation of recyclable and compostable wastes..."
Separation is already working at the supermarket and home. Vegetables are displayed separately from soft drinks. Paper towels are not thrown in with chilled beef. At home we don't put bath towels in the refrigerator. Separation of waste is just an extension of what we already do.

Page 36: "The legislation should also provide penalties for those establishments whose Waste streams delivered to the facility do not meet established standards for incoming wastes."
Instead of a penalty for residential or commercial or government waste that violates these standards, an "additional service fee" might be very effective. I had heard that a city in Oregon would pickup a residents trash container with prohibited recyclable material but then separate out these items and then send a bill to the customer.

Recycling
Association
of **G**uam

~~PO Box 4387, Hagåtña, Guam, 96932~~
~~Tel: 1-671-735-2016 Fax: 1-671-734-1245~~
~~e-mail: uog3@kuentos.guam.net~~

As the 2006 ISWP document states on P. 40:
"The privatization of waste collection was addressed in Public Laws 24-139 and 24-272."
If ideas and practices will not be enforced or implemented, they are just words on paper.

Page 40: "As with commercial collection operations, the need for Government collection to support and promote recycling and composting **is crucial to the success** of Guam's recycling-based integrated solid waste management system."

Page 40: "A small operation may be maintained for the collection and transport of MSW from government agencies, institutions, and public facilities."
GovGuam should not even have a "small operation". This will become another funding problem with personnel payroll, office space and equipment purchases.

Page 45: "5. Refuse: Solid waste that is either putrescible or does not belong in the other waste streams..."
Educating Guam residents on alternatives for handling food waste will help improve general sanitation. Refrigeration or kitchen sink food waste grinders can be used. Some European countries collect food waste separately from other waste.

Guam EPA is to be commended for providing the 2006 ISWMP on their web site.
However, input from the average Guam resident should be accepted as a facsimile or email document. Many are now actively using computers, the internet and email. Restricting public input to correspondence sent via US Postal Service mail or hand-delivered to Guam EPA appears to make submission of comments more difficult.

Sincerely,

Paul S. Tobiason

Paul S. Tobiason
Member: Recycling Assoc. of Guam
Tel: 477.7579 email: tobiasonp@teleguam.net

ALBERT H. TSUTSUI, A.I.A., INC. . ARCHITECT
424 W. O'BRIEN DRIVE . JULALE CENTER-SUITE 213 . HAGATNA, GUAM 96910
P.O. BOX 2993 . HAGATNA, GUAM 96932
TEL.: (671) 472-8566 / 477-8539 FAX: (671) 477-9227

DATE	JOB NO.
SEPTEMBER 26, 2006	

ATTENTION:
MR. ROLAND GUTIERREZ
ACTING ADMINISTRATOR

TO: **GUAM ENVIRONMENTAL PROTECTION AGENCY**
P.O. BOX 22439 GMF
BARRIGADA, GUAM 96921

RE:

DRAFT GUAM 2006 INTEGRATED SOLID WASTE MANAGEMENT PLAN

GENTLEMEN:

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

__ Shop Drawings __ Prints __ Plans __ Samples __ Specifications

__ Copy of Letter __ Change Order __ Other: _____

COPIES	DATE	NO.	DESCRIPTION
1	ORIGINAL		LETTER FROM OCEAN DEVELOPMENT CO, INC. (DATED 9/25/2006)
1			PROPOSAL OF A SOLID WASTE TREATMENT PLANT FOR THE ISLAND OF GUAM
1			PROPOSAL FOR PREVENTION OF ENVIRONMENTAL POLLUTION AT THE
			ORDOT DUMP IN GUAM
1			PROPOSAL OF A COVER SYSTEM FOR PREVENTION OF RAIN WATER FOR THE
			ORDOT DUMP FOR THE ISLAND OF GUAM
1			CD - ACTIVE WATER PLANT
1			DVD - MDN PROCESS PLANT

THESE ARE TRANSMITTED as checked below:

__ For Approval __ Approved as submitted __ Resubmit _____ copies for approval
x For your use __ Approved as noted __ Submit _____ copies for distribution
x As requested __ Returned for corrections __ Return _____ corrected prints
__ For review and comment __ Other: _____
__ FOR BIDS DUE: _____ 20____ __ PRINTS RETURNED AFTER LOAN TO US

REMARKS: TRANSMITTING THE ATTACHED AS DESCRIBED HEREIN FOR YOUR YOUR USE AND INFORMATION.

IF YOU SHOULD HAVE ANY QUESTIONS OR REQUIRE CLARIFICATION(S), PLEASE DO NOT HESITATE TO CONTACT OUR OFFICE AT THE TELEPHONE AND FAX NUMBERS PROVIDED ABOVE.

RECEIVED
SEP 26 2006
Guam Environmental Protection Agency

COPY TO: _____

Signed: _____
ALBERT H. TSUTSUI, A.I.A.

If enclosures are not as noted, kindly notify us at once.

OCEAN DEVELOPMENT CO., INC.
(O. D. C. INC.)
603 ORIENT NEW AKASAKA, 2-8-15, AKASAKA, MINATO-KU, TOKYO, JAPAN

PHONE 03-3587-0341, 0454
TELEX 02425520 PITKOD-J
CABLE DORAYKE TOKYO
FAX 03-3587-0467

September 25, 2006

Mr. Roland T. Gutierrez
Acting Administrator
Guam Environmental Protection Agency
P.O. Box 22439 GMF,
Barrigada, Guam 96921

Dear Mr. Gutierrez,

We at O.D.C. Inc Group submitted the Letter of Interest for solid waste facility improvement in Guam in response to the Request for Letter of Interest advertised in January, 2006.
With reference to the Guam government's current request for comments for the Draft Guam 2006 Integrated Solid Waste Management Plan Update, we would like to provide our related comments as a proposal to use the latest waste disposal system which is practically used in Japan.

The proposed system is a "Magmatizing Waste Disposal to Nature process (M.D.N.) that can process waste into recyclable slag in harmless subgrade materials and resalable metals. The system does not produce any pollutants such as dioxin by using an ultra high temperature reduction method different from other incineration furnace. Japan's Environment Minister Koike personally inspected the system and admitted it as an environment-friendly, recycling-oriented, advanced nonpolluting system. Currently, a waste treatment facility employing this system is operating at an isolated island in Okinawa and accepts waste from neighboring islands.

We would like to propose a smaller M.D.N. plant for household waste treatment in Guam. The furnace can take any kinds of waste, from domestic garbage to waste oil, heavy industrial machine, tire, scrap car, abandoned boat, home electric appliances, plastics, asbestos, FRP, transformer, battery with PPC, and medical waste. Therefore, it can dispose of every waste in the Ordot Dump, which leads to a cost reduction and "reclaiming" of the land as a "park". Also, a cost savings

will be the none requirement of a landfill. There are different sizes of plants according to the amount of waste.

We believe that it is important to recycle waste as resources and raw materials in terms of conserving natural environment and using natural resources efficiently.

Attached materials on waste treatment measures are as follows:

(1) Proposal of a Solid Waste Treatment Plant for the Island of Guam
(2) Proposal for Prevention of Environmental Pollution at the Ordot Dump in Guam
(3) Proposal of a cover system for prevention of rain water for the Ordot Dump for the Island of Guam
(4) CD - ACTIVE WATER PLANT
(5) DVD - MDN PROCESS PLANT

We would appreciate it if you would review these materials and use them to solve the waste treatment problems in Guam.

Sincerely yours,

Yusuke Kurumi
President & CEO
Ocean Development Co., Inc. (Group)

PROPOSAL OF A
SOLID WASTE TREATMENT PLANT
FOR
THE ISLAND OF GUAM

Sep. 25, 2006

Ocean Development Co. Inc. Group

CONTENTS

CHAPTER 1 GENERAL DESCRIPTION

The " Solid Waste Treatment Plant" is designed for the complete solution of the problems of municipal solid waste in Guam. By having this plant, the needs to acquire a landfill area will be eliminated and the volume of existing landfilled waste will be gradually treated to reduce its volume. And the flue gas will be controlled by state-of-art technology to give almost nil impact on the natural environment.

Section 1.1 PLANT DESIGN

1) Objects of Waste Treatment

a) Household Wastes, Commercial Wastes, Industrial Wastes (Demolition and construction wastes, etc) 146M.Tons/24Hr

b) Medical Wastes 4M.Tons/24Hr

c) Waste from landfill site 50M.Tons/24Hr

2) Capacities of Furnaces

a) Melting Furnace 100M.Tons/24Hr x 2 Furnaces (Wet Base)

Note : When you want to treat excavated waste from ORDOT landfill, the tonnage of incoming waste does not match that of treatment facility.
The reason for this is that as the flow sheet shows, we separate out the soil, sand, concrete debris and thing of that sort, and the weight of these will be taken out from incoming waste.

3) System

The proposed facility is a Magmatizing Waste Disposal to Nature process (M.D.N) that can take any kind of waste, whether it is household garbage or industrial waste, and process it into easily recyclable slag and metal without producing any pollutants in process. The system uses a cokebed furnace similar to a smelting furnace to melt down the waste instead of incinerating it.

3-1) MDN Plant _

a) Preprocessing Equipment Skeleton Rock Bucket

(Note: above are operated in the landfill site)

b) Receiving and Feeding Equipment Forklift and conveyor
c) Furnace Type Magmatizing cokebed shaft furnace
d) Gas Cooling Equipment Boiler and Gas cooling tower
e) Flue Gas Treatment Equipment
Dry Scrubber (Bag Filter + Activated Carbon + Slaked lime)
f) Power Generation Equipment Steam Turbine + Power Generation

g) Waste Water Treatment Equipment Unnecessary

h) Fly-Ash Handling Equipment Feed back to the Magmatizing cokebed shaft furnace

3-2) Common Equipments
a) Electric Equipment
b) Instrumentation
c) Building Equipment : Building, Parking Area, Pavement, Washrack

4) <u>Process Flow Diagram</u>
a) General Flow : Please refer to the attached Document AAT-1 "Process Flow Diagram"
b) MDN Plant Flow : Please refer to the attached Document AAT-2 "MDN Process Flow"

Section 1.2 EMISSION STANDARD

The "MDN Plant" is designed to meet the below standards.

1) Air Pollutant Emission Standard

Particulate	0.01 g/ Nm^3
Nitrogen Oxide	100 ppm
Hydrogen Chloride	50 ppm
Sulfur Oxide	20 ppm
Dioxins	0.1 ng-TEQ/ Nm^3

Note: The values listed above are on a basis of O_2:12% and dry gas.

2) Water Emission Standard

Water emission standard is considered to be equivalent to Japanese standard.

Notes: Plant Wastewater shall be treated and reused in the plant, without discharge.
Domestic Wastewater shall be discharged to the city sewage system.

3) Other Standards

Other standards are considered to be equivalent to Japanese standards.

Section 1.3 SCOPE OF WORK

1) The Scope of Work on this proposal

a) Basic engineering

b) Detail engineering

c) Civil and architectural works

d) Equipment and material (including mechanical equipment, instrument, electrical equipment, piping materials, duct and cable)

e) Installation Works (including installation of equipment, piping work, cabling work and temporary works)

f) Under ground water treatment facility for plant use

(Depend on the site condition, it may be required city water supply)

g) Training for the operation personnel

h) Commissioning supervision

i) Spare parts and consumables for one-year operation

2) The Out of Scope on this proposal

a) Refuse collection

b) Collection of existing and interim landfilled waste

c) City water supply for plant operation staff

d) Operation of the plant

e) Land acquisition

f) Administrative permissions shall be carried out in the name of the owner.

(Technical support for permissions is included in our scope)

g) Any items which are not in Section 1.3 1) above.

h) Any taxes duties levied in Guam including not only corporate tax, personal income tax but import duties and other local taxes.

Section 1.4 DESIGN OBJECTIVES

The "M.D.N Plant" is designed to construct an efficient waste disposal method and utilizing its energy while preserving the environment and elimination of a landfill area.
In order to attain this purpose, main design objectives are established as follows.

1) Complete Solution

The MDN system uses a cokebed furnace that can take any kind of waste and process it including fly ash into easily recyclable slag and metal without producing any pollutants in process.

2) Follow Environmental Regulation

The plant is equipped with dry scrubber as flue gas control system. The system is designed to reduce the concentration of particulate and harmful gases to almost nil.

3) Easy To Maintain

The systems of the plant are designed based on internationally accepted design standard related to the field of their application. This has been particularly decided with respect to future expansion, short-term repair of facilities, optimization of maintenance as well as a uniform stock of spare parts. Furthermore, equipment spacing, provisions of maintenance platform and access were given sufficient consideration.

4) Easy to Operate

The plant is equipped with state of the art plant control systems. The plant is designed to have a synchronized control and monitoring of Magmatizing cokebed shaft furnace and steam generation process in the central control room. The plant control system is designed for easy control of combustion and equipment operation.

CHAPTER 2 SYSTEM AND EQUIPMENT DESCRIPTION

This chapter describes the process flow, technology and their advantages of the systems in the plant.
In addition, regarding the composition of equipment and process flow diagrams were previously mentioned. Please refer to Section 1.1 4).

Section 2.1 PREPROCESSING SYSTEM

Preprocessing system is designed in order to clear off the wastes such as concrete, soil, sand in wastes from landfill.
The preprocessing system consists of Skeleton Rock Bucket and a trammel.
First, the skeleton rock bucket classifies the wastes from landfill in terms of size. In this stage, the wastes over 300 mm are classified to return to landfill. While, wastes that size are over 300 mm are broken up by the crusher, and turned to be under 300 mm.
Further, the trammel classifies the wastes of under 300mm in weight. Most of heavier ones separated by the trammel should be soil, sand, etc. And that soil and sand are returned to fill again.
This system shall be installed and operated in the landfill site.

NOTE: 40% of incombustibles such as concrete, soil, sand is estimated, judging from data in Japan

Section 2.2 WASTE RECEIVING AND FEEDING SYSTEM

The design and layout of various equipment and facilities for the receiving of waste are properly considered so that the delivery of waste can be handled easily without any obstruction or long waiting time for the refuse vehicles. Furthermore, it is designed so that the feeding of waste can be easily and evenly controlled.

Regarding the receiving and feeding waste, forklift and conveyor system is adopted.

Section 2.3 FURNACE

The M. D. N. Plant furnace offers the following features:

a) Gas is produced in the course of reducing reaction and contain CO which is usable as fuel
b) Slag and materials are usable as recycled resources.
c) Small volume of consumption of power and water
d) No fly ash and unburned materials

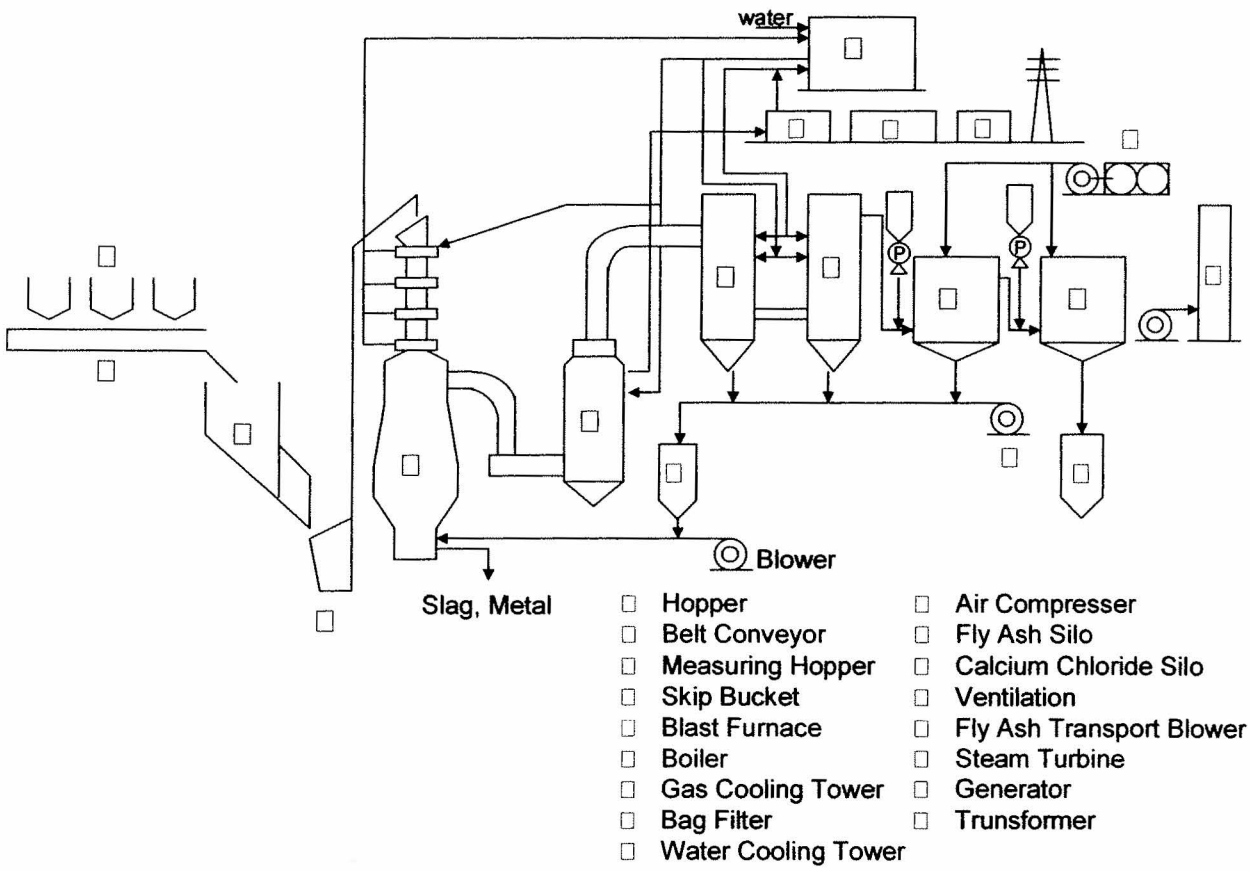

Fig 1. A Cross section drawing of typical MDN Plant

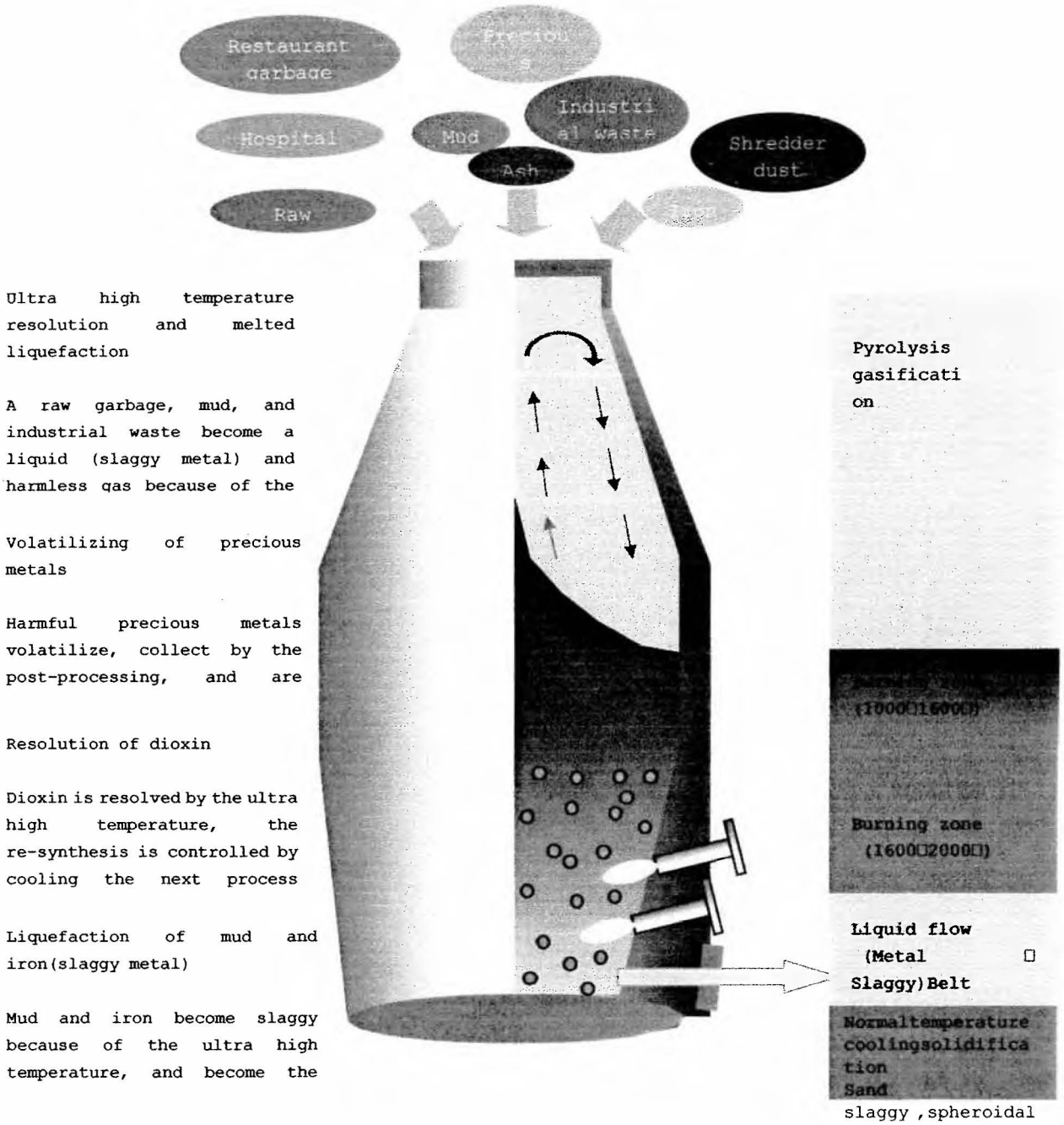

Fig 2. Outline of magmatizing cokebed shaft furnace

Section 2.4 FLUE GAS TREATMENT SYSTEM

Flue gas treatment systems are becoming more important year by year, as concerns for environment and health increase worldwide. The system we planned efficiently removes acidic gasses such as HCl and SOx from flue gas.
The air pollution control equipment consists of dry scrubber system, activated carbon injection system and bag filter.
The powdered slaked lime will be used in the dry scrubber as a chemical reactant with the acid gases. And the activated carbon will be used for Dioxins/Furans removal.
The bag filter is designed and operated to meet particulate emission standard.

It has a number of special features.

a) High ratio of acidic component removal and good mechanical reliability
b) Low installation costs, easy maintenance, and low operational costs
c) Does not require a wastewater treatment facility.

CHAPTER 3 COST AND MANPOWER

Section 3.1 INITIAL COST (from Japanese cost basis) (Unit: JP. million yen)

	Plant cost	Building cost
Waste-To-Energy (WTE) Plant	7,899	494
Vehicles for plant preprocessing	26	----
Office Equipments	----	10
Preprocessing system at landfill (Skeleton rock bucket, Vehicles)	81	----

Note: 'Plant cost' includes a), b), d), e), f), g), h) & l) of section 1.3 1) described before.

Section 3.2 OPERATION COST

Please refer to attachment ATT-3 (1/2) " Operation Cost Table " and ATT-3 (2/2) " Operation Term "

Section 3.3 PLANT MAINTENANCE COST

Please refer to attachment ATT-4 " Plant Maintenance Cost "

Section 3.4 MANPOWER SCHEDULE FOR OPERATION

(from Japanese cost basis)

TYPE OF OCCUPATION		SHIFT				TOTAL
		1	2	3	4	
Magmatizing waste Disposal to Nature Process (M. D. N.) plant	FURNACE/BOILER OPERATOR	3	3	3	3	12
	ELECTRICAL/INSTRUMENT OPERATOR	1	1	1	1	4
	ASSISTANT OPERATOR	.	.	.	.	0
	CRANE OPERATOR	1	.	.	.	1
	MAINTENANCE TEAM	2	.	.	.	2
	WEIGHING OPERATOR	2	.	.	.	2
	PLATFORM WATCHMAN	2	.	.	.	2
	MANAGER FOR OPERATION	1	.	.	.	1
	DRIVERS FOR PLANT VEHICLE	.	.	.	.	.
	Sub-Total	17	.	.	.	29
Landfill Site	DRIVERS and WORKERS for Preprocessing	10	.	.	.	10
TOTAL		27	4	4	4	39

* Manpower cost = 39people x ¥6 million (Unit Rate/Year)= ¥234 million/Year

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I. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

1. It is essential that whatever entity is created or designated to handle SWM's responsibilities discharge SWM operations in a prudent and efficient manner including billing and collecting for its services in a businesslike manner. The financial hurdles facing SWM are daunting. Recent projections for future residential fees and tipping fees show increases of up to 400% in a period of 3 years as follows:[3]

	FY 2006	FY2009
Residential Fee (Month)	$8.00	$22.22
Tipping Fee (Ton)	$20.00	$95.00

These projections assume that there will exist accurate billing and a collection rate of 95% for the residential fee. As will be detailed in this report, current practices for billing and collection are in disarray and must be corrected. Time is of the essence and the solutions must be put in place immediately. Failure to do so could threaten the proposed bond financing that is required to fund critical compliance projects.

Concurrent with the improvement of billing and collection practices, there also needs to be significant improvements in operational practices and the poor current level of services in order to collect in the face of the rate increases. Current collection rates for residential service are extremely low. GCG believes a significant cause of the low collection rate[4] for residential SWM customers is resistance to paying amounts owed due to poor and sporadic service.

To solve these important issues it is our primary recommendation that SWM be transferred to a public corporation under the oversight of the Consolidated Commission on Utilities ("CCU"). With this recommendation all functions will be consolidated in one corporation, there will be an experienced Chief Financial Officer,

[3] From the most recent draft estimate contained in the draft Engineer's Report, which is being prepared by HDR Inc. to support the proposed revenue bonds.

[4] See paragraphs 5 and 6 below

experience with billing and collection systems and potential assistance available from the sister utilities – GPA and GWA plus experience in dealing with the Guam Environmental Protection Agency.

2. The PUC has indicated that it has a dual role in regulating DPW's rates: a) the obligation to provide adequate revenues to enable DPW to meet its financial obligations; and b) the obligation to assure that DPW's customers pay *just and reasonable* rates for reliable service. P.L. 28-56 directs the PUC to audit SWM's existing operations and by implication to issue such orders as may be necessary to require SWM to provide competent service at a reasonable cost.

3. GCG's audit review and recent press reports[5] establish that the current quality of residential service is unacceptable. Given the principle of just and reasonable rates for reliable service, an unacceptable level of service invites the possibility of disallowed or deferred rate increases by the PUC. Given that significantly higher rates will be required[6] to support the anticipated bond offering, such a potential disallowance or deferral would be a major problem to providing the required financial resources to provide for adequate debt service. The resolution of the unacceptable level of service problem must be given the highest priority.

4. DPW has failed to comply with the mandate of P.L. 26-99 that DPW establish and privatize 2 of 3 residential collection districts by October 2002. As of the date of this audit report, DPW has not even defined the three collection districts. DPW has recently reported that privatization would occur by the end of 2007. This timeframe

[5] See Attachment B
[6] Conclusion reached in the rate proceeding concluded on October 27, 2005, Docket 05-09.

is, in GCG's judgment, unacceptable. DPW's chronic failure to regularly collect residential waste raises public health concerns and will frustrate efforts to increase revenues from residential service. Every effort must be made to have this effort fast tracked. This is best approached by a combined collaborative effort between the PUC, DPW and the Consent Decree Compliance Team ("Compliance Team").[7] All options, including accelerating the procurement process by requesting an emergency declaration from the Governor, should be considered. It is essential in GCG's opinion that this privatization be concluded as early in 2007 as is reasonably possible. We further recommend that all 3 residential districts be subject to privatization. Privatization of residential collection would have the potential to quickly resolve the unacceptable level of service issue. The failure to resolve this problem could potentially lead to:

a. Continued poor collection rates from residential customers as a result of poor service and a backlash to substantial higher rates;

b. The PUC disallowing or deferring rate increases as a result of the PUC action based on the principle of *just and reasonable* rates. Simply stated, this is the *quid pro quo* of decent service for a fair rate.[8]

5. DPW collection rates from its residential customers are abysmal. Data collected since the last rate proceeding showed that recent collection rates for residential customers had averaged approximately 37%. DPW management stated during GCG's audit that the collection rate has been improved from the data available in the rate proceeding. The data we received does not support this contention. To fix this problem the billing and collection systems together with the customer service

[7] Under Executive Order 2006-12 [1] the Consent Decree Compliance Team has the responsibility to propose solutions and proposed legislation. See Attachment C.
[8] See Attachment D legal memorandum.

systems need to be completely overhauled. GCG recommends that CCU be authorized and directed to oversee SMW billing and collection functions if SWM is transferred into a public corporation and that the billing and collection function be outsourced regardless of whether SWM is transferred into a public corporation or becomes another entity.

6. During our audit SWM was in the process of evaluating a prepaid "sticker" system for residential pickup. The implementation of this system was deferred or abandoned. We recommend that such a system be developed and implemented after appropriate input from stakeholders and approval from the PUC. The benefits of such a system are significant in the current environment. It eliminates, on a prospective basis, concerns about accounts receivable and about back billing problems. It accomplishes our recommendation of prepayment for services to assist with a severe cash flow problem. It eliminates concerns about establishing a reliable customer list and assures that the drivers collect only customer trash. We recommend that this system be implemented by the end of 2006, by which time we have recommended that privatization of residential collection be implemented or in the context of the next rate proceeding anticipated to be heard in January 2007.

7. Data from DOA regarding SWM collections from the largest commercial customers[9] shows that *none or very little* of the October 25, 2005 interim rate increase (effective November 1, 2005) was received by DPW through March 31, 2006. The explanation offered for this situation is that the commercial haulers have not received payment from their commercial customers and only make payment after they receive payment. This situation cannot be permitted to continue if there is to be

[9] See Table 1 in the report.

any confidence in the financial integrity of SWM's billing and collection system. To solve these SWM billing and collection problems:

a. GCG endorses the PUC's April 20, 2006 finding that the best solution is to transform DPW into a public corporation under the CCU's governance under whose guidance normal business practices would be implemented. The reasons for this recommendation are clear. Such a transformation would unify all financial matters under a single CFO at the CCU, establish a strong governing body and make support, experience and resources available from GPA and GWA. In GCG's opinion, it is unlikely that any other viable alternative could be implemented in a timely fashion in these critical circumstances. Implementation of this recommendation would *require immediate interaction* with the Legislature and the Governor. If this solution is not adopted by policy makers, then the less desirable second solution would be to implement other remedial actions contained in our report.

b. In addition to the change of structure recommended, it is essential the current practice of dividing the revenue cycle functions between DOA, the Treasurer of Guam and DPW for certain aspects of cash management, accounting, customer interface and customer service cease. All revenue cycle operations should be consolidated under a single entity. The current practice leads to very poor financial and cash control and customer service. Putting DPW's SWM division under the CCU would solve this problem. In the absence of the CCU solution, we recommend that PUC require DPW under PUC oversight to evaluate all options to update its billing and collection and customer service systems, including contracting with the CCU for the implementation of an

improved system, or outsourcing this task to a private entity and then order the option it determines is the best. We recommend that evaluation of the best option begin immediately, coupled with a requirement that an improved billing and collection system be implemented no later than April 1, 2007

c. The current problems in the billing and collection practices as well as inefficient accounting procedures jeopardize the proposed bond issue. The solution ultimately adopted to address these deficiencies should include an understandable and reasonable list of milestones and a timeline for correcting these deficiencies in accounting, billing and collection In order to moderate the expected large rate increases that will be required to fund the proposed bond issue[10], it is essential that PUC establish an overall collection rate standard of at least 90% on all accounts for the fiscal year 2007. The previously mentioned Engineer's Report projects that there will be substantial rate increases in each of the next three years. In evaluating the rate increases we recommend that the PUC set appropriate collection standards that will be taken into account in setting the revenue requirement.[11] The absence of such a standard would potentially require higher rates to offset any cash shortfalls (if permitted by the PUC). To achieve this goal of a 90% overall collection rate for FY 2007, GCG recommends that as many of SWM accounting billing and collection functions be privatized, even if SWM is put under CCU's governance. Timeframes are tight and CCU resources, while available, are already burdened with complying with GWA's Stipulated

[10] PUC Audit Report ¶1.a

[11] The Engineer's Report assumes that the residential collection rate will rise to 95% by FY 2008.

Order[12] while GPA personnel are dealing with the expanded infrastructure requirements facing Guam as a result of expected increase in the number of military personnel over the next three years.

8. During the audit, GCG found that the escrow account ordered by the PUC to hold revenues received by DPW from the rate increase authorized by PUC's October 27, 2005 Order contained only $9,000 six months after an annual rate increase of approximately $1.3 million dollars was approved.

a. This unacceptable situation is illustrative of the consequences of a dysfunctional, fragmented billing and collection system. We have recommended consolidation of the functions under the CCU and recommend privatization of the function whether or not these functions are placed under the oversight of the CCU;

b. Current legislation requires the commercial haulers serve as collection agents for tipping fees and have no duty to take enforcement action to pursue collection and remit to DPW payments only after tipping fees are collected from their customers. Our audit indicated that there existed business accounts that were approximately 6 months in arrears in collecting and depositing fees. The current situation needs to be corrected immediately. GCG concludes that corrections will require a legislative solution that would:

i. Amend current law to make the tipping fees a cost of business for the commercial haulers, which they should recoup from their customers. Consideration should be given to exempting the

[12] Guam Waterworks Authority, like the Government of Guam, is subject to a Federal order, which mandates that its improvement of water and wastewater service to meet Federal standards, at a cost in excess of $200 million dollars.

tipping fee portion of the haulers' revenues from the Guam gross receipts tax (GRT). This would maintain the status quo. No GRT is currently paid on tipping fees, since these are government revenue. If implemented, this recommendation would shift the risk of nonpayment from the government to the commercial haulers, who would in the ordinary course of business terminate service to any customer who fails to pay the fee.

ii. Impose sanctions on haulers who fail to make timely payments (consideration should be given to the suspension of a hauler's GEPA Solid Waste Collection Permit, cancellation of a hauler's business license, and imposition of penalties and interest).

iii. Given the extraordinarily high level of accounts receivable from commercial haulers [see Table 2 below], a large portion of which GCG is informed represents tipping fees which have not been remitted to the haulers, GCG recommends that proposed legislation authorize an immediate audit of all commercial haulers' tipping fee collection records. We recommend that the Public Auditor be tasked with the audit and make the findings available to the PUC. We recommend that legislation empower the PUC to take appropriate action to enforce findings that the PUC concludes should be implemented. The scope of the audit should include:

- Are commercial haulers billing the tipping fee to their customers?
- Are they collecting it?

- Are they providing services to customers who have paid the commercial hauler's fees but not the tipping fee?
- Are they timely depositing with DOA all monies collected consistent with P.L. 25-93, which prescribes that payments shall be remitted within 20 days into the month following receipt of payment from a customer?
- Are there any underlying reasons for businesses failing to pay the tipping fee or haulers failing to remit the same to DOA?

II. FINDINGS AND RECOMMENDATIONS

1. Residential Collection and Revenue Problems

Approximately 42% of SWM recorded revenues come from the collection fee[13] of $10 per month for weekly pickup of waste from residential customers. Guam residents have three legal choices for the disposal of residential waste, i.e. pay SWM to pickup the waste at curbside, contract the same services from a private hauler or "self-haul" the waste to the Ordot facility or one of the three Transfer Stations operated by SWM. As mentioned before, recent collection information indicates that there is only an approximate 37% collection rate for residential customers. This could mean that only approximately 37% of those DPW regards as customers are paying for their pickup. One method of expanding revenues could come from expanding SWM's customers who pay their bills. It is critical that the collection rate increase to at least 90% in FY 2007 if rate increases are to be kept from being even higher than the high levels already projected. SWM residential service is poor and sporadic,[14] causing customers to either not pay their bills or use private contractors rather than SWM.[15] The collection function for two out of three districts was already supposed to have been privatized by law by October 2002 but this has not taken place. This issue is discussed later in this section.

GCG has found that many residential customers do not comply with SWM's rules for collections, which are attached to this report.[16] For example, residential customers are required to keep their waste in lightweight waterproof containers with handles (or lifting features). These containers should have a capacity of between 5 and 35 gallons and be placed four feet from the curb. GCG observed that many customers overload their containers, resulting in an overflow of waste onto the ground. GCG also observed waste being placed in plastic bags and cardboard boxes at curbside rather than in the required containers. In all instances that GCG observed,

[13] At times this collection fee is incorrectly referred to as a "Tipping" Fee,
[14] See Attachment B for recent articles in the press regarding the poor quality of service and collection.
[15] It is likely that DPW does not have an accurate count of current customers.
[16] See Attachment E

SWM's drivers picked up the garbage despite obvious violation of SWM rules. It is clear that these violations are causing additional and unnecessary effort by the drivers as well as creating an unsightly and unhealthy situation. GCG recommends that enforcement of the current rules be one of SWM's highest short-term priorities. This would improve sanitation and provide customers with the perception of receiving reasonable service. Implementation should occur as soon as possible but in any event no later than the end of 2006. **[Finding and Recommendation #1]**

There is no current restriction on the number of containers placed at curbside by residential customers. As part of the transition to mandated volume-based residential rates[17] this policy needs to be changed. During the course of GCG's audit, it was observed that the number of containers per customer ranged from as few as one to as many as eight! We recommend that SWM establish a maximum number of containers that will be unloaded by the SWM drivers at the interim residential rate (currently $10 per month). Once PUC approval is given, SWM should begin to charge an additional rate for containers in excess of that maximum.

It is widely anticipated that a further rate case will be needed to support the anticipated bond issue. We believe that it is realistic to estimate that this case will be heard by the PUC in the January 2007 timeframe. SWM has a very large workload in front of it currently, assisting with the bond process as well as keeping track of the Consent Decree compliance. We therefore recommend that GCG assist SWM in the preparation of the next rate filing and that GCG should also be directed to propose revisions to the service rules to accomplish the legislative mandate for volume-based residential rates.[18] **[Finding and Recommendation #2]**

During our audit we were informed that DPW personnel had developed preliminary plans for the handling of containers in excess of the base. Containers in excess of a base number could be identified by a "one time use" receipt or sticker that would be purchased in advance and attached to the container. SWM drivers would remove and discard the sticker in the course of

[17] 10 GCA § 51118 (e)
[18] GCG was advised that SWM will seek additional revenues from the PUC in a filing anticipated in late 2006.

each weekly collection. These "one time use" receipts or stickers would have been available for purchase not only at SWM customer service locations, but also be made widely available for purchase through local vendors and the mail. This concept has been temporarily deferred by SWM. We recommend that in the forthcoming rate proceeding, discussed above, GCG be authorized to consider the concept of stickers. While this concept needs further study there are many attractive features including eliminating, on a prospective basis, concerns about accounts receivable and about back billing problems. It accomplishes prepayment for service and it eliminates concerns about establishing a reliable customer list and assuring that the drivers collect only customer trash. **[Finding and Recommendation #3]**

GCG's on-site investigation revealed that SWM does not have accurate lists for the residential customers on each of its 35 collection routes, making it impossible to identify or calculate the overall total number of SWM residential customers. SWM's drivers use their "judgment" as to whether residential waste left at the curbside has been set out for collection by a current SWM customer. GCG observed no instance where a SWM driver failed to collect waste that was set out at curbside. It should, therefore, be a top priority of SWM to prepare a complete and accurate database of residential customers, to update this list on a regular basis and to ensure that the list of SWM residential customers is sorted by route number and distributed to SWM's drivers before they begin their routes each day. The determination as to whether a household is a current SWM customer should not be left to SWM's drivers. Without such a list it is possible that trash would be collected from non-customers or customers that are delinquent in their payments, essentially providing the service free to these households,[19] **[Finding and Recommendation #4]**

As previously discussed, SWM needs to update its rules and regulations concerning residential collection services. While an informational hand-out[20] is provided to customers

[19] Many of these problems would be eliminated by the "sticker" system discussed above.
[20] See Attachment E

requesting new or continued service, it is not clear that all other residential customers are aware of these service rules. The current hand-out, with input from SWM drivers, should be expanded to list situations in which SWM will not provide services and widely publicized. In Recommendation #2 above we recommended that GCG be instructed to prepare a revised collection policy and present the policy to the PUC for review and approval during the anticipated rate filing hearing in January 2007. **[Finding and Recommendation #5]**

Within the preparation of the revised service rules referred to above, GCG and SWM should investigate whether the current rules and regulations for residential pick up services (as described in a hand-out to new customers) are consistent with current laws[21] and that no new legislation or amending legislation has been adopted that would invalidate any of these current rules and regulations. We recommend that SWM and GCG be tasked with this legal review and should be submitted to the PUC for approval during the rate hearing in January 2007. **[Finding and Recommendation #6]**

GCG inquired how SWM's drivers knew whether households with containers set out in front of them at curbside were not only SWM customers, but also customers who are not in arrears to SWM. The simple answer is they do not. Regarding delinquent customers, SWM had implemented a policy during the second quarter of calendar 2006 that if a customer is identified as a delinquent, his containers are marked with an "X" and the SWM drivers are instructed not to service this customer. Once the customer satisfies his indebtedness to SWM, the containers are then marked with the circle surrounding the "X." SWM determined there may be legal issues with this program, since at the current time the containers are not property of SWM and terminated the program. This problem would be addressed by our Recommendation #4 where accurate customer lists would be developed. These lists should be made current no later than the

[21] The handout references PL17-87; 23-64, 24-272, 24-313, 25-93 and its amendments.

end of 2006, the date by which we recommend that privatization of all residential collection occur.[22] **[Finding and Recommendation #7]**

SWM has not segregated collection routes into roughly equal Northern, Central and Southern districts for future privatization as required by PL26-99. SWM is already about four years past the deadline required for the privatization of collection for two thirds of the residential customers (October 2002). This requires that this program be provided the highest priority by SWM. We noted that SWM customer service had on its own initiative begun to segregate customer files into three territories, but it is not clear whether upper management and/or the Consent Decree team is aware of this process. SWM is currently reviewing its data with the intent of complying with the mandate in PL26-99. This should not be an overly complex exercise and SWM must move toward compliance with the greatest urgency – we recommend no later than the end of 2006. Furthermore, we recommend that the PUC should seek an amendment to PL26-99 that would provide that <u>all</u> of the residential collections be privatized. **[Finding and Recommendation #8]**

2. Operational and Administrative Function Problems.

Truck Maintenance.

GCG inspected DPW's maintenance department and interviewed its chief mechanic. GCG observed that while SWM has sixteen packer trucks, only seven packers were operational at the time of GCG's inspection. Of the remaining nine packer trucks, two had been cannibalized for parts and the remaining packer trucks were in various states of disrepair, ranging from repairs as simple as tire replacement to repairs as major as installing a new transmission. Some of these packer trucks have been non-operational for many months while many of the ones that are in operation are fifteen years old (most were purchased in 1992 and 1993 Recent press reports[23] indicate that recently, since our audit, as few as one or two trucks have been working resulting in

[22] This would also be another relevant issue to consider in the analysis of implementing the "sticker" system.
[23] See Attachment B

frequent missed pick up days, a level of very poor service and customer frustration. Our recommendation that all residential routes should be privatized for collection would eliminate this issue. **[Finding and Recommendation #9]**

Transfer Station Operations

SWM is responsible for operating three transfer stations. These transfer stations are open five days per week (Thursday through Monday 9-5 except for Holidays and Sundays when open 7-3:30). During GCG's inspection, operations at the Agat transfer station were observed. That operation consisted of three employees, two trash containers ("roll offs") and a guard house. Only one transaction occurred during GCG's on-site inspection. The SWM employee responsible for collection of the self-haul fee is issued a book of blank invoices that are sequentially numbered. Upon entry into the transfer station, a customer pays the self-haul fee and receives one of the three triplicate invoices listing the customer's license plate number and the total charged. The transfer station is a cash only operation. There is no scale or any device for cubic yard measurement on premise. The one customer GCG observed arrived with a partially full pickup truck and was charged the $5 self-haul rate. This rate covers anything over 3 cubic yards.

GCG was informed by the SWM employee who collected the self-haul fee that a SWM runner is supposed to arrive at the transfer station toward the end of each day to pick up the receipts and cash. Cash and one copy of the receipt are delivered to DOA, while the second copy of the receipt is delivered to SWM. If the SWM runner fails to appear at the end of the day, a SWM employee takes the cash home. This is bad policy and should cease in order to provide security for the cash as well as appropriate internal control. **[Finding and Recommendation #10]** The utilization rate of transfer stations and appropriate self-haul rate should be carefully investigated in future proceedings, since a rate that is below the monthly curbside pickup rate might encourage the public to bring the waste to the transfer station and from illegally disposing of waste. Currently, in the face of no or irregular residential waste collection, many residences are faced with the dilemma of health hazards associated with storing waste on premises, self-

hauling or illegal dumping. This issue will be important when the significant rate increases that are imminent are implemented and customers will be strained to afford service.

SWM employees reported that waste is frequently left at the gates of the transfer stations as well as the Ordot facility. This situation is not only unsightly, but attracts vermin. The waste left at the gate is swept up by SWM employees at the start of each day and deposited into available receptacles. This "illegal" dumping of waste represents additional revenues that should have been collected by SWM, but were not. This situation provides free service to the individual or individuals responsible. Bond holders are adverse to free service and the bond indenture usually prohibits free service. Enforcement of existing laws related to illegal dumping of waste needs to be undertaken. SWM should seek police assistance in monitoring the transfer stations during off hours. SWM and GEPA should establish a joint strategy to eliminate this situation, including the possibility of installing surveillance cameras. **[Finding and Recommendation #11]**

3. Commercial Collection and Revenue Problems.

Approximately 57% of SWM revenue comes from services rendered to commercial haulers at the Ordot facility. The tipping fees, which the customers of these haulers are required to pay is determined by the whether the waste is un-compacted or compacted. This is determined by weight. The scale at the Ordot facility is currently broken which makes it difficult, if not impossible for SWM to correctly determine the tipping fee, which is due for each truck. The amount of revenue which has been lost from this problem is difficult to calculate. However, what is clear is that it must be immediately corrected. The current rates for per cubic yard are $5 un-compacted and $20 compacted. Because of this significant differential it is important that SWM have procedures in place to ensure that the correct fee is being charged for waste deposited. We were approached with allegations that SWM was in certain cases charging an uncompacted fee for compacted trash. We are not able to verify the allegations. SWM should be required to

immediately repair or replace the scale until such time as the new landfill facility is functional and provide adequate controls to ensure that the commercial haulers are properly billed. **[Finding and Recommendation #12]**

4. Billing and Collection Problems

GCG's focus in this audit was a review of the billing and collection functions of both SWM and DOA. SWM has had the responsibility to bill for residential services for approximately one year now and DOA bills for commercials services. Historically, SWM has been woefully unable to collect revenues from the residential segment of customers as indicated by the following table:

Table 1

Four Year Average Collection Ratios

Commercial Haulers	92%
Other Commercial Haulers	65%
Residential Customers	26%
Transfer Stations	100%
Total Collection	68%

At the current time, SWM prepares all billings to the residential customers receiving SWM collection services. There are significant problems with these billings: customer lists are incomplete and collection rates are very low and the paid up status of customers are also incomplete and inaccurate. There was a massive six-month billing (containing retroactive periods) that was prepared by SWM customer service and mailed out in early April 2006. A total of nearly 23,000 invoices were prepared. In many cases customers do not agree with the invoices prepared. Customers that dispute their bills must come in to the SWM customer service office with their complaints. In the instance where the customer claims that he is no longer a customer, he must submit proof that his service was terminated by showing customer service disconnection

notices from GPA or GWA. Moreover, GCG is aware that in one instance it took a new customer nearly two hours to become a customer.

We were informed that there is no written policy has been created by SWM to handle complaints of this nature SWM has only five customer service positions authorized and two of these were vacant at the time of GCG's inspection. A specific problem identified with the latest residential billing is that there is a legal prohibition against back-billing for more than four months of services (see PL26-17). This public law was passed in the aftermath of Supertyphoon Pongsonga. Collection of tipping fees had previously been suspended immediately after the super typhoon struck Guam, and the intent of PL26-17 was to limit the economic hardship that was felt by Guam residents once collection of tipping fees resumed. This law needs to be reviewed and amending legislation may need to be introduced to ensure that restrictions for time periods that may be back-billed will be determined based on sound management decisions as this could impact the financial condition of SWM and its ability to support debt service. A sound Collection Policy should be developed. This should be done in conjunction with the development of service rules that we have recommended and should be either approved through the Administrative Adjudication Act (AAA) process or be approved by petitioning the PUC and heard in the same time frame as the January 2007 rate hearing. SWM should bill no less than quarterly and should do so immediately. Any legal impediment for this recommendation should be removed. **[Finding and Recommendation #13]**

GCG was informed by SWM management that a policy regarding promissory notes (or payment plans) was evolving. Currently, the decisions for such plans are made on an ad hoc basis by SWM customer service personnel. Though the concept of a promissory note permitting a customer to make monthly payments against arrears may be desirable, a formal policy needs to be created by SWM management and approved by the PUC so that SWM customer service is not placed in the position of making policy decisions of a potentially arbitrary nature. There should be a written summary of this policy posted at all customer service locations that is also made

available to SWM customers through the mail or "on-line." Such a collection policy should include specific timing from when an invoice is deemed late, interest or penalty charges for late payments, fines for return of customer check for "insufficient funds" and written criteria for promissory notes. Implementing such a policy would be a significant effort and before this effort is made we recommend that its implementation be deferred to a later phase in the process. We make this recommendation because current collection rates are so low and service currently and historically has not been acceptable making the possibility of customer disputes multiply. We recommend that GCG be tasked with this evaluation and that this recommendation should also be made in the January 2007 time frame. Any legal impediment to in creating a collection policy should be removed. **[Finding and Recommendation #14]**

The current situation of billing and collection for SWM residential service is abysmal. While there has been considerable effort by SWM customer service employees to rectify this matter, the situation will need significant time and effort to fully address all of the systemic problems that have lead to a wholly unacceptable 26% SWM residential collection average over the past four years. Except for the GovGuam accounts, GPA and GWA currently have collection rates between 95 and 100% of billings. Based on information received from DOA, the most recent estimate of accounts receivables is approximately $11 million broken down as follows:

Table 2

Month Ending	Large Commercial	Other* Commercial	Residential
June 30, 2006	3,197,945	239,948	7,593,970
Annual Revenue	3,670,647	80,263	2,730,435
Days Outstanding	318	1,091	1,015

It is of course highly questionable whether the amounts in the table are collectible. For residential customers the amounts of prior billings are questionable and the amounts subject to

1 collection are limited to a specific period of time if they are the result of back billing. For large
2 commercial customers the amounts may be more collectible. We recommend that the
3 investigation into the collection of receivables be put into a second phase under the oversight of
4 the ALJ. We have previously recommended that the Public Auditor undertake an audit of the
5 commercial haulers' billing and collection of their customers and amounts collected and remitted
6 from their customers to SWM. The amounts receivable from large commercial SWM customers
7 is approximately 10.5 months. These amounts can clearly be reduced.

8 Our recommendations to privatize the billing and collection functions, even if SWM is
9 made a public corporation and transferred under the oversight of the CCU we believe will
10 transform the billing and collection issues and reduce the high level of receivables. We
11 recommend that GCG be tasked with establishing a realistic level of receivables and to make
12 recommendations to bring the level down to reasonable levels and to provide a report to the PUC
13 in the January 2007 time frame. **[Finding and Recommendation #15]**

14 Currently, SWM bills and collects in arrears for residential services. Assuming that
15 SWM bills on a quarterly basis, this results in a lag between the date services are rendered and the
16 date payment is due of at least 120-150 days from the first month of service even when payment
17 is made within thirty days of the bill being issued. This is not a desirable effect considering the
18 need for sufficient cash flow for both routine operations and the cost of preparing SWM to be in a
19 financial situation that would improve investor confidence in the upcoming bond issuance. GPA
20 and GWA bill in arrears, but on a monthly basis. Late payment policies are also in place at both
21 GPA and GWA including interest payments and promissory notes. As a result, the average lag
22 between the time that services are rendered and the time that its customers' payments are due is
23 forty-five days or less.

24 As mentioned previously SWM had under consideration during the period of our audit a
25 proposed SWM Decal program that would be used to identify customers (including lifeline
26 customers) and to purge SWM's aging database of incorrect information. Although SWM has

1 deferred the "Decal" program pending the resolution of other matters SWM deems to be higher
2 priorities, one of the benefits of such a program is that it would result in a prepayment plan, i.e.
3 customers would pay prospectively for service. While the specific program has been deferred,
4 the concept of prepayment for services would be useful and would certainly help SWM both in
5 cash flow and in customer service. An appropriate prospective billing program for no more than
6 three months should be considered even if the decal program is not implemented. This change in
7 billing protocol would require PUC approval and should be submitted for approval in the January
8 2007 timeframe or earlier.

9 As noted, we have recommended the full privatization of the residential collection
10 function and we have also recommended the privatization of the billing and collection function.
11 We recommend that after the January 2007 set of hearings the concept of setting up independent
12 franchise areas where all aspects of trash collection, billing and collection would be undertaken
13 by a single entity and be subject to the oversight of the PUC be examined. **[Finding and**
14 **Recommendation #16]**

15 A lifeline rate as required by GCA 10 §51118h (1) does not exist at this time. P.L. 28-56
16 law requires that the PUC set rates that are "consistent with and meeting the low income
17 eligibility criteria, requirement policies or procedures established by the Guam Housing and
18 Urban Renewal Authority (GHURA) applicable to their Low Income Public Housing Program."
19 The PUC must approve both the rate for lifeline customers and the non-lifeline rate that combined
20 would develop sufficient revenues to cover SWM's operational costs and debt service
21 requirements.

22 PUC has determined that a lifeline rate should be established in the next rate case
23 (assumed to be heard in January 2007). PUC should task GCG with recommending a lifeline rate
24 and the criteria for determination of eligibility consistent with the GHURA's "low income"
25 eligibility criteria. Announcement of the proposed rate and eligibility requirements should be
26 published when SWM files its next rate case. We have previously indicated in our previous rate

case testimony that the current "low income" criteria has the potential to qualify too many customers, making the lifeline program either too costly or the discount too small. We recommend that consideration be given to using more targeted criteria for the population in economic need. If income qualifications other than the GHURA "low income" eligibility criteria are used, the Guam Legislature must first change the applicable law. GCG is awaiting additional information from GEDA regarding the success of the new "swipe program"[24] to determine if it can be used by SWM to more easily identify customers eligible for the lifeline rate. If SWM ties eligibility for the lifeline rate to participation in that program, assuming that the number of participants is not too large, SWM may be able to more easily enroll customers eligible for the lifeline rate and reduce the administrative burden of the program. The specific discounted rate as well as the eligibility criteria should be presented to the PUC in the upcoming rate case **[Finding and Recommendation #17]**

After receiving a copy of an invoice for services for the commercial haulers at the Ordot landfill, DOA (who is currently responsible for billing these customers) prepares and submits bills to individual haulers which are due within sixty days. It is the responsibility of the commercial hauler to collect the invoiced tipping fees from their customers and pay SWM in 60 days. we believe that the 60 day time frame set for payment is too long from time of receipt of the bill and should be reduced to 30 days. We note here however, that a lot of progress need to be made on this issue as our previous table showed that for commercial haulers the accounts receivables are currently approximately 318 days. This recommendation should also be read in conjunction with our finding and Recommendation #20 to make the commercial customer the customer of the hauler and to make the tipping fee the responsibility of the hauler. **[Finding and Recommendation #18]**

[24] The SWIPE program uses a credit type card in lieu of food stamps where the client "swipes" the card at the counter.

During GCG's meeting with DOA, it was discovered that there are occasions (apparently not infrequent) where invoices from Ordot are delivered to DOA with invoices that are either out of sequence or in no sequential order at all. This belies what GCG was told by SWM customer service, who claimed that specific invoices were assigned to each SWM employee and that each such employee was required to account for all of the numbered invoices in the sequence so issued. DOA stated that it had upon occasion held invoices until SWM answered DOA inquiries about the reasons for missing numbered invoices. Until such time as the Ordot facility is closed or until such time as billing and collection are turned over to outside contractors, SWM employees that issue receipts for commercial haulers (or at the transfer stations for self-haul) should be required to sign for all blank numbered receipts and thereafter be required to account for <u>all</u> numbered receipts issued to each such employee. **[Finding and Recommendation #19]**

Currently commercial haulers are merely agents for SWM in the collection of tipping fees from their customers. Therefore, commercial hauler take the position that PL25-93 requires that only those tipping fees actually collected from a commercial hauler's customers are required to be forward to SMW. This places the collection burden on SWM and not on the commercial haulers. In defense of this position, the commercial haulers cite the portion of PL25-93 that provides:

> Tipping fees for business or government generators that have their solid waste collected by commercial collectors shall be collected by commercial collectors, on behalf of the government of Guam. Commercial collectors shall remit the tipping fees paid by their customers in the prior month to the government by the twentieth (20th) day of the following month. The tipping fees collected by commercial collectors, upon remittance to the government of Guam, shall be considered as revenue for the government and *not* as income for commercial collectors. *If* a commercial collector does *not* remit the tipping fees actually collected from generators, as provided in this Section, then the commercial collectors shall be liable for full payment to the government of all tipping fees that are collected from generators, but *not* remitted to the government.

We recommend that this situation be changed so that the business or government customers become customers of the commercial haulers and that the commercial hauler be

1 responsible for the collection of all fees from their customers and remittance to SWM. The
2 current situation results in a situation where SWM has no means of knowing what is owed by the
3 ultimate business or government customer and not being able to collect. While the
4 recommendations of this report are being evaluated and alternative implemented, we recommend
5 that the haulers be required to notify SWM monthly of customers that are delinquent in payments.
6 SWM should pursue collection efforts with these customers and the haulers should be put on
7 notice that any delivery that contains a delinquent customer's trash will not be accepted. Our
8 audit obtained information from DOA that indicated that collections from commercial haulers
9 lagged over 5 months while the accounts receivables show a 318 day balance. Under the
10 recommended scenario where commercial haulers would be responsible for all payments, the
11 billings to them should be made monthly and payments due in 30 days. When this
12 recommendation is adopted, appropriate service rules should be developed and approved by the
13 PUC, including penalties for delinquent payments. GCG also recommends that if the tipping fee
14 expense is shifted from the hauler's customer to the hauler, that it be exempt from gross receipts
15 tax to maintain the current status quo. . **[Finding and Recommendation #20]**
16 There does not appear to be a strong policy forcing full and timely payments from
17 commercial haulers. Information obtained from SWM indicates that there is a payment lag by
18 some of these haulers of as much as one year after the time service is rendered. This was also
19 confirmed by DOA in its communications regarding collections of the interim rate increases
20 effective November 2005. Service rules should be established by SWM and approved by the
21 PUC that would force full and timely payments from the commercial haulers, including denying
22 access to the SWM's solid waste disposal facility for non-payment of undisputed bills and for
23 payment for disputed bills after all appropriate remedies are exhausted. All commercial haulers
24 should be notified of this policy at least thirty days in advance of the implementation of this
25 policy. This policy should inform the commercial hauler of its ability to dispute bills and the
26 methods for the resolution of those disputes. Payment on all bills should be due, other than

disputed amounts, within thirty days. Any commercial hauler failing to pay its bills timely should be denied access to the Ordot facility until such time as payments are brought current. **[Finding and Recommendation #21]**

As mentioned in GCG's September 2005 report filed in the prior rate proceeding[25] many of the requirements of the legislation transferring rate making authority to the PUC, including cost-based and variable rates, could not be implemented without more detailed financial reports. Internal financial reports are not routinely generated and are only provided by DOA at the request of SWM. This lack of an ongoing flow of financial information from DOA to SWM management prevents simple reports, such as accounts receivable aging or budget versus actual expenditures, from being received and reviewed by the appropriate individuals at SWM on a timely basis. This situation cannot continue, as fragmented financial information is viewed as a negative by the investment community. GCG was advised that there is an accounting consultant at SWM who is capable of creating these reports using the DOA accounting software and that a regularized reporting process is in the process of being reviewed and implemented. This should be completed by January 2007. This recommendation should be read with our primary recommendation to make SWM a public corporation and put it under the CCU. **[Finding and Recommendation #22]**

The PUC required that all additional revenues derived from the November 1, 2005 interim rate increase be deposited into a reserve fund for future use in payment of costs associated with the management audit, regulatory review and debt service requirements. Establishing this fund was a condition of PUC approval of the interim rate increases. During GCG's on-site review, it was discovered that while the separate account into which DOA (SWM) was ordered by the PUC to deposit the additional revenues has been established, the account is grossly under-funded. The total amount in the fund as of May 2006 was less than $9,000, even though DOA stated in its response to GCG that the amount should be $47,000. Recent correspondence from

[25] This report is available on the PUC web site.

SWM and DOA indicates that they now believe that the proper amount that should be in the account as of June 30, 2006 should be approximately $580,000. Ensuring that the portion of collected funds that is derived from the increase in rates is actually deposited into this reserve account would improve SWM's ability to provide the necessary funding for its upcoming rate case and implementation activities from this audit. The proper funding of this account should be viewed as a priority item, because establishing permanent rates and implementing the recommendations of this audit will be viewed as a positive development in SWM operations by potential bond investors. We believe that the amount that should be in the fund as of June 30, 2006 should be approximately $465,000. This should be funded in 60 days and then be maintained at the appropriate level. **[Finding and Recommendation #23]**

In several meetings attended by GCG, it became obvious that all of the parties (SWM, DPW, EPA, GEPA, legislators, bond counsel, PUC, etc) are in agreement that some independence from DOA and DPW would be beneficial to SWM. We believe that such independence is a necessity and have recommended that we support the PUC's position that SWM be a public corporation under the CCU. It is difficult to see how there could be any support for the current situation to continue. This would cause consternation from bondholders and put the contemplated financing in jeopardy. The CCU would bring seasoned management as a resource, a Chief Financial Officer, and an organizational structure that has experience in managing utility operations and making operational improvements using both in house and outside resources as appropriate. These management skills will be extremely valuable in reorganizing SWM and providing its customers with good service as well as to manage the required operations at the landfill and bring SWM into compliance with the Guam EPA. **[Finding and Recommendation #24]**

Again, GCG thanks the all SWM and other GovGuam employees and management for their assistance provided to GCG during the course of its investigation, without which GCG

would not have been able to prepare this report. GCG looks forward to a long-term relationship with SWM in whatever form it will ultimately take. This concludes GCG's report.

EXECUTIVE SUMMARY.

Under the Federal Consent Decree[1], defendant Government of Guam (GovGuam) is required to: a) close the existing landfill; b) open and operate a new landfill; and c) undertake other solid waste remedial actions. GovGuam is currently in material violation of Consent Decree deadlines.

GovGuam intends to finance the initial sum of approximately $100 million dollars as part of the cost of Consent Decree compliance with revenue bonds. These bonds would be repaid, in substantial part, by rate revenue from Department of Public Works (DPW) Solid Waste Management (SWM) customers.

GovGuam financial advisors forecast that existing SWM rates will need to be increased by upto 400% in the next 36 months to produce the revenues necessary to support the revenue bonds. These substantial increases assume that SWM operations in the future attain a level of efficiency that is the norm in the industry and which currently does not exist. In the absence of making these efficiency and operational improvements the rates required to support the anticipated bonds would be even higher than those currently projected and service levels would continue to be unacceptable.

This audit report has been prepared at the Guam Public Utilities Commission's [PUC] direction[2] to examine whether DPW is capable of efficiently billing and collecting the increased rate revenue, which will be required to fund GovGuam's obligations under the proposed revenue bonds.

This audit report finds that:

a. DPW's current billing and collection system is unable to competently handle even current rate revenue levels much less the increased burden necessary to support the revenue bonds.

b. Substantial remedial action, including operational changes, legislation, regulatory action and rulemaking must immediately occur to enable DPW to bill and collect the revenue necessary to fund revenue bond requirements.

c. If this remedial action does not occur, DPW will not be able to bill and collect the rate revenues necessary to fund revenue bond obligations and this burden would fall, in part, on the General Fund. Regulatory principles could obstruct the PUC: i] from awarding rate increases to compensate for DPW billing and collection mismanagement; and ii] from increasing SWM residential customer rates unless the quality of residential service is dramatically improved.

This audit report will now examine each of the above findings and will propose a broad outline of immediate remedial action, which will be necessary to empower DPW to bill and collect the rate revenues necessary to meet the requirements of the proposed revenue bonds. A summary of the recommendations contained in our report together with the recommended implementation time lines are as follows:

---

[1] USA v. Government of Guam, Guam District Court Civil Case 02-22, Consent Decree dated February 11, 2004.

[2] PUC Resolution dated April 20, 2006.

Summary – Audit Recommendations

Recommendation	Action Date
Legislation:	
Establish SWM as public corporation under CCU governance.	ASAP
Consolidate administration of SWM finances.	ASAP
Privatize third residential collection district.	ASAP
Convert commercial tipping fee to hauler business expense or bring haulers under PUC regulation and Public Auditor audit authority.	ASAP
Procurements: [Action date is for PUC approval of procurement documents.]	
Outsource SWM billing and collection system with conversion to prepaid decal system	1/07
Privatize two of three residential collection districts. [Privatize 3 rd district if authorized.]	1/07
Retain accounting consultant to address accounts receivable, establish accounting system and issuance of reliable financial reports	11/06
Regulatory Action: [Preparation of documents for regulatory consideration would be collaborative effort between GCG and Compliance Team].	
Approve recommended procurement documentation.	1/07
FY07 rate proceeding, including establishment of residential rate and variable residential rate	1/07
Review and approve revised residential service rules.	1/07
Establish customer hauler service rules {in event haulers are placed under PUC regulatory authority].	1/07
Public Auditor financial audit of commercial haulers.	4/07
Phase II GCG audit of SWM $10 million accounts receivable	1/07
Operational Action:	
Repair landfill scales.	11/06
Institute rules for transfer site revenues.	11/06
Establish three residential collection districts.	11/06
Enforcement of revised residential service rules.	2/07
GEPA enforcement of illegal dumping laws.	ASAP

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P.O. Box 22439 GMF, Barrigada, Guam 96921 · Tel. 475-1658/9 · Fax: 477-9402

PUBLIC HEARING

The Guam Environmental Protection Agency Board of Directors will conduct a public hearing on Tuesday, September 26, 2006 at 5:00p.m. in the Main Office Conference Room, 17-3304 Mariner Avenue, Tiyan, Guam. The public is invited to provide input on the Integrated Solid Waste Management Plan (ISWMP)

For a copy of the agenda or to make arrangements to accommodate persons with special needs, please contact the Board Secretary at 475-1637.

John M.U. Jocson
Acting Administrator

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INTEGRATED SOLID WASTE MANAGEMENT PLAN UPDATE FOR GUAM

SEPTEMBER 2006

FACT SHEET

The **Guam Environmental Protection Agency (Guam EPA)** has drafted an update to the *Guam 2000 Integrated Solid Waste Management Plan* as required by Chapter 51, of Title 10 Guam Code Annotated. The Draft of the *Guam 2006 Integrated Solid Waste Management Plan* (the Draft Plan) is available to the general public for review and comments at Guam EPA offices and at the Nieves Flores Memorial Library from September 15, 2006 to September 26, 2006.

Guam EPA will hold a public hearing on Tuesday, September 26, 2006, beginning at 5:00 PM at the GEPA Conference Room, 17-3304 Mariner Avenue, Tiyan, Guam.

Features of this draft Plan are here summarized:

I. PLAN PURPOSE

This first update of the *Guam 2000 Integrated Solid Waste Management Plan* is written in compliance with Section 51103(2) of Title 10 of Guam Code Annotated, which states that the "***Guam Environmental Protection Agency shall revise the Solid Waste Management Plan at least every five years, or sooner as needed.***" It identifies and describes the key elements of the integrated solid waste management system which will be implemented on Guam during the five-year period 2006-2010 and beyond.

II. PLANNING APPROACH

Based on review of the contents, data and recommendations of the *Guam 2000 Integrated Solid Waste Management Plan* adopted under P.L. 25-175, Guam EPA and the Solid Waste Division of Guam Department of Public Works (DPW) drafted the *Guam 2006 Integrated Solid Waste Management Plan (ISWMP) Update.* They assessed the progress in solid waste management since 1999, proposed revised goals and objectives for the ISWMP, and updated data and projections of waste generation to the year 2037. They formulated a Solid Waste Management System incorporating the components of a Public Corporation, Disposal and Volume Reduction, Collection and Transport, and Public Education. Included are Performance Criteria which define measures of plan implementation.

This update accommodates legal concerns expressed in the numerous local solid waste laws, federal mandates, and the District Court of Guam's imposed Consent Decree. In 2004, the Government of Guam entered into a Consent Decree with the United States establishing specific deadlines for (1) opening a legal permitted landfill, (2) closing of the Ordot Dump, (3) instituting a Household Hazardous Waste (HHHW) collection program, including construction of a facility, and (4) producing a financial plan to achieve the first three tasks (Consent Decree Tasks). Therefore, the Consent Decree requirements heavily influence this 2006 ISWMP Update.

III. PLAN UPDATE FEATURES

Some highlights of recommendations in the Plan include the following:

- Controlled privatization of solid waste management operations
- Assignment of the oversight on the privatized solid waste operations to the CCU
- Inclusion of all federal facilities in the operations and use of the landfill
- Requirement of a Waste Composition and Characterization study
- Exclusion of recyclable and compostable materials from the landfill
- Development of solid waste transfer stations for accepting of waste and recyclables and for transfer of waste to large carriers to haul it to the landfill
- Improved public information on solid waste management
- Satisfaction of the Consent Decree calling for opening and privately operating a legally conforming landfill by October 2007 and closing Ordot Dump before then.

IV. CHAPTER REVIEWS

1. Introduction- Summarizes what this update covers and notes major developments since the last ISWMP study.
2. Goals and Objectives- What Guam wishes to accomplish through this Plan.
3. Management of Solid Waste Operations- Proposes establishment of a Public Utility, the Solid Waste Authority, with CCU oversight.
4. Extended Solid Waste Projections- Estimates solid waste projections and waste generation for planning purposes. These data are useful tools for understanding how we can reduce the amount of waste going to the landfill.
5. Collection and Transport- Reviews how the collection and transport of waste affect the reduction and disposal of the generated waste stream.
6. Disposal and Volume Reduction- Landfills and plans to reduce disposed waste.
7. Recycling and Composting- Analyses how waste can be reduced through recycling and composting.
8. Public Education- Discusses the development of a public awareness and involvement program as an essential component to the success of integrated solid waste management.

V. PROCEDURES FOR SUBMITTING COMMENTS

The public has until September 26, 2006 to provide comments on this Draft Plan. Guam EPA will hold a public hearing at the Guam EPA main office in Tiyan, on Mariner Drive on Tuesday, September 26, 2006 beginning at 5:00 PM. Any person interested in commenting on the Draft Plan must submit their remarks in writing by September 26, 2006 to:

Administrator
Guam Environmental Protection Agency
Post Office Box 22439 GMF
Barrigada, Guam 96921

Or hand delivered to: Administrator, Guam EPA
17-3304 Mariner Avenue
Tiyan, Guam 98913

Comments should include all accurate references, reasonable and relevant concerns, and supporting information. For more information, contact Mr. Roland Gutierrez or Ms. Conchita Taitano at 475-1658/9.

Administrator's Determination
Compliance with Economic Impact Statement Requirements of Administrative Adjudication Law (AAL)

Guam 2006 Integrated Solid Waste Management Plan

Subsections (d) through (j) of 9 GCA §9301 of the AAL require that an economic impact statement be made when agencies promulgate regulations, fees or fee increases. Subsection (j) provides for an exemption from the requirement when it is determined that regulations and fees will not have an annual economic impact to the general public of five hundred thousand dollars ($500,000.00) or less.

With the advice of the Attorney General's Office, the Agency has conducted an evaluation of annual cost impacts for those provisions of the plan that are considered unique elements, or elements that are not existing legal obligations. The following findings address the unique elements. Any provision of the plan not mentioned here would stand alone outside of and independent of the Plan. Some of the controlling stand alone factors, include provisions covered by valid permits, subject to existing rules and legal agreements such as the Ordot Consent Decree.

Chapter Two: Solid Waste Management Goals and Objectives

Sections 2.2.2 and 2.2.3 are unique to this ISWMP and call for reductions in the overall waste stream by up to twenty-five percent by July 1, 2018.

Waste diversion and recycling at the source and at Material Resource Recovery Facilities (MRRFs) will require subsequent legislative authority in the form of a mandatory program for diversion and recycling. The cost of developing MRRFs will also require subsequent authorization as part of pending revenue bond legislation or by separate appropriation.

Finding: Although these objectives are unique elements, their implementation costs cannot be directly attributed to the 2006 ISWMP (the Plan). The estimated annual cost impact to the general public *to develop plans and programs to support legislation* is less than 0.25 of one full-time employee ($15,000.00).

Chapter Three: Management of Solid Waste Operations and the Formation of a Public Utility: Guam Solid Waste Authority

Establishing a Guam Solid Waste Authority and its policy oversight relationship with the Consolidated Commission on Utilities (CCU) is a unique element of this the 2006 Plan although it was proposed in the original Integrated Solid Waste Plan (the 2000 Plan). This objective with all its requisite financial and operations management, contracting, and environmental compliance functions will not be realized without future legislation.

Finding: Although these objectives are unique elements, their implementation costs cannot be directly attributed to the 2006 ISWMP (the Plan). The estimated annual cost impact *to develop legislation and prepare the Solid Waste Management Division of the Department of Public Works (DPW) for reorganization* is no more than 0.50 of one full-time employee ($30,000) in any given year.

Chapter Four: Extended Solid Waste Projections

The Extended Solid Waste Projections are a planning tool unique to this Plan. The projects were modified in 2004 - 2005 from the 2000 Plan and used in the environmental impact statement documents to site the new landfill.

Finding: The process of *refining solid waste projections* to account for additional population growth from expanded military development and any accelerated growth in the tourism industry can be accomplished with an annual cost impact of less than $5,000.00. This task can be accomplished as an in-house project involving data collection and analysis.

Chapter Five: Collection and Transport

The Plan "advocates *universal source separation and collection* to the greatest extend possible". To accomplish this, the Plan favors mandatory requirements established through subsequent legislation for commercial collection and transportation operations.

Finding: Although these objectives are unique elements, their implementation costs cannot be directly attributed to the 2006 ISWMP (the Plan). The estimated annual cost impact associated with *developing mandatory recycling legislation and preparing DPW operations and management oversight to implement the legal requirements* is less than 0.33 of one full-time employee ($20,000.00) in any given year.

Chapter Six: Disposal and Waste Diversion

The Plan outlines a number of potential disposal and waste diversion alternatives which include various levels of recycling effort to realize a minimum 30-year landfill life span and other community benefits. In order to effectively develop and implement recycling standards the government must work with community stakeholders. Recycling will either be profitable to some extent or require a subsidy to meet stated objectives and standards. Much work remains to be done to reasonably determine the annual cost impact to the public of recycling of the type and scale identified in the Plan. Many of the market factors associated with a regional landfill operation, private access to resources, markets, expertise, and complimentary technology, among others, have not come to light or adequately understood in the local context.

Finding: Although many of the specific recycling and waste diversion objectives are unique elements, their implementation costs cannot be directly attributed to the 2006 ISWMP (the Plan). It is estimated that the annual cost impact of designing and implementing an optimum recycling (waste diversion systems) with community stakeholders cannot be accurately calculated at this time; however much of the preliminary ground work in this area overlaps with the work identified in Chapter 7 of the Plan.

Chapter Seven: Recycling, Composting, and Special Wastes

The Plan outlines a number of Performance, Functional and Operational Standards that do not currently exist in law, regulation or as part of existing permit regimes. In order to effectively develop and implement standards the government must research, develop, and promulgate standards. The primary government programs to accomplish these tasks are the Guam Environmental Protection Agency (GEPA) Solid Waste Management Program and the DPW Solid Waste Management Division. Dedicated Recycling Officers have not been hired to develop standards; however a number of activities related to this function currently exist within both agencies.

Finding: Although these objectives are unique elements, their implementation costs cannot be directly attributed to the 2006 ISWMP (the Plan). It is estimated that the annual cost impact of providing *full support for recycling programs* as a direct result of this Plan is less than 0.25 of one full-time employee ($25,000.00). The only reason any costs are associated with this plan is that there are a number of very basic planning and rule development tasks yet to be accomplished as well as legislation, and Department of Administration approval of new classified positions.

Chapter Eight: Public Education Strategy

The plan calls for a Public Information and Education Strategy to develop support for and guide community efforts toward Plan implementation covering emerging recycling requirements, improving acceptance of existing fees, and other critical solid waste operations. The Plan calls for the direct subsidy of "start-up" education efforts in the amount of four hundred eighty thousand dollars ($480,000). Approximately $200,000 was requested for Fiscal Year 2007 by the GEPA in its initial budget request to the Bureau of Budget and Management Research (BBMR). The request was not granted; however, it was decided between GEPA and BBMR that BBMR would attempt to provide the funding ($100,000.00) under the Governor's transfer authority.

Finding: Although these objectives are unique elements, their implementation costs cannot be directly attributed to the 2006 ISWMP (the Plan). It is estimated that the annual cost impact of the *"start-up" Public Information and Education Strategy* subsidy is approximately one hundred thousand dollars ($100,000.00), subject to either legislative appropriation or the Governor's transfer authority. The balance of $380,000.00 would be targeted in later years and is subject to legislative authorization.

Conclusion

The total estimated annual cost impact of this Plan for Fiscal Year 2007 is one hundred ninety-five thousand dollars ($195,000.00) and for Fiscal Year 2008 and thereafter $380,000.00 or less, which is significantly less than the $500,000.00 cost impact threshold of 9 GCA §9301(j). Therefore, the Agency has determined that the Plan is exempt from the requirements under the AAL to conduct an Economic Impact Assessment.

Guam 2006 Integrated Solid Waste Management Plan

September 2006

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EXECUTIVE SUMMARY

By this document, the Guam Environmental Protection Agency (Guam EPA), with assistance from the Guam Department of Public Works (DPW), updates and revises Guam's Integrated Solid Waste Management Plan, as mandated by Section 51103 of Title 10 of the Guam Code Annotated.

Guam's first Integrated Solid Waste Management Plan was developed for the Guam Environmental Protection Agency and approved by the Guam EPA Board in 1999. It was modified and adopted by the Guam Legislature on December 12, 2000. It called for major changes in solid waste management on Guam, including creation of a new legally conforming landfill and closing of the Ordot Dump.

This update to the Plan revises the solid waste management objectives, identifying the key elements of the integrated solid waste management system, which will be implemented during the five-year period 2006-2010 and beyond, as follows:

(1) SOLID WASTE COLLECTION AND TRANSPORT
- Fully implement user charges and prepaid tipping fees by December 31, 2006
- Establish private contracts for residential solid waste collection as soon as possible in 2006 or early 2007

(2) RECYCLING AND WASTE REDUCTION
- Reduce the annual quantity of the Guam-wide solid waste stream by a minimum of five percent through composting by July 1, 2007
- Reduce the annual quantity of Guam-wide solid waste stream by twenty percent through diversion at the source and recycling by July 1, 2009
- Reduce the annual quantity of the Guam-wide solid waste stream by thirty-five percent through diversion at the source and recycling by July 1, 2018

(3) SOLID WASTE DISPOSAL
- Final closure of the Ordot Dump by September 23, 2007, or by a court-approved revised Consent Decree schedule
- Privatize and open the Layon Landfill by September 23, 2007, or by a court-approved revised Consent Decree schedule

(4) PUBLIC EDUCATION
- Adopt the public education strategy recommendations from the updated ISWMP by December 31, 2006

(5) MANAGEMENT OF THE GOVERNMENT OF GUAM'S SOLID WASTE OPERATIONS
- Create a public utility and adopt the planning and operational recommendations from the updated ISWMP by December 31, 2006
- Implement an ongoing, comprehensive SWM data collection, analysis and planning process in 2007

- Establish Guam-wide solid waste management operations, inclusive of the military's collection, storage, processing and disposal operations by October 1, 2008

This update to the 2000 ISWM Plan reviews the accomplishments made during the time between the adoption of the Plan and September 2006, including the following

- The Guam EPA amended its solid waste disposal regulations and consequently received United States Environmental Protection Agency (U.S. EPA) delegated authority to enforce the federal solid and hazardous waste laws and regulations.

- Between May 1999 and September 2006, the Guam Legislature enacted more than 18 solid waste laws, as summarized in Appendix A. However, expected objectives of these laws and the Plan, including collection of sufficient tipping and user fees to match cost of services, financing and implementing the opening of a new landfill and the closing of Ordot Dump, composting of green waste, and administration of contracts for privatized collection and disposal were not met.

- Solid waste disposal resulted in a vertical and lateral expansion of the Ordot Dump and DPW's 2005 closure design became outdated.

- Because of the continued contamination of the Lonfit River from the Ordot Dump, the U.S. EPA had initiated negotiations for a federal court order, or Consent Decree, to resolve civil penalties and to establish a schedule for construction of a Municipal Solid Waste Landfill Facility (MSWLF) and closure of the Ordot Dump.

- During the almost four years (2000-2004) the Government of Guam (Government) took to negotiate the Consent Decree, Guam made no progress on a new landfill. The Ordot Consent Decree became effective on February 12, 2004. With its specific deadlines and stiff stipulated penalties for missed deadlines, this Consent Decree has suddenly forced the Government into modern solid waste disposal practices.

- The Consent Decree required the Government to conduct a screening process to identify the best landfill sites. Guam EPA and DPW implemented the site screening process of the 2000 Integrated Solid Waste Management Plan and selected the Layon area in the vicinity of Dandan, Inarajan, in January 2005.

- The Consent Decree also required the permitting of the closure and pre-closure operations of the Ordot Dump by December 2005.

- In January 2006, the Guam Environmental Protection Agency Board of Directors approved the first Update of the Integrated Solid Waste Management Plan, which is herein revised and further updated.

- In 2006 PUC began actively regulating DPW's solid waste rates and service problems. The recommendations of its August 18, 2006 Audit Report are incorporated here in Appendix B.

Within the updates of the Plan, a change in management methods is proposed. This calls for the formation of a Public Utility Solid Waste Authority with oversight by the CUC to manage the collection of tipping fees or other financing resources and implement the privatization of Government operations as mandated by the Guam Legislature. Such an Authority had been included in the Guam EPA Board approved Plan of 1999; however, in 2000 the Legislature rejected the formation of the Solid Waste Authority. Since then, the Government's solid waste practices and other circumstances justify the creation of the Guam Solid Waste Authority with financial management consolidated under the services of its chief financial officer.

The Plan update revises Guam's solid waste load projections to the year 2037 (which approximates the conservative life-span of the new landfill) and includes future federal facilities waste in the island-wide management system and alternative levels of waste reduction. These projections will need to be revised in 2007-2008 when Guam has better projections on the population increases for the military buildup

It calls for mandatory source separation with curbside collection of all waste streams, and drop-off/collection capability at regional transfer stations. Recycling, composting, proper disposal of special waste, as well as the special considerations of waste reduction opportunities and curtailing of illegal dumping, are all components of the 2006 ISWMP. Special wastes, such as white goods, household hazardous waste, automotive batteries, and abandoned vehicles, are to be handled differently from recycling of other municipal solid waste recycling activities.

The approach to increasing public awareness and public involvement in waste management improvements and plan implementation calls for increased efforts by the Guam EPA. The update also provides performance standards for the components of the solid waste management system.

In December of 2005, Guam EPA issued a permit to the DPW to continue operating the Ordot Dump until the earlier of either (1) the opening of a Municipal Solid Waste Landfill Facility or (2) September 23, 2007, the date mandated by the Consent Decree; and for closure construction and post-closure monitoring and maintenance. Closure construction should have begun no later than April 21, 2006. Post-closure care will ensue for 30 years or more. Therefore, with the issuance of the permit, Guam has embarked upon modern solid waste management operations, which will be privatized as required by law. In 2007, Guam EPA will implement its regulations on landfill design and construction and those for post-closure care when the Ordot Dump closes.

The Consent Decree mandates that the Municipal Solid Waste Landfill Facility (MSWLF) open on or before September 23, 2007. Therefore, 2006 to 2008 will be pivotal years for Guam's solid waste management as DPW designs and constructs solid waste facilities and Guam EPA develops permit conditions that are protective of the environment.

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CHAPTER ONE: INTRODUCTION

1.1 Plan Purpose

This first update of the 2000 *Integrated Solid Waste Management Plan for the Island of Guam* is written in compliance with Section 51103 of Title 10 of Guam Code Annotated, which states that the ***"Guam Environmental Protection Agency shall revise the Solid Waste Management Plan at least every five years, or sooner as needed."*** It identifies and describes the key elements of the integrated solid waste management system that will be implemented on Guam during the five-year period 2006-2010 and beyond.

1.2 Planning Approach

Based on review of the contents, data, and recommendations of the 2000 *Integrated Solid Waste Management Plan for the Island of Guam* (PL 25-175), a team of technical reviewers from within the Guam Environmental Protection Agency (Guam EPA) and the Solid Waste Division of Guam Department of Public Works (DPW) drafted this 2006 *Guam Integrated Solid Waste Management Plan* (2006 ISWMP or the Plan) update. They assessed the progress in solid waste management since 1999, proposed revised goals and objectives for the ISWMP, and updated data and projections of waste generation to 2037. They formulated a solid waste management system incorporating the components of a management authority, waste diversion and disposal, collection and transport, and public education. Included are performance standards that define measures of plan implementation. These components were assigned to chapters, each addressing (1) the current status ("where we are"), (2) desired objectives ("where we want to be"), (3) recommended actions ("how to get there"), and (4) the performance measures ("how we know whether we have succeeded").

All parts of this update were developed with a view to accommodate legal concerns expressed in the numerous local solid waste laws (Appendix A) and the District Court of Guam's imposed Consent Decree. In 2004, the Government of Guam entered into a Consent Decree with the United States (U.S. District Court of Guam, 2004) establishing specific deadlines for (1) opening a legally permitted landfill, (2) closing of the Ordot Dump, (3) institutionalization of a household hazardous waste (HHW) collection program, including construction of a facility, and (4) producing a financial plan to achieve the first three tasks (Consent Decree tasks). Therefore, the Consent Decree requirements heavily influence this 2006 ISWMP document. However, since the Consent Decree schedule was not being met for either the Ordot Dump closure or new landfill construction, Government of Guam proposed a revised schedule to USEPA. A decision on approval of the revised schedule was awaited in September 2006.

1.3 Background

Guam has seen many changes since it became a Territory of the United States in 1898. It has become westernized, but has not lost all of its cultural and social

traditions. As is the case with any westernized society, the influence of capitalist economics and social trends have created in Guam's population the inevitable social patterns that can only be described as "commercialism" and "consumerism." As a result of these patterns, residents' buying habits, methods of consumption, and general lifestyle are characterized by an attitude that emphasizes the "disposable" nature of modern consumer products. Traditionally, Guam, like any other island in the Pacific, did not have this paying and consumption lifestyle that requires proper disposal and management of its solid waste. Everything was part of the earth and biodegradable – no plastics, glass, metal, or chemical contaminants. The islanders never actually had to worry about the negative impacts that result from the disposal of their wastes. Needless to say, both the islanders' disposal habits and westerners' commercialism and consumerism do not lend themselves well to the effective and efficient management of solid waste on Guam.

Another aspect of solid waste management on Guam is the government's historic approach to government utilities and services. In the fairly recent past, government's management of other critical utility services, such as power and water, revealed a pattern of insufficient planning and management, under-prioritized maintenance of facilities and equipment, insecure funding for operations, political controversy involving the Legislative and Executive Branches, and the eventual emergence of utility crises (load-shedding and water shortages) leading to, among other problems, a federal court stipulated order. Recently, the privatization of the Guam Telephone Authority has demonstrated that much of the government's services can be operated more efficiently and more economically by a private firm. The value of properly planned and controlled privatization of solid waste management operations is therefore emphasized in this plan.

Following use of the Ordot Dump as the official municipal solid waste disposal site for all residents and businesses on Guam, including some disposal of military wastes a half-century ago, its valley site has become a mountain. It has far outlived its acceptability, causing health and environmental risks that should not be tolerated. It not only affects neighboring residents with health, odor, noise, and animal vector problems, but has also caused fires generating toxic fumes that have required residents' repeated evacuations from their homes. It has polluted surface waters from its leachate, which has led to a federally forced Consent Decree (U.S. District Court of Guam, 2004) that requires the Government of Guam to close the dump. This Consent Decree imposes a strict schedule of related actions that must be taken, backed by the imposition of financial penalties for missed deadlines. This dump has been the primary reason for the development of solid waste management plans on Guam.

In 1999, the Guam EPA's first Guam Integrated Solid Waste Management Plan was drafted by a local consulting firm, Dueñas and Associates, Inc., with the coordination of a steering committee, under the guidance of the Guam EPA (Guam EPA, 1999). This was subsequently approved by the Guam EPA Board of Directors and submitted through the Guam Planning Council and the Governor of Guam to the Guam Legislature. It was modified and adopted by the Guam

Legislature through Public Law 25-175 on December 12, 2000, as the *Integrated Solid Waste Management Plan for the Island of Guam* (2000 ISWMP). It assessed solid waste generation and disposal volume requirements and evaluated disposal and volume reduction options and management. Waste collection and transport methods were then presented. These selected components were then examined to see how they would be best managed in order to yield a functional, efficient, and effective Integrated Solid Waste Management (ISWM) system. The desired performance levels for components were specified to complete the 2000 ISWMP. The requirements to establish a non-political Guam Solid Waste Authority and the option of waste reduction by incineration were removed from the Guam EPA Plan by the 25th Guam Legislature. Consequences of not having this proposed Authority appear very significant.

Before and after this Plan development, numerous local laws were passed to address the problems with the Ordot Dump and related solid waste concerns. These are summarized in Appendix A. Most of those laws enacted before 1999 (before the 25th Guam Legislature took office) were considered in the development of the 2000 ISWMP.

There have been many legislative attempts since the 2000 ISWMP to make the government solid waste activities operate more efficiently. In fact, during the six-and-a-half years between May 1999 and November 2005, the Guam legislature enacted more than 20 laws influencing solid waste management.

Regarding privatization, Public Laws 24-06, 24-139, and 24-272 mandate DPW to contract out all operations. Public Law 26-99 again mandates DPW to privatize collection and mandated the separation of Guam into three residential collection zones. Public-private partnerships have the potential to provide great advancements for solid waste management in terms of the improvement of operations and implementation of new technologies. However, it is imperative that careful consideration be given to all aspects of privatization. Viable options must be examined, including those that may not, at first glance, appear to be the most technologically advanced. Environmental and social goals also may counter the use of private business decisions on waste management.

Recycling efforts on Guam must be expanded and improved. The Asian market for both metal and waste paper is booming. Thousands of junk cars have been removed and shipped to recyclers since the 2000 ISWMP. The Guam Public School System is starting environmental clubs to address the collection of aluminum cans. Ambros, Inc., of Guam, in collaboration with other local businesses and in coordination with Guam EPA, is currently sponsoring a project to place aluminum can recycling bins in most of the public schools and some private schools by fall of 2006, and ultimately in all the schools on Guam. Although there appears to be a significant increase in recycling activities on Guam, the Government of Guam must ensure that plans support the integration of increasing recycling business opportunities within all solid waste management activities.

The 2000 ISWMP set performance criteria that can be used to measure whether tasks of the plan were accomplished. These criteria were developed for each of the components of the ISWM system and were based on functional, operational, and legal requirements. Table 1.1 includes key components and general guidance on steps to be taken from the existing solid waste management system in 2000 to a fully implemented integrated system. In general, very few of the proposed activities were accomplished within the transition period. It is therefore critical that this Plan update set guidelines and identify a Solid Waste Authority that is committed to the implementation of all the components of this Plan. The Consent Decree was not a component of the 2000 ISWMP nor is it a local mandate to enforce the implementation of the 2000 ISWMP. But it is a driving force that enabled the implementation of the two key factors of the Plan: the closure of Ordot Dump and the opening of the new landfill.

Table 1.1 Summary of Solid Waste Management Plan Tasks of 2000 ISWMP

Tasks	Description of Activities	Implementation	Present Status	Future Application
Operation at Ordot	Shredder Volume Reduction	DPW	Not done	Carry forward
	Coordination with Closure Design	DPW	Permitted Dec. 2005	Ongoing
New Landfill	Opening Date 2001	DPW	Not done; new opening date by Sept. 27, 2007	Ongoing
Billing and Collection System	Interim Volume Base Fee Determination	DPW	Done	PUC to set fees
	Scales and Related Equipment Used	DPW	Not done; permit requirement	Carry forward
Data Collection	Interim Data Collection Facilities and Strategy	DPW	Not done	Carry forward
	Data Collection Personnel	DPW	Not done	Carry forward
Collection and Transport	Development of Container Standard	DPW	Done	Revise for source separation
	Development of Collection Standards, Rules and Regulations	DPW	Done	Revise for source separation
	Assessment of Fleet Service	DPW	Not done	Carry forward
	Develop Scope of Contract Services	DPW	Not done	Carry forward
	Assign Small Collection Contracts for Organized Subdivisions	DPW	Not done	Carry forward
	Coordinate with DLM to Identify Sites for New Regional Solid Waste Transfer Stations	DPW	Not done	Carry forward; use existing stations where practical
Recycling	Establish Recycling Program	Guam EPA	Not done	Carry forward
	Waiver at Port	Guam EPA, Legislature, Port Authority	Done	Ongoing
	Qualifying Certificate	Guam Economic Development and Commerce Authority	Done	Ongoing
	Recycling Collection Centers at Existing Transfer Stations and Community Centers	DPW, Mayor's office	Not done at transfer stations, and mayors' offices have informal recycling programs	Carry forward
	Grants for Recycling	Guam EPA, University of Guam	Not done	Carry forward
Composting	Establish Chipping/ Shredding at Existing Transfer Stations	DPW	Not done	Carry forward
	Develop Interim Rules and Regulations for Composting	Guam EPA	Not done	Carry forward
	Legislation Requiring Government, Landscaping and Ground Maintenance to do Composting	Guam EPA	Not done	Carry forward

The Solid Waste Management Program of Guam EPA issues solid waste permits to all companies engaging in the transport and management of solid waste. Within the last five years, Guam EPA issued 367 solid waste permits as shown in Table 1.2. An increase in the number of solid waste permits shows that local companies are now more aware of the need to properly dispose of and manage wastes. In 2005, there was an increase in the number of companies doing waste processing and storage. In fact, in 2005 there were 11 companies involved with waste recycling, processing, and transfer.

The composition of solid waste has changed in Guam since 2000. However, this has not been measured and studied for more than ten years. In order to capture the current waste composition and the amount of waste going to the planned landfill, a waste composition and characterization study will be performed within the next two years.

Table 1.2 Annual Solid Waste Permits Issued

Permit Type	Collection	Processing	Storage/ Transfer	Disposal	TOTALS
Fiscal Year 2000	61	7	3	4	**75**
Fiscal Year 2001	65	16	7	4	**92**
Fiscal Year 2002	45	15	3	3	**66**
Fiscal Year 2003	22	8	3	2	**35**
Fiscal Year 2004	28	2	3	2	**35**
Fiscal Year 2005	38	14	10	2	**64**

Additional developments and changes in solid waste management on Guam since the 2000 ISWMP are discussed in the following chapters.

CHAPTER TWO: SOLID WASTE MANAGEMENT GOALS AND OBJECTIVES

The goals of this 2006 ISWMP are the following:

- Protect Guam's public health and environment during every aspect of Guam-wide solid waste storage, collection, processing, transfer, and disposal;
- Reduce Guam's waste stream through source reduction, recycling, public education, and other means;
- Privatize DPW's solid waste operations as mandated by Public Laws 24-06, 24-272, and 26-99; and
- Achieve the most appropriate balance of efficient and overall cost-effective integrated solid waste collection, reduction, and disposal systems.

The objectives are organized into four general categories: (1) collection/transport, (2) waste stream reduction, (3) disposal, and (4) management. The objectives are further categorized into five time frames: (1) overdue-range (1998-2003); (2) Ordot Consent Decree range (2004-2007); (3) short-range (years 2005-2009); (4) mid-range (years 2010-2014); and (5) long-range (years 2015-2035). These objectives form the framework of Guam's integrated solid waste management system. They are guidelines by which solid waste management will achieve mandated goals. These objectives do not manifest the level of detail required for implementation, but rather draw upon the performance criteria developed in the evaluation of various component alternatives to outline what should be expected from the ISWM system.

2.1 Collection/Transport

2.1.1 Fully Implement Residential User Charges and Tipping Fees through a Prepaid System for Users by December 31, 2006 (Overdue- Range)

The implementation of this objective was mandated by Public Law 24-272. Tipping and user fees are deposited into the Solid Waste Operations Fund (SWO Fund) and must be used for solid waste management practices. DPW implemented user charges and tipping fees on December 24, 1998; however, DPW has not been successful in billing and collecting. Between February 1, 2000, and March 2001, DPW fell behind in billing, so the Guam Legislature intervened. With Public Law 26-17, it limited to four months DPW's ability to backbill (billing for a number of prior months), and it required DPW to prorate collection of the fees backbilled before May 2001. Since 2001, DPW has been largely unsuccessful in billing and collecting from an acceptable number of customers. Both DPW and the Department of Administration have encountered difficulties in collecting from some commercial haulers.

Effective fee collection must occur in order to support the cost of service and ensure favorable interest rates on capital debt (e.g., new landfill, HHW facility, transfer stations, etc.). Moreover, the fees collected during 2000-2006 were not sufficient to pay for the Consent Decree mandated tasks because the SWO Fund did not have a reserve account for such projects. So, in October 2005, the Public Utilities Commission (PUC) approved an interim tipping fee rate adjustment to cover service costs and to create a reserve account for some of the Consent Decree project costs. For a detailed analysis of this fee adjustment and methods and basis for future incremental adjustments to meet Consent Decree mandates, please refer to the PUC Rate Report of September 2005. On August 18, 2006, the PUC consultant provided an Audit Report on DPW's billing, fee collection, and services. It recommended a prepayment system for residential waste. See Chapter 3 for more discussion.

2.1.2 Private Contracts for Residential Solid Waste Collection by December 31, 2006 (Overdue-Range and Short-Range)

Privatization of residential collection was mandated in early 1998 by Public Law 24-139. It was further mandated by Public Law 24-272. Four years later, because privatization had not occurred, the Guam Legislature intervened. On June 3, 2002, with Public Law 26-99, it mandated DPW to divide Guam into three solid waste management districts by July 3, 2002, and to contract for collection services in two of the districts by September 2002. DPW has reported progress in structuring a privatization bid offering. DPW issued a request for proposals of interest for a broad range of solid waste responsibilities in March 2006. However, private contracting of residential collection had not been implemented by September 2006.

Other financial considerations would be to impose a franchise fee for residential collections. This element is critical to the smooth and efficient operation of the system and is likely to be subject to public scrutiny and public complaint if mismanaged. Short-term franchises would ensure that performance standards and customer service standards are met consistently. Currently, DPW regulations require collection contracts to be short-term (five years or less).

2.2 Waste Stream Reduction

2.2.1 Reduce the Annual Quantity of the Guam-wide Solid Waste Stream by a Minimum of Five Percent through Composting by July 1, 2007 (Overdue- and Short-Range)

Reduction of Guam's solid waste stream was mandated by Public Law 24-272. In fact, the public law specifically sets the minimum reduction at twenty percent through reuse, recycling, and composting of solid waste generated on Guam. The 2000 ISWMP adopted the twenty percent reduction mandate, which was re-affirmed through passage of Public Law 25-175. Moreover, the use of these source reduction and waste minimization methods is discussed as a continuing means of promoting land conservation and diminishing our dependence on landfills.

The 2000 ISWMP estimated that composting could account for a five percent minimum reduction in the generated waste stream by the year 2003. The implementation of this objective will require taking the concept from the drawing board to complete construction and implementation, as there are currently no civilian facilities available for the manufacture of compost from organic wastes. In 2006 a private local company obtained equipment and applied for permits to store and process green waste adjacent to its hardfill operations. Also another company applied for a tire shredding and recycling and plastic recycling permits. The development of attendant programs and systems, such as public education programs, will be discussed in subsequent sections.

2.2.2 Reduce the Annual Quantity of Guam-wide Solid Waste Stream by Twenty Percent through Diversion at the Source and Recycling at Material Resource Recovery Facilities (MRRFs) by July 1, 2009 (Overdue- and Short-Range)

It is estimated that recycling can account for at least a twenty-percent reduction in the generated waste stream by the year 2009 through the implementation of source separation, separating at transfer stations, MRRFs, and recycling collection centers. Historically and currently Guam recycles less than ten percent of the total solid waste stream generated. This is due in large part to the fact that collection services for recyclables are limited, as are collection/drop-off centers, and that recycling is currently entirely voluntary and without adequate supporting public education programs. Implementation of this component of the 2006 ISWMP will require the construction of one or more MRRFs, more aggressive policies and laws, intensive public education efforts, and increased facilities for collection and processing of recyclable commodities. Details of the alternatives to achieve implementation are included in subsequent sections of this document.

2.2.3 Reduce the Annual Quantity of Guam-wide Solid Waste Stream by Thirty-five Percent through Diversion at the Source and Recycling by July 1, 2018 (Long- Range)

The implementation of this component will be achieved through increased recycling of generated solid waste prior to disposal into the municipal solid waste stream. This increase should be a product of the change in the public's attitude and waste disposal practices resulting from the recommended legislation and enhanced public education efforts initiated for the short-range recycling objective. It requires no additional needs beyond minor upgrades to those facilities and systems implemented for the short-range objective.

2.3 Disposal

2.3.1 Final Closure of the Ordot Dump September 23, 2007 (Overdue-Range and Consent Decree)

Public Law 22-115 mandated that the Ordot Dump be closed by April 25, 1997. Public Law 24-139 mandated the Ordot Dump be closed by September 11, 1998,

but that date was extended by Public Law 24-272 to April 8, 1999. These aggressive deadlines were not based on a realistic analysis of the tasks required to actually achieve this objective. Based on DPW's realistic assessment of tasks required to meet federal and Territorial requirements, the 2000 ISWMP identified July 1, 2001, as a best case for completing closure. However, the Government of Guam equivocated, and engaged in four years of negotiation with U.S. EPA for a Consent Decree to settle claims for polluting the Lonfit River, and to mandate a schedule for closing the Ordot Dump and opening a Municipal Solid Waste Landfill Facility (MSWLF).

Under the Ordot Consent Decree, closure construction must be completed by October 23, 2007, and the dump must stop receiving waste by the earlier of either the opening of the Layon Landfill or by September 23, 2007. This requires that steps be taken immediately to open a new landfill by committing to pick up the pace of development to make up for lost time and to complete the closure process as scheduled by the Consent Decree. Since some of these dates have been exceeded, new later dates have been requested for U.S. EPA approval in 2006. This component of the 2006 ISWMP will entail implementing the closure design plans, which are complete, and making any necessary modifications resulting from value engineering analysis which was completed in January 2006.

2.3.2 Privatize and Open the Layon Landfill by September 23, 2007 (Overdue- and Consent Decree Range)

Phase I of the 2000 ISWMP (Guam EPA, 1999), which was completed in August 1998, contained three alternative detailed fast-track schedules of planning and construction of the MSWLF. These schedules contemplated a start date of August 1998 and a completion date before the end of 2000. But because no progress was made between 1998 and 2004, the Consent Decree mandated a schedule for site selection and landfill construction. As indicated previously, this crucial solid waste management issue depends greatly on the Government of Guam's determination to take all necessary steps to open the landfill on or before September 23, 2007. This component of the 2006 ISWMP will include at a minimum a new MSWLF, compliant with Guam EPA regulations and federal RCRA Subtitle D, with access road, supporting infrastructure, and waste receiving facilities. It will also include recycling collection facilities and other solid waste management facilities as determined in the rest of this planning document. Specific issues associated with the new landfill facility are addressed in subsequent sections of this document and in the environmental impact statement and supporting design plans and specifications developed over the past two years for the landfill facility.

2.4 Management

2.4.1 Adopt the Planning and Operational Recommendations from the Updated ISWMP in 2006 (Short-Range)

This objective is the prerequisite for effective continued implementation of the ISWMP. As mentioned previously, several components of the 2006 ISWMP