

**2015 SWANA Excellence Award
Integrated Solid Waste Management Systems**



**Guam Solid Waste Authority
Under Gershman, Brickner & Bratton, Inc., Receiver**

Executing a Turnaround of Guam's Solid Waste System



Ordot Dump – now closed after 50-year history of polluting discharges



Guam's modern sanitary Layon Landfill



Cart-based curbside recycling and trash collection for all GSWA customers



New Harmon Transfer Station and HHW facility

Jurisdiction: U.S. Territory of Guam
Approx. Population: 161,000
Cost/HH/Project: Based on 44,589 HH units, cost/HH: \$413
Approximate Budget: FY 2015 Operating Budget: \$18,400,000

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Executive Summary

Over the past seven years, under Court-appointed Receivership, Guam’s solid waste system has been transformed from a crisis-ridden, dysfunctional system, plagued with significant environmental impacts and serious operational, administrative and financial deficiencies, into a modern, integrated solid waste management system. The new system replaces the polluting Ordot Dump with an environmentally sound, fully compliant Subtitle D landfill for non-hazardous municipal solid waste. Cart-based trash and recycling collection replaced unsightly curb set-outs and few residential recycling opportunities. Trash collection occurs on time, with streamlined routing and well-trained employees. Bulky and household hazardous waste collection systems are in place. With new rate structures, the system’s cash position has improved dramatically, and reserves are funded for future landfill cell development and post-closure care of the Layon Landfill. While Dump closure and several projects continue, Guam residents now have an integrated solid waste management system and can look to a more environmentally sustainable future.

Overview of System and System Performance

The U.S. Territory of Guam is where America’s day begins. Guam is the largest and most southern of the Mariana Islands. Ceded to the United States in 1898, it has had an enduring strategic importance due to its proximity to Asia. With a population of about 161,000 today, the 212 square-mile island currently has 44,589 household units, 3,143 businesses, and U.S. Navy and Air Force bases, with current plans to relocate about 5,000 Marines from Okinawa, Japan.

With its beautiful beaches and blue waters, Guam may appear to be an environmental paradise. However, a closer look reveals a difficult 25-year history of dysfunctional, mismanaged and politically charged solid waste management with serious environmental impacts. During the past seven years, this history has been completely reversed. Guam’s solid waste system has achieved new operational, administrative and financial performance and efficiencies as well as improved environmental protection. This award entry tells the story of the transformation of Guam’s dysfunctional solid waste system into a more modern, integrated system. To understand the extent of this transformation, it is important to briefly recount the history of Guam’s solid waste crisis.

The Making of a Solid Waste Crisis

Since the 1940s, Guam’s Ordot Dump was a dumping ground for remains from World War II and Guam’s commercial and municipal solid waste. Proper landfill operation procedures at the site, including placement of daily cover and proper waste compaction, were not followed. Used by both the Japanese and U.S. military forces during World War II and owned by the Government of Guam since 1950, the 341-foot mountain of trash acted like a sponge, absorbing rainwater (annual rainfall is about 100 inches) and discharging contaminated water into the nearby Lonfit River and coral reefs of Pago Bay.

On July 24, 1990, in response to violations of the 1972 Clean Water Act, the U.S. EPA issued an administrative order directing the Guam Department of Public Works (DPW) to cease the discharge of pollutants from the Dump. But for years, the discharges and violations of the Clean Water Act continued. On February 11, 2004, the U.S. District Court of Guam approved a Consent Decree (Civil Case No. 02-00022), in which the Government of Guam agreed, among other provisions, to cease the discharge of pollutants from the Ordot Dump, close the Ordot Dump within 45 months, begin implementation of a post-closure plan, and provide for proper disposal of household hazardous waste. In addition, DPW agreed to site, obtain permits for, construct and begin operations of a new municipal sanitary waste landfill within 44 months.

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Despite the Consent Decree, the stalemate continued for four more years. On March 17, 2008, Chief Judge Frances Tydingco-Gatewood of the U.S. District Court of Guam, noting lack of progress in complying with the 2004 Consent Decree, appointed Gershman, Brickner & Bratton, Inc. (GBB) as Receiver with full authority to manage, supervise and oversee the Solid Waste Management Division (SWMD) of the Department of Public Works and bring Guam into compliance with the Consent Decree. (Note: In 2011, to prepare Guam for the eventual end of the Receivership and resumption of solid waste management functions, Guam’s legislature passed the Guam Solid Waste Authority (GSWA) Act, replacing the SWMD. Until the transition from Receivership takes place, GBB Receiver has full authority over the GSWA. In this narrative, we use GSWA to refer to the SWMD before 2011.)

A Polluting Dump and a Dysfunctional Solid Waste System

In April 2008, when GBB Receiver staff arrived to take over management of the GSWA, they found the Ordot Dump’s mountain of trash swarming with flies that obscured vehicle windshields; toxic, decaying trash with no cover, forcing school cancellations and neighbor complaints on days when the smell was especially nauseating; wild pigs roaming the Dump; frequent fires that contributed to air advisories; and leachate contaminating the nearby Lonfit River and Pago Bay. Clearly closing the Dump was a high priority, but as GBB Receiver staff looked closer, they also discovered a solid waste management system plagued by serious operational, financial and administrative problems that needed immediate attention, even as work began on Consent Decree projects.



Operational Deficiencies

- The GSWA owned a fleet of trash trucks purchased in the early 1990s. Only one of the trucks was operational, working around the clock using three crew shifts to collect from 12,000 customers with unreliable support from two rented trash trucks that were often sidelined with mechanical problems.
- Curbside trash collection was many weeks behind schedule and customer complaints were high.
- GSWA’s three convenience centers were not permitted and in poor state of repair with limited functionality.
- Guam had no recycling program and only 2 percent of waste was diverted, despite Guam law requirements of 20 percent recycling by 2009 and 35 percent by 2018.
- There was no collection of bulky waste. White goods were stacked at one of the three convenience centers due to a failed contract.
- There were no facilities for proper collection and management of household hazardous waste.

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- The working conditions for the 99 GSWA staff members were substandard. Staff had few tools with which to work; showers leaked; kitchen facilities were makeshift, dirty, and a fire hazard; and staff morale was very low.



Employee bathroom and kitchen facilities were dirty and substandard, contributing to low employee morale.



When GBB Receiver arrived in March 2008, GSWA had only one working truck.

- The GSWA was spending up to \$11,000 per day on rental equipment and contract operators.
- At the Ordot Dump, there were no scales to accurately calculate the tonnage of waste disposed there.
- The Ordot Dump was nearing capacity with no efforts made to extend its capacity.
- The Ordot Dump had been in continual violation of the Clean Water Act for 22 years, with no stormwater management facilities and possible peak daily leachate discharges of 600,000 gallons continuing to pollute the environment.
- No regular cover was being applied at the Ordot Dump; a fog of flies and herds of wild pigs fed off the active face as neighbors complained of odors; regular fires burned contributing to air advisories.
- No new landfill had been built, as required by the Consent Decree.

Administrative Deficiencies

- The GSWA's billing and account management systems were unreliable, and for years, GSWA had been collecting trash from more than 4,000 non-paying customers.
- Only 68 percent of billings were collected.
- There was no ability to track customers. With an unreliable U.S. postal system, addresses for customer locations were often wrong, unknown or non-existent.

Financial Deficiencies

- Procurement requests were unprocessed.
- There was no capital funding plan or reserve accounts for constructing a new landfill, closing the Ordot Dump and complying with other Consent Decree projects.

Turnaround Goals: Developing a Modern Integrated Solid Waste System

Beyond meeting the everyday challenges of turning around the dysfunctional GSWA, GBB Receiver needed to work with the Government of Guam and the GSWA to achieve full compliance with the 2004 Consent Decree. The turnaround road map included seven major goals:

1. Build a new landfill with supporting infrastructure that met laws and regulations

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2. Evaluate Ordot Dump stability and develop a fill sequence plan to extend Dump life until the new landfill could be built
3. Close and provide for closure construction of the Ordot Dump, and halt leachate discharges
4. Streamline the GSWA and improve trash collection to achieve on-time, consistent performance
5. Institute a waste diversion program, including for recycling, HHW and bulky waste
6. Develop a financing plan that provides adequate capital for construction, debt service and operations funding
7. Develop a financial management strategy to assure financial controls, including a new schedule of tipping and other fees to finance a new solid waste system

Program, Facilities and System Transformation

With GBB Receiver staff on the ground in Guam from day one, immediate improvements were made to the operations of the solid waste system while the work on building the new landfill and closing the Ordot Dump was ongoing. These improvements brought new efficiencies, improved productivity and performance, and better customer service to Guam's solid waste management system.

Operations Improvements

Ordot Dump Improvements

GBB Receiver took immediate steps that improved the management of the Ordot Dump, eliminated fires, deterred wild animals from feeding on the active face, and diminished nauseating odors and after-hours dumping. A convenience box was placed in the residential dump area for safe disposal of trash, regular sprinkler service eliminated fires, and proper daily cover procedures decreased odors, fires and complaints. GBB fixed broken machinery and replaced expensive contractors with GSWA employees and equipment. GBB Receiver also assigned additional staff to the Dump and increased oversight of operations.

Collection Program Advances: New efficiencies and cart-based trash collection

In order to improve trash collection, GBB Receiver made emergency equipment purchases in 2008 and 2009 with the Governor's Emergency Purchase Executive Order. These immediate purchases included three new refuse collection trucks with hydraulic cart lifters, two roll-off trucks, roll-off waste containers, roll-off recycling containers, showers, and weight scales, among other equipment. For the first time, weight scales enabled accurate waste tracking, instead of thumbnail volume estimates.

With new vehicles and equipment, daily rental costs of \$11,000 were reduced to \$484 within the first six months of the Receivership. In addition, with new working trucks instead of one old unreliable truck and implementation of a preventive and repair maintenance program, GBB Receiver collected the trash on time, reduced the number of daily trash collection routes from nine to six, decreased weekly collection days from 5 to 4, and reduced collection employees per truck from three to two. On-time performance therefore increased immediately. Today, GSWA routinely achieves 99.7 percent on-time performance. The number of customer complaints dropped dramatically by 85 percent between 2008 and 2009 and remains low today.

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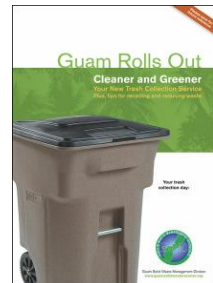
Operations improved with the purchase of new trucks with hydraulic cart lifters and recycling roll-off containers for Guam's convenience centers.

GBB Receiver also streamlined GSWA's organization, reducing the number of employees from 99 in March 2008 to 56 today – a decline of 43 percent – while the number of services increased. Contributing to the morale boost was a renovation of staff facilities, including the kitchen and bathrooms, as well as annual uniform distributions and regular payment for work completed.



Renovations to employee kitchen and bath facilities helped improve employee morale, even as the number of employees was reduced by 43 percent.

These improvements were only the beginning. GBB Receiver proposed and received Court approval to implement curbside cart-based trash collection for all GSWA customers. As noted earlier, when GBB Receiver arrived, the GSWA collected trash from 12,000 customers, included about 4,000 who did not pay for service. With no way to accurately track customers due in large part to Guam's poor street address system, it was necessary to re-register the entire customer base for the new cart-based collection service. From fall 2009 through spring 2010, GBB Receiver conducted a phased-in registration program throughout the island for both existing and new customers. An innovative aspect of the registration process was the implementation of a new system to verify pick-up locations for each customer using GPS routing that matched pick-up locations with RFID tags on the trash carts. Working with the Mayors in each of Guam's 19 villages, GBB Receiver conducted community education and outreach that included a brochure about the cart-based service, letter to GSWA customers and a cart hanger with a magnet. GBB Receiver procured a total of 17,000 95-gallon Toter carts and registered 16,300 customers during the initial registration drive, an increase of 35 percent over the 12,080 customers at the start of the Receivership. The customer base stands at 17,094 today and has held steady over the past four years.



Operations innovations included the roll out of cart-based trash collection in 2010. The carts replaced unsightly curb set-outs and reduced litter. Brochures, letters and cart hangers promoted the new program.

Increased Diversion through Recycling

In order to extend the life of the Ordot Dump until the new landfill could be built, on July 17, 2008, GBB Receiver implemented a materials ban at the Dump for cardboard, yard waste and construction waste. Outreach about the ban in press releases and flyers provided information about alternative recycling options for these materials through private-sector organizations. At the same time the ban was implemented, GBB Receiver opened drop-off recycling facilities for cardboard, glass bottles and jars, and mixed paper at two convenience centers and the Ordot Dump.

The ban and new recycling opportunities resulted in an immediate 30 percent reduction in the volume of waste disposed at the Dump, with average daily volumes dropping from 512 cubic yards to 360 cubic yards. Commercial haulers also reported increased recycling among their customers. Glass bottles and jars were pulverized and used as alternative daily cover at the Ordot Dump, while a local recycler baled cardboard and mixed paper, and shipped it overseas.



New programs for recycling cardboard, mixed paper and glass at Guam's convenience centers helped conserve space at the Ordot Dump while the new Layon Landfill was being built.

Curbside Recycling: Pilot and island-wide rollout

To further advance diversion, in January 2011, GBB Receiver implemented a Curbside Recycling Pilot Program for a representative sample of 1,000 GSWA customers. The pilot was designed to assess the value and feasibility of implementing a full-scale curbside recycling collection program for all GSWA customers. GSWA staff distributed 95-gallon carts to participants in the pilot program. Cardboard, mixed paper, aluminum and bi-metal cans, and #1 and #2 plastics were accepted for recycling and processed by Guahan Waste Control, a local processor under contract to the GSWA.

GBB Receiver worked closely with the Village Mayors and the Mayors' Council to refine the areas for the pilot program and educate residents about its purpose. The GSWA enlisted the help of the University of Guam's "Green Army" environmental group to assist with public education through neighborhood meetings and door-to-door outreach. In order to minimize collection cost, the GSWA used the same collection vehicle for recycling collection in the afternoon that it used to collect trash in the morning from the pilot customers. Collection frequency varied for the pilot customers, with some receiving monthly collection, others twice monthly and some weekly.

After 12 months of service, the contamination rate among pilot customers declined from 14 percent to 7 percent, with a total of 336,819 pounds of material collected (312,263 pounds of recyclables and 24,556 pounds of contaminants). Average set-out rates were 57 percent. In order to assess customer satisfaction with the pilot program, GSWA customer service staff administered a telephone survey to a sample of 105 participants in the Curbside Recycling Pilot Program. Ninety-seven (97) percent said they wanted to continue with recycling. A second survey was administered to GSWA customers who did not participate in the pilot. They too indicated a desire to have a curbside recycling program.

The GSWA next issued a Request for Interest for a processor who would process single-stream recyclables in an island-wide program. Having this information enabled GBB Receiver to more accurately project the

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costs for implementing a roll-out of curbside collection to all GSWA customers. As a result of the findings from the Curbside Recycling Pilot Program, survey results, and an analysis that showed GSWA could conduct an island-wide recycling program with its own trucks and staff in order to minimize costs, GBB Receiver recommended, and on August 13, 2013, the Court approved, the expansion of the program island-wide.

The cart-based curbside recycling program was rolled out to all GSWA customers in 2014 with several modifications to the trash collection schedule and a consolidation of routes, all designed to streamline the collection system and cost-effectively incorporate recycling collection into the integrated solid waste management system.



Curbside cart-based recycling collection is now available to all GSWA customers.

During the last six months of 2014, roughly 10 percent of residential trash was diverted through recycling at the curb with 978.55 tons of recyclable material collected (and 9,843.03 tons of trash). In addition, at Guam's three convenience centers, customers deposited 73.9 tons of recyclables (and 2,508.97 tons of trash). While the new recycling program has yet to reach the 35 percent goal mandated by Guam law for 2018, the program has been embraced by GSWA customers and is a significant improvement over the lack of recycling opportunities in 2008. Recent analysis shows that the cost per ton of recycling (\$129) is less than that for landfilling (\$171).

Bulky waste collection

In September 2011, the GSWA launched a Metallic and Bulky Waste Collection Program. Customers may request two free collections each year by appointment, with a \$25 charge for each additional pick up. Since the launch, the program has grown in popularity. In the last six months of 2014, GSWA collected 2,176 metallic and bulky items in 767 appointments.

Household hazardous waste (HHW) program

On January 23, 2015, GSWA opened its new household hazardous waste program, co-located with the new Harmon Residential Transfer Station, which replaced the transfer station at the Ordot Dump that closed in August 2011 (described in more detail below). For the first time, Guam residents are able to properly dispose of household hazardous waste. The opening of the HHW program was a major milestone in Guam's achievement of an integrated solid waste management system and an important condition of compliance with the 2004 Consent Decree.

Integrating the System, Achieving Consent Decree Compliance with the New Landfill and Dump Closure

During the early years of Receivership, while work continued to improve operations and create integrated solid waste programs, closing the Ordot Dump and beginning construction of a new landfill were high priority Consent Decree projects. GBB Receiver faced a race against time to open the new Layon Landfill before rapidly diminishing capacity at the Ordot Dump was reached.

Opening the Layon Landfill

When GBB Receiver was appointed, a new landfill site had been selected, but zoning approvals and permits had not been obtained, the landfill design was preliminary, and there was no plan for developing the infrastructure required. Furthermore, the initial landfill design failed to plan for the management of leachate treatment at the local wastewater treatment plant (WWTP).

Between 2008 and 2011, GBB Receiver worked closely with Guam EPA and U.S. EPA on landfill design, zoning approvals and permitting. GBB Receiver obtained zone changes, solid waste facility permits, air

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pollution control permits, building permits, environmental permits. GBB Receiver also conducted a leachate treatability study; reached agreement with Guam Waterworks Authority for treatment of leachate at the Inarajan WWTP; and completed a hydrogeologic assessment, which was approved by GEPA. GBB Receiver also established groundwater monitoring for the landfill, and oversaw construction management of the landfill and infrastructure, including a five-mile access road, entrance facilities, cells 1 and 2, liner systems, five-mile sewer line and pump station system, and utilities. The Receiver procured and managed more than 12 construction contracts and procurements and kept construction on schedule, despite Guam’s rainy season and frequent typhoons. Table 1 shows the total number of contracts managed by GBB Receiver, including construction projects.

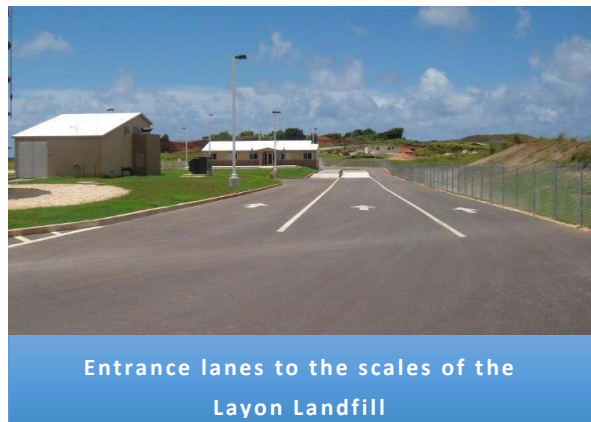
Table 1. Companies Under Contract to GBB Receiver for Consent Decree and Other Projects

Alpine Technology Corporation	Fleet Services	Nippo Corporation
Asia Tiger Construction	G4 Security Services (Guam), Inc.	Pacific Data Systems
Bend Mailing Service	GHD, Inc. (formerly Winzler & Kelly)	Pacific Human Resource Services, Inc.
Black Construction Corporation Environmental	Guan Waste Control	Pacific Island Security
Brown and Caldwell	Hawthorne Pacific Corp.	Pacific Trucking Co.
Core Tech International	GGH Guam, LLC (formerly Herzog Environmental, Inc.)	Shaw Environmental
EA Science and Technology	Kevin and Steve Corporation	TG Engineers, PC
Ella Builders	Maeda Pacific Corporation	Triple J Enterprises, Inc.
Far East Equipment Co.	Morrice Equipment Co.	

On September 1, 2011, after just three years of work, the first trucks with waste arrived at the scale house of the new Layon Landfill. The Layon Landfill is an environmentally sound and well-controlled landfill for non-hazardous municipal solid waste. It was built with an engineered double composite liner and a leachate collection and removal system that protect human health and the environment. With a capacity in excess of 15.8 million cubic yards, the Layon Landfill will service the island of Guam for more than 50 years. The Layon Landfill is owned by the Guam Solid Waste Authority and operated by Green Group Holdings - Guam.



Arranging ballast bags before opening of the Layon Landfill, August 2011



Entrance lanes to the scales of the Layon Landfill

Opening the Hauler-only Transfer Station

On September 1, 2011, with the opening of the Layon Landfill, GSWA began operating a hauler-only (commercial) transfer station under contract with Guahan Waste Control, with GSWA personnel staffing

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the scale house. Commercial haulers and large generators bring waste material to this facility, which the transfer station operator screens for excluded waste (including radioactive waste) before loading large transfer trailers for transit to the Layon Landfill. By consolidating waste at the transfer station, traffic to the Layon Landfill is reduced and safety improved considerably over the conditions at Ordot Dump, which allowed residents and commercial haulers alike to dump at the active disposal areas.

Closing the Ordot Dump: Reaching an environmental milestone

The Ordot Dump ceased operations August 2011, just days before the new Layon Landfill opened. This milestone in achieving compliance with the Consent Decree was celebrated with a closure ceremony and media event. By 2013, the closure and remedial investigation and design work to support the closure construction and future post-closure care and long-term monitoring were completed. In 2014, ongoing work consisted of closure construction and installation of a geosynthetic cover, as well as leachate management, gas monitoring and stormwater management at the site. In February 2015, another significant milestone and condition of the Consent Decree were achieved when leachate was pumped from the Ordot Dump to the Guam Waterworks Authority's Hagatna Wastewater Treatment Plant. As a result, leachate from the Dump is collected for the first time to be treated and no longer flows into Guam's oceans and rivers – a significant environmental milestone.



Soil cover foundation is compacted over Ordot Dump.



Geo-composite and geo-membrane cover pulled into place at Ordot Dump, now closed.

Additional Challenges

During the past seven years, GBB Receiver has faced additional challenges, including changes in legal counsel, dealing with the Government's inability to pass a workable funding plan for several Consent Decree projects and attempts to repurpose Consent Decree bond funding; the Guam Treasurer's unauthorized withdrawals from the GSWA bank account; legal maneuvers to thwart Court orders; and disruptions due to the discoveries of ancient remains within the right-of-way of the landfill access road and of a colony of the Guam Tree Snail, an endangered species that needed to be relocated.

Financial and Business Management

When GBB Receiver was appointed in March 2008, Guam had no financial plan for achieving compliance with the Consent Decree. In addition, expenditure patterns for the GSWA were erratic, making planning more difficult. There was little customer accountability. Trash collection services were being provided to 4,000 non-paying customers since with poor record keeping, management could not determine which customers had paid and properly communicate that information to collection crews.

Since 2008, with careful fiscal planning and management, the operating budget has consistently shown a surplus of revenues over expenses, customer accountability has been established, delinquent accounts have been reduced, and a capital funding plan and reserve accounts have ensured sufficient funding for Consent Decree projects.

Financial and Business Goals

Arrange Capital Funding for Consent Decree Projects

Beginning in 2008, GBB Receiver assisted the Court and the Government of Guam by estimating the costs of Consent Decree projects and recommending full funding of required capital through sale of Section 30-backed Bonds. The Receiver also worked closely with the Government of Guam’s Bond Counsel, finance consultants and the Guam Economic Development Authority to secure the bonds needed to finance the Consent Decree projects. These bonds produced construction funding of \$160 million that enabled the completion of the Layon Landfill construction, proper closure and remediation of the Ordot Dump, construction of the new HHW facility, and completion of other infrastructure for achieving compliance with the Consent Decree. GBB Receiver also established Receiver Trustee Accounts to manage capital funding and assure proper control of funds and timely payment of contractors.

During the construction of the Landfill, capital savings of approximately \$15 million have been achieved, largely due to the careful management of the contracts for design, permitting and construction of the Layon Landfill and its supporting infrastructure. These savings have been applied to fully fund the environmental closure of the Ordot Dump.

Achieve a Strong Financial Position

Since 2008, operating revenues have been strong and cash has been consistently collected while operating expenses have been well managed. The most recent results are shown in Table 2.

Table 2. GSWA Operating Budget FY2014

Guam Solid Waste Authority Summary of Operating Budget FY 2014				
October 1, 2013 to September 30, 2014 (Unaudited)				
Item	Total Annual Budget	Budget to Date	Actual Spending / Revenue to Date	% over (under) Budget
Personnel Expenses	\$2,809,300	\$2,809,300	\$2,917,462	3.9%
Other Expenses / Reserves*	\$15,857,684	\$15,857,684	\$15,872,042	0.1%
Total Expenses / Reserves	\$18,666,984	\$18,666,984	\$18,789,504	0.7%
Total Revenue (All Sources)	\$16,846,000	\$16,846,000	\$17,978,880	6.7%
Budgeted From Fund Balance	\$1,820,984	\$1,820,984	\$810,623	-55.5%
Total Funding Available	\$18,666,984	\$18,666,984	\$18,789,504	N/A
Surplus / (Deficit)**	\$0	\$0	\$0	N/A

*Beginning in May, funds previously used to reimburse GovGuam for Debt Service payments it makes using federal Section 30 funds are withheld pending resolution of funding issues for additional GSWA capital spending requirements. Pursuant to the Court's Order dated 9-12-2014 these funds were transferred to a new reserve bank account named "Reserve for Unfunded Expenses" pending the Court's resolution of these funding issues. ** Surplus goes to reserve for future years (i.e. fund balance) and deficits are covered by the same reserve. Interest income on reserve accounts not included in operating revenue.

Grow the Fund Balance

Fund balance is the difference between the cumulative obligations of GSWA and its cumulative financial assets. Since FY2009, the fund balance has grown from negative \$200,000 to a healthy \$14.5 million, as shown in Figure 1 (below).

Figure 1. Growth in Fund Balance FY2009 to FY2015

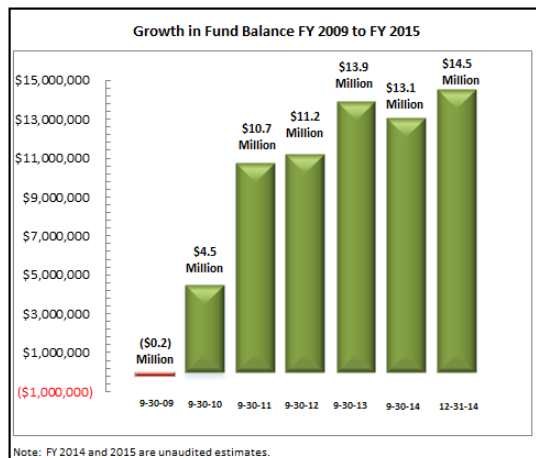
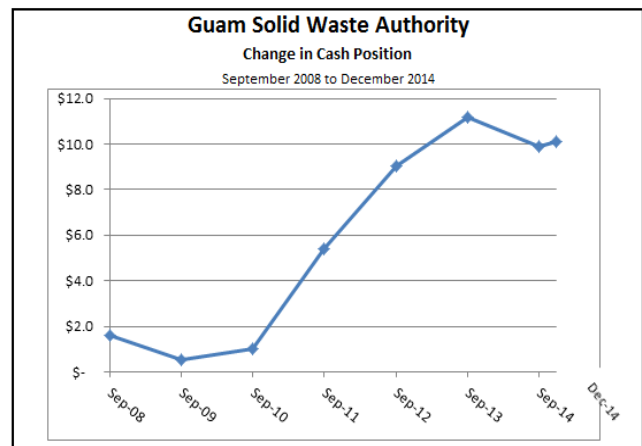


Figure 2. Change in GSWA Cash Position (Million \$)



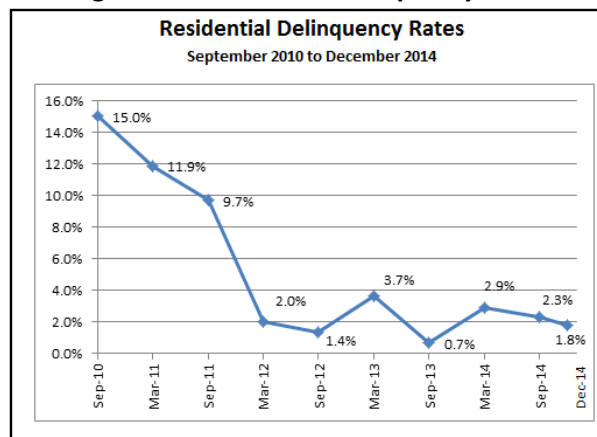
Increase GSWA's Cash Position

GSWA's cash position has continued to show an upward trend since September 2008 as shown in Figure 2 (above).

Establish Customer Accountability; Reduce Delinquent Accounts

The customer registration process described earlier, which matched customer accounts to GPS curbside collection locations and customer contact information, along with the RFID tags on customer carts, have established customer accountability. Delinquent accounts have been dramatically reduced as shown in Figure 3.

Figure 3. Residential Delinquency Rates



Improve Customer Service, Billing and Payment

Installation of RAMS PRO customer service software has helped customer service representatives categorize inquiries to the GSWA. In addition, in 2013, GSWA implemented new systems for online billing and payment. Currently, 7,728 customers (45 percent of the total customer base) have registered for online services, an increase of 40 percent since 2013.

Create a Well-Financed Solid Waste System

With the opening of the new landfill, costs increased to ensure that it is properly operated and reserves (Table 3) are set aside for future needs. To address the cost of the new system, in 2011, new tipping fees were phased in for residential and commercial customers. The Government of Guam currently uses

federal funds to pay the debt service on the system, but at some point may decide to raise rates further, making the system fully self-supporting.

Table 3. Reserves of the GSWA

Reserves of the Guam Solid Waste Authority	
As of 12/31/2014	
Reserves	Total
Equipment Replacement Reserve	\$ 2,114,181.56
New Cell Development Reserve	\$ 155,320.88
Cell Closure Reserve	\$ 155,320.88
Post-Closure Care Reserve Layon Landfill	\$ 310,641.51
Post-Closure Care Reserve Ordot Dump	\$ -
Total Reserves.....	\$ 2,735,464.83

Table 4. Waste Disposed FY 2014

Change in Waste (Tons) Disposed by GSWA			
By Customer Group			
Comparing October to September FY2013 with FY2014			
Customer	FY 2013	FY 2014	% Change
Residential	19,577	18,632	-4.8%
Commercial	53,017	53,357	0.6%
Military	7,923	7,612	-3.9%
Government	6,162	8,868	43.9%
Mayors	1,565	1,478	-5.5%
Transfer Stations	5,591	4,798	-14.2%
Other	107	114	6.4%
Total	93,943	94,859	1.0%

Note: About 3 percent of the waste handled by GSWA is not landfilled due to removal of excluded waste and water loss.

Cost of System and Revenue Streams Targeted

Today, Guam’s large commercial haulers, primarily serving Guam’s business community, comprise the largest segment of Guam’s solid waste system, accounting for 62.4 percent of the system’s revenue. Residential customers and government (including the Military) account for 34.1 percent and 3.4 percent respectively. From the beginning of the Receivership, GBB Receiver worked with Military officials to ensure that the new landfill would also meet the Military’s solid waste needs on Guam. In 2011, GBB Receiver negotiated a letter of intent with Military for the Military’s use of Layon Landfill. In FY2014, 94,859 tons of waste was disposed. Table 4 (above) shows the waste disposed in FY2013 and FY2014 by customer class.

Planning and Forecasting

The history of the Receivership has been a story of ongoing planning and forecasting, both in the financial and business areas and in operations. In its July and October 2008 quarterly reports, GBB Receiver provided the Government of Guam and the Court with estimates for the emergency procurements, projected spending for the operating budget and fund balance, and estimates for construction and equipment costs for capital projects to achieve compliance with the Consent Decree, including landfill construction, closure of the Ordot Dump, and construction of a new transfer station and HHW facility. In addition, the Curbside Recycling Pilot Program and eventual roll-out to all GSWA customers entailed detailed planning and forecasting of expenses for program implementation. GBB Receiver’s forecasts and estimates have held accurate throughout the seven years of the Receivership.

Employee Development and Recognition

As noted earlier, employee morale was at a low point in March 2008 when GBB Receiver was appointed. With improved facilities and equipment, and employee concerns addressed, morale improved. In addition, the GSWA structure was streamlined and reorganized, with employee training and development programs established for using the new equipment, registering customers, performing customer service, and providing collection services for trash, recycling and bulky waste.

In 2012, GSWA began development of Standard Operating Procedures in order to provide direction, improve communication, reduce training time and improve work consistency. In March 2012, GSWA initiated an employee recognition program in which selected employees are named “Employee of the Quarter” for their exemplary work and one employee is named “Employee of the Year.” In addition, each quarter, certificates of appreciation are presented to selected employees for their performance.

Change Management Processes: Preparing for the Transition to GSWA

In anticipation of the transition from the Receivership to GSWA, GBB Receiver has been meeting at least quarterly with board members of the Authority to familiarize them with the Authority’s finances and operations. The Board is developing policies and procedures, has hired board counsel and will initiate a search for a general manager at the appropriate time in order to ensure a smooth transition when the Court ends the Receivership.

Community Relations

Customer service, community education and public relations have been key components of GBB Receiver’s work since 2008. Through the Receiver’s website, focus group research, one-on-one meetings with key stakeholders, media relations, and outreach campaigns, the community in Guam, including Mayors and key stakeholders, have been engaged and informed about each step in the transformation of Guam’s solid waste management system.

Customer Service Approach

GSWA has adopted a customer-centered approach to its work with three Customer Service Representatives (CSRs) and a supervisor, who are trained to respond to customer inquiries and concerns. During the last six months of 2014, CSRs assisted 3,905 walk-in customers with billing, sign up for collection service, mapping service location and providing recycling and other information. During this time frame, CSRs also sent 9,982 letters and called 10,074 customers who were late paying their bills and in jeopardy of having their carts repossessed. For the majority of these customers, the letters and calls resulted in payment of the balance due.

Community Outreach

Receiver and GSWA Websites

Immediately upon being appointed Receiver, GBB Receiver developed a website (www.guamsolidwastereceiver.org –below left) in order to provide regular communication with the public and media. This website has an average of 5,769 page views per month with steady growth since 2008. The website allows readers to sign up for email updates when press releases are issued or major events take place. When the GSWA Act was passed, a second site was developed in February 2012 (www.guamsolidwasteauthority.com –below right), which contains information about GSWA services. This website, which is managed by GBB Receiver until the transition to GSWA, has an average of 16,509 page-views per month.



The GBB Receiver website provides regular communications about the Receivership to the Guam community, officials and media.



The GSWA website provides information about solid waste services.

Focus Group Research and Other Outreach

In February 2009, with plans underway to transition to cart-based collection service for trash, GBB Receiver organized three focus groups with Guam residents in order to obtain their opinions about the new service, customer registration plan, collateral materials, and recycling options for the future. Group participants also discussed whether brochures and other collateral should be bilingual (English and Chamorro) but advised the Receiver that English was the only language needed. The focus group findings led to some modification of messaging and collateral design. In addition, GBB Receiver staff held meetings with Guam’s Mayors and key stakeholders (e.g., Guam Recycling Association) regarding plans for the cart-based service and recycling improvements.

Media Relations

During the seven years of the Receivership, GBB Receiver has issued 51 press releases and participated in regular media interviews. Press releases have announced system advances as well as requests for proposal and expressions of interest for Consent Decree and other projects. Also, since March 2008, more than 1,100 articles about Guam’s solid waste system have been published in newspapers and magazines. These articles included coverage of the system transformation as well as a number of editorials praising the work of the Receiver. Media events were held at the opening of recycling facilities at the convenience centers (2008), closure of the Ordot Dump (2011), opening of the Layon Landfill (2011) and opening of the Harmon Residential Transfer Station and HHW facility (2015).

Outreach Campaigns

Implementation of cart-based trash collection service, the Curbside Recycling Pilot Program and the island-wide Curbside Recycling Program each involved outreach campaigns that included collateral materials (brochures, flyers, cart hangers), grassroots outreach through Mayors and local organizations, and media relations. Careful planning and execution of each of these campaigns resulted in successful implementation of important system improvements.

Meeting Community Concerns

The March 2008 arrival of a Virginia-based Receiver that would take over the GSWA was met with concerns from some in Guam about the need for such a drastic, bold measure. However, over the past seven years, these concerns have been allayed through communications and community outreach as well as significant system transformation. Local recycling organizations, residents, and the local press have praised the work of the Receiver.

Praises for the Court and the Receiver

In an August 30, 2011, *Pacific Daily News* editorial stated, “The federal receiver, Gershman, Brickner & Bratton Inc., has the island’s thanks for fixing and improving the government’s solid waste program ... In short, the receiver has transformed the way the island deals with waste.”

“Despite [the] challenges, the Receiver has turned the formerly defunct SWMD into an efficient, reliable, and self-financing government entity.” District Court Chief Judge Frances Tydingco-Gatewood, September 2, 2011, Court Order.

A January 21, 2015, a *Marianas Variety* article stated, “...kudos go to the U.S. District Court of Guam...Fortunately, the court appointed a receiver with the experience and competence to turn the solid waste system around. The unreliability and inefficiencies of seven years ago have faded.”

2015 SWANA Excellence Award – Integrated Solid Waste Management Systems Guam Solid Waste Authority under GBB Receiver

A March 31, 2015 editorial in *Pacific Daily News* stated: “The receiver -- Gershman, Brickner & Bratton Inc., a nationally recognized waste management consulting firm -- has done what was necessary to close the Ordot dump and open a new, modern, sanitary landfill. It's fixed a host of problems with solid waste operations... Thanks to Tydingco-Gatewood's firm hand and the receiver's expertise, our island has seen real change.”

GBB Receiver and GSWA Team in Guam¹



¹ The GBB Receiver Team (Guam and Virginia): Chace Anderson, Mary-Jane Atwater, Tim Bratton, François Coulombe, Caroline Friend, Harvey Gershman, Chris Lund, P.E., and David Manning.