



**Gershman, Brickner & Bratton, Inc.**

*Innovative, Sustainable Solutions  
for Solid Waste Management*

[www.gbbinc.com](http://www.gbbinc.com)

## **GBB Corporate Brochure**





Photo by Huguette Roe

# Innovative, Sustainable Solutions for Solid Waste Management

## Our Passion

At Gershman, Brickner & Bratton, Inc. (GBB), we believe effective management of solid waste is an imperative that directly affects the health of our planet—both today and far into the future. In a world of limited resources, we regard solid waste as a valuable resource that can be creatively managed while protecting our planet and society.

We consider sustainability to involve a balance among environmental, economic and community needs. Achievement of this balance with cost-effective, efficient and innovative solid waste solutions is our passion—and our focus.

Guided by our principles of quality, value, ethics, and results, we believe that using best practices to solve solid waste challenges can result in doing more with less. Finally, we uphold as a key value the importance of transparency and honesty in our relationships with clients.

## Our Vision:

**A world where discarded materials are used as resources rather than wasted.**

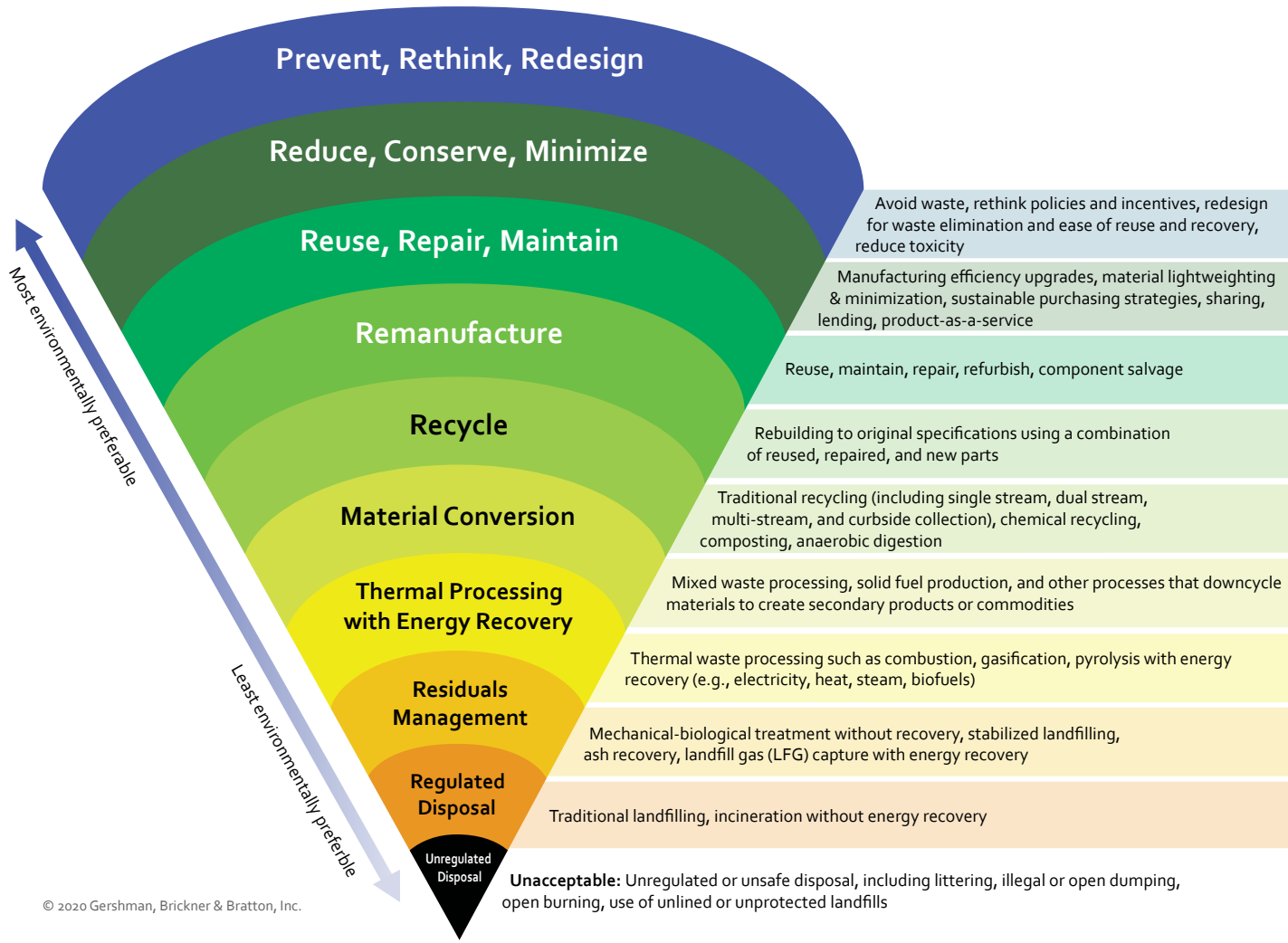
## Our Mission:

**We help our clients solve solid waste management issues by providing innovative, responsible, sustainable and economical strategies and solutions for the benefit of communities and the environment.**

# Innovative, Sustainable Solutions

## GBB's Sustainable Materials Management Hierarchy

We have developed our own Sustainable Materials Management Hierarchy in order to push our industry forward to prioritize keeping materials at their highest and best use.



# Sustainable Solutions for Solid Waste Management

## What We Do

GBB is an international consulting firm that helps public and private sector organizations craft practical, customized and technically sound solutions for complex solid waste management challenges.

Clients come to us for our independent, objective advice that helps them plan and implement sustainable solid waste management programs that improve efficiencies, save money, enhance customer service and protect the environment. Our services enable our clients to optimize their systems and capture valuable resources.

During the past 40 years, as the solid waste industry has grown and concerns for environmental responsibility, sustainability, and resilience have increasingly informed waste management decisions, we have been a trusted resource at the forefront of the industry, creating success stories that integrate smart planning with effective and sustainable management of materials and services.

**“GBB’s assistance in articulating a plan that was able to address closing a number of inefficient landfills while creating a dependable regional disposal system was invaluable, especially the firm’s ability to draw a majority of the County’s 24 cities into the ‘Partnership Strategy’... I also appreciated GBB’s ability to navigate the treacherous political waters.”**

— Gerald Newcombe  
Associate Administrative Officer  
County of San Bernardino, California

**“GBB was extremely knowledgeable and helpful in the City of Allentown’s collection contract bid revision process that resulted in a 50%–70% lower collection rate increase than surrounding municipalities. They were also able to meet some very tight deadlines in our process. I highly recommend GBB.”**

— Betsy Levin, former Director of  
Community Development  
City of Allentown, Pennsylvania

## How We Do It

Based on our expert analysis and drawing on the experience, skills and entrepreneurial approach of our staff, we uncover innovative solutions to solid waste challenges, guided by and aligned with our Sustainable Materials Management Hierarchy in order to keep materials circulating at their highest and best use.

We are recognized for our comprehensive suite of strategic planning services; sustainability, resilience, circular economy, and disaster debris planning; diversion, recycling, collection, and routing best practices; financial evaluation, market analysis, and business planning skills; and technical evaluation of and planning for technology and infrastructure, including emerging technologies that create useful materials, chemicals, fuels and energy from waste. We can also step in to provide transition services to manage solid waste administration, operations and facilities, with results that include significantly improved allocation of resources, expanded services, reduced customer complaints and lower costs.

Learn more about our commitment to sustainability at [www.gbbinc.com/sustainability](http://www.gbbinc.com/sustainability).

# GBB's Comprehensive Services

GBB's wide service offering includes:

## Strategic solid waste management planning

- Feasibility studies
  - o New infrastructure development
  - o Major programmatic changes to municipal collection systems
- Procurement and negotiation of programs, services, and facilities, including:
  - o Proposal development and evaluation
  - o Contract development, negotiation, compliance, and monitoring
- Waste Characterization Studies for recycling, waste, and construction and demolition debris
  - o Municipal Solid Waste (MSW) & Recycling Studies (single- and multi-season studies)
  - o Institutional, Commercial & Industrial (ICI) waste
  - o Construction & Demolition (C&D) waste
- Stakeholder engagement and public education
  - o Public opinion study and education campaign design, review, and execution
  - o Stakeholder engagement and visioning
  - o Public presentation development

## Sustainability, resilience, and circular economy strategy and disaster debris planning

- Sustainable project and business development
- Eco-Industrial Park planning and implementation
- Waste minimization, zero waste, and sustainable materials management planning, strategy, and certification assistance
- High-level lifecycle analyses
- Disaster debris management planning

## Financial evaluation, market analysis, and business planning

- Financial analysis of potential programmatic changes and infrastructure investment
- Rate studies, cost savings analysis, options analysis, and feasibility studies

## Route and curbside collection optimization

- Existing conditions and options analysis/studies
- Greenhouse gas savings analysis

## System administration & solid waste receivership

- Administration of solid waste programs
- Solid Waste Receiver for the U.S. Territory of Guam





### Technical Evaluation & Planning

- Composting, anaerobic digestion, material recovery facility, transfer station, mechanical-biological treatment, waste conversion, and waste-to-energy technology
  - o Technology review and analysis
  - o Operations reviews
  - o Program planning and development
- Construction and demolition materials recovery
  - o Equipment and facility technical review
  - o Evaluation and design review for new construction, retrofit, and refurbishment projects for maximum waste prevention and diversion potential
  - o Material impact review and market studies
- Material processing facility design review and construction monitoring
  - o New construction, retrofits, and refurbishments
  - o Punch lists, commissioning, and testing
  - o Owner's representative services
- Landfill management consulting
  - o Closure and post-closure care planning and management
  - o Odor and runoff mitigation
  - o Fill rate analysis and new landfill cell planning

### Expert Witness Services

With extensive experience in the industry, GBB's officers are uniquely qualified to give expert witness testimony and dispute resolution service on waste industry cases.

#### Expert Witness Services include:

- Contractual and other business disputes
- Disposal fee and cost assessment disputes
- Environmental pollution liability and potential responsible party cost allocation
- Franchising and contracting claims
- Personal or worker injury
- Statutory and regulatory interpretation
- Technology evaluations, license disputes and patent infringement
- Waste characterization and market evaluations
- Waste flow control lawsuits

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A more complete description of our services and examples from the communities and organizations GBB has served can be found at [www.gbbinc.com/services](http://www.gbbinc.com/services).

“I help clients find efficient, environmentally acceptable solutions to their materials management and solid waste issues, from planning and design development, through permitting, construction management and start-up operations.”

Chris Lund, PE  
*Senior Vice President*

Specialties: Comprehensive sustainable planning for waste systems; engineering technical system reviews; engineering and environmental design; solid waste facility operational and compliance audits; procurement; and expert witness and investigations.



## GBB Success Stories: System Administration & Management

GBB is proud to have helped hundreds of communities and organizations throughout the country and overseas achieve measurable results in the administration and management of their solid waste systems, including substantial cost savings, efficiencies, increased diversion and new revenues.



More information at [www.gbbinc.com/guam](http://www.gbbinc.com/guam),  
[www.GuamSolidWasteReceiver.org](http://www.GuamSolidWasteReceiver.org) and [www.GuamSolidWasteAuthority.com](http://www.GuamSolidWasteAuthority.com)

### Territory of Guam: [168,500 residents]

A 180-Degree Turnaround in Solid Waste Management

#### BACKGROUND

In March 2008, the U.S. District Court of Guam appointed GBB as Receiver of the Territory of Guam's Solid Waste Management Division. Responsibilities included managing the employees, equipment, facilities, payroll and implementation of all 2004 Consent Decree projects to bring the Territory into compliance with the Clean Water Act.

Inheriting a solid waste management system plagued by serious operational, financial, and administrative problems; environmental issues; and decrepit facilities, GBB assembled a multi-disciplinary team to develop a turnaround plan and present to the Court a roadmap to accomplish the Consent Decree projects and reform Guam's solid waste management system.

Working with GovGuam, the U.S. military, private waste haulers, and other stakeholders, GBB closed the Ordot Dump, opened a sanitary landfill, implemented recycling programs, opened a household hazardous waste facility and upgraded the residential transfer stations, in full compliance with the requirements of the Consent Decree. This was accomplished under the guidance of the Court and in consultation with the U.S. EPA and the Guam Environmental Protection Agency.

# GBB Success Stories

When GBB arrived	RESULTS
Ordot Dump out of regulatory compliance for 22 years, polluting nearby river and groundwater and creating odors and fires	<ul style="list-style-type: none"> <li>• Changed operations at the Ordot Dump to minimize neighborhood impacts</li> <li>• Closed the Ordot Dump on August 31, 2011</li> <li>• Concluded the Environmental Closure of the Dump to protect the surrounding environment on March 1, 2016; initiated post closure care</li> </ul>
New landfill neither permitted nor built	<ul style="list-style-type: none"> <li>• Built the Layon Landfill, with a capacity in excess of 15.8 million cubic yards, to service the island of Guam for more than 40 years</li> <li>• Opened the state-of-the-art Layon Landfill for non-hazardous municipal solid waste on September 1, 2011</li> <li>• Managed compliant operations for over 7 years</li> </ul>
Solid Waste Management Division, now the Guam Solid Waste Management Authority, unable to cover costs; only 68% of service billings collected	<ul style="list-style-type: none"> <li>• Achieved reduction in operational expenses by more than 30%; payroll and operating expenses consistently under budget</li> <li>• Installed new accounting and billing system</li> <li>• Achieved a 98% rate of collection on residential billings</li> <li>• Installed new weigh scale for more accurate measurement of waste and calculation of tip fees</li> </ul>
Non-compliant unsafe condition of transfer stations and facilities for frontline staff	<ul style="list-style-type: none"> <li>• Fully renovated residential transfer stations, achieving compliant operational permits</li> <li>• Improved staff morale with clean facilities and streamlined operations</li> <li>• Constructed new residential transfer station with island's only Household Hazardous Waste facility</li> </ul>
Inefficient solid waste operations	<ul style="list-style-type: none"> <li>• Eliminated \$11,000 per day spending on leased equipment</li> <li>• Reduced staff by almost 40%, from 99 to 61</li> <li>• Reduced daily collection shifts from three to one</li> <li>• Returned Guam Solid Waste Authority's day-to-day operations to the Government of Guam on April 29, 2019 after 180-degree turnaround of operations by GBB</li> </ul>
Trucks and equipment aged and in disrepair; unprocessed requests to fix equipment	<ul style="list-style-type: none"> <li>• Completed procurements for purchase of new trucks, equipment and maintenance</li> </ul>
Trash collection service inconsistent; customer complaints high	<ul style="list-style-type: none"> <li>• Implemented on-time, consistent trash collection with an 85% reduction in customer complaints</li> <li>• Registered more than 19,000 customers for new cart-based collection service, a 44% increase over number of customers in 2008</li> <li>• Implemented cart-based trash collection system that features radio frequency identification (RFID) tags, optimized routing and a state-of-the-art billing and accounting system</li> </ul>
No GovGuam recycling programs; 2% diversion vs. 25% required by Guam law	<ul style="list-style-type: none"> <li>• Opened recycling convenience centers at transfer stations</li> <li>• Achieved a 30% reduction in volume of waste disposed, resulting from a ban on certain recyclables and construction and demolition waste</li> <li>• Implemented curbside collection of metallic and bulky waste</li> <li>• Implemented curbside recycling program, resulting in more than 18,000 customers with recycling carts</li> </ul>
No financing plan to raise estimated \$160 million capital needed to undertake Consent Decree projects	<ul style="list-style-type: none"> <li>• Recommended financing plan that resulted in GovGuam securing full funding for Consent Decree projects</li> </ul>

**“The court is very proud of the work accomplished by the Receiver over the last 11 years. [...] The Receiver has built a modern solid waste system for the island which includes a compliant solid waste landfill, a recycling program and a household hazardous waste disposal center.”**

— District Court Chief Judge  
Frances Tydingco-Gatewood,  
April 29, 2019, Court Order



“I am passionate about taking action *now* to advance a sustainable future that embraces waste prevention, reuse and recycling. We have an urgent need to implement regenerative, circular solutions for ourselves and future generations.”

Jennifer Porter  
*Senior Vice President*

Specialties: Solid waste management planning; recycling; composting; circular economy and sustainability initiatives; collection; and procurement.



## GBB Success Stories: Sustainability & Circular Economy

GBB is enacting its vision of a world where discarded materials are used as resources.

GBB is focused on helping communities plan and implement innovative, economically sound solid waste management solutions that protect the environment and is uniquely qualified and positioned to help our clients develop visions, strategies, and plans to achieve their sustainability and circular economy goals.

Visit <http://gbbinc.com/services/sustainability/sustainability-and-the-circular-economy> for more information about GBB's circular economy services.

“GBB’s comprehensive approach to the development of this Master Plan will allow us to move seamlessly into the implementation phase. Your agency’s collective industry experience and willingness to bring local engineering consultants alongside the process has proven to be invaluable as we explore the variety of technologies in use across the world to help us reach our goals of reducing waste going to landfill by 90% by 2030.”

— Darwin J. Baas, Department of Public Works Director, Kent County, Michigan

### Kent County, Michigan [657,000 residents]

The County has set a bold goal to divert 90% of County-generated trash that goes to landfills by 2030. Building a Sustainable Business Park is an essential part of reaching that goal and attracting investment and jobs from companies that can convert waste into usable products.

#### OUR ROLE

- Reviewed organization, operations, landfills and disposal/Waste-to-Energy facilities’ efficiency
- Conducted stakeholder meetings
- Performed waste stream and market analyses
- Developed a Sustainable Business Park Master Plan and conducted procurement process
- Currently managing and leading plan implementation

#### RESULTS

- Approval of the Master Plan addressing infrastructure design and construction, funding sources, and how the sustainable business park tenants’ services might interact with existing waste management infrastructure
- Received and evaluated 23 responses from suppliers, developers, and end-market users interested in advancing the county’s vision of a circular economy

Visit [www.gbbinc.com/KentCounty](http://www.gbbinc.com/KentCounty) to view the plan and for continuously updated information.



## GBB Success Stories: Sustainability, Circular Economy and Organics Planning and Management

Nearly half of the solid waste produced globally is organic or biodegradable. Diverting these materials from landfills is a necessity for minimizing greenhouse gas emissions and achieving long-term sustainability and circularity.

**G**BB works with clients to divert organic waste into composting and anaerobic digestion systems. While yard waste diversion has been in place in many U.S. communities since the 1990s, food waste diversion is a growing concern due to increasing levels of food waste globally. GBB conducts feasibility studies, financial planning analyses, technology reviews, and program planning and management to develop organic waste diversion and management solutions tailored to specific client needs.

Visit <http://gbbinc.com/services/technical-evaluation-planning/composting> for more information about GBB's organics services.

### Prince William County, Virginia

[470,300 residents]

#### OUR ROLE

- GBB is assisting the County with transforming its landfill into an Eco-Park, a community resource producing energy, recovering valuable materials and providing unique opportunities for education
- GBB provides the general program planning and management tasks preparatory to the implementation of the Eco-Park

- GBB has supported the County in its goal to divert organic materials from the landfill by managing the procurement process for an advanced food and yard waste composting facility, monitoring construction of the advanced composting facility, and writing grant proposals to secure federal funding for food waste diversion from the County's public school system

#### RESULTS

- Produced the development plan and overall site development plan for the Eco-Park
- Identified potential Eco-Park developers and solicited technical financial proposals from these parties for the County's evaluation
- A finalized contract for the operation and upgrade of the County's existing traditional composting facility processing approximately 25,000 tons per year of organic waste, including limited food, to an advanced composting facility processing 210,000 tons per year with greatly expanded food waste processing capabilities

For more information, visit <http://gbbinc.com/development-of-prince-william-eco-park>

“I help our clients develop efficient, cost-effective solutions for material handling systems and equipment to realize maximum waste diversion and recycling.”

Bradley Kelley, BSME  
Senior Project Engineer

Specialties: Waste Characterization Studies, Material Recovery Facilities (MRFs), Mixed Waste Processing Facilities (MWPFs), Construction & Demolition Debris, Sorting equipment reviews, Robotics and Smart Technology in Waste Processing, Recyclability versus Recovery analysis, Biochar applications, Anaerobic Digestion and Composting Equipment.



## GBB Success Stories: Solid Waste Management Planning

Since 1980, GBB has helped hundreds of communities and organizations throughout the country and overseas with strategic solid waste management planning and implementation.

GBB's innovative, strategic solid waste management planning projects often include the review, evaluation, in-depth operational and financial analysis and procurement of waste management system components – including waste characterization, collection, transport, storage, processing, diversion and disposal. While clients' specific needs may vary, GBB typically involves key stakeholders and designs and implements sustainable, integrated systems that are compatible with, and linked to, other environmental initiatives.

**“Our experience working with GBB was fantastic and I would absolutely recommend them. They are extremely knowledgeable in the solid waste and recycling industry and best practices. They are very accommodating, responsive, professional, and very easy to work with.”**

— Kim Hynes, Executive Director,  
Central Virginia Waste Management  
Authority

For more information about GBB's planning services: <http://gbbinc.com/services/strategic-solid-waste-management-planning>

### Central Virginia Waste Management Authority, Richmond, Virginia [Thirteen localities with 1,222,754 total residents]

#### OUR ROLE

- Evaluated planning and programs against state goals and ambitions of the solid waste management plan
- Assessed the materials available to be reduced, recovered, or recycled
- Evaluated additional economically feasible recycling opportunities
- Identified how new programs might financially impact member localities

#### RESULTS

- Created a menu of programs/services for the Authority to offer to member localities
- Confirmed cost-effectiveness of the Authority's current program and produced a financial impact analysis compared to individual contracts and programs

#### STRATEGIC PLANNING PROJECT ELEMENTS

- Strategic program review and recommendations
- Recycling market options review and analysis
- Financial impact analysis

# GBB Success Stories

## City of Fort Wayne, Indiana

[270,400 residents]

### OUR ROLE

- Conducted a strategic review of the City's current trash and recycling collection programs, and current disposal and material processing
- Provided recommendations for future programs to improve efficiencies and increase diversion

**“Your firm’s expertise in the solid waste management field was very beneficial for the City of Fort Wayne as can be seen by the competitive bids we received this past summer. Being able to lower residents’ monthly fees is a welcome change from solid waste bids received in the past.”**

— Bob Kennedy, Public Works Director,  
City of Fort Wayne, Indiana

- Facilitated Solid Waste Committee meetings and obtained citizen input through surveys and neighborhood association meetings
- Oversaw the procurement process, evaluated bids and assisted in contracting for new solid waste and recycling contracts

### RESULTS

- Reduced residential trash fees by more than \$1 million
- Generated \$500,000 for the City with revenue-sharing provision in collection contract
- Doubled participation in recycling to 68% (2011)
- The Indiana Association of Cities and Towns and the Solid Waste Association of North America both recognized the City's achievements with awards in 2011 and 2012 respectively

### STRATEGIC PLANNING PROJECT ELEMENTS

- Strategic program review and recommendations
- Stakeholder engagement and public surveys
- Procurement and negotiation



# GBB Success Stories

## City of Fort Worth, Texas

[909,600 residents]

### OUR ROLE

- Organized a diverse planning and procurement team to meet the City Council's aggressive schedule
- Managed a complex procurement for collections of residential and commercial waste, as well as recycling collection and processing
- Managed procurement for landfill lease and operations

### RESULTS

- Fort Worth's City Council approved the 20-Year Comprehensive Solid Waste Management Plan
- Achieved a more sustainable approach to solid waste management with cost savings and new revenues
- Recycling diversion jumped from 6% to over 20% and the participation rate nearly doubled from 38% to 70%
- New revenues from lease rentals, royalties and recyclables sales are projected to be substantial over the terms of the 20-year contracts

### STRATEGIC PLANNING PROJECT ELEMENTS

- Comprehensive Solid Waste Management Plan
- Procurement
- Financial analysis

**“GBB has provided the City of Fort Worth with valuable insight into the local, regional and national solid waste community that has allowed us to not only maximize revenues and lower and stabilize costs for our residents but also create a program that protects our citizens' solid waste assets for the next 20+ years.”**

—Brian Boerner, Former Director of Environmental Management, City of Fort Worth, Texas

**“GBB was instrumental in the negotiation of our franchise agreement. As a result of their technical expertise and innovative approach, the City of Plano received additional funding to support a comprehensive commercial recycling program. In addition, the franchised commercial hauler invested \$1.3 million in technology upgrades at its MRF.”**

—Nancy Nevil, Director of Sustainability and Environmental Services, City of Plano, Texas

## City of Plano, Texas [287,700 residents]

### OUR ROLE

- Evaluated Plano's commercial waste and recyclables collection system and rate structure
- Assisted in negotiations of a new franchise agreement to add single-stream recycling
- Provided technical training and marketing/public education tools
- Developed a comprehensive business plan for a regional composting operation; evaluated options for increasing recycling of C&D materials

### RESULTS

- Increased commercial recycling diversion from 11% to 19% in five years
- Achieved significant cost savings

### STRATEGIC PLANNING PROJECT ELEMENTS

- Strategic program review
- Negotiation
- Business plan development
- Public education and marketing
- Technical training





## Maui County, Hawaii [167,400 residents]

### OUR ROLE

- Led the project team that developed the plan to achieve 60% recycling diversion (state goal at the time was 50%)
- Provided analysis and recommendations for single-stream curbside recycling and weekly trash collection; collection of bulky and household hazardous waste; C&D recycling; materials recovery facilities for recyclables and C&D; landfill gas collection for electricity generation; consolidated operation centers; and new technologies to convert waste to electricity
- Advised on the County's public education campaigns and engagement efforts

### RESULTS

- Working with the Solid Waste Resource Advisory Committee assembled by Mayor Charmaine Tavares and the County of Maui Department of Environmental Management, developed a new Integrated Solid Waste Management Plan that, when implemented, is designed to increase recycling diversion from 36% to 60%

### STRATEGIC PLANNING PROJECT ELEMENTS

- Integrated Solid Waste Management Plan
- Options analysis and recommendations
- Public education

## Southeastern Oakland County Resource Recovery Authority (SOCRRA), Michigan

### OUR ROLE

- Managed a cooperative collection transfer and disposal services procurement for 12 communities, 100,000 homes and 283,000 citizens

### RESULTS

- Achieved over 16% savings on collection, transfer station operations and disposal services

### STRATEGIC PLANNING PROJECT ELEMENTS

- Multi-community cooperative procurement

**“This has been a grueling 3-month-long clarification process, and results wouldn’t have been the same without GBB’s facilitation and wealth of experience from which to bounce off ideas... Even more amazing is the fact that we exceeded our Board’s dictate (for a 10% cut) by about \$1,040,000. Who would ever have guessed that we’d achieve a 16% cost reduction by this RFP process?!”**

— Michael A. Czuprenski, P.E., former Operations Director SOCRRA, Royal Oak, Michigan

# GBB Success Stories

## GBB Success Stories: Facility Design Review and Construction Monitoring

GBB serves as an owner's representative to ensure that project design and construction activities are in our clients' best interests.

GBB has provided infrastructure project owner services for a wide variety of clients and project types over the years, with projects collectively valued at multiple hundreds of millions of dollars. GBB looks out for its clients' best interests to ensure that these valuable infrastructure projects are completed on time, on schedule, and on budget, while meeting overall project goals.

With a depth of expertise and breadth of services offered that includes a multi-disciplinary team providing consulting and engineering services, the GBB team has provided services for a variety of new construction and modification or retrofit projects, from waste- and recycling-related facilities to commercial and institutional buildings and campuses. Services include feasibility and due diligence studies, facility design review, construction monitoring, commissioning and acceptance testing, and project management.

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For more information, visit: <http://gbbinc.com/services/technical-evaluation-planning/design-review-construction-monitoring>

### Craine Architecture, Denver, Colorado

#### OUR ROLE

- GBB provided design review support pertaining to solid waste management infrastructure to Craine Architecture as it designed a mixed-use property in Denver, Colorado, consisting of 2 connected 90,000-square-foot buildings (180,000 square feet total) with a variety of programs, including a hotel and restaurants/lounges

#### RESULTS

GBB provided recommendations to Craine regarding:

- Current and potential future local regulations for waste, recycling, and organics in commercial buildings within the context of national trends
- Loading docks right-sizing and placement of solid waste, recycling, and organics containers
- Vector control recommendations





## Prince William County, Virginia [470,300 residents]

### OUR ROLE

- GBB acts as the Owner's Representative for the County for the development and construction of its advanced food and yard waste composting facility

### RESULTS

- During the Construction Phase: attended bi-weekly construction meetings and site walk-throughs to observe progress; assisted the County in managing the operating and construction contractors, including contract review for substantial completion requirements; and issued field reports and construction meeting minutes
- During the Testing and Acceptance Phase: assisted with punch list development and advised County on final acceptance conditions
- The new advanced composting facility uses aerated static piles with reversing aeration (Phase 1) and enclosed vessels (Phase 2, forthcoming) to process around 210,000 tons per year of food and yard waste

## Wasatch Integrated Waste Management District (WIWMD), Utah

[Davis & Morgan Counties, 355,500 & 12,100 residents, respectively]

### OUR ROLE

- GBB acted as the Owner's Representative for Design, Construction, and Testing and Acceptance for WIWMD's Mixed Waste Processing Facility Construction
- Monitored the overall process of construction and reported on the system development relative to the contractual obligations of WIWMD's construction contractors

### RESULTS

- During the Construction Phase: attended weekly construction meetings; conducted periodic site inspections; observed progress; coordinated, reviewed and recommended change orders as required; and reviewed and signed off on invoices
- During the Testing and Acceptance Phase: reviewed Construction Certification and Acceptance Report for substantial completion with respect to equipment; assisted with punch list development, coordination, execution and documentation; and witnessed commissioning of equipment, commercial start-up monitoring and testing, and final acceptance



# GBB Success Stories

## GBB Success Stories: Construction & Demolition Materials Recovery & Recycling

GBB is recognized as a national leader in construction waste and demolition debris (C&D) management.

GBB assists in developing sound and cost-effective approaches to improving the handling, processing, recycling, and/or disposal of C&D waste material, which consists of land-clearing and new construction wastes, or mixed building and roadway demolition debris. Over the years, GBB has performed more than 150 C&D-related project activities for its clients, ranging from full-scale feasibility studies to project procurement and implementation assistance.

GBB's experience also extends to assisting commercial clients with achieving goals of zero C&D waste, through a comprehensive approach that includes developing specifications and bidding instructions for contractors, a C&D materials recovery plan and separation strategy, a C&D materials management tool kit, C&D recycling and reuse facility evaluation, and managing the process for UL 2799 Zero Waste to Landfill Certification for construction and demolition projects.

### Metropolitan Government of Nashville and Davidson County, Tennessee [694,100 residents]

#### OUR ROLE

- With “green and best practices demolition,” managed fast-track demolition of Metro Nashville’s aging waste-to-energy facility (Thermal) after a fire, monitoring removal of over 10,000 cubic yards of charred waste from the tipping floor and pit

#### RESULTS

- Achieved 98.5% resale-reuse-recycling; special equipment auction generated 150 transactions, netting \$983,000
- Total net cost of the demolition: \$120,000 versus initial estimate of \$2.5 million, with no ambient air quality disturbances or worker injuries





**“In a fast-tracked procurement process, GBB brought valuable insight. The combination of GBB’s procurement experience and C&D knowledge gave the County assurance that we were headed in the right direction at a crucial time.”**

— Mike Dorsey, Director of Environmental Services, Fauquier County, Virginia

## Fauquier County, Virginia [70,700 residents]

### OUR ROLE

- Managed fast-track procurement process for a state-of-the-art 400 cubic-yard-per-hour, \$1.2 million C&D processing and recovery facility

### RESULTS

- Obtained County approval of the facility, which now increases recycling, maximizes landfill life and generates revenues to help fund and support the County’s solid waste management services

## National Demolition Association and Construction Materials Recycling Association: C&D Waste Research

### OUR ROLE

- GBB has developed national studies for the National Demolition Association and the Construction Materials Recycling Association of the total amount of C&D materials generated, processed and recycled annually.
- These reports serve as a trusted resource for the U.S. EPA, policy makers and industry leaders

### RESULTS

**“The [2006] survey was incredibly helpful and will be part of the EPA 2006–2011 National Policy. These data influence EPA policy.”**

— Michael Dunn, Team Leader, Industrial Materials Recycling Program, U.S. EPA

For more information about GBB’s C&D recycling services and projects: [www.gbbinc.com/services/construction-waste-demolition-debris](http://www.gbbinc.com/services/construction-waste-demolition-debris).

# GBB Success Stories

## GBB Success Stories: Thermal Waste Processing, Waste Conversion and Emerging Technologies

GBB's waste management expertise extends to thermal waste processing, commonly known as waste-to-energy (WTE), projects and financing as well as conversion and emerging technologies for processing waste.

GBB believes that technologies like WTE and waste conversion have a role to play in managing difficult-to-divert waste materials, according to the GBB Sustainable Materials Management Hierarchy. GBB has worked on more than 200 WTE projects, from initial feasibility study and economic analysis to vendor negotiations and commercial operations monitoring. GBB also conducts feasibility studies for bond financings, and monitors construction, acceptance testing and operations.

With many organizations now evaluating emerging waste processing technologies, GBB's technical knowledge and experience enable us to evaluate such conversion technologies as cellulosic ethanol production, solid fuel production, mechanical-biological treatment, acid catalysis and distillation, gasification/pyrolysis and plasma-arc, etc.

### Among the clients GBB has recently helped to evaluate emerging technologies:

- Chester County Solid Waste Authority, Pennsylvania
- City of Plano, Texas
- County of Maui, Hawaii
- Fairfax County, Virginia
- Kent County, Michigan
- Mojave Desert and Mountain Recycling Authority, California
- New Hanover County, North Carolina
- Prince William County, Virginia
- Rhode Island Resource Recovery Corporation
- Solid Waste Authority of Palm Beach County, Florida

For more information about GBB's waste-to-energy projects: <http://gbbinc.com/services/technical-evaluation-planning/waste-to-energy-conversion-technologies>

### City of Alexandria and Arlington County, Virginia

[159,400 and 236,800 residents, respectively]

#### OUR ROLE

- Provided strategic analysis, guidance for compliance with 1998 Clean Air Act Amendments (CAAA) and project refinancing for 975 tons-per-day (TPD) waste-to-energy facility
- Administered the retrofit of the facility to meet 1998 CAAA requirements and managed the Board of Trustees' relationship with its contractor, Covanta Energy
- Provided assistance securing waste supply agreements to keep the facility financially viable

#### RESULTS

- Two jurisdictions refunded existing debt and issued new debt for facility retrofit
- Retrofit successfully completed in December 2000
- Positive relationship with facility operator resulted in high availability of plant

**"I know I can speak for the Trustees in saying that GBB has been of enormous assistance to us. The firm has guided us and the two jurisdictions' solid waste operations through some challenging times. The Trustees have no hesitation in recommending GBB."**

— Philip G. Sunderland, Esq., former City Manager, Alexandria, Virginia



## Northeast Maryland Waste Disposal Authority (NMWDA), Baltimore, MD [593,500 and 827,400 residents, Baltimore City and County respectively]

### OUR ROLE

- Served as management consultant to the NMWDA, helping implement the Authority's Baltimore WTE facility that disposes over 2,250 TPD of municipal solid waste and produces and sells steam and electricity
- Assisted in vendor procurement and negotiations

### RESULTS

- Approximately \$190 million of resource recovery revenue bonds and \$45 million of letter of credit notes for the facility went to market
- Facility has continued to serve the City and County of Baltimore continuously since it came online more than 20 years ago

## Town of Babylon, New York [214,200 residents]

### OUR ROLE

- After New York State banned additional landfills on Long Island, developed a new solid waste system for the Town
- Provided assistance and advice on procurement, environmental impact statements, negotiations and recycling

### RESULTS

- Since the late 1980s, this system has provided reliable service, including a 225,000 tons-per-year waste-to-energy facility and an ashfill to accommodate the 50,000 cubic yards of ash generated annually by the WTE facility
- Changes to residential and commercial recycling collection services have increased recycling collection and lowered the cost of services

# GBB Success Stories

## GBB Success Stories: Routing & Curbside Collection Optimization

GBB combines its waste and recycling industry expertise with information technology tools to address its clients' curbside collection and routing optimization challenges.

GBB conducts collection analyses for both large and small jurisdictions, including evaluating existing collection equipment; vehicle/crew configurations; staff skill levels and training efforts; administrative and management practices and procedures; and public education activities. GBB's recommendations have resulted in service improvements and substantial cost savings between 10% and 25%.

GBB helps its clients procure software tools and solutions that make waste collection and dispatch operations both efficient and cost-effective, eliminating hours spent on manual routing, maximizing productivity, optimizing equipment and staff allocations, and allowing for better control over operations. GBB also advises clients on franchise and contract agreements for privatization of solid waste management services.

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For more information about GBB's collection and routing services, visit <http://gbbinc.com/services/collection-route-optimization>

### City of Baltimore, Maryland [593,500 residents]

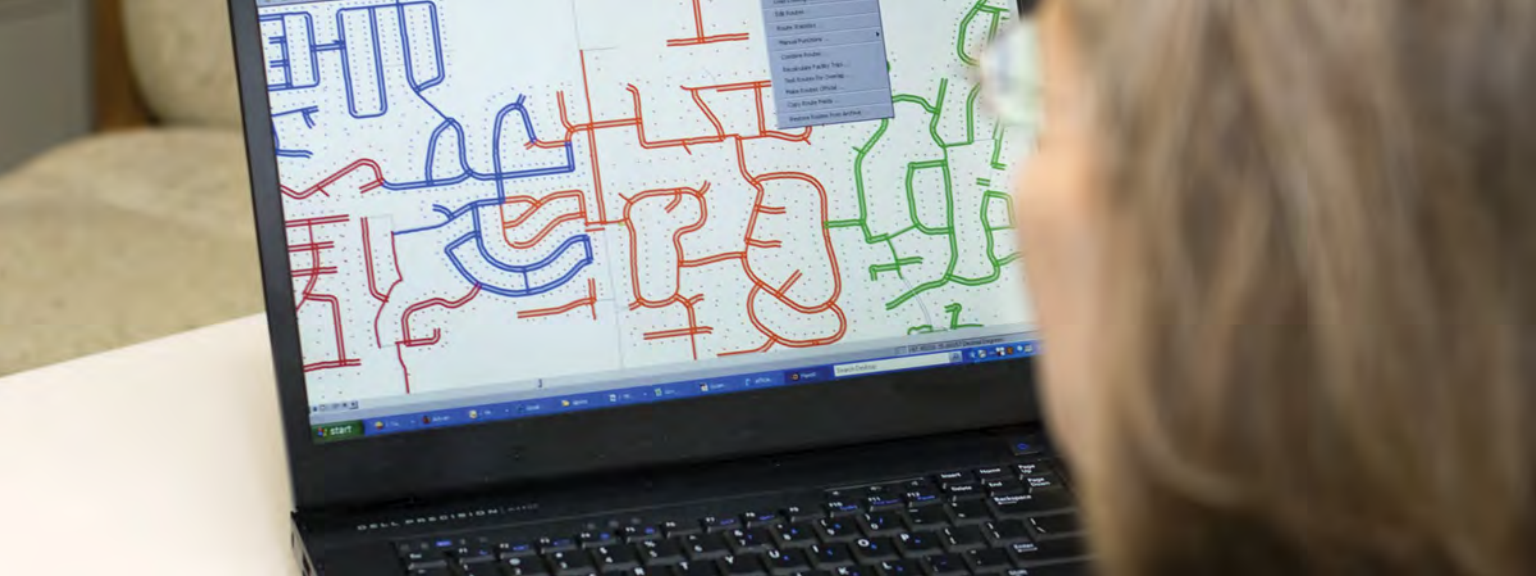
#### OUR ROLE

- Provided service bureau routing assistance to re-route the City's residential trash collection system, which used 100 trucks to service 233,000 households
- Refined on GIS maps the geocoding of the City's customers (including those serviced in alleys)
- Developed five alternative route scenarios that optimized the routes, workdays and equipment allocation, each with associated cost savings

#### RESULTS

- City achieved new collection efficiencies and cost savings of approximately \$6 million annually





## City of Broken Arrow, Oklahoma [110,200 residents]

### OUR ROLE

- Conducted resident survey to inform decision-making about future revisions to solid waste collection system
- Prepared detailed collection service options cost analysis
- Conducted curbside recycling collection pilot program

### RESULTS

Based on the survey results and lessons learned through the pilot, the City elected to:

- Convert to once-weekly collection and optimize routes
- Issue 96-gallon recycling carts to all customers and continue collection of garbage and yard waste in bags
- Consider gradually replenishing fleet with automated trucks for recyclables collection

**“GBB has shown a great deal of knowledge, skill and experience in assisting the City in preparing for this key shift in refuse service. They exhibit outstanding professional ethics, are competent on all matters related to refuse and recycling, have a responsive, pleasant staff, and importantly, are able to communicate their ideas and their associated benefits effectively.”**

— Russell Gale, Assistant City Manager  
City of Broken Arrow, Oklahoma

## Metropolitan Government of Nashville and Davidson County, Tennessee [694,100 residents]

### OUR ROLE

- Created a long-term, strategic solid waste management plan for Metro that generated cost data for collections business units
- Analyzed options for replacing Metro’s aging downtown waste-to-energy facility (Thermal) with a new, highly efficient District Energy System (DES)
- Prepared the feasibility report for \$66.7 million in revenue bonds to finance the construction of the new natural gas-fired steam and electricity-driven chilled water generating facility and administered the new DES through construction and initial three years of operation

### RESULTS

- In less than four months, completed Metro’s solid waste disposal services procurement that dropped disposal costs 65%, from \$75 to \$26.50 per ton
- In three months, implemented new, balanced routes for curbside trash and recycling collection for 120,000 households, with GIS path routing
- Independent audit confirmed that actual savings exceeded estimate
- DES has been recognized nationally for leadership, service, engineering and partnerships, and was named System of the Year by the International District Energy Association

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for Solid Waste Management**

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