

Green-ness is Next to Godliness

Organics Diversion at a Religious Facility

Presented at
**Virginia Recycling Association
Virginia Beach**

By
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GBB Overview


- Established in 1980 as an objective adviser to governments, institutions, and businesses
- Over 29 years implementing innovative solutions for the waste and recycling industry
- “*Change Agents*” to produce better services and facilities
- Emphasis on technical feasibility, as well as the business, political, institutional, and public involvement aspects of successful implementation



***Innovation and Leadership in Waste Management
Quality - Value – Ethics - Results***



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GBB Network of Clients


- Clients in 45 U.S. States; from largest cities/counties to rural communities
- Canada, Hong Kong, Australia and Chile

<p>ALASKA Anchorage Law Firm</p> <p>ALABAMA Solid Waste Disposal Authority of Huntsville</p> <p>ARIZONA City of Tucson</p> <p>ARKANSAS Tri-County Solid Waste District City of Fort Smith</p> <p>CALIFORNIA City of Oceanside City of Avalon San Gabriel Valley, San Marino City of Beverly Hills City of San Fernando City of Torrance San Bernardino County City of Oxnard City of Santa Clarita Disney/Imaging City of Santa Monica City of Pasadena City of Ontario City of Hemet Cypress Abbey Company Mojava Desert & Mountain Recycling Authority</p> <p>COLORADO City and County of Denver</p> <p>CONNECTICUT Town of Shelton Town of Southbury Town of Windsor City of Norwalk CT Resources Recovery Authority Southeastern Connecticut Regional Resources Recovery Authority</p> <p>DELAWARE Delaware Solid Waste Authority</p> <p>DISTRICT OF COLUMBIA U.S. Postal Service Headquarters St. Elizabeth's Hospital Eagle Maintenance District of Columbia Gov.</p> <p>FLORIDA Palm Beach County Fl. Dept. of Environmental Resources Broward County Lee County Miami-Dade County City of Kissimmee</p>	<p>FLORIDA (cont.) Emerald Coast Utilities Authority Solid Waste Authority of Palm Beach County</p> <p>GEORGIA Coastal Georgia Regional Development Center, Brunswick Cities of College Park and East Point City of Statesville Georgia Department of Community Affairs</p> <p>HAWAII Maui County Kauai County</p> <p>ILLINOIS Peoria County CornerStone Material Recovery Cities of Champaign and Urbana City of Chicago</p> <p>INDIANA City of Valparaiso City of Wabash</p> <p>IOWA Metro/Waste Authority, Des Moines Iowa Department of Natural Resources East Central Intergovernmental Association Hardin County Scott Area Solid Waste Management Commission, Scott County Cedar Rapids Audubon, Crawford, and Shelby Counties Marshall County Landfill Commission Ottawa-Wapello Counties Sioux City Calhoun County Upper Exploration Region Iowa Energy Policy Council Artistic Waste Services Phoenix CAD Recycling</p> <p>KANSAS Kansas Department of Corrections Hesper County</p> <p>KENTUCKY Lexington-Fayette Urban County Government</p> <p>LOUISIANA Shreveport Chamber of Commerce Jefferson Parish City of New Orleans City of Baton Rouge-Parish of East Baton Rouge</p>	<p>MAINE Aroostook County Waterville-Winslow City of Portland</p> <p>MARYLAND City of Annapolis City of Baltimore Baltimore County Washington County Frederick County Ocean City</p> <p>City of Gaithersburg Harford County Maryland Office of Attorney General Montgomery County Northeast Maryland Waste Disposal Authority, Baltimore Anne Arundel County Calvert County Caroline County Town of Easton Charles County Somerset County Talbot County Queen Anne's County Wicomico County USPS - Baltimore Division Maryland Recyclers Coalition Maryland Department of the Environment St. Mary's County McCormick and Company Prince George's County Office Paper Systems, Inc. Maryland Environmental Service Langell Melson Wood Walker, Inc.</p> <p>MASSACHUSETTS City of Pittsfield City of Springfield City of Fitzburg North Andover Massachusetts Department of Environmental Management</p> <p>MICHIGAN Michigan Department of Natural Resources Lapeer County Livingston County City of Marquette Muskegon County City of Alpena</p>	<p>MICHIGAN (cont.) Southeastern Oakland County Resource Recovery Authority (SOCORRA) City of Pontiac Greater Detroit Resource Recovery Authority (GDRRA) Traverse City MINNESOTA Metropolitan Council of the Twin Cities Area St. Cloud Hospital, St. Cloud Ramsey County Lyon County Blue Earth County East Central Minnesota Martin County City of Minneapolis</p> <p>MISSISSIPPI City of Meridian</p> <p>MISSOURI Kansas City City of Springfield</p> <p>MONTANA Yellowstone County (Billings)</p> <p>NEW HAMPSHIRE New Hampshire Office of State Planning City of Portsmouth City of Nashua Town of Plymouth - City of Franklin ERCO (Epping)</p> <p>NEW JERSEY Ocean County Pollution Control Financing Authority City of Warren County Salem County Essex County Capitol May Municipal Utilities Authority New Jersey Department of Environmental Protection and Energy Atlantic County Utilities Authority City of Sayreville Pennsauken Solid Waste Management New Jersey Clean Communities Council</p>
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<p>NEW YORK New York State Energy and Research Development Authority (NYSERDA) Town of Babylon City of New York Department of Sanitation Seven Towns in Westchester County St. Lawrence County Private Developer in Onondaga County Town of North Hempstead Urban Harvest Corporation Montgomery-Otsego-Schoharie Solid Waste Management Authority</p> <p>NORTH CAROLINA Mecklenburg County New Hanover County Town of Chapel Hill Container Corporation of the Carolinas Department of Transportation Materials Reclamation (Raleigh) Patrick Waste (Burlington) City of Charlotte Wake County Montgomery County City of Wilmington North Carolina Turnpike Authority (Mid-Currituck) Orange County</p> <p>OHIO Solid Waste Authority of Central Ohio (SWACO) City of Cincinnati City of Edmond City of Stillwater</p> <p>OREGON Metropolitan Government of Portland Deschutes County Marion County</p> <p>PENNSYLVANIA City of Allentown City of Pittsburgh Borough of State College City of Uniontown Fayette County City of Philadelphia Water Department Department Pennsylvania Department of Environmental Resources National Association of Demolition Contractors, Doylestown Union and Snyder Counties Centre County Clarion, Crawford, Forest and Venango Counties Dauphin County Mckean County Solid Waste Authority, Mt. Jewett</p>	<p>PENNSYLVANIA (cont.) Mifflin County Solid Waste Authority City of New Castle Boroughs of Newtown and Yardley Potter County Schuylkill County Susquehanna-Wyoming Counties Pike County Westmoreland County City of Erie Clinton County Solid Waste Authority Indiana County Municipal Services Authority Monroe County Municipal/Waste Management Authority Lawrence County Lancaster County Carbon County Blair County Exeter Township City of Altoona City of Johnstown Wayne County Lycoming County Greene County Bedford, Fulton, Huntingdon Counties SWA City of Harrisburg Northern Tier Solid Waste Authority</p> <p>RHODE ISLAND Rhode Island Solid Waste Management Corporation Town of South Kingstown Town of Narragansett Rhode Island Resource Recovery Corporation</p> <p>SOUTH CAROLINA City of North Myrtle Beach Livingston County South Carolina DHEC</p> <p>SOUTH DAKOTA State of South Dakota</p> <p>TENNESSEE City of Bartlett City of Chattanooga City of Collierville City of Franklin City of Memphis Johnson City Metropolitan Government of Nashville/Davidson County Container Corporation of America City of Galatin</p> <p>TEXAS City of Arlington City of Houston City of Plano City of Corpus Christi City of Carrollton City of Fort Worth City of Lewisville</p>	<p>TEXAS (cont.) City of Frisco City of Denton City of San Antonio Toussaint Addison Schuykill County Salt Lake County</p> <p>VERMONT Northeastern VT Development Association Northeast Kingdom City of Chesapeake City of Norfolk City of Richmond City of Alexandria U.S. Army Engineer District, Fort Lee Prince William County Stafford County Chesterfield County Virginia Recycling Association Central Virginia Waste Management Authority Fairfax County Appalachian Regional Recycling Consortium, Commonwealth of Virginia Southern Public Service Authority of Virginia City of Manassas Arlington County James City County Culpeper County Virginia Dept. of Environmental Quality Virginia Power Rivanna Solid Waste Authority City of Harrisburg Henrico County City of Suffolk Fauquier County University of Virginia City of Falls Church Rockbridge County</p> <p>WEST VIRGINIA City of St. Albans South Charleston West Virginia Solid Waste Management Board Jefferson County Kanawha County Solid Waste Authority, Charleston Morgantown and Huntington West Virginia Resource Recovery Solid Waste Disposal Authority</p>	<p>WISCONSIN Adams County West Central Wisconsin Regional Planning Commission Wausau County City of Richland Center Dane County Winnebago County Outagamie County Brown County City of Janesville Wisconsin Department of Natural Resources Eau Claire County La Crosse County Manitowish County City of Milwaukee Southeast Wisconsin City of Prairie du Chien City of Madison City of Wausau INTERNATIONAL Cayman Islands Government Greater Toronto Area Government of Hong Kong U.S. Virgin Islands U.S. District Court of Guam Goldier Associates - Australia Santiago, Chile OTHERS Karofo Corporation Aluminum Association American Forest & Paper Association American Paper Institute U.S. Environmental Protection Agency Constitution Materials Recycling Association Council for Solid Waste Solutions Epilepsy Wrecking Financial Guaranty Insurance Company Johns Hopkins Health System Lumina Education Services Marathon Equipment Mafrot Corporation Mobil Chemical Company National Demolition Association National Soft Drink Association Novelle Inc. Office of Technology Assessment OREG Site Work Services, LLC Petroleum Corporation of Jamaica Shetbrooke O.E.M. LTD SIWANA U.S. Air Force U.S. Conference of Mayors U.S. Dept. of Agriculture, Forest Service U.S. Department of State U.S. Dept. of Housing and Urban Development U.S. Postal Service, Northwest Region Great River Energy Various Confidential clients</p>
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Religious Facility Overview Congregation Beth El – Bethesda, Maryland

- 60,000 square feet of space
- Many diverse religious and event functions
- Over 1,000 family members
 - (some 2,500 people)
- Three clergy
- 14 office staff
- 60 part-time teachers
- 400 religious school students
- 130 nursery school children
- Equivalent of five full time janitorial staff
- 'Green Tikkun' committee involvement



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Divine Motivations

- Jewish Traditions
 - Mitzvah ~ 'Commandment to do Good Deeds'
 - "Bal Tashchit" ~ Not to waste
- Recycle More, Spend Less
 - Increase of recyclables and addition of organics collection
 - Offset by reduced trash service
- County Goals
 - Businesses to recycle 50%




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Existing Services

- One 8 yd³ Trash Container
 - 2x/week collection
- One 6 yd³ Cardboard Container
 - 1x/week collection
- One 96 gallon Recycle Cart (commingled bottles/cans)
 - 1x/week collection
- One collection contractor for all

(Note: County required dual-stream collection, although single-stream processing facilities existed in area.)




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In-house Custodial Services

- Daily Waste services
 - Staff empty bags from small interior waste containers into large bags and transport to exterior dumpsters
- Weekly Recyclables service
 - Material from inside containers consolidated into large bag and brought to outside recycling container(s)



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Recycling Bins in Offices/Classrooms



The top-left photo shows a white office copier with a brown recycling bin placed next to it. The top-right photo shows a white trash bin and a blue recycling bin on a carpeted floor. The bottom-left photo shows a white trash bin with a green recycling bin on top, situated in a hallway. The bottom-right photo shows a black trash bin and a blue recycling bin on a checkered tile floor.

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Kitchen Well Equipped for Re-usable Dishware



The photograph shows a commercial kitchen with stainless steel countertops, a sink with a faucet, and various kitchen equipment. There are stacks of green and white dishware on the counter.

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2008 Waste Sort



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2008 Waste Sort (cont'd)



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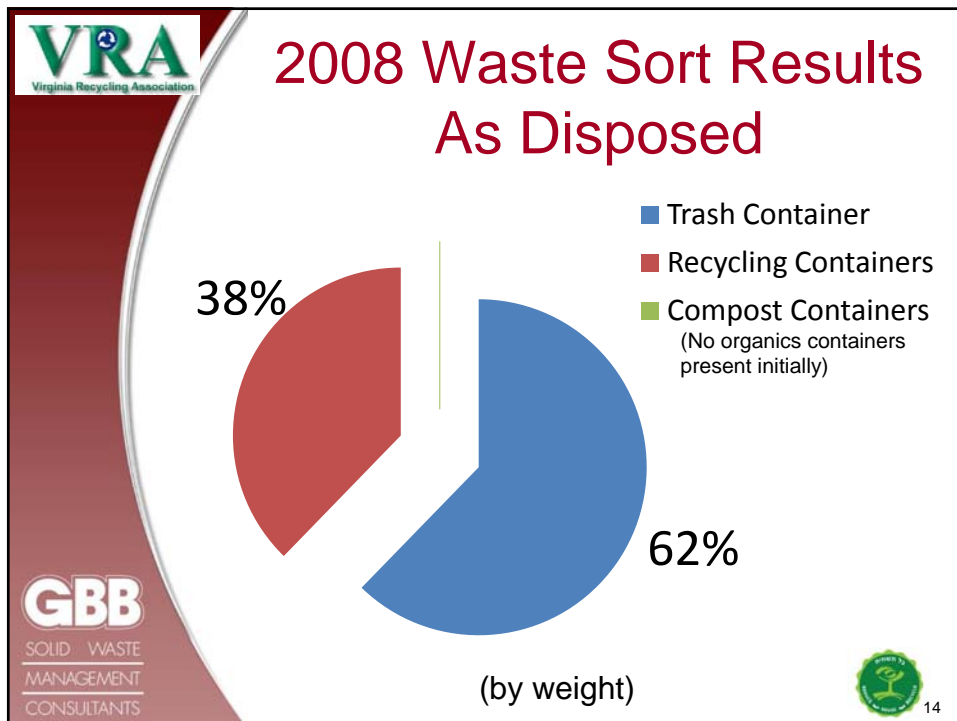
Potential Compostables



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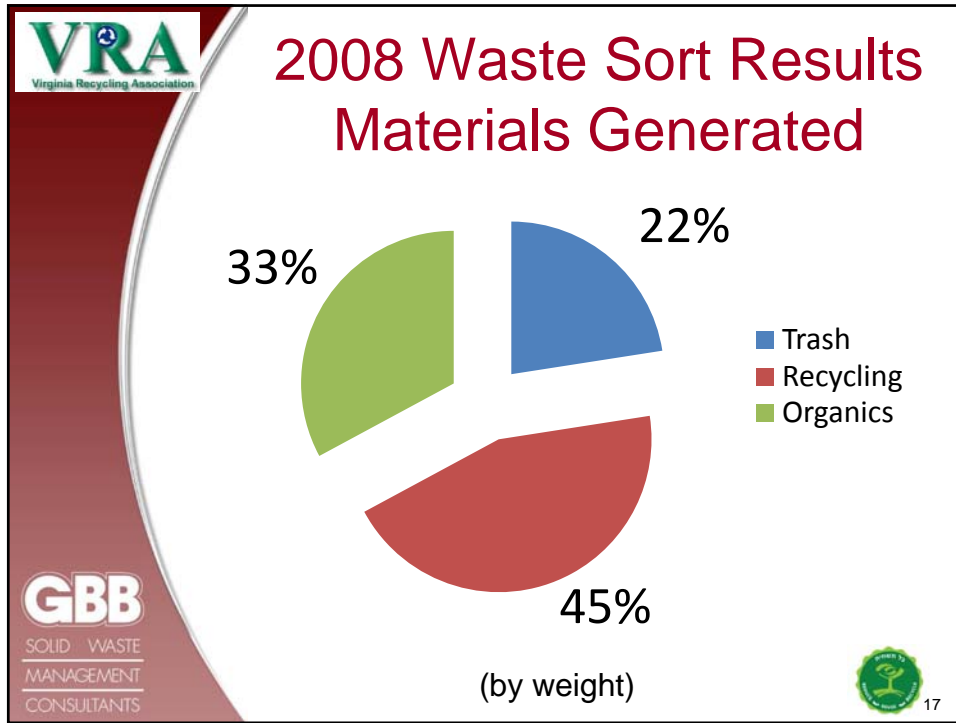


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- What is in the recyclables and waste (by weight)?**
- Waste:
 - 52 % food scraps/compostable
 - 14.5 % recyclable materials
 - bottles/cans, mixed paper, aluminum foil; food packaging
 - 2.2 % reusable items
 - a couple of good white candle sticks, a metal spoon, partial roll of trash can liners
 - 25.7% waste of various types
 - mostly non-recyclable plastic containers food packaging
 - 5.6 % disposable plates/cups/utensils
 - Recyclables:
 - 72.4% paper of various kinds
 - 20.2 % bottles and cans
 - 7.4% non-recyclable waste
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- Waste Analysis Results**
- Total waste and recyclables generation for 2008
 - 28.5 tons (estimated)
 - Recycling at 2008 levels
 - 8.5 tons, or 28.7% (estimated)
 - Well below the County’s standard and goal of 50%
- ☹️
- Logos: VRA Virginia Recycling Association, GBB SOLID WASTE MANAGEMENT CONSULTANTS, and a small green circular logo with the number 18.





Items of Note

- Food Scraps
 - 52% of trash contents (by weight)
 - 33% of all materials generated
- Disposables (foam plastic)
 - plates, cups, utensils
- Single-serve/package items
- Additional recyclables in trash
- Trash contaminating recyclables
- Reusable items discarded




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Program Upgrade Plan

- Divert food scrap organics, including soiled paper products
 - Provide containers, signage, contractor
- Reduce use of disposables
- Add more interior containers for bottles/cans/paper
 - Improve signage
- Explore purchase of fresh or bulk packaged items
- Provide Custodial training



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Internal Services Upgrade

- **Offices**
 - Revise labeling of Paper recycling bins
 - Change from “Paper Only”; to say “Mixed Paper”
- **Kitchen**
 - Implement Food Scrap diversion/collection
 - Better labeling of existing bottle/can recycling bins
- **Function Rooms**
 - Recycling bins for bottles and cans needed
 - In addition to existing paper recycling bins
- **Sanctuary/Chapel**
 - Needed recycling bins for Mixed Paper near door for pamphlets discarded after services

(Note: County requires dual-stream collection, although single-stream collection services exist in the area.)

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New Exterior Waste/Recycling Container Set



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Food Scrap and Plate Return Stations for Events/Users



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“Place Dirty Plates on this Cart”



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Signage Challenges



For Composting – If it grows, it goes!

- All leftover food
- Paper cups, paper napkins, wood
- White paper is ok, but better to recycle
- Plastic
- Styrofoam
- Coffee stirrers

Please recycle paper, bottles & cans



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Kitchen Barrels for Food Scrap Diversion



“For Biodegradable and Regular Food Only” 



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At Beth El we are turning our waste into compost!
Please put composting items here:

- Food
- Paper plates and napkins
- Paper and waxed paper drinking cups
- Coffee grounds and tea bags
- Paper towels



NO PLASTIC

Thank you!



Beth El Green Tikkun
– Bal Tashchit
– Do Not Waste

Please put composting items here:

EVERYTHING
– BUT NOT PLASTIC



Beth El Green Tikkun
– Bal Tashchit
– Do Not Waste

Please put composting items here:

- Food
- Paper, napkins
- Wax cups
- Coffee and tea

NO PLASTIC






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Food Scrap Collection Contractor



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www.EnviRelation.com



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Composter Accepts Material in Plastic Bags



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Material Ground and Composted, Plastic Screened Out After



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Green Tikkun Messaging

- Custodial staff given logoed polos
- Logo also populates announcements both in hard copy and electronic
- The institution's culture is being converted to reduce/reuse/recycle much, much more
- And: This is "not that hard" to do!



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2009 Waste Sort Results – Program Adjustments Needed



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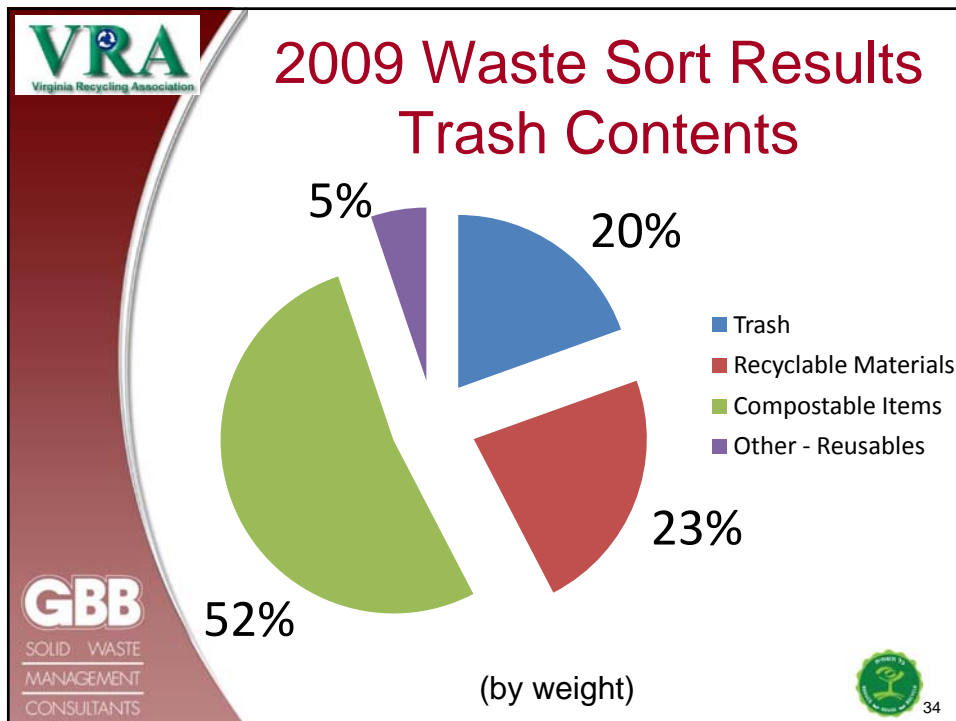
2009 Sort Findings

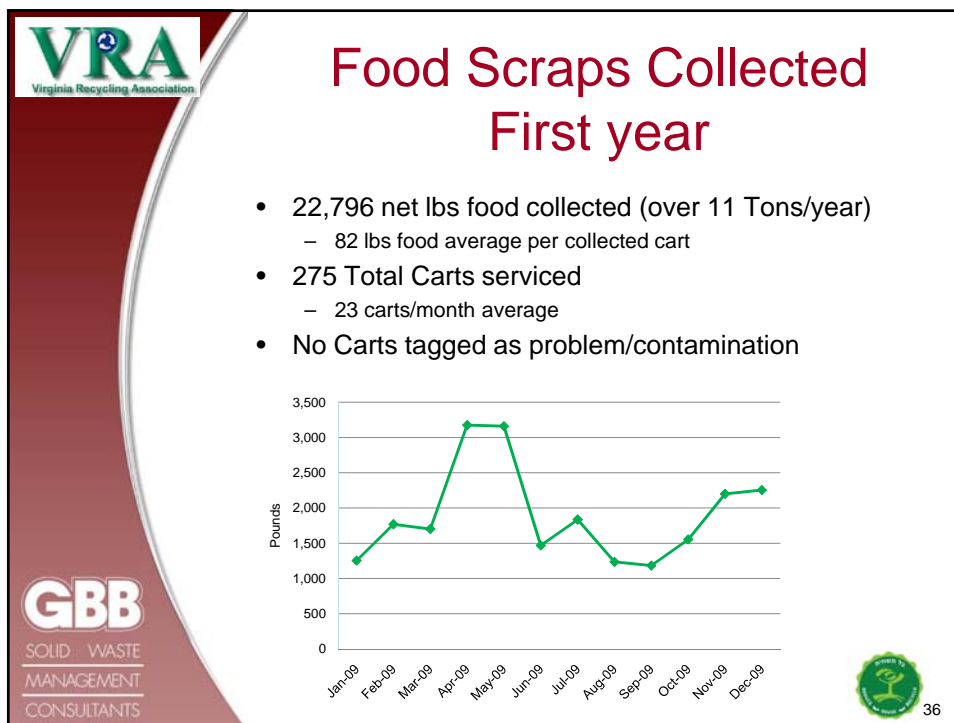
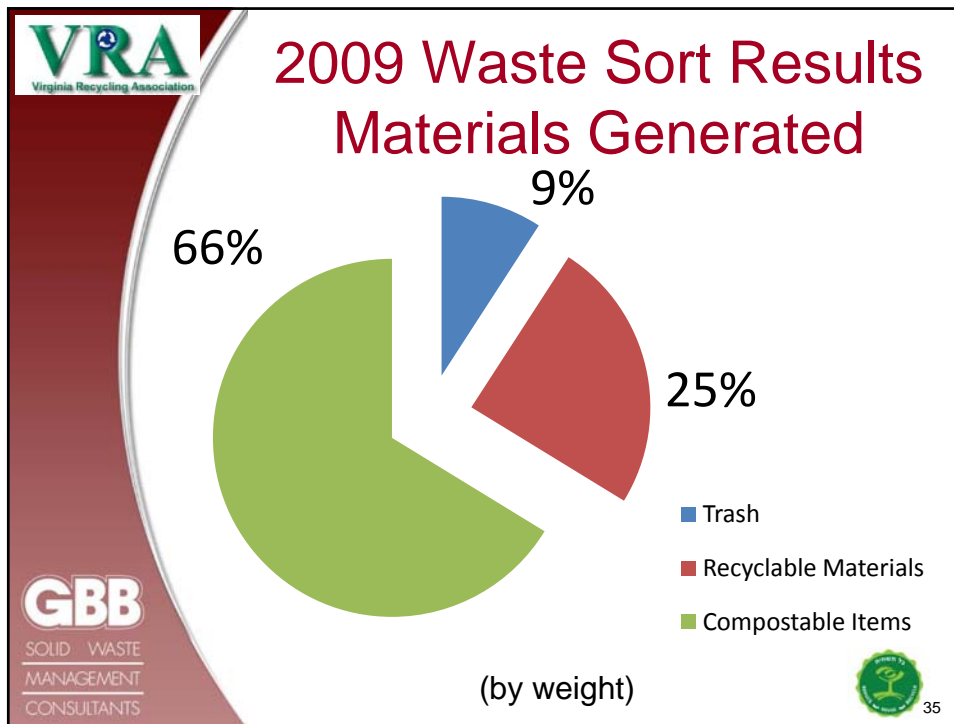
- Still food scraps in waste container
 - Additional kitchen cans
 - Signage improvement
- Soiled paper available also
 - Consider diversion for compost
- Recyclables in trash – apparently separated inside and discarded during collection
 - Additional custodial training
 - Implement clear vs. black bags
- Some reusables
 - Need to establish donation outlet
- Some small-scale disposables still used
 - Consider use of paper products for compost

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Recycling Rate

- Total Waste Generation estimate in 2008:
 - 28.5 tons/year (57,000 lbs)
 - 4,750 lbs/month
- Recycling Recovery estimate in 2008:
 - 8.5 tons/year
 - 1,417 lbs/mo (0.71 tons/month)
 - 30% of wastes recycled
- Food Scraps recovery in 2009:
 - 11.4 tons/year (22,796 lbs)
 - 1,900 lbs per month (average)
 - 40% of wastes composted
- Facility achieving estimated 70% recycling rate – Well above County's goal of 50% recovery!

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Waste Box Downsized



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Additional Program Adjustments Recommended

- Continue custodial training and involvement
- Clear bag for recyclables
 - Visual key to custodial staff
- Spot-checking of trash bags to assure materials going in the right stream
- Right-size trash/recycling services/containers to match reduction in waste and increase in recycling

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Revised Service Set



- Reduce Trash Container from 8 to 6 yd³
 - Keep 2x/week collection
- Increase Recycling Collection to 8 yd³ Single-Stream Recycling Container from 6 yd³ paper & 96 gallon commingled
 - Keep 1x/week collection
- Add 2 more (total to 8) 35 gallon Organics Carts
 - Collect 3x/week
- Explore 'single stream' collection for mixed paper and containers



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Conclusions

- Food Scrap and other compostable materials are a large portion of waste generation at a variety of locations
- *If there are meals where you pray, there is a lot of food waste to take away!*
- Facilities with commercial kitchens can be targeted for significant organics diversion, adding to local recycling efforts & targets
 - Local collection contractors and food composters required
 - Facility education needed to maximize diversion program performance



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Thank you!

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