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# **ORGANICS COMPOSTING IN THE WASHINGTON REGION: OPPORTUNITIES AND CHALLENGES**

# OVERVIEW

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- ✘ What Is and Why Compost?
- ✘ Climate Connections & Other Opportunities
- ✘ Regional Activities & Facilities
- ✘ Model Programs in Place Elsewhere
- ✘ Challenges
- ✘ National Capital Region Organics Task Force
- ✘ Maryland Statewide Compost Study Group Recommendations

# WHAT IS COMPOSTING?

Composting is the aerobic, or oxygen-requiring, decomposition of organic materials by microorganisms under controlled conditions.

During composting, the microorganisms consume oxygen. Active composting generates heat, carbon dioxide, and water vapor.

Composting reduces the volume and mass of the raw materials while transforming them into a valuable soil conditioner.

*Source: Robert Rynk et al, On-Farm Composting Handbook, 1992.*



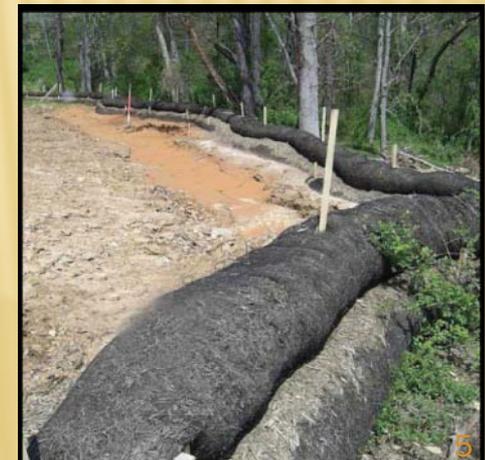
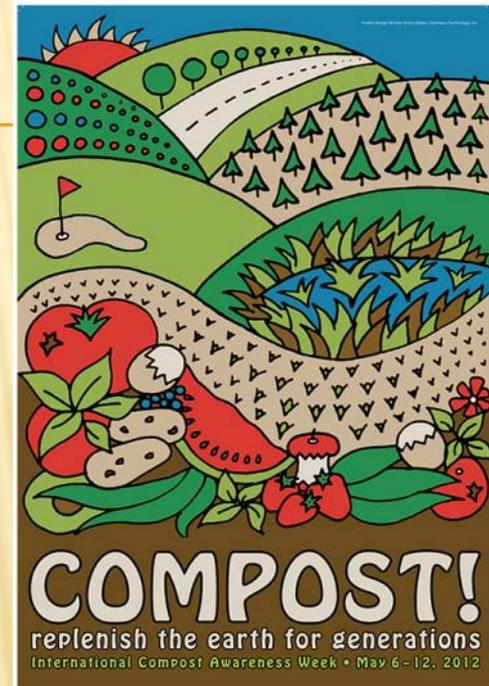
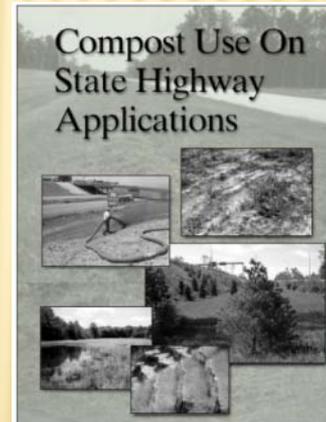
# ORGANIC MATERIALS

- ✘ Leaves
- ✘ Yard Trimmings
- ✘ Brush and Branches
- ✘ Food Scraps
- ✘ Compostable packaging & paper



# COMPOST APPLICATIONS

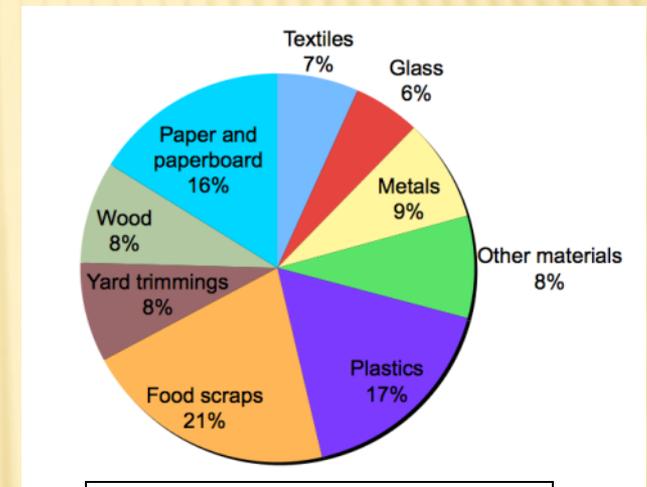
- ✘ landscape and nursery
- ✘ agricultural and horticultural
- ✘ vegetable and flower gardens
- ✘ tree and shrub planting
- ✘ sod production and roadside projects
- ✘ wetlands creation
- ✘ soil remediation and land reclamation
- ✘ sports fields and golf courses
- ✘ sediment and erosion control



# BENEFITS OF COMPOSTING & COMPOST

- + Reduces Waste
- + Improves Soil
  - × Creates a rich nutrient-filled material, humus
  - × Increases the nutrient content in soils
  - × Helps soils retain moisture
  - × Reduces or eliminate the need for chemical fertilizers
  - × Suppresses plant diseases and pests
  - × Promotes higher yields of agricultural crops
  - × Helps regenerate poor soils
  - × Has the ability to cleanup (remediate) contaminated soil
- + Reduces Stormwater Run-off & Soil Erosion
- + Cuts Landfill Methane Emissions
- + Creates Jobs & Supports Local Economies

U.S. Municipal Waste Disposed (after recycling)



160.9 million tons in 2009

Source: US EPA, 2009 data  
(<http://www.epa.gov/epaoswer/non-hw/muncpl/msw99.htm>)



# COMPOST: FOUNDATION OF HEALTHY SOIL AND GREEN INFRASTRUCTURE

- ✘ Stormwater management (low-impact development)
- ✘ Water conservation (the cheapest “new supply” of water)
- ✘ Sustainable landscapes
- ✘ Sustainable local/regional agriculture

***Added benefit of cost-effective waste diversion***

Source: David McDonald, Seattle Public Utilities & Washington Organic Recycling Council, Soils for Salmon Project.



**USCC factsheet: Using Compost in Stormwater Management**

Precipitation falling on the Earth and flowing over and through the soil is a major source of water pollution. While the precipitation is natural, what happens to it after it falls is dramatically affected by human activity. For example, in the Piedmont Region of Pennsylvania, of the 45" of rain that falls during the average year, 25" would be expected to be returned to the atmosphere by vegetative evapotranspiration, 12" would infiltrate deeper into the ground, and only 8" would runoff over the surface. Yet after development, as much as 95% might leave as surface runoff (PA DEP, 2006).

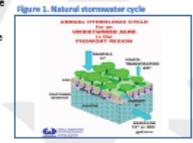
**enhanced, of good quality**

**Stormwater utilize c**

Stormwater divisions, construction term, the p will continue reduce the called low-design and water hydro LID manage flow rates as increasing infiltration thereby decreasing pollutant loads entering water bodies. Incorporating compost into these practices can dramatically lower runoff volume due to improved water holding capacity, healthy vegetation/biomass, and increased infiltration.

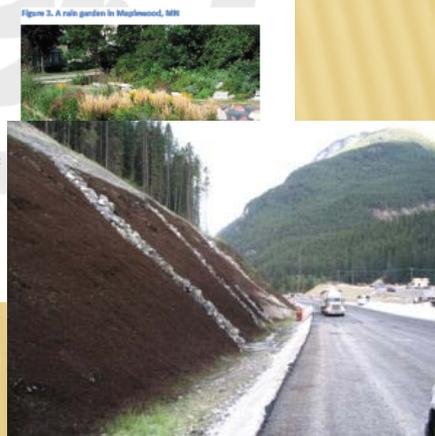
**LID Stormwater practices that include or benefit from the use of compost include:**

**Rain gardens and/or Bioretention Systems<sup>2</sup>**

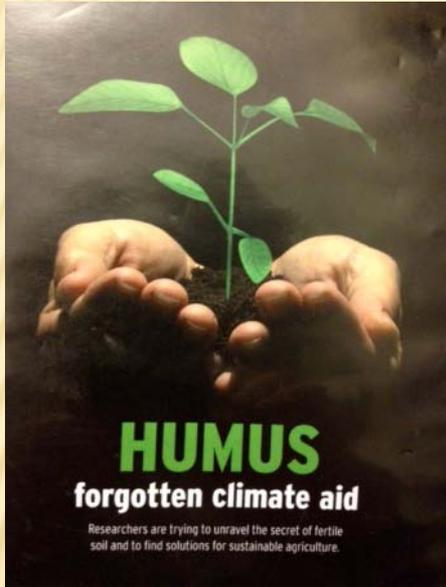


Increased runoff leads to increased erosion, more frequent and more intense flooding, habitat and species loss, higher pollutant loads, and water quality degradation. While the emphasis in stormwater management over the past 50 years has been on "peak rate" control, that is, detaining stormwater so that the highest rate of flow was no more than what would have been expected before the development (hence the ubiquitous detention basins in modern landscapes), there is a paradigm shift underway that recognizes that the most effective storm water management will be one that attempts to emulate natural processes. Thus

management practices that emphasize the roles of soils and plants are gaining prominence. These practices are



# COMPOSTING: CLIMATE PROTECTION



- ✘ Prevents landfill methane emissions
- ✘ Stores carbon
- ✘ Improves soil's ability to store carbon
- ✘ Substitutes for energy-intensive fertilizers, pesticides, fungicides
- ✘ Improves plant growth, and thus carbon sequestration
- ✘ Reduces energy use for irrigation



# CHANGING CLIMATE – A DRIVER FOR AMENDING SOIL WITH COMPOST

- ✘ Intense storm events – stormwater loading, flooding, wind damage
- ✘ Precipitation variability – alternate drought and flooding
- ✘ Agricultural productivity – soil loss, weather

*Source: David McDonald, Seattle Public Utilities & Washington Organic Recycling Council, Soils for Salmon Project.*



# COMPOSTING = LOCAL JOBS



On a per-ton basis, composting sustains 4 x more jobs than landfills or trash incinerators

- ✘ Organics do not ship well
- ✘ Composting is small-scale
- ✘ Jobs are local
- ✘ Compost products are used locally
- ✘ Dollars circulate within local economies
- ✘ Local = good for local economies
- ✘ Composting linked to urban food production
- ✘ Composting diversifies farm products and saves money

# WHY NOT HERE?



Maine produced compost sold at Maryland retail outlets

# RESIDENTIAL COLLECTION

- ✘ Collection systems can be by
  - + public crews
  - + public contractors
  - + private haulers
- ✘ Collection methods can be by
  - + Vacuum trucks (leaves)
  - + Clear plastic bags
  - + Compostable paper bags
  - + Loose in reusable cans or carts



# LOCAL GOVERNMENTS RESIDENTIAL

- ✘ Leaves only
  - + DC
  - + City of Alexandria
- ✘ Leaves & Garden Trimmings (Only Spring and Fall)
  - + Arlington County
- ✘ Year Round Leaves and Yard Trimmings (grass)
  - + Most other counties
- ✘ Food Scraps
  - + Howard County pilot



## Recycle Food Scraps!

### Accepted:

- Fruit and vegetable scraps
- Egg shells
- Bread, pasta, rice, grains, cereal
- Cakes, pies, cookies, baked goods
- Nuts, beans, seeds
- Corn cobs and husks
- Coffee grounds, filters, tea bags (no foil or foil-backed products)
- Paper towels and napkins
- Uncoated paper plates
- Pizza boxes (remove non-food items)
- Ice cream containers
- Paper egg cartons and paper bags
- House plants
- Cut flowers
- Small quantities of:
  - Grass and leaves

### Not Accepted:

- Meat or fish (including bones)
  - Dairy (cheese, butter, ice cream, etc.)
  - Fats, oils, grease
  - Facial tissues
  - Styrofoam
  - Diapers
  - Pet waste
  - Plastic-coated paper plates or bowls
  - Plastics of any kind, including bio-degradable plastics
  - Milk cartons: Recycle in your blue bin/cart
  - Waxed paper or waxed cardboard, aluminum foil, or plastic wrap
- Please recycle cardboard and clean aluminum foil in your blue bin or cart.



[www.HowardCountyRecycles.org](http://www.HowardCountyRecycles.org) 410-313-6444



# LOCAL GOVERNMENT COLLECTION METHODS

## ✘ Compostable paper bags or loose

- + Montgomery County

- + Loudoun County

- + Arlington County

- + Cities of Falls Church, College Park, Manassas, Takoma Park

- + Prince George's County (1/1/2014)

## ✘ Plastic Bags

- + Fairfax County

- + Prince William County



# OTHER PROGRAMS

- ✘ Grasscycling with mulching mowers
- ✘ Backyard composting
- ✘ Food donation



# COMPOSTING FACILITIES

- ✘ Both government and private
- ✘ At capacity limit on nearby grass and leaf composting facilities
- ✘ Food composting is the next frontier in increasing recycling rates
- ✘ Extremely limited food composting capacity for the region
- ✘ MD regulations are not friendly to composting food



# MAJOR GRASS AND LEAF COMPOSTING FACILITIES

- ✘ Prince William Co. Balls Ford Road
- ✘ Prince George's Co. Western Branch
- ✘ Montgomery Co. Dickerson
- ✘ Frederick Co. Reichs Ford Road
- ✘ Loudoun Composting (private)
- ✘ POGO Organics (Olney)
- ✘ Recycled Green (Woodbine)



# MAJOR FOOD COMPOSTING FACILITIES

- ✘ Recycled Green (closed to food December 2011)
- ✘ Peninsula Compost – Wilmington, DE
- ✘ Prince William County Balls Ford Road (no meat, low volume)
- ✘ Chesapeake Compost Works – Baltimore (just opened, low volume)
- ✘ Prince George's County Western Branch – (pilot 7/1/14, full scale 12/31/15)
- ✘ Howard County at Alpha Ridge Landfill (under construction)
- ✘ Freestate Farms (private) in Fauquier County (under development)



*Peninsula Compost*



*Chesapeake Compost*

# UNIVERSITY OF MARYLAND



Don't have a tray?  
Use the  
three-compartment  
waste separation  
stations

**COMPOST**  
**RECYCLING**  
**LANDFILL**

Keep campus clean:  
**Do not take  
your waste  
outside.**  
Use the  
three-compartment  
waste  
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# COMPOST

PLEASE, NO STYROFOAM

**FOOD SCRAPS**  
Apple, vegetable, bread, fruit, etc.

**SOILED PAPER**  
Paper plates, paper cups, paper towels, napkins

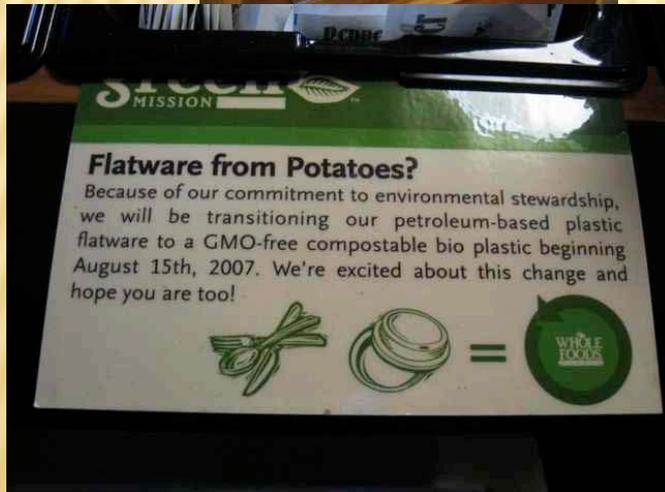
**WAXED PAPER**  
Waxed paper cups, containers

**PAPER CONTAINERS**  
Paper cups, paper plates, paper bowls, paper trays, paper containers

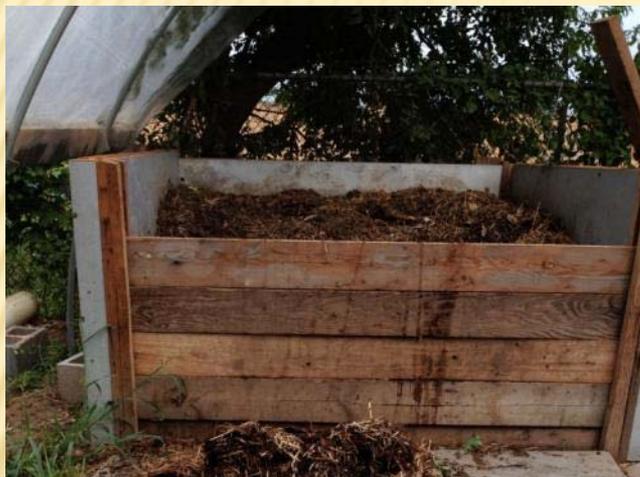
terps leave **small** footprints



# WHOLE FOODS: EXAMPLE OF PRIVATE SECTOR ACTIVITIES



# URBAN FARM COMPOSTING – ECO CITY, EDMONSTON, MD



# SAN FRANCISCO: COMPOSTING, THE HEART OF ITS ZERO WASTE STRATEGY



# COMPOSTING & RECYCLING COLLECTION SYSTEM DESIGNED FOR HIGH DIVERSION



Recycled Paper  
21%



Food Scraps  
20%



Yard Trimmings  
5%

Compostable Paper  
10%



Other  
15%



Glass and Plastic Bottles  
Aluminum and Steel Cans  
5%

Construction and  
Demolition Waste  
25%

Courtesy of City of San Francisco

# EASY TO UNDERSTAND PROGRAM

## 1 Recycle

Place all bottles, cans, foil, paper and cardboard in the blue cart - **MAKING RECYCLING EASIER!**

**not accepted**  
 glass, mirrors, tires, auto parts, hazardous waste, paint, oil, aerosols, propane, refrigerators, air conditioning units, large appliances, stoves, washers, dryers, freezers, refrigerators, A/C units, and other large appliances.

## 2 Compost

Place all of your food scraps, food-soiled paper and yard trimmings in the green cart.

**not accepted**  
 all the garbage, auto parts, tires, paint, oil, aerosols, propane, refrigerators, air conditioning units, large appliances, stoves, washers, dryers, freezers, refrigerators, A/C units, and other large appliances.

## 3 Garbage

Place what is left over - non-recyclables - into the black cart.

**Your New Program Reduces Garbage!**  
 As you can see more things are recyclable than ever before. With your help we will:

- Reduce our environmental footprint, reduce waste to landfill.
- Reduce the # of garbage trucks in the city.
- Make San Francisco the first large U.S. city to collect food waste for composting by 2015.

No hazardous materials. For household hazardous waste information, call 415-654-4222.

**not accepted**  
 all the garbage, auto parts, tires, paint, oil, aerosols, propane, refrigerators, air conditioning units, large appliances, stoves, washers, dryers, freezers, refrigerators, A/C units, and other large appliances.

### Questions?

Call 415-330-1300 or visit [www.sunsetscavenger.com](http://www.sunsetscavenger.com)

## Composting Collection

### All Food

Meats, vegetables, fruits, poultry, seafood, shellfish, bones and clean grease, bread, cheese and eggshells.

### Food-soiled Paper

paper, cardboard, napkins, paper towels, paper plates, paper cups, coffee and tea bags, coffee grounds, filters, reusable cups, bowls.

### Plants

Dead landscaping, lawn trimmings, flowers, grass clippings, weeds.

### 全部食物

肉類、蔬菜、水果、禽類、海鮮、骨頭及清潔油、麵包、起司及蛋殼。

### 被食品弄髒的紙類

紙類、紙板、餐巾紙、紙杯、咖啡及茶包、咖啡渣、濾網、可重複使用的杯子、碗。

### 植物

死去的園藝用品、草屑、鮮花、草屑、雜草。

### Toda Comida

carne, mariscos, carnes, mariscos, moluscos, aves, aves, huevos, panes, pastas, queso, lácteos de vacas.

### Papel Manchado por Comida

cartón, servilletas, servilletas, platos y vasos de papel, filtros y papeles de café, recipientes de cartón para los cafés, filtros de los cafés de máquina, tazas.

### Plantas

resacas de flores y árboles, hierba, césped cortado, matamoscos, setos.

### YOUR COLLECTION DAY IS 資源回收日(期): EL DÍA DE RECOLECCIÓN ES

Collection must be on the curb at 4:00pm on the collection day. 收集必須在資源回收日(期)前於下午四時前在路邊。

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### Questions?

330-1300

# DESIGNED FOR EASY PARTICIPATION



Kitchen Pail



Labeled Lids



Wheeled Cart

# SEATTLE: COMPOSTABLE FOODSERVICE WARE



# HIERARCHY OF FOOD RECOVERY OPTIONS

- ✘ Source reduction
- ✘ Donation to food banks
- ✘ Food to animal feed and direct land application
- ✘ Subsidized distribution of compost units and intensive training for residents
- ✘ Shared, small-scale, decentralized composting systems for residences and businesses
- ✘ Use of discarded organics for production of liquid fertilizers and other value-added products
- ✘ Centralized composting of food residuals through drop-off or curbside collection programs



Source: US EPA

Source: Richard Anthony Associates and Gary Liss Associates, Zero Waste Action Plan for the City of Glendale, California, December 2010.

# CHALLENGES TO EXPANDING COMPOSTING

- ✘ Lack of collection infrastructure
- ✘ Lack of composting capacity
- ✘ Siting difficulties
- ✘ Lack of regs/permitting to facilitate compost operations
- ✘ Zoning regulations
- ✘ Competition with cheap disposal
- ✘ Lack of leadership

*System planned for Howard Co.*



# NATIONAL CAPITAL REGION ORGANICS TASK FORCE

- ✘ Recommending regional policies
- ✘ Facilitating Master Composter Training Program
- ✘ Promoting compost-amended soil policies (modeled after Washington state's *Soils for Salmon* project)
- ✘ Participating on MD Statewide Compost Study Group
- ✘ Creating a MD/DC state chapter of US Composting Council
- ✘ Networking



**Cultivating Leadership:**

**Building Leaders through  
the Master Composter  
Certificate Program**

Jodie Colón, NYC Compost Project in the Bronx  
Jenny Blackwell, NYC Compost Project in Brooklyn



**NYC Compost Project**  
A program created and managed by  
NYC Department of Sanitation  
Bureau of Waste Prevention, Reuse and Recycling

# MD STATEWIDE COMPOST STUDY GROUP: DRAFT RECOMMENDATIONS (SELECT)

- ✘ Adopt a hierarchy for food scrap recovery
- ✘ Update and streamline regulations/permitting
- ✘ Adopt performance-based permitting regs
- ✘ Promote on-farm composting
- ✘ Build and maintain comprehensive web site
- ✘ Share best practices
- ✘ Characterize how much organics generated
- ✘ Build markets for compost
- ✘ Promote compost and compost-related products as best management practices for controlling stormwater run-off and erosion
- ✘ Target large generators by providing resources and technical assistance
- ✘ Share sample zoning ordinance language



# CONTACTS

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