

Integrated Solid Waste Management in Philadelphia & Act 101 Plan

Presentation to Solid Waste and Recycling Advisory Committee

*City of Philadelphia Streets Department
Sanitation Division*

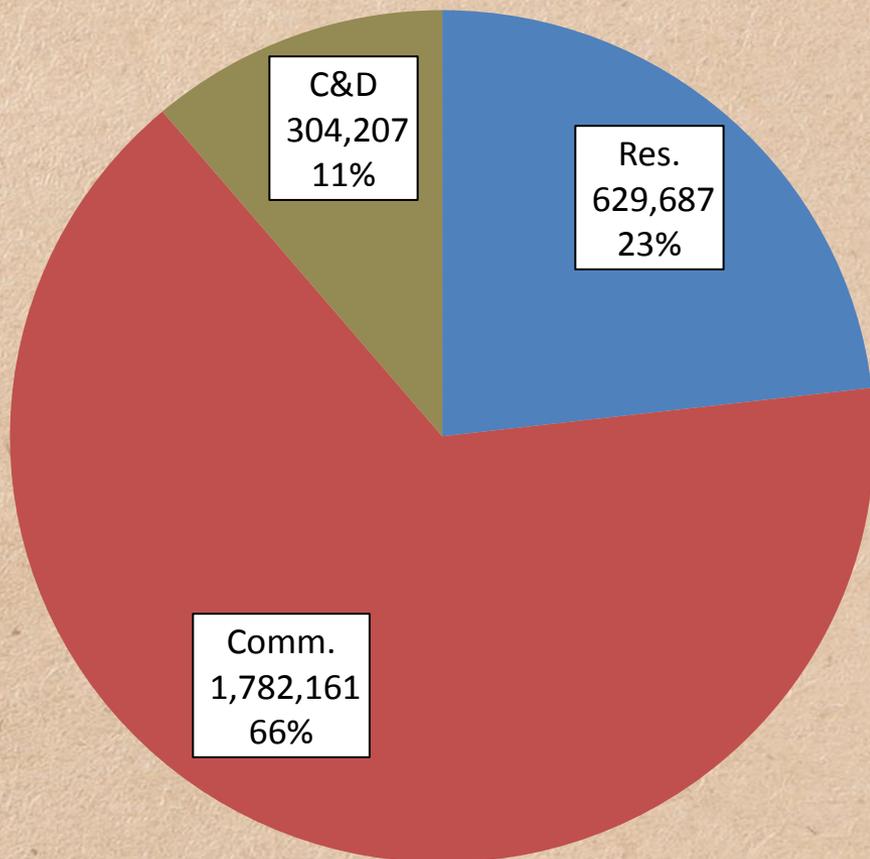
November 14, 2013

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner

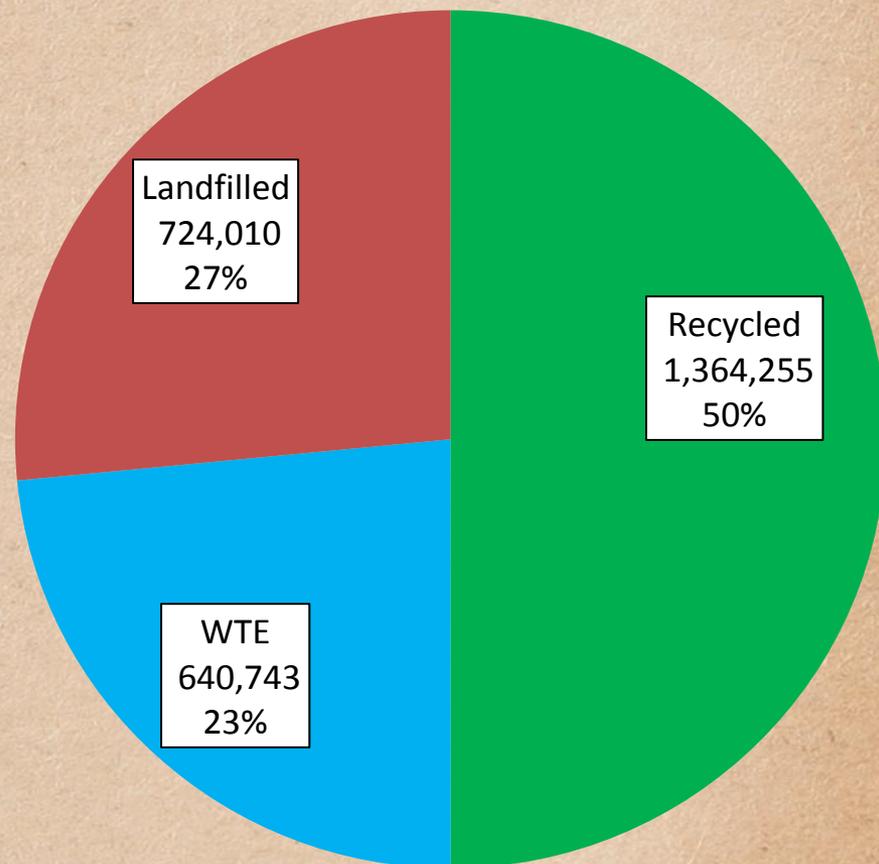


MSW Management in Philadelphia 2012

MSW By Generator Type



MSW Managed

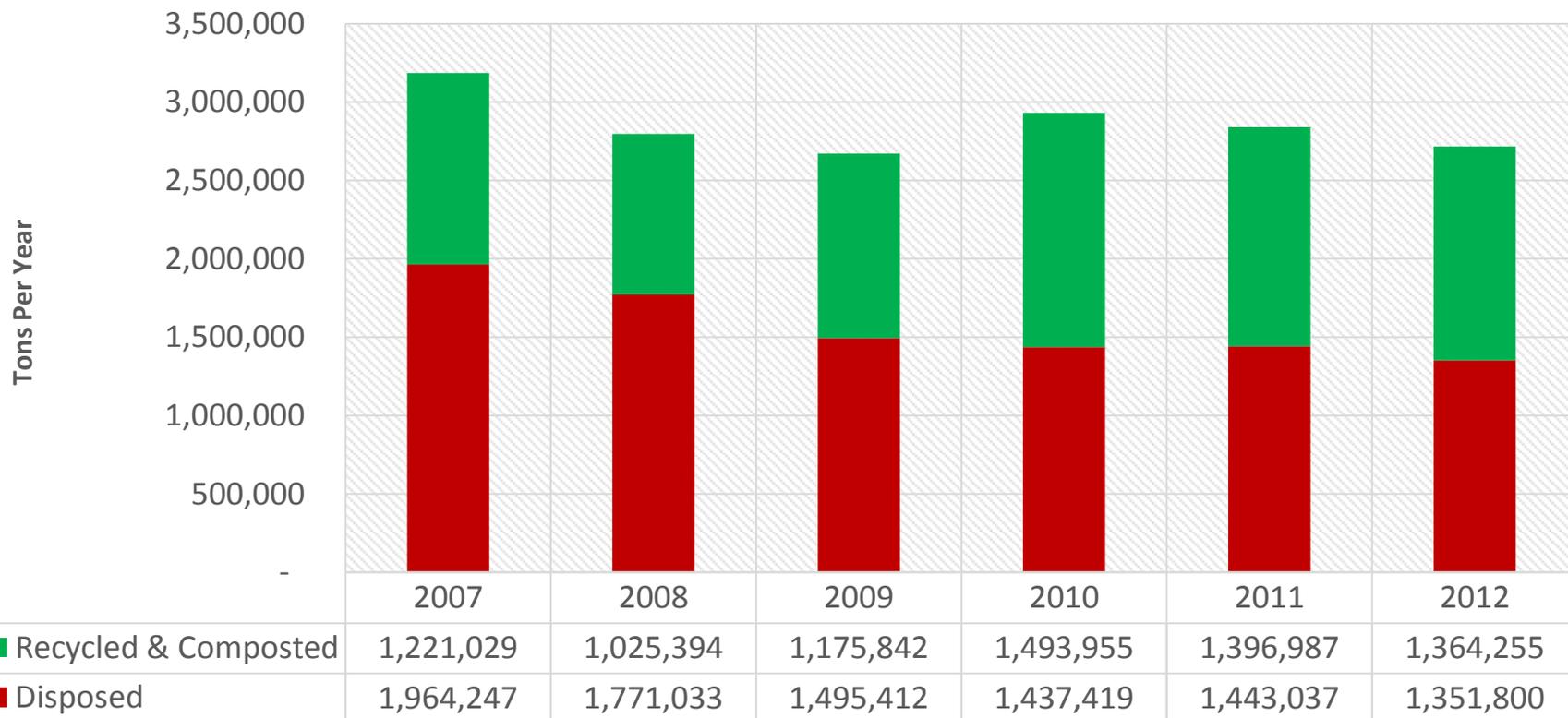


Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Solid Waste Management Trends in Philadelphia (by calendar year)

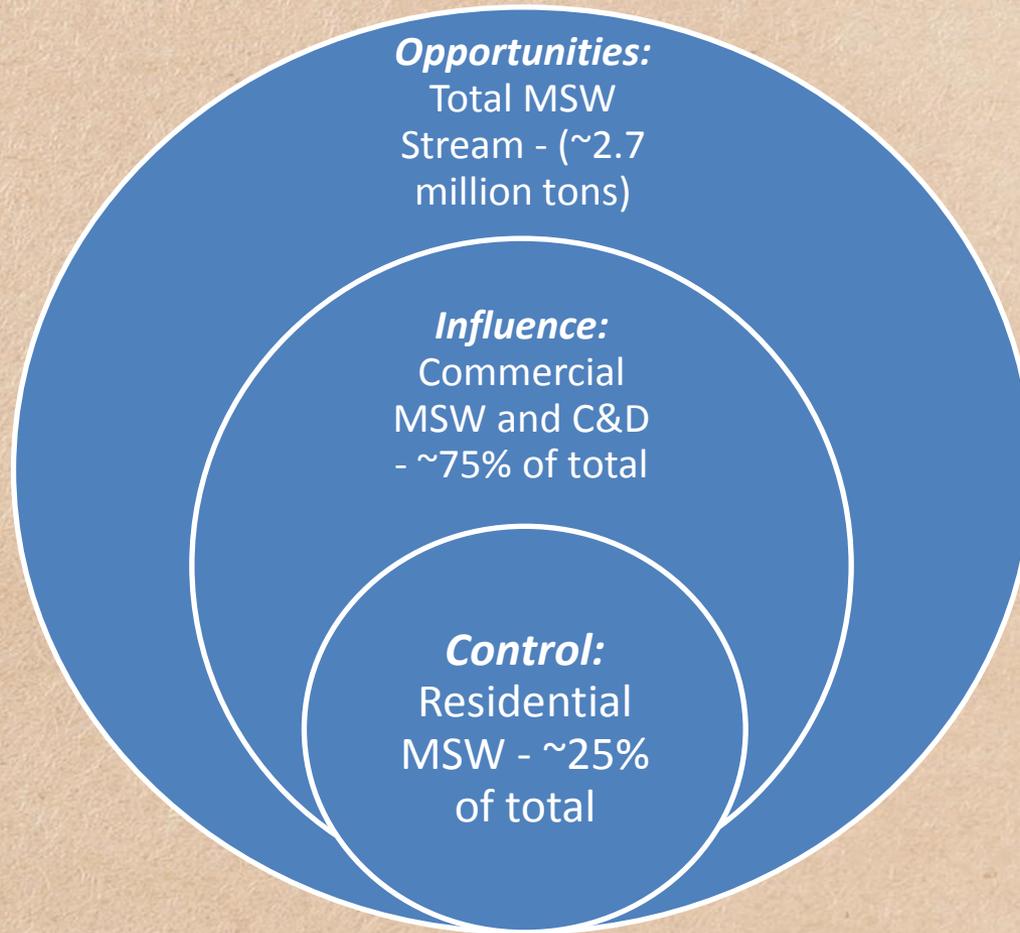
Philadelphia MSW 2007-2012



Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Solid Waste Management in Philadelphia

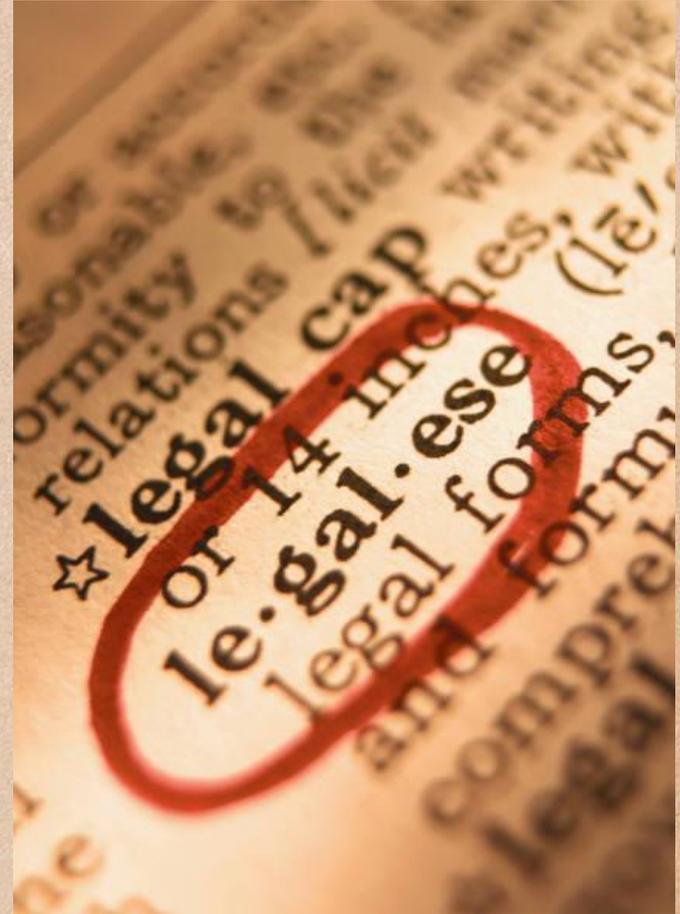


Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner

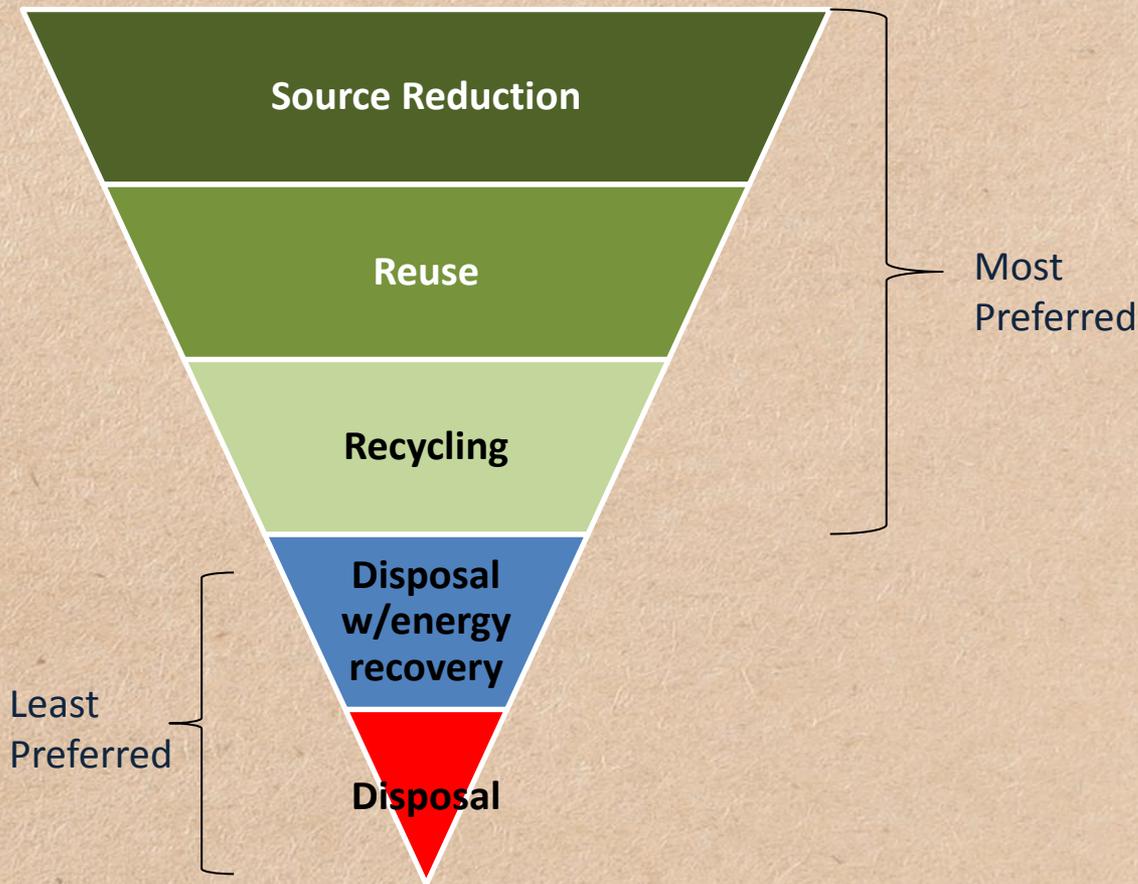


Key Recycling Requirements & Policy Goals

- PA Act 101 (1988):
 - Mandatory recycling for municipalities with more than 5,000 persons.
 - Includes commercial recycling requirements.
 - Established 35% recycling goal.
- City ordinance requirements (10-700) includes commercial recycling (1994).
- Greenworks goals including 25% residential diversion rate and 70% landfill diversion rate.



How Should We Manage our Solid Waste?



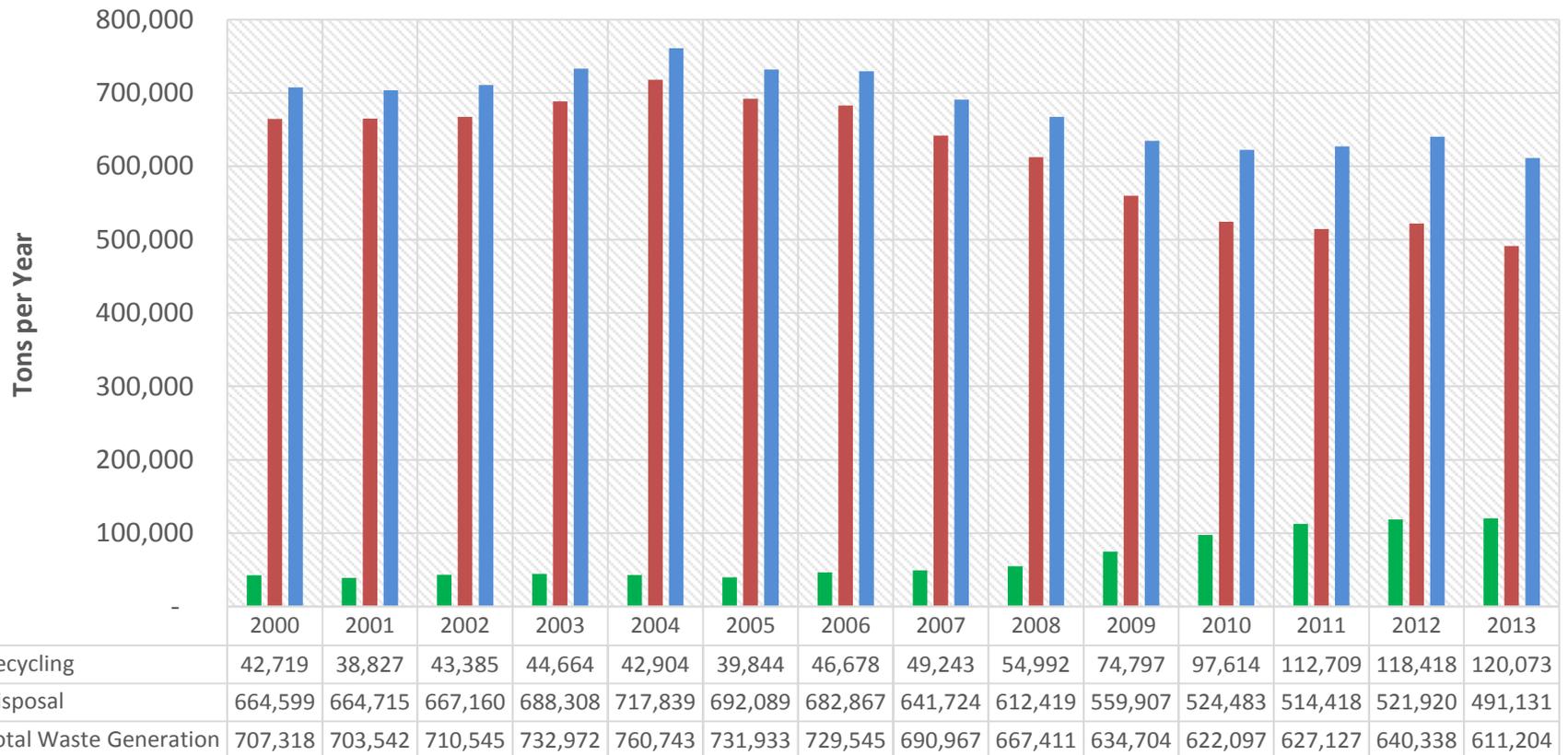
- US EPA developed solid waste management hierarchy in late 1980s.
- Source, or waste reduction means minimizing or not creating waste in the first place.
- Recycling is preferred way to manage materials.

Residential MSW and Recycling:

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Residential MSW Tonnage Trends 2000-2013 (by calendar year)



Residential MSW generation has decreased by 17% since peak in 2004.

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Curbside Recycling Program

- One of the 1st curbside recycling programs in U.S. (c. 1984).
- 525,000 households serviced by Streets Dept.
- 122,000+ tons for FY 2013; ~460 lbs. per HH annual yield.
- Fiscal benefits to city (FY 2013):
 - \$3.2 million in revenues
 - \$7 million in avoided disposal fees

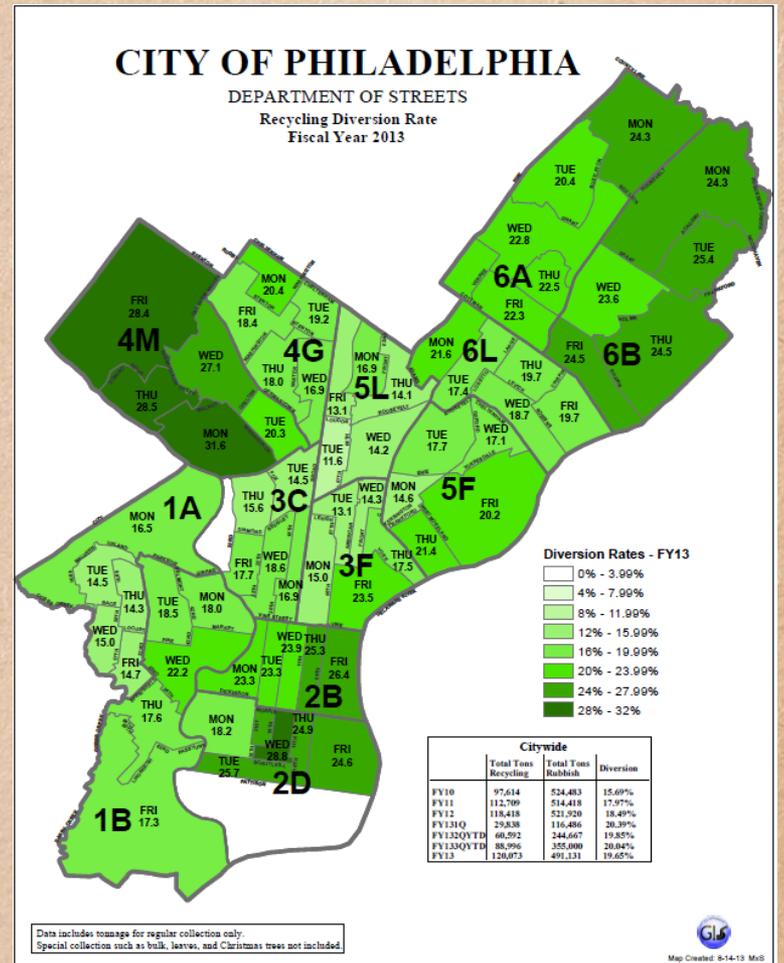
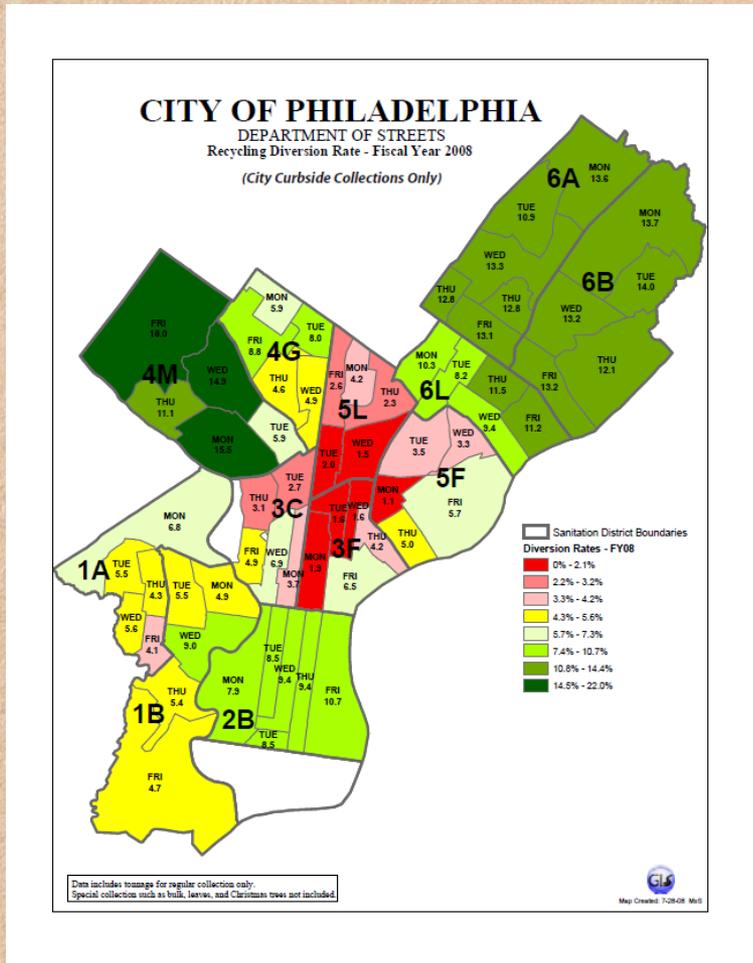


Photo courtesy of Peter Tobia

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Curbside Recycling Diversion Rates by Sanitation District

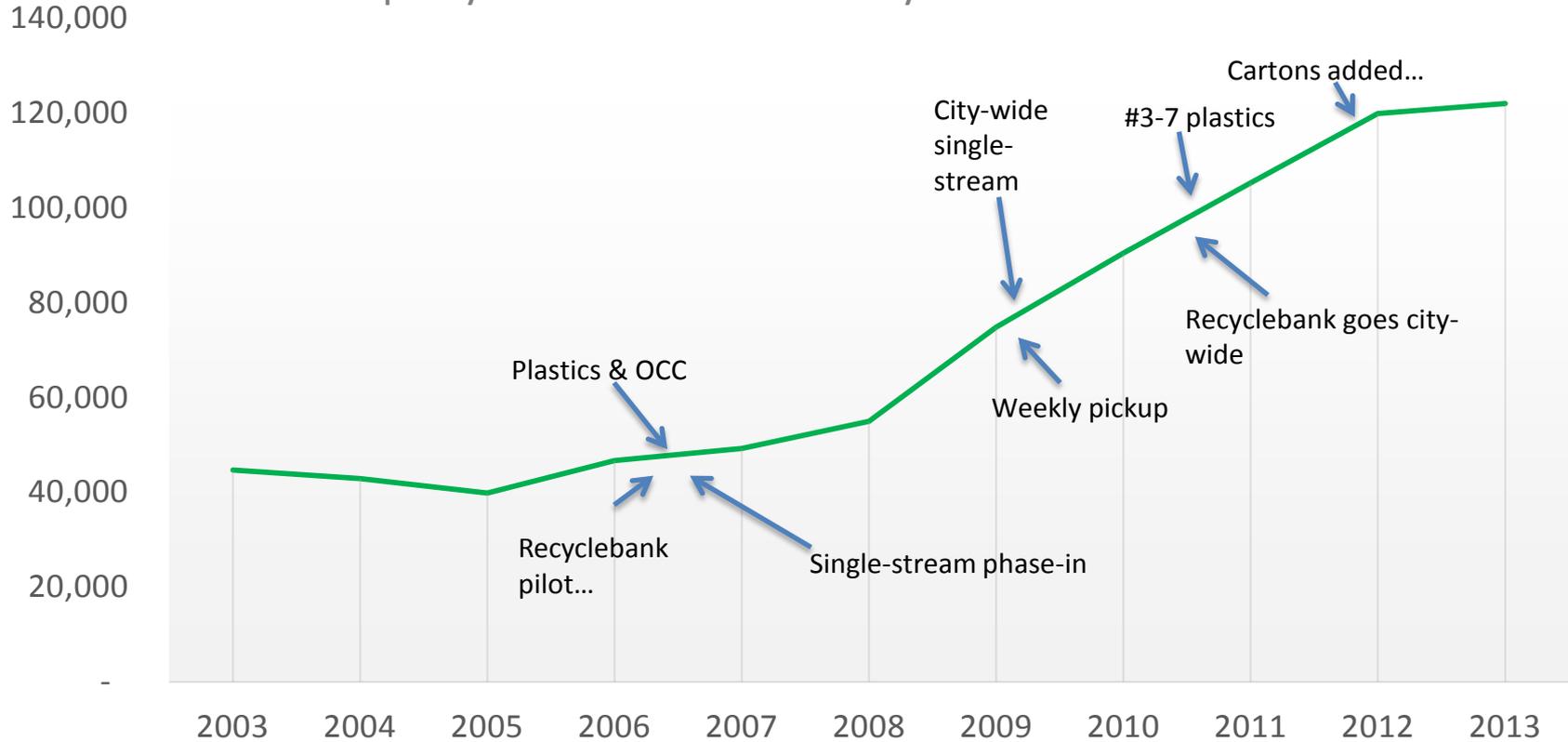


Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Recycling Revitalization Milestones in Philadelphia

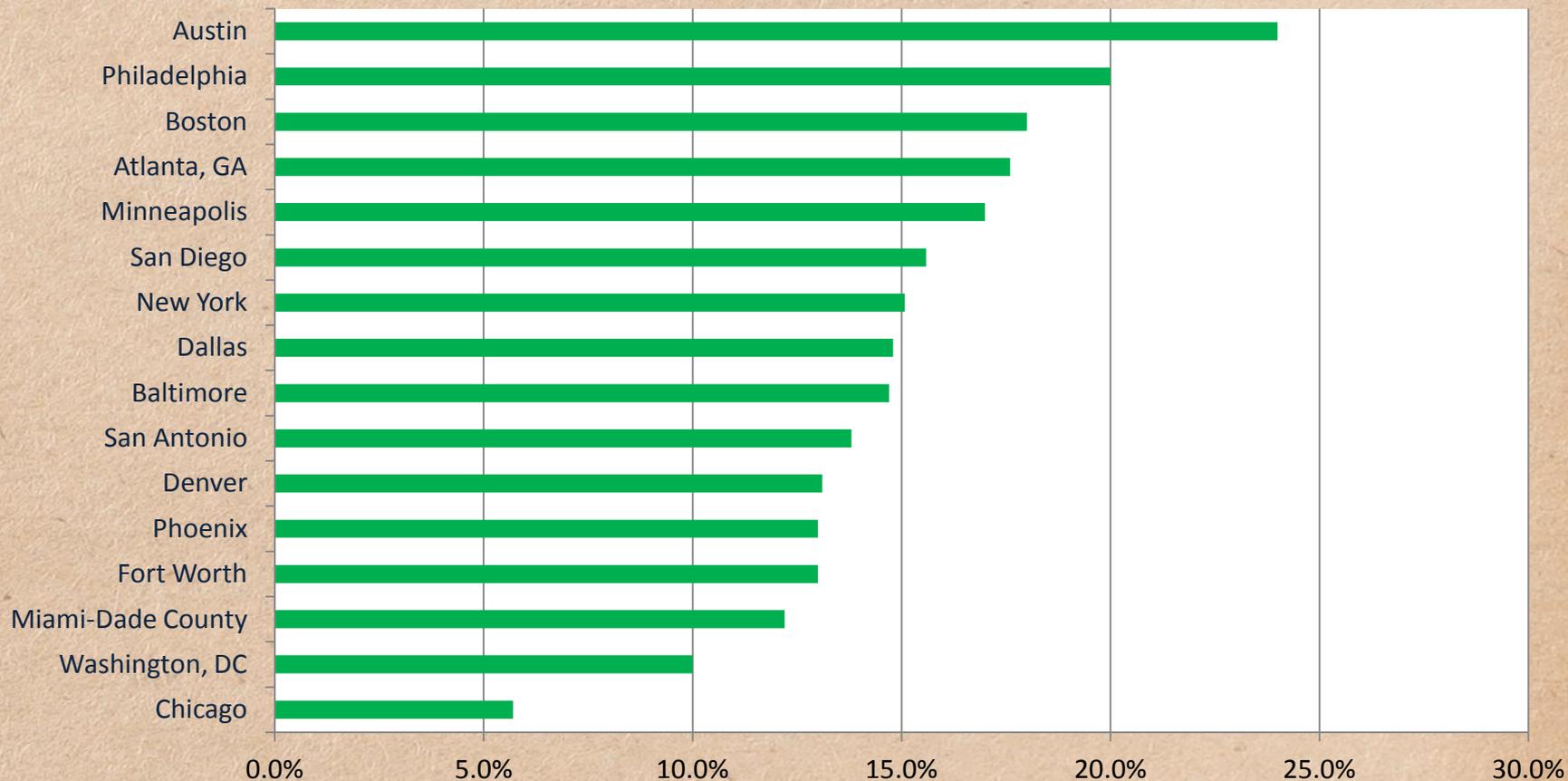
Tons per-year of Residential Recyclables 2003-2012



Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Comparative Curbside Recycling Rates (*metals, plastics, glass, and paper only*)*



*Sources are varied and include city performance measure reports, departmental program reports, or operating budget documents from 2012 or 2013.

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Recycling Rewards Program

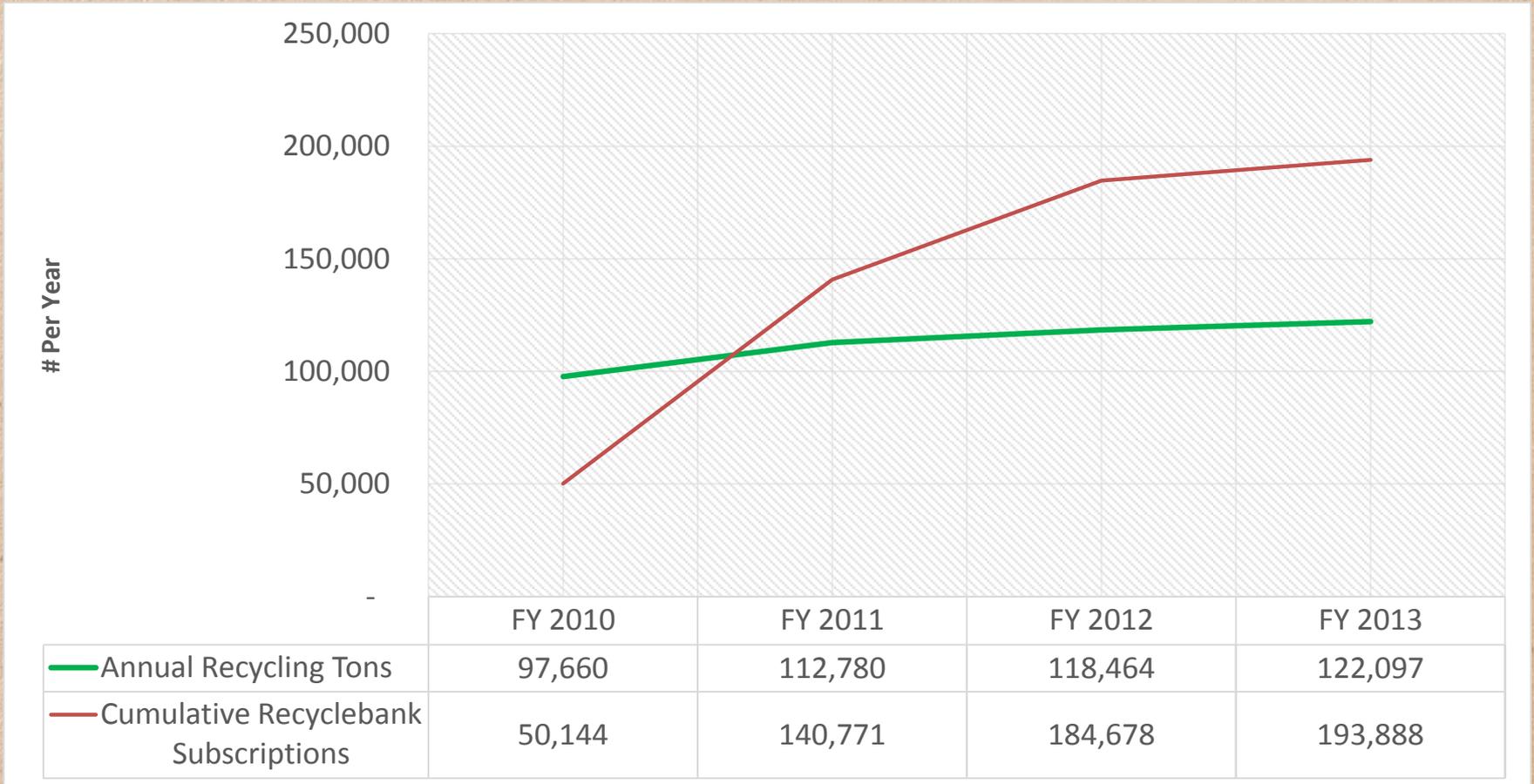
- Philadelphia original Recyclebank pilot (2006).
- Program became City-wide 2010.
- ~190,000 households have signed up for the program.
- Outreach, events, and overall program visibility are key elements:
 - 2012 summer sweepstakes
 - Recycling bin distribution events
 - America Recycles Day
 - Green Schools Project
 - U.S. Conference of Mayors Award



Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Recycling Rewards Program: Rewards Sign-ups Compared to Tons Diverted



Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Other Initiatives & Programs

- Public space recycling opportunities (~970 Big-Belly sites).
- Recycling drop-off centers at sanitation yards accept other materials:
 - Electronics
 - Household Hazardous Waste
 - Polystyrene foam
- Public event recycling:
 - 87% recycling/composting rate at 2012 Philadelphia Marathon



Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner

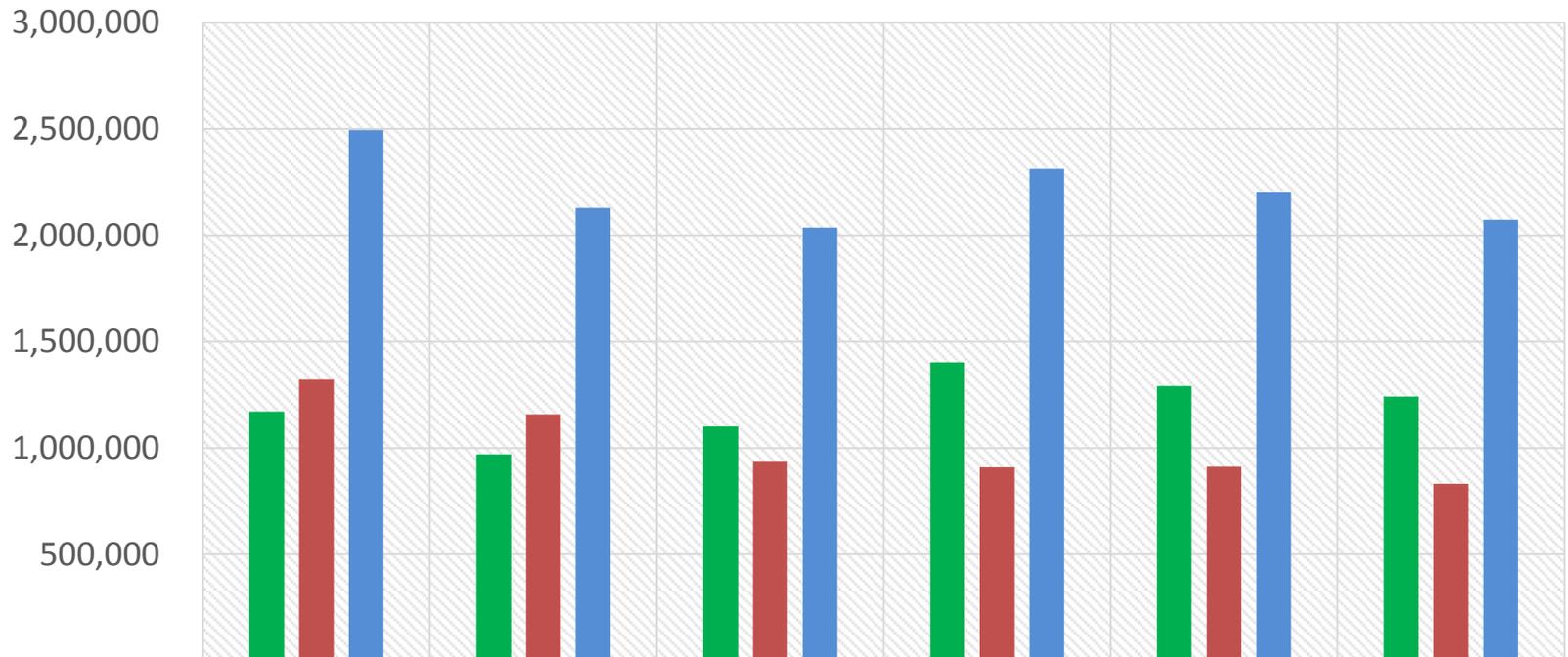


Commercial/Institutional MSW and Recycling:

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Commercial MSW Tonnage Trends 2007-2012 (by calendar year)



■ Recycling	1,171,786	970,402	1,101,045	1,403,480	1,291,739	1,241,575
■ Disposal	1,322,523	1,158,614	935,505	908,626	912,258	831,800
■ Total Generation	2,494,309	2,129,016	2,036,550	2,312,106	2,203,997	2,073,375

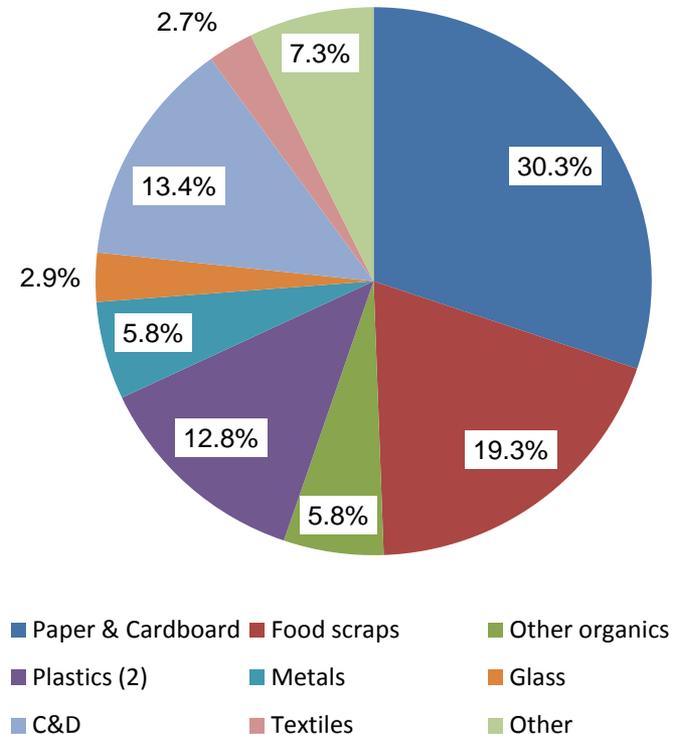
Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Business Recycling in Philadelphia

- Commercial recycling mandated since 1994
- 59% + commercial recycling rate (2012)
- Considerable private/institutional innovation underway:
 - C&D recycling
 - Organics & food waste recycling
- Paradigm shift needed in way commercial solid waste services are provided (allow for right-sizing)
- City developing business recycling toolkit.

Assumed Philadelphia Commercial MSW Composition %



Economic Benefits of Recycling



- About 2% of \$12.36 trillion U.S. GDP in 2007
- Labor intensive & creates jobs at 10/1 ratio vs. disposal.
- Multiplier impact with economic activity created at each stage.
- 2008 five-state (PA, NY, MA, ME, DE) economic study:
 - 11,738 recycling or recycling-reliant establishments (3,803 in PA)
 - Workforce of 100,500; payroll of \$4.2 billion (52,316 & \$2.1 billion in PA)
 - \$35 billion in gross receipts (\$20.5 billion in PA)

Recycling in City Buildings & Agencies

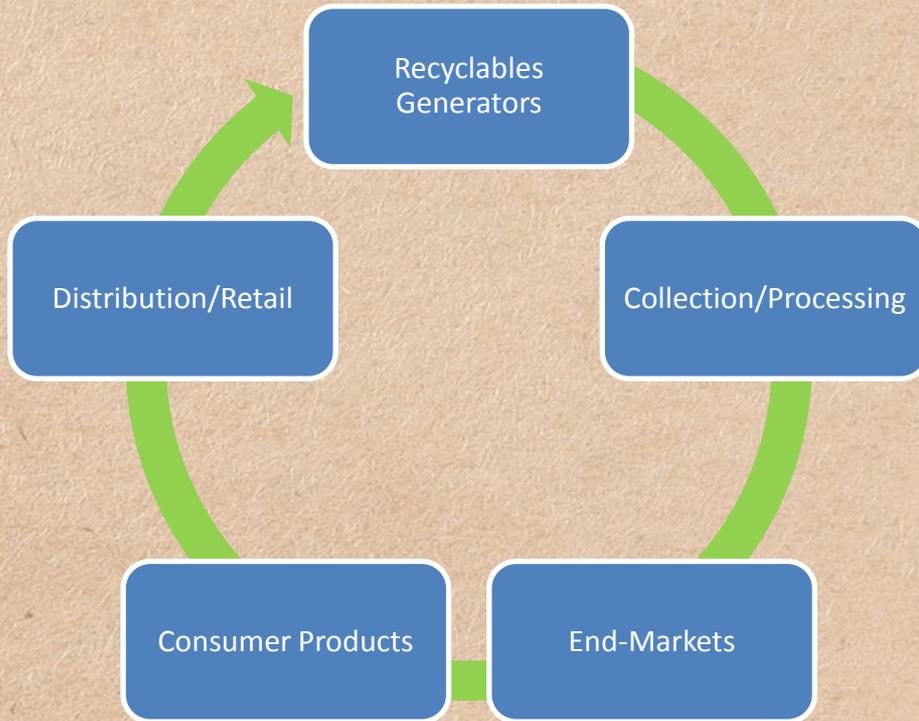
- Recycling in City buildings began in 1991; expanded in 1996 following issuance of Executive Order 5-96.
- City agencies receive recycling collection from combination of Streets Department, private haulers, and in-house collections (Parks, Prisons).
- Streets collects between 1,000-1,200 tons per year from City facilities.
- Local government waste stream very recyclable.
- Efforts under way to revamp program.



Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Other Initiatives & Programs



- City has begun to participate in strategic, multi-stakeholder forums.
 - AMERIPEN
 - U.S. Recycling Summit

Future Recycling Initiatives & Challenges

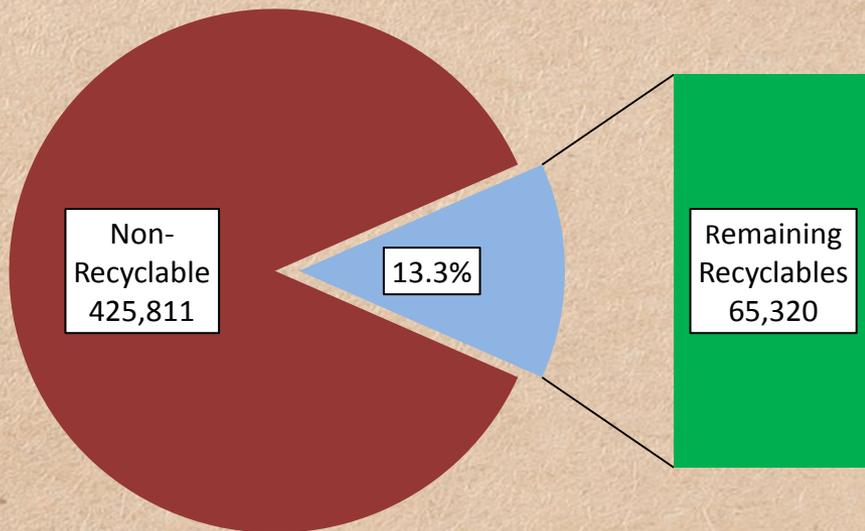
Philadelphia Residential MSW Composition

Material	2000	2010	Difference 2010 vs. 2000
Paper & cardboard	29.0%	14.7%	-14.3%
Plastics	13.2%	10.0%	-3.2%
Glass	4.0%	1.9%	-2.1%
Metals	6.6%	3.5%	-3.1%
Organics	29.1%	27.2%	-1.9%
C&D	12.9%	24.1%	11.2%
Other	5.2%	18.6%	13.4%

- Continued decreases in current program materials
- Need to examine approaches to recovering big-ticket materials

Future Recycling Initiatives & Challenges

Program Recyclables in Residential Waste Stream



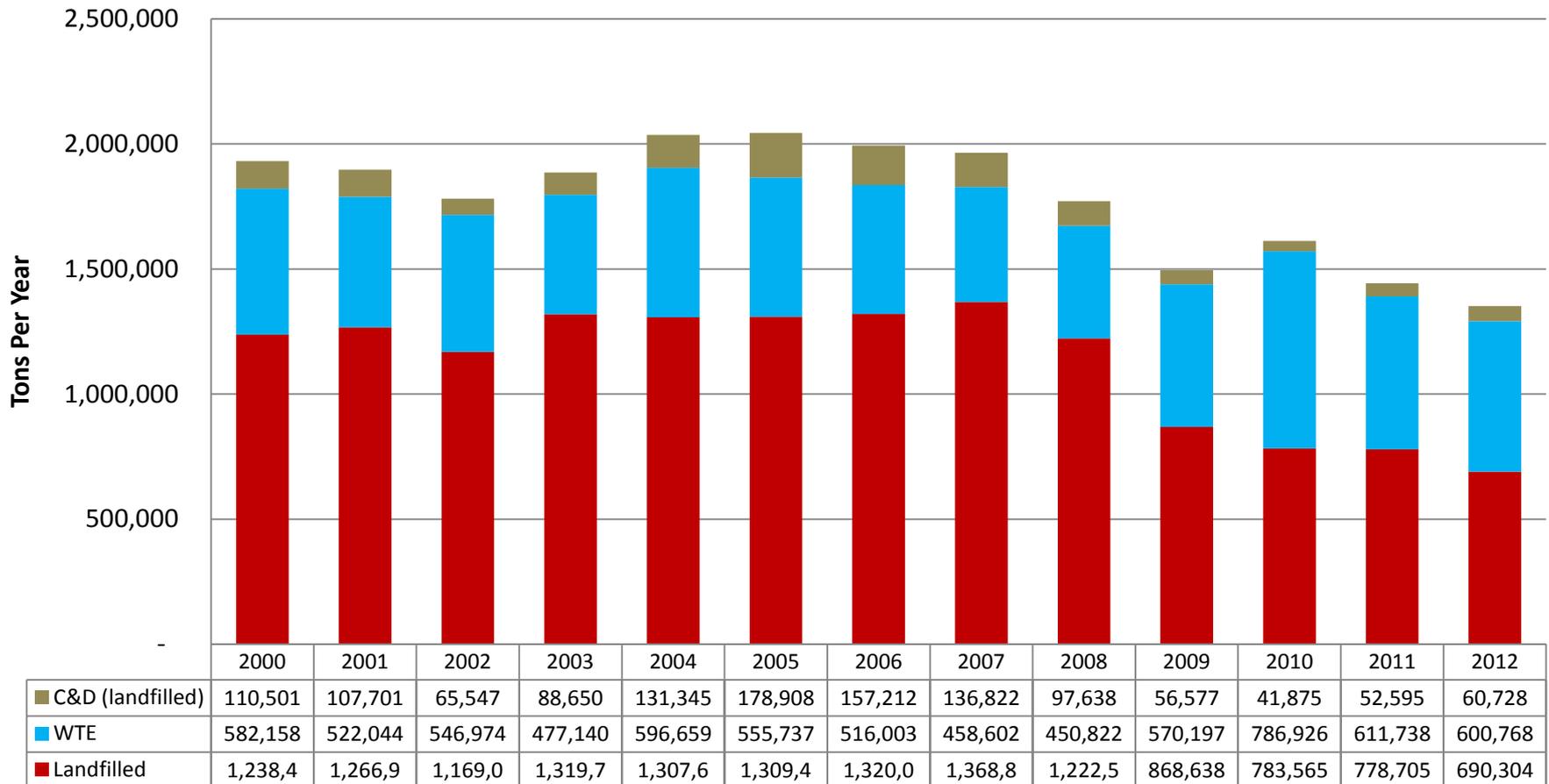
- An additional 30K+ tons needed from residential program to reach Greenworks goal.
- Increase use of drop-off center network
- Increased public space recycling
- New MRF contract FY 2015; recyclables sort needed
- Fully integrate outreach and linkages between recycling at home and away from home

Solid Waste Processing & Disposal:

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Philadelphia MSW Disposal 2000-2013 *(includes commercial & residential)*



Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Philadelphia Residential Solid Waste Disposal

- RFP for disposal let in late 2011; contracts awarded in May 2012 to Waste Management and Covanta
 - Waste Management contract FY 2013 costs: \$26 million
 - Covanta contract FY 2013 costs: \$8.7 million
- Total disposal costs for FY 2013: \$34.7million, a \$8.4 million decrease from FY 2013 budget (19% decrease)
- Total disposal costs for 7 year contract term \$256 million; a \$69 million decrease from budgeted disposal costs (FY 2013-19)

Solid Waste Disposal Contract

Location of Waste Transfer and Processing Facilities

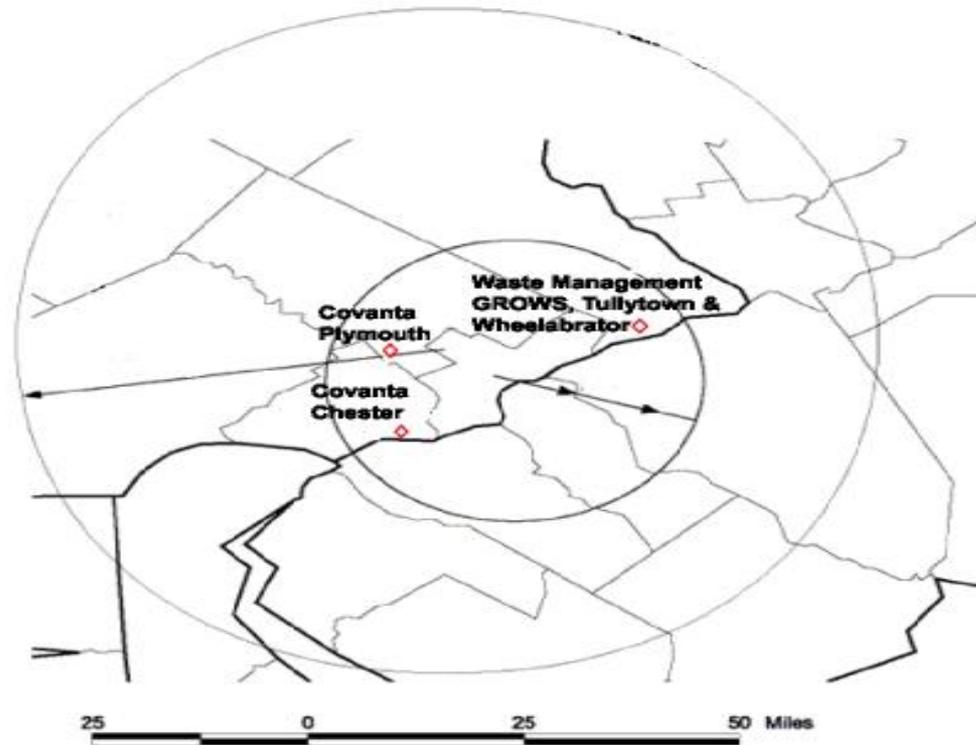


Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Solid Waste Disposal Contract

Disposal Sites City of Philadelphia Disposal Contracts FY 13-19



Note Disposal Site Location are Approximate and not Geocoded

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner



Disposal Contract Terms: Waste Management/Wheelabrator

- Waste Management/Wheelabrator = 550-1,250tons/day
 - Wheelabrator Falls WTE plant
 - G.R.O.W.S. or Tullytown landfills
- SpecFUEL™ plant to accept 500-1,200 tons per day (beginning late 2013)
- FY 2013 contract value = \$26 million
 - \$57.95 per ton tipping fee



Disposal Contract Terms: Covanta 4Recovery

- Covanta 4Recovery= 550 tons per day
- FY 2013 contract value = \$8.7million
 - Tipping fees range from \$54 to \$61.95 per ton based on delivery location



Act 101 Plan Update

Integrating Policies and Studies:

- Sanitation Division Priorities
- Greenworks Plan goals
- Waste Composition Study
- Disposal RFP and Contracts
- MRF Contract
- Philadelphia 2035

Integrating Plans Ordinances and Regulations:

- Act 101 Plan Update
- Environmental Management System Plan Update
- Revised Recycling Ordinance
- New Hauler Licensing Ordinance
- Revised Residential and Commercial Regulations

Act 101 Plan Update

- Update the disposal facilities list for privately collected waste (Includes surveys of disposal sites and new disposal capacity availability agreements must be put in place).
- Update waste generation rates.
- Update the description of various solid waste and recycling components of the Plan:
 - Waste and recycling collection and disposal systems for publicly and privately collected waste
 - Commercial recycling.
 - Recyclable materials markets.
 - Recyclable materials processing capabilities/capacity.
 - Recycling education programs.
- Demonstrate how the City will continue to achieve the state's 35% recycling goal
- Update the biosolids management section of the Plan (PWD).

Structure of Act 101 Plan

- Prescribed in Statute...
- Plan 2024 Document 30 – 40 pages overview of plan and background studies, data and description, of policies, goals and implementation schedule...
 - Existing Recycling and Waste Management Programs
 - Disposal Capacity and Recycling Markets
 - Processing and Disposal
 - Community Outreach
 - Technology Trends
 - Sustainability and Environmental Management
 - Policy Goals, Objectives and Strategic Priorities
 - Implementation Plan
- Appendix:
 - PADEP Planning Requirements Document: background / inventory data defined as required by Act 101 of 1988
 - Studies, reports and plans such as the waste composition study, EMS Plan, Disposal RFP, Commercial Recycling Plan etc.
 - Implementation Documents such as Ordinances, Regulations, and Contracts

Act 101 Plan Update: Projected Pathway Forward

Task	2013			2014						
	October	November	December	January	February	March	April	May	June	July
PADEP Notification (Completed July 2013)										
Appoint SWRAC										
Revise Recycling Ordinance										
Waste Collection Activity Ordinance										
Inventory Process										
Technology Assessment										
Waste Disposal and Recycling Market Assessment										
Draft Updated Regulations										
Integrate other Plans and Policies										
Finalize Goals and Policies										
Prepare Plan for PADEP										

Michael A. Nutter, Mayor
David J. Perri, P.E., Acting Commissioner

