MDE **Maryland Department of the Environment**

Zero Waste Maryland

Draft Plan

May 22, 2014

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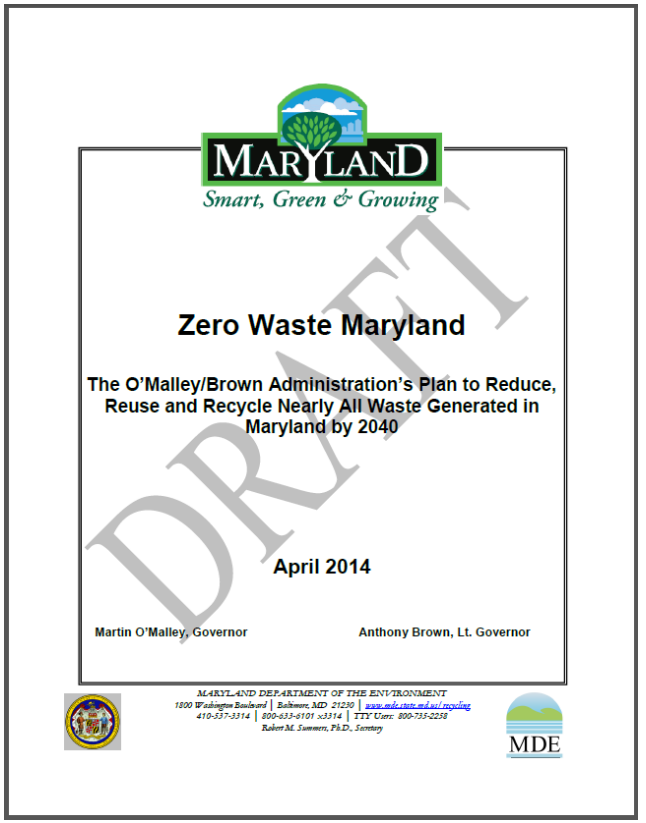
Current Status

- Full draft plan published online April 30, 2014.
- Initial comments requested by May 23, 2014.



Zero Waste Principles

- Expand focus from end-of-life management to the full lifecycle
- Increase emphasis on product design, source reduction
- Prioritize management methods to capture maximum value from materials
- Set ambitious, aspirational goals

"...Zero Waste means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them…"

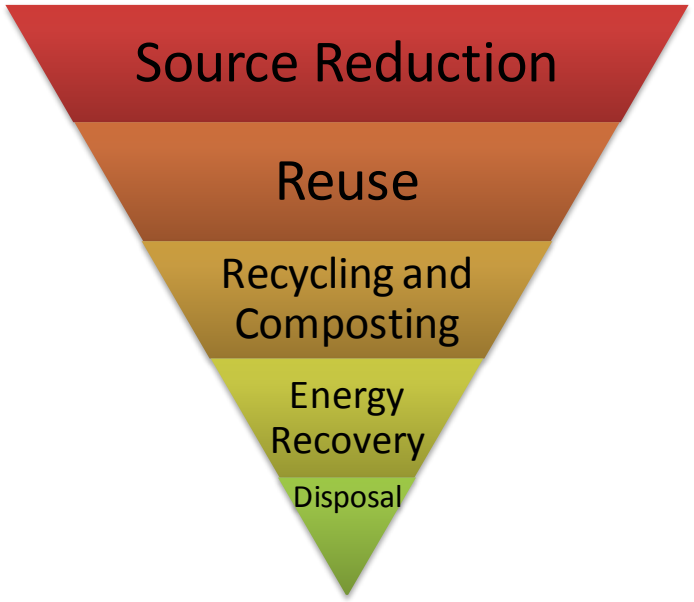
(ZWIA, http://zwia.org/standards/zw-definition/)

Benefits of Zero Waste

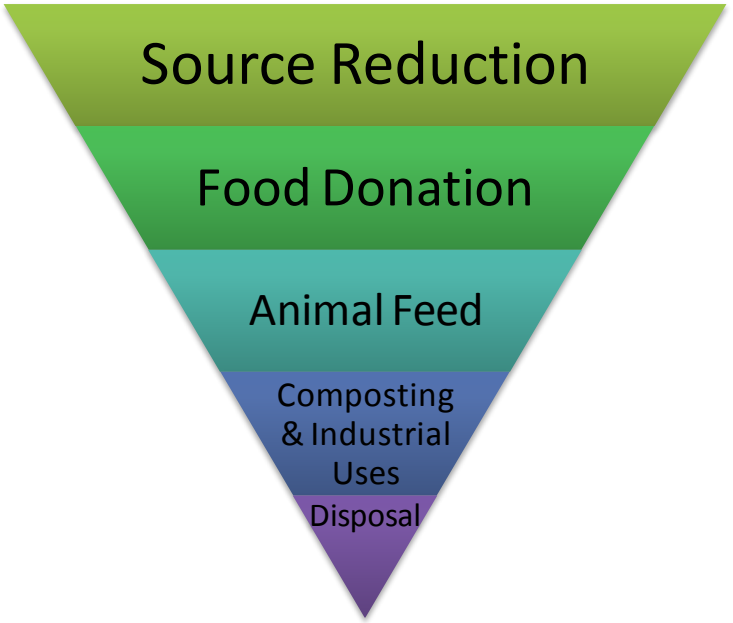
- Expand business opportunities and sustain more jobs
- Conserve natural resources
- Avoid disposal costs
- Reduce GHG emissions
- Save energy
- Conserve landfill capacity

Zero Waste Hierarchies

Materials Management Hierarchy



Food Management Hierarchy



Adapted from U.S. EPA, "Nonhazardous Waste Management Hierarchy" and "Food Recovery Hierarchy,"
http://www.epa.gov/osw/nonhaz/municipal/hierarchy.htm;
http://www.epa.gov/osw/conserve/foodwaste/index.htm

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Zero Waste Goal Examples

Jurisdiction	Goal
Massachusetts	2020: Reduce 2008 tons disposed by 30% 2050: Reduce 2008 tons disposed by 80%
Delaware	2015: Recycling rate of 50% and diversion rate of 72% 2020: Recycling rate of 55% and diversion rate of 82%
California	2020: Recycling rate of 75%
Washington, DC	2032: Diversion rate of 80%. Send zero waste to landfills and reduce waste generated by 15%.
Austin, TX	2015: Diversion rate of 50% 2020: Diversion rate of 75% 2025: Diversion rate of 85% 2030: Diversion rate of 90% 2040: Diversion rate of 95%
San Francisco, CA	2020: Diversion rate of 100%
Seattle, WA	2015: Recycling rate of 60% 2022: Recycling rate of 70%

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Maryland Zero Waste Goals

	2012*	**2015**	**2020**	**2025**	**2030**	**2040**
Overall Waste Diversion	49%	54%	65%	70%	75%	85%
Overall Recycling	45%	50%	60%	65%	70%	80%
Recycling, Food Scraps	9%	15%	35%	60%	70%	90%
Recycling, Yard Trimmings	71%	73%	76%	80%	83%	90%
Water Reuse	1.5%	2%	7%	15%	25%	40%

* 2012 actual values included for comparison; all others are goals.

Key Materials

Material	Percent of Waste Stream*	Estimated Recycling Rate in MD	Tons Left to Capture
Yard Trimmings	13.5%	70.9%	256,805
Food Scraps	14.5%	8.5%	870,435
Paper	28.0%	50.7%	904,986
Plastic	12.7%	8.6%	672,487

*Top 4 materials as a portion of the U.S. waste stream, based on EPA, Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2011,http://www.epa.gov/osw/nonhaz/municipal/pubs/MSWcharacterization_508_053113_fs.pdf.

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Figure 1: Maryland Recycling and Waste Diversion Rates, 1992 - 2012

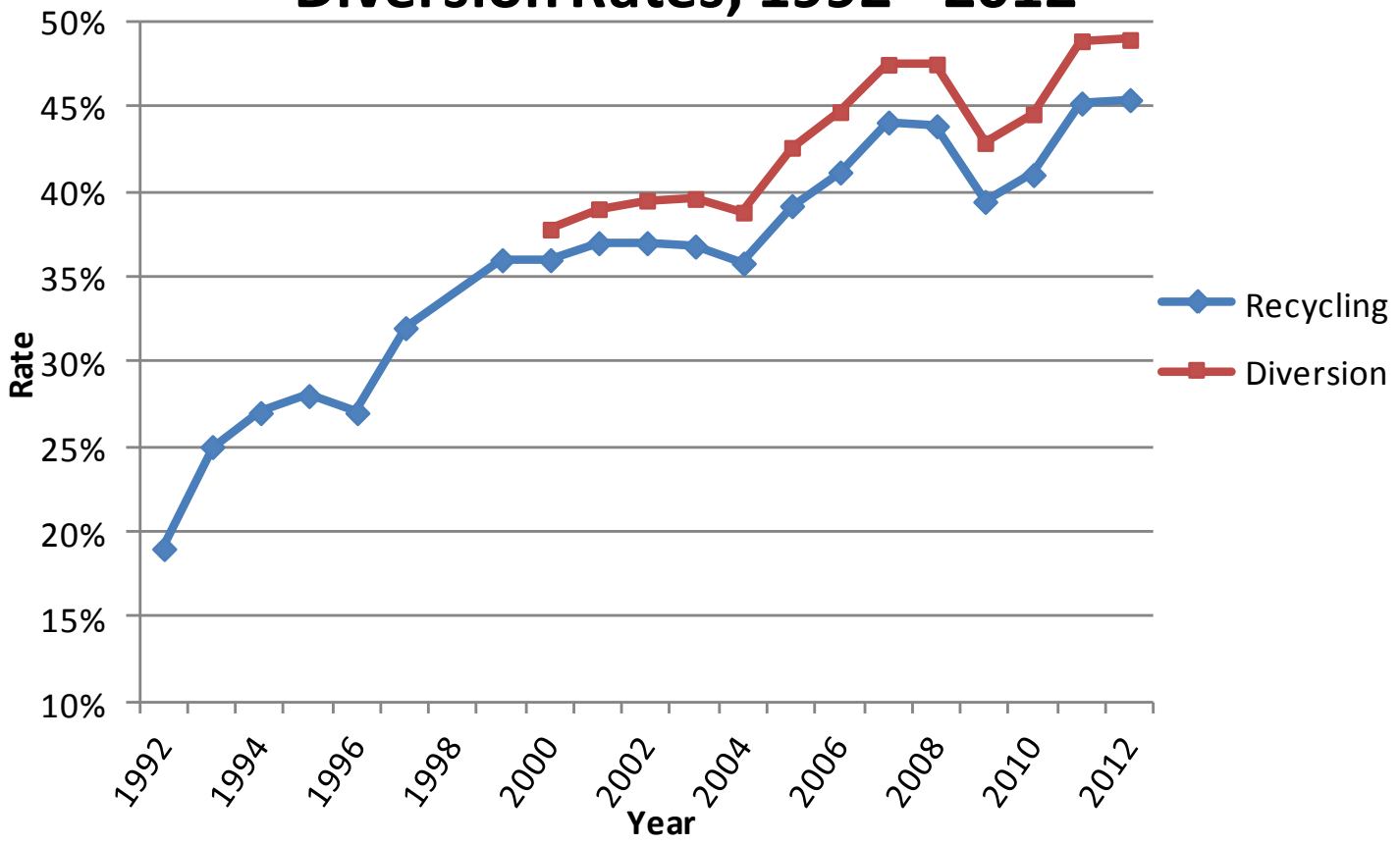

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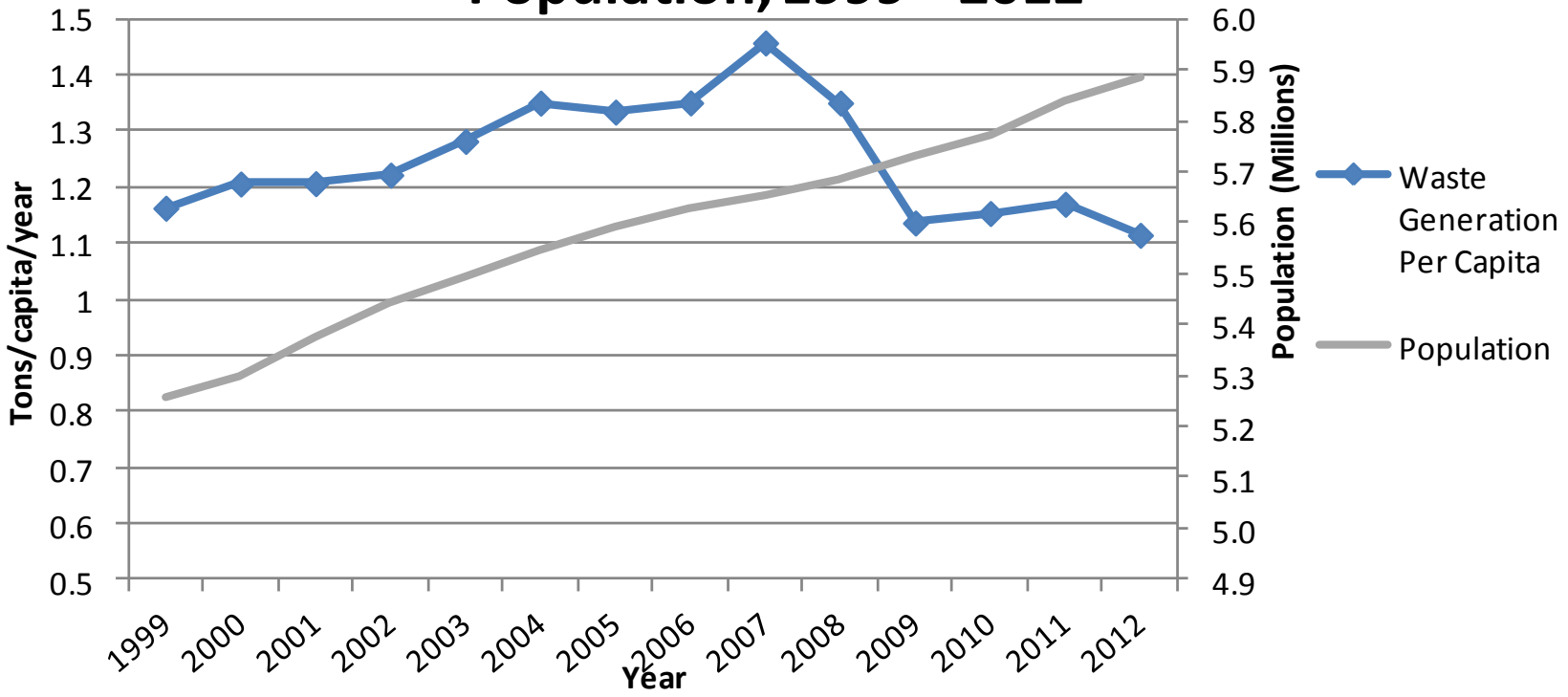
Figure 3: Waste Generated Per Capita and Population, 1999 - 2012



Challenges

- Reducing reliance on landfills
- Securing sustainable funding for waste diversion programs
- Increases in waste generation and population
- Complexity of the lifecycle approach

Action Plan

- Divided into 8 broad objectives.
- Under each objective, proposes initiatives in the following timeframes:

Underway	In process of being implemented now
Near term	2014 – 2020
Medium term	2021 – 2025
Long term	2026 – 2030

Objective 1 - Increase Source Reduction and Reuse

1.1	Study and update source reduction credits by 2016	2014 – 2020
1.2	Conduct a source reduction outreach campaign directed at consumers	2014 – 2020
1.3	Provide source reduction technical assistance to businesses	2014 – 2020
1.4	Ensure EPR systems are designed to encourage source reduction	2014 – 2020
1.5	Increase water Conservation	2014 – 2020
1.6	Increase water Reuse	2014 – 2020
1.7	Organize waste Exchanges	2021 – 2025
1.8	Research methods of encouraging sustainable product design	2026 – 2030

Objective 2 – Increase Recycling Access and Participation

2.1 Increase mandatory county recycling rates	Underway
2.2 Implement multifamily recycling	Underway
2.3 Quantify the level of business recycling	2014 – 2020
2.4 Address away-from-home and event recycling	2014 – 2020
2.5 Phase in disposal bans on recyclables	2014 – 2020
2.6 Encourage pay-as-you-throw (PAYT)	2014 – 2020
2.7 Support extended producer responsibility for packaging	2014 – 2020
2.8 Consider further increases in minimum county recycling and maximum county disposal rates	2014 – 2020
2.9 Adopt universal recycling	2026 – 2030

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Objective 3 – Increase Diversion of Organics

3.1	Finalize and implement new composting regulations	Underway
3.2	Publish composting facility guidance	2014 – 2020
3.3	Encourage food donation	2014 – 2020
3.4	Launch an education and outreach campaign targeted to organics	2014 – 2020
3.5	Phase in a disposal ban on commercial and institutional organics	2014 – 2020
3.6	Encourage anaerobic digestion	2014 – 2020
3.7	Decrease plastic bag usage for organics collection	2014 – 2020
3.8	Decrease disposal of sewage sludge	2014 – 2020
3.9	Institute universal organics diversion	2026 – 2030

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Objective 4 – Address Specific Target Materials

4.1 Conduct a waste sort	2014 – 2020
4.2 Adopt a disposal ban on electronics	2014 – 2020
4.3 Establish EPR programs for mattresses and other difficult-to-manage materials	2014 – 2020
4.4 Adopt a carryout bag reduction and recycling law	2014 – 2020
4.5 Adopt a beverage container recycling law	2014 – 2020
4.6 Study potential solutions for pharmaceuticals	2014 – 2020
4.7 Consider other disposal bans	2021 – 2025
4.8 Consider product bans for non-recyclable materials	2026 – 2030

Objective 5 – Incentivize Innovation and Develop Markets

5.1	Review regulatory requirements and provide guidance	2014 – 2020
5.2	Support waste diversion research	2014 – 2020
5.3	Initiate and fund demonstration projects	2014 – 2020
5.4	Establish a funding system for provision of financial incentives	2014 – 2020
5.5	Establish by 2018 financial incentives for new reuse and recycling facilities	2014 – 2020
5.6	Collaborate across agencies on business and market development	2014 – 2020
5.7	Incentivize adoption of new programs by local governments	2014 – 2020

Objective 6 – Recover Energy from Waste

6.1	Assess and compare environmental impacts of disposal technologies	Underway
6.2	Encourage anaerobic digestion	2014 – 2020
6.3	Support gasification and other clean energy technologies	2014 – 2020
6.4	Utilize WTE for managing solid waste after maximum removal of recyclables	2014 – 2020

Objective 7 – Collaborate and Lead by Example

7.1	Increase environmentally preferable procurement/management of electronics by State government	Underway
7.2	Increase procurement and use of compost	2014 – 2020
7.3	Seek opportunities for regional collaboration	2014 – 2020
7.4	Create a State government source reduction checklist	2014 – 2020
7.5	Increase procurement of recycled products	2014 – 2020
7.6	Increase State government recycling rates	2014 – 2020
7.7	Markedly increase composting and anaerobic digestion of State government organic waste	2014 – 2020

Objective 8 – Conduct Education and Outreach

8.1 Seek sustainable funding for outreach	2014 – 2020
8.2 Provide funding to local governments for outreach activities	2014 – 2020
8.3 Establish a zero waste business recognition program	2021 – 2025
8.4 Conduct outreach at schools	2021 – 2025
8.5 Conduct business recycling assistance	2021 – 2025

Questions?

View the full draft Plan at:
http://mde.maryland.gov/programs/Marylander/Pages/ZeroWastePlan.aspx

Please e-mail any comments to zerowaste.mde@maryland.gov by May 23, 2014.