



City Nature Challenge

Baltimore Metropolitan Area 2023

Scott Shatto / sshatto@aquarium.org

What is the City Nature Challenge?

A 4-day long annual community science competition for cities around the world to find and document plants and wildlife in urban areas.



CITY NATURE CHALLENGE IS ORGANIZED BY



CALIFORNIA
ACADEMY OF
SCIENCES

NATURAL
HISTORY
MUSEUM
LOS ANGELES COUNTY

of cities that
participated

2

San Francisco

of people that
participated

1K

of observations made

19,800

of species
identified

2,544

Los Angeles





**City
Nature
Challenge
2021**

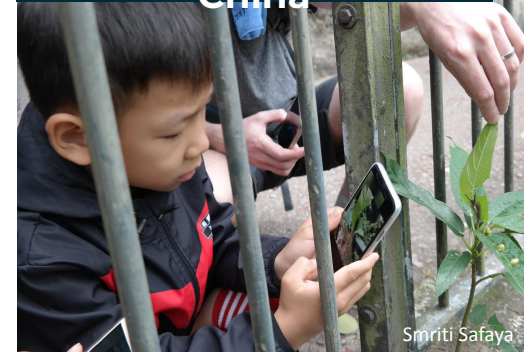
Halifax, NS, Canada



Bristol & Bath, UK



Hong Kong SAR, China



Smriti Safaya

La Paz, Bolivia



Kuala Lumpur, Malaysia



Benjamin Ong

Collective Results 2022



1,694,877

Total Observations



50,176

Total Species



67,220

Total People

447 Cities



Worldwide

Baltimore Metro Area 2022

of people that
participated

709

of observations made

7,890

of species
identified

1,393





Baltimore Metro Area 2022 Breakdown

	Observations	Species Identified	Identifiers	Observers
Baltimore County	2605	763	313	236
Baltimore City	1575	512	235	163
Anne Arundel County	1541	570	218	145
Howard County	1102	422	194	162
Harford County	582	288	129	58
Queen Anne's County	307	171	79	24
Carroll County	245	163	71	46



Why is the City Nature Challenge Important?

- Connects people to nature
- Collects urban biodiversity data important for managers & scientists
- Connects people to each other and builds community
- Grows volunteer biodiversity documentation globally
- Have fun through some friendly competition!

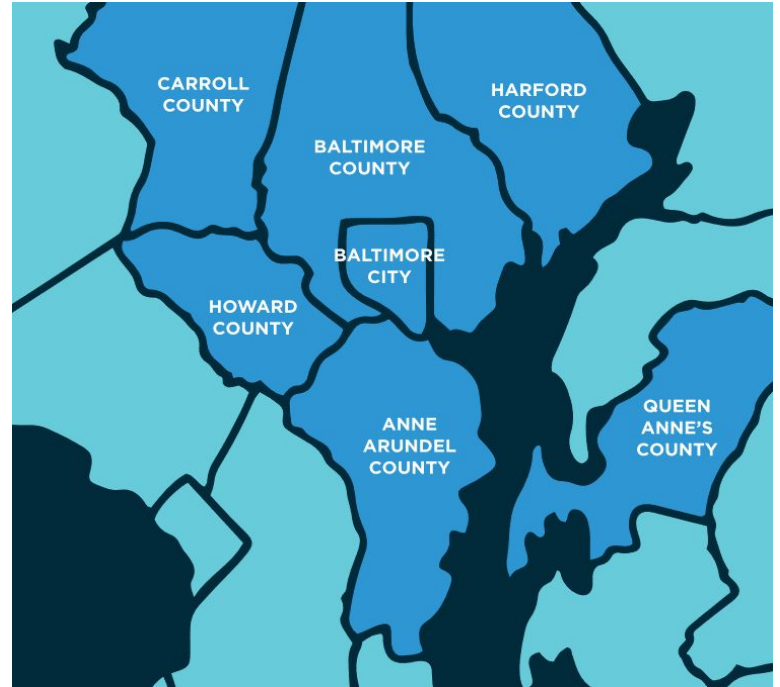
What is the data used for?

- Global species population dynamics
- Local changes in our urban ecosystem
- Helps inform management and policy decisions
- Contributes to an ever-growing data pool



City Nature Challenge 2023: Baltimore

- Starts Friday, April 28 12:01AM
- Ends Monday, May 1 11:59PM
- 9:00am May 7 deadline for uploads and IDs
- Covers Baltimore Metropolitan Area
- www.aqua.org/baltimore-cnc





How Can I Participate?

- Partner with us and spread the word!
- Make observations between **April 28th** and **May 1st**
- Participant or host an observation event
- Help identify!

Ready, Set, Upload



**Step 1: Download the
iNaturalist App**



**Step 2: Find Wildlife
& Photograph What
You Find**



**Step 3: Upload Your
Observations**

Hosting an Observation Event

What to know:

- Date and Time – during the City Nature Challenge
- Location – in the Baltimore Metropolitan Area
- Leader – main contact
- Audience – public or private?

What to have:

- A device (or many) to record observations

Event Ideas:

- Stream monitoring, student campus observations, bird walk, tree planting, guided hike, BioBlitz





Important Links

City Nature Challenge, Baltimore
Area Webpage and Pledge Page:

www.aqua.org/Baltimore-cnc



Partner Interest Form:

<https://aqua.formstack.com/forms/cnc23>



Partner Observation Event List:

<http://bit.ly/40Y562O>

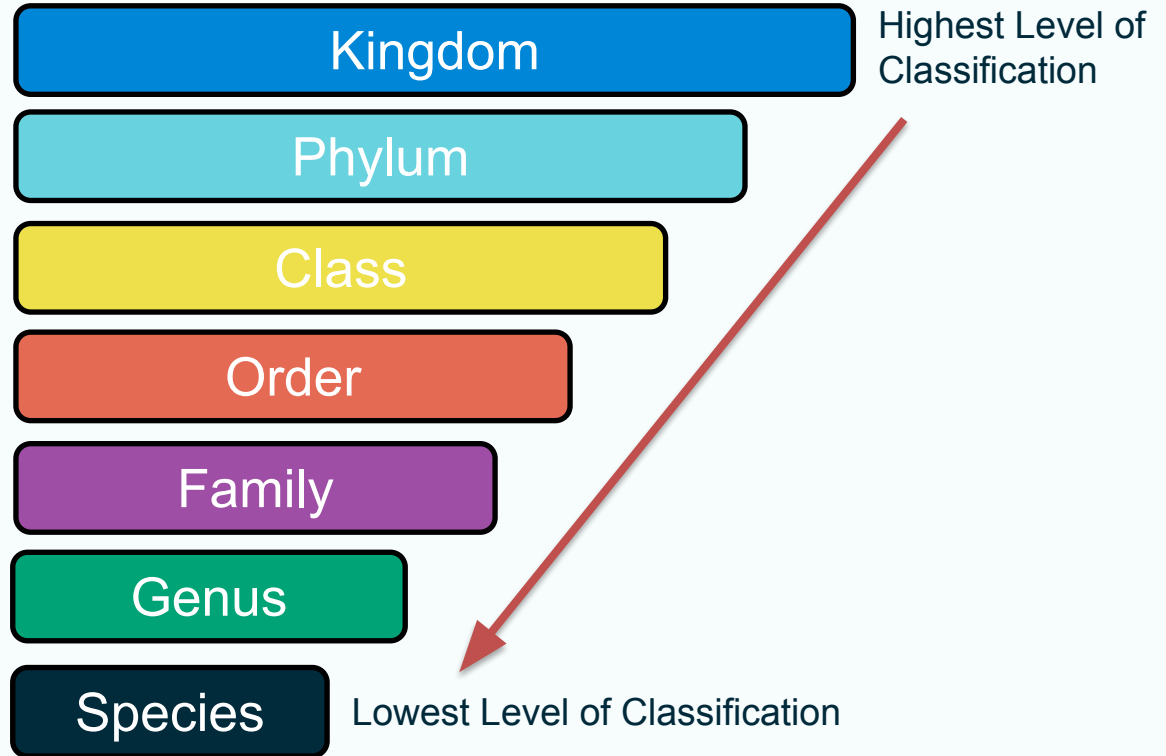


Using iNaturalist



Taxonomy 101

The science of classifying organisms



Taxonomy 101

The science of classifying organisms

Kingdom

Animalia

Phylum

Chordata

Class

Mammalia

Order

Artiodactyla

Family

Cervidae

Genus

Odocoileus

Species

O. virginianus (white-tailed deer)



Demonstration



Making a Research Grade Observation

Research Grade Observations Must:

1. Have a photo
2. Have an accurate date and location
3. Cannot be captive or cultivated (to count for city nature challenge)
4. Over 2/3rds of people who ID'd it have to agree on what species it is



Identifying Species on iNaturalist



- Through iNaturalist.org or app
- Join the City Nature Challenge 2023: Baltimore Area to see observations
- Agree, comment, or suggest an identification
- Community IDs require 2/3rds consensus



Tips for Making a Good Observation

1. Capture the details

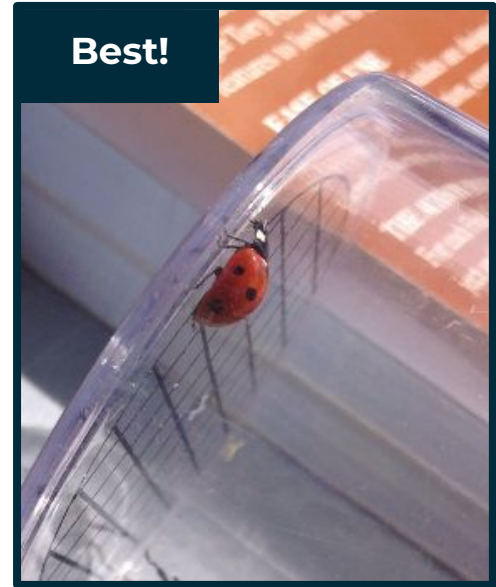
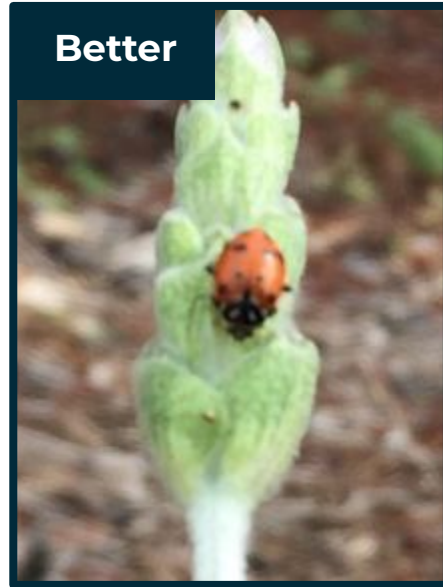
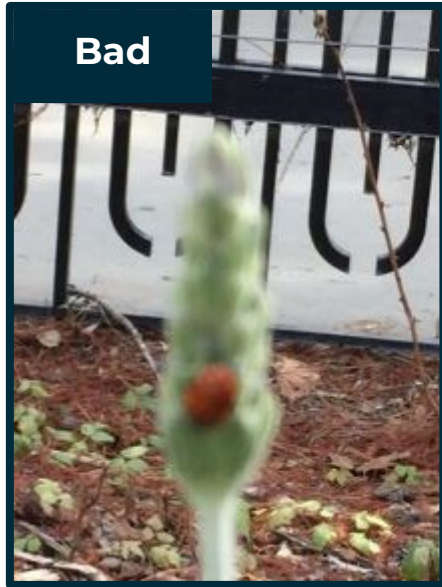
Bad



Good!



Tips for Making a Good Observation



Tips for Making a Good

2. Different angles Observation



Tips for Making a Good

4. ^{Show scale} Observation



Tips for Making a Good Observation



Questions?

Thank you!

Scott Shatto / sshatto@aqua.org

Environmental Science Outreach in Baltimore

Dr. Alison Cawood

Director of Public Engagement

Smithsonian Environmental Research Center



**The
Smithsonian
Environmental
Research
Center (SERC)**

SERC, which is located on Rhode River in Edgewater, Maryland, was founded in 1965.

Nearly 3,000 acres with 16 miles of shoreline

20 Research Labs and ~150 Staff



Environmental Science at the Land-Sea Interface





Climate Change and Sea Level Rise

Health and Diversity of Forests





Invasive Species



Species Interactions

Restoring Native Species



Tim & Doug Watts

Environmental Science Outreach Activities in Baltimore

Science to Go

Family-focused events in partnership with libraries with hands-on activities and interactions with SERC researchers.



Environmental Monitoring in the Middle Branch

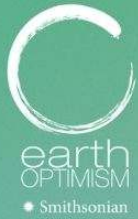
Working with partners to develop environmental monitoring program that engages community members and research scientists



Monitoring Restoration with Faith Communities

Engaging youth and faith communities in West Baltimore in efforts to monitor environmental restoration activities





EARTH OPTIMISM YOUTH ACTION & LEADERSHIP



A Smithsonian educational partnership to establish a collaborative network of organizations to advance youth-led conservation and environmental justice projects.

Working in collaboration with Smithsonian Affiliate, the Reginald F Lewis Museum of Maryland African American History and Culture, students at Reginald F Lewis High School gain:



Hands-on experiential field excursions



Lessons to increase environmental science and justice literacy



Guest speakers who are both subject matter experts and industry professionals



Seed funding for environmental action project implementation



Paid summer internships

Looking Forward

Baltimore City 10-Year Solid Waste Management Plan

.....
Baltimore Commission on
Sustainability

19 April 2023



Team Introductions



Agenda

1. Background & Purpose

2. Current Waste Infrastructure & Programs

3. Plan of Action

4. Community Input

5. Questions & Comments



Background & Purpose

What is the Solid Waste Management Plan?

- Describes the state of Baltimore City's solid waste infrastructure and programs
- Discusses strategies to reduce waste, decrease illegal dumping and litter, manage landfill, and sustain solid waste operations for the next decade
- The content of the Plan follows a strict set of guidelines outlined by Maryland regulations (COMAR 26.03.03) and is submitted to the Maryland Department of the Environment

Section 1
**Overview of Goals,
City Structure, &
Regulatory Guidelines**

Section 2
**Background
Information**

Section 3
**Overview of
Existing System**

Section 4
**Assessment of
Needs &
Constraints**

Section 5
Plan of Action

Sources of Information

**Population
Estimates**



**Historical
Data**



**Tonnage
Reports**

**City
Planning
Documents**



Public Input

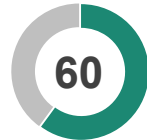


**Regulatory
Guidelines**

Plan Stages

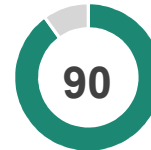
1. 60% Draft

- Draft Sections 1-4
- Public Meeting



2. 90% Draft

- Completed with feedback from 60% considered
- Draft Sections 1-5
- Public meeting



3. 99% Draft

- Plan and supporting documents will be completed with feedback from 90% draft considered
- Public meeting will review pre-final version of Sections 1-5



4. 100% Draft

- Plan will be completed with feedback from 99% draft considered
- Two public final reviews of the plan will be completed
- Plan sent for State approval and adoption by Baltimore City Council



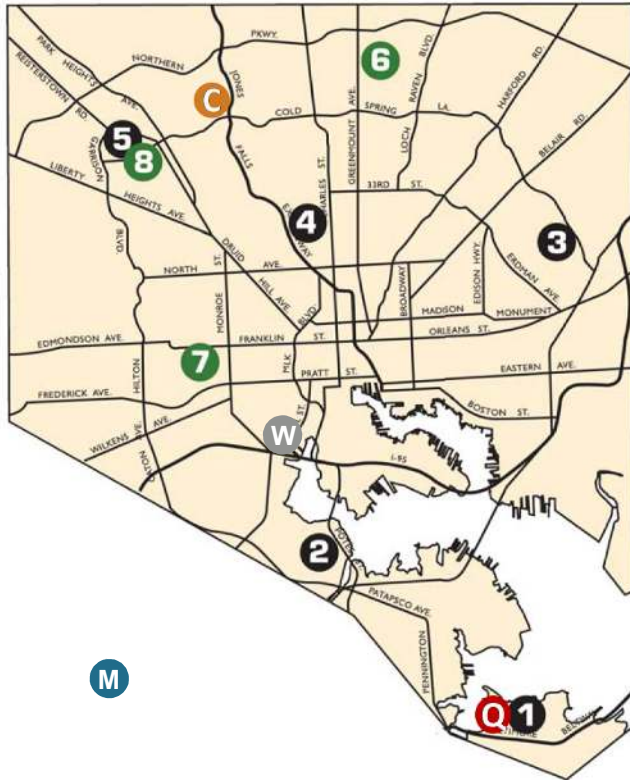
Key Events

Time Period	Description
February - April 2023	Public Meetings
May 2023	Draft Plan Submitted to the State
August 2023	Response from the State
December 2023	Submitted to Mayor & City Council for Formal Adoption
January 2024	Plan goes into Effect



Current Waste Infrastructure & Programs

Existing Solid Waste Facilities



- (1) QRL Convenience Center
- (2) Reebird Ave. Convenience Center
- (3) Bowley's Lane Convenience Center
- (4) Sisson St. Convenience Center
- (5) Northwest Transfer Station
- (6) York Road Substation*
- (7) Calverton Road Substation*
- (8) Lewin Ave. Substation*
- (C) Camp Small
- (Q) Quarantine Road Landfill
- (W) WIN Waste
- (M) Materials Recovery Facility

*Recyclable items only



Existing Recycling & Diversion Efforts

Source reduction and diversion initiatives

- Polystyrene ban
- Plastic bag ban
- Recycling can program
- Recycling initiatives in city schools
- Outreach events and social media



Curbside Single Stream Recycling

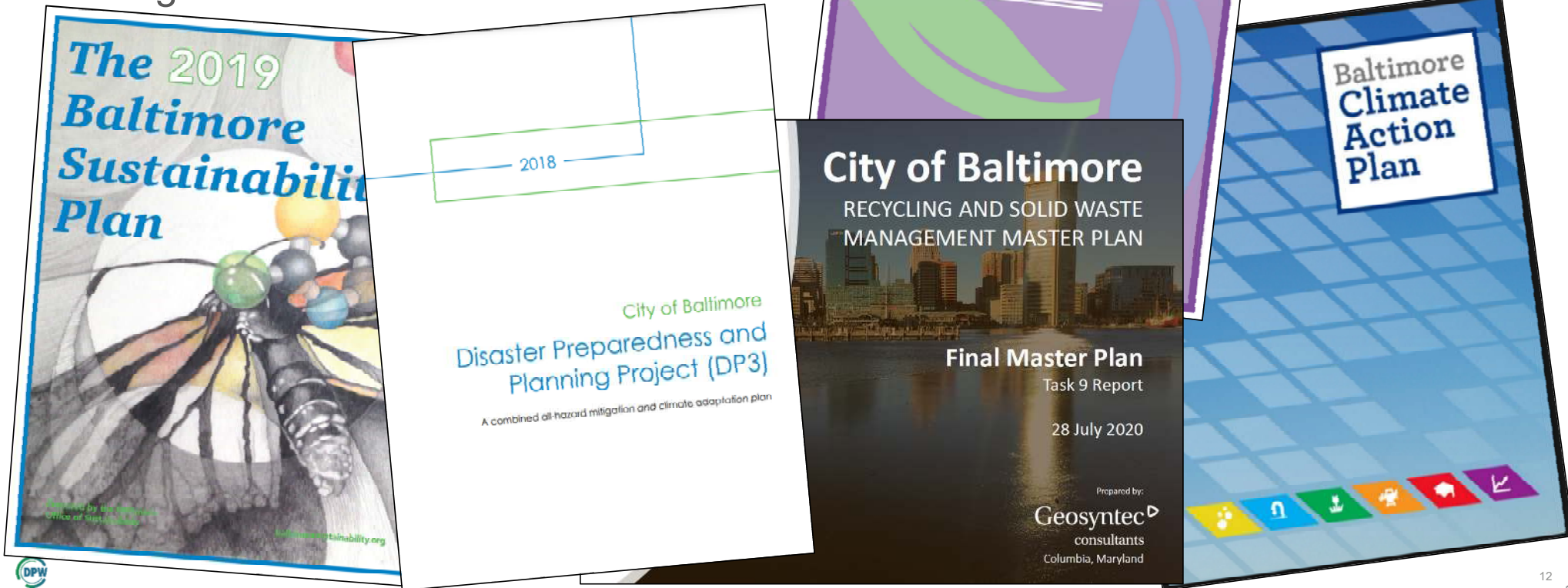
- Biweekly curbside collection of single-stream recyclables
- Materials accepted in the collection program include aluminum and steel/tin cans, cardboard, glass containers, mixed paper, and plastic bottles and jars

Organics Diversion and Composting

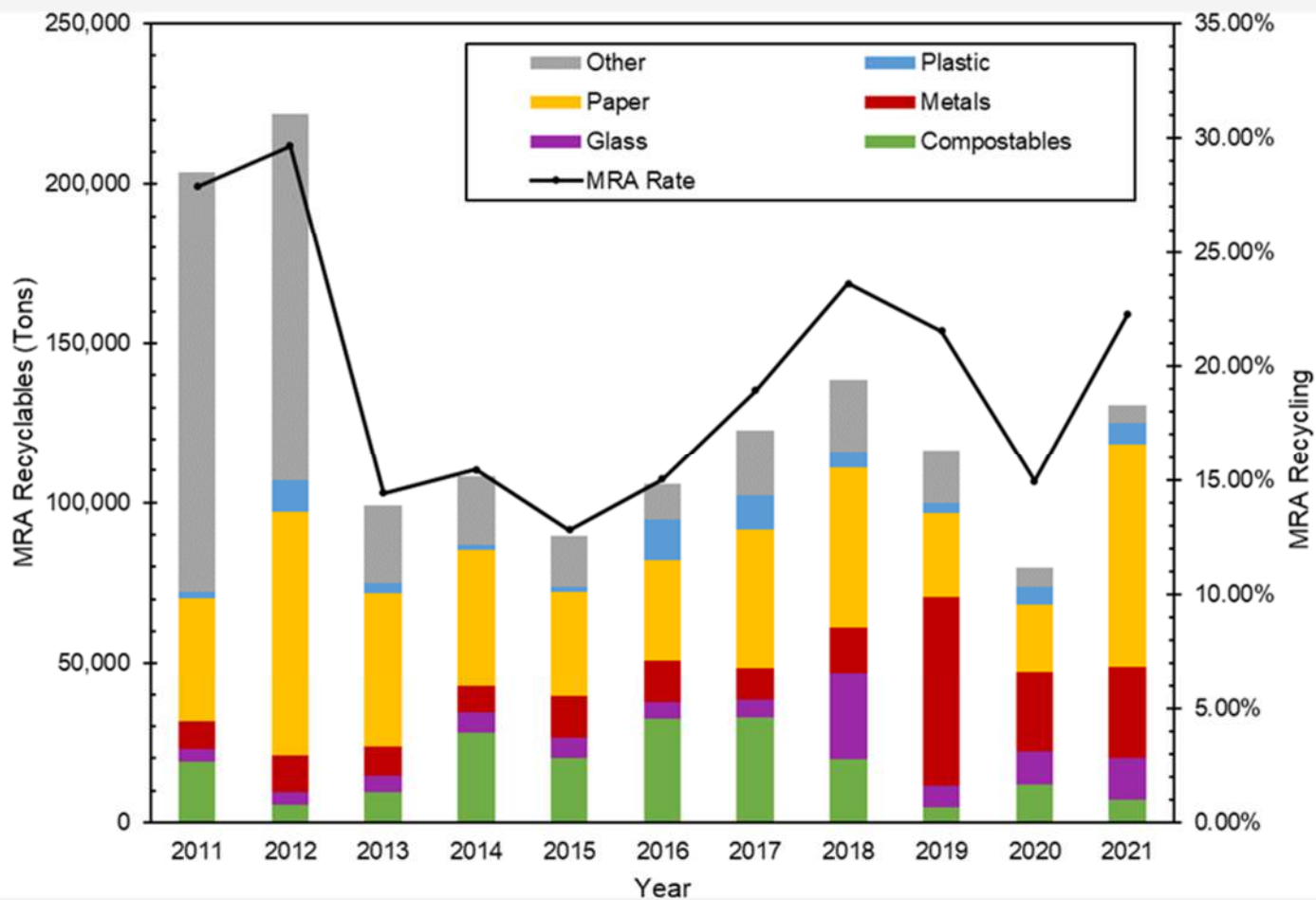
- Public education program promoting grass-cycling and at-home composting
- Food scrap collection at residential drop-off centers and at the Farmer's Market

Existing City Plans

The 10-Year Solid Waste Management Plan integrates information and long-term goals presented in other City planning documents, including:



Baltimore City Recycling Rates



Long-Term Solid Waste Goals

Waste Category	Sector	2020 Diversion Rate	City Reduction Goal	City Diversion Goal
Food Waste	Residential	0.6%	80%	80%
	Commercial	2.1%	50%	50%
Yard Waste	Residential	8.8%	N/A	80%
	Commercial	6.4%	N/A	50%
Recyclables	Residential	15.9%	N/A	90%
	Commercial	36.5%	N/A	90%
C&D	Residential	100.0%	N/A	90%
	Commercial	35.5%	4%	90%
Bulk and Special Waste	Residential	40.0%	50%	60%
	Commercial	93.2%	50%	60%
Other Waste	Residential	0.0%	N/A	90%
	Commercial	61.6%	N/A	90%



Plan of Action

Plan to Improve Waste and Recycling Collection

Recycling



- Update equipment (trucks)
- Improve worker retention
- Reinstate weekly collection
- Improve residents' drop-off centers
- Improve education and outreach

Trash



- Update equipment (trucks)
- Improve worker retention
- Support waste reduction initiatives
- Improve education and outreach

Litter and Illegal Dumping



- Improve cleanup
- Engage local community members
- Improve reporting and enforcement
- Support vulnerable communities

Plan to Improve Recycling

Legislative Actions

- Support legislation that bans recyclables from disposal
- Support legislation requiring mandatory commercial recycling and reporting
- Support legislation that creates enforcement mechanisms for recycling mandates

Administrative Actions

- Improve education and outreach
- Incentivize growth of local recycling markets
- Assess funding mechanisms for waste diversion initiatives

Programmatic Actions

- Improve recycling in public spaces
- Reinstate weekly recycling collection and optimize collection routes
- Offer green business certification



DIVERSION POTENTIAL: 125,300 tons/year



Plan to Improve Organics Diversion

Reducing Food Waste

- Consult Baltimore Food Waste & Recovery Strategy
- Improve education and outreach
- Support state mandates banning food waste disposal

Increasing Organics Diversion Efforts

- Encourage and support backyard and community composting
- Initiate pilot organics collection program
- Improve education and outreach

Encouraging In-City Composting

- Engage private and public sector to construct in-city composting facility
- Offer community workshops and training opportunities
- Support residents interested in obtaining compost operator certification



REDUCTION POTENTIAL: 25,500 tons/year
DIVERSION POTENTIAL: 19,600 tons/year



Plan to Improve Education and Outreach

Community Engaged Planning

- Community-engaged seminars focusing on underserved communities
- Zero Waste Coalition

Resource Development and Strategic Messaging

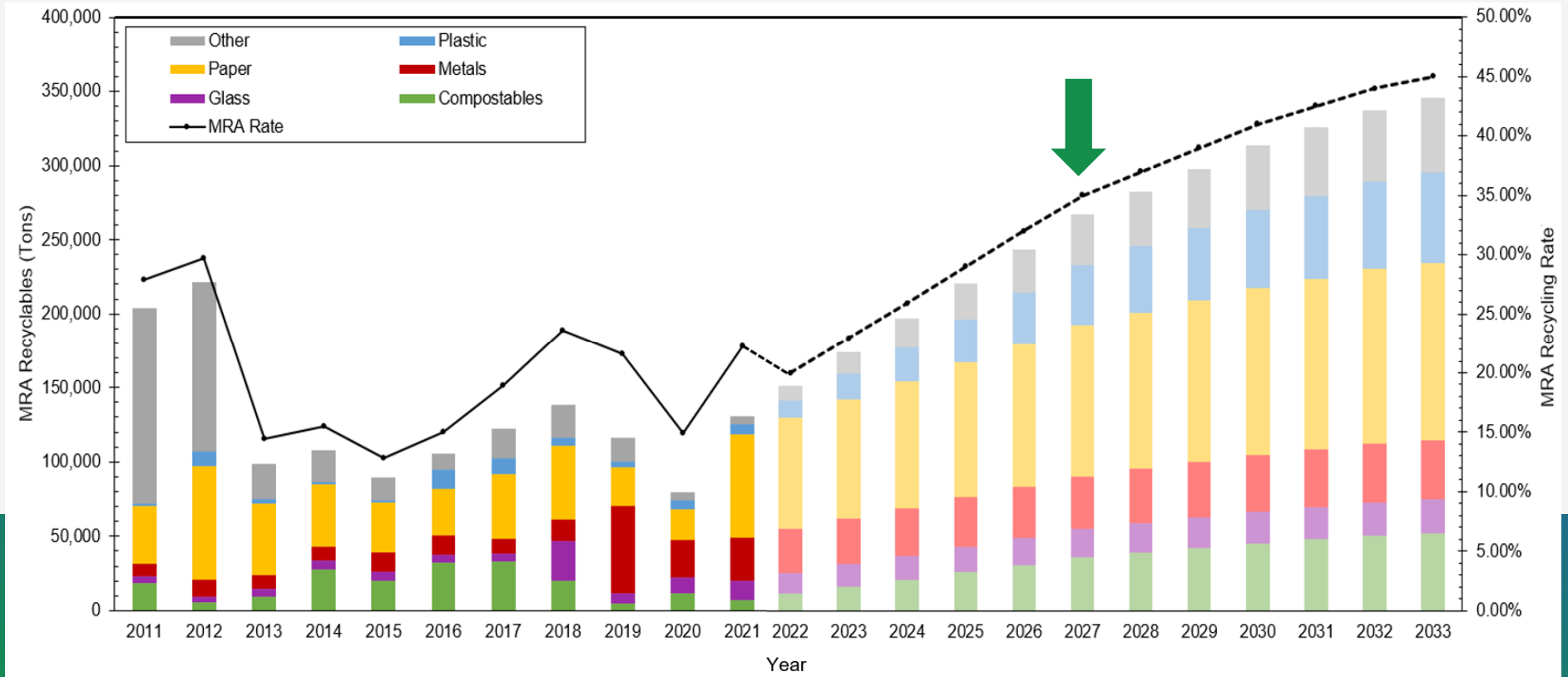
- Guides for hard-to-recycle materials, food waste, and reuse directory
- Four-part educational module on recycling/reuse for public schools
- Community-based social marketing campaign

Workshops

- Repair clinics
- Creative reuse classes
- Circular cooking classes
- Composting
- Community recycling sorts



Projected Recycling Rate



Plan to Improve Waste Disposal and Transfer

Waste Disposal

- Expand Quarantine Road Landfill
- Improve landfill operations
- Improve waste diversion efforts
- WIN Waste contract ends in 2031
- No additional in-city waste disposal options

Waste Transfer

- Improve Northwest Transfer Station operations
- No room to expand Northwest Transfer Station
- Construction of additional transfer capacity as out-of-city disposal option



Estimated Budget Requirements

Component	Capital Expense	Annual Operating Expense	Cost Offsets
SSR Diversion	\$ 9,500,000	\$ 300,000	-
Organics	\$ 21,000,000	\$15,000,000	-
C&D	-	\$ 150,000	-
Bulk Waste	-	\$ 150,000	-
Other	-	\$ 150,000	-
Residential Drop-off Centers	\$ 11,000,000	\$ 500,000	-
Mini-MRFs	\$ 1,300,000	\$ 750,000	\$ 280,000
Composting Facilities	\$ 3,500,000	\$ 1,300,000	\$ 580,000
Eastside Transfer Station	\$ 18,600,000	\$14,400,000	-
Rail Transfer Station	\$ 70,500,000	\$30,700,000	\$20,300,000
Landfill Expansion	\$ 99,500,000	No change	No change
TOTAL	\$225,000,000	\$63,100,000	\$21,200,000



“

The Bureau of Solid Waste has received over
Comments from stakeholders are being gathered and considered for
incorporation through April 24th

”



Community Input

Schedule of Public Meetings

Date	Time	Description
Wednesday, 2/22/2023	6 PM - 7:30 PM	60% Draft Public Review Meeting (Virtual)
Monday, 3/13/2023	2 PM - 3:30 PM	90% Draft Public Review Meeting (Virtual)
Monday, 3/27/2023	6 PM - 7:30 PM	99% Draft Public Review Meeting (Virtual)
Monday, 4/10/2023	6 PM - 7:30 PM	Final Draft Public Review Meeting 1 (In Person & Virtual)
Monday, 4/24/2023	6 PM - 7:30 PM	Final Draft Public Review Meeting 2 (In Person & Virtual)

Please Register at: bit.ly/10YearSWMP



Public In-Person/Virtual Meetings

Date: Monday, 4/10/2023

Location: Enoch Pratt Free Library - Southeast Anchor Branch (3601 Eastern Ave., Baltimore, MD 21224)

Time: 6 – 7:30 PM

Live Spanish translation will be available for the in-person meeting option

Date: Monday, 4/24/2023

Location: Arlington Elementary School (3705 W Rogers Ave, Baltimore, MD 21215)

Time: 6 PM – 7:30 PM

Please Register at: bit.ly/10YearSWMP





To read the draft, provide feedback, or read the Frequent Questions and Comments section, scan QR code or visit:

bit.ly/10YearSWMP

To provide questions or feedback:
SolidWastePlan@BaltimoreCity.gov



To provide written feedback:
[Solid Waste Management Plan](#)
[200 Holliday St.](#)
[10th Floor](#)
[Baltimore, MD 21201](#)

Feedback received during [meetings](#), [via email](#), [mail](#), and those [posted on the draft](#) will be considered for the next draft



Questions & Comments



B A L T I M O R E C I T Y

**DEPARTMENT OF
PUBLIC WORKS**