Maryland
Department of the Environment

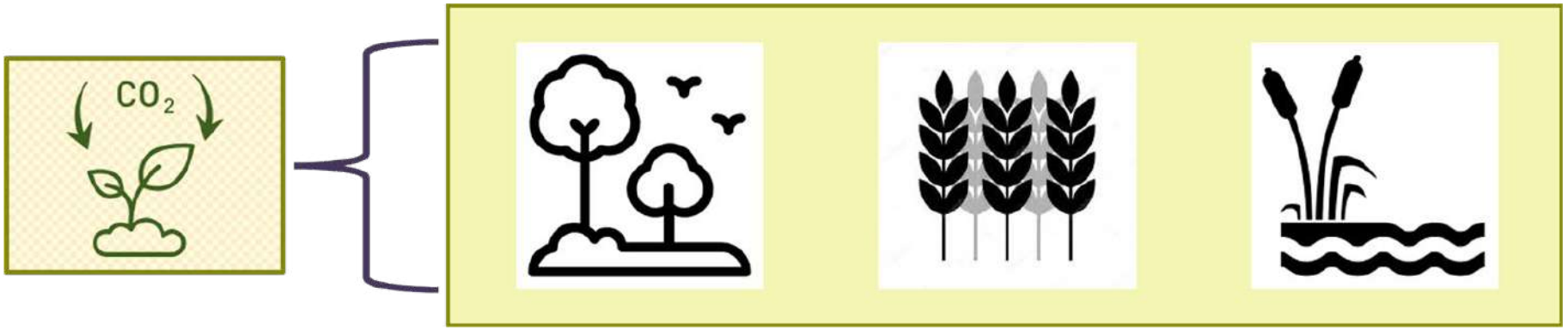
Growing and Supporting Maryland's Natural Climate Solutions

RURAL SUMMIT

November 14, 2023

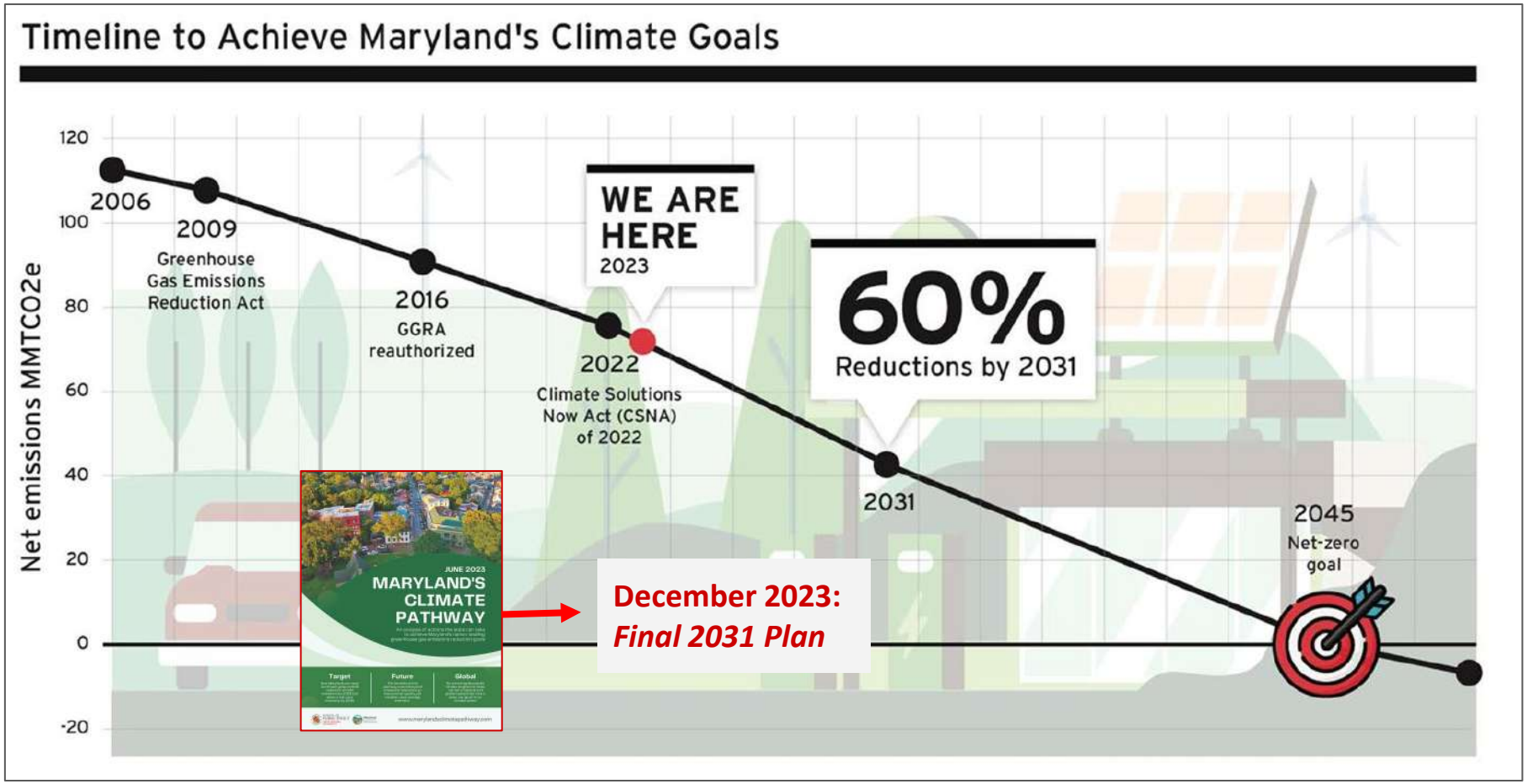
Nature-based Climate Solutions

Can **avoid greenhouse gas emissions** and **enhance carbon sinks** on land and in the sea as well as **build resilience and aid adaptation** to climate change for both nature and people.



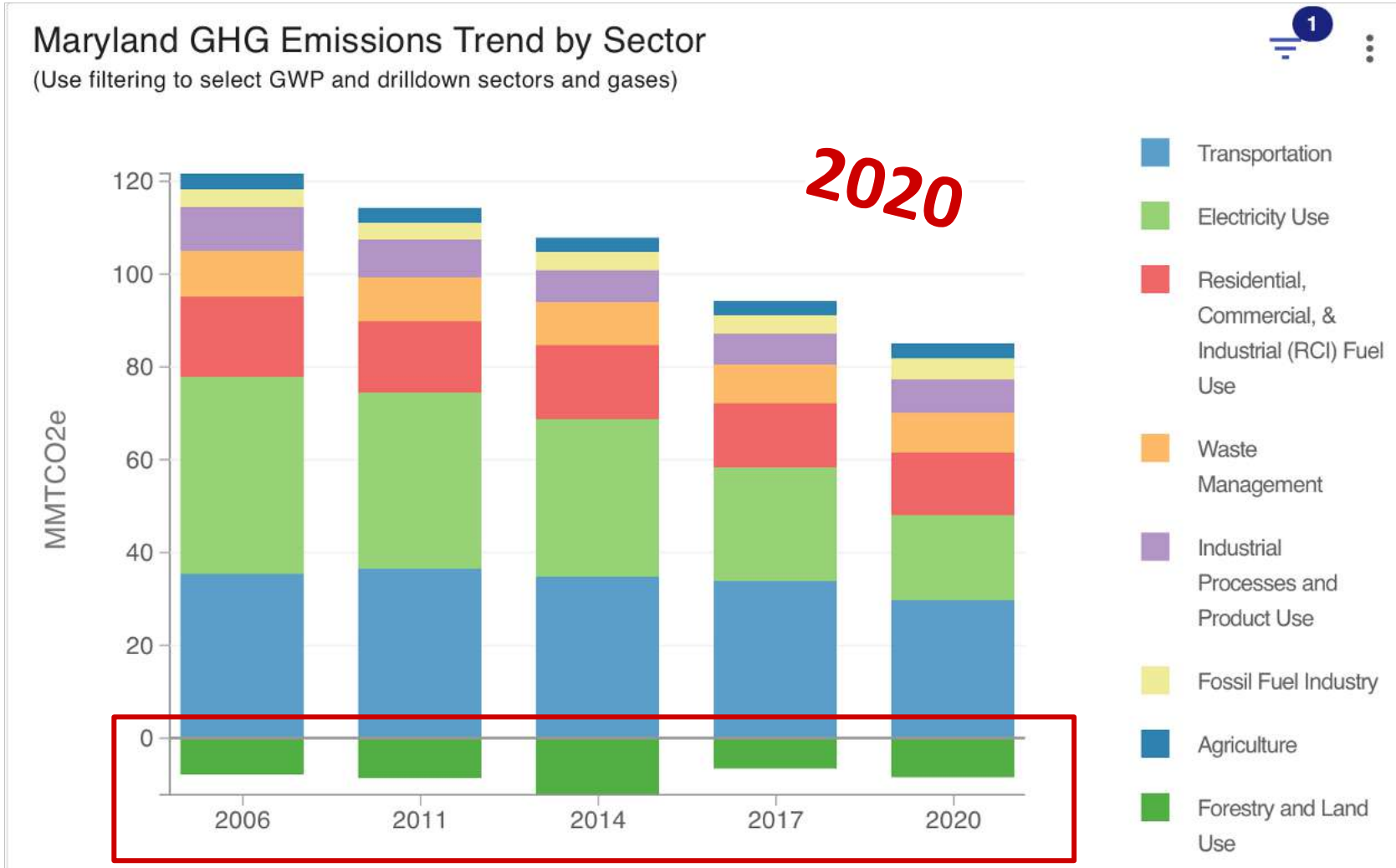
- **Protecting** current lands (existing area, **avoid loss** to current sinks)
- **Managing** current lands (existing area, **create larger sinks**)
- Identifying lands for **restoration** (new area, **create new sinks**)

MD GHG Reduction Planning



https://mde.maryland.gov/programs/air/ClimateChange/

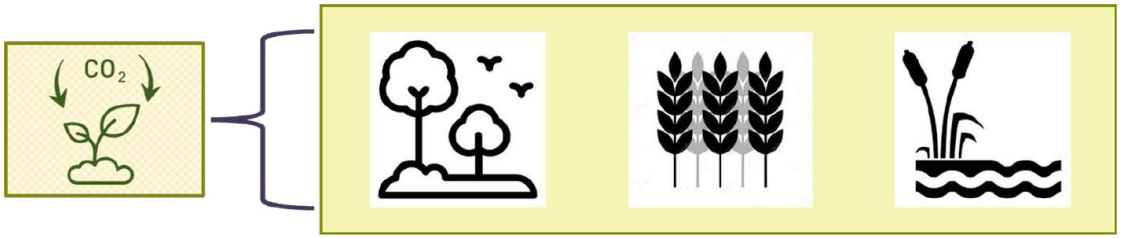
MD GHG Reduction Planning



Solutions that remove carbon from the atmosphere and store it!

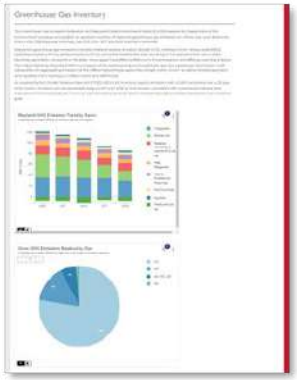
Net-zero Means Full Integration of NWL

Natural and Working Lands (NWL)



Assessment and Planning Tools

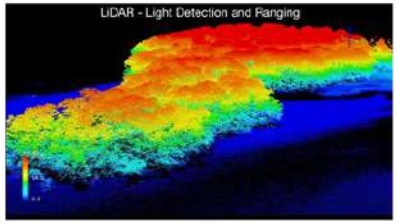
Emissions Inventory



Reduction Plan

Progress Tracking

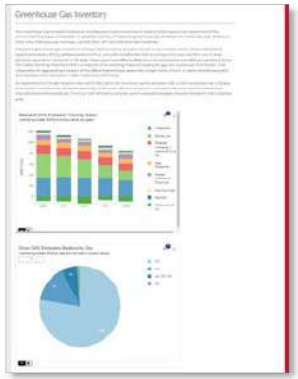
Improved Science



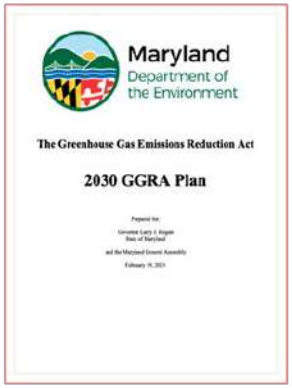
Net-zero Means Full Integration of NWL

Assessment and Planning Tools

Emissions Inventory

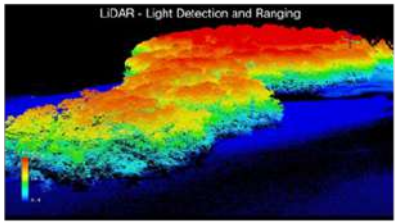


Reduction Plan



Progress Tracking

Improved Science



Helps us harmonize outcomes from past (2006) to future (2045)

actual/known carbon impacts

known state and federal programs + potential scale of implementation + projected C benefits

actual/known program implementation

Tree Solutions Now Act of 2021

additional!

5 million native trees
planted and maintained by 2031

500,000 trees planted
in urban underserved areas
Support **environmental justice**
and **equity**

ACHIEVING 5M TREES IS A MULTI–AGENCY EFFORT

Maryland Department of the Environment is coordinating the implementation of the Tree Solutions Now Act of 2021 with leadership support from

MARYLAND DEPARTMENT OF NATURAL RESOURCES

MARYLAND DEPARTMENT OF AGRICULTURE

Maryland Department of the Environment

MDOT MARYLAND DEPARTMENT OF TRANSPORTATION

5 MILLION TREES FOR MARYLAND

Our Progress So Far

See our statistics and data policies

July 2021-June 2023

Five Million Trees Tracking Dashboard

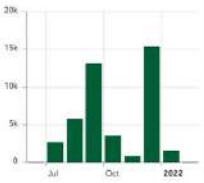
Last Update: 9/25/2023

Total Trees Planted
484,439

Total Trees Planted Underserved Areas
24,798

County	Trees Planted
Allegany	31,214
Anne Arundel	31,791
Baltimore City	2,001
Baltimore	14,120
Calvert	5,527
Caroline	4,132
Carrol	66,925

Trees Planted by Month



mde.maryland.gov/5Mtrees

MD Agricultural Soil Health

NRCS Practice Standards for Greenhouse Gas Emission Reduction and Carbon Sequestration

Qualitative Ranking N=Neutral	Practice Code	Practice Standard and Associated Information Sheet	Beneficial Attributes
 GHG Benefits of this Practice Standard	327	Conservation Cover (Information Sheet)	Establishing perennial vegetation on land retired from agriculture production increases soil carbon and increases biomass carbon stocks.
	329	Residue and Tillage Management, No Till/Strip Till/Direct Seed (Information Sheet)	Limiting soil-disturbing activities improves soil carbon retention and minimizes carbon emissions from soils.
	379	Multi-Story Cropping	Establishing trees and shrubs that are managed as an overstory to crops increases net carbon storage in woody biomass and soils. Harvested biomass can serve as a renewable fuel and feedstock.
		Windbreak/Shelterbelt Establishment (Information Sheet)	Establishing linear plantings of woody plants increases biomass carbon stocks and enhances soil carbon.
		Silvopasture Establishment	Establishment of trees, shrubs, and compatible forages on the same acreage increases biomass carbon stocks and enhances soil carbon.
		Forage and Biomass Planting (Information Sheet)	Deep-rooted perennial biomass sequesters carbon and may have slight soil carbon benefits. Harvested biomass can serve as a renewable fuel and feedstock.
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GHG Inventory - Ag Soil Carbon

- High rates of BMP adoption by MD farmers
- Incomplete representation by EPA National Data
- Goals using **state-specific** data:
  - 1) understand historical annual contributions (2006-2021)
  - 2) develop method to use for future GHG inventories
  - 3) estimated future potential contributions for planning
- Credit farmers for progress, identify next best BMPs

COMET Farm

USDA United States Department of Agriculture Natural Resources Conservation Service

Colorado State

Sierra View Solutions

UNITED STATES CLIMATE ALLIANCE
STATES UNITED FOR CLIMATE ACTION

Iterate with new 2031 and 2045 Targets

2020 GHG Inventory: How do our carbon sinks support our GHG goals? What are the dominate factors affecting change?

2022 Progress Report: Does actual implementation of activities align with what was planned? Why or why not?

New 2031 Plan: Do we need additional programs or policies to reach existing (or new) targets?

- *What is the technical potential for MD NWL by 2045?*
- *How can we connect to complementary goals?*

e.g., 10% of new trees must be planted in underserved urban areas *(Equity and EJ)*

Contact

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Links to more resources

June 2031 Pathway Report:
https://mde.maryland.gov/GGRA

GGRA Progress Report:
https://mde.maryland.gov/GGRA

GHG Emissions Inventory:
https://mde.maryland.gov/programs/air/ClimateChange/Pages/GreenhouseGasInventory.aspx

Trees and Forest Data and Methodology Documentation:
https://mde.maryland.gov/programs/air/ClimateChange/Documents/VIMAL/MD_ForestCarbon_Flux_Methodology_01.06.23.pdf

Blue Carbon Data and Methodology Documentation:
https://mde.maryland.gov/programs/air/ClimateChange/Documents/VIMAL/MD_BlueCarbon_Flux_Methodology_01.06.23.pdf

Agricultural Soil Carbon Project Brief:
https://mde.maryland.gov/programs/air/ClimateChange/Documents/VIMAL/MD_AgriculturalSoils_Flux_Project_01.06.23.pdf