SAN MATEO COUNTY
Sustainability Department

Advancing Carbon Sequestration in SMC

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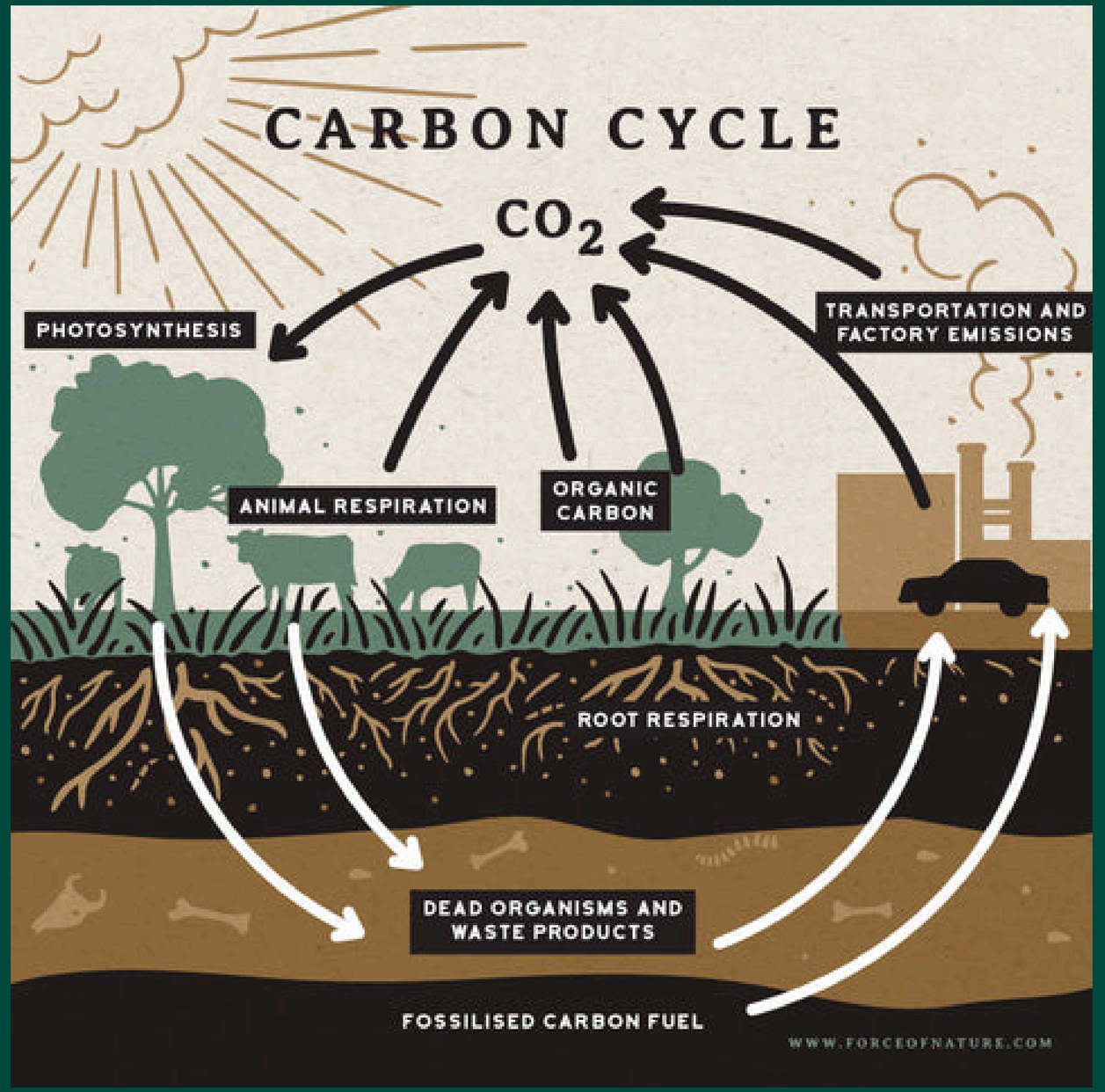
Avana Andrade
Senior Sustainability Specialist

Matt Petrofsky
Senior C/CAG Program Specialist

Agenda

- Carbon sequestration defined
- Current carbon sequestration policies & projects:
  - San Mateo County Government Operations Climate Action Plan
  - San Mateo County Community Climate Action Plan
- Discussion

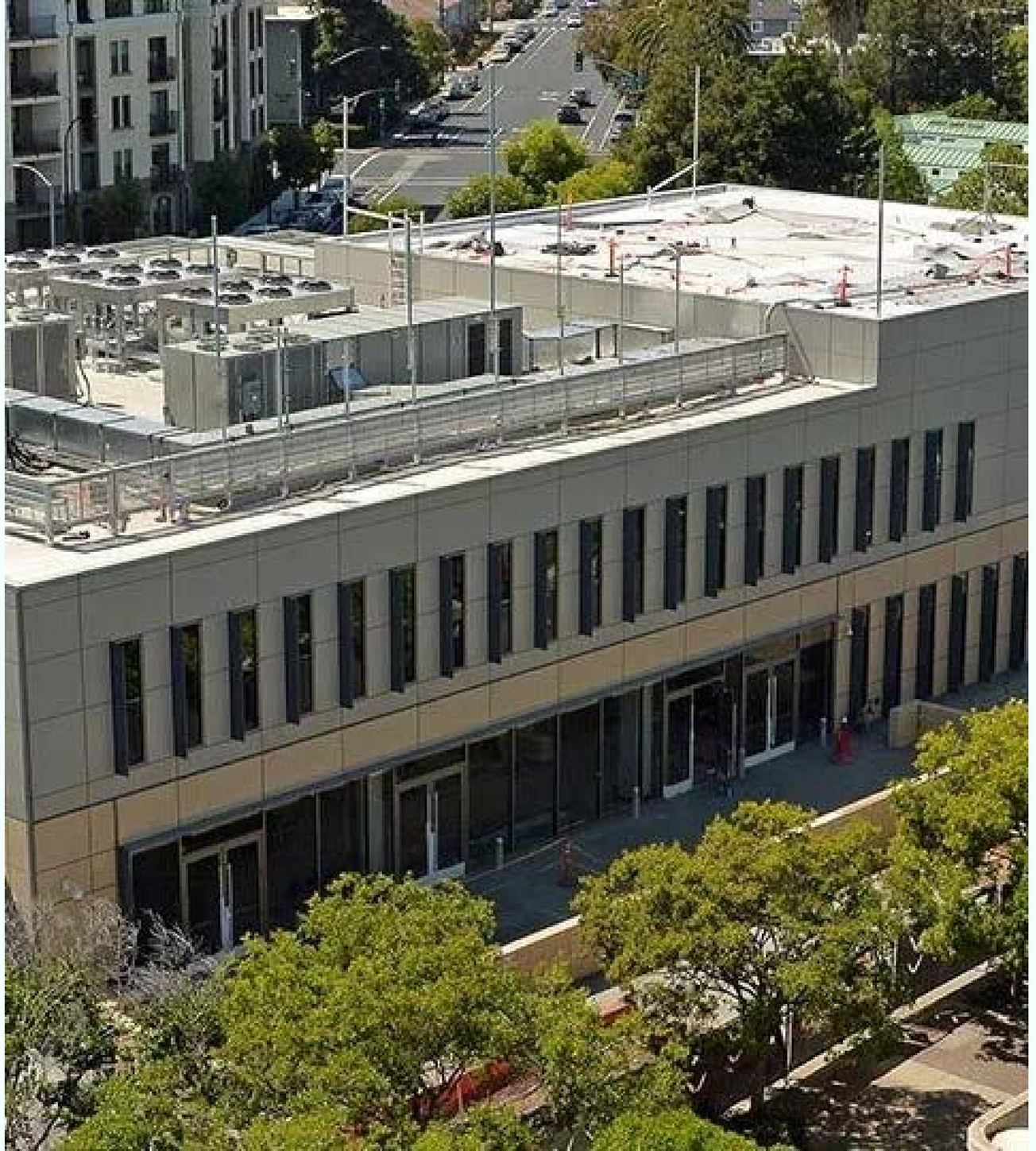
Carbon sequestration is the process of capturing atmospheric carbon dioxide and storing it for long periods to prevent it from contributing to global warming



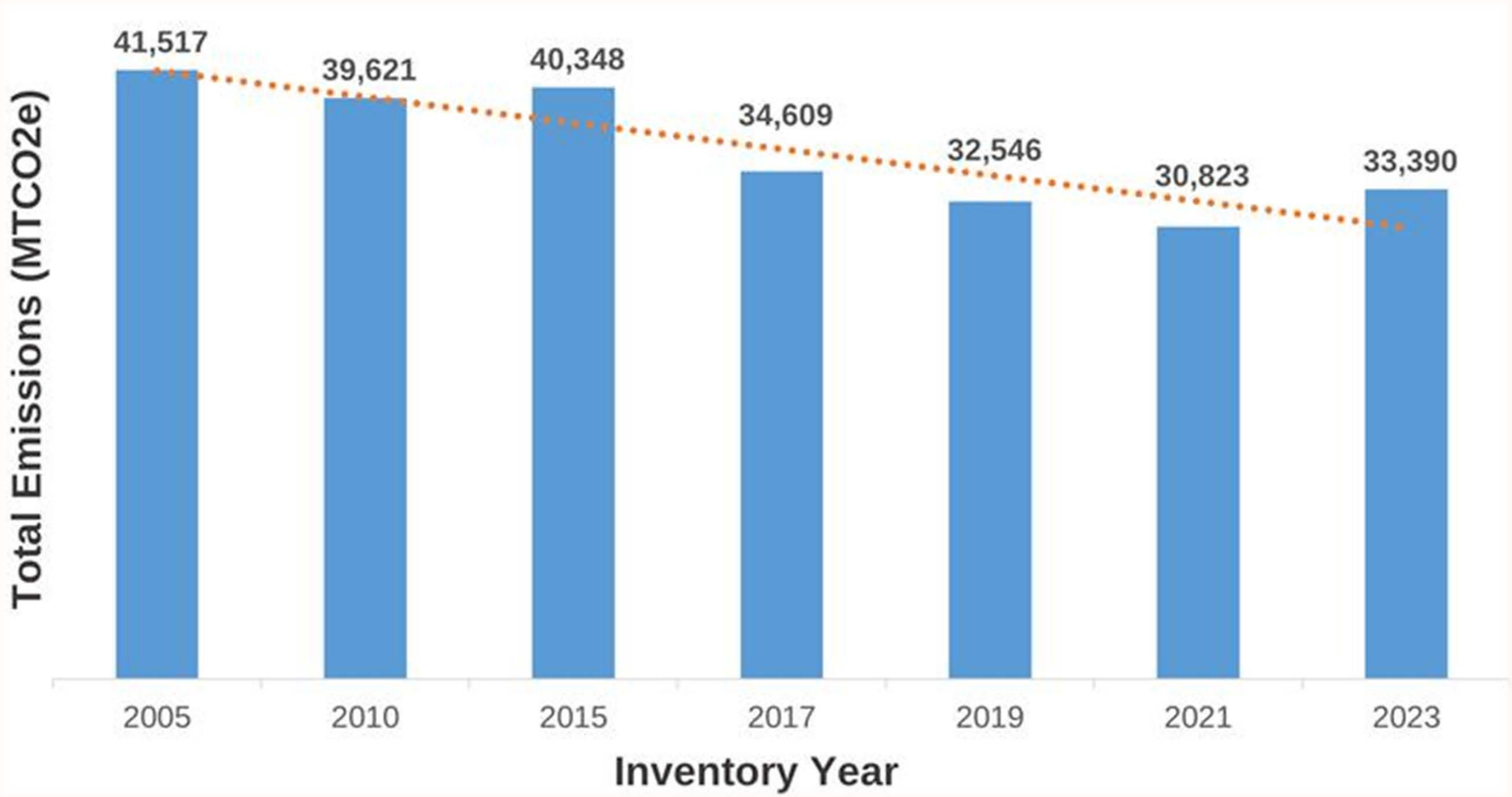
Government Operations Climate Action Plan calls for sequestration to reach goals

- **By 2030:** Reduce 80% of greenhouse gas emissions generated by government business operations
- **By 2035:** Reach carbon neutrality

- Eliminate 100% of natural gas usage in County buildings
- Reduce employee commute emissions by 95%
- Electrify 100% of the County vehicle fleet
- Improve water efficiency by 30%
- Produce zero waste in government operations
- Sequester carbon in County parks



Progress in Emissions Reductions



Focus Area 4: Carbon Sequestration

	OBJECTIVES	2030 GOAL	2035 GOAL
1	Offset emissions through carbon sequestration.	Carbon sequestration plan completed	Offset 14% of emissions

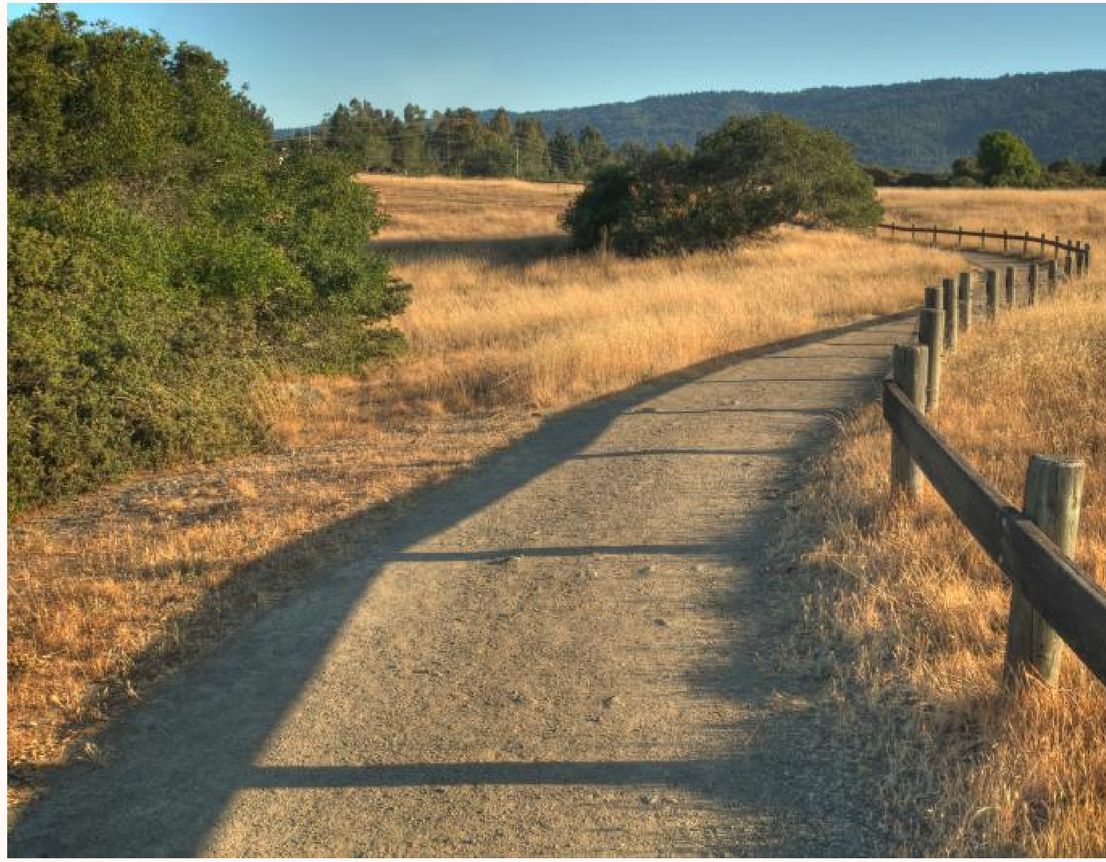
OBJECTIVE 1. OFFSET EMISSIONS THROUGH CARBON SEQUESTRATION

	ACTIONS	DESCRIPTION
1.1	Analyze Carbon Sequestration Strategies for County Parks and Land.	Undertake a carbon sequestration plan to understand how much carbon can be stored in Parks' land. Implement actions outlined in carbon sequestration plan.

Determining Sequestration Potential in County Parks

Four Components to the SMC Sequestration Plan

- *Parklands Land Cover Analysis*
- *Carbon Stock, and GHG Emissions Inventory*
- *Carbon Sequestration Potential Analysis*
- *Co-Benefits Assessment*



- What types of land make up our parks?
- How much carbon is stored in County parklands?
- What actions could increase that amount of stored carbon?
- What other benefits are provided by taking those actions?

Findings

- **2,278,259 mt CO_2e:** amount of carbon stored in above and below ground vegetation and soils in parklands
- **2,630 mt CO_2e:** potential annual maximum carbon sequestration amount in parklands

Climate Smart Practice	Total Potential Acres	Potential Carbon Sequestration (MT CO_2e)	Estimated Total Implementation Cost
Improved forest management thinning from below	531	955.8	$773,667

Biodiversity Co-benefits	Wildfire Mitigation Co-Benefits	Soil Quality Co-benefits	Water Quality Co-Benefits
Targeted vegetative species cover/density, non-native species richness, survival rate of saplings	Acres treated, fuel removed, horizontal and vertical fuel composition, area of defensible space created, amount of non-native vegetation removed	Hydrologic conductivity/water infiltration, soil organic matter, reduced soil compaction	Pesticide transport downstream, surface/groundwater depletion

Steps Towards Sequestration

COMPLETE INITIAL PLANNING PROCESS

IDENTIFY HIGH-IMPACT SITES

ADVANCE PRIORITY PROJECTS TO “GRANT READY” STATUS

PURSUE DIVERSE FUNDING SOURCES

IMPLEMENT PROGRAMS

STRENGTHEN PARTNERSHIPS AND COORDINATION
STANDARDIZE CARBON TRACKING PROTOCOLS

Community Climate Action Plan Calls for Investments in Carbon Sequestration

- **Agriculture** is one of the only sectors with the potential to deliver **net negative emissions** (sequestering CO2 at rates exceeding the sector's annual emissions) while also **delivering significant social, ecological, and economic benefits**.
- San Mateo County has:
  - 545 acres of vegetable crops
  - 315 acres of fruit and nut crops
  - 809 acres in field crops
  - 27,109 acres of range and pasture lands
  - Over 489 acres in flower and nursery production

CCAP Goals & Targets

- Increase resilience to climate change impacts
- Improve water quality and soil health
- Enhance and increase habitat for pollinators and wildlife
- Increase energy efficiency and reduce GHG emissions
- Bolster the local agricultural economy

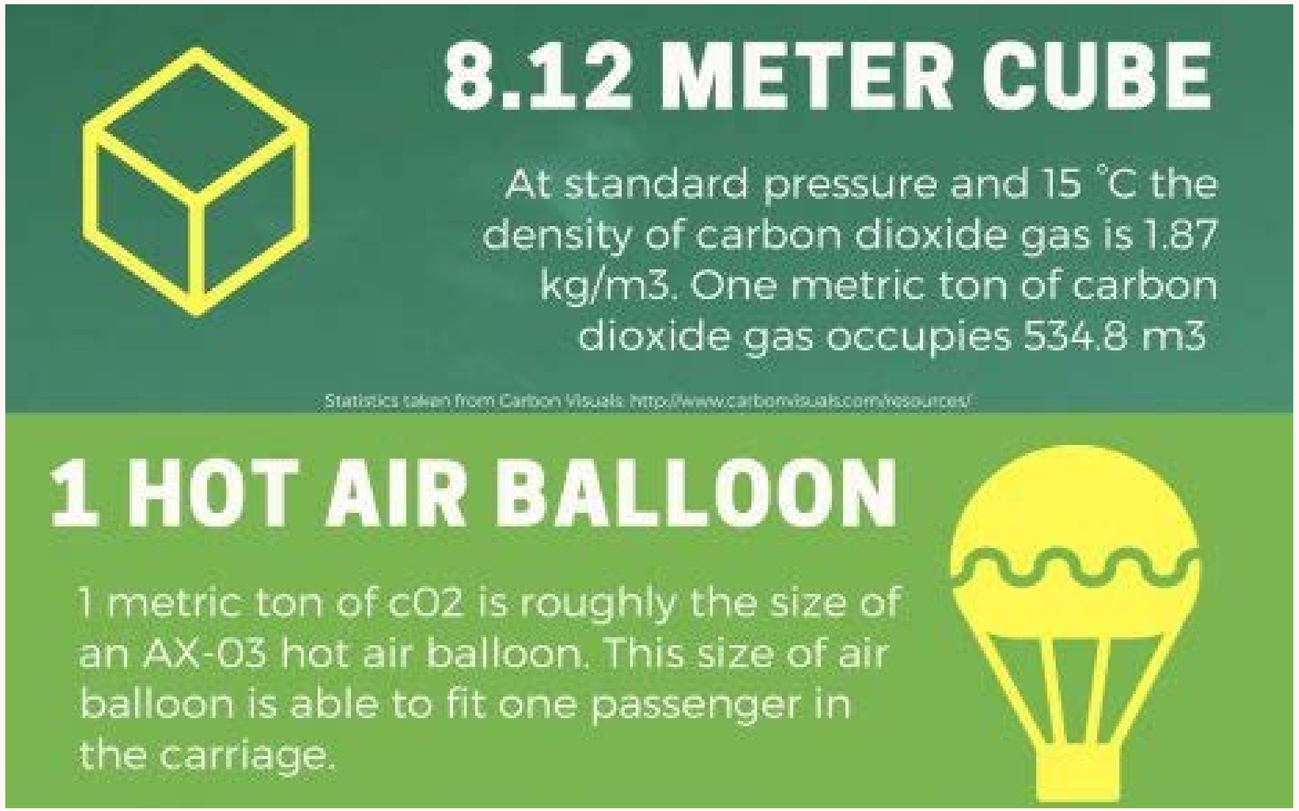
2030 Goal

- **Moderate adoption rate:**
  - Annual rate of sequestration: 7,900 MTCO2e
  - Cumulative amount sequestered between 2022 and 2030: 39,000 MTCO2e
- **High adoption rate:**
  - Annual rate of sequestration: to 13,590 MTCO2e
  - Cumulative amount sequestered between 2022 and 2030: 67,000 MTCO2e

2045 Goal

- **Moderate adoption rate:**
  - Annual rate of sequestration: 13,577 MTCO2e
  - Cumulative amount sequestered between 2022 and 2030: 166,000 MTCO2 e
- **High adoption rate:**
  - Annual rate of sequestration: 23,729 MTCO2e
  - Cumulative amount sequestered between 2022 and 2030: 282,000 MTCO2e

How much is metric ton of carbon?



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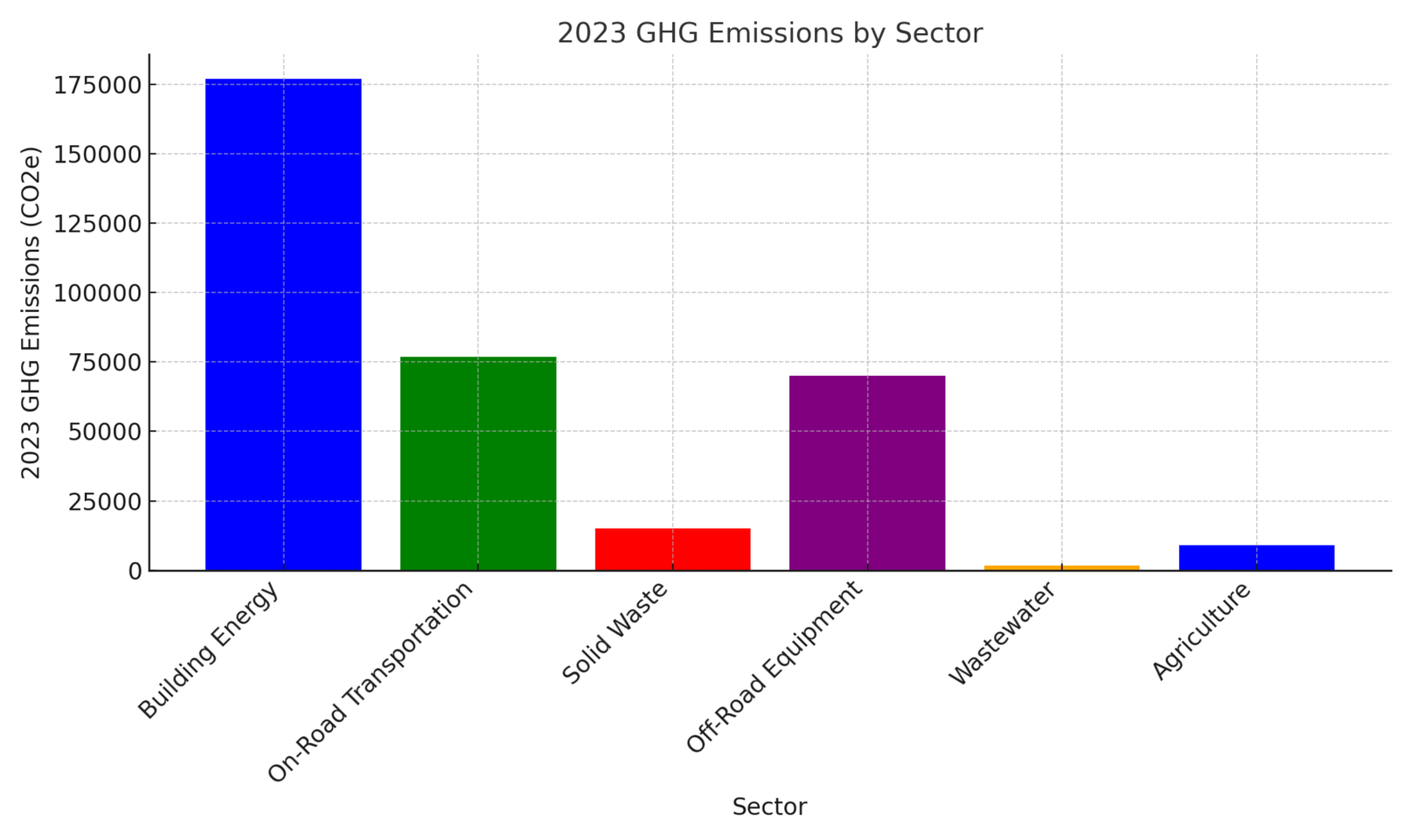
Putting Sequestration Rates into Context



Sequestration Rates

- **2030 Moderate Adoption Rate:**
  - Annual: 7,900 MTCO2e
  - Cumulative: 39,000 MTCO2e
- **2040 Moderate Adoption Rate**
  - Annual: 13,577 MTCO2e
  - Cumulative: 166,000 MTCO2e

✓ **Carbon farming will help the agricultural sector sequester all its emissions.**

Working Lands Chapter Summary

- **Policy L-1:** Identify new financing to scale carbon farming
- **Policy L-2:** Support technical assistance, education, and data collection efforts to scale climate beneficial agriculture
- **Policy L-3:** Secure access to key implementation infrastructure to advance climate beneficial agriculture
- **Policy L-4:** Address permitting barriers to implementing beneficial agricultural practices
- **Policy L-5:** Ensure agricultural lands are preserved for agricultural production
- **Policy L-6:** Support carbon sequestration and ecological restoration on natural lands

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https://coastsidebuzz.com/wp-content/uploads/2022/08/three-artichoke-farmers-1.jpg

Carbon Sequestration Practices

Rangeland planting

Riparian forest buffer

Cropland composting

Rangeland composting

Hedgerow planting

Windbreaks

Moving Towards Implementation

- In May 2025, the Board of Supervisors authorized a contract with the San Mateo County Resource Conservation District (RCD) to **design** and **launch** a **carbon farm fund** that will **advance carbon sequestration efforts** on the County's working lands
- This contract will: **help farmers and ranchers implement and maintain climate beneficial agricultural practices**

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Moving Towards Implementation

Background Research and Funding Pathways Analysis

- Conduct background research on existing funding models
- Assess pathways for a fund model that can be sustained beyond the contract term without ongoing County investment

Program Design for Administering Funds

- Establish criteria for distributing funds
- Develop draft performance metrics
- Develop marketing plan
- Develop application process, annual report template

Program Implementation & Fund Distribution

- Select most viable funding pathway(s)
- Implement program design as outlined in previous steps
- Distribute County funds in accordance with County approved process

Building a Sustainable Funding Model

- The Carbon Farm Fund project seeks to establish a sustainable funding model beyond the term of the contract.
- Utilizing government funds to seed a fund that leverages additional funding sources such as philanthropic and other grant sources.

- **What organizations do you think might be interested in contributing/getting involved?**

SAN MATEO COUNTY
Sustainability Department

Thank you.

Staff Name
Staff Title
Staff Email