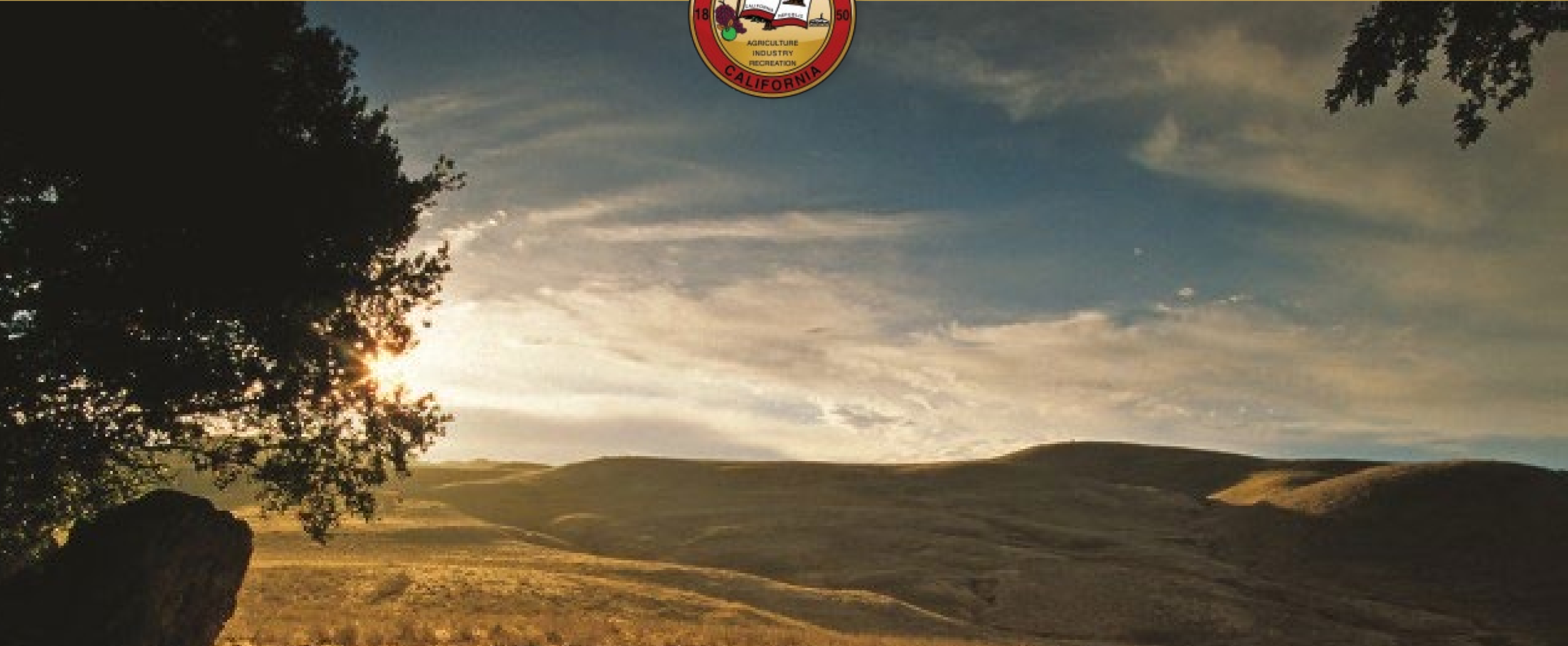


Climate Action and Resiliency Workshop

August 29, 2023



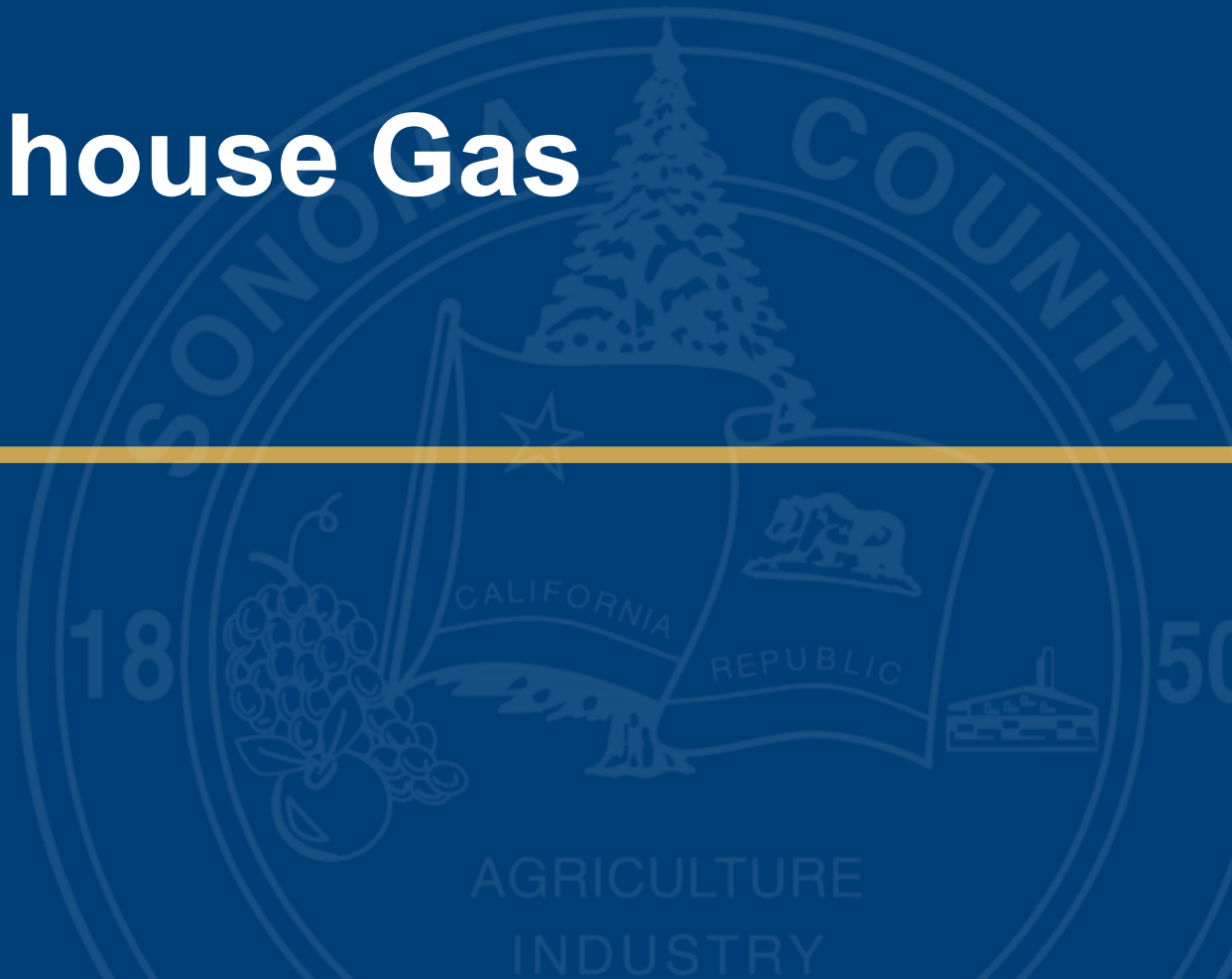


Part 2: Developing a Climate Resilience Master Action Plan



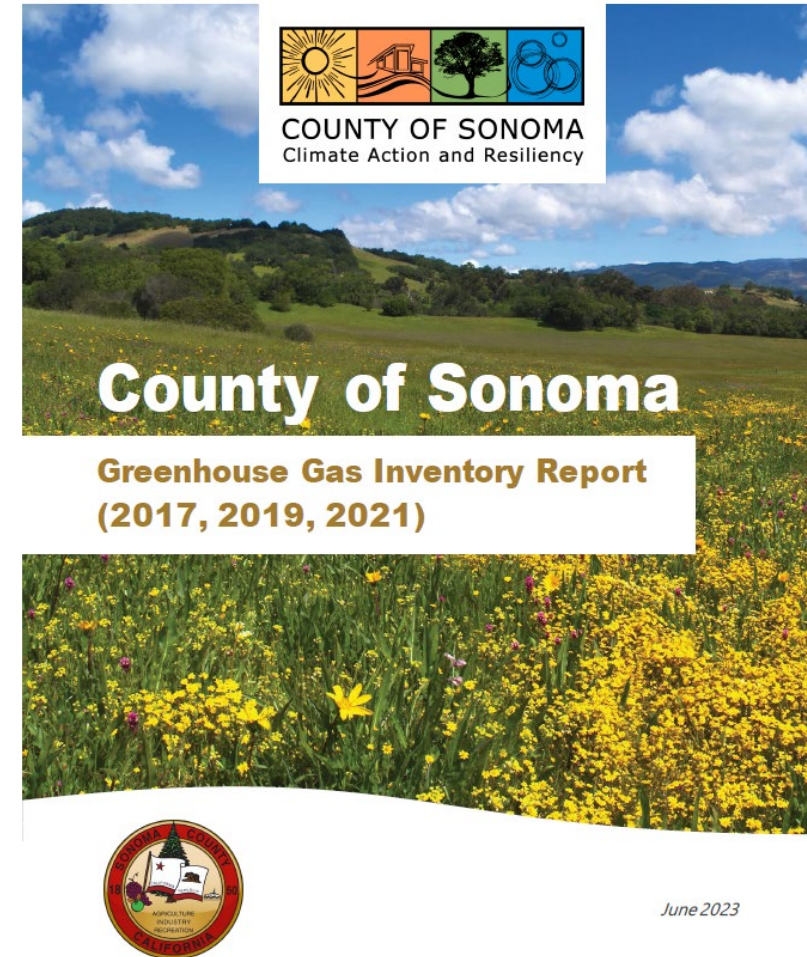


Municipal Greenhouse Gas Inventory

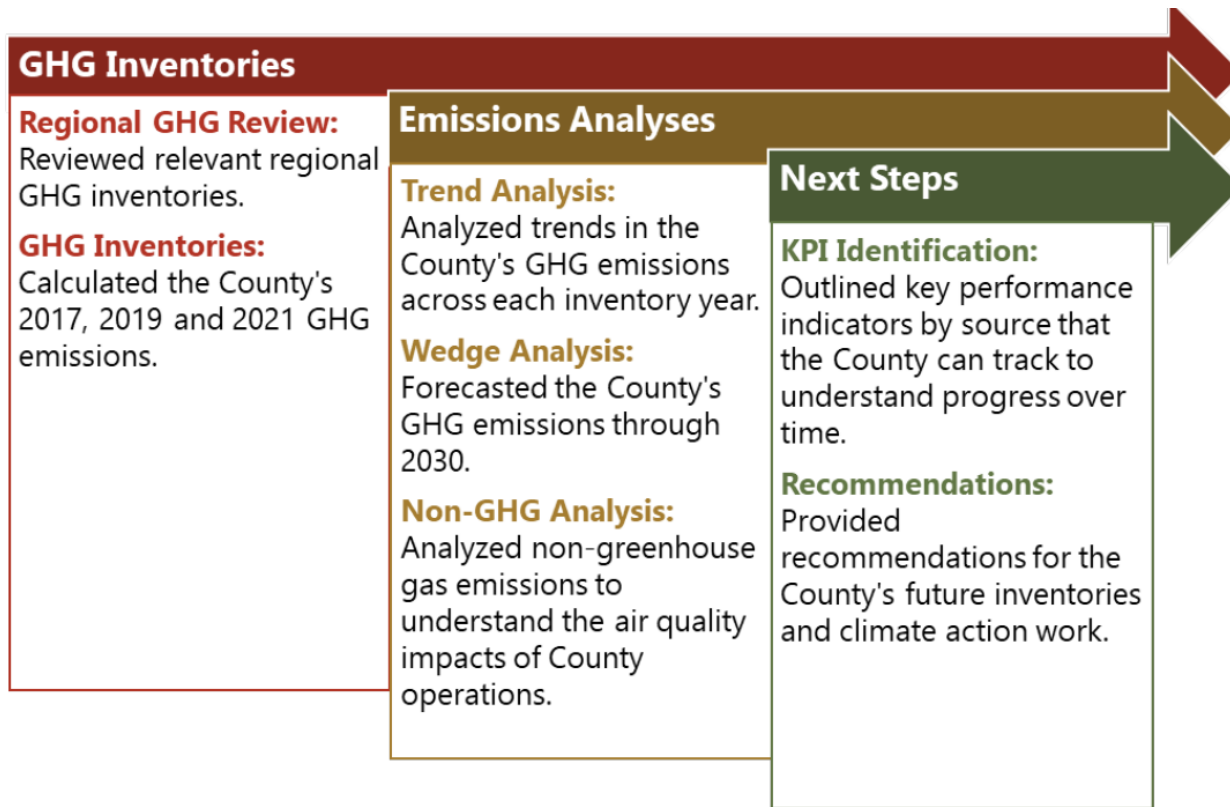


Strategic Goal: Carbon Neutral for all County Operations by 2030

- GHG totals collected for 2017, 2019, and 2021
- Projects future county GHG emissions based on various measures taken



Methodology



Utilized Local Government Operations Protocol (LGOP)

Collaboration between multiple County and Non-County agencies

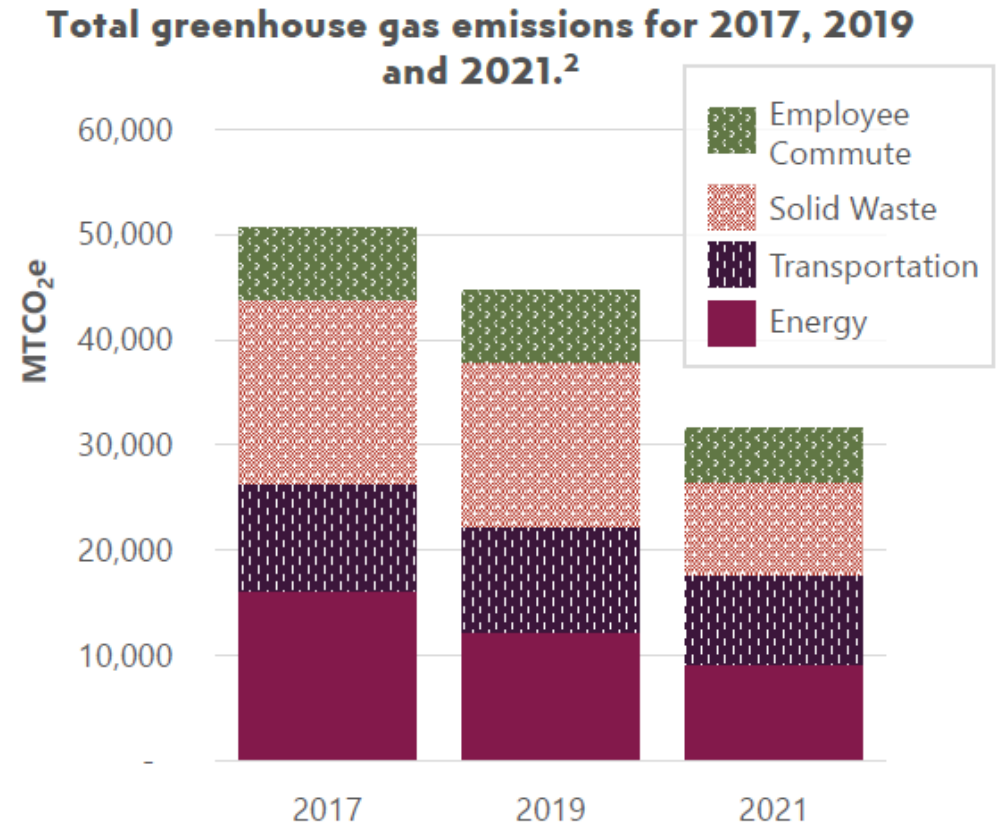
Replicable process

- Data collection pathway for future inventories
- Documentation & instructions

Figure 1. County of Sonoma's 2022–2023 GHG inventory process.

Preliminary Findings

- 50,635 metric tons carbon dioxide (MTCO₂) equivalent in 2017 – 31,712 MTCO₂ in 2021
 - Reduction of 37% from 2017 to 2021
 - Unusual factors influencing emission reduction trend:
 - Decommissioning of County Fuel Cell
 - Reduced commute/facility emissions during COVID-19 pandemic

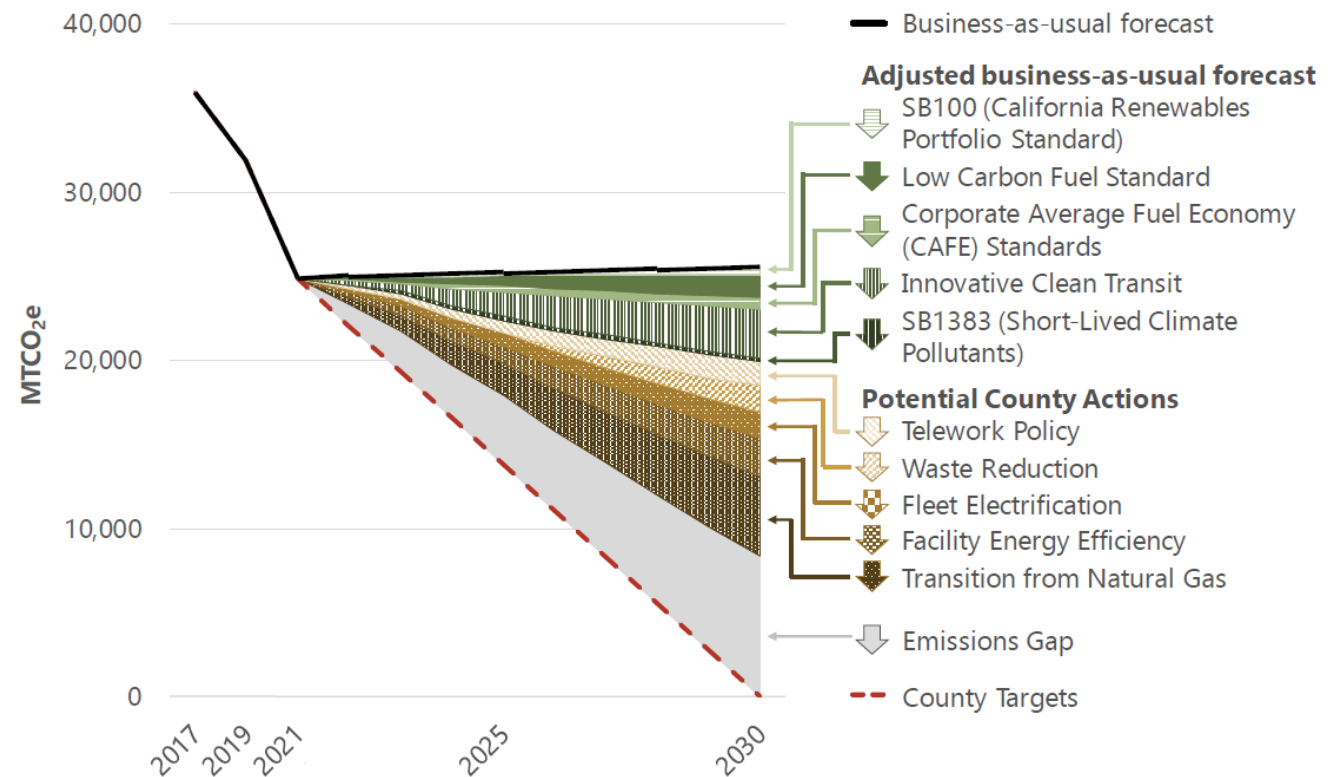


Wastewater emissions were excluded from this figure because they were too small to be seen

Guiding Metrics

- Clear path to reductions through Wedge Analysis
- “Business as Usual Forecast” Policy Changes and County Actions taken
- Emissions remain in 2030 after all identified actions are taken
- Future policies not yet known may add to potential savings

Wedge Analysis



Graphic illustrates Sonoma County historic and projected GHG emissions based on multiple data sources and potential actions taken

Recommended County Actions

- 17 total recommended actions
- Prioritized based on emissions percentage & county's level of control



- Highest priority actions include:
 - Utilize renewable energy sources
 - Electrify buildings
 - Complete energy efficiency upgrades and retrofits
 - Continue to electrify County Fleet
 - Maintain flexible work schedules and increase telework where feasible

Multi-Criteria Analysis

- High-level qualitative analysis of draft emission reduction actions based on several criteria
- Heavily based on the County's Climate Action Resilience & Equity (CARE) framework used for project prioritization
- Results in an overall priority score for each draft action

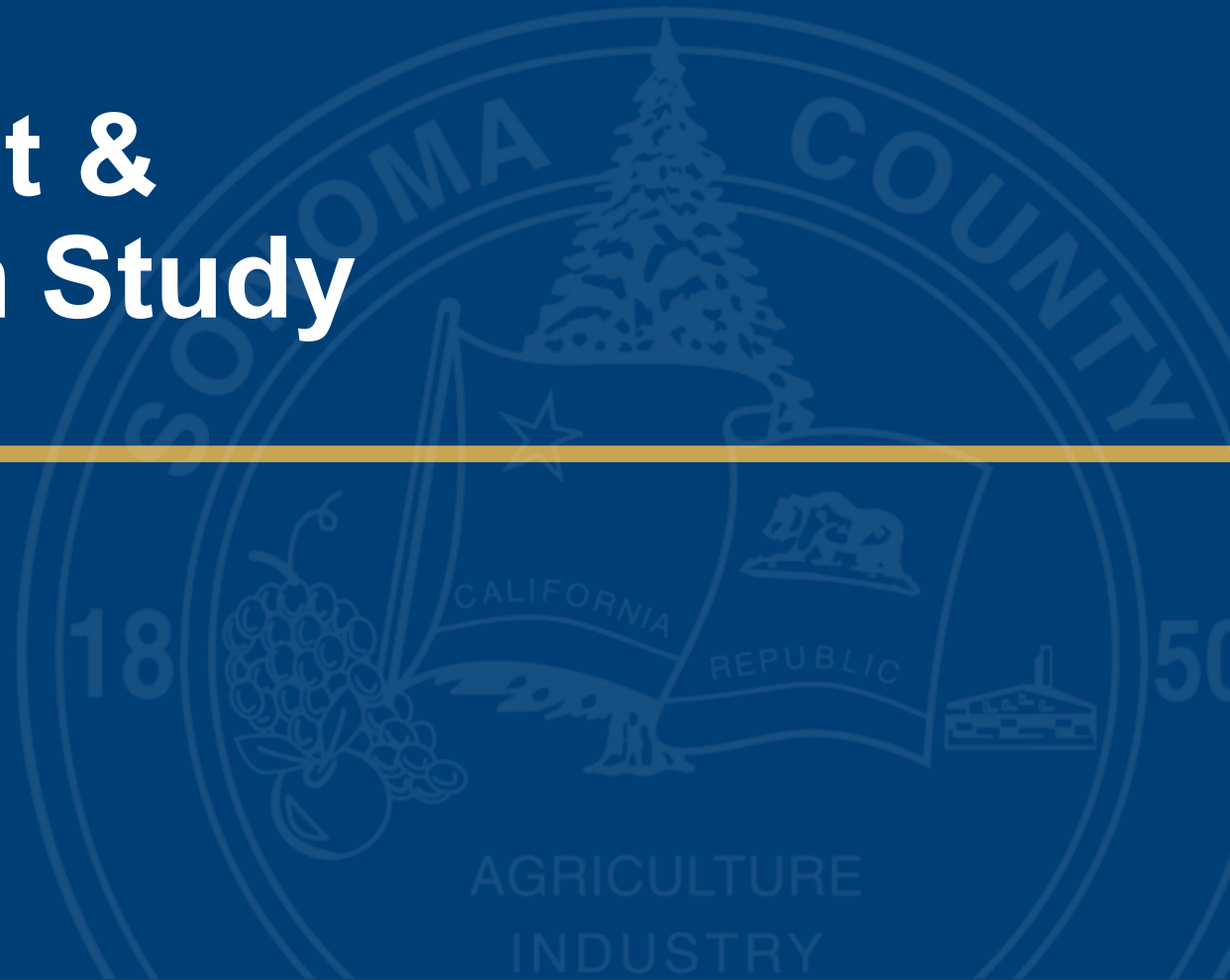


Next Steps

- ▶ Open the Public Hearing to consider approving the inventory
- ▶ Provide policy direction as appropriate on identified actions and on pursuing additional identified actions
- ▶ Iterative data collection for KPIs, and subsequent inventories when needed



Zero Waste Audit & Characterization Study



Strategic Goal: Zero Waste for all County Operations by 2030

- The County of Sonoma Zero Waste Audit and Characterization Study was identified as a necessary step to establish:
 - A baseline understanding of waste levels and conditions at county facilities
 - A path toward zero-waste
- This project will provide:
 - Critical data
 - A quantitative report
 - A qualitative assessment
 - Recommendations for prioritized



Zero Waste is Defined as:

The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.

- Zero Waste Sonoma's resolution

Methodology

Facilities Selected

Crop Yard
Warehouse
Maintenance

Veterans
Memorial
Buildings

Recreation

Animal
Services

Offices

Airport

Detention

- **Facility Selection**

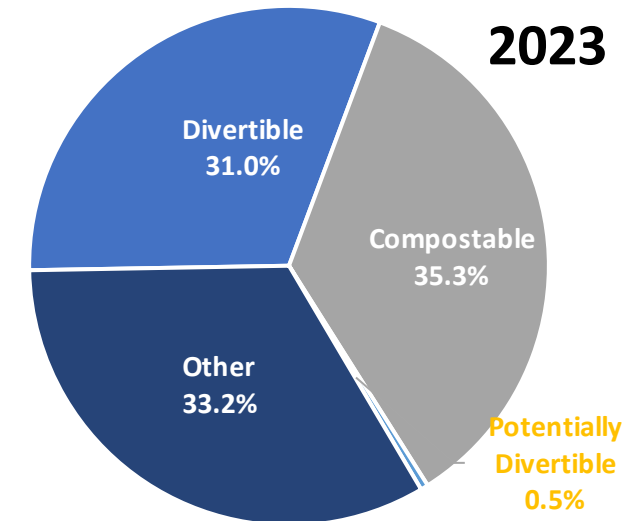
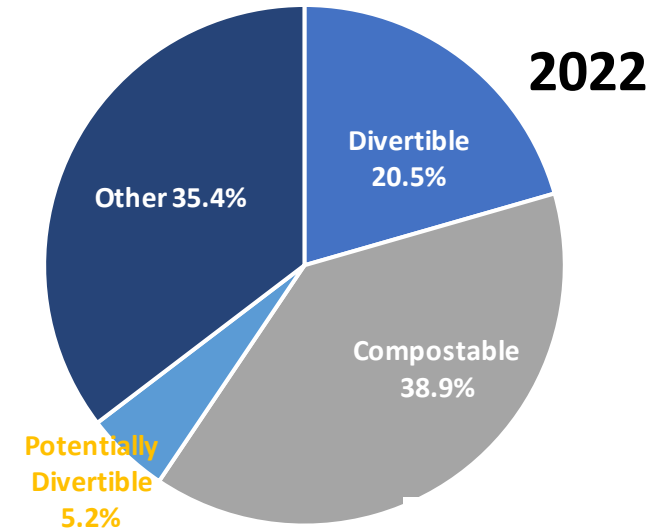
- Data on facility waste generation – Recology
- Largest Generators
 - If a facility makes up ~20% of County facility generated waste, ~20% of # samples selected from that facility
- Unique Generators
- Highest Priorities – Division Input

- **Site visit and visual audit**

- 38 distinct waste material categories
- Manually sorted & weighed
 - ASTM Standard Test Method for Determination of the Composition of Unprocessed Municipal Solid Waste – Designation D 5231-92
- Categorized by Divertability – Ex. Recycle, organic waste etc.)
- Schedule aligned with normal collection service

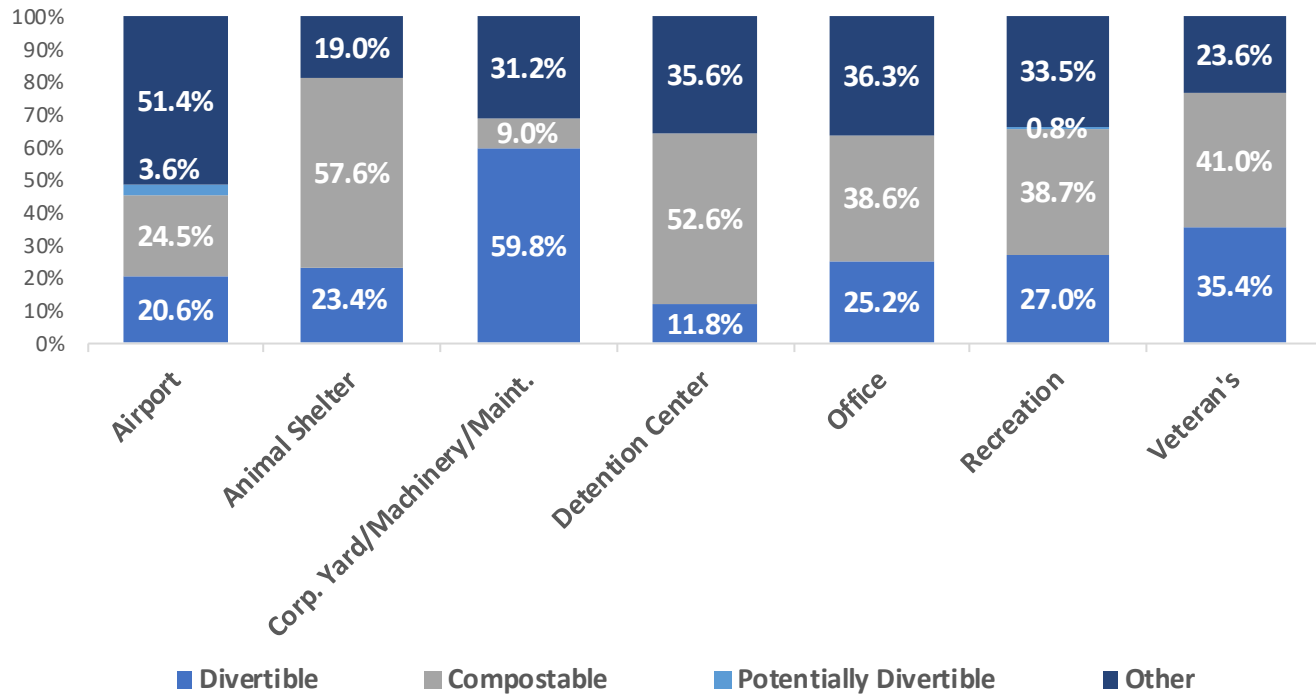
Preliminary Findings

- All facilities are enrolled in the recycling program and performance remains relatively strong in comparison to compostable streams
- Organic material was the most frequently encountered element within the landfill stream
 - Next is Paper & Metal
 - Most of the material could be diverted to recycling or composting facilities
- Compost Streams & Contamination Varied by Facility

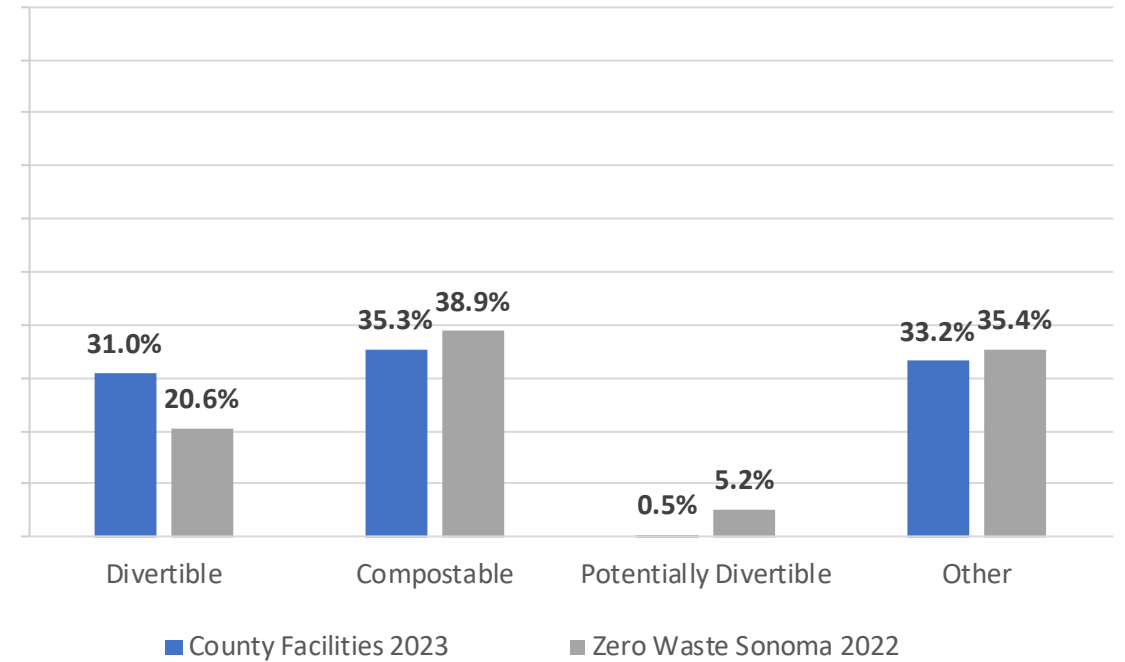


Preliminary Findings

Waste Streams per Sampled Facility



Divertibility Comparison County Facilities 2023 vs. Zero Waste Sonoma Commercial Facilities 2022

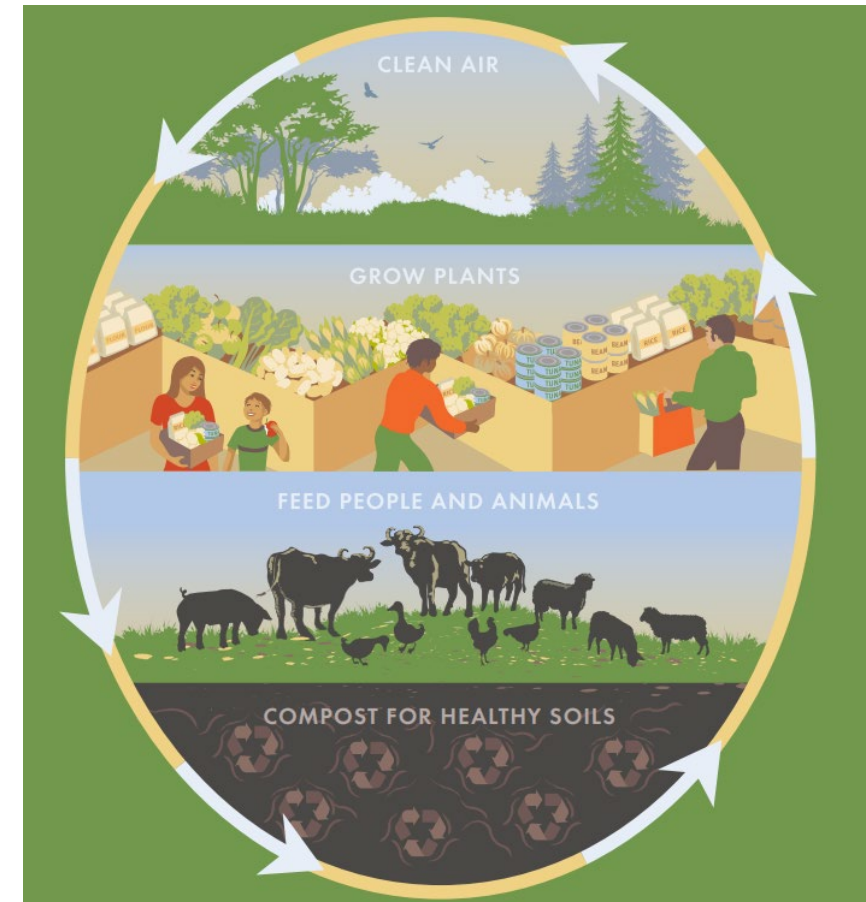


Next Steps

Results & full report will be submitted to the Board of Supervisors September 2023

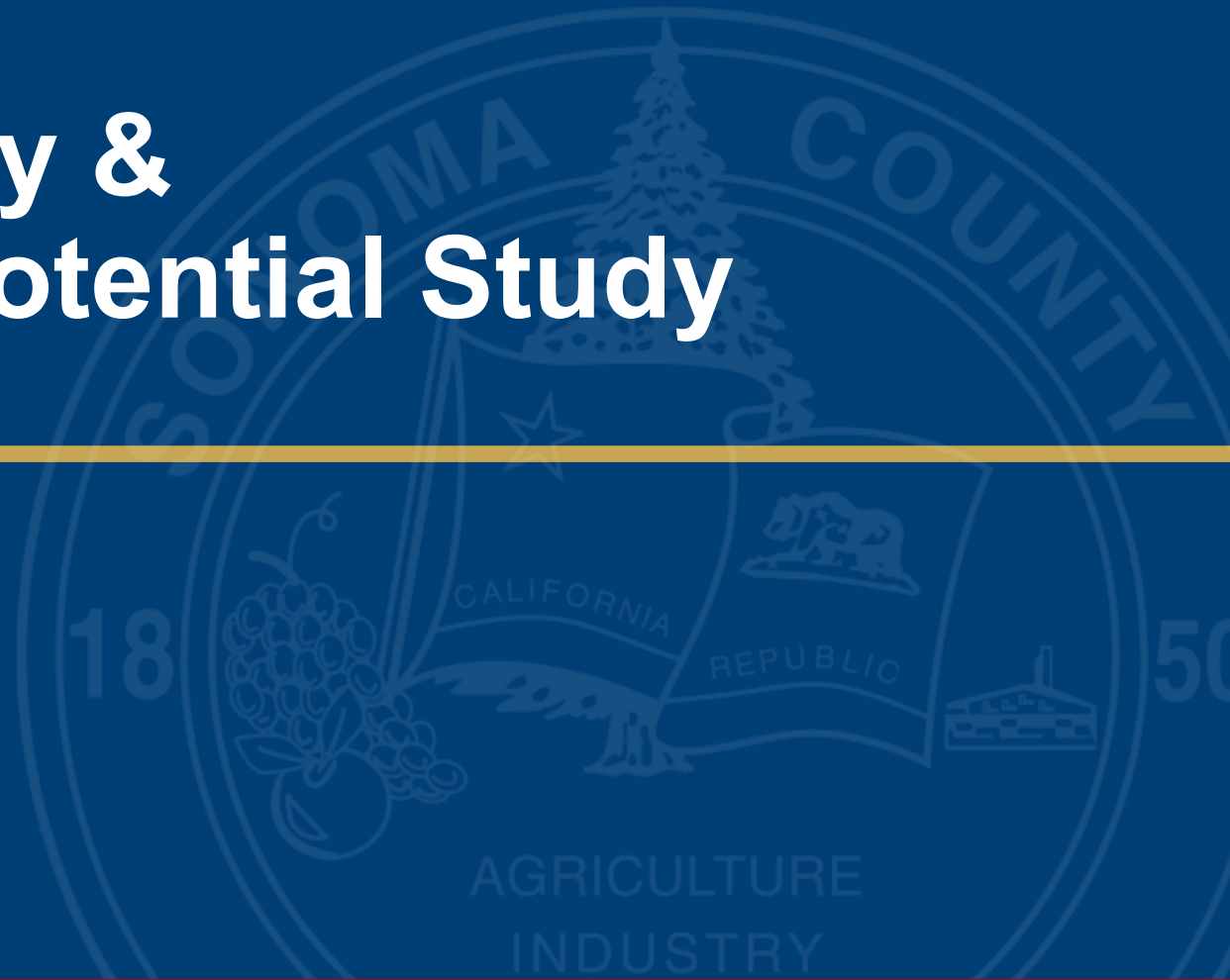
1383 Compliance Refinement & Technical Assistance – Confirm Proper Use of Organic Waste Collection Programs

Create Integrated Waste Management Approach at all Facilities in Need – Education & Outreach – Facilities, Staff, Visitors etc.



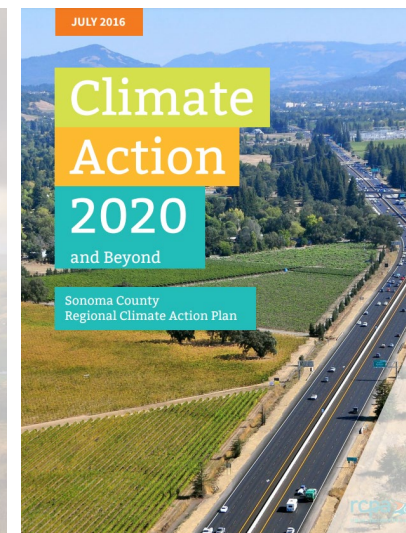
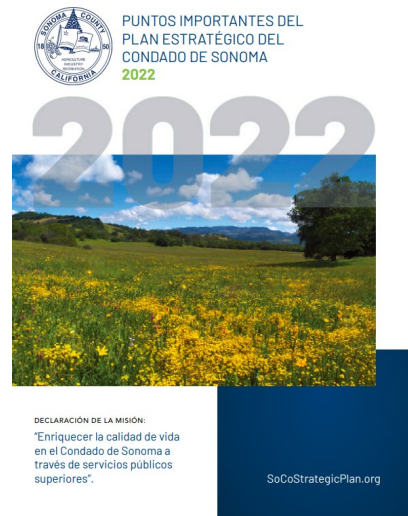


Carbon Inventory & Sequestration Potential Study



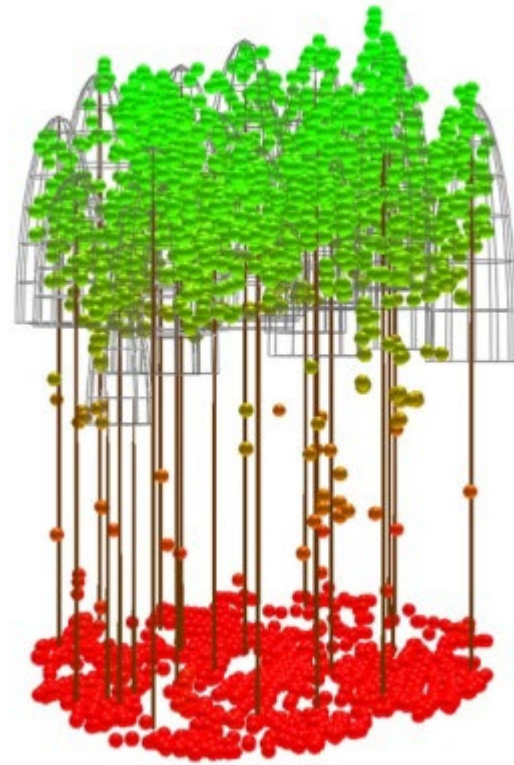
Strategic Goal: Maximize Carbon Sequestration

- Building Off Recent Plans
 - Sonoma County's 5-Year Strategic Plan
 - Sonoma County's Integrated Parks Plan
 - Sonoma County Vital Lands Initiative
 - Climate Action 2020 and Beyond
 - The Sonoma Climate Mobilization Study
 - And More!



Methodology

- Large-Scale Spatial Data sets and Accurate Carbon/Biomass Data
 - 2013 Sonoma County Vegetation Mapping & Lidar Program
 - 2022 National LANDFIRE
 - Statewide Crop Mapping
 - National Landcover Database
 - National Tree Canopy
 - National Cooperative Soil Survey



AG +
OPEN
SPACE
SONOMA COUNTY



The Nature
Conservancy

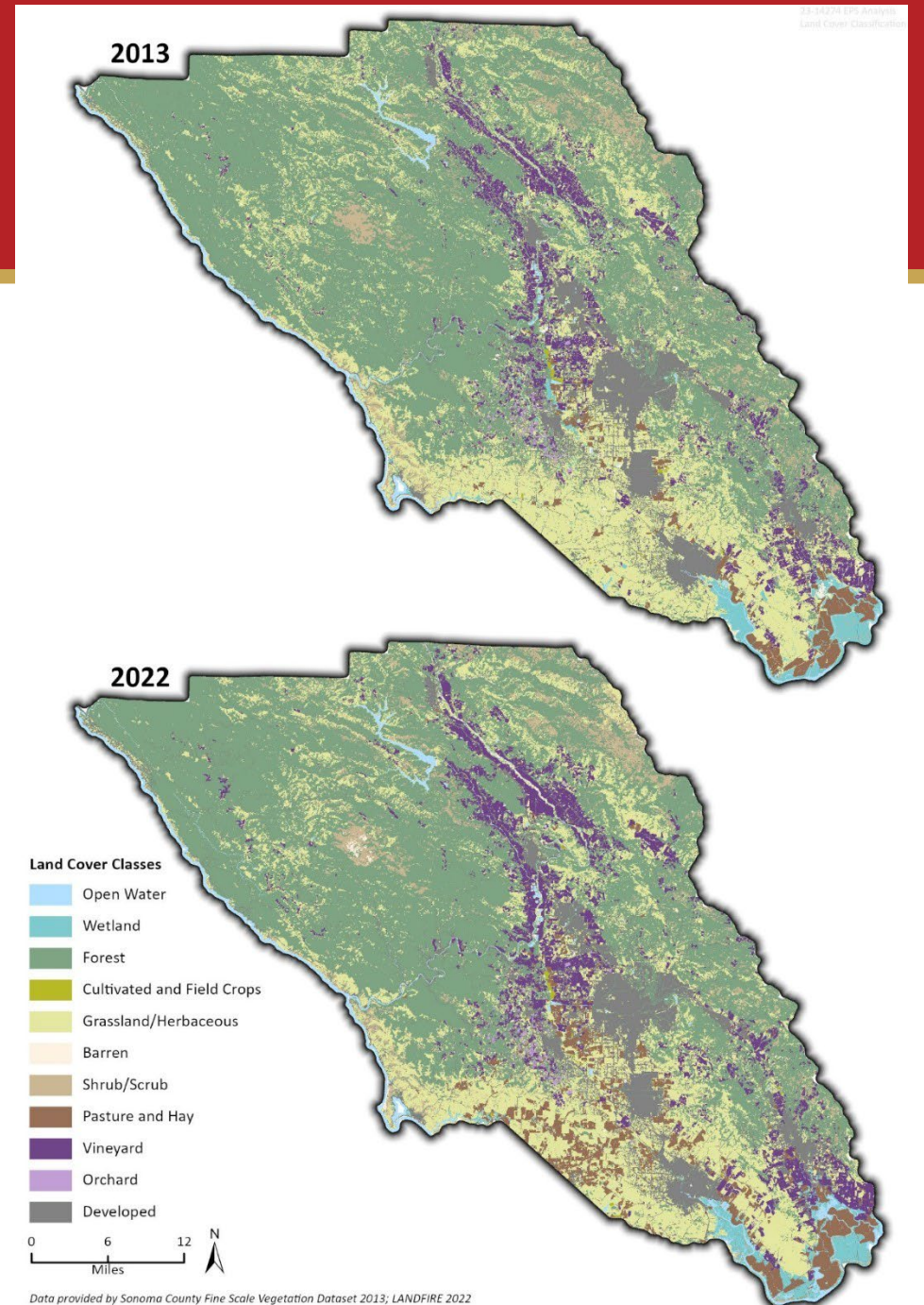


Pepperwood
PRESERVE
Inspiring conservation through science



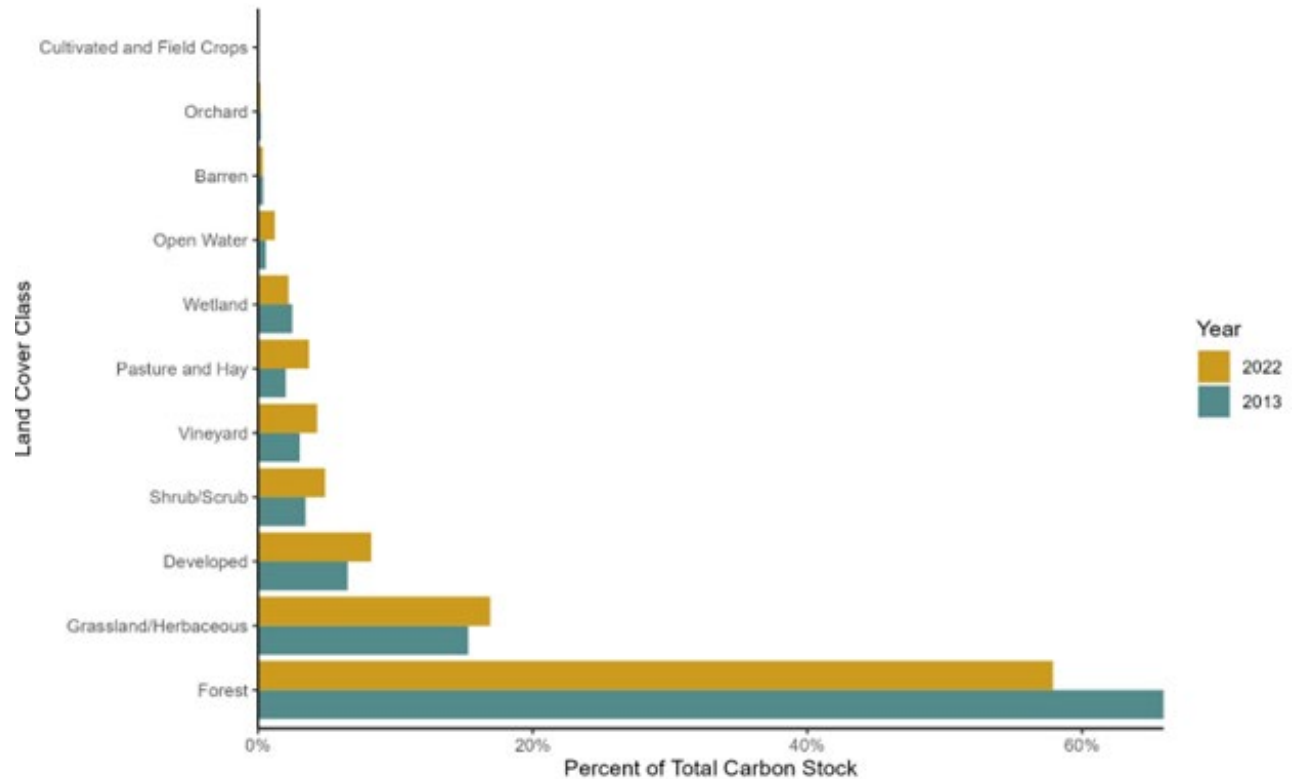
Preliminary Findings

- Preliminary Change Analysis:
 - Developed land cover increase from about 9 to 10%
 - Grassland/herbaceous decrease by 15%
 - Barren land decrease by 17%
 - Forest decrease 5%
 - Pasture/Hay increase 118%
 - Vineyards increase 26%
- Data artifacts - best available data



Potential County Actions - Highlights

- Estimate carbon stocks by land cover class
- Calculate carbon stored in different carbon pools
 - (i.e., above- and below-ground live biomass, litter, and soil)
 - based on existing vegetation type, cover, and height
 - soil data is from 2017 - does not capture changes
- Both years, forests and grassland/herbaceous lands held the most, and second most total carbon in the county

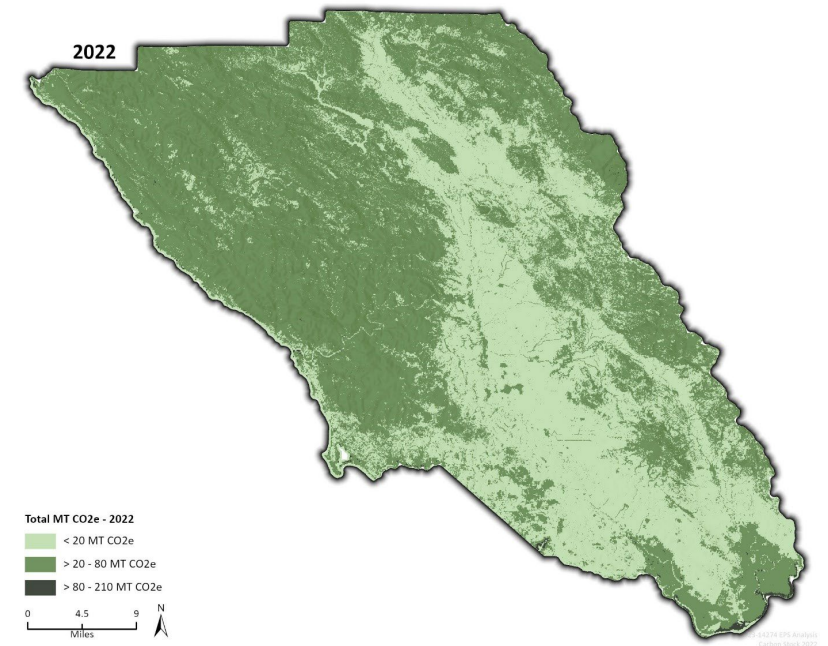


Next Steps

Results and the full study will come to the Board of Supervisors October 2023

Assessment of nationally recognized conservation practices and their applicability to Sonoma County

Refined assessments of land management and carbon sequestration strategies, including data acquisition





Master Energy Plan



Strategic Goal: Carbon Neutral County Facilities by 2030

- PG&E Sustainable Solutions Turnkey Program
 - Performs Investment Grade Audits of building energy use, equipment, building components, etc.
 - Identifies opportunities to reduce energy use and install renewable energy & storage.
 - Evaluates costs of improvements and estimates energy savings
 - Provides streamlined contracting and implementation.
 - Identifies incentives and offers a suite of financing tools



Progress to Date

- Facilities Evaluated
 - Preliminary audits of 85 buildings
 - 75 buildings to receive in-depth audits
- Santa Rosa Veterans Memorial Hall upgrades approved in August will result in zero-net-energy
- Rescheduling at the Central Mechanical Plan will save \$125,000 per year in energy costs



Next Steps

- SST provides detailed audit findings
 - Evaluates upgrades for groups of facilities in the portfolio
 - Presents analysis of feasibility, costs and savings for: lighting, heating & cooling, building envelope, renewable energy, back-up storage, water use, and more
- County refines project groupings, and prioritizes
- SST identifies incentives and financing
- Board considers which packages to move forward with
- Final package and schedule become Master Energy Plan



Putting it All Together



Public Engagement

- Outside consultant to support engagement with internal and external partners, and with the public
- Goal: gather information to inform development of the Climate Resilient Map.
- Engagement includes:
 - Survey of County departments & agencies
 - Public survey
 - Focus groups and individual interviews
 - Community Town Hall meeting
 - Synthesis of knowledge gained



Public Engagement

- Continuing engagement by County staff on foundational elements
- Tribal engagement on Climate Resilience MAP and implementing land-based strategies
- Focused engagement to bring in voices & perspectives from underserved communities
- Second Board Workshop this winter before draft Climate Resilience MAP is proposed



Evaluating Costs, Benefits, and Potential Impacts

- Rough cost analysis on potential pathways for Climate Resilience MAP
- Deeper cost benefit analysis of draft Climate Resilience MAP
- Consultation with Permit Sonoma and County Counsel on evaluating potential impacts



Grants Update

- **Grants Secured:**
 - HMGP & BRIC Structure Hardening \$60 M
 - HFRP Fuels Reduction \$ 6 M
 - USDA Carbon Farming \$10 M
 - Congressional Approp. Deployable Solar Charging \$0.7 M
 - Clean Water Act Planning \$0.25 M
 - DOE EECBG \$0.23 M
- **Grant Applications**
 - Regional Microgrid Planning \$0.6 M
 - Greenspace Corridors \$2.5 M
- **Board Investments**
 - Vegetation Management \$25 M
 - Climate Resilience Fund \$10 M

*More than **\$110 million** dedicated and potentially more*





Board Discussion

