CHARLESTON COUNTY ELECTRIC VEHICLE INTERGRATION STRATEGY

Resilience & Sustainability Advisory Committee

Resilience & Sustainability Division
June 2026



County Objectives

Charleston County's 2020 greenhouse gas inventory showed that transportation is the County's largest emissions source, making it the most impactful area to address. In line with the County's commitment to identify opportunities to reduce GHG emissions, transitioning the fleet represents a clear and actionable path forward.

- Transportation is Charleston County's largest source of greenhouse gas emissions.
  - It accounts for 44% of the County's total GHG footprint.
- Fleet transition will help reduce the County's GHG emission contribution in a gradual, practical way.

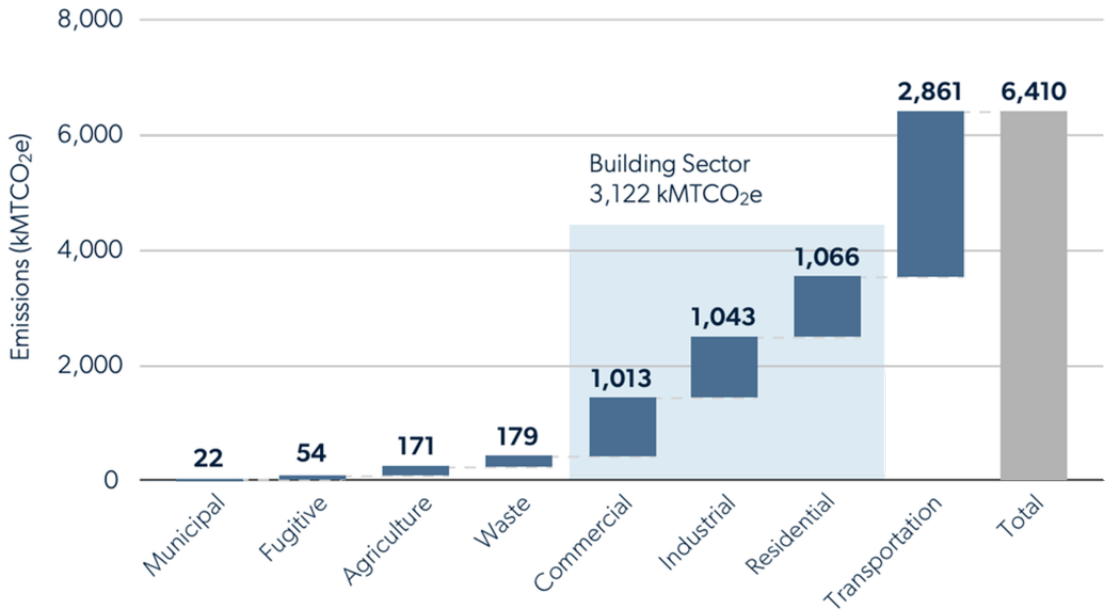


Figure 1.Charleston County GHG emission by sector in baseline year 2020

Charleston County's Future Emissions

Charleston County's low-carbon measures were established in the County's adopted Sustainability Plan, approved by County Council in 2021. Section 3.1.2 (page 4) identifies three scenarios used to guide these measures. However, for our purposes, we are focusing only on two of those scenarios: the Business-as-Planned (BAP) scenario and the Low-Carbon (LC) scenario.

Business-as-Planned Scenario Measures

- Two electric vehicles in the fleet by 2023.
- Five percent of low-duty vehicles is electric by 2050.

Low Carbon Scenario Measures

- Light-duty vehicles are electric by 2035.
- By 2045, all new mid-to-heavy duty vehicles bought are electric.
- 50% of Mid-to-heavy duty vehicles are zero-emission vehicles(ZEV) by 2050.

Accomplishments

Charleston County continues to make steady progress toward the fleet electrification goals outlined in the 2021 Sustainability Plan. Our accomplishments to date reflect meaningful movement toward reducing transportation-related emissions and improving public charging access.

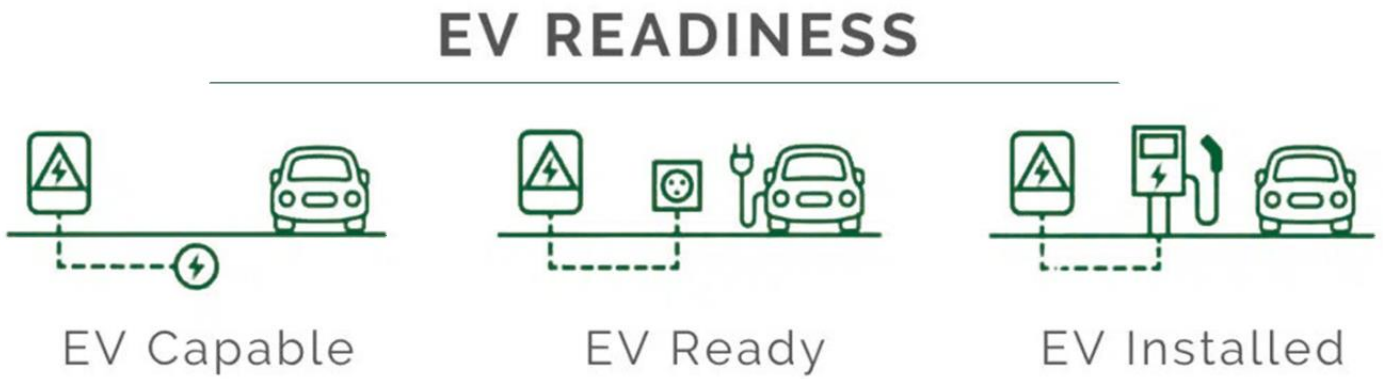
Current Infrastructure

- We have 6 electric vehicles and 3 hybrids
  - (22% of low-duty fleet).
- 22 County-operated chargers; 12 are public.
- 8 chargers are currently being installed.
  - 4 at the Teddie E.Pryor Sr Social Services Building
  - 4 at Azalea Complex
- With the potential addition of 8 EVs, we would be at 41% of low-duty vehicles transitioned.

BAP Measures

- Two electric vehicles in the fleet by 2023. ✓
- Five percent of low-duty vehicles is electric by 2050. ✓

How are we preparing for future charging?



Key Terms

Make-Ready: Preparing a location at the time of construction or major renovation to efficiently add EV charging capabilities and stations at a later time.

Future-Proofing: When installing charging stations at a site, taking steps to prepare that site for additional charging stations to be added later.

EV Capable: Dedicated electrical infrastructure to support an EV charging station.

EV Ready: Is an establishing a power source to the electrical infrastructure.

EVSE Installed: The above steps along with installation of a charging station.

Moving Forward

- The EV Rotation Program allows different departments to test electric vehicles and receive feedback on their experience.
- This input helps us understand benefits and challenges, and it informs how we integrate EVs and hybrids into the fleet over time.
- The rotation currently includes a Nissan Leaf and a Ford F-150 Lightning, and departments also have access to two Mustang Mach-Es in the motor pool to support additional testing and evaluation.

Rotation Program Feedback

Strengths

01 **Vehicle Performance**

02 **Functionality That Supports Daily Operations**

Limitations

03 **Inadequate Infrastrucetre**

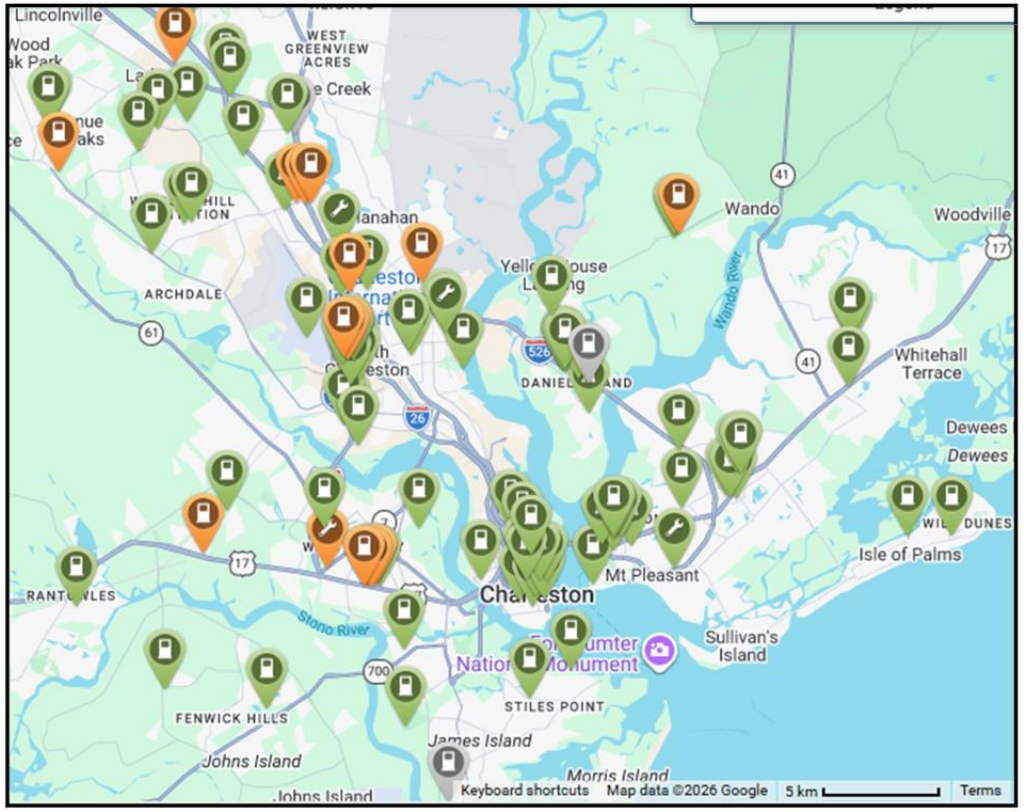
04 **Limited Range**

*Vehicle performance refers to how well the vehicle operates in real work conditions, such as handling, acceleration, braking, and capability on different terrain.

Regional Steps Taken

Charleston County is positioning itself as a regional leader in electrification by advancing countywide fleet and infrastructure planning that complements the City of Charleston's initial EV deployments, Mount Pleasant's charging investments, and BCDCOG's regional transit electrification roadmap.

- **City of Charleston** has begun fleet electrification under its Climate Action Plan, adding its first EVs in 2023 for daily operational use (mail courier and Planning).
- **Town of Mount Pleasant** has prioritized public charging infrastructure, installing 23 new EV stations in 2024 at Town Hall and Memorial Waterfront Park, with more planned.
- **The BCDCOG** Battery Electric Bus Master Plan outlines a regional strategy for fully electrifying the public transit fleet. As part of this, the Lowcountry Rapid Transit (LCRT) system plans to operate 19 articulated battery-electric buses.

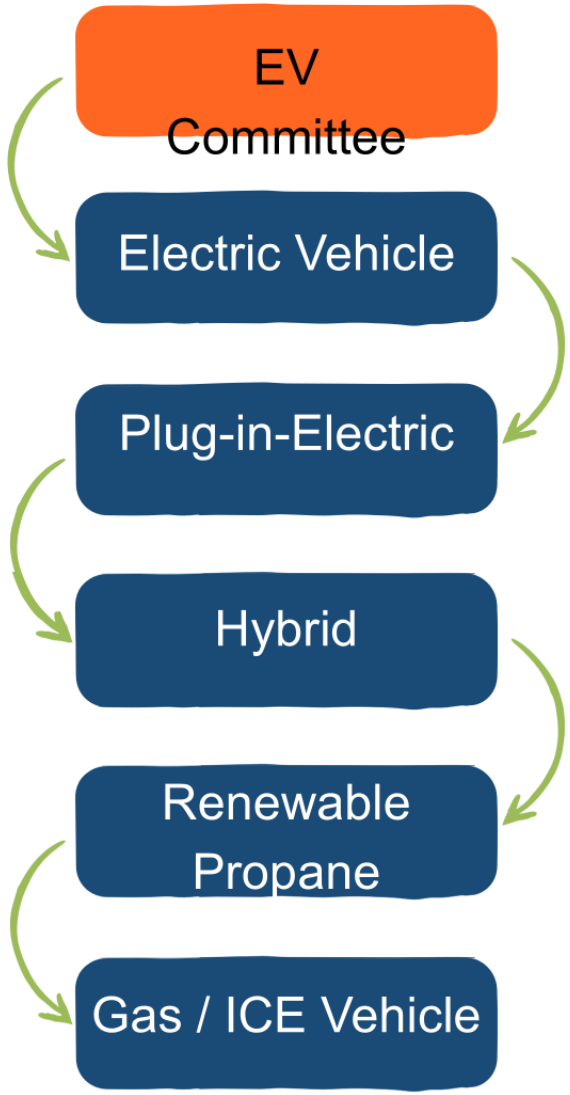


Proposed Strategy

Charleston County continues to strengthen its vehicle procurement process by applying right-sizing, right-typing, and right-fueling principles to ensure each fleet asset is appropriately matched to operational needs, mission requirements, and the most efficient energy source.

Right sizing, right typing, right fueling

- Working toward establishing a committee to strengthen vehicle procurement.
  - Internal, establishing a committee with Fleet Operations that reviews vehicle needs and replacement requests
- Process will include support for departments to pilot/test EVs before purchase



QUESTIONS & COMMENTS

