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# Municipal Sustainability

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A primer on municipal decarbonization efforts





# What does an Office of Sustainability DO?

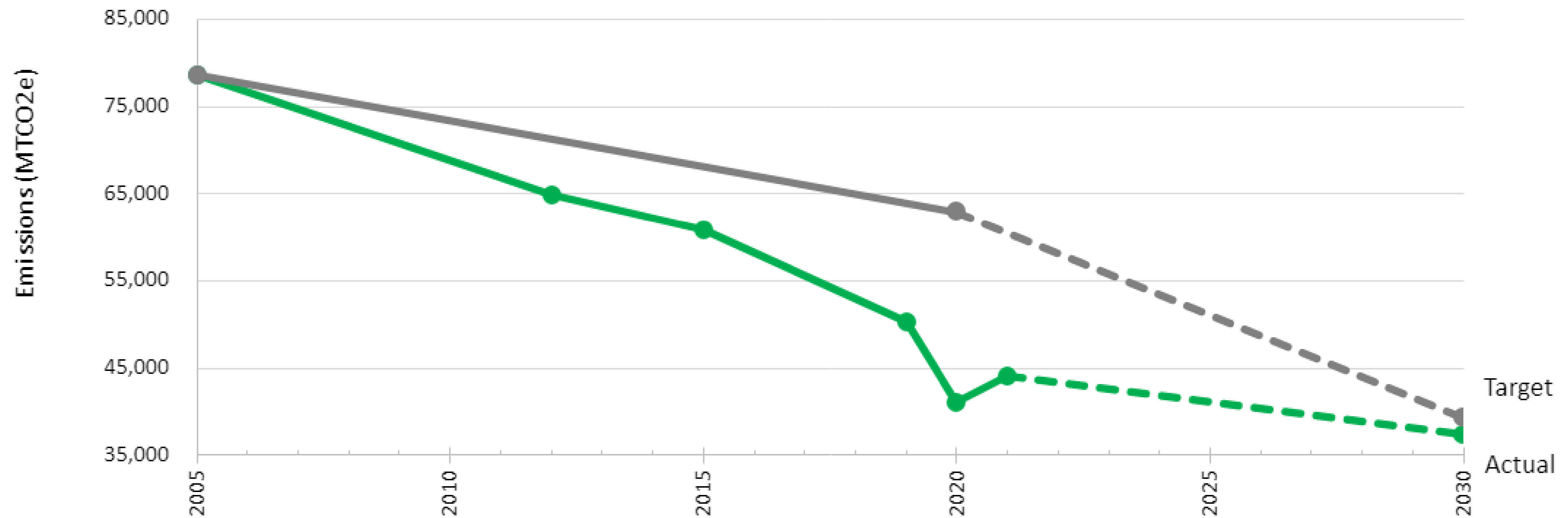


- **Track and model emissions**
  - 500+ utility meters
  - Fuel use of over 1,000 vehicles (gas, diesel, propane, CNG, electric)
- **Research policy & best practices**
  - Urban Agriculture, Energy Savings Performance Contracting, Streetlight Retrofits, Adopting building codes, etc
- **Track emissions trends**
  - Baseline year: 2005
  - Operations inventories: Annually
  - Community inventories: Every 3 years
- **Work with partners to advance goals**
  - Collaborative grants (e.g. NGOs, UTK, LPCs, TVA)
  - Collaborative capital investments (e.g. Community Solar, EV Charging)

# Operational Emission Trends



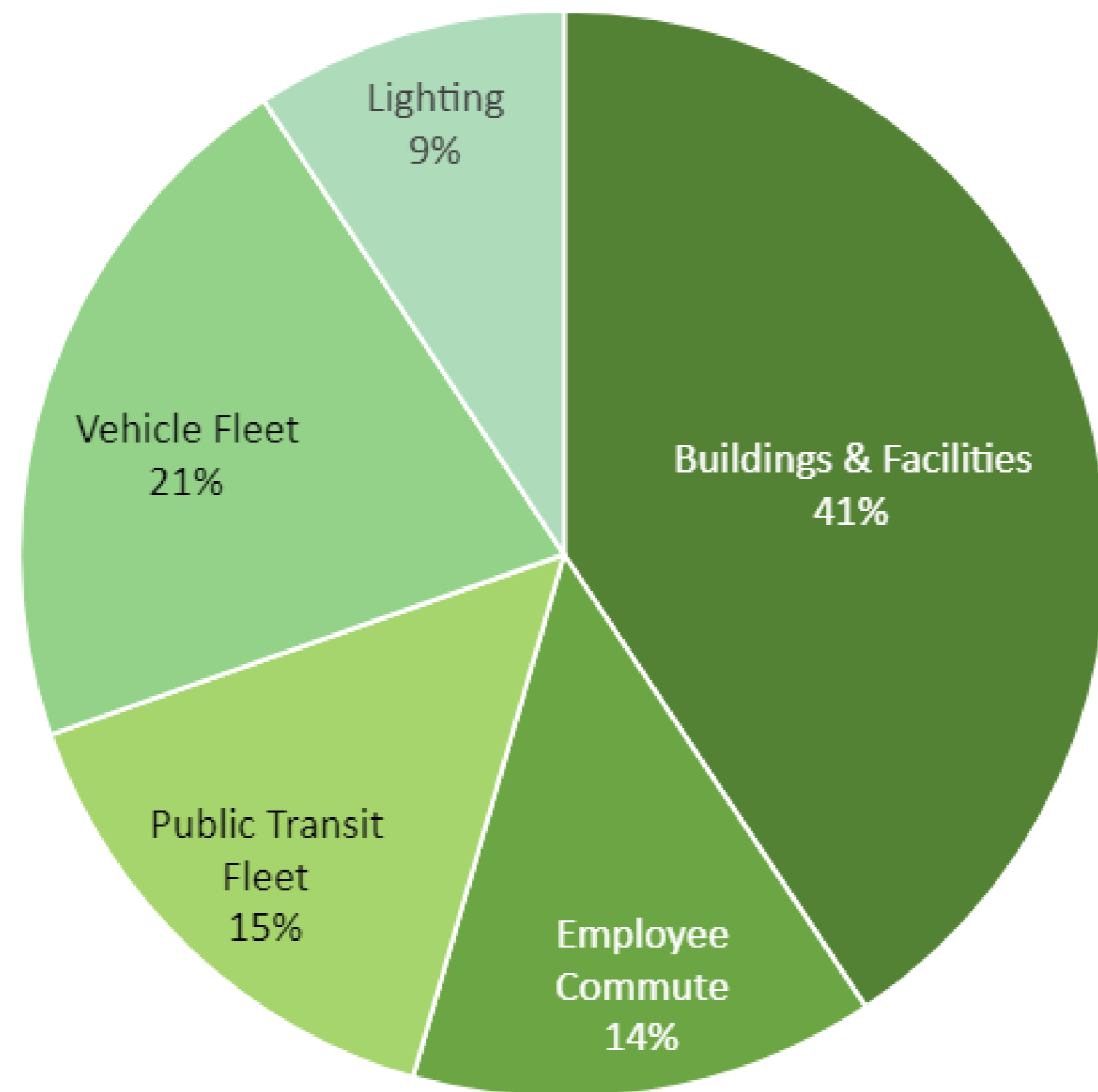
Municipal Government Emissions: Actual vs. Target



# Operational Emissions cont.



Municipal Emissions by Sector (2021)

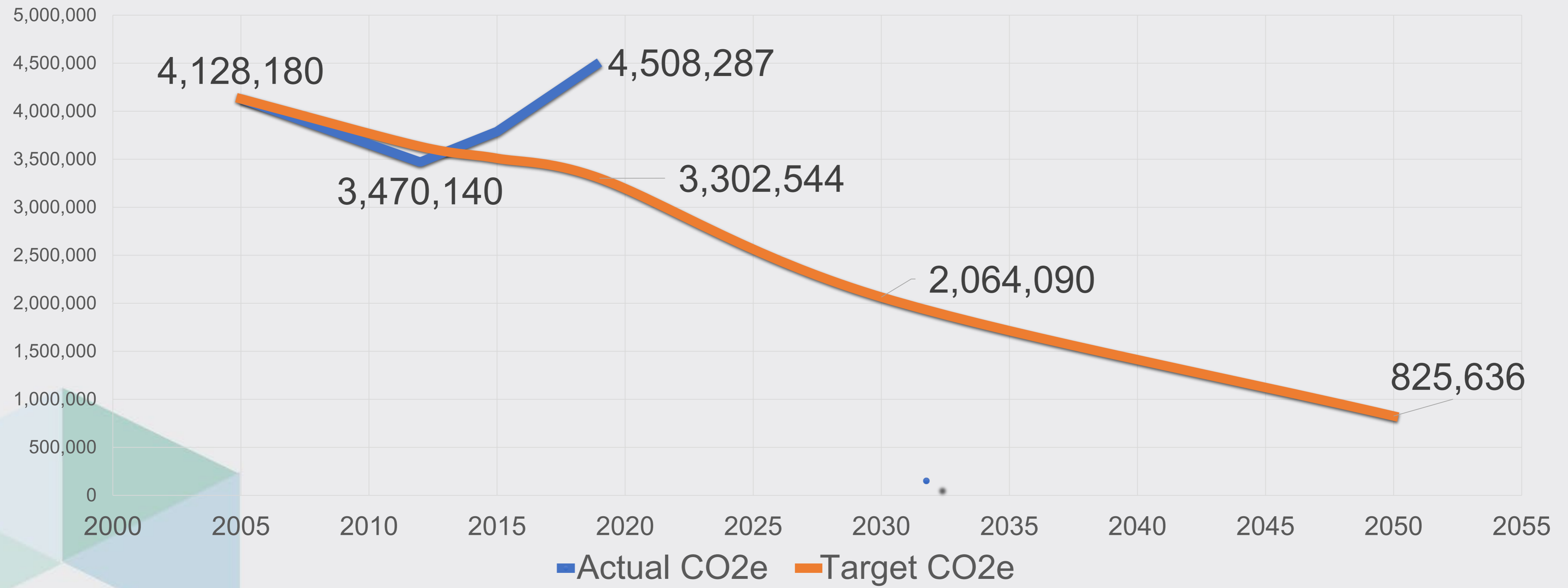


- 50% Buildings and outdoor lighting
  - LED streetlight retrofit reduced energy use 65%
  - Efficiency investments reduced building energy approx. 26%
- 50% from Vehicles
  - Investing in EV (bus and light duty)
  - Adding workplace charging for employees



# Community Emission Trends

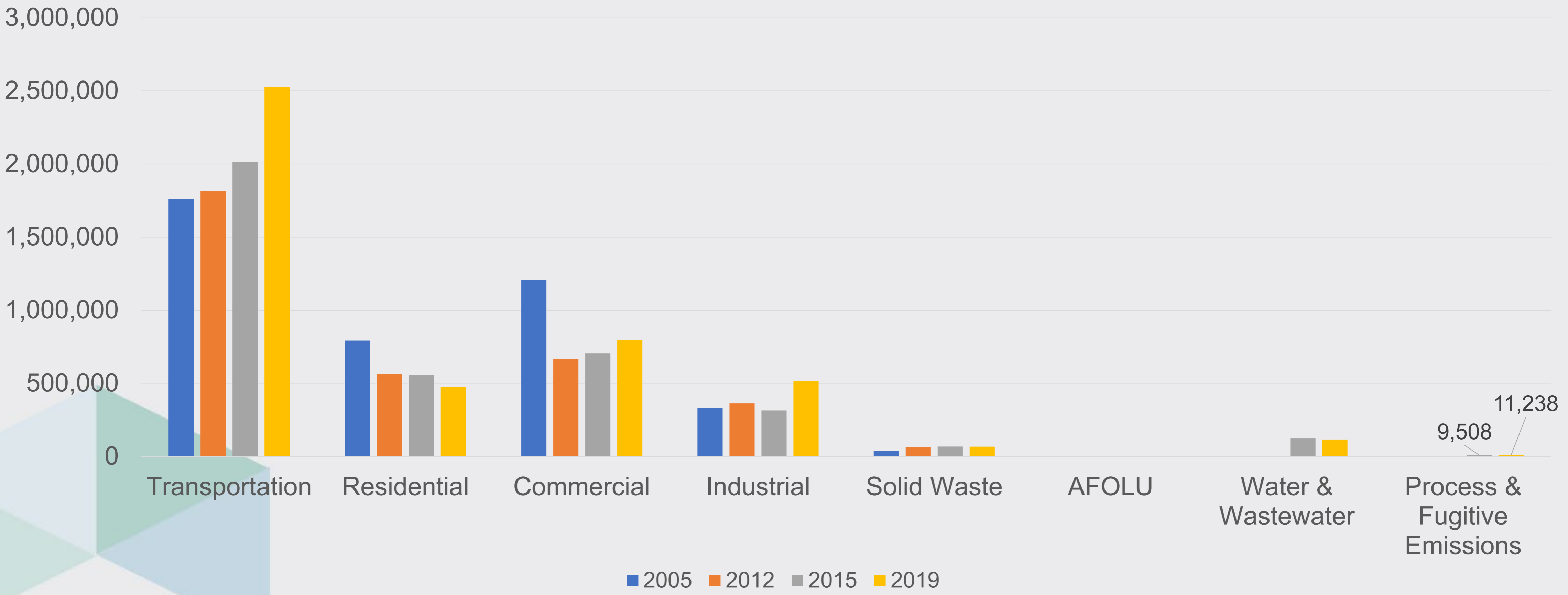
Community Totals (MTCO2e)





# Community Emission Trends

Sector Emissions (MTCO<sub>2</sub>e)





# Major drivers



- Building sector reductions driven mostly by investments in low-carbon production (TVA) and *some* efficiency gains
- Population growth and increased job opportunities in the area are driving emissions (per capita gains).
  - Average vehicle in our area is 10 years old
  - Manufacturer MPG efficiency hasn't increased significantly in the last 15-20 years
  - Significant economic commercial investments leading to increases in square footage

# Framing our priorities

1. Potential emission reduction
2. Length of time experts thought it would take to start
3. Potential community benefit / likelihood to advance positive equity outcomes

## Transportation Priorities

Expand and improve bicycle and pedestrian facilities, connectivity, convenience, and/or safety in a manner that significantly increases the number of trips taken by walking or biking

**Measuring success:** Miles of improvement, mapping corridors of connectivity, estimating pedestrian and bicycle trips



Make public transit investments that significantly enhance coverage, service quality, frequency, and/or speed

**Measuring success:** Number of trips, average route frequency, number of bus stop improvements, Community VMT



Significantly accelerate community adoption of electric vehicles

**Measuring success:** Number of EV registrations, number of EVSE by level of service, EVSE distribution



Partner with major local commercial fleet operators to transition to electric vehicles

**Measuring success:** EVSE on commercial property, EV registrations





# Knoxville's Priorities



## Transportation

1. Expand bike/ped facilities
2. Make investments in public transit
3. Accelerate community adoption of EVs
4. Work with commercial fleets to transition

## Buildings/Energy

1. Commercial and multifamily energy reduction
2. Residential energy reduction
3. Amplify opportunities to invest in renewables
4. Promote opportunistic thermal electrification

## Waste

1. Commercial organic diversion
2. Increase recycling rate
3. Promote consumption-reduction
4. Residential organic diversion

# National & Regional Commitments

(current)



- Carbon Disclosure Project
- Chicago Climate Charter
- Climate Mayors
- DOE Better Buildings Challenge (Goal Achiever in 2021)
- DOE Better Climate Challenge
- DOE Low-Carbon 2-year Pilot
- Drive Electric Tennessee & Drive Electric Smoky Mountains
- Global Covenant of Mayors (Paris Accord reporting & goal setting)
- Southeast Sustainability Directors Network
- TVA Connected Communities Steering Committee
- TVA Regional Energy Resource Council
- Urban Sustainability Directors Network



# Thank you!



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