



Equitable climate action for a
healthy and resilient Richmond

Climate Action

What is Climate Change?



Climate change is
a shift in the
long-term, average
weather pattern

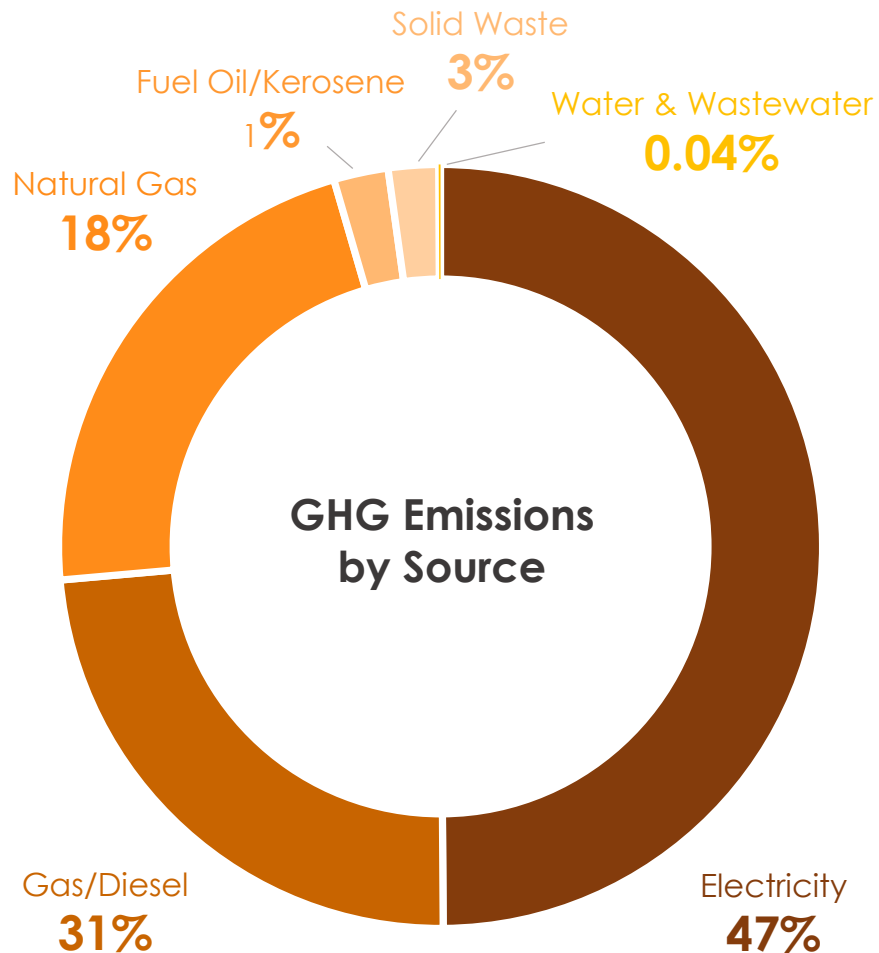


Human-caused
emissions—especially
from burning fossil
fuels—are driving
climate change

What Causes Climate Change?



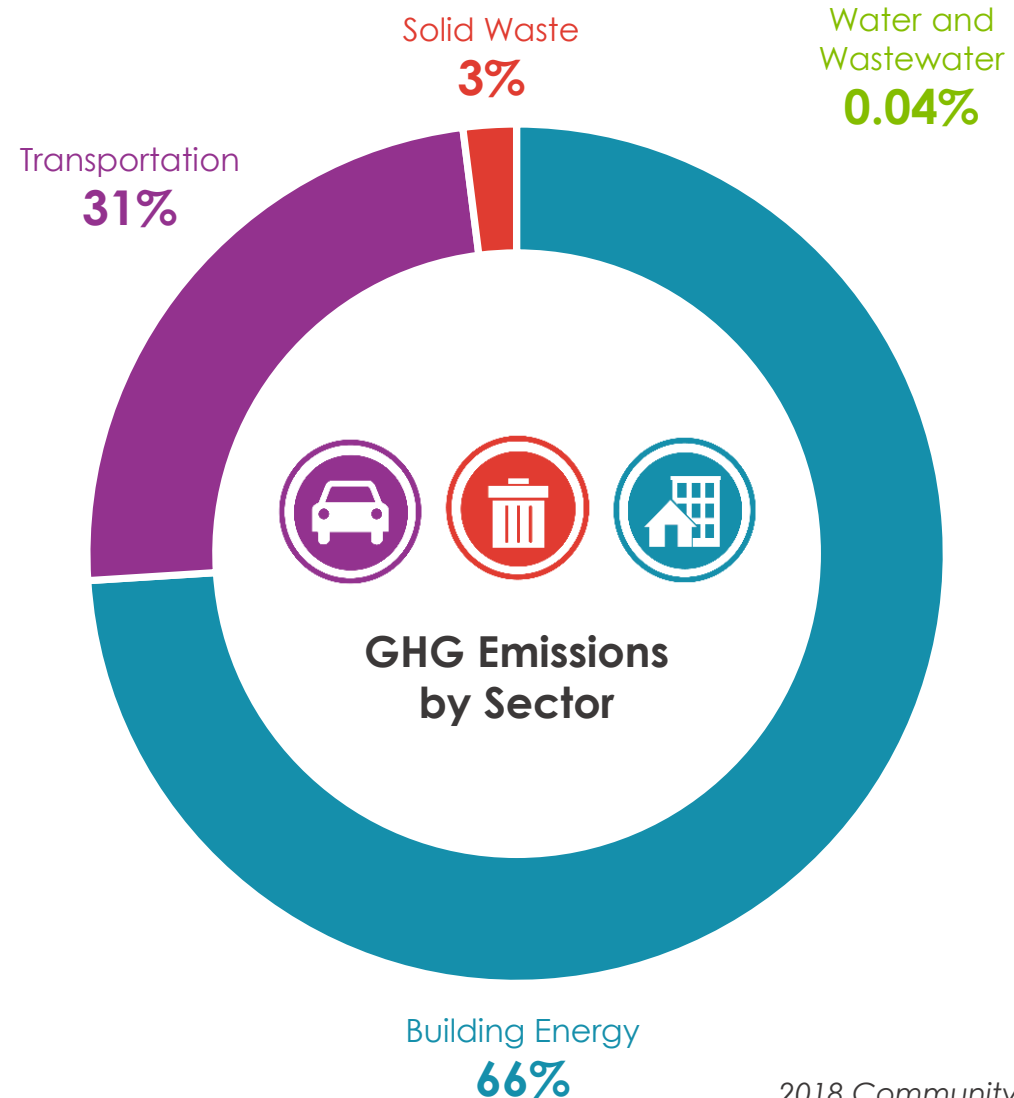
Richmond GHG Emissions **BY SOURCE**



- Methane and other off-gassing from the treatment of our drinking water and wastewater
- Methane and other off-gassing from our landfilled waste
- Pollutants from fuel oil and kerosene for heat and industrial processes
- Pollutants from the transport and off-gassing of natural gas used to heat our spaces and hot water
- Emissions from the combustion of gasoline and diesel for fueling vehicles
- Emissions generated from the production of electricity that we use to power our lights, run industrial processes, generate heating and cooling, power our technology, etc...

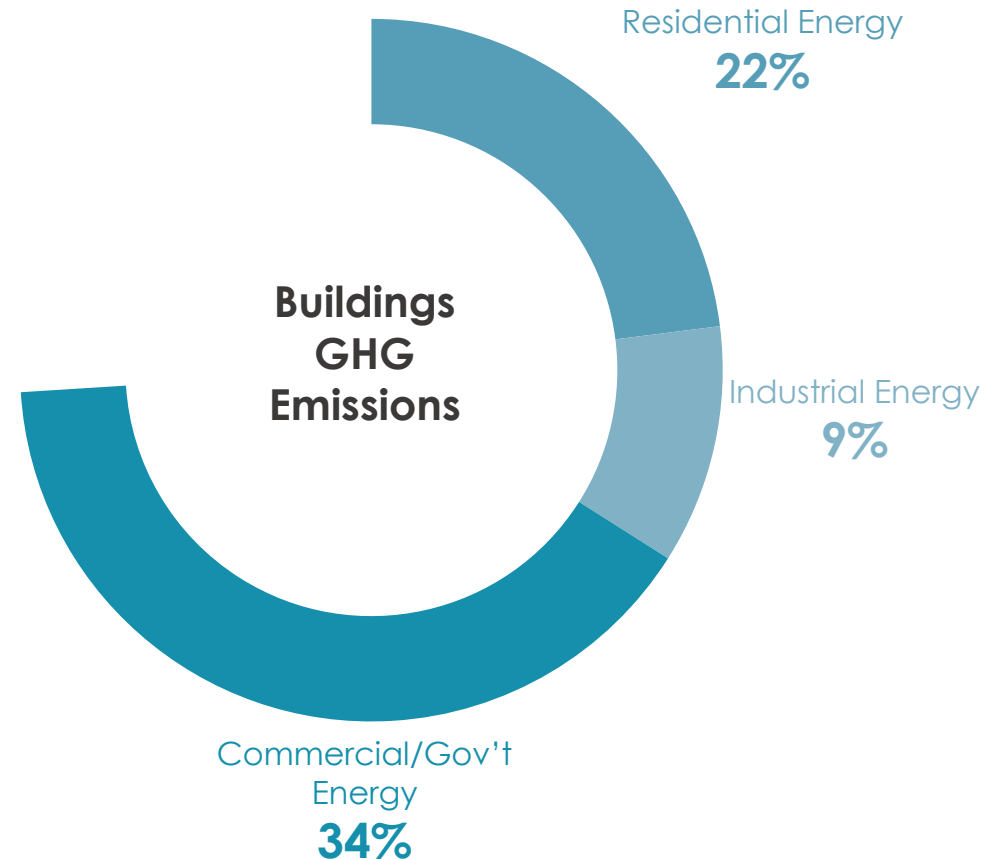
Richmond GHG Emissions **BY SECTOR**

- Treatment of sewage and drinking water
- Solid waste transferred to landfill
- Transportation emits pollutants to run our buses, cars, trains, and trucks for transport)
- Power from all sources to provide lighting, heating and cooling, technology, etc in all of our residential, commercial, government, and industrial buildings



Richmond GHG Emissions **FROM BUILDINGS**

- Residential: Emissions generated from all energy sources within our homes and on residential properties (i.e. heating/cooling, lighting, cooking, and general plug load)
- Industrial: Emissions from energy used in our manufacturing and industrial facilities
- Commercial/Government: All of the energy used by commercial and government buildings and public operations



Climate and Energy Modeling Process

What action is needed to achieve Richmond's **climate and energy goals**?

Buildings

What buildings are in Richmond and how much energy do they use?

Building Energy Use Profile

Transportation

How do people move around Richmond?

Transportation Energy Use Profile

Waste

How much waste do Richmonders generate?

Waste Production Profile

Energy Supply

How much electricity, natural gas, gasoline, diesel, and other fuels are used in Richmond?

What are the fuel sources used to generate the electricity that is used by Richmond?

Baseline Data

Emissions Profile

How many tons of greenhouse gas (GHG) emissions come from energy use? *(GHGs produced by burning fossil fuels to generate electricity)*

BAU Scenario Trends

Baseline Energy & Emissions Model

What is the projected growth in building floor area and industry?

What is the projected growth in VMT by cars, trucks, and buses?

What is the projected growth in waste?

Business-As-Usual Projections for Energy & Emissions

Policy Scenario Actions

What can we do to reduce building energy use?

What can we do to reduce transportation energy use?

What can we do to reduce emissions from waste?

What can we do to increase renewable energy?

How is the mix of fuels used to generate electricity going to change (due to RGGI and market forces)?

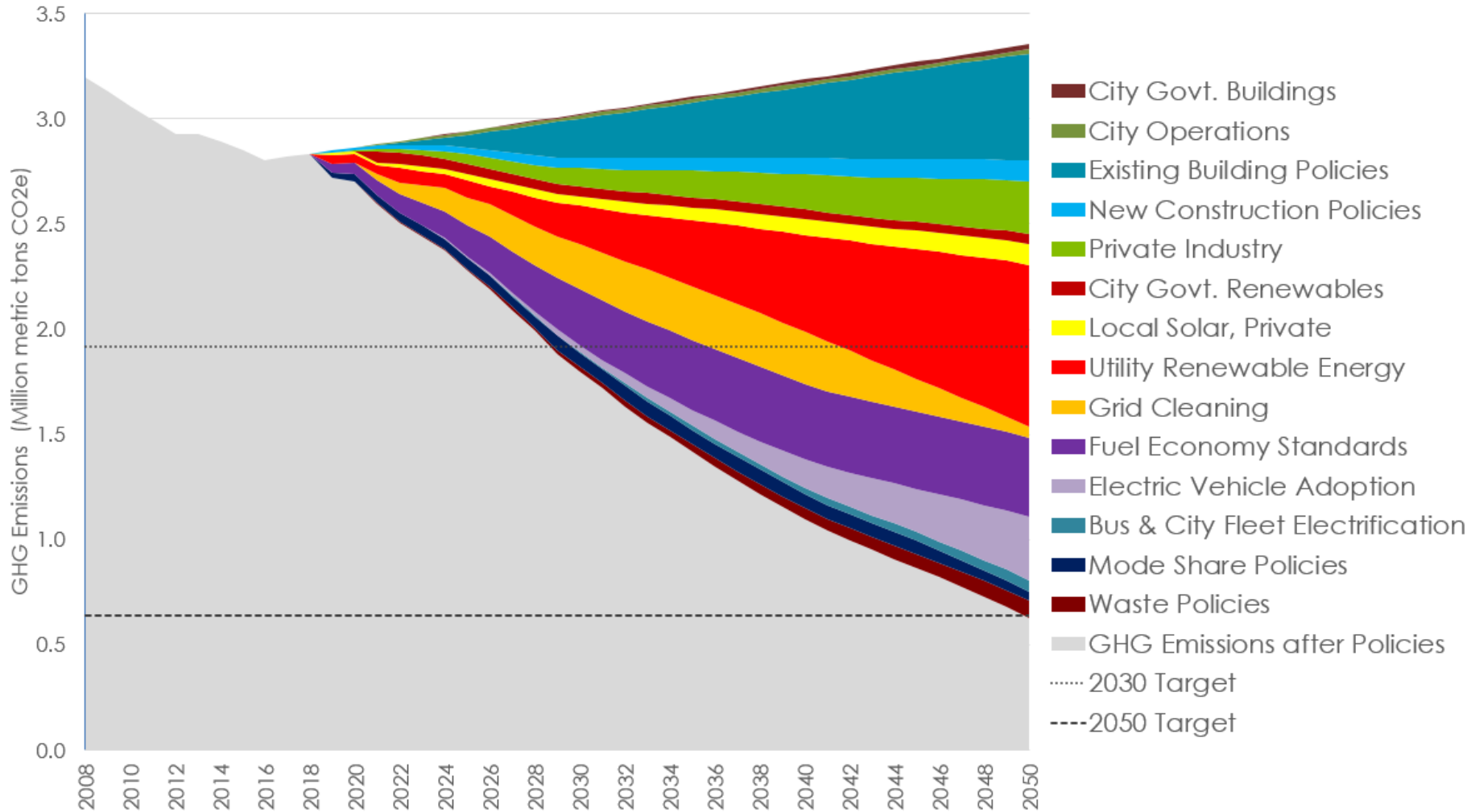
Policy Scenario Projections for Energy Use

Policy Scenario Projections for GHG Emissions and Renewable Energy Use

Example mitigation actions (from best practices, peer research, and consultant knowledge) feed into **RVAgreen 2050** planning process

GHG Mitigation Modeling

GHG Reductions for Goal Scenario (80% by 2050)



What Role do We Play in Climate Change?

