



Office of Climate Action, Sustainability, and Resiliency

2020 Budget Overview
“Combating Climate Change”

Mitigating climate change by advancing carbon-free strategies to reduce greenhouse gas emissions; cultivating resiliency in the face of potential climate change-related emergencies; and securing an economically, socially and environmentally sustainable city for generations to come.



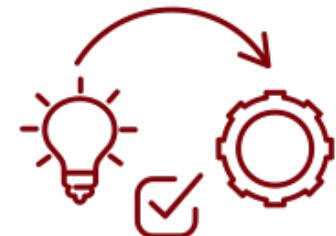
Data Collection,
Management,
Analysis, and
Reporting



Community
Engagement,
Outreach, and
Partnerships

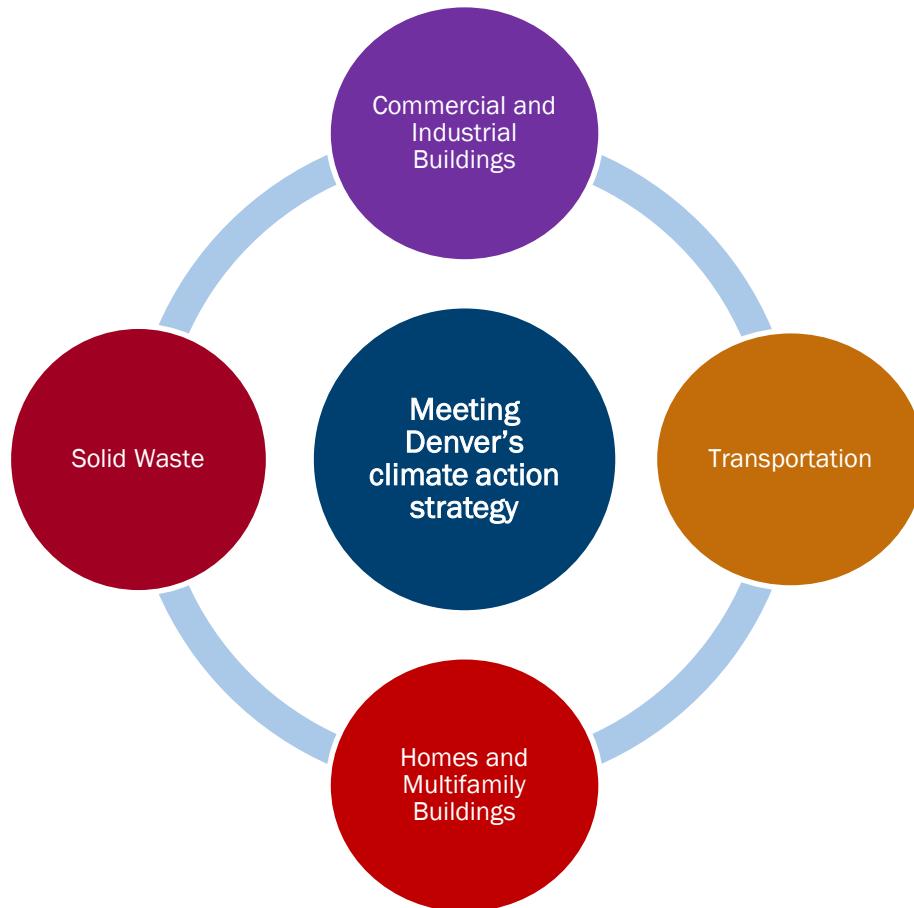


Policy,
Regulatory, and
Legislative
Activities



Implementation,
Programs,
Incentives, and
Actions

Strategic Pillars



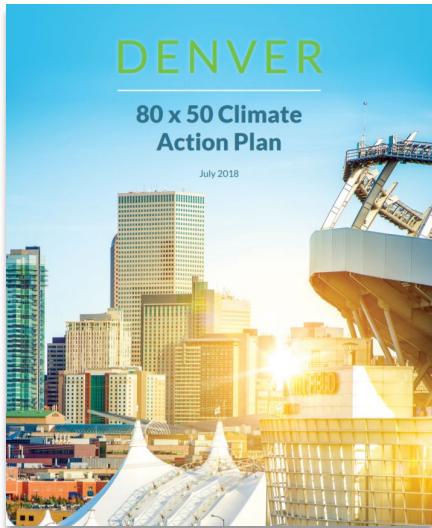


Key Strategic Metrics



Denver's long-term climate goal: Reduce GHG emissions 80% by 2050 from 2005 baseline

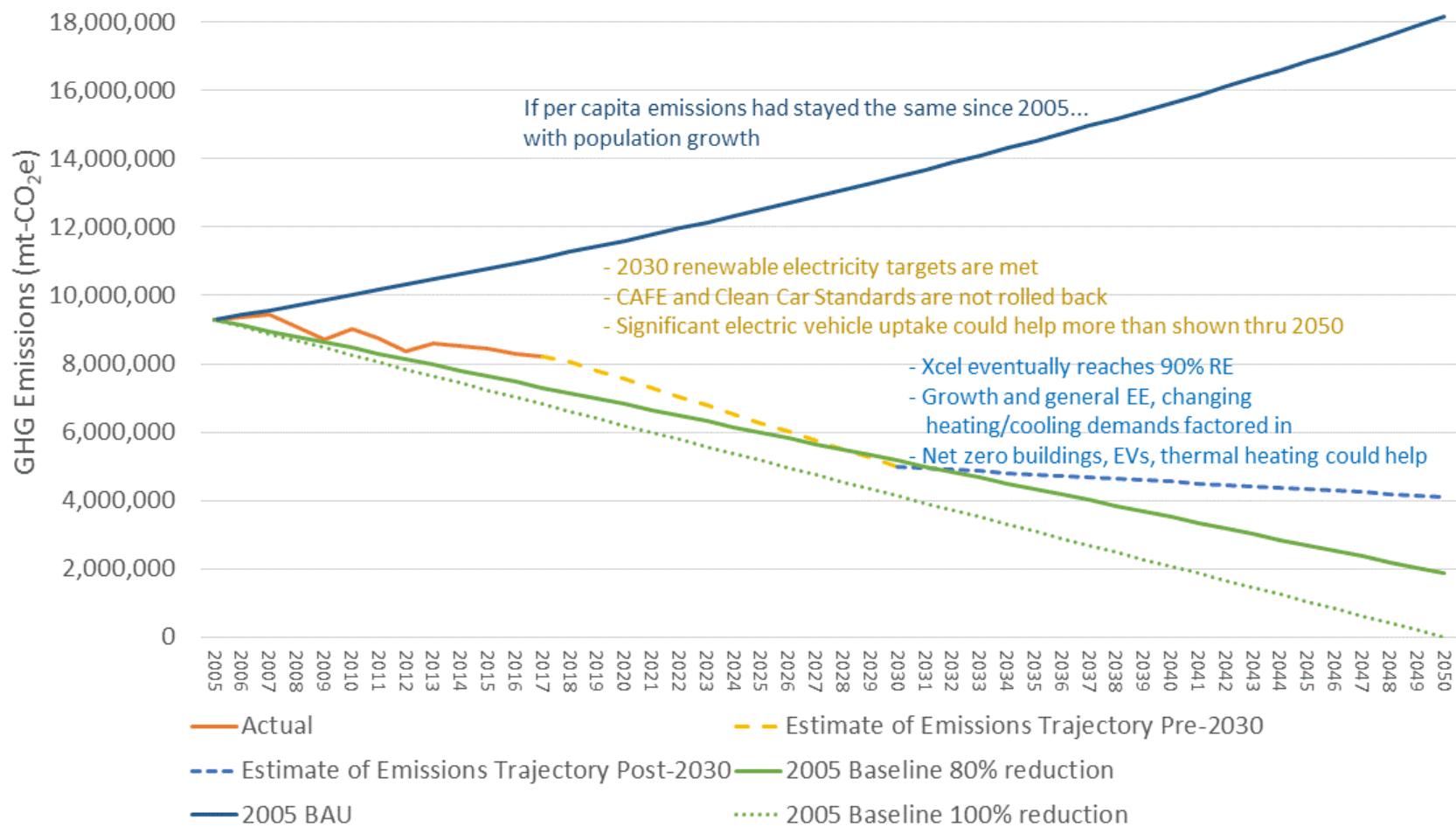
IPCC – requires cutting emissions in half by 2030 and be carbon free by 2050



EVERY ACTION MATTERS
EVERY BIT OF WARMING MATTERS
EVERY YEAR MATTERS
EVERY CHOICE MATTERS

Green House Gas (GHG) Emissions

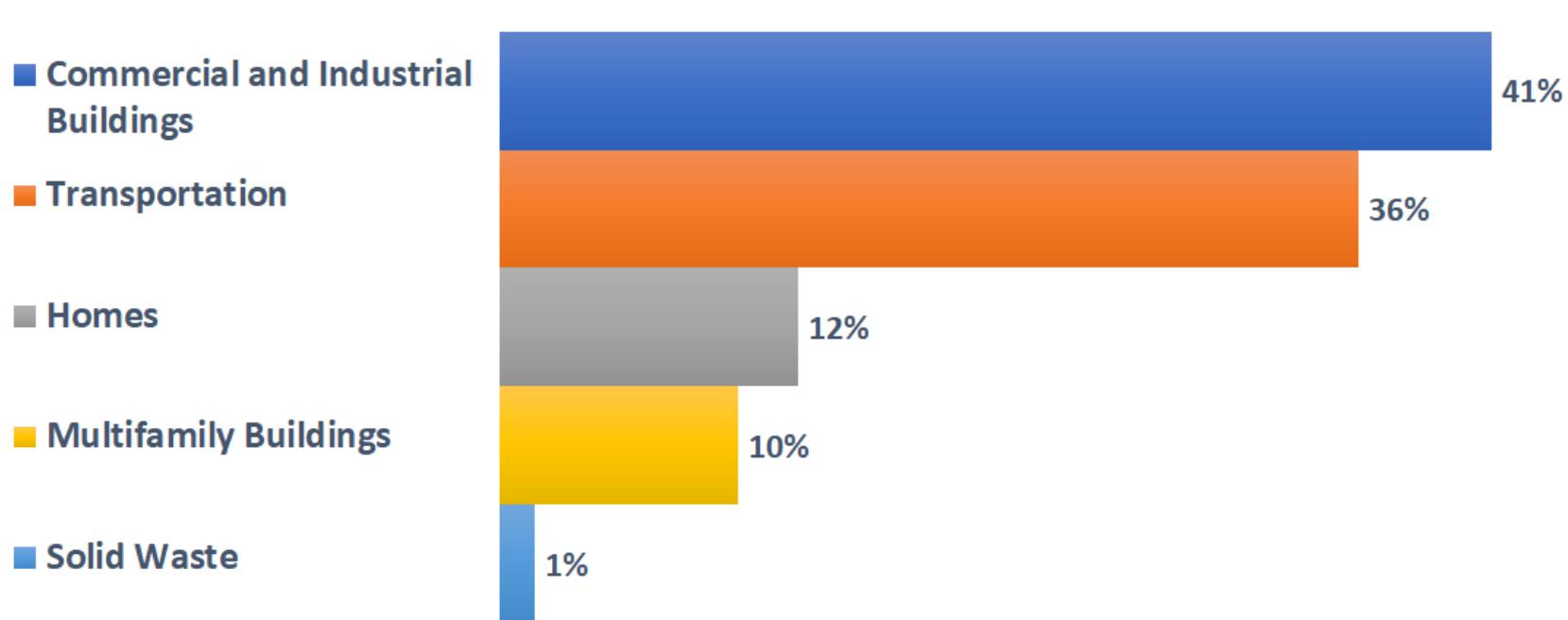
Denver Core GHG Emissions Relative to Business as Usual (BAU), Known Reductions, and
Needed Reductions to Meet 80x50 or 100x50 Goal



Climate and Transportation

Meeting Denver's climate goals will require a reduction in carbon emissions and the elimination by 2050

Denver's Greenhouse Gas Emissions



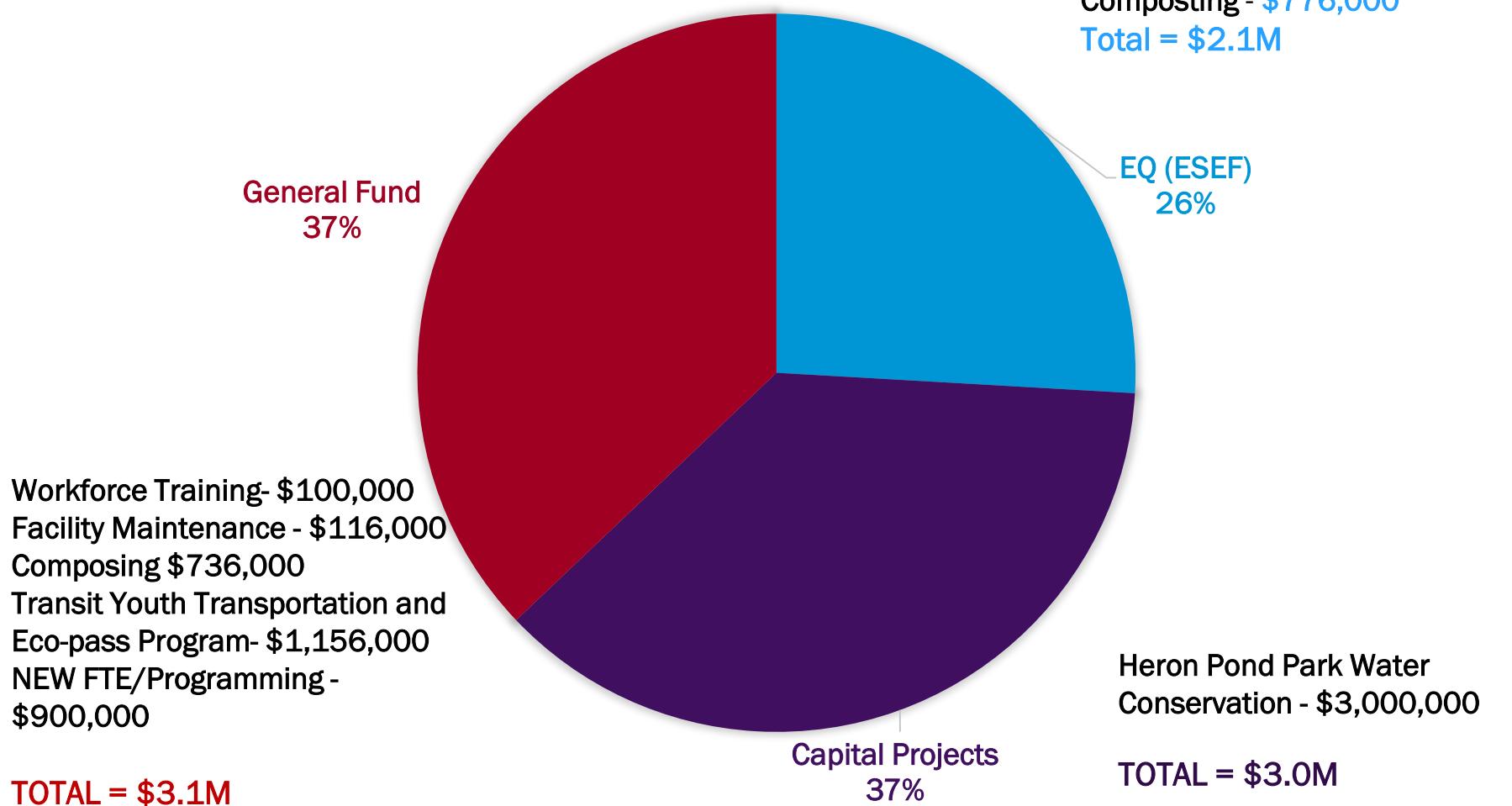


2020 New Investments

Agency	Investment
Community Planning & Development	\$116,000
Office of Children Affairs	\$150,000
Human Resources	\$344,000
Public Works	\$2,174,000
Public Health & Environment	\$2,325,000
Parks & Recreation	\$3,000,000
TOTAL	\$8,109,000



2020 New Investments





Total Investments

Agency	Investment
Community Planning & Development	\$116,000
Office of Children Affairs	\$150,000
Public Works/General Services	\$460,000
General Services	\$1,700,000
Human Resources	\$1,799,000
Parks & Recreation	\$3,000,000
Public Health & Environment	\$5,000,000
Public Works	\$28,286,000
TOTAL	\$40,511,000



Individual Agency Total Investment

Adapt to the Changing Climate and Limited Resources: Incorporate more climate-resilient landscape, protect and expand tree cover across Denver, and continue to develop best practices to maintain our Mountain Park forest and mitigate fire risk.



\$3,000,000 is being invested into Heron Pond Park that will move forward the water quality effort in Denver.

Public Works Investments

Air Quality	Climate	Energy	Food
			
Attain all National Ambient Air Quality Standards	Reduce Denver CO2 emissions to below 1990 levels.	Hold total energy use below 2012 levels, while cutting fossil fuels by 50%.	Grow and/or process at least 20% of food production in Denver in Colorado.
Health	Housing	Land Use	Materials
			
Increase the % of youth in Denver at a healthy weight from 69% to 74%	Ensure 80% of neighborhoods are rated as affordable	Move Denver's Walk Friendly rating from Gold to Platinum	Increase the citywide recycling rate to 34% or greater
Mobility	Water Quality	Water Quantity	Workforce
			
Reduce trips in single-occupant vehicles to no more than 60% of commutes	Make all Denver creeks and rivers swimmable and fishable	Reduce per capita potable water usage by 22%	Reduce single-occupant work commutes in transit deserts to less than 60%

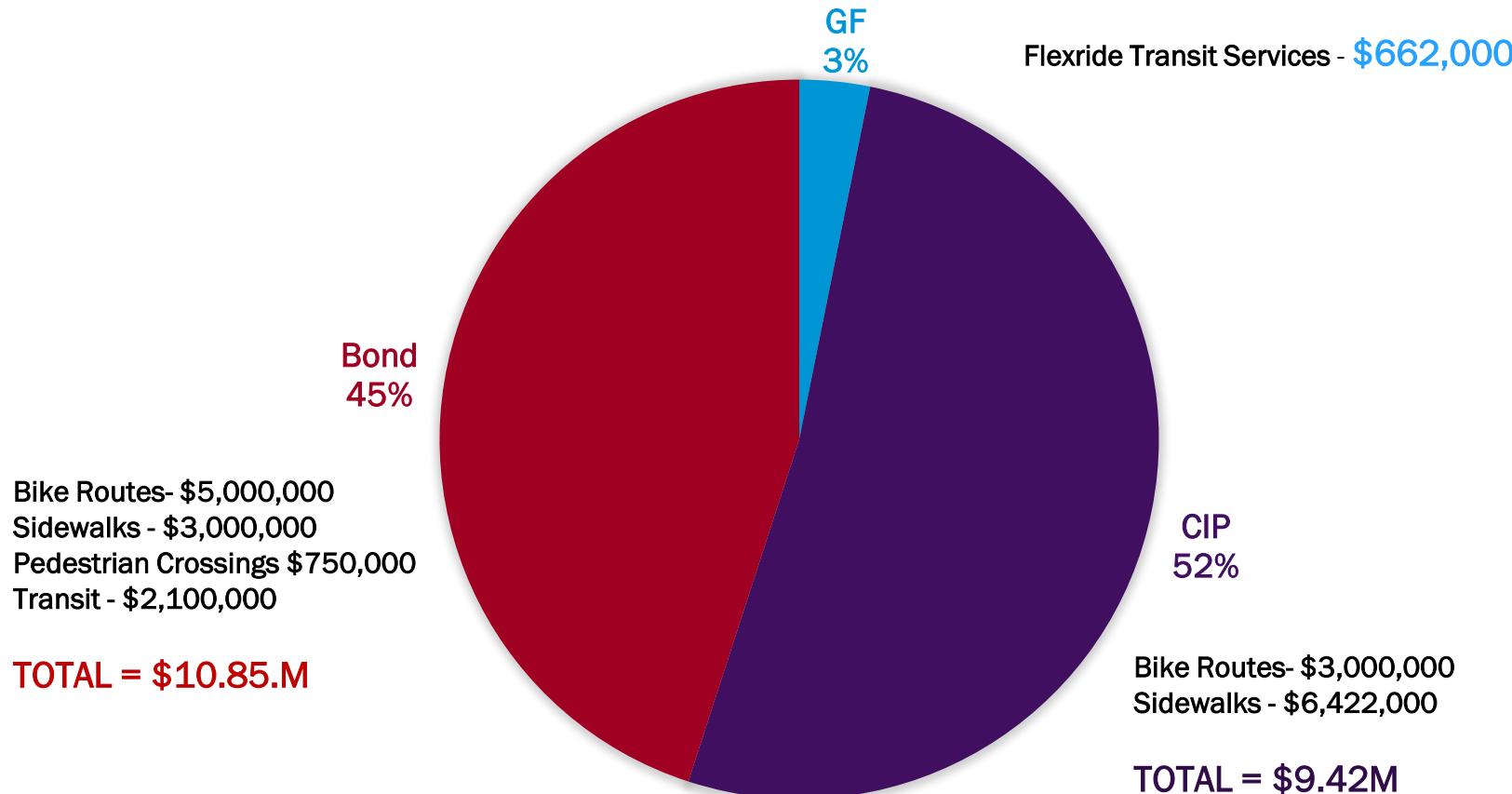
The Department of Public Works is dedicated to achieving the Mayor's goals of

- reducing our carbon footprint,
- safeguarding our historically marginalized communities of color who are disproportionately affected by the health impacts of climate change,
- powering our city with 100% renewable electricity, and
- ensuring environmental justice and equity as Denver transitions to carbon-free energy and transportation systems.

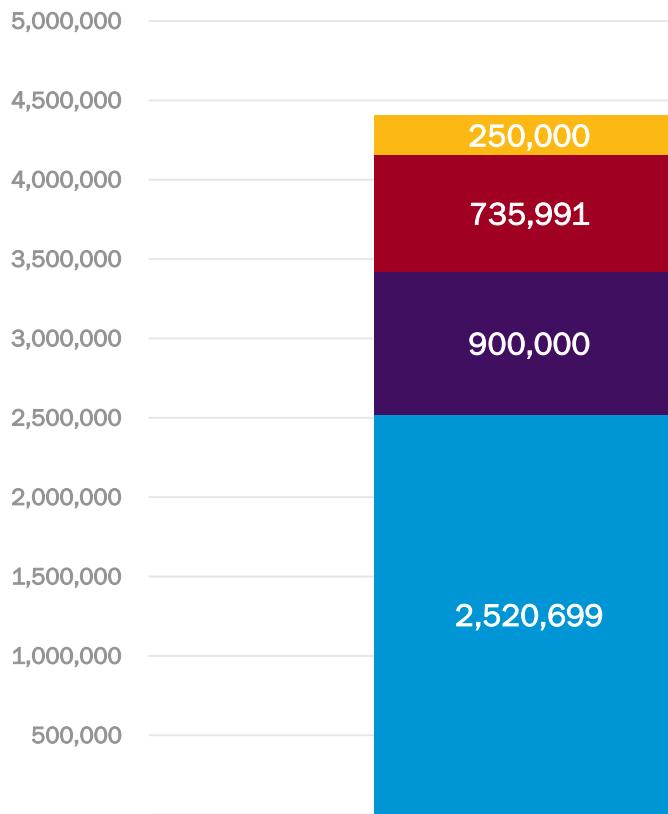
Public Works TOTAL 2020 INVESTMENT = \$27.06M



Public Works Investments



Public Works Waste Diversion Investments



- **\$250,000** Base GF - Community Education & Outreach-Base
- **\$735,991** Increase GF - Denver Composts Drivers
- **\$900,000** Base EQ - Compost Truck Lease
- **\$2,520,700** Base SRF/EQ- Composting and Truck Lease



General Services Investments

Public Works and General Services are working together to achieve the goals under the **80x50 Climate Action Plan** to maintain and update the City's building automation system and heating, ventilating, and air conditioning systems to be more energy efficient by reducing fossil fuel use and other environmental impacts.

2020 CIP Projects	Investment
DFD Station #12 HVAC	\$68,000
Montbello Library HVAC	\$90,000
700 W Colfax HVAC	\$250,000
700 W Colfax BAS	\$50,000
TOTAL	\$458,000



\$1,700,000 is invested in the Energy Conservation Capital Projects Fund

General Services' goal is to achieve 100% renewable electricity for 256 City and County of Denver municipal buildings by 2025, utilizing an Energy Savings Performance Contract (ESPC) through Energy Service Companies (ESCO).

- This is an alternative financing mechanism used to accelerate energy conservation investments.
- Guarantees improvements will generate energy cost savings to pay for the project.
- These reduced energy costs guarantee utility cost savings to be reinvested and pay for more capital projects.
- At contract completion, additional cost savings accrue to the agency.
- General Services is evaluating proposals and will award ESCO contract(s) in Q4 2019 for the \$1.7M in existing funds.

Public Works Electric Vehicles Investments

By the end of 2020

\$6.8M investment (\$2.9M in 2020)

22% of electric-eligible fleet will be converted by 2020



2018 Lifecycle Emissions Profile (mg/mile)

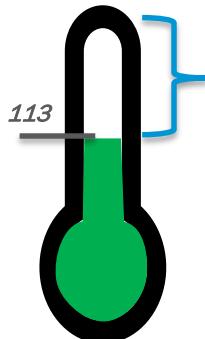
Pollutant	New Gasoline Car	New Electric Vehicle	% Reduction
NOx	108	31	71%
VOC	135	2	99%
GHG	323,060	213,270	34%

NOx – nitrogen oxide

VOC – volatile organic compound

GHG – greenhouse gas

Mayor's 2020 EV Goal = 200



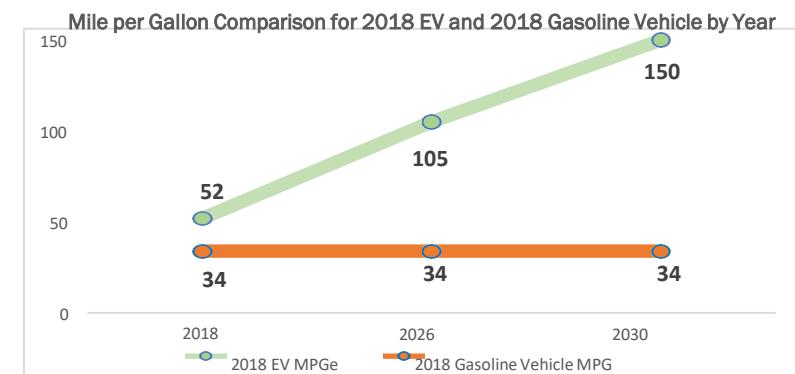
Adding 87 Vehicles in 2020

- 22 for DPW
- 16 for DFD
- 40 for DPD (Incl. 30 Zero Motorcycles)
- 5 for DPR
- 1 for DEH
- 1 for DHS
- 1 for DMV
- 1 for CAO

27% of fleet is electric-eligible (900 vehicles)

Beyond 2020

Because electricity becomes cleaner each year, existing EVs will also reduce their emissions every year. The same 2018 Nissan LEAF, if on the road in 2030, would have improved its mpge from 52 to 150 mpge, while a comparable new gasoline vehicle bought in 2018 would at best maintain its original fuel economy of 34 mpg.



Public Health EV Infrastructure Investment

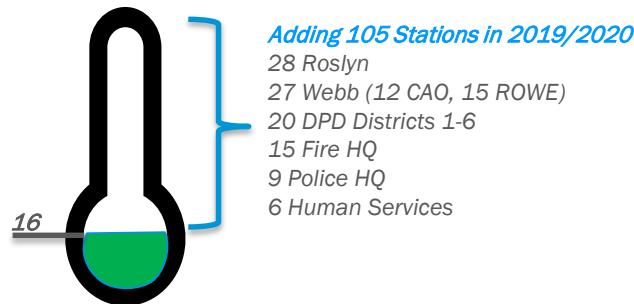
By the end of 2020

\$1.3M Contribution by Xcel Energy
for load testing and load capacity expansion

\$500K City Investment from EQ/ESEF
for charging stations and installation

121 charging stations = 230 ports

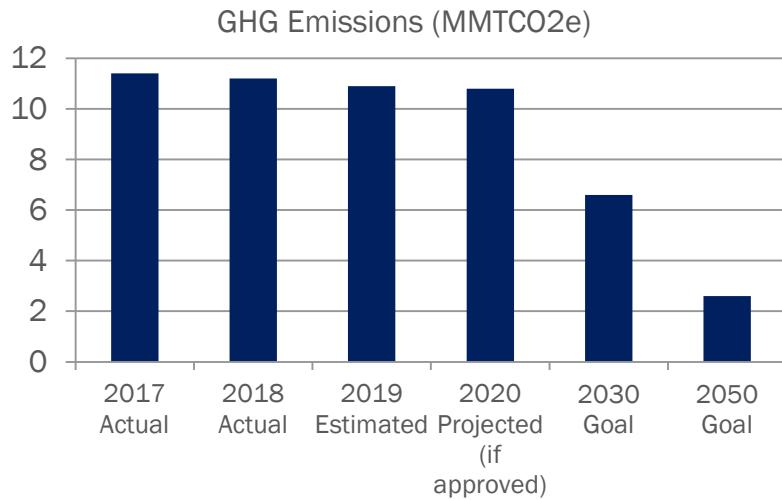
Charging Stations



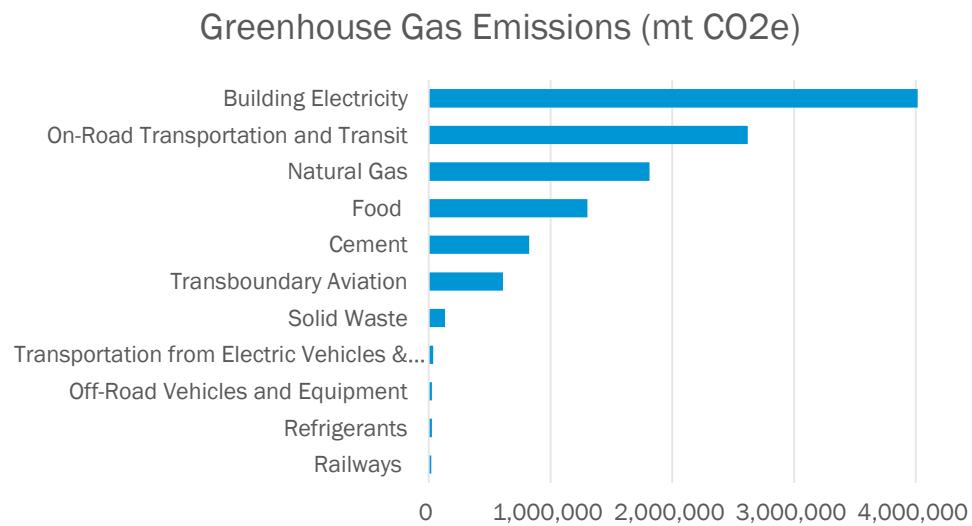
Public Health Investments

	Expenditures	Revenues	FTE	Revenue Duration
NEW FTE/Programming	\$2,325,000	\$1,325,000	11.12	\$1,775,000 onetime transfer from ESEF
FTE TRANSFER	\$2,200,000	\$2,200,000	16.5	Temporary
TOTAL	\$4,525,000	\$3,525,000	27.62	

Establishes new Office of Climate Action, Sustainability and Resilience to accelerate action towards climate and sustainability goals. Includes a new General Fund investment and moves EQ's Climate Action Team & Office of Sustainability staff to the new office; funded by ESEF transfer.



80x50 plan 2020 GHG goal = 11.26M tons (15% below 2005)



**\$116,000 invested in 1 FTE for Green
Buildings Compliance**



RTD EcoPass Program



OHR and OCA working together to invest \$2.0M in the RTD Eco-pass program to provide access and options for youth and employees to help reduce climate emissions.



DEN Energy Programs

- DEN hosts 7 solar photovoltaic arrays totaling over 15 megawatts of power generating capacity
 - 4 arrays interconnected at DEN electric meters
 - 2 on-site Community Solar Gardens
 - Xcel-owned solar canopy at Peña Station NEXT parking lot, part of a microgrid/battery storage demonstration project
- Renewable energy purchasing
 - Xcel's Renewable*Connect Program
 - Off-site Community Solar Gardens
- Energy efficiency
 - Xcel Energy Annual Achievement Awards in 2014, 2016, and 2018 for lighting, HVAC, and control projects
- Green building
 - 4 Leadership in Energy and Environmental Design (LEED) certified buildings, including LEED Platinum hotel
- Over 50 electric vehicle charging stations for passengers and employees

DEN Energy Projects

- **Energy Master Plan**
 - “Ensure that Denver International Airport can meet its future energy needs with energy that is low-carbon, cost-effective, reliable, and resilient”
- **Comprehensive energy audits/Energy Performance Contract**
- **New large-scale solar project**
- **Planning first net-zero energy building**
- **DEN Real Estate energy goals**
- **Xcel Community Resiliency Initiative application**



DEN Sustainability Highlights

- **Climate**
 - 28% reduction in DEN-controlled greenhouse gas emissions between 2013 and 2018 despite passenger growth
- **Food**
 - DEN's partners donated 177,836 pounds in 2018 – almost 150,000 meal-equivalents
- **Materials**
 - Over 20 separate materials diverted from the landfill
 - Composting increased from 65 tons in 2013 to 144 tons in 2018
 - New glass program recycled 325 tons in the first 12 months
- **Mobility**
 - All DEN city employees offered RTD EcoPass
- **Water Quality**
 - DEN collects an industry-leading 70% of the deicing fluid applied to aircraft each winter season