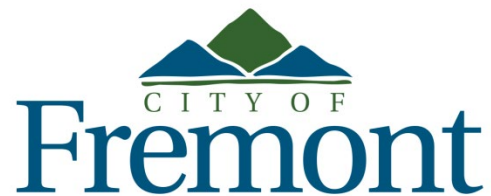


Community-wide Greenhouse Gas Inventory Update

Environmental Sustainability Commission
September 7, 2017



Purpose of GHG Inventory

- Track progress in 5 year increments toward 25% greenhouse gas emissions reduction goal by 2020
- Update the original inventory with improved & standardized methodology
- Guide future implementation of Fremont CAP

Process

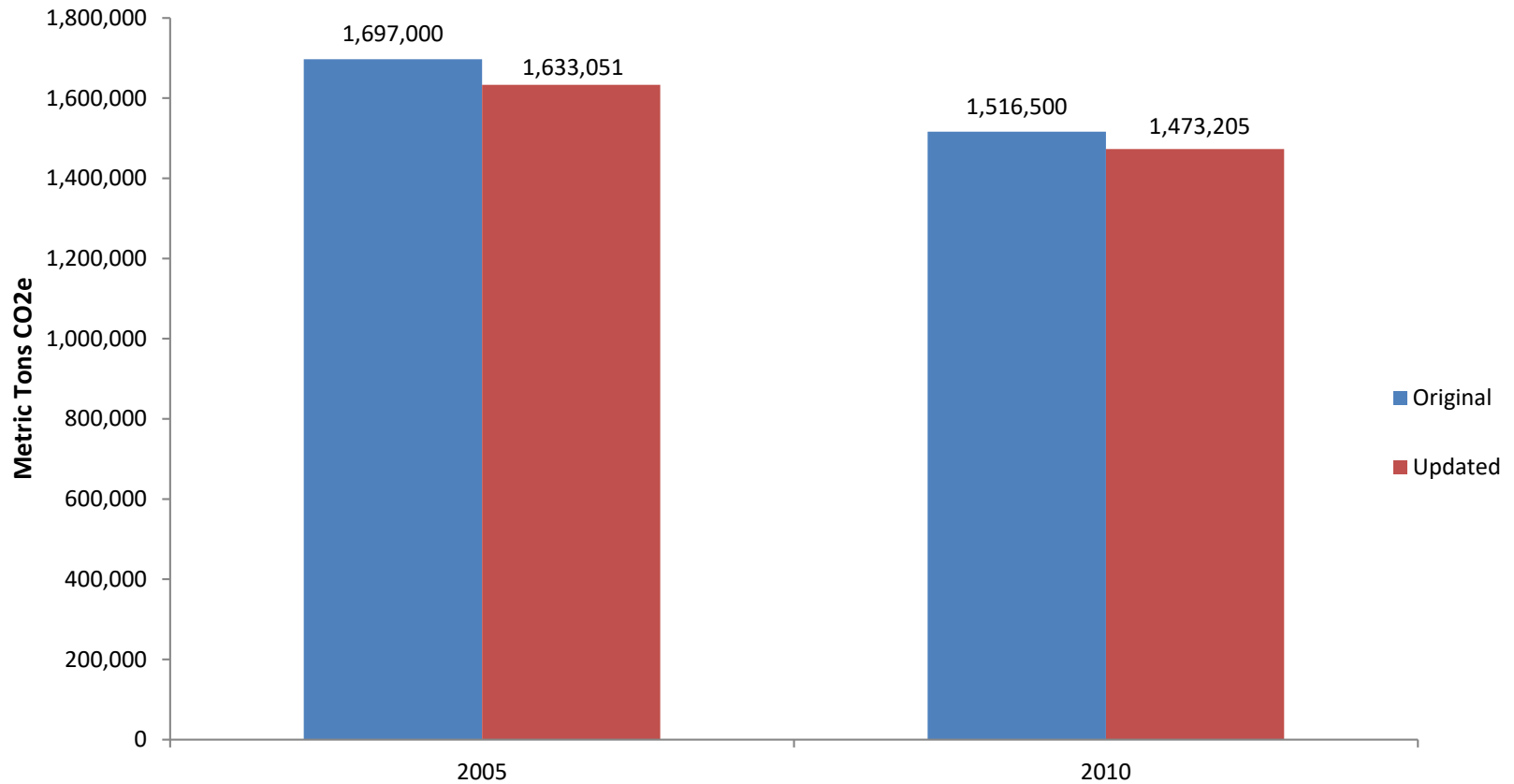
- LGC CivicSpark Climate Fellow to assist with update process
- Use of SEEC/ICLEI Clearpath Online Tool
- Update of 2005 baseline and 2010 update inventories with improved methodology
- Completion of 2015 community GHG emissions update with same methodology

Changes in methodology

- Main updates to 2005 and 2010 inventories are related to the ***transportation*** sector:
 - Vehicle class distribution through MTC's VMT (vehicle miles traveled) and fuel breakdown percentage through CARB's EMFAC Database
 - Attribution of electric vehicle to the total mix of vehicles (gasoline and diesel)

Baseline and 2010 Inventories

2005 and 2010 Updated Values



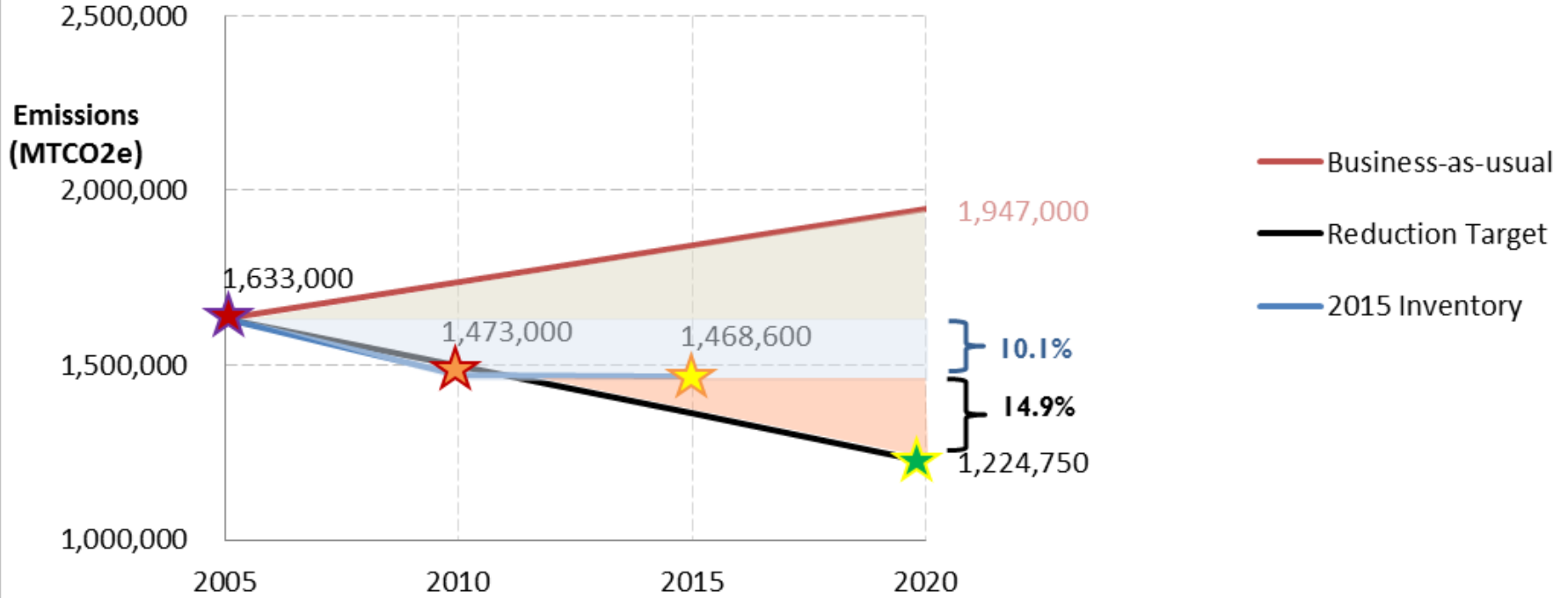
Values updated due to newer methodology

2015 Inventory Summary

2015 total community-wide emissions =
1,468,592 MTCO₂e

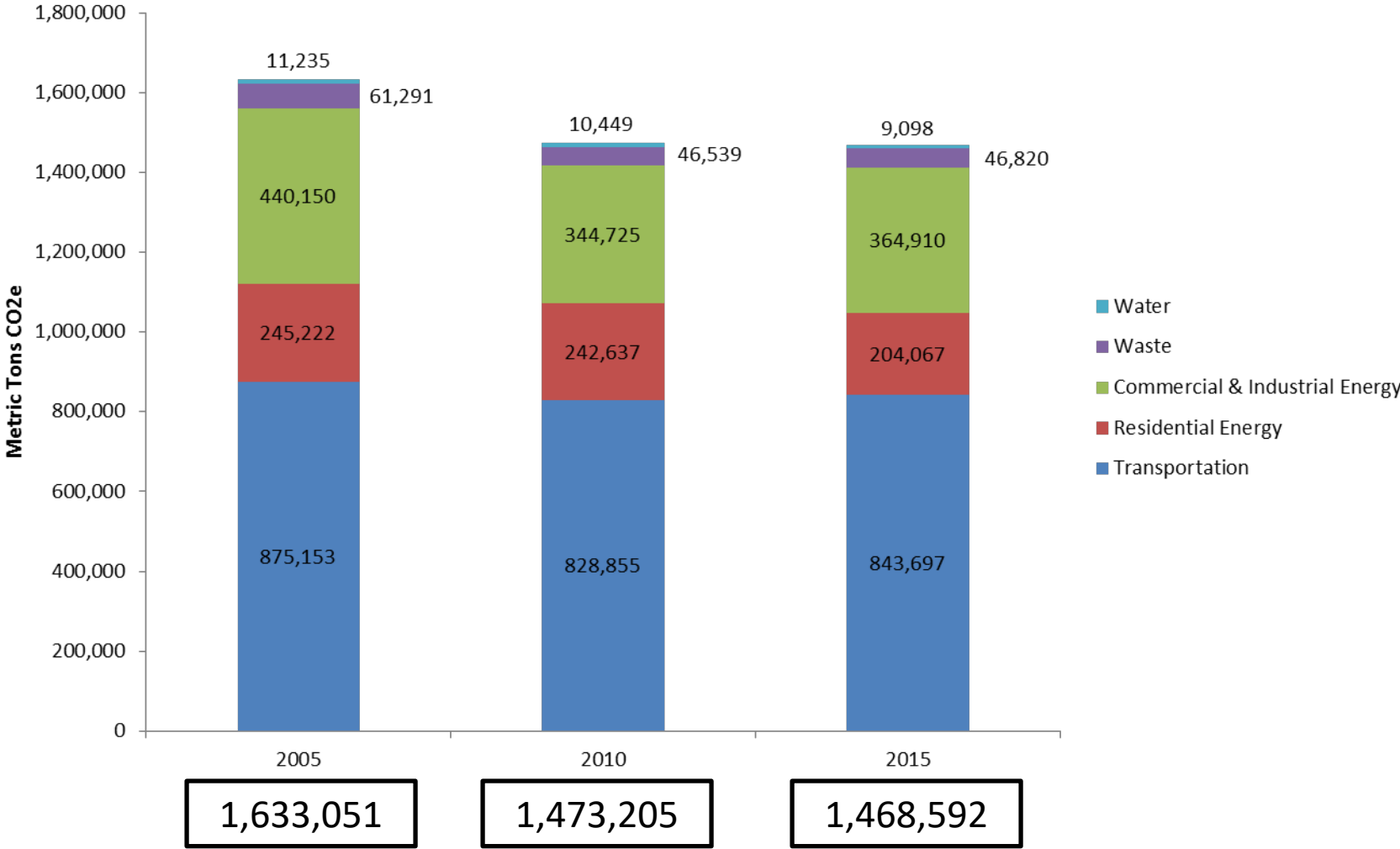
- 2005 to 2010 = 9.8% reduction
- 2010 to 2015 = 0.31% reduction
- 2005 to 2015 = 10.1% reduction

2020 Projection, Target, and Progress



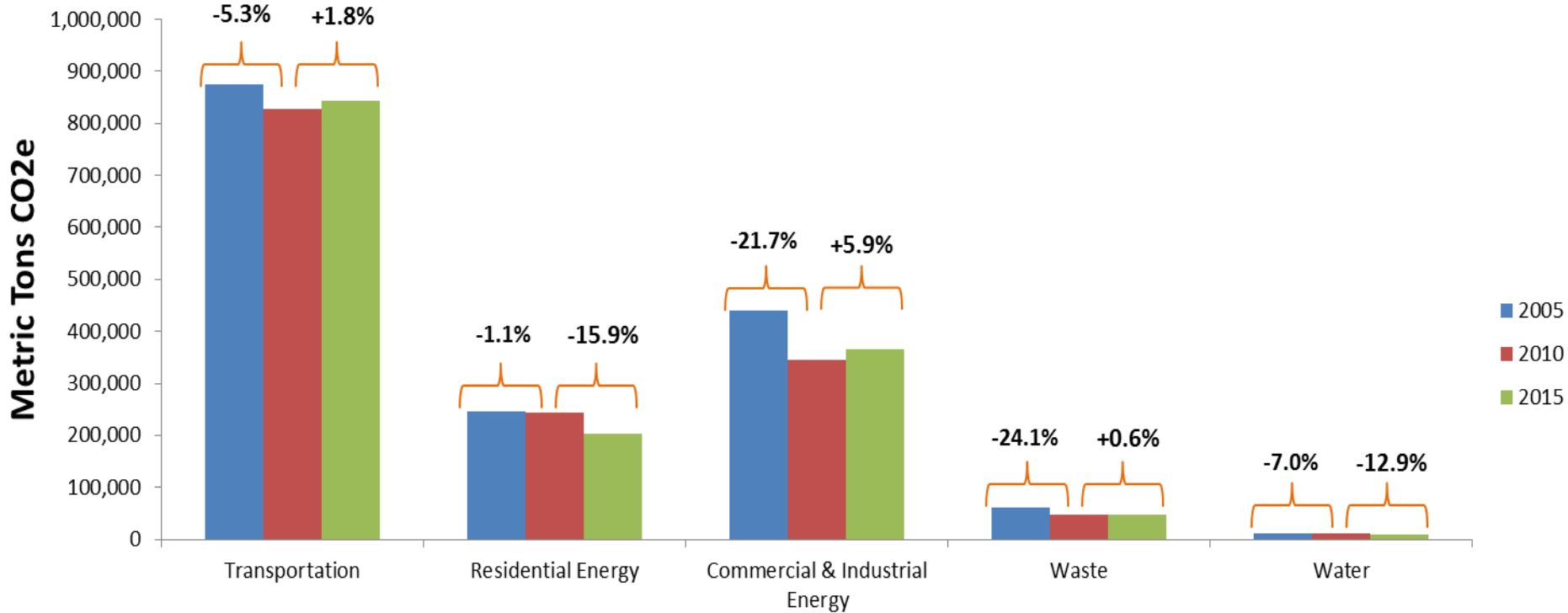
	2005	2010	2015	2020
Business-as-usual	1,633,100	1,737,600	1,842,667	1,946,700
2015 Inventory	1,633,100	1,473,200	1,468,600	
Reduction Target	1,633,100	1,497,000	1,360,900	1,224,800
Reduction still needed				243,800

Community-Wide GHG Emissions



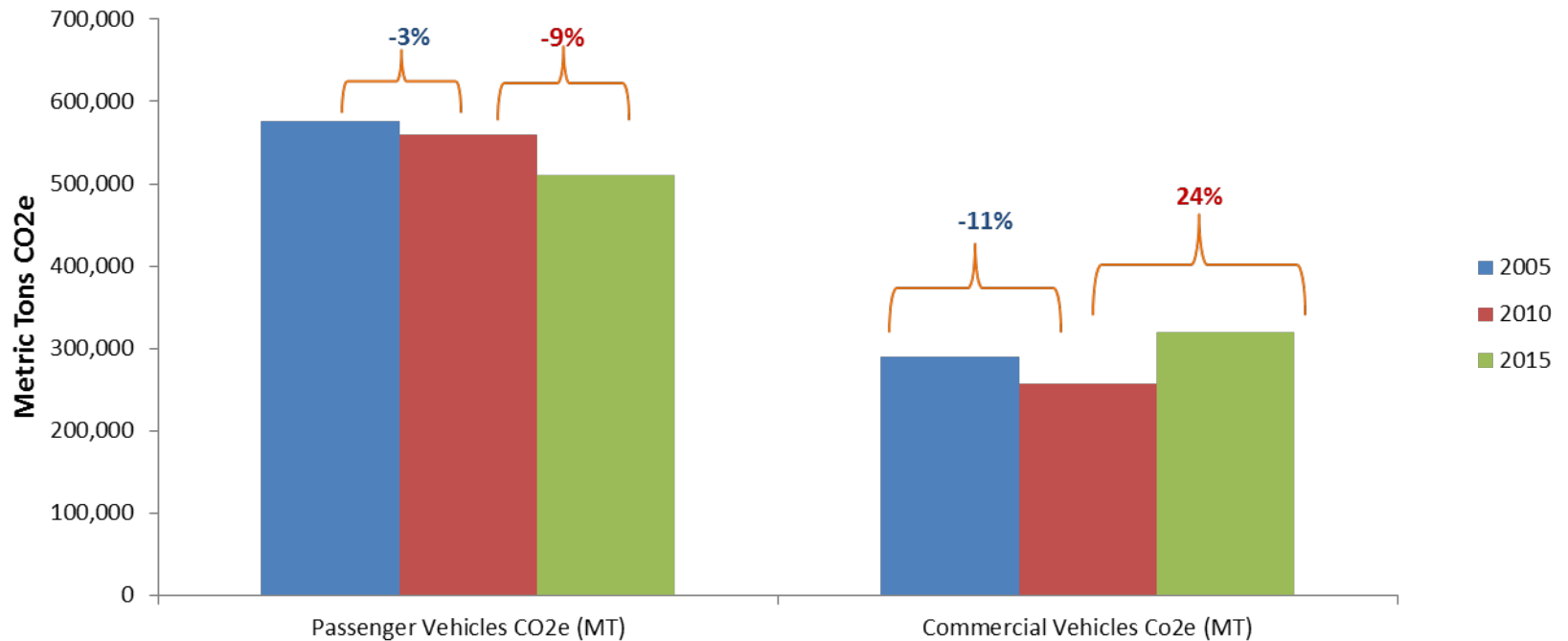
Emissions by Sector: 2005, 2010, 2015 Comparison

GHG Emissions by Sector Over Time



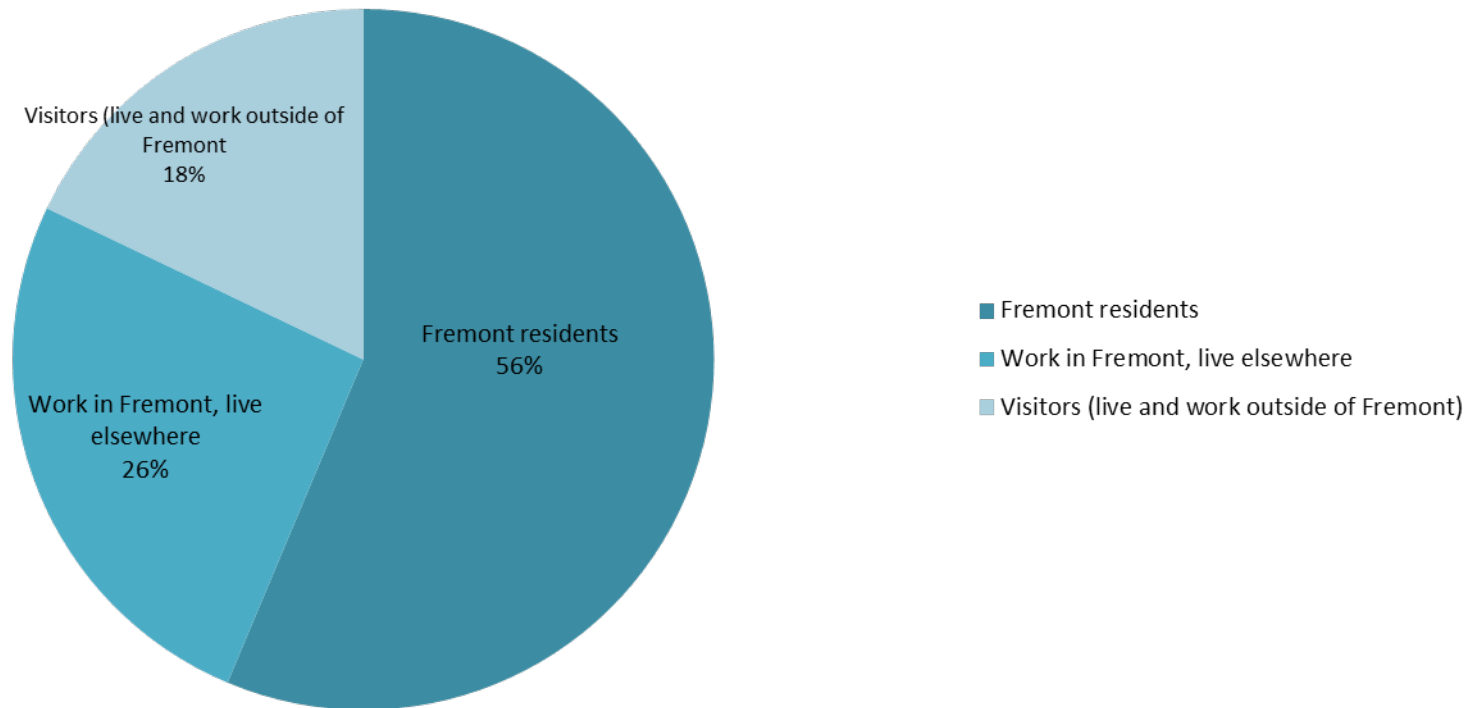
Transportation Emissions

Transportation Emissions
2005, 2010 and 2015



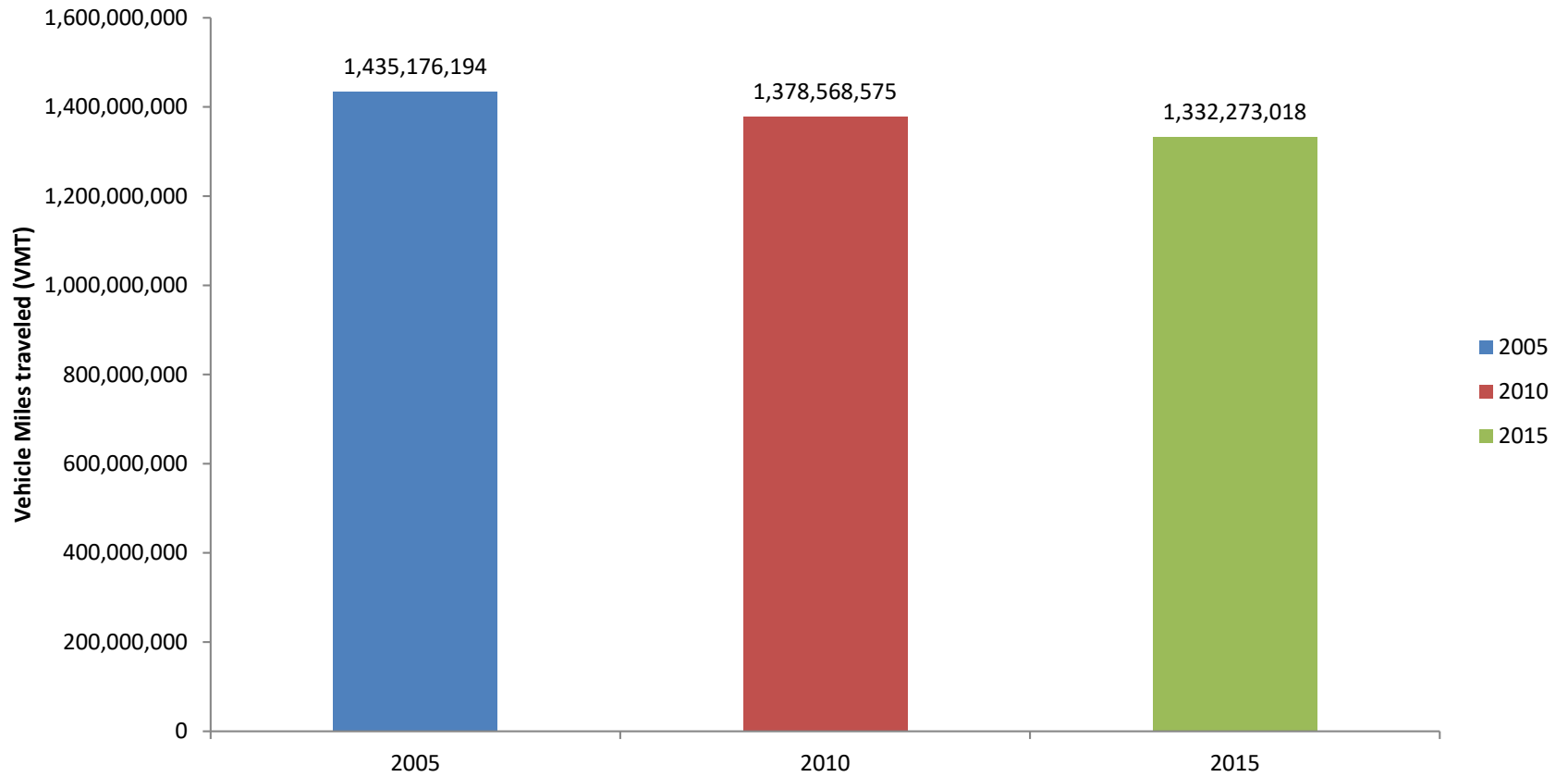
Vehicle Miles Traveled by Segment

2015 VMT by Population Segment



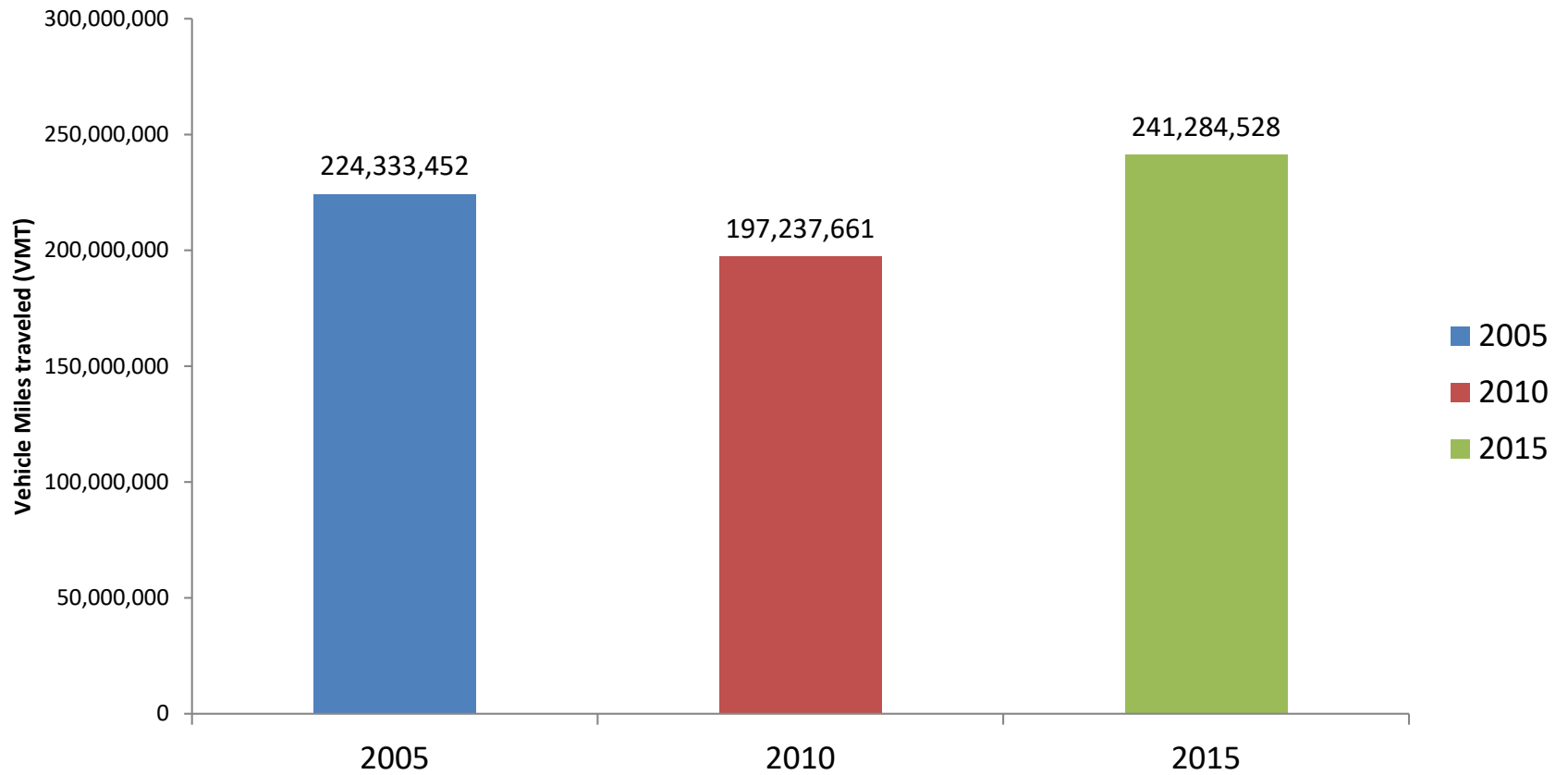
VMT By Sector

Annual Passenger Vehicle Miles Traveled

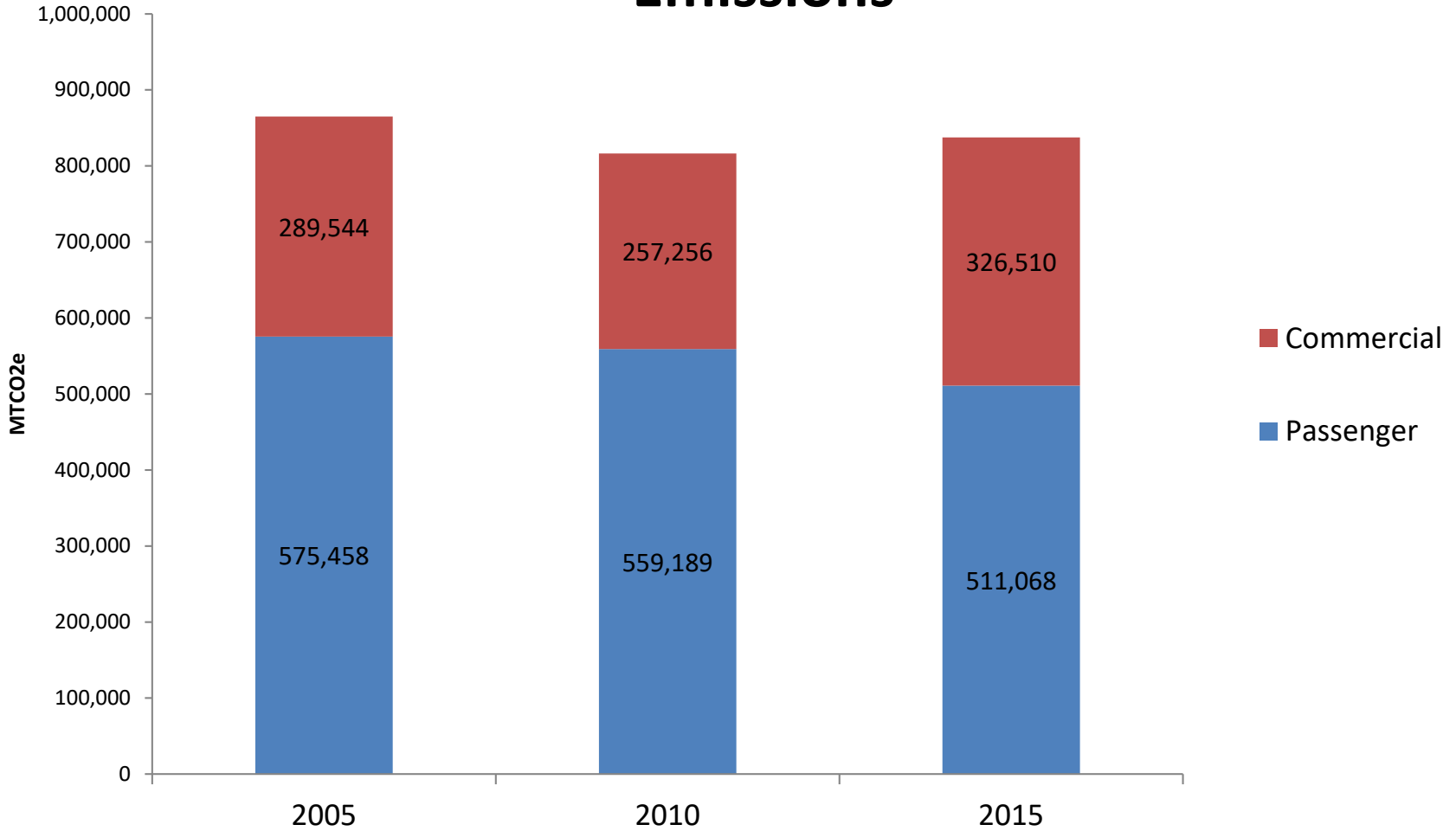


VMT by Sector

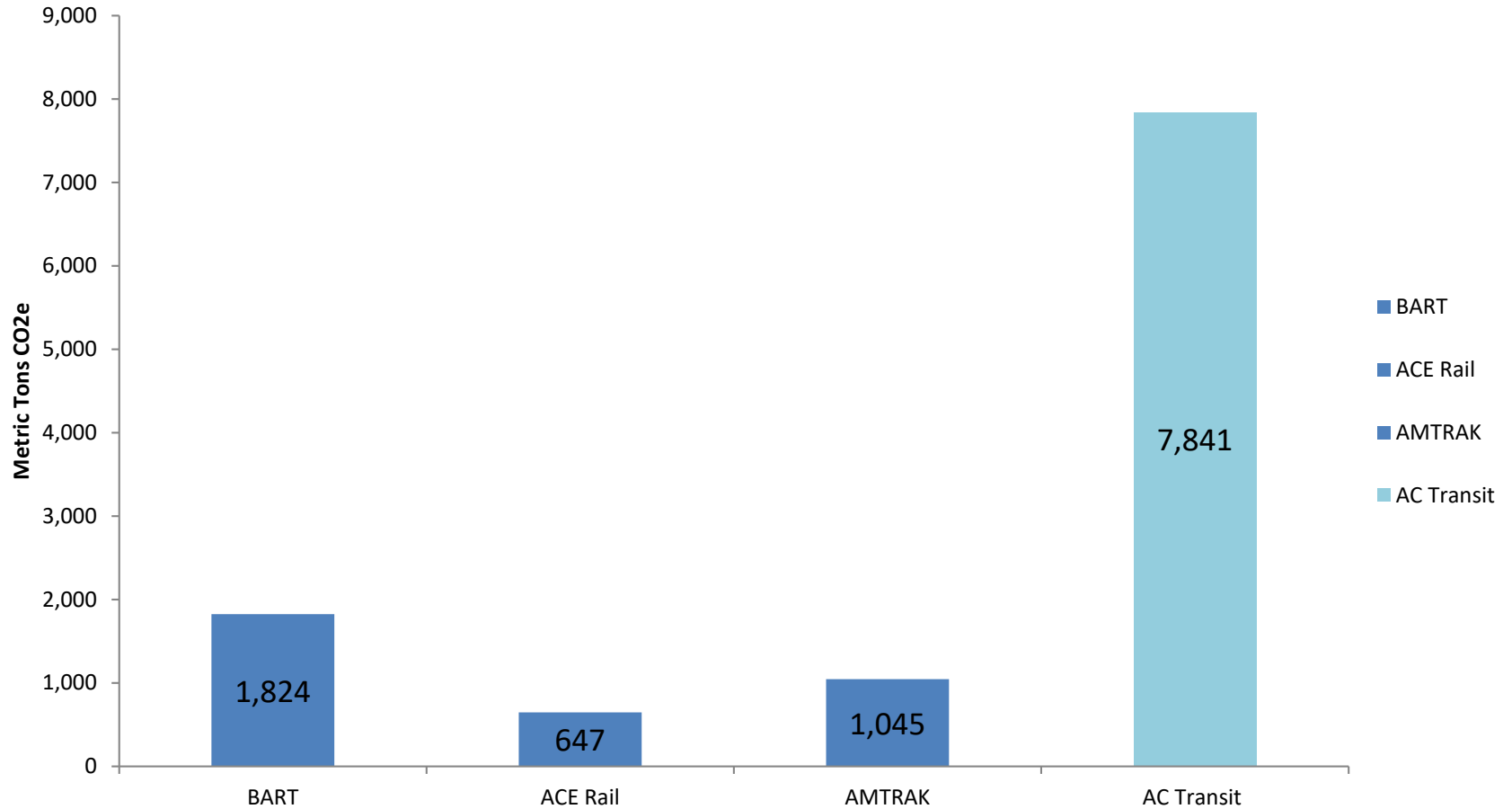
Annual Commercial Vehicle Miles Traveled



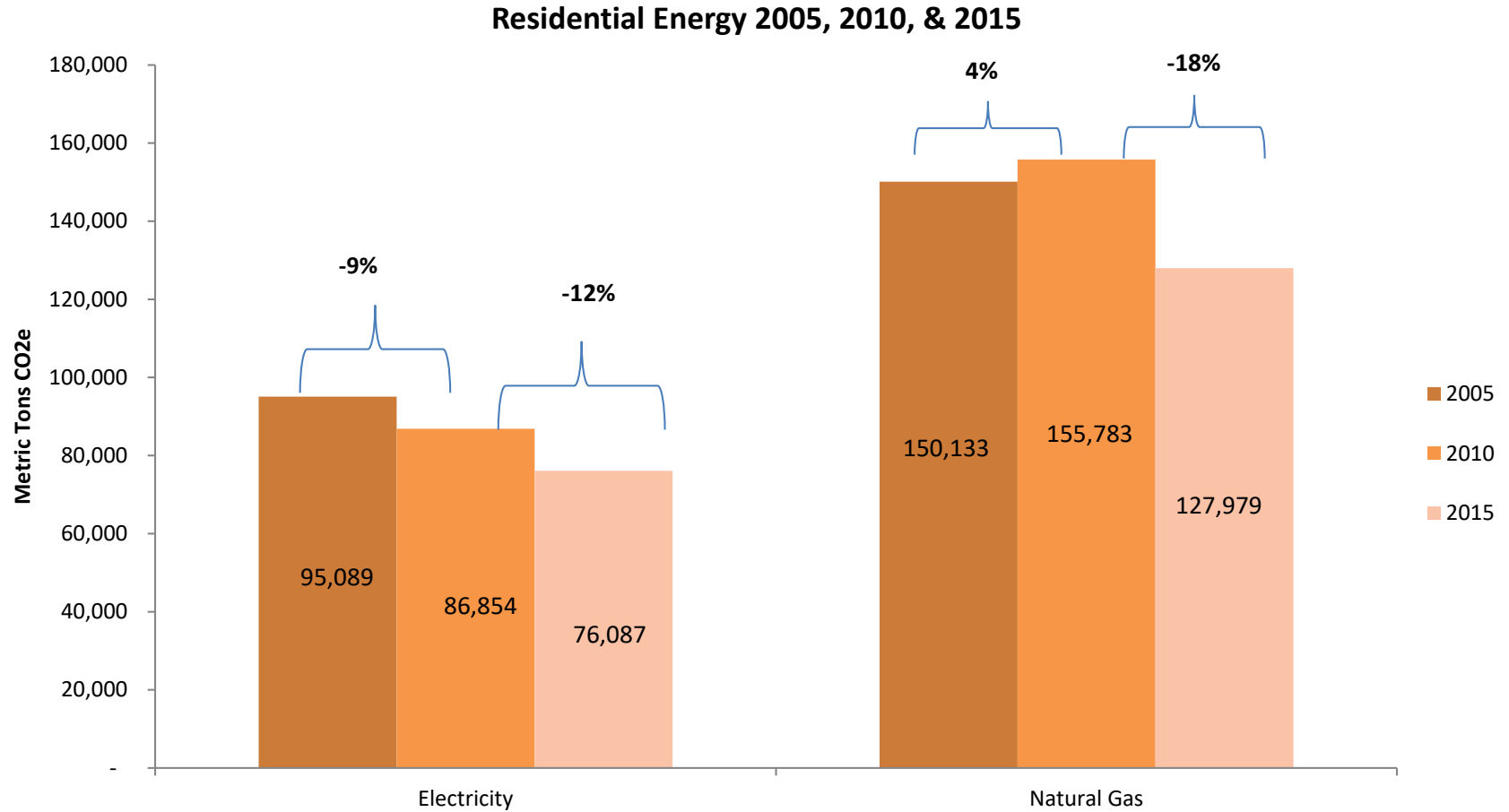
Total Passenger & Commercial Vehicle Emissions



2015 Public Transportation Emissions

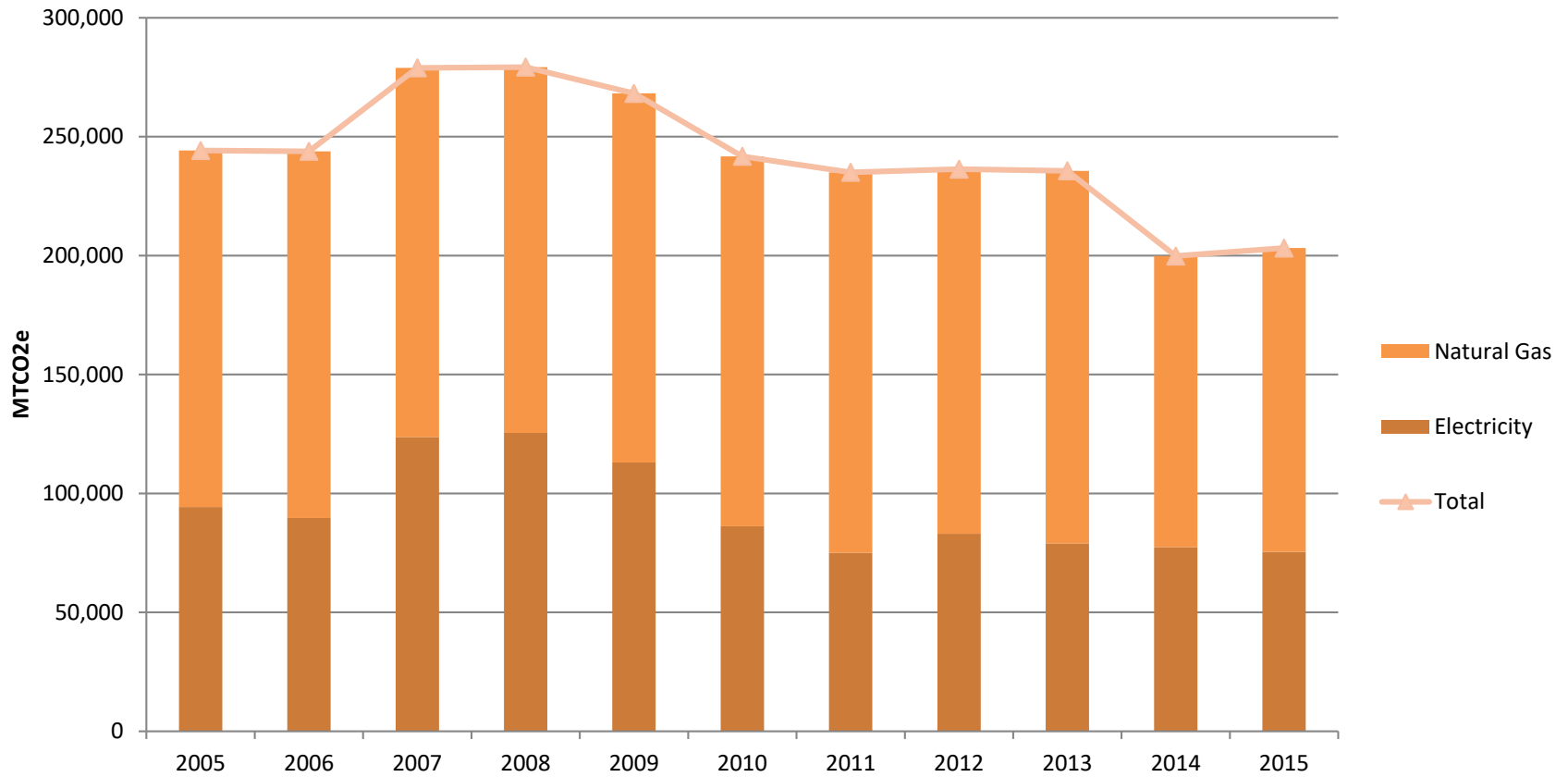


Residential Energy Emissions



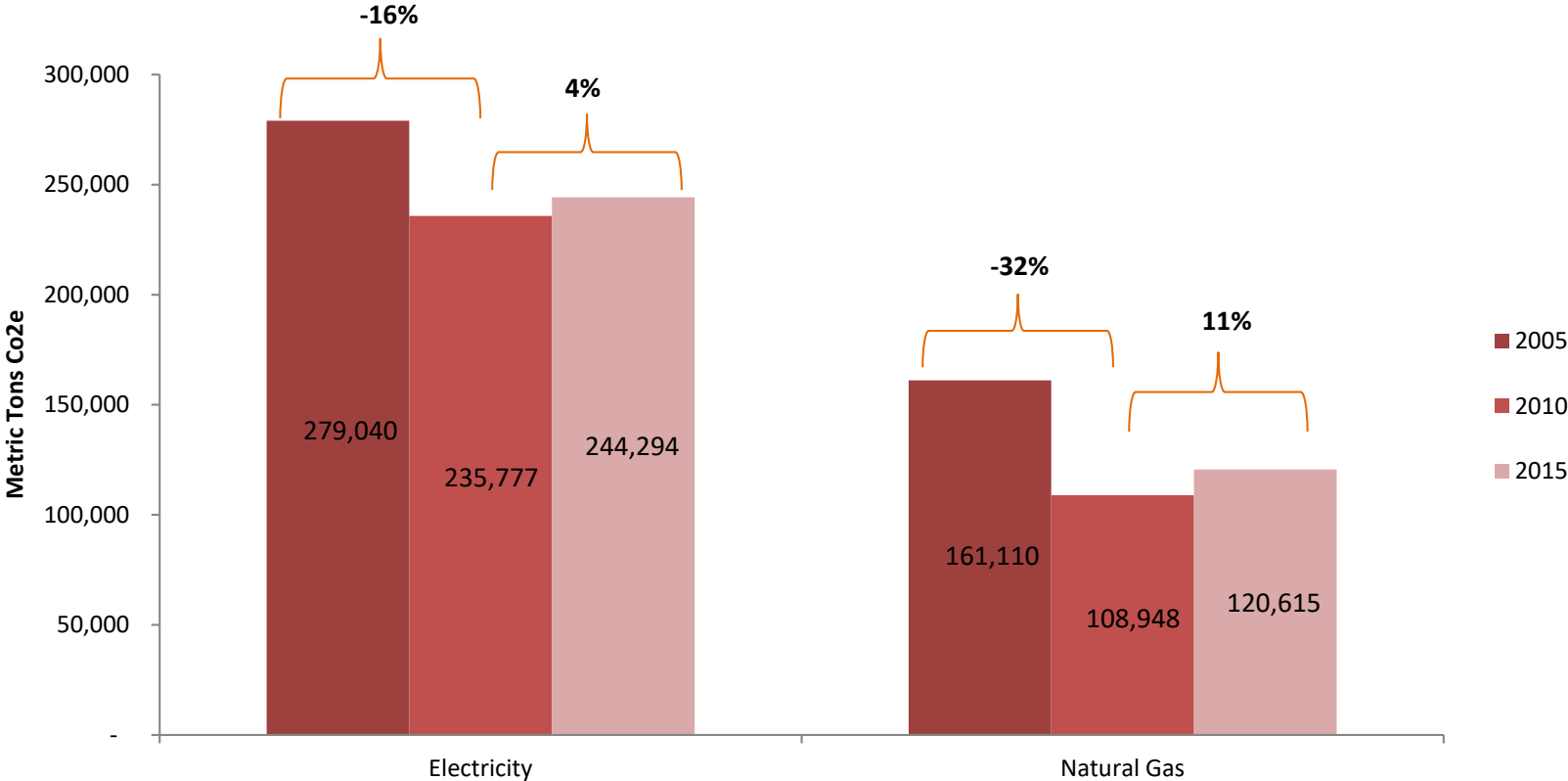
Residential Energy Consumption

Residential Energy Usage



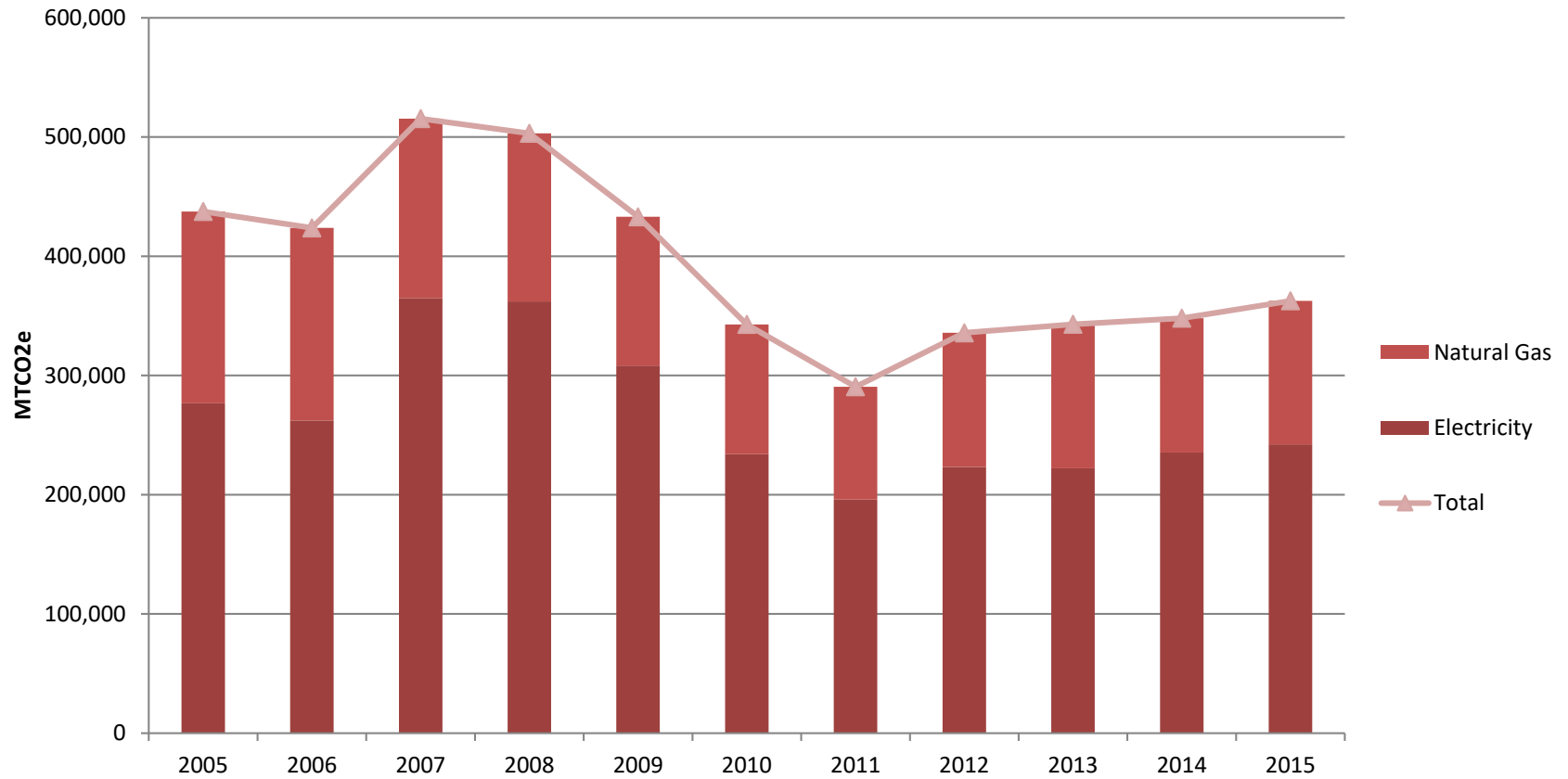
Commercial & Industrial Energy Emissions

Nonresidential Energy 2005, 2010, & 2015



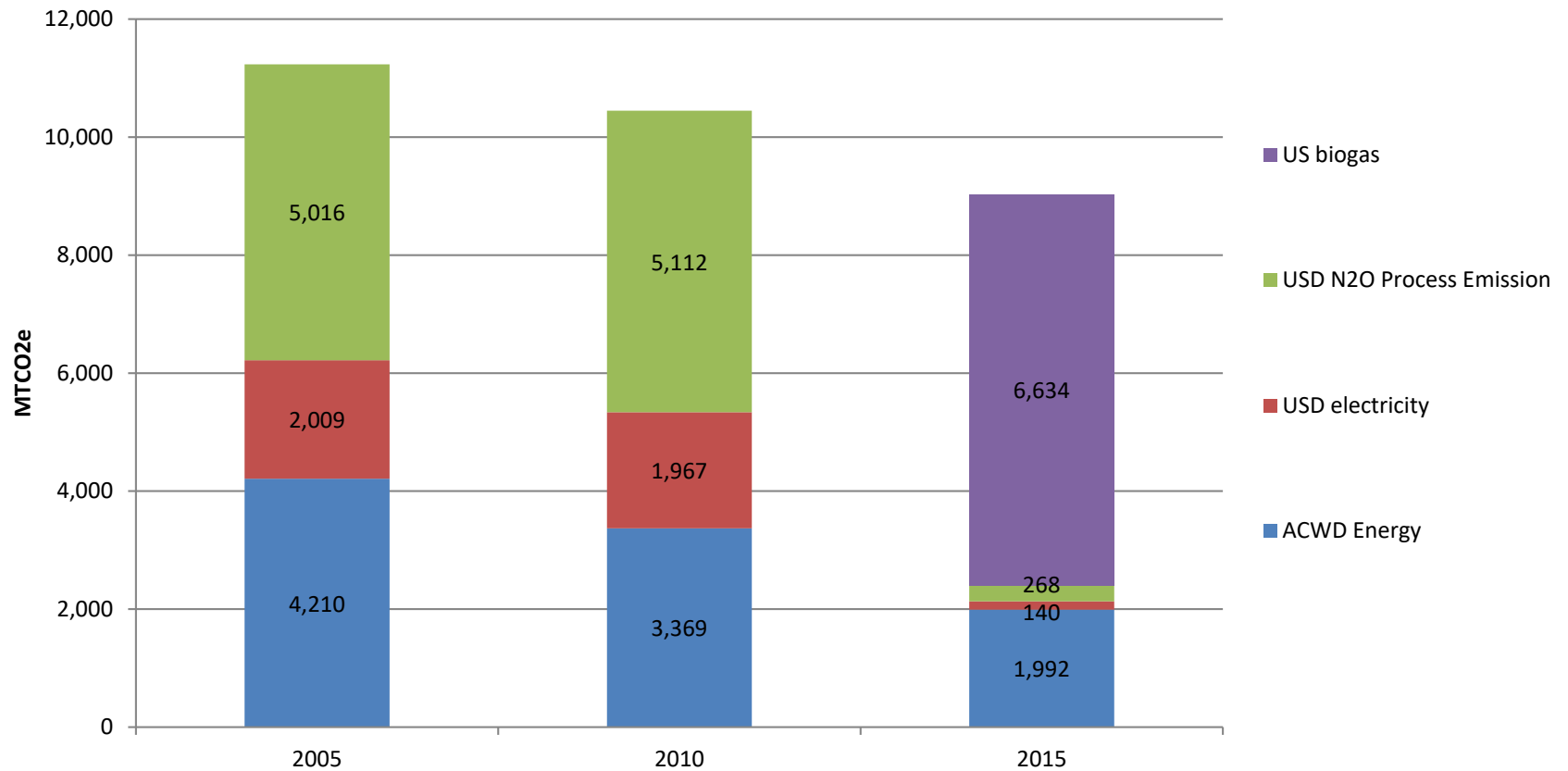
Commercial Energy Consumption

Nonresidential Energy Usage



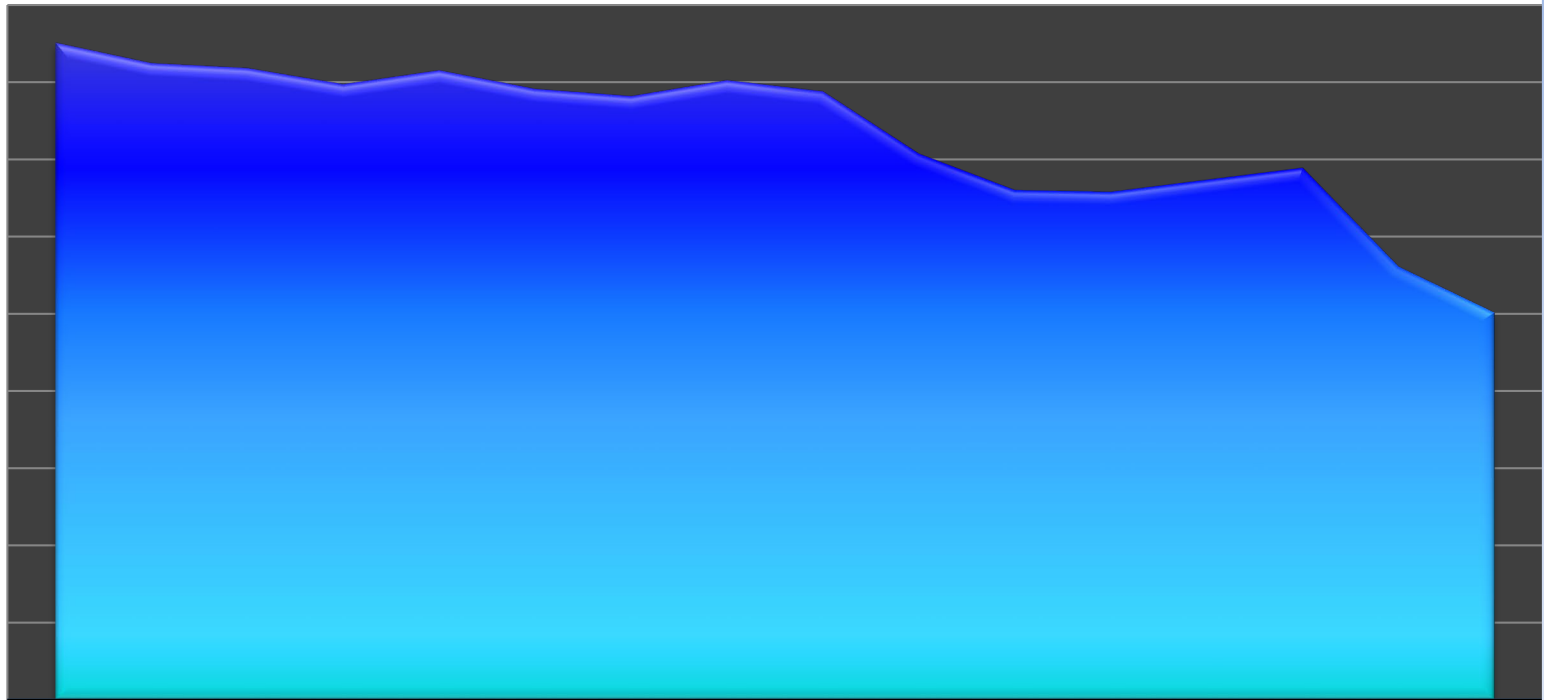
Water Sector Emissions

2005, 2010, & 2015 Water Use Emissions



Water Consumption per Capita

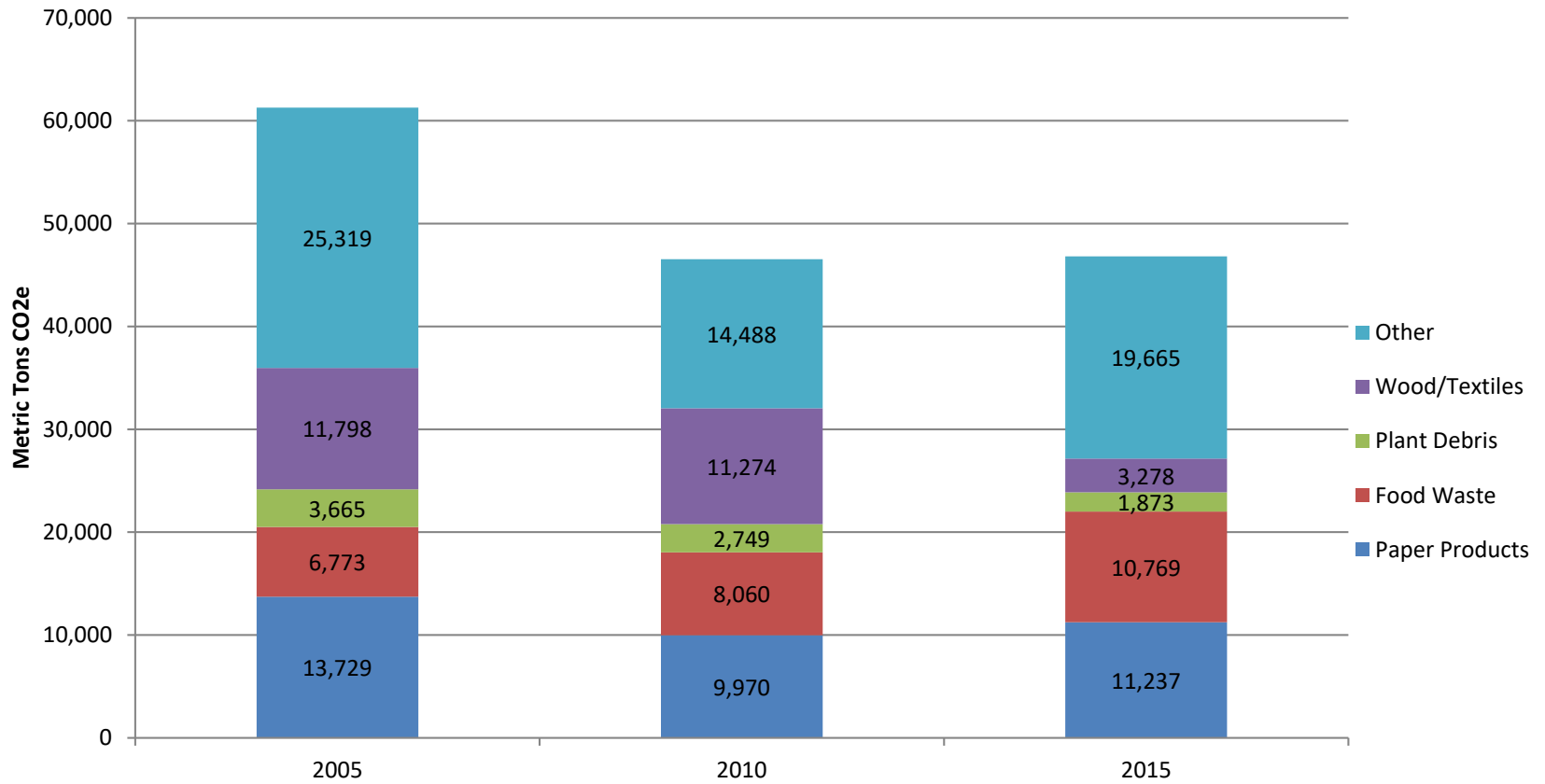
ACWD Average Daily Water Usage (2000-2015)



	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Gallons Per Capita	170.2	164.9	163.6	159.4	163.0	158.2	156.3	160.4	157.5	141.5	132.0	131.6	134.7	137.8	112.3	100.4

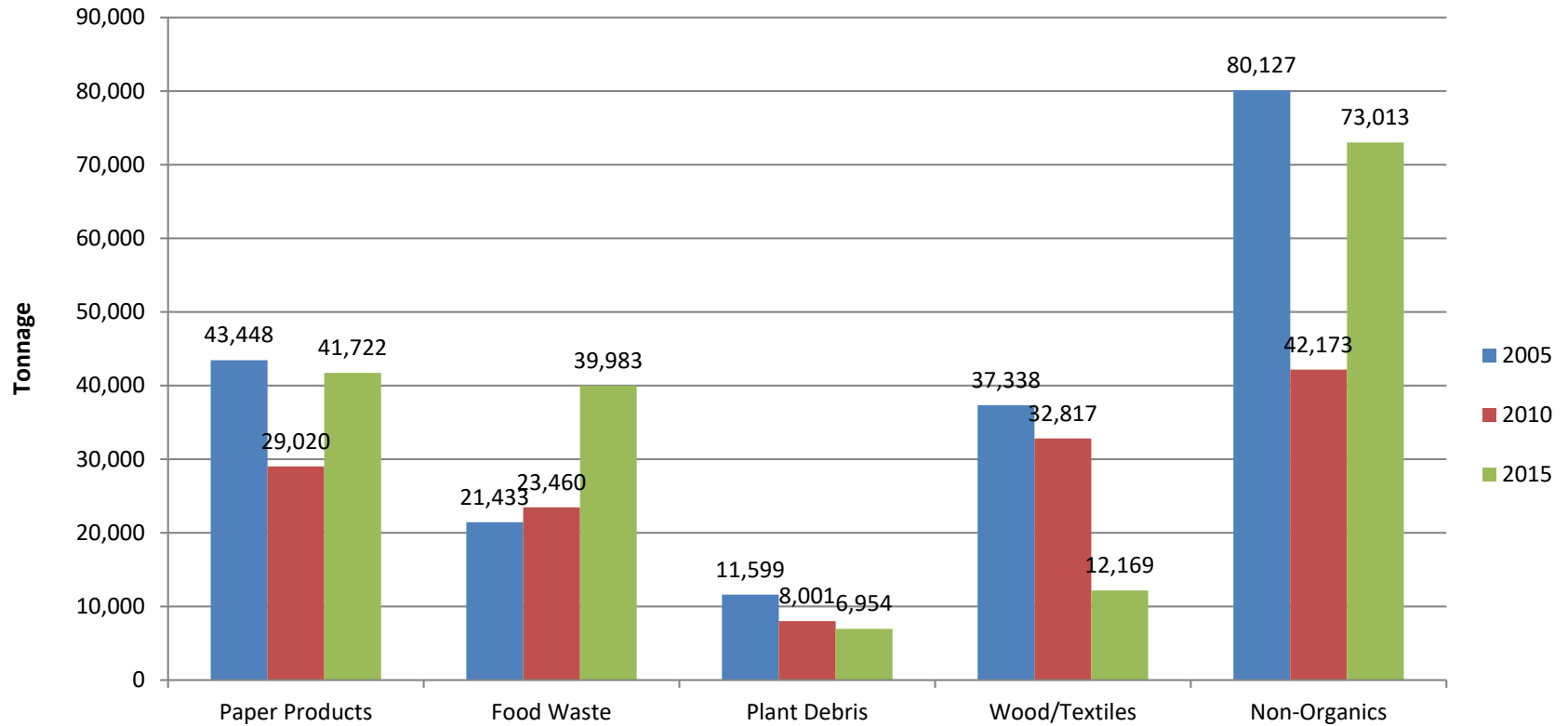
Waste Sector Emissions

Waste Emissions 2005, 2010 and 2015



Waste Emissions by Type

Waste Comparison 2005, 2010, and 2015



2015 Emissions Summary

- **Transportation Sector** also had a *slight increase* in emissions (2% increase from 2010; 4% reduction since 2005). The increase in transportation came from *freight* vehicles.
- **Residential Energy Sector** had the *largest reduction* MTCO_{2e}, (16% reduction from 2010; 17% reduction since 2005)
- **Commercial & Industrial Energy** had a *slight increase* in emissions (6% increase from 2010; 17% reduction since 2005)
- **Water Sector** also had a *significant reduction* in emissions MTCO_{2e}, (13 % reduction from 2010; 19% reduction since 2005)
- **Waste Sector** had an *increase* in emissions since 2010 (1% increase from 2010; 24% reduction since 2005)