

Community

Greenhouse Gas

Emissions Inventory Update

2014

Envision San José 2040

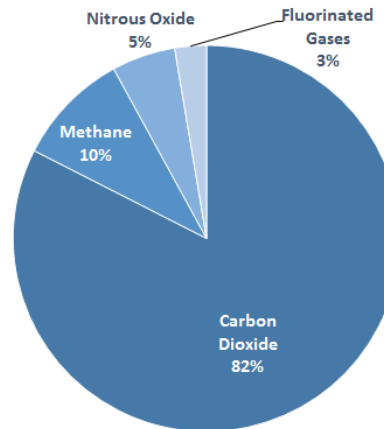
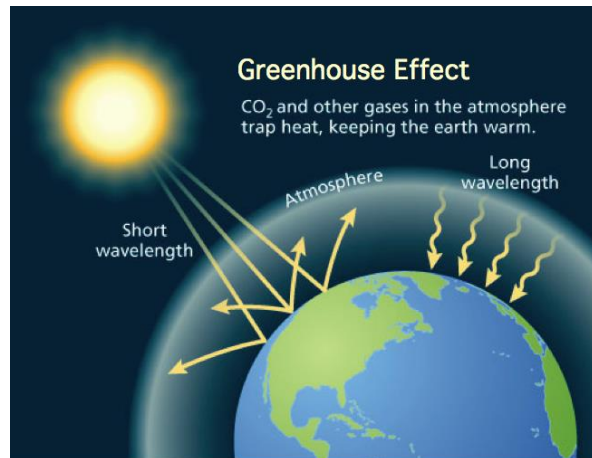
April 2016

What are Greenhouse Gases?

- **green·house gas**

noun

a gas that contributes to the greenhouse effect by absorbing infrared radiation, e.g., carbon dioxide and chlorofluorocarbons.



**U.S.
Greenhouse Gas
Emissions
in 2013**

Primary Greenhouse Gases

- **CO₂** – Carbon Dioxide (fossil fuel combustion)
- **CH₄** – Methane (fossil fuel combustion, landfills, wastewater treatment)
- **N₂O** – Nitrous Oxide (fossil fuel combustion, wastewater treatment, industrial activities)
- **Fluorinated gases (HFCs / PFCs / SF₆)** – Hydrofluorocarbons / Perfluorocarbons / Sulfur Hexafluoride (refrigeration, semiconductor and aluminum industries, electrical insulator)

Climate Change

“Human influence on the climate system is clear, and recent anthropogenic emissions of greenhouse gases are the highest in history. Recent climate changes have had widespread impacts on human and natural systems.”

- Intergovernmental Panel on Climate Change, 5th Assessment Report, Synthesis Report
- Climate change impacts:
 - Sea level rise, forest fires, heavy precipitation events, intense drought

State GHG Emission Targets

- Executive Order S-3-05 (2005)
- Assembly Bill 32 Global Warming Solutions Act (2006)
- Executive Order B-30-15 (2015)
- Reduce GHGs to:
 - 1990 levels by 2020
 - 40% below 1990 levels by 2030
 - 80% below 1990 levels by 2050



Local Government Role

- Air Resources Board developed Scoping Plan to outline state-wide pathway towards 2020 target achievement
- Scoping Plan recommends local government and community targets of 15% below current levels by 2020 to parallel state efforts

City of San José Targets

- Per BAAQMD guidance at time of General Plan EIR preparation, City established 2020 and 2035 targets:
 - 6.60 MT CO₂e/service population in 2020
 - 3.04 MT CO₂e/service population in 2035
- Efficiency targets (e.g., emissions per service population) were based on statewide emissions estimates, accommodation of state population and employment growth, and emissions goals of AB 32

City of San José Actions

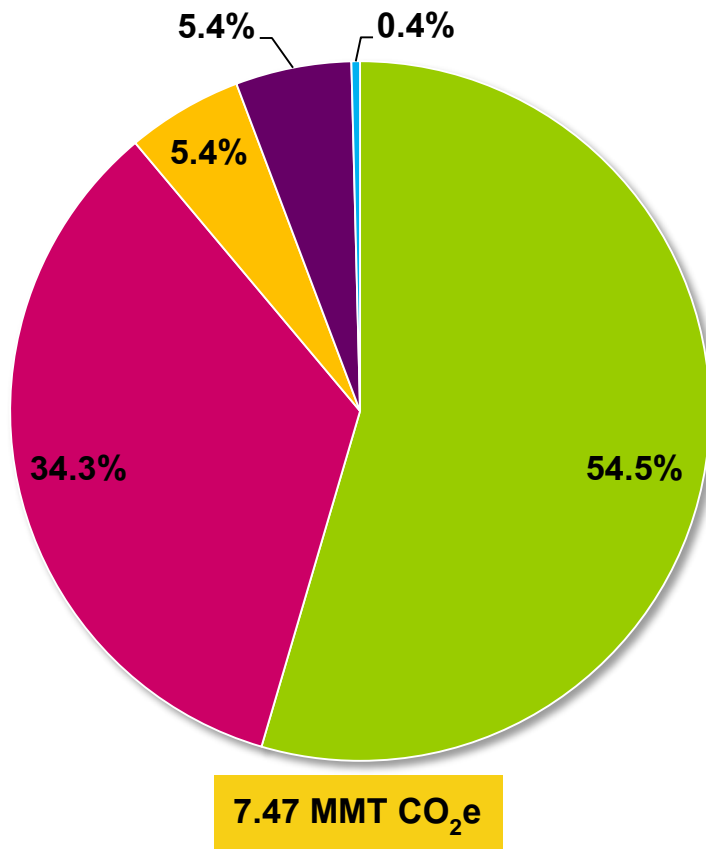
- **Greenhouse Gas Reduction Strategy**
 - Developed to achieve GHG targets of General Plan
 - Includes 19 emissions reduction strategies to achieve 2035 target
 - Energy efficient appliances; green building incentives; community energy programs; interconnected trails
 - Integrating diverse land use (housing, employment, public service, etc.) near transit to reduce VMT
- **Green Vision**
 - 15-yr plan for economic growth, improved sustainability
 - Identifies 10 goals, most of which have direct emissions reduction benefits

San José Community Inventory

- 2014 update to previous 2008 inventory
- Analyzes emissions in five sectors (i.e., categories)
 - Mobile Sources (vehicle emissions)
 - Energy Consumption (electricity and natural gas)
 - Wastewater Treatment (process emissions)
 - Solid Waste (landfill-generated emissions)
 - Potable Water (energy used from water source to end use)
- Describes emissions from community activities during 2014* (energy is currently 2013 data)

2014 Inventory Draft Results

San José Community Inventory – 2014

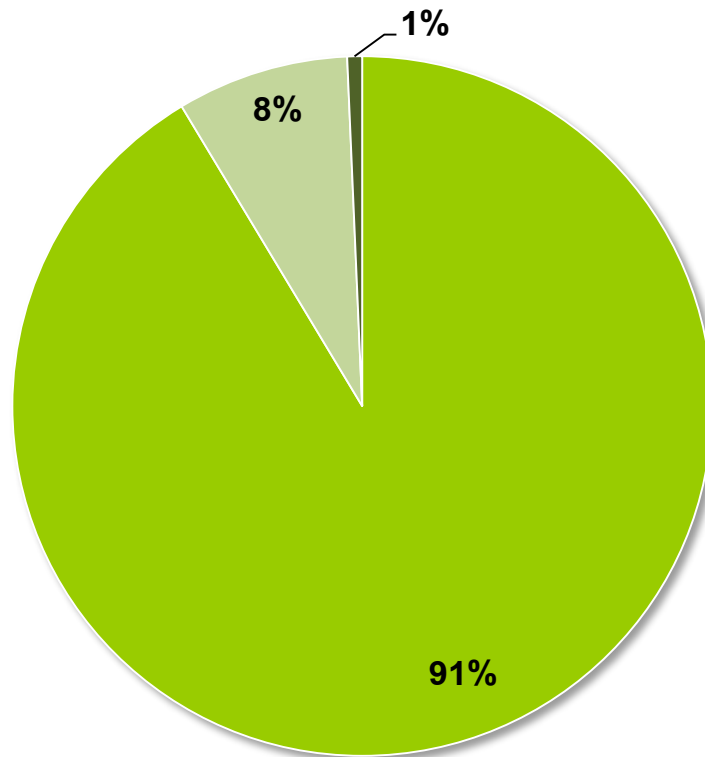


- Mobile Sources
- Energy Consumption
- Wastewater Treatment
- Solid Waste
- Potable Water

- 89% of emissions from **transportation and energy**
- 7.35 MT CO₂e/capita
- 5.29 MT CO₂e/service population (i.e., residents + jobs)

Mobile Sources

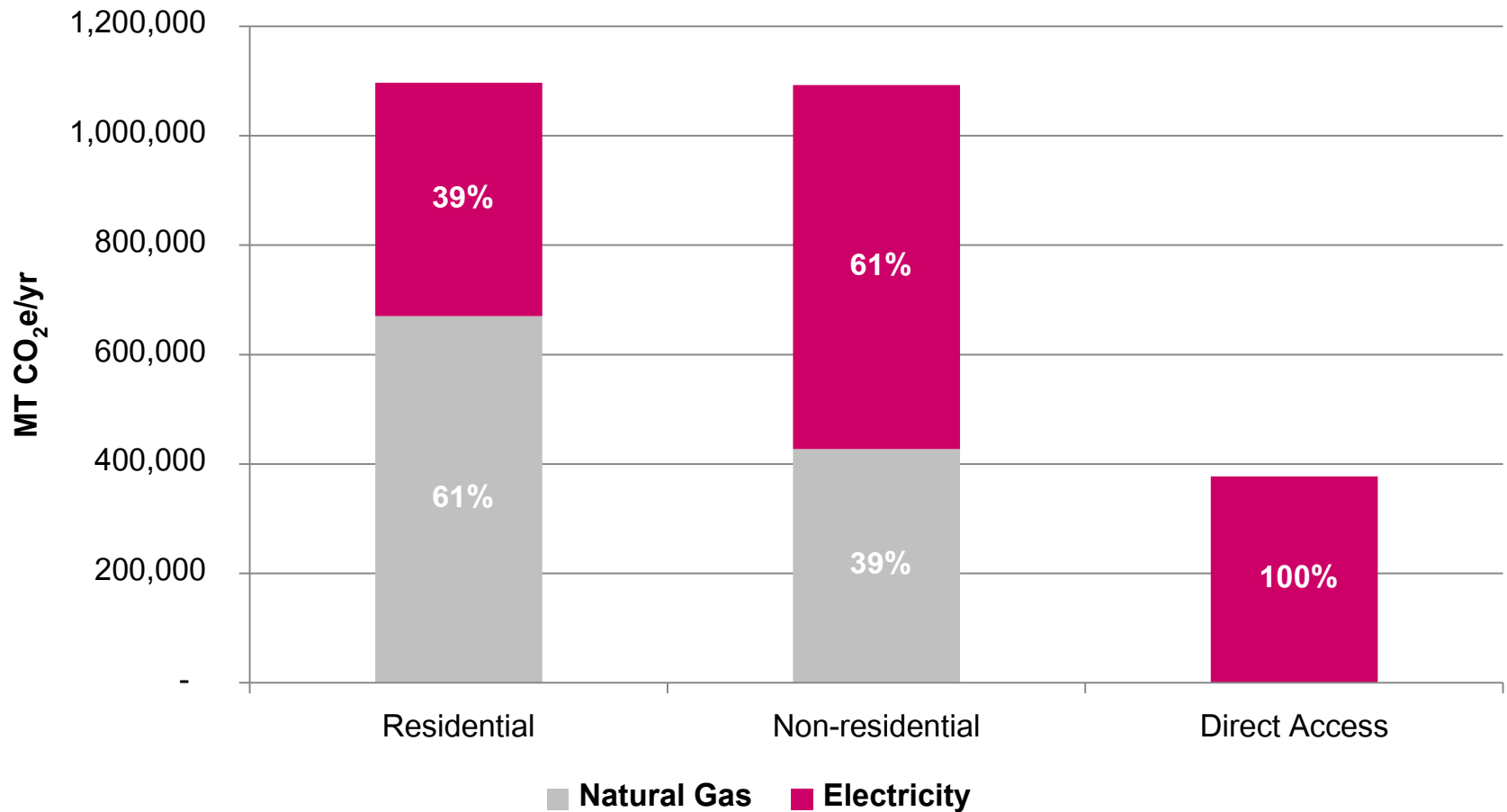
San José Community Inventory – 2014



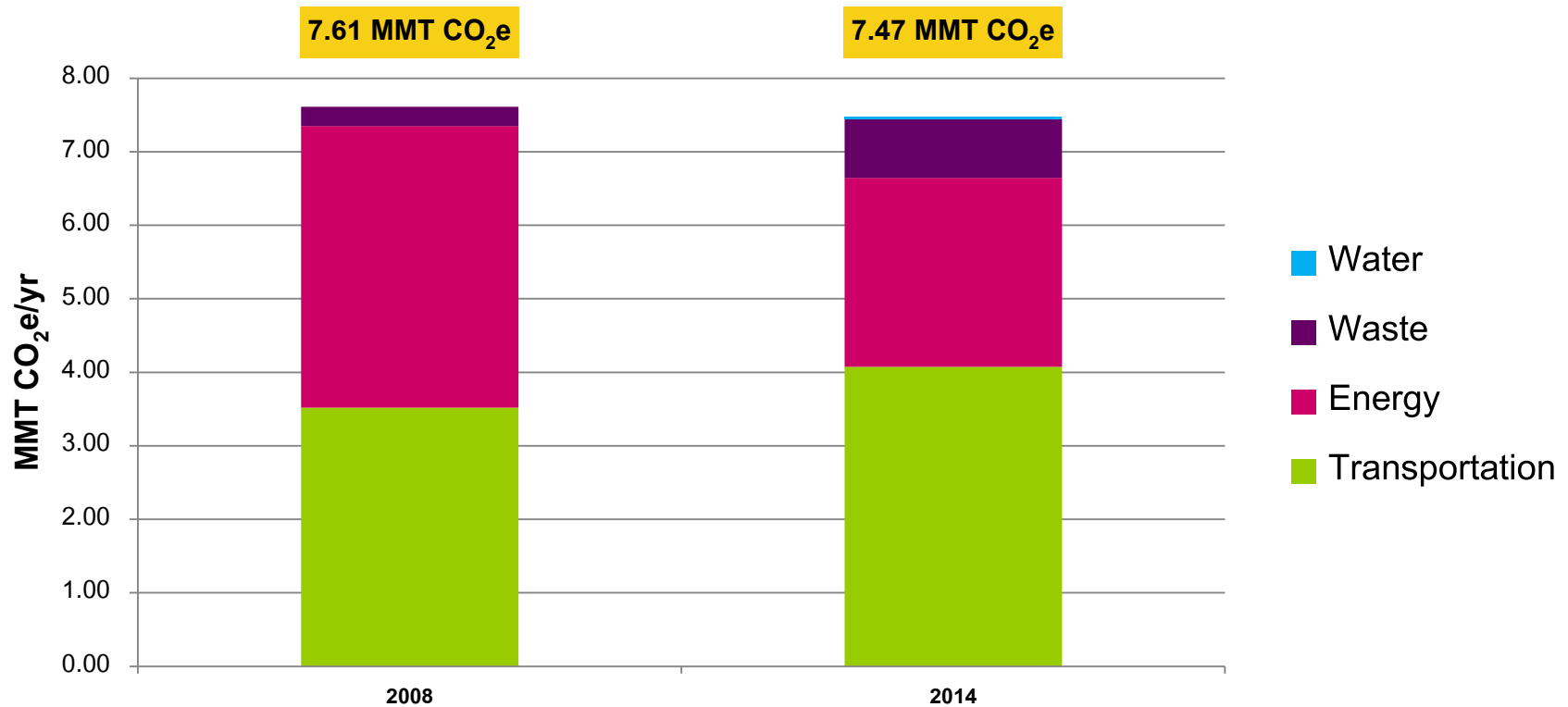
- On-Road Vehicles
- Off-Road Equipment
- Off-Road Vehicles

- Off-Road Equipment
 - *Recreational boats*
 - *Airport ground equipment*
 - *Passenger trains*
- Off-Road Vehicles
 - Forklifts
 - Lawnmowers

Energy Consumption



2008 Inventory Comparison



- Community-wide emissions **decreased 1.8%** since 2008
- Per capita emissions decreased 4.8%

2008 Inventory Comparison

- **Transportation – 16% increase**

Why? – Population increase 3.2%, employment increase 7.4%

- **Energy – 33% decrease**

Why? – Cleaner electricity; energy efficiency programs

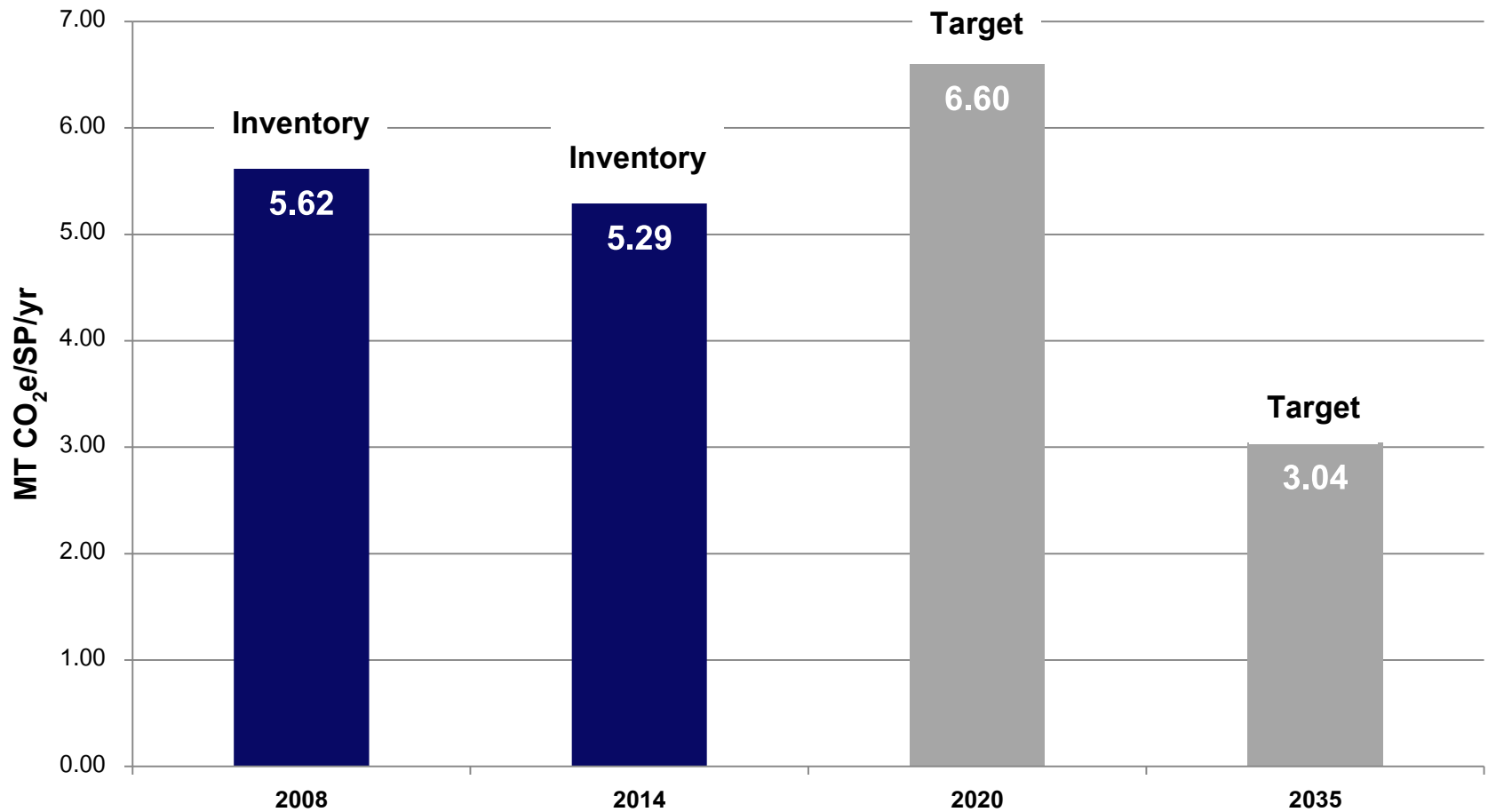
- **Waste – imperfect comparison across inventories**

Why? – Solid waste methodology differences; 2014 includes wastewater treatment emissions

- **Water – distinct sector not included in 2008 inventory**

Why? – Possibly included in 2008 energy sector

Inventory and Target Comparisons



Next Steps with GHG Inventory

- Develop 2040 emissions forecasts based on revised General Plan growth scenario
- Compare emissions growth forecasts against emissions targets (e.g., 2020, 2035, 2040, 2050) to estimate emissions reductions needed to achieve targets
- Review existing community reduction strategies (e.g., Green Vision, Greenhouse Gas Reduction Strategies)
- Develop additional reduction strategies, if necessary

Questions?