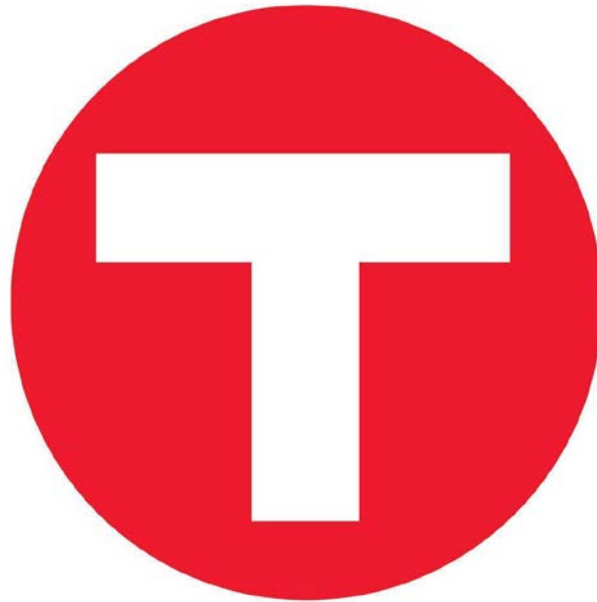




Metro Transit Sustainability/Energy Annual Update



Transportation Committee

9/24/18

Jeff Freeman/Claire Warren
Engineering and Facilities

Metro Transit Sustainability/Energy Update

- Purpose, Leadership and Collaboration
- 2017 Energy Report
- 2017-2018 Projects and Initiatives
- 2018-2019 Future Initiatives



Metro Transit Leadership & Collaboration

- Thrive Work Group
 - Climate Change and Sustainability Focus
- CCET
 - Climate Change and Emissions team member
- Xcel, Connexus, and CenterPoint Energy
 - External collaboration on projects and rebate programs
- Xcel Energy
 - **Green Partnership:** Memorandum of Understanding between Xcel and the Met Council that will allow us to transition to 100% renewable purchased electricity by 2040
 - Metro Transit participates in Xcel's transportation electrification workshops
- American Public Transportation Association (APTA)
 - Hosted the annual Sustainability & Multimodal Planning Workshop in August of 2017

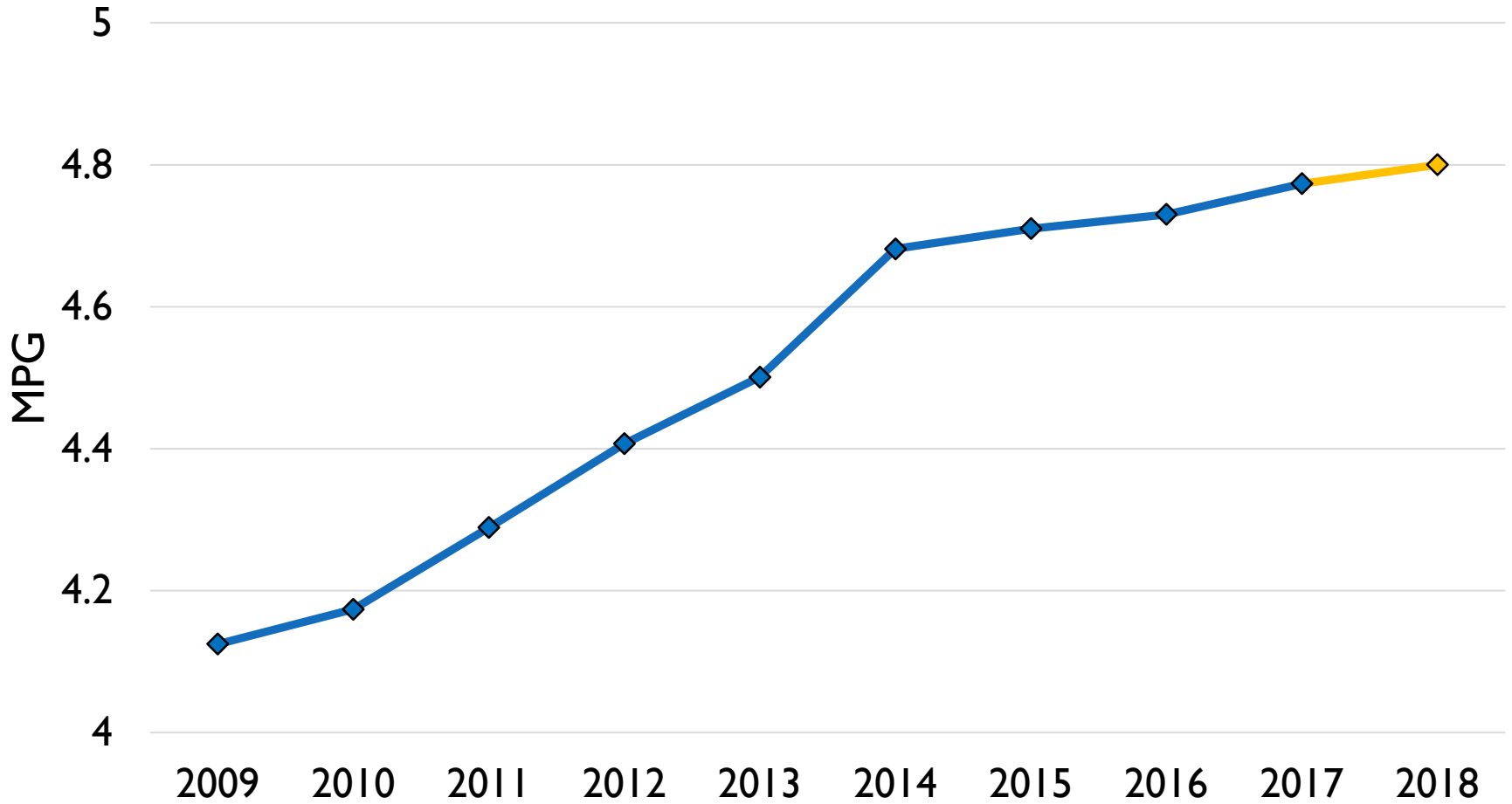


MN Office of Enterprise Sustainability



- Governor's Executive Order – November 2017
 - Set sustainability goals for all state agencies as a collective enterprise
- Metro Transit participates in Fleet, Energy & GHGs, and Waste & Procurement work groups
- Goal Action
 - **Fleet:** 30% reduction of State Fleet fossil fuel consumption by 2027
 - **Water:** 15% reduction of water use by 2025
 - **Procurement:** 25% of total spent on Priority Contracts are sustainable purchases by 2025
 - **GHG Emissions:** 30% reduction of GHG emissions by 2025
 - **Energy:** 30% reduction in consumption of energy per sq. ft by 2027
 - **Waste:** 75% combined recycling and composting rate by 2030

Bus Fleet MPG Increasing

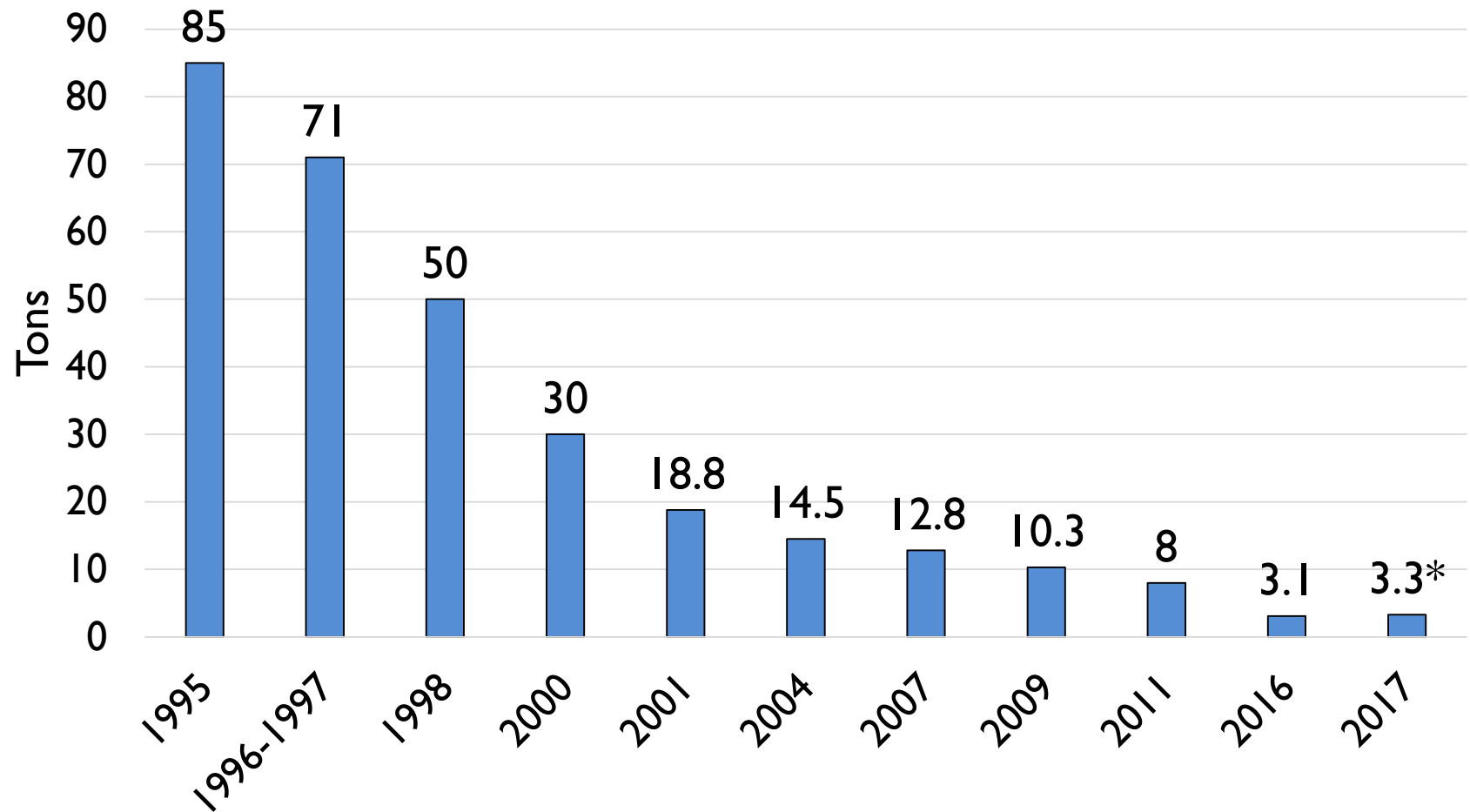


Bus Model MPG Improvement



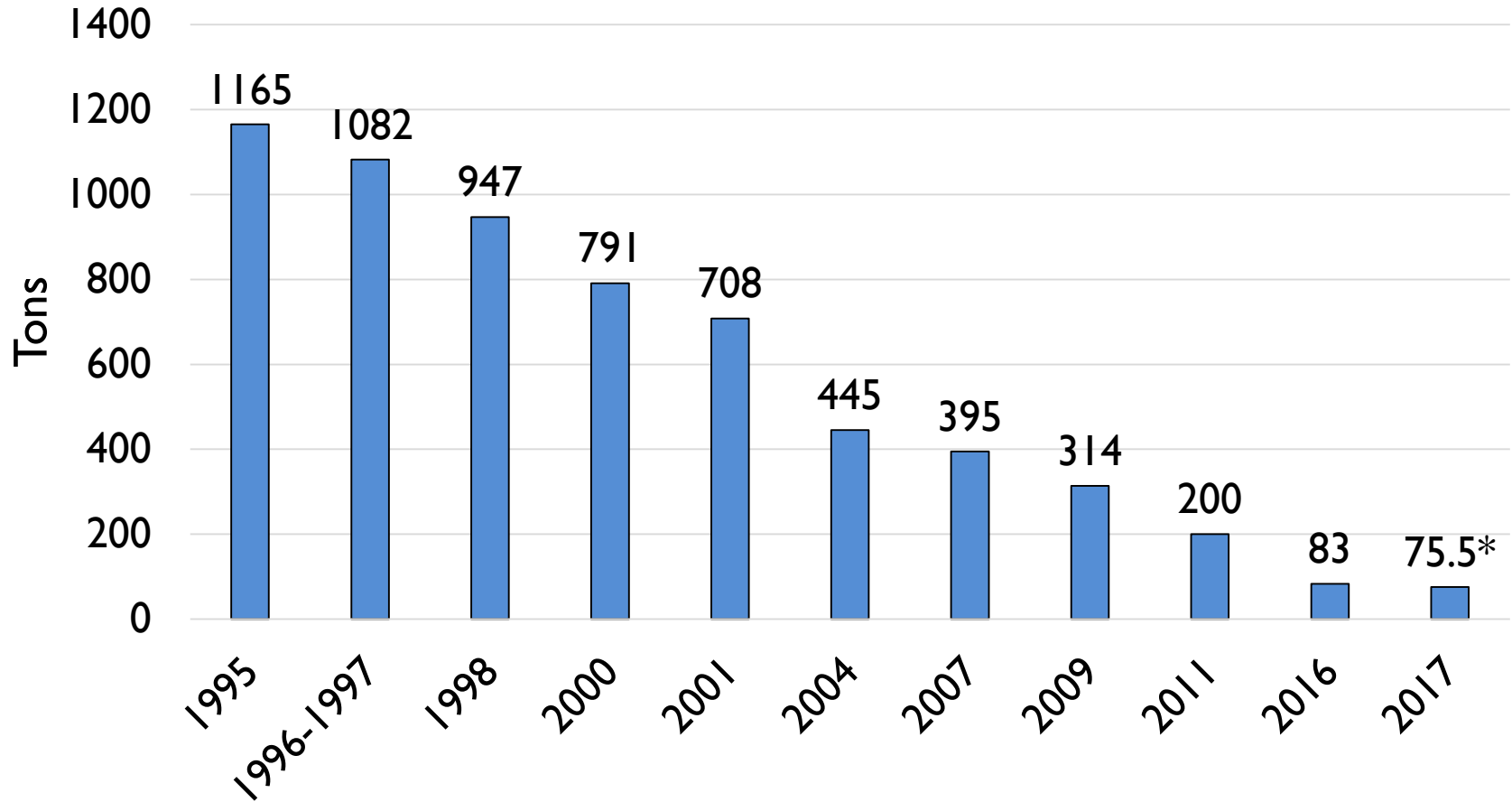
Bus Year	40' Foot	60' Foot	Hybrid
2010/2011	4.60	3.84	5.30
2015/2016	4.91	4.64	5.67

Total Fleet Tailpipe Particulate Emissions



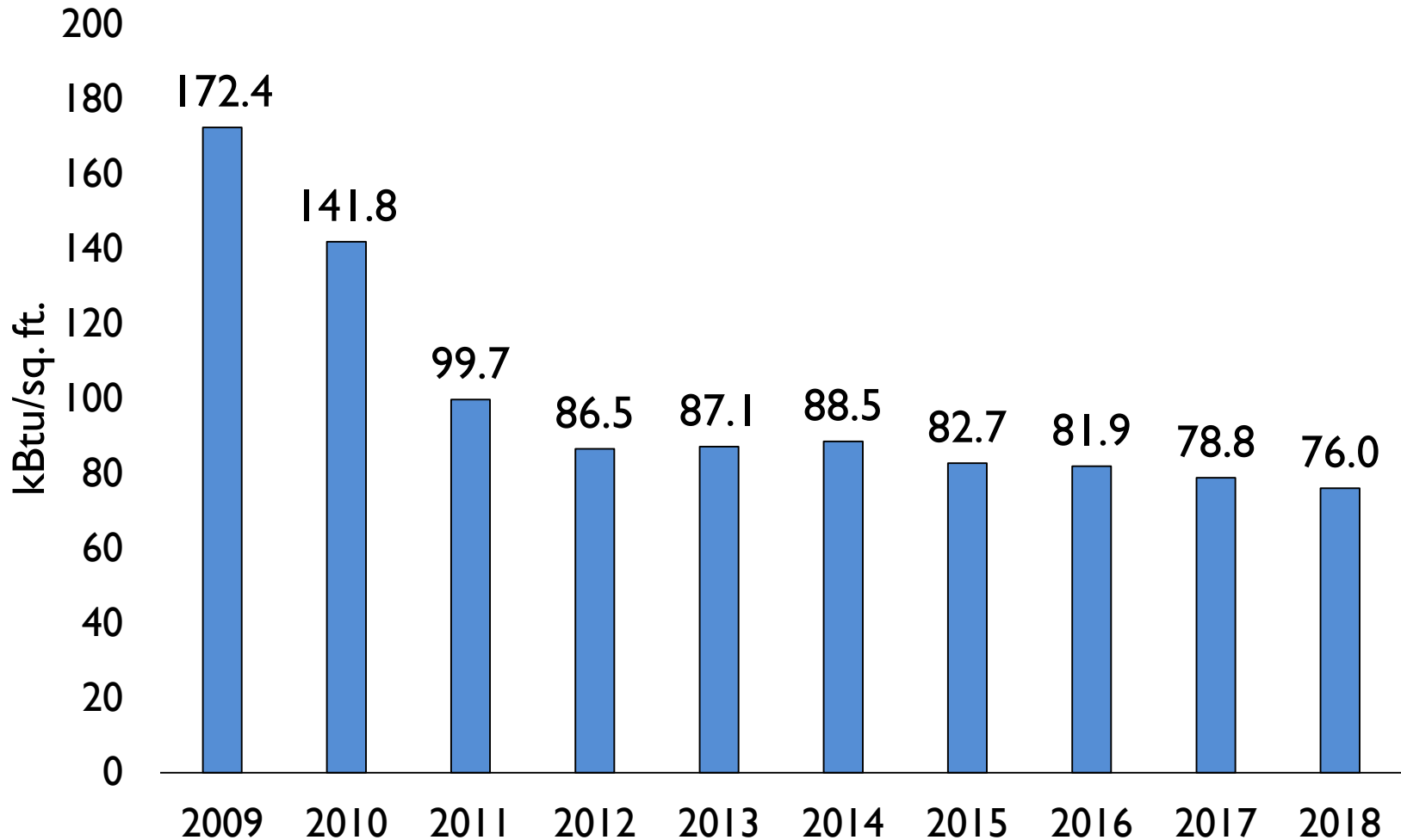
*Value is higher because the fleet traveled 2.5 million miles more in 2017.

Total Fleet Tailpipe NOx Emissions



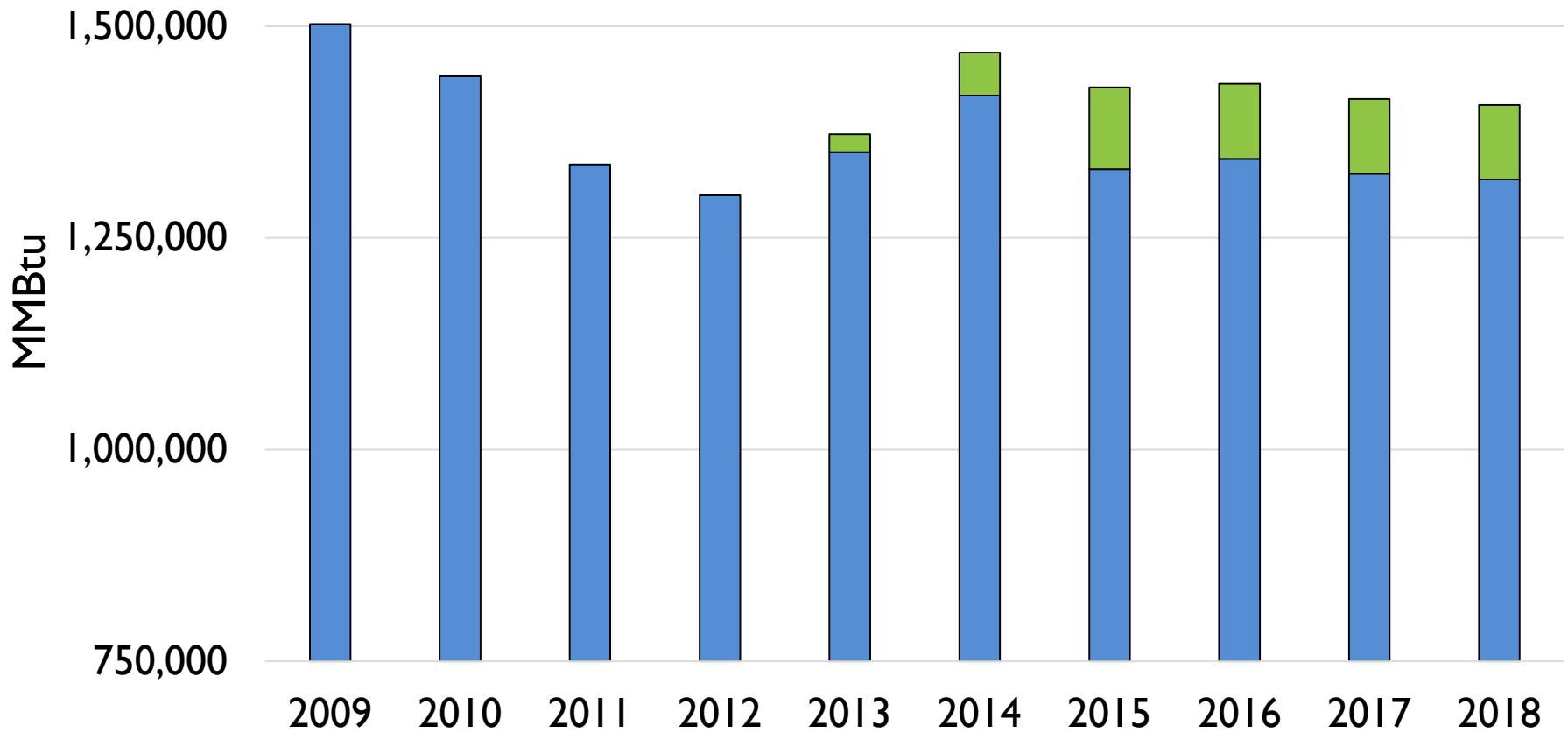
*Fleet traveled 2.5 million miles more in 2017, but NOx is still lower due to less miles traveled by oldest bus group.

Building Energy Use Intensity (kBtu/sq. ft.)



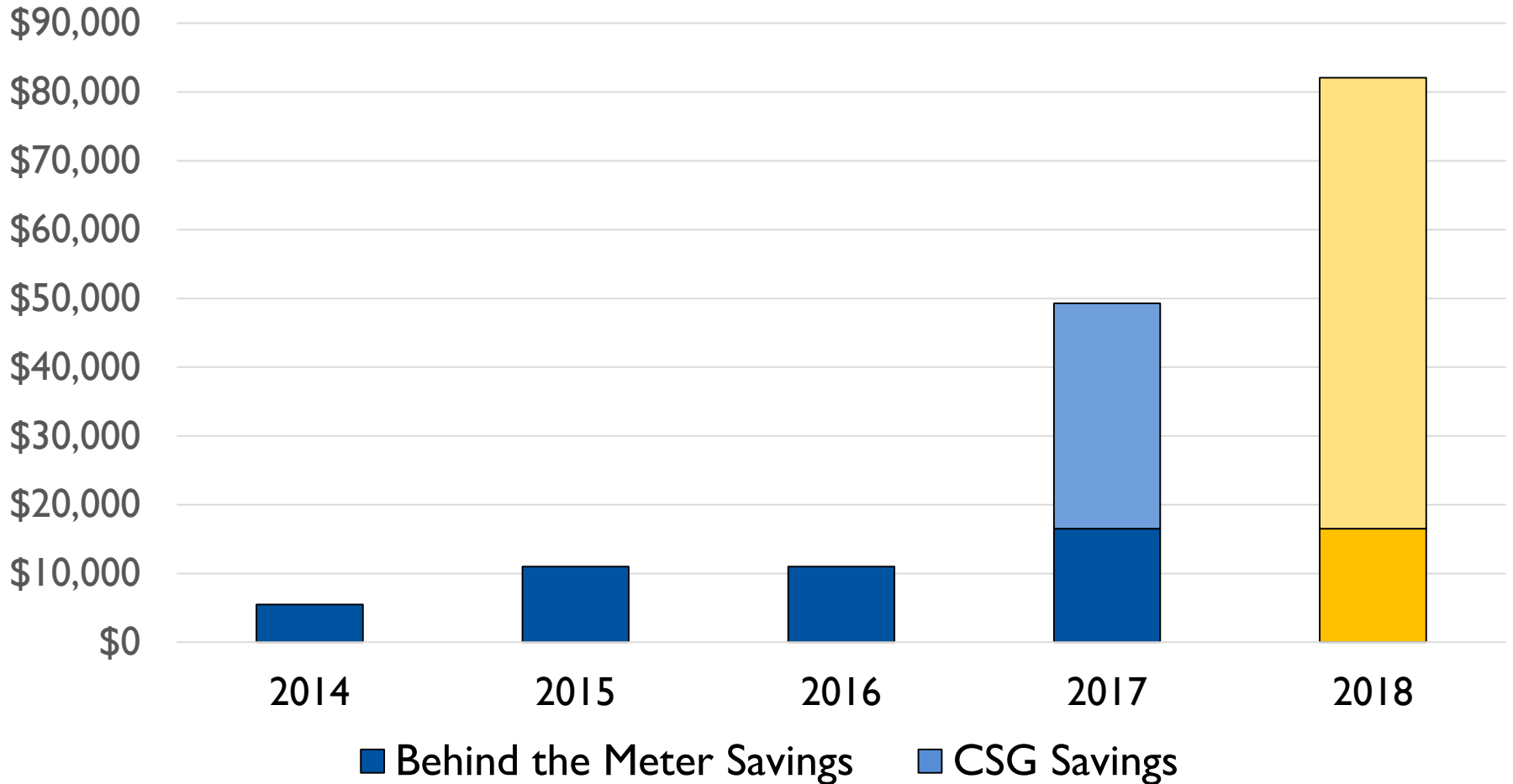
*Weather normalized facility data
for 11 major support facilities

Metro Transit Total MMBtu



*Inclusive of all energy sources (electricity, natural gas, and fuel)

Metro Transit Solar Annual Utility Savings



LED Lighting Projects

An additional 11,000 LED fixtures at Metro Transit support and customer facilities will be under contract for installation by mid-2019.

- 2017 Lighting Retrofits

- Blue Line Downtown Stations, Nicollet & South Garage Exteriors, Northstar Stations, Northstar VMF Rail Yard, and Overhaul Base

- 2018 Lighting Retrofits

- Exterior

- Overhaul Base, Martin J. Ruter Garage, Transfer Road, Operations Support Center, Transit Control Center, East Metro Garage

- Interior

- Overhaul Base, Martin J. Ruter Garage, Transfer Road, South Garage, East Metro Garage, Nicollet Garage, Rail Support Facility, Northstar VMF, Fred T. Heywood Garage, and Blue Line O&M

Blue Line Lighting Project – Downtown Stations



Energy Conservation Return on Investment

- Spent or committed since 2002: \$15 million
 - Lighting upgrades
 - BAS installations
 - Recommissioning
- Project savings on committed/completed projects
 - Approximate cumulative savings by 2020: \$30 million
 - Ongoing annual savings in 2020 and beyond: \$3.8 million

Waste Program Management

- 1-year anniversary of the new 3 bin waste sorting program at three support facilities
 - Centralized waste sorting stations for organics, mixed recycling, and trash
- New or Improved Recycling programs at Overhaul Base
 - Metals
 - Plastic Film
 - E-Waste
- Conducted site audits with vendor
 - Gathered information about current practices
 - Identifying opportunities for improvement
 - Improved diversion rate
 - Reduced costs



Recycle First. Trash Last.

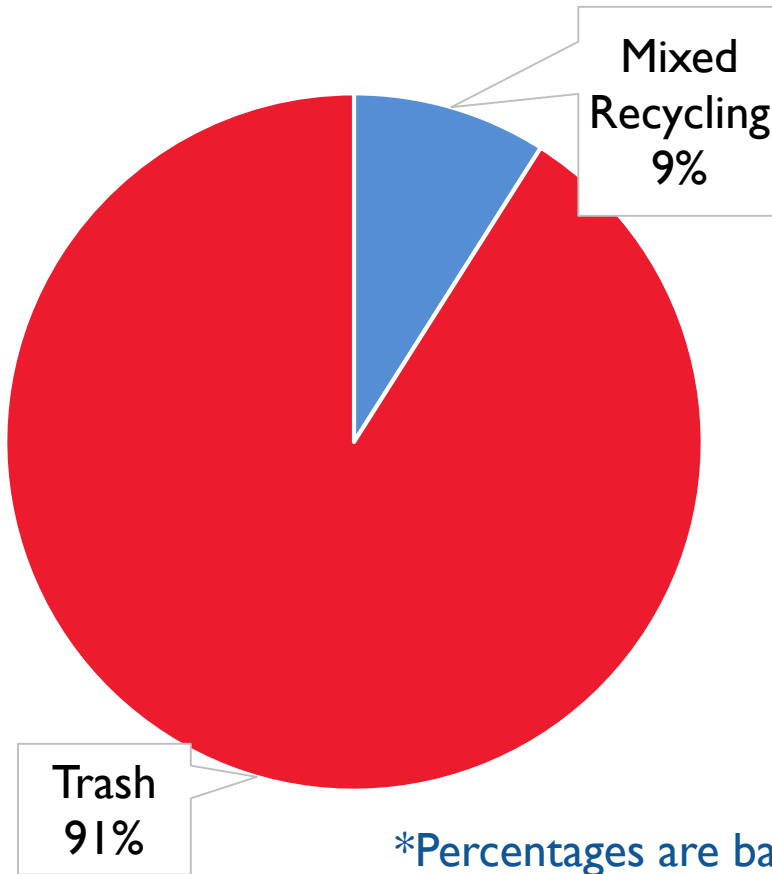
Waste Collection Challenges

- Engaging employees
 - Collaborating with Custodial Services
 - Review of entire collection process
 - New collection bags
 - Creating new educational materials for staff
- Addressing recent recycling industry challenges
 - Closure of the Chinese recycling markets
 - Limited domestic demand
 - Hauler requirements for cost control

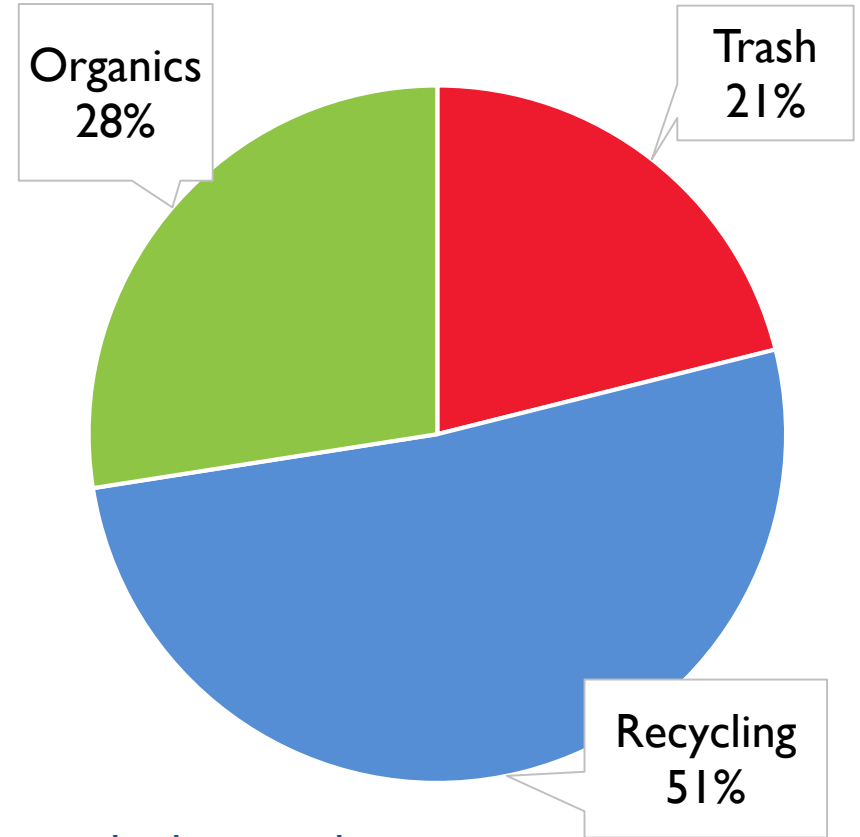


Heywood Office Waste Profile

Prior to new sorting program



1 year into new sorting program



*Percentages are based on a single day sample

2018 → 2019 Projects & Initiatives

Electric Cars

- Purchasing 2 Chevy Bolts for staff use
- 2 Nissan LEAFs since April 2016
 - 17,625 miles total
 - Avg 3.4 mi/kWh or 114 MPGe
 - \$2,150 saved so far in fuel and maintenance costs



Electric Buses

- Purchasing 8 fully-electric buses for our C-Line project
- Installing charging equipment at the Heywood Garage and the Brooklyn Center Transit Center
- Benefits include:
 - Reduced harmful emissions on routes
 - Greater socioeconomic and environmental justice
 - Longer service life
 - Lower O&M and garage HVAC costs
 - Enhanced ride experience



2018 → 2019 Projects & Initiatives

- Sustainable Design for New Buildings
 - MTPD, New Minneapolis Bus Garage, Blue Line Ext OMF, Green Line Ext RSF
- HVAC Recommissioning
- Waste Program Updates
 - 3 bin sorting program expansion to additional support facilities
 - Pallet recycling program
 - Trash compactor at Transfer Road
- Water Conservation Initiatives
 - Bus wash system improvements
 - Ongoing Inflow and Infiltration prevention study at 5 service garages, Overhaul Base, and Transfer Road
- Data Analytics and Reporting Development
- APTA Sustainability Commitment Gold Recertification

Questions?

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