



2019



marta 

sustainability update



4.4 million
people in Atlanta Metro Area

400,000+
passengers daily

connects people to
**employment,
entertainment
& recreation**

Introduction

The Metropolitan Atlanta Rapid Transit Authority (MARTA) provides public transportation services by way of bus, heavy rail, light rail, and paratransit to the Atlanta Metropolitan Region, home to over 4.4 million people. With over 400,000 passengers daily, MARTA's comprehensive and wide-reaching transit option connects people to employment, entertainment, and recreation.

In November 2016, voters in the City of Atlanta overwhelmingly approved a half-penny local sales tax that set plans in motion for the largest investment in transit enhancements and expansion in four decades. Known as the More MARTA,¹ the plan is already underway. With this expansion, our role in the Atlanta region's transportation, connectivity, and environmental discussions will only grow in years to come.

Sustainability is inherent in our agency's mission of providing public transit options to the region. We remove passenger vehicles and associated congestion from our roadways, as well as impact land use changes throughout the region. By reducing the number of vehicles on the road, MARTA is actively improving the region's air quality, which has improved substantially over the last decade. MARTA currently helps to alleviate heavy traffic issues that lengthen commutes and contribute to air pollution.



2019 Update Report

The 2019 Update Report reviews the progress MARTA has made towards realizing the Triple Bottom Line — achieving cost-savings, having a net-positive impact on the environment, and improving the communities in which we operate, work, and live.

Following the organizational format of the 2018 report, we provide new updates categorized into four main sections:



BUILDINGS



ENVIRONMENT



COMMUNITY



CLIMATE

We conclude with our Vision Forward and next steps for MARTA's sustainability program.

2017

Carbon Footprint Update

Our recent Carbon Footprint Update for 2017 found that MARTA's provision of alternative transportation to the region's population prevents 1,725,435 metric tons (MT) of carbon dioxide equivalent (CO₂e) from being released into the atmosphere due to mobility mode shift and changing land use.

2018

Sustainability Report

In 2018, MARTA released our inaugural Sustainability Report,² detailing our sustainability program since its 2012 inception.



	2012	CHANGE	2018
EMISSIONS (CO ₂ e per PMT)	0.643	-13%	0.568 ³
WATER (gallons per PMT)	0.048	-25%	0.036
WASTE (lbs. per PMT)	0.0064	-5%	0.0061
ENERGY⁴ (kBtu per PMT)	1.86	+0.5%	1.87

Continually Improving

Continual improvement is central to MARTA, and our sustainability and environmental management programs are no exception. To the left, our high-level data points show the progress we've made in reducing our impacts on the environment. All metrics are normalized by our ridership metric (passenger miles traveled, or PMT); this accounts for our increasing service levels, and also makes our values more easily comparable to other transit agencies. Initiatives enacted to achieve these reductions are further described later in the report.





buildings

building a more sustainable MARTA



Efficiency Upgrades

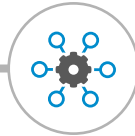
MARTA has entered into a contract with an energy service company (ESCO) to complete energy efficient upgrades across the Authority. The projects began in late 2018 with anticipated completion by May 2021. 17 years after initiating these energy savings projects, it is expected these projects will save MARTA over \$55 million from avoided electricity usage and over \$2 million in avoided operations and maintenance costs. This is in addition to the energy and associated GHG reductions.

The projects include:



Light-emitting diode (LED) lighting upgrades

at 36 rail stations, 54 support facilities, and 3 parking garages



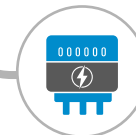
Installation of building automation systems

in 12 facilities/offices
(can be controlled from a central workstation)

Installation of submeters

at 23 rail stations/yards

(for more accurate electricity usage monitoring)



Mechanical retrofits

at 28 locations

(heating and cooling systems/units, hot water boiler burners, chilled water pumps, etc.)





environment

conserving resources and being good stewards





MARTA EMS Facility Locations



MARTA contributed to
the development of the first
EMS Working Group
for APTA's Sustainability Committee

Environmental Management System

MARTA's Environmental Management System, or EMS, is a set of policies, processes, and procedures for assessing, controlling, and reducing the environmental impact of its activities, products and services. MARTA's EMS Program has expanded to encompass seven facilities within its scope.

These facilities are geographically spread across MARTA and cover all our modes of transportation, including heavy rail, bus, mobility and light rail. MARTA is externally certified to the International Organization for Standardization (ISO)'s standard 14001:2015 as a multi-site organization. The plan is to continue expansion to all maintenance facilities in the next couple years.

To maintain environmental compliance, MARTA's Department of Safety and Quality Assurance performs dozens of inspections across numerous geographical and operationally diverse facilities each month. In 2018, MARTA developed an Environmental Management Information System tool (using Microsoft Excel) to:



Track and summarize
all findings found during
regular inspections



Track open issues
through closure



Help management
personnel identify trends
and common findings at
different facilities

In order to review inspections, this tracker uses easy-to-understand formulas, pre-populated tables and graphs, and a pivot table that can be adjusted to view the results most important to the user at the time.

Externally, MARTA contributed to the development of the first EMS Working Group for American Public Transit Association's (APTA) Sustainability Committee in 2018. This group kicked off in January 2019 and will foster a network of EMS practitioners from transit agencies to exchange best practices and challenges within their own programs. Our EMS Program Manager is currently serving as the inaugural Chair of the working group.



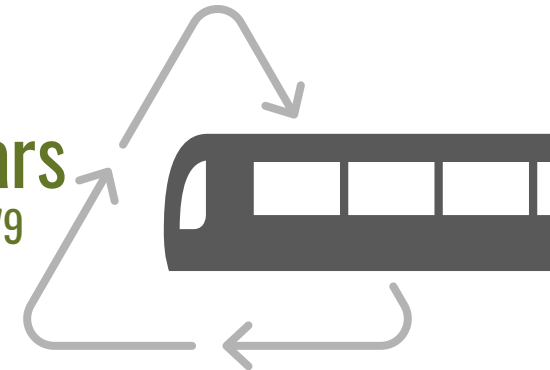
Waste Reduction and Recycling

From 2017 to 2018, MARTA saw an increase in recycling tonnage of over 80 tons. This resulted in improved diversion rate of 12 percent in 2018 versus 8 percent in 2017. MARTA continues efforts to increase our recycling while also decreasing the total amount of produced waste.

MARTA is about to start the process of replacing all railcars in service since 1979 — the year our heavy rail system first opened. The Request for Proposal (RFP) for the disposal of MARTA's existing railcars will include language for all materials to be recycled when possible. This disposal information will be reported back to MARTA and included in future waste data.

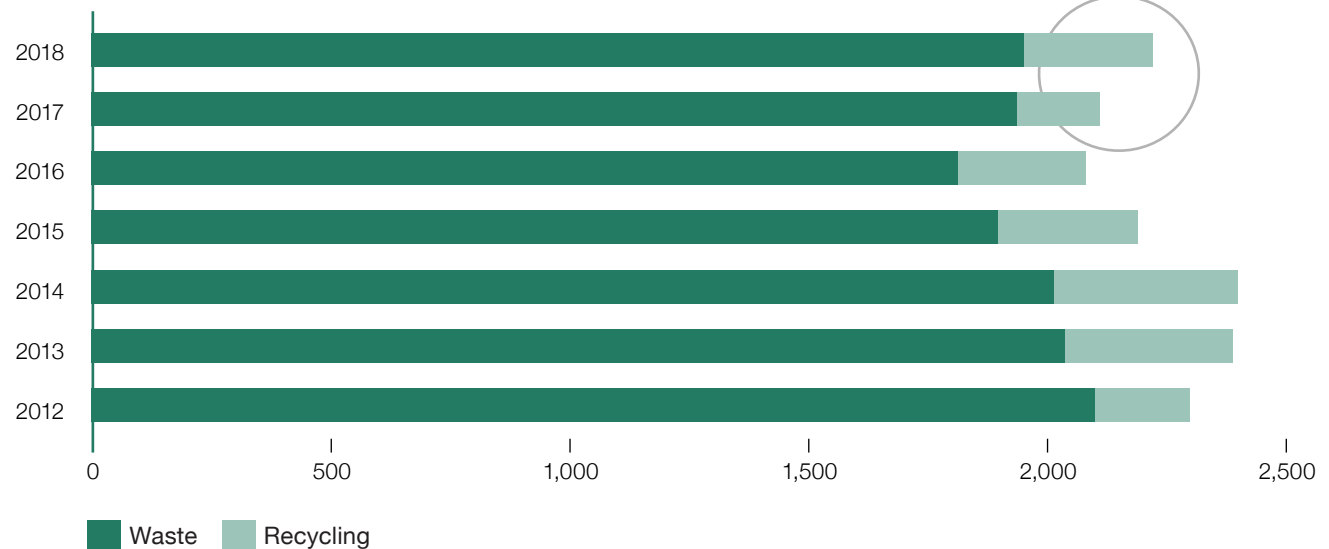
We've also improved our data tracking by following up with contractors at project completion to obtain waste and recycling tonnage information to include in our totals. We retroactively increased our 2017 recycling totals by 5 tons of electronic waste that one of our contractors produced from a project at South Yard. We've also been receiving data from our ESCO contractor on their recycling efforts as they work through the efficiency upgrades across the Authority. In the first half of 2019 alone, the contractor has recycled over 17 tons of scrap metal and cardboard.

replacing railcars
in service since 1979
with plans to recycle all
materials when possible



80+ ton recycling increase

Total Annual Tonnage for Waste and Recycled Materials Produced by MARTA

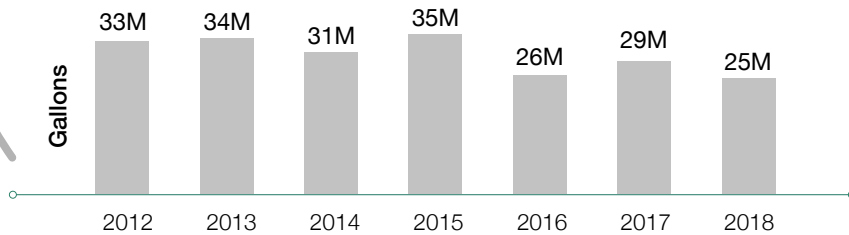




water usage decreased
in 2018 by 13% to the

lowest annual usage
since MARTA began recording data in 2012

Historical Water Usage at MARTA



Water Usage

Water use decreased in 2018 by 13 percent to the lowest annual usage on record since MARTA began recording data in 2012. The planned retrofits to cooling and heating systems in (the ESCO contract) will likely contribute to further reductions in water use. MARTA's bus wash water reuse systems continue to save MARTA an estimated 3,500,000 gallons of water each year that would otherwise be drawn from the City's potable water system.⁵

Finally, the Five Points MARTA rail station is currently being redesigned and updated with and sustainability considerations. MARTA's Custodial and Landscaping (C & L) department is planning to replace all planter beds with drought tolerant native plants. This will build resiliency into the landscaping to endure periods of drought, as well as require fewer water resources and likely less maintenance cost. As well, it creates a positive aesthetic at the station. This landscaping approach will also be considered for other stations as they are updated.



community

supporting and improving our surroundings





Transit-Oriented Development

MARTA is proud of the role that we play in local sustainable development and in connecting people and communities across the region. In fact, MARTA has been pursuing Transit-Oriented Development (TOD) for years now. These are pedestrian-friendly, mixed-use communities that minimize vehicle dependency by increasing access to transit for residents and workers. The developments offer affordable housing, retail, office space, and more. Some of our current TOD projects and their benefits to the Atlanta communities are featured below:⁶

Station	TOD Details	Public Benefits
<p>King Memorial Phase: Approved</p>	<p>Residential Affordable Housing Retail</p>	<p>Affordable Housing: 20 percent of residential units will be affordable to households whose incomes do not exceed 80 percent of the area median income.</p> <p>Economic and Tax Benefits: Upon full build-out the project is expected to generate \$600,000 annually in new property tax revenue to the City and Fulton County.</p> <p>Pedestrian Streetscape: Streetscape improvements will be made along Grant Street and through the tunnel, enhancing pedestrian access to the station.</p> <p>Public Art: As part of the En Route mural program, artist Fahamu Pecou installed a mural entitled Rise Above on the northern facade of the King Memorial Station.</p>
<p>Chamblee Phase: Construction</p>	<p>Office Retail Open Space / Park</p>	<p>Job Creation: Approximately 150 construction jobs and 320 permanent positions will be created by this project.</p> <p>Greenspace and Pedestrian Safety: The project includes new sidewalks, active uses at street-level, a 4,300 ft² pocket park public greenspace and facilitates improved pedestrian access to the station.</p>
<p>Edgewood / Candler Park Phase: Construction</p>	<p>Residential Retail Open Space Cultural Space</p>	<p>Affordable Housing: 20 percent of residential units will be affordable to households whose incomes do not exceed 80 percent of the area median income.</p> <p>Economic and Tax Benefits: Upon completion of Phase I the project is expected to generate \$500,000 annually in new property tax revenues to the City of Atlanta and DeKalb County.</p> <p>Job Creation: Approximately 150 construction jobs and 5 permanent positions will be created in Phase I.</p> <p>Greenspace and Pedestrian Safety: This dense urban node will be effectively woven into the fabric of the surrounding neighborhood by providing connectivity in several locations through ample sidewalks and connections to existing streets. The design includes a ½ acre area of greenspace at the heart of the project.</p>
<p>Avondale Phase: Construction</p>	<p>Residential Affordable Housing Retail Public Space Plaza and Greenway Path</p>	<p>Affordable Housing: 20 percent of residential units will be affordable to households whose incomes do not exceed 80 percent of the area median income.</p> <p>Economic and Tax Benefits: Upon full build-out the project is expected to generate \$800,000 annually in new property tax revenues to the City of Decatur and DeKalb County.</p> <p>Job Creation: Approximately 200 construction jobs will be created and 25 permanent positions.</p> <p>Greenspace and Pedestrian Safety: This dense urban node will be effectively woven into the fabric of the surrounding neighborhood by providing connectivity in several locations through ample sidewalks, connections to existing streets and an extension of the East Decatur Greenway PATH through the site.</p>



Mobility Connections

To help with first and last mile connectivity in and around Atlanta, MARTA has formed new partnerships with local electric scooter and bicycle companies. Lime, an electric scooter rental company, is participating in the Fresh MARTA Market’s monthly community festivals to bring affordable mobility options to low-income city residents. Lime representatives help riders sign up for Lime Access — a low-income program offering heavily discounted rides on Lime electric scooters. The MARTA-Lime partnership started with our successful collaboration on the April 25th National Get on Board Day.⁷ More than 300 Atlantans attended to learn the benefits of public transit, receive free scooter helmets and discount codes, and sign up for the Lime Access program.

MARTA continues to offer bike-friendly bus and train rides. We have been rolling out kiosks with free bike repair equipment for breakdowns such as flat tires and dislodged bike chains. The first repair kiosk is operational at Lindbergh Center Station; plans for expansion include kiosks at all stations except for Airport Station. Please see our website for more information on how to ride MARTA with a bike.⁸



first and last mile connectivity

new partnerships with local electric scooter and bicycle companies



MARTA is also a partner of Georgia Commute Options⁹ which provides worksite assistance and incentive programs to help Atlanta-area commuters, employers and schools improve their commutes. MARTA riders can sign up for free and be entered into a drawing to receive incentives for choosing MARTA instead of driving alone for their commutes.



Fresh MARTA Market

The Fresh MARTA Market has expanded and now takes place at five MARTA stations:

- Bankhead
- West End
- Five Points
- College Park
- H.E. Holmes

These locations were selected to serve Atlanta neighborhoods that have limited access to fresh food. Each stand operates one day per week and accepts cash, credit, and EBT/SNAP. The goal of the Fresh MARTA Market is to make healthy, fresh food more conveniently accessible to the people of Atlanta.

This innovative food access solution is a partnership between MARTA and the Community Farmers Markets,¹⁰ GA Food Oasis-Atlanta,¹¹ Atlanta Community Food Bank,¹² and Organix Matters.¹³ The Fresh MARTA Market sources locally-grown produce from members of the Southwest Atlanta Growers Cooperative and farmers affiliated with Community Farmers Markets, as well as from several local food hubs. This gives local farmers the opportunity to sell more produce and serve consumers who might not otherwise get to a farmer's market. These offerings are complemented with non-local produce so that Fresh MARTA Market patrons can conveniently accomplish much of their fresh food shopping on their way to or from home.



**healthy,
fresh food**
more conveniently accessible
to the people of Atlanta

Public Art Program

MARTA's public art program, Artbound, features engaging visual art, dance, theater, and live music. By integrating art into our stations, we're bringing energy and excitement to passengers along their journey. Please see our website for more information on the public art installations throughout the authority.¹⁴

This program has continued to expand across the system, as follows.



Midtown Station

Artbound and Midtown Alliance have partnered to re-think the plaza at Midtown Station. They have added new public art, enhanced lighting, and innovative seating (hello, astromounds)! An open call for muralists was put out in January, with local artist Andrew Catanese chosen from over 40 submissions. The new murals, greenery, and live music turn the plaza into a little park in the city!¹⁵



Ashby Station

Artbound and Wonderroot, with the help of the Blank Foundation and the Transformation Alliance have collaborated on another incredible mural by Fahamu Pecou, with assistant artists Danesha Claxton and Fabian Williams. *The People Could Fly*, based on a traditional folktale of hope, is a new installation on the outside of Ashby Station facing Joseph E. Lowery Boulevard.¹⁶



Hamilton E. Holmes Station

The mural by Fahamu Pecou was installed in late 2018. It is the fourth mural in the En Route series and honors Dr. Hamilton E. Holmes, who along with Charlayne Hunter-Gault integrated the University of Georgia.¹⁷



climate

mitigating and adapting to climate change

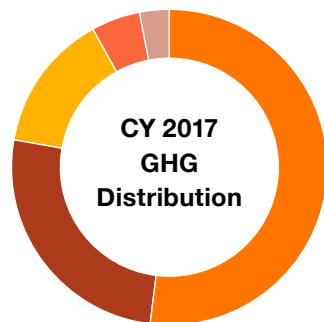


Greenhouse Gas Emissions

MARTA has regularly updated its Carbon Footprint with additional Footprints completed for calendar years (CYs) 2008, 2012, 2014, 2015, 2016, and 2017. CY 2018 will be completed this year. These emissions encompass all of MARTA's emissions from revenue and non-revenue mobile sources, as well as stationary emissions from facilities and offices. See the CY 2017 GHG Distribution graph for a breakdown of its sources of emissions for 2017.

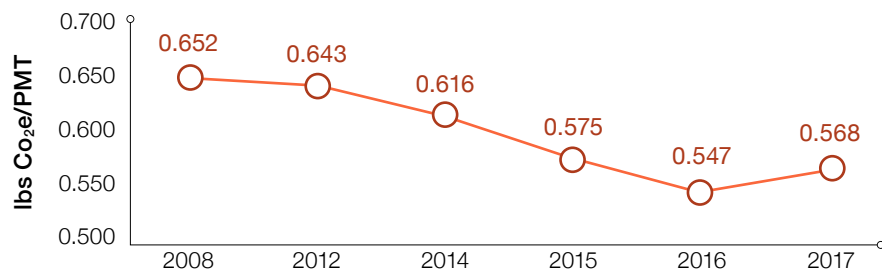
Per our 2017 Carbon Footprint update, MARTA's greenhouse gas (GHG) emissions have decreased by roughly 22 percent since our first carbon footprint report in 2008. MARTA's overall GHG emissions per PMT have decreased by 0.084, or 13 percent since 2008 (see Change in CO₂e Emissions Intensity graph). This means that MARTA's transit services have become less carbon intensive over that period.

The decrease in CO₂e emissions from 2012 to 2017 may be attributed to a decrease in older diesel buses plus an increase in new Compressed Natural Gas (CNG) buses, as well as decreases in stationary gas combustion and refrigerant purchases. The decrease in emissions can also be attributable to changes to the Environmental Protection Agency's (EPA) electricity



52% Electricity 5% Gasoline
26% CNG 3% Stationary Natural Gas
14% Diesel

Change in CO₂e Emissions Intensity 2008–2017



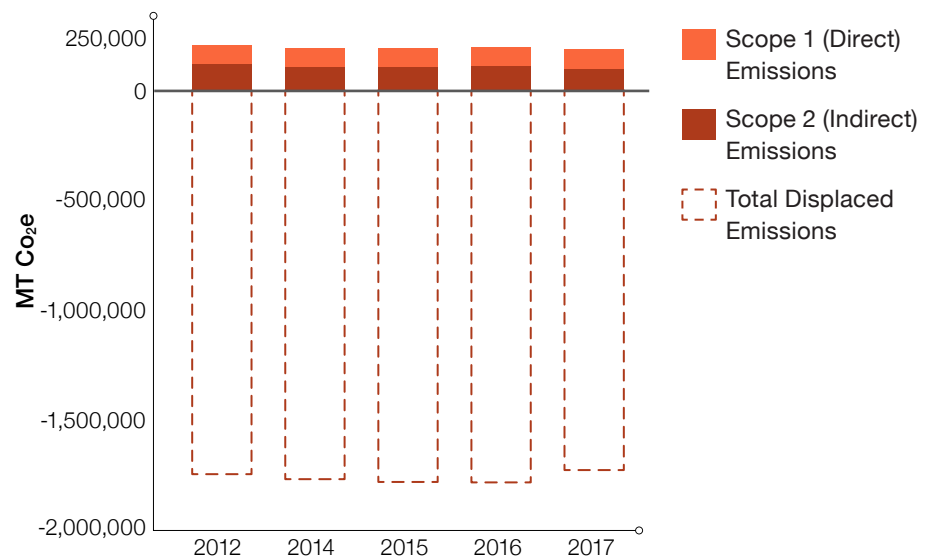
1.7M+ MT CO₂e = **366k+ cars**
out of Atlanta's atmosphere off the road for a year

emissions factors for the sub-region due to the region's shift from coal to cleaner energy options. As electricity represents over half of MARTA's emissions, changes to these emission factors have a large impact on our total MT CO₂e.

MARTA is proud of the significant role we play in the Atlanta metropolitan region in reducing GHG emissions

by providing alternative transportation options that help to decrease the number of cars on the roads. MARTA's bus and rail services reduced regional GHG emissions by keeping 1,725,435 metric tons (MT) of CO₂e out of the atmosphere in 2017 (see Overview of Emissions and Emissions Displaced graph). This is equal to keeping 366,334 cars off the road for a year or annual electricity use from 300,892 homes.

Overview of Emissions and Emissions Displaced by MARTA 2012-2017



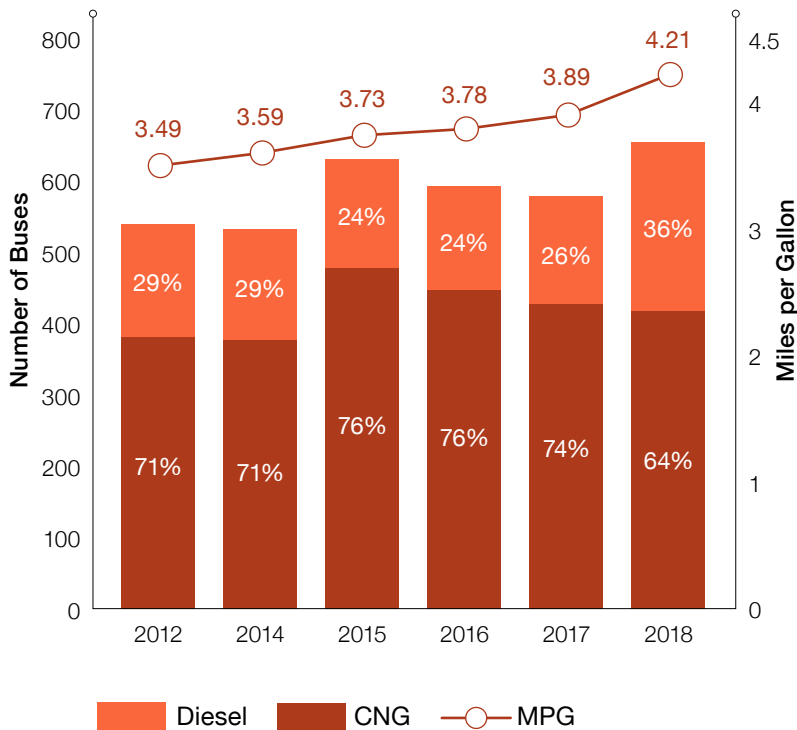


GHG Emission Reduction Initiatives

In an effort to reduce emissions, MARTA has been replacing its old diesel fleet with new CNG and diesel buses. Burning CNG fuel produces significantly fewer pollutants than diesel fuel. Furthermore, by replacing buses with newer models MARTA's fleet is also becoming more fuel efficient.

Our bus fleet's overall fuel efficiency has increased by 20 percent from 2012 to 2018:

MARTA Bus Fleet Ratio and Fuel Efficiency, 2012–2018



\$2.6 million grant awarded by U.S. DOT to purchase six zero-emission battery electric buses



In July 2019, MARTA announced that we were awarded a \$2.6 million grant by the U.S. Department of Transportation for the purchase of six zero-emission battery electric buses to replace six diesel models. Removing the 2005 diesel versions from the fleet will reduce MARTA's GHG emissions and overall energy consumption. The new buses are expected to be deployed by July 2021 once they are procured and charging stations are installed at our bus maintenance facilities.

As previously mentioned, we are replacing all railcars that have been in service since MARTA opened in 1979. Aging over 40 years, their efficiency has decreased over time. With new technology available, we are expecting an improvement in efficiency once the new railcars hit our tracks in 2023. This efficiency should reduce electricity used for propulsion, as well as associated costs and emissions, while providing an enhanced experience for our riders.



vision forward

what's next!



As MARTA has already achieved Bronze and Silver level sustainability accreditation from APTA, the next step would be for us to pursue Gold.

next step: gold level accreditation

In the interim, MARTA is striving to improve our internal and external commitments to sustainability, setting new targets, creating new partnerships, and committing to continue doing our part for our riders and our communities.

We are currently exploring the feasibility of a MARTA-run rail station recycling program. Our present vending machine vendor provides limited recycling bins by the vending machines outside of MARTA's gates — the only option for riders to recycle. By adding more receptacles within the stations, customers will also be able to recycle *inside* the station, enabling MARTA to divert more waste from landfills. The plan is to integrate this idea into our broader rail station rehabilitation program, designed to refurbish all stations throughout the Authority.

MARTA's Environmental Management System will also continue to expand into additional maintenance facilities with the goal of being Authority-wide within a couple of years. The Perry Bus Maintenance Facility is the next location slated to undergo the program and eventually aim for ISO 14001:2015 certification.

improving internal & external commitments to sustainability

MARTA is also exploring the feasibility of other programs, including:

- Reduced idling policy/program for revenue and non-revenue vehicles
- Implementing additional water efficiencies into landscaping practices, including native drought tolerant plantings and rain capturing
- Developing a climate action plan
- Tablets with specialized software for use during environmental inspections
- Annual sustainability report updates



appendix

Footnotes

- 1 [More MARTA](#)
- 2 [2018 Sustainability Report](#)
- 3 2017 emissions, 2018 emissions have not been calculated yet
- 4 Includes electricity, vehicle fuel, and natural gas
- 5 Average estimate taken from total water usage at Perry and Laredo (reuse bus washing facilities) vs. Hamilton (non-reuse bus washing facility) from CY2013 to CY2016
- 6 [TOD Projects](#)
- 7 [Get Board](#)
- 8 [Take Your Bike for a Ride](#)
- 9 [Georgia Commute Options](#)
- 10 [Community Farmers Markets](#)
- 11 [GA Food Oasis-Atlanta](#)
- 12 [Atlanta Community Food Bank](#)
- 13 [Organix Matters](#)
- 14 [Public Art Collection Program](#)
- 15 [Midtown Station art](#)
- 16 [Ashby Station art](#)
- 17 [Hamilton E. Holmes Station art](#)



Acronyms

APTA	American Public Transportation Association
CNG	Compressed natural gas
CO₂e	Carbon dioxide equivalent
CY	Calendar year
EBT	Electronic bank transfer
EMS	Environmental Management System
EPA	Environmental Protection Agency
ESCO	Energy Service Company
GA	Georgia
GHG	Greenhouse gas
ISO	International Organization for Standardization
LED	Light-emitting diode
MARTA	Metropolitan Atlanta Rapid Transit Authority
MT	Metric tons
PMT	Passenger miles travelled
RFP	Request for proposal
SNAP	Supplemental Nutrition Assistance Program
TOD	Transit-Oriented Development

Glossary

American Public Transportation Association

(APTA): A non-profit organization whose goal is to advance public transportation. MARTA is a member of this organization.

Carbon Dioxide Equivalent (CO₂e):

The standard unit for measuring greenhouse gas emissions by expressing each greenhouse gas in terms of CO₂. Greenhouse gases, e.g. N₂O and CH₄, are multiplied by a global warming potential to calculate their emissions in terms of CO₂e.

Electronic Bank Transfer (EBT) and Supplemental Nutrition Assistance Program (SNAP):

Monthly supplements for low-income families to purchase nutritious food provided by the government. ([USDA](#))

Environmental Management System (EMS):

A program based on the ISO 14001:2015 standards that help MARTA manage environmental impacts and demonstrate our commitment to the environment.

Greenhouse Gas (GHG): Gaseous constituents of the atmosphere which absorb and emit radiation at specific wavelengths, which causes the greenhouse effect. Water vapor (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), and ozone (O₃) are the primary greenhouse gases in the Earth's atmosphere. ([IPCC](#))

International Organization for Standardization

(ISO): An independent, non-governmental international standard-setting body composed of representatives from various national standards organizations.

Light emitting diode (LED): Lighting products in which an electrical current passes through a microchip, which illuminates the tiny light sources called LEDs and the result is visible light. LED's produce light approximately 90% more efficiently than incandescent light bulbs. ([Energy Star](#))

Passenger Miles Traveled: The cumulative sum of the distances ridden by each passenger. A commonly used normalizing factor for sustainability metrics at public transit agencies. ([FTA](#))

Transit-Oriented Development: Creation of compact, walkable, pedestrian-oriented, mixed-use communities centered around transit systems.



Detailed Sustainability Data

YEAR	2008	2012	2013	2014	2015	2016	2017	2018
Recycling/Waste								
Scrap Metal Recycling (tons)		139	224	277	128	107	55	157
Single-Stream Recycling (tons)		48	56	45	108	92	37	52
Used Oil Recycling (gallons)		46,415	46,521	41,202	42,340	43,710	48,404	47,812
Electronic Waste Recycling (tons)		0	0.8	0.6	4.4	2	1	11
Paper Recycling (tons)		16	74	64	52	72	80	41
Municipal Solid Waste (tons)		2,042	2,036	2,014	1,896	1,812	1,932	1,905
Diversion Rate		9.1%	14.8%	16.1%	13.3%	13.1%	8.2%	11.8%
Pounds (lbs.) waste & recycling / PMT		0.0064	0.0070	0.0071	0.0059	0.0056	0.0062	0.0061
Energy Usage								
Propulsion Electricity (kWh)		84,755,425	84,500,218	89,172,383	92,260,860	92,324,642	91,288,461	91,538,744
Stationary Electricity (kWh)		99,421,291	99,536,821	103,099,365	104,294,807	103,990,794	103,101,273	102,506,612
Total Electricity Consumed (kWh)		184,176,716	184,037,039	192,271,748	196,555,667	196,315,436	194,389,734	194,045,356
kWh / PMT		0.263	0.270	0.280	0.266	0.264	0.267	0.275
Total Stationary Natural Gas Combustion (therms)		1,022,933	1,161,796	1,155,237	1,124,451	1,066,777	1,239,755	1,157,227
Therms/ PMT		0.00146	0.00170	0.00169	0.00152	0.00143	0.00170	0.00164
Water Usage								
Total Water Consumed (gallons)		33,384,685	33,940,595	31,037,073	34,900,740	25,840,667	28,964,573	25,253,976
Gallons / PMT		0.048	0.050	0.045	0.047	0.035	0.040	0.036
Mobile Fuel Usage (Revenue and Non-Revenue)								
Diesel Fuel (gallons)	3,400,000	3,105,175		3,262,438	2,623,705	2,537,015	2,625,127	2,059,460
Compressed Natural Gas (DGE)	7,200,771	5,485,662		5,329,457	5,465,831	5,867,303	5,995,539	5,458,537
Unleaded Gasoline (gallons)	416,000	270,579		355,576	1,045,385	1,091,211	1,177,975	1,309,445
Total Fuel Consumed (gallons)	11,016,771	8,861,416		8,947,471	9,134,921	9,495,529	9,798,641	8,827,442
Gallons / PMT	0.0136	0.0127		0.0131	0.0124	0.0128	0.0134	0.0125

Light grey boxes represent year in which the corresponding data were not collected