



# SEP-TAINABLE

ANNUAL REPORT (FEBRUARY 2018)

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## LETTER FROM THE GENERAL MANAGER



One year ago this month, the SEPTA Board adopted *SEP-TAINABLE 2020*, a second-generation Sustainability Program Plan with goals to deepen a commitment to sustainability at SEPTA, and by doing so, to advance sustainability throughout southeastern Pennsylvania. The plan reaffirmed SEPTA’s key leadership role in promoting sustainable business practices and established aggressive yet achievable performance targets to ensure accountability.

One year later, I’m pleased to report on substantial progress. Key achievements include:

- Delivery of the first of **25 battery-electric buses**, which will give SEPTA the largest zero-emission bus fleet on the East Coast of the United States by 2018.
- Delivery of the first of **525 additional hybrid-electric buses**; by 2021, greater than 90 percent of SEPTA’s entire bus fleet will be hybrid- or battery-electric, one of the largest “green fleets” in the United States.
- Selection of a developer to install **3.1 megawatts of roof-mounted photovoltaic (PV) solar** at four of SEPTA’s largest vehicle maintenance facilities, the second largest solar PV project in City of Philadelphia history.
- Re-certification of SEPTA’s Environmental & Sustainability Management System (ESMS) to the now more rigorous International Organization for Standardization (**ISO 14001:2015 standard**).

In addition to these key initiatives, SEPTA also advanced a series of policy and planning efforts that establish a strong foundation for years to come. These included:

- Development of a citizen and stakeholder-driven second-generation **Energy Action Plan**, a comprehensive strategy to reduce energy and GHG emissions through 2026; the plan is being published as a companion to this year’s SEP-TAINABLE Annual Report.
- Membership in the Delaware Valley Green Building Council (DVGBC) “**2030 District**,” and with it, a commitment to reduce water, energy and emissions from SEPTA’s 1234 Market Street headquarters building by 50 percent within a decade. SEPTA immediately put this commitment into action by selecting a developer to implement a retrofit program through an energy performance contract.
- Active participation in key stakeholder-driven initiatives, including the City of Philadelphia’s **Zero Waste & Litter Committee, Connect Committee, Electric Vehicle (EV) Task Force**, and **SmartCityPHL Team**.

Ultimately, a more sustainable SEPTA supports a more economically prosperous, socially conscious and environmentally sustainable region. Southeastern Pennsylvania produces 41 percent of the entire state’s economic activity with 32 percent of its population on just five percent of its land, a level of economic productivity not possible without a sustainable transit system to efficiently move people through a densely populated metropolitan area. On average, commuters who choose transit over driving cut their personal transportation emissions by *more than 70 percent*, and with per-capita driving rates 40 percent below the national average, ours is a region that is already on the vanguard of sustainable mobility.

Still, SEPTA believes even more can be done to grow the economy and reduce transportation-sector emissions through increased transit usage. SEPTA is committed to working with partners in 2018 and beyond towards this goal through implementation of an expansive “Rebuilding the System” infrastructure program, active support for transit-oriented economic development, planning efforts for targeted system expansion such as the King of Prussia Rail project, and exploration of innovative approaches to reduce traffic congestion. The future is bright in southeastern Pennsylvania, and SEPTA believes that transit will play a key role in our region achieving its full potential.

I’m now pleased to share this annual report with you.

  
Jeff Knueppel  
General Manager



# A GUIDE TO THE SEP-TAINABLE

In 2011, SEPTA launched its first five-year Sustainability Program, entitled SEP-TAINABLE: The Route to Regional Sustainability. In 2017, SEPTA launched its second-generation plan, SEP-TAINABLE 2020, which established goals and targets for performance improvements across the triple bottom line approach: Natural Environment, Healthy Communities and Workforce, and Economic Vitality.

## NATURAL ENVIRONMENT

Sustaining the natural environment ensures sufficient resources to support our society and healthy living conditions - now and in the future.

## HEALTHY COMMUNITIES & WORKFORCE

Creating healthy communities and workforces helps to ensure a good social well-being.

## ECONOMIC VITALITY

Focusing on economic vitality leverages the impact of transit on supporting the region's density and economic productivity.

The 2018 SEP-TAINABLE Annual Report provides an update on progress, highlighting current and future efforts that represent a commitment to continual improvement in each pillar of the plan. Complimentary updates about SEPTA's Sustainability Program can be found on the SEPTA Sustainability website [www.septa.org/sustain](http://www.septa.org/sustain)

The plan document and website are designed to be accessible and relevant to all riders and residents of southeastern Pennsylvania. We hope that you enjoy discovering how SEPTA is contributing to a more sustainable region and what you can do to help support SEPTA's efforts.

## HOW YOU CAN HELP SEPTA'S SUSTAINABILITY PROGRAM



By reading SEPTA's Sustainability Annual Reports, and visiting the SEPTA Sustainability [webpage](http://www.septa.org/sustain), you can learn more about SEPTA's various environmental, social, and economic sustainability efforts throughout the region. Sharing this information with your family and friends will help to spur conversations and help to spread the message of sustainability.



One of the best things you can do to support our sustainability program is continue to use public transit. SEPTA plays a critical role in reducing transportation emissions in southeastern Pennsylvania. On average, commuters who choose transit over driving cut their personal transportation emissions by 70%.

The more riders SEPTA has, the deeper SEPTA's positive impact on regional sustainability becomes.



You can support SEPTA's waste management strategies by properly utilizing waste and recycling combo units. These combo units can be found at all SEPTA stations, and the recycling bins have new lids with updated stickers to direct riders on how to separate waste and recycling from one another. This is especially important to avoid contaminating our recycling loads to increase the amount of waste that can actually be recycled once it reaches the plant.



It is equally important for our riders to report problems or provide suggestions for what they would like to see from our sustainability program. Examples include things like reporting a leaky faucet in a station restroom or a recycling bin without a lid. Passengers can also request that bike racks be installed at SEPTA owned stations throughout the system.

For this and any other input on sustainability at SEPTA, please email SEPTA at [sustainability@septa.org](mailto:sustainability@septa.org).



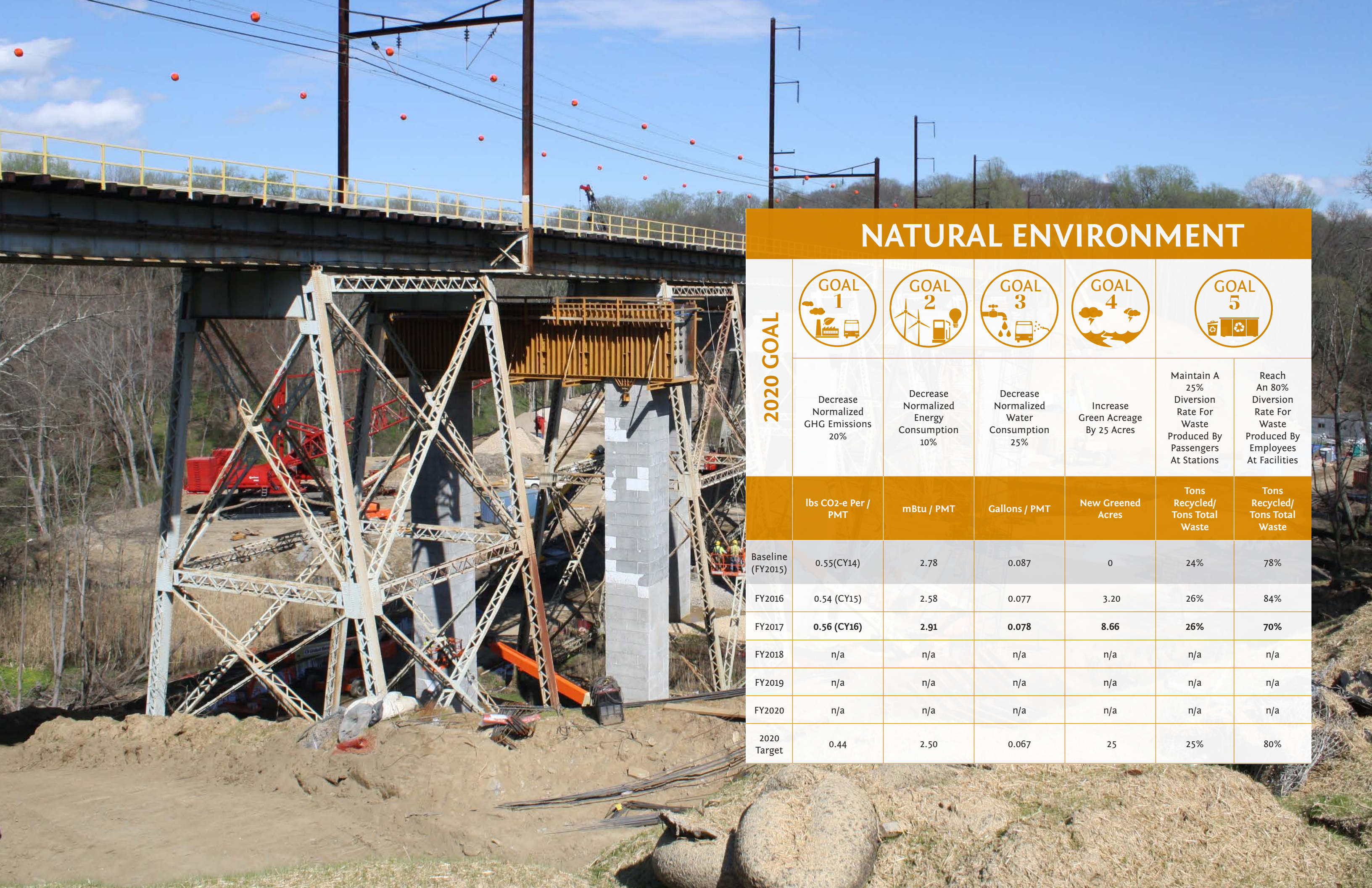


# NATURAL ENVIRONMENT

Public transportation is inherently sustainable. SEPTA reduces greenhouse emissions through reducing private auto use, congestion, and supporting compact, energy efficient development. SEPTA also engages in its own internal sustainability efforts to continually mitigate its environmental footprint.

The Natural Environment chapter of this Annual Report provides an update on progress towards goals focused on reducing greenhouse gas emissions and energy and water consumption, mitigating stormwater runoff, and improving waste minimization and diversion strategies.





# NATURAL ENVIRONMENT

## 2020 GOAL



Decrease  
Normalized  
GHG Emissions  
20%



Decrease  
Normalized  
Energy  
Consumption  
10%



Decrease  
Normalized  
Water  
Consumption  
25%



Increase  
Green Acreage  
By 25 Acres



Maintain A  
25%  
Diversion  
Rate For  
Waste  
Produced By  
Passengers  
At Stations

Reach  
An 80%  
Diversion  
Rate For  
Waste  
Produced By  
Employees  
At Facilities

lbs CO2-e Per /  
PMT

mBtu / PMT

Gallons / PMT

New Greened  
Acres

Tons  
Recycled/  
Tons Total  
Waste

Tons  
Recycled/  
Tons Total  
Waste

Baseline  
(FY2015)

0.55(CY14)

2.78

0.087

0

24%

78%

FY2016

0.54 (CY15)

2.58

0.077

3.20

26%

84%

FY2017

0.56 (CY16)

2.91

0.078

8.66

26%

70%

FY2018

n/a

n/a

n/a

n/a

n/a

n/a

FY2019

n/a

n/a

n/a

n/a

n/a

n/a

FY2020

n/a

n/a

n/a

n/a

n/a

n/a

2020  
Target

0.44

2.50

0.067

25

25%

80%





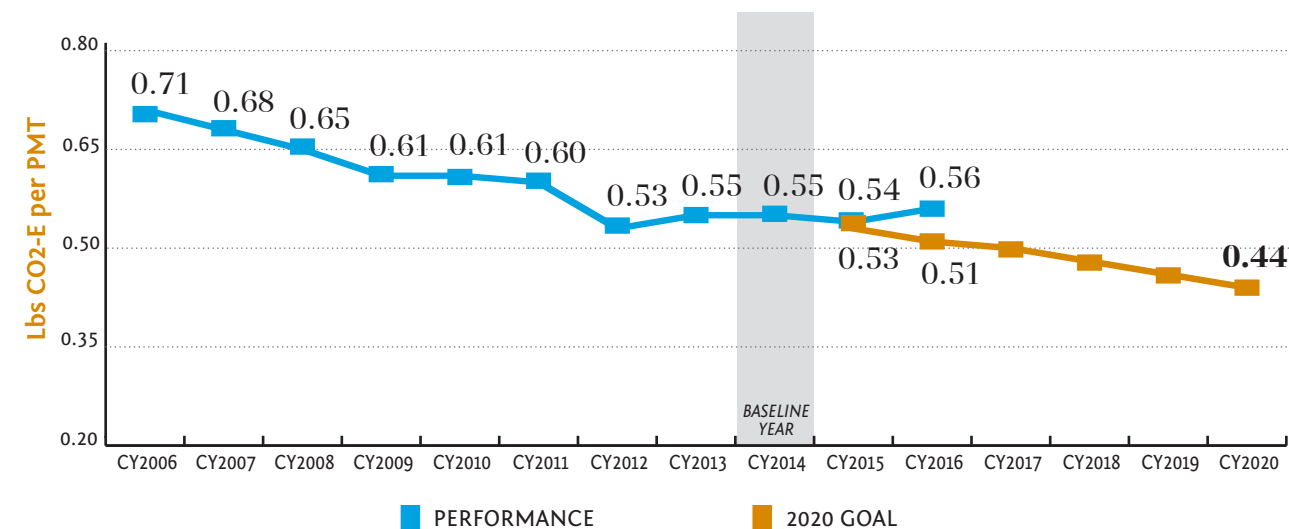
## REDUCE SEPTA'S CARBON FOOTPRINT

DECREASE NORMALIZED GHG EMISSIONS  
BY **20%** BY 2020

SEPTA produces greenhouse gas (GHG) emissions in daily vehicle and heating operations. As GHG emissions contribute to global climate change, SEPTA aims to minimize its emissions while maintaining high-quality service and increasing ridership.

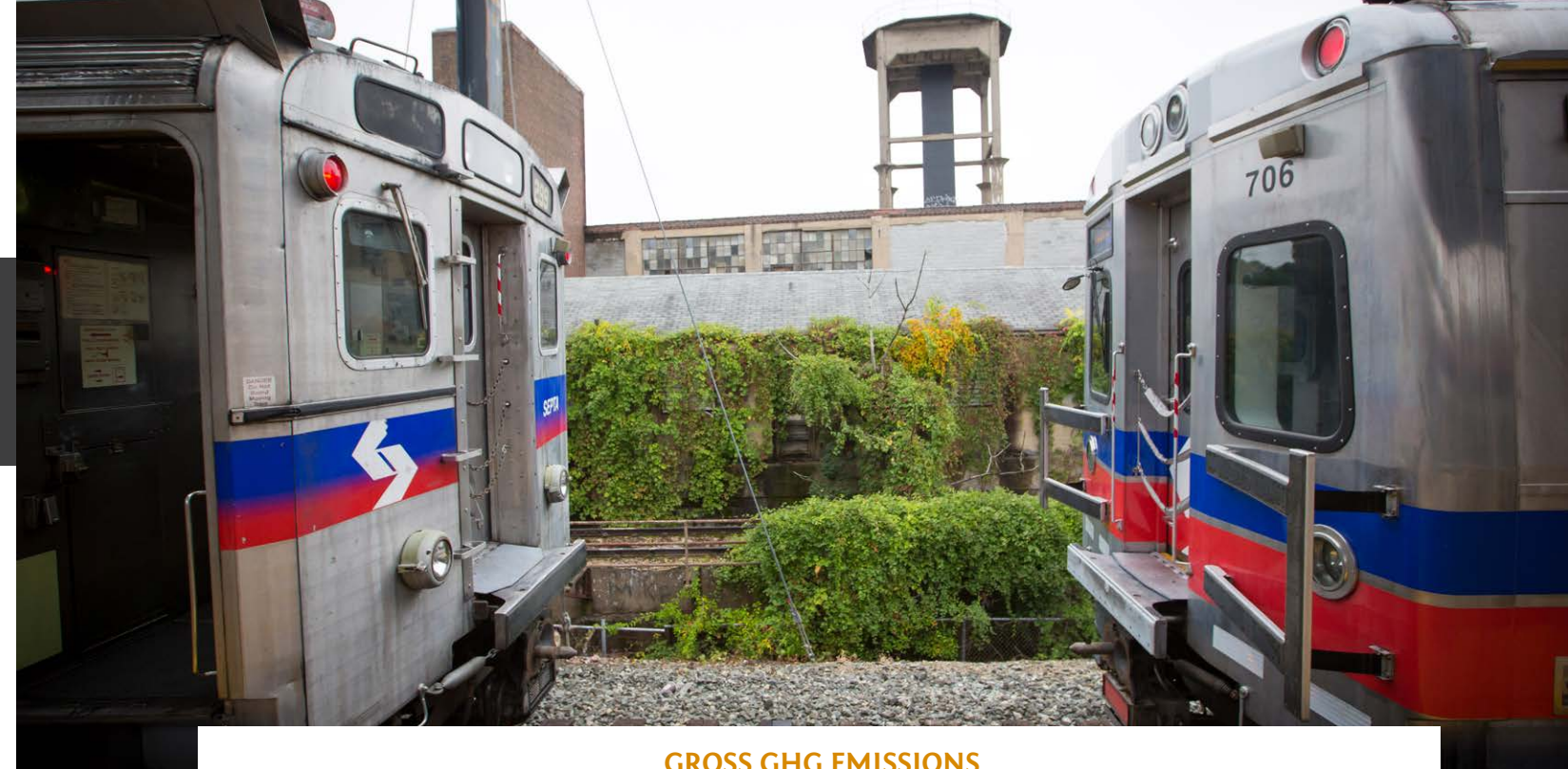
In 2016, SEPTA did not meet its goal to reduce normalized emissions. SEPTA did reduce its gross emissions by over 8 million lbs CO<sub>2</sub>-E. In order for SEPTA to meet the 2020 emission reduction goal, SEPTA must continue to look for ways to reduce emissions while growing ridership.

### NORMALIZED GHG EMISSIONS

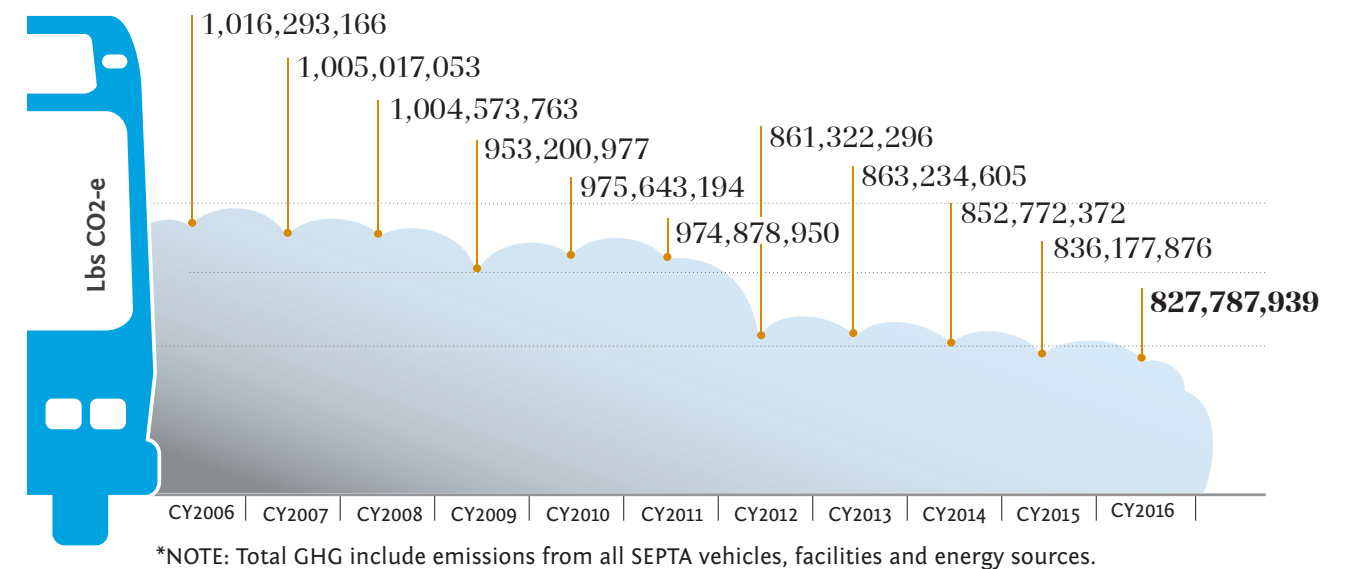


#### HOW WE'RE DOING:

From CY2014 to CY 2016, SEPTA increased normalized emissions by 2%.



### GROSS GHG EMISSIONS



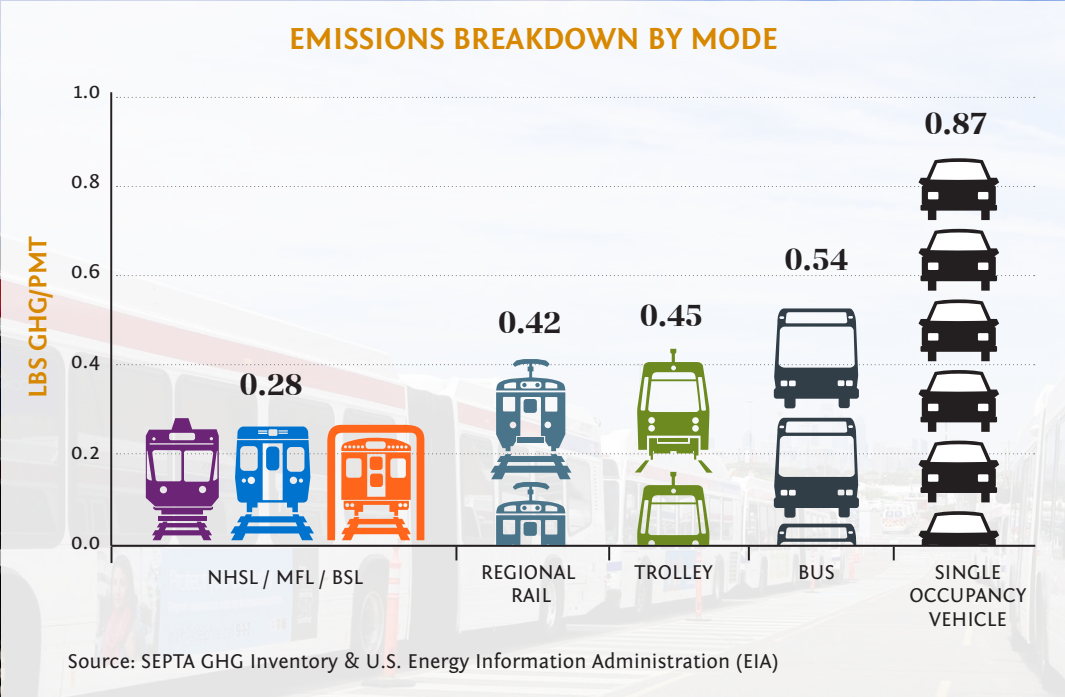
### CALCULATING SEPTA'S GHG EMISSIONS

SEPTA measures both gross (total, non-normalized) GHG emissions and normalized (total emissions divided by number of passenger miles traveled) GHG emissions. Additionally, in 2017, SEPTA began including eGrid losses into its GHG emissions calculations based on recommendations from the City of Philadelphia. Grid losses are calculated as an additional percentage of SEPTA's baseline electricity consumption and were applied to SEPTA's gross GHG emissions from 2006 to 2016.

Since 2006, SEPTA has reduced its gross GHG emissions by over 185 million pounds of CO<sub>2</sub>-E, equivalent to a 19% reduction. The majority of SEPTA's GHG emissions, 84%, are generated by vehicles transporting passengers. The remaining 16% of SEPTA's emissions result from heating and powering passenger stations, depots, offices, and maintenance vehicles. SEPTA is committed to reducing its energy consumption and gross GHG emissions through energy efficiency and conservation initiatives, purchasing more efficient vehicles, and procuring renewable energy.



In CY2016, buses and rail modes together accounted for 82% of SEPTA's energy consumption, and therefore account for the majority of SEPTA's emissions. SEPTA's buses produced approximately 41% of emissions, while trolley's and trains produced 39% of emissions. SEPTA has reduced its emissions across both bus and rail modes through various initiatives like installing wayside energy storage batteries at SEPTA's substations, upgrading the Silverliner V Fleet, and investing more in hybrid-electric buses.

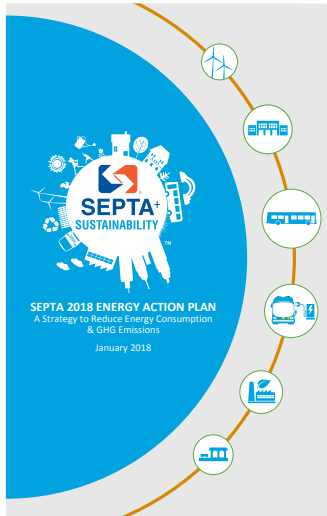
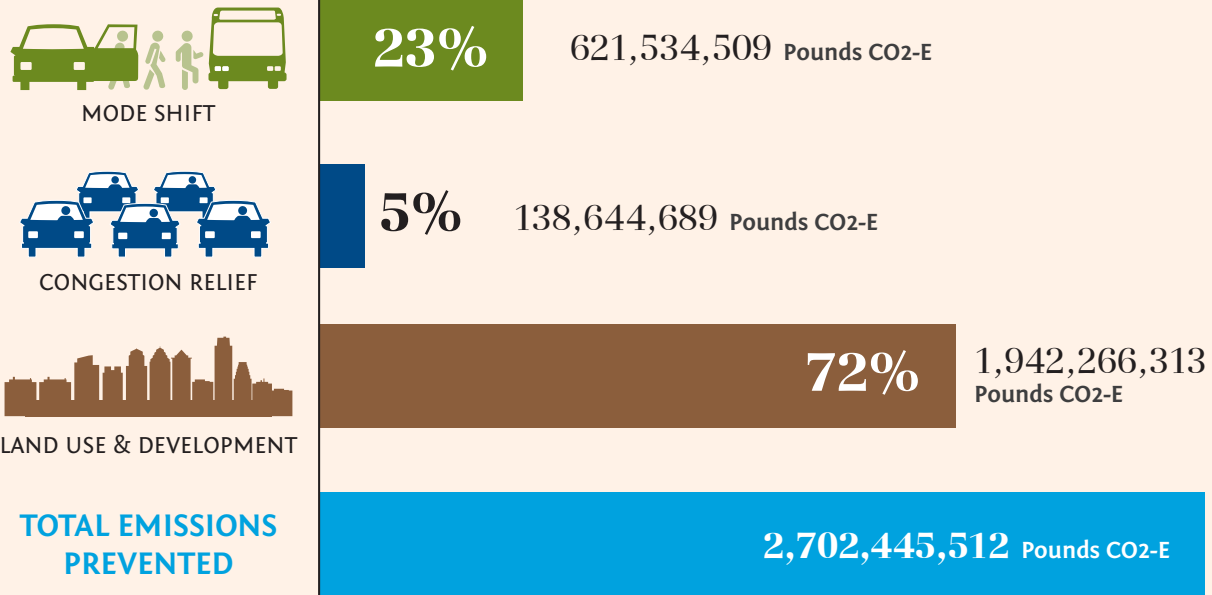


### GLOBAL IMPACT OF TRANSPORTATION

In addition to gross emissions, SEPTA measures emissions prevented as a transportation service. In CY2016, SEPTA prevented 2,702,445,512 lbs CO2-E through mode shift, congestion relief, and supporting dense, compact land uses.

Through mode shift, SEPTA reduces the number of single-occupancy vehicles on the road, which simultaneously provides congestion relief and reduces idling time in high-traffic conditions. Additionally, SEPTA's high-capacity service produces what is known as the “multiplier effect,” which increases density and reduces dependence on private vehicle use.

### CY2016 PREVENTED EMISSIONS



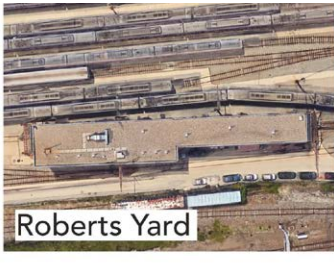
### ENERGY ACTION PLAN

In January 2018, SEPTA released its second Energy Action Plan discussing progress from the first 2012 Energy Action Plan and outlining 15 new initiatives to reduce energy consumption, increase energy efficiency, and reduce GHG emissions. The 2018 Energy Action Plan goals are complimentary to those from the Board-approved SEP-TAINABLE 2020 document and will chart a course towards energy and emissions reductions by using a 80 x 50 benchmark.



### ELECTRIC BUSES

Beginning in 2017, SEPTA received its first procurement of 25 electric buses from Proterra, which will replace diesel and hybrid-electric buses along routes 29 and 79. Replacing 25 diesel-powered buses with 25 electric buses will reduce emissions by approximately 2.1 million lbs CO2-E.



### SOLAR POWER PURCHASE AGREEMENT

SEPTA has selected SunVest Solar, Inc. for a power purchase agreement (PPA) through a competitive process to install solar panels on the rooftops of four SEPTA backshops. Combined, the solar panels will produce 3.1 MW worth of energy annually and reduce SEPTA's emissions by over 3 million lbs CO2-E. This project is also the second largest solar installation in the City of Philadelphia and will increase the total installed capacity of solar panel systems throughout the City by 30%.





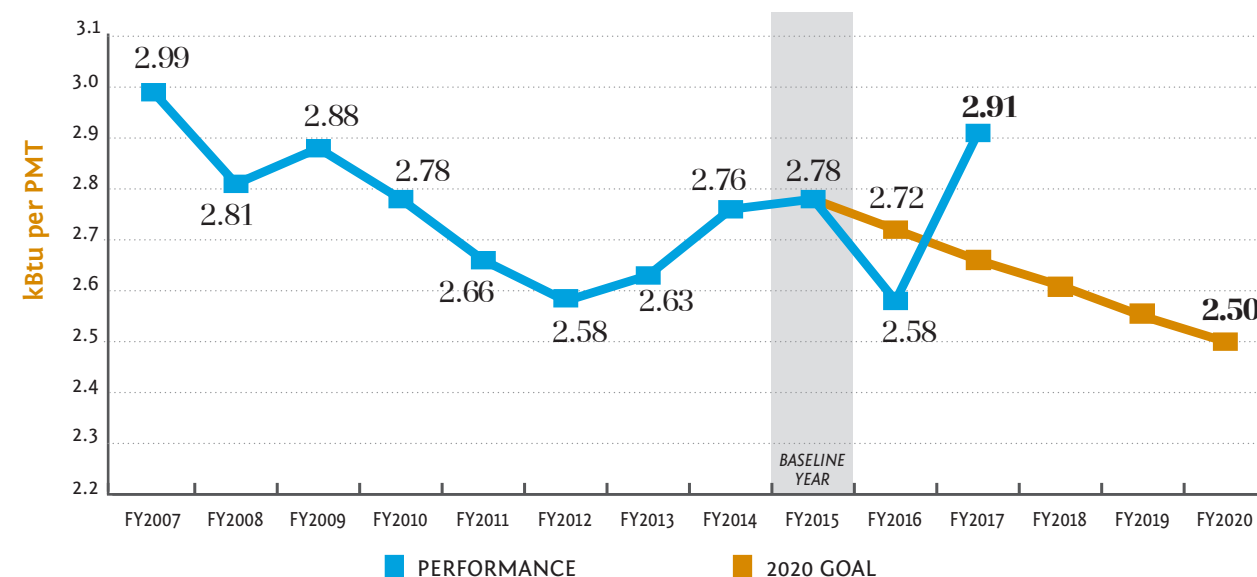
## IMPROVE ENERGY EFFICIENCY

DECREASE NORMALIZED ENERGY CONSUMPTION BY **10%** BY 2020

SEPTA uses energy for every aspect of its operations, from powering railcars and buses to heating stations and illuminating track signals. Energy inefficiency has negative environmental impacts including incremental GHG emissions, and air and water pollution from energy generation.

In FY2017, SEPTA did not meet its goal to reduce normalized energy consumption. This was due to a 12% decrease in passenger miles traveled between 2016 to 2017. In order for SEPTA to meet the 2020 energy efficiency goal, SEPTA must continue to look for ways to reduce energy consumption while growing ridership.

### NORMALIZED ENERGY CONSUMPTION



#### HOW WE'RE DOING:

From FY2015 to FY2017, SEPTA's normalized energy consumption increased by 5%.

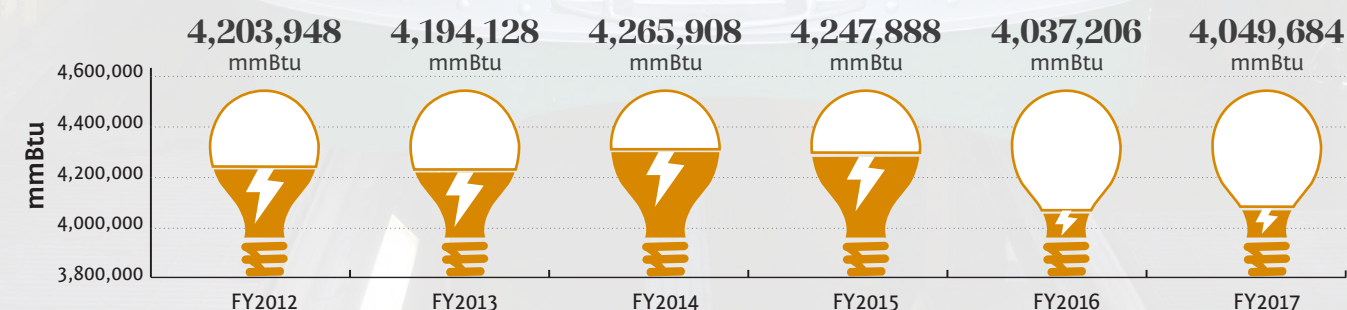


### CALCULATING SEPTA'S ENERGY CONSUMPTION

SEPTA realizes that in order to be truly sustainable and have the least environmental impact, two factors must be measured and compared – gross (total non-normalized) energy consumption and ridership. In order to track SEPTA's progress with these two factors in mind, total energy consumption is divided by the number of passenger miles traveled (PMT) each year (normalized data).

SEPTA's energy sources include electricity, gasoline, diesel, natural gas, heating oil, and steam. Since FY2012, SEPTA has reduced its energy consumption by 154,264 mmBtu, an approximate 4% reduction. This savings is equivalent to powering 4,125 houses for one year.

### GROSS ENERGY CONSUMPTION

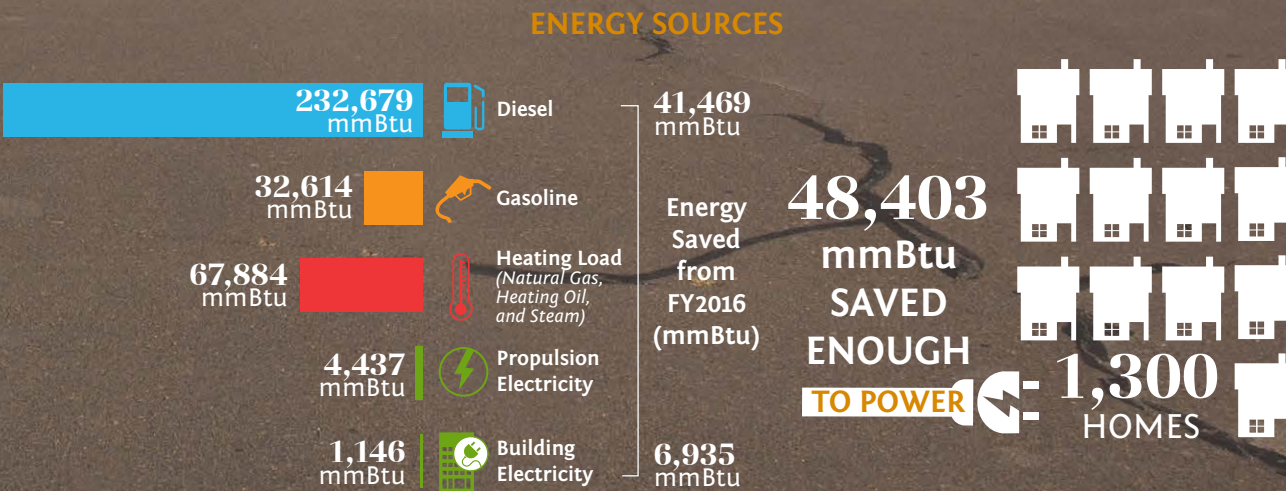
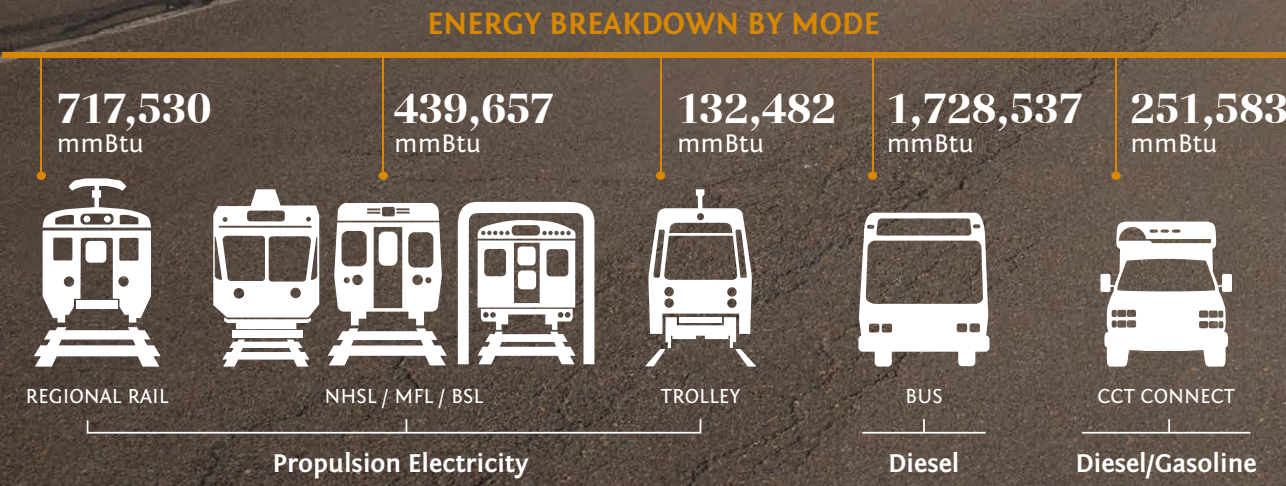






SEPTA's buses log more miles than any other mode, and therefore account for approximately half of all energy used to transport customers. SEPTA has been able to significantly reduce energy consumption by investing in hybrid buses – currently more than half the fleet – and will continue to invest in new technologies, like all electric vehicles, to further reduce energy consumption at SEPTA.

FY2016 to FY2017, SEPTA reduced its energy consumption from buses by 2% by integrating more hybrid-electric buses. SEPTA also reduced its facility energy consumption by 2% through energy efficiency upgrades such as lighting replacements and HVAC upgrades.



### ESCO MASTER PLAN

As part of the 2018 Energy Action Plan, SEPTA has committed to partnering with an Energy Saving Company (ESCO) to implement energy efficiency retrofits. In September 2017, SEPTA completed an ESCO project at five backshops and depots and on various railcars, enabling the Authority to reduce energy consumption from rail cars and facilities by 4%. Moving forward, future ESCO projects will include similar energy efficiency upgrades like HVAC improvements and lighting change-outs.



### WAYSIDE STORAGE

SEPTA's first two Wayside Energy Storage Systems (WESS) were installed at two substations along the Market-Frankford Line. The WESS consist of batteries and super-capacitors that enable SEPTA to store and reuse power generated from braking trains. SEPTA is now in the process of installing seven additional WESS batteries at seven different substations along the Market-Frankford and Broad Street lines as part of a public-private partnership. The additional WESS will reduce vehicle electricity consumption by 2%.



### HYBRID-ELECTRIC BUSES

In 2017, SEPTA began receiving its latest generation of hybrid-electric buses. The new hybrid-electric buses will replace older diesel buses and are 20-30% more fuel efficient than the diesel buses they are replacing.

SEPTA has begun replacing diesel buses with hybrid-electric buses since 2007. By 2021, 525 more diesel buses will be replaced by hybrid-electric buses, which will reduce emissions by 15.5 million lbs CO2-E. Once all 525 buses have arrived and are added to the existing fleet, approximately more than 90% of SEPTA's bus fleet will be comprised of hybrid-electric buses.





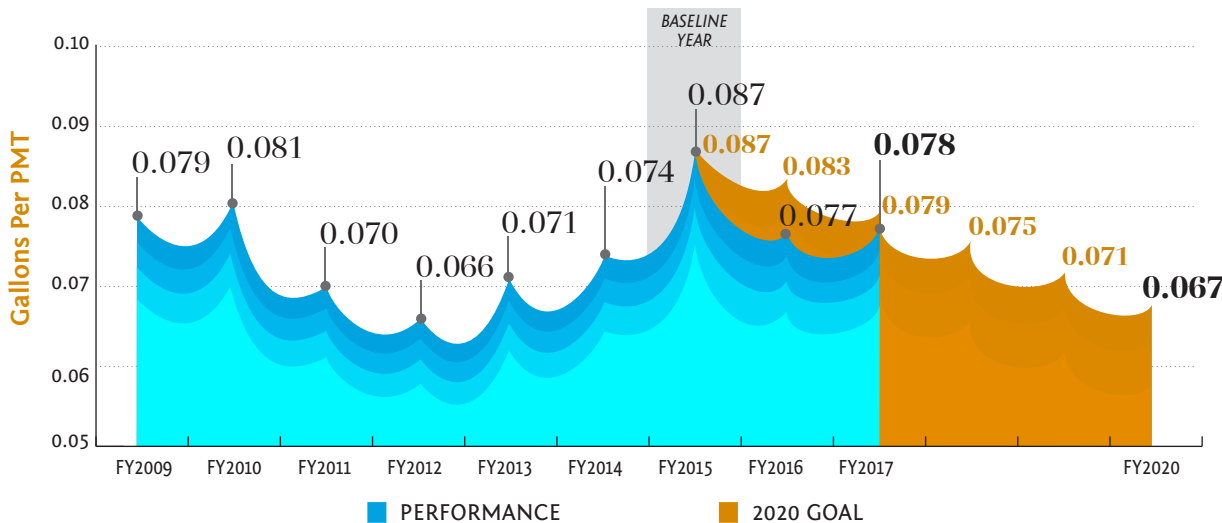
# GOAL 3 IMPROVE WATER EFFICIENCY

DECREASE NORMALIZED WATER CONSUMPTION BY **25%** BY 2020

Water is an essential part of SEPTA's operations, from bus washers to bathrooms at passenger stations. SEPTA aims to decrease its water consumption in recognition that clean, fresh water is a limited resource and excessive withdrawal from natural sources can harm surrounding ecosystems threatening the resiliency of the area.

From FY2016 to FY2017, SEPTA increased its normalized water consumption. Gross water consumption decreased by over 12 million gallons through water efficiency initiatives such as installing bush washers that use reclaimed water and upgrading water fixtures at ESCO locations.

NORMALIZED WATER CONSUMPTION



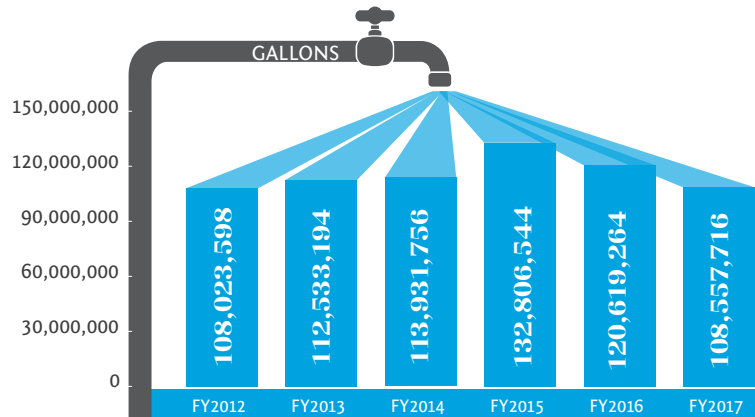
HOW WE'RE DOING:

From FY2015 to FY2017 SEPTA has decreased normalized water consumption by 10%.

## CALCULATING SEPTA'S WATER CONSUMPTION

To better understand water efficiency progress, SEPTA measures and compares two factors – total amount of water used AND the number of riders we provide service to. However, as ridership increases so might SEPTA's water consumption from additional passengers using SEPTA facilities. As a result, in order track progress, SEPTA divides total gallons of water consumed annually by the number of passenger miles traveled (PMT) each year (normalized data).

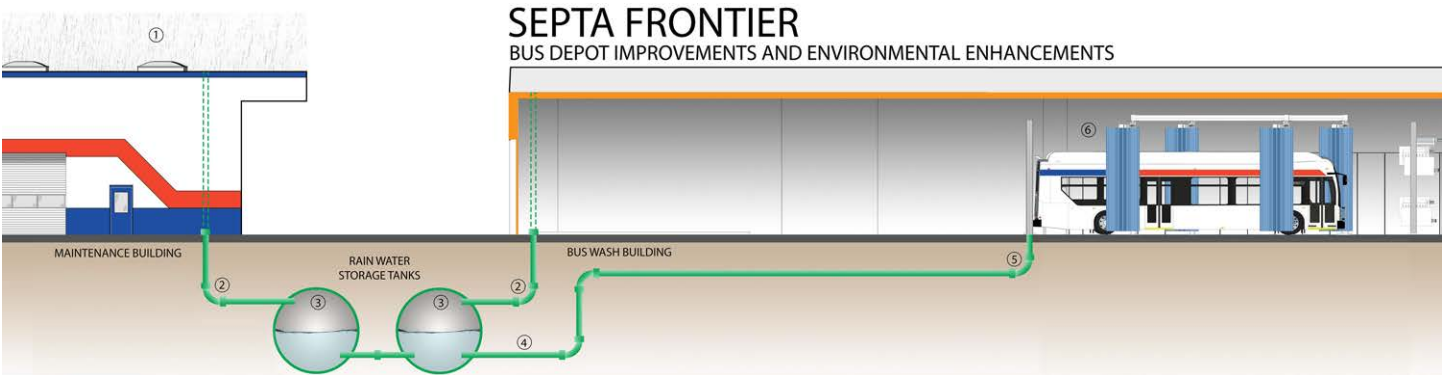
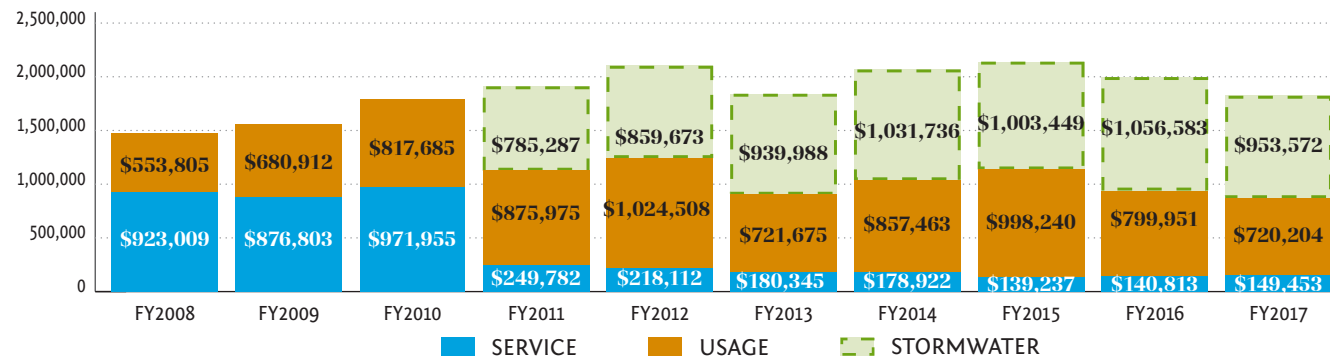
GROSS WATER CONSUMPTION



## COST OF WATER

SEPTA has experienced a gradual decrease in water service fees, however, usage fees have fluctuated based on SEPTA's gross water consumption. By decreasing water consumption, SEPTA recognizes both the positive environmental and financial impacts. In addition to water usage fees, SEPTA began being charged by the City of Philadelphia for stormwater fees in 2011. More information on the budgetary impacts of stormwater fees can be found in Goal 4.

BUDGETARY IMPACT OF WATER



## FRONTIER BUS DISTRICT

At SEPTA's Frontier Bus District, two 30,000 gallon underground storage tanks are being installed to collect rainwater. The rainwater is then used to wash buses, reducing freshwater consumption by optimizing reclaimed rainwater. This system is expected to reduce SEPTA's potable water consumption by approximately one million gallons annually.

## ESCO WATER SAVINGS

As part of SEPTA's first ESCO project at five backshops and depots, low-flow water fixtures were installed to increase water efficiency. These efficiency fixtures are projected to reduce SEPTA's water consumption by 320,000 gallons.





## REDUCE STORMWATER RUNOFF

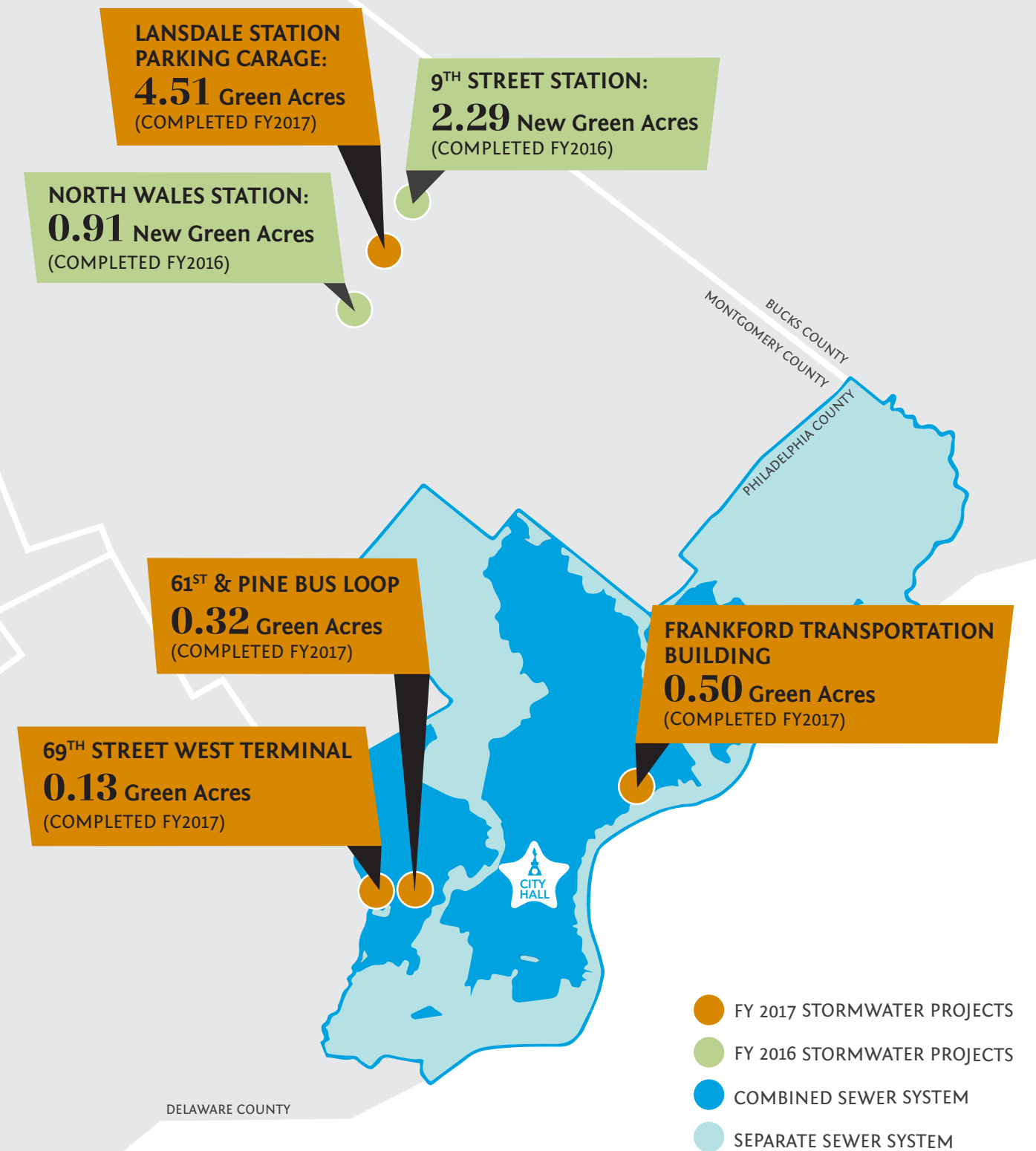
INCREASE GREEN ACREAGE BY  
**25 ACRES** BY 2020

The City of Philadelphia's "Green City, Clean Waters" plan seeks to increase green acreage throughout the city to mitigate stormwater runoff. SEPTA properties produce runoff when stormwater accumulates on its roofs and impervious surfaces and flows into sewer systems. Through a memorandum of understanding and in support of this plan, SEPTA and the City of Philadelphia's Water Department will collaborate to develop stormwater mitigation strategies. SEPTA applies its stormwater management goals to both the city and properties in the surrounding suburbs.

In FY2017, SEPTA's stormwater projects across the region increased green acreage by 5.46 acres, bringing SEPTA's total green acreage to 8.66 green acres. SEPTA will continue to consider stormwater management in the design process of future capital projects and develop a Stormwater Management Plan focused on cost-effective opportunities for runoff and associated fee reductions.

### HOW WE'RE DOING:

From FY2015 to FY2017, SEPTA's increased green acreage by 8.66 acres.



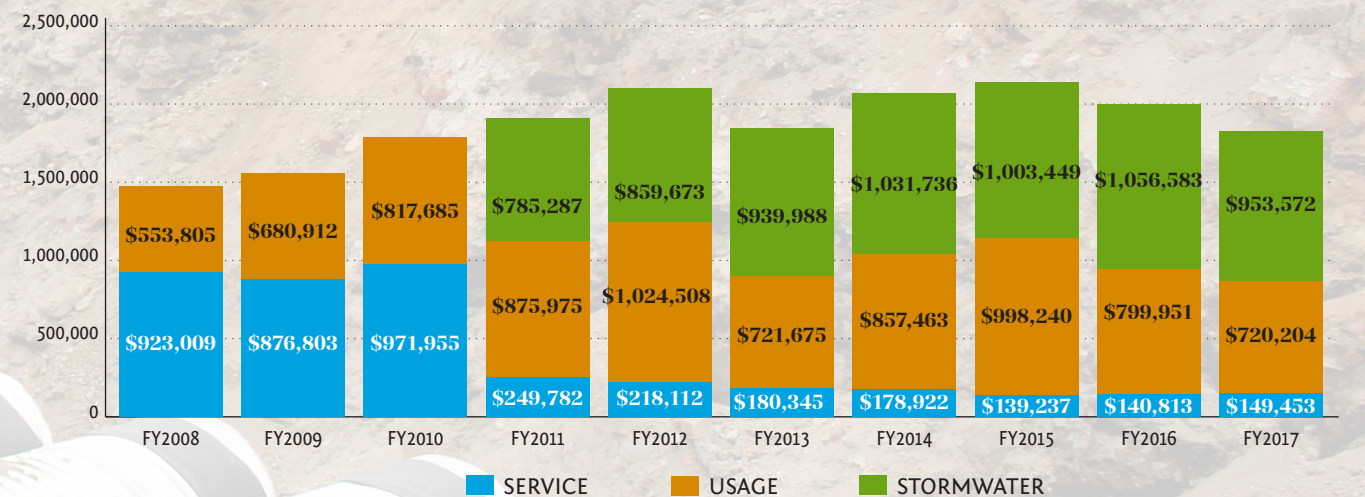




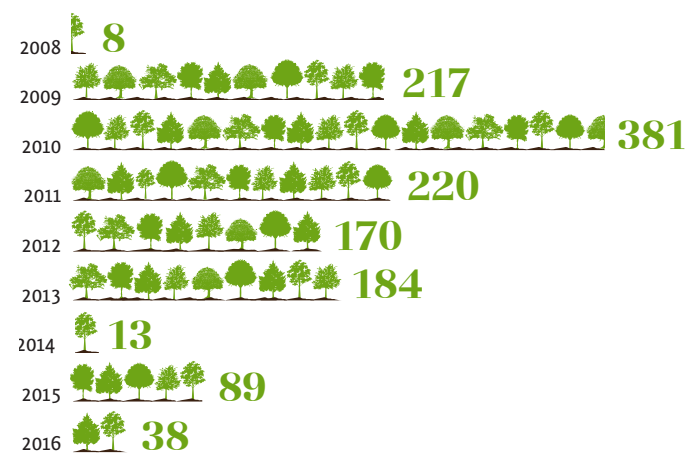
## COST OF STORMWATER

In 2011, the City of Philadelphia began charging stormwater fees based on square footage of impervious surface. Since then, SEPTA's green roofs, retention basins, and other green infrastructure across the city have mitigated runoff, helping to reduce the budgetary impact of stormwater fees.

### ANNUAL STORMWATER FEES

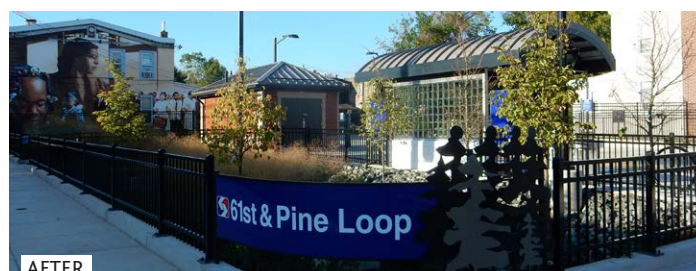


## 1,320 TREES have been planted from 2008-2016



### TREE PLANTINGS

In 2016, SEPTA planted 38 trees to assist with carbon sequestration and stormwater runoff mitigation. One mature tree can intercept approximately 1,000 gallons of water annually. Once SEPTA's newly planted 38 trees reach maturity, they will capture approximately 38,000 gallons of water annually. Since 2008, SEPTA has planted 1,320 trees.



### STORMWATER MASTER PLAN

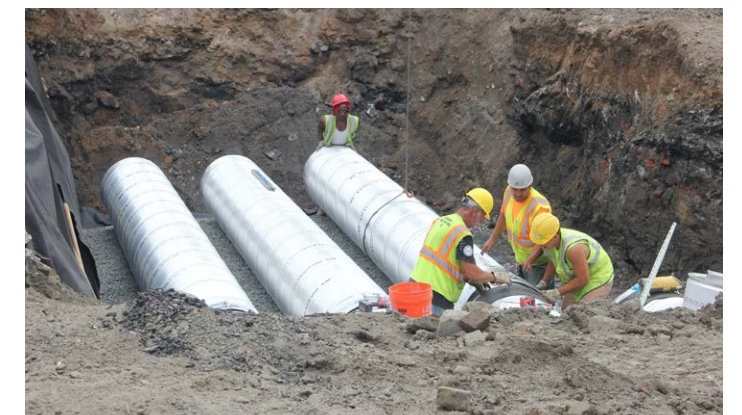
In order to systematize and prioritize stormwater management improvement on SEPTA properties, SEPTA will develop a comprehensive Stormwater Master Plan. The plan will put a comprehensive strategic framework around the implementation of rain gardens, underground retention basins, and other green infrastructure, which have been integrated into station and facility projects including Washington Lane Station, 23rd and Venango bus loop, 33rd and Dauphin, North Wales, Germantown Station, and Southern Garage.



### GREENROOFS

In FY2017, green roofs were incorporated into two major construction projects. SEPTA's West Terminal at 69th Street Transportation Center and a new Transportation Building near the Frankford Transportation Center have green roofs to mitigate stormwater runoff.

SEPTA will continue to integrate green roofs and walls in to other passenger station designs to expand its stormwater management strategies.



### SOUTHERN STORMWATER PROJECT

In 2017, SEPTA began installing bioretention basins at Southern Depot. Once complete, the project will capture more than 8 acres of stormwater, making this SEPTA's largest stormwater management project and one of the largest in the City of Philadelphia to date since "Green City, Clean Waters" was adopted.



# GOAL 5

## REDUCE & REUSE WASTE

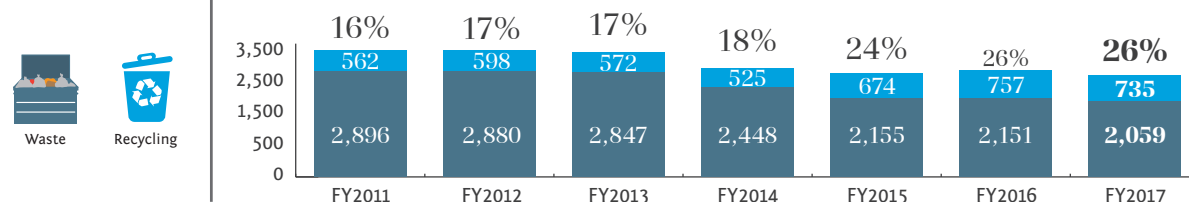
1. REACH A **25%** DIVERSION RATE FOR WASTE PRODUCED BY PASSENGERS AT STATIONS BY 2020
2. MAINTAIN AN **80%** DIVERSION RATE FOR WASTE PRODUCED BY EMPLOYEES AT FACILITIES BY 2020

SEPTA collects waste at passenger stations, at SEPTA facilities, and at construction sites. SEPTA has established two waste management goals to increase the diversion rate of waste produced by passengers and continues to make efforts to reduce waste and increase recycling at SEPTA facilities.

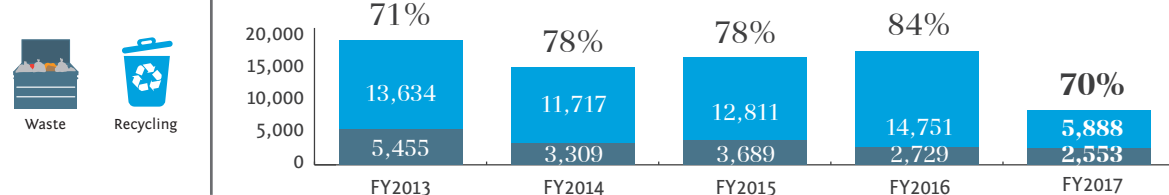
From FY2015 to FY2017, SEPTA increased its passenger diversion rate by 1.6% to reach 26%, which exceeds one of the 2020 recycling goals. Recycling rates at employee facilities decreased from 84% in FY2016 to 70% in FY2017.

SEPTA will continue to facilitate recycling programs at facilities, look for new ways to reduce and reuse its waste products, and expand recycling receptacles at stations. SEPTA will also focus on employee recycling and waste minimization education in order to push through the plateauing of SEPTA employee recycling rates.

### GOAL 1 TOTAL PASSENGER WASTE & RECYCLING



### GOAL 2 TOTAL EMPLOYEE & FACILITY WASTE & RECYCLING



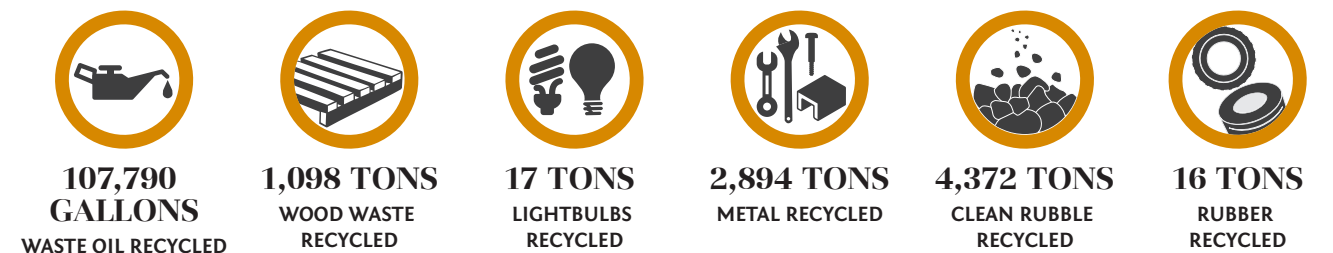
#### HOW WE'RE DOING:

SEPTA's passenger diversion rate is 26%. Recycling rates at employee facilities is 70%.

### RECYCLING AT SEPTA



### RECYCLED MATERIALS AT FACILITIES IN 2017



#### STATION RECYCLING & LID REDESIGN

As of June 2017, over 100 waste and recycling combo units have been installed on the Broad Street, Market-Frankford and City Trolley Lines. Replacement of waste and recycling bins on Regional Rail Lines occur with station improvement projects. The new bins have improved passenger compliance with the recycling program.



#### PHILADELPHIA ZERO WASTE AND LITTER ACTION PLAN

The City of Philadelphia launched the Zero Waste and Litter Cabinet in December 2016. The goal of the cabinet is to move the City of Philadelphia toward a Zero Waste and litter-free future by 2035. SEPTA has been an active participant on the cabinet since its inception and is committed to meeting the goals in the Zero Waste and Litter Action Plan.

As part of SEPTA's commitment to the Zero Waste and Litter Action Plan, SEPTA has conducted litter surveys at all passenger stations on the Market-Frankford and Broad Street Lines and created a task force to clean up the rail right-of-way on the Airport Line.

For more information about the City of Philadelphia's Zero Waste and Litter Action Plan, including SEPTA's role, please visit [cleanphl.org](http://cleanphl.org)

#### WASTE REDUCTION STRATEGIES

SEPTA reduces waste through construction material reuse in capital projects. Two recent examples are Radnor Station and Matsonford Station on the Norristown High Speed Line. At both stations, the existing platforms and structures were reinforced and refinished rather than being torn down. The existing shelters were repurposed and reconfigured for a more modern design without having to completely replace the structures.

Additionally, at Wyndmoor Station on the Chestnut Hill East Regional Rail Line, the existing station building and platform canopies were re-roofed and the structure improved and recoated while new windscreen panels were installed on the existing platforms. Reusing materials in station construction projects helps SEPTA to reduce the amount of waste going into landfills.





# HEALTHY COMMUNITIES & WORKFORCE





SEPTA strives to provide equitable and accessible transportation service throughout Southeastern Pennsylvania. SEPTA’s “social sustainability” platform positively impacts its employees, customers, and communities throughout the region.

The Healthy Communities & Workforce chapter of this Annual Report provides an update on progress towards goals to increase participation of disadvantaged business enterprises, improve food access, long-term investments in employee health and professional development, and participation in ongoing local and regional planning efforts.





# HEALTHY COMMUNITIES & WORKFORCE

2020 GOAL	 GOAL 6		 GOAL 7	 GOAL 8	 GOAL 9
	Lead 3 Planning Studies Per Year	Collaborate With 30 External Planning Efforts Per Year	Host Five Farmers Markets On SEPTA Property By 2020	Implement Five-Year Human Resources Master Plan	Increase FFY2016 Baseline Of Contracting Dollars Committed To Small, Minority And Women-Owned Companies By 20%
Baseline (FY2015)	New goal: no baseline		4	New goal: no baseline	New goal: no baseline
FY2016	Led 4 planning studies	Collaborated with 38 planning efforts	4	Master Plan Adopted with 16 initiatives	16% (FFY2017)
FY2017	Led a total of 5 planning studies	Collaborated with a total of 67 planning efforts	4	Progress towards HR Master Plan Completion	16% (FFY2017)
FY2018	n/a		n/a	n/a	n/a
FY2019	n/a		n/a	n/a	n/a
FY2020	n/a		n/a	n/a	n/a
2020 Target	Lead a total of 15 planning studies	Collaborate on a total of 150 planning studies	5		19.2%





## INTEGRATE WITH LIVABLE COMMUNITIES

- 1. LEAD **3** PLANNING STUDIES PER YEAR
- 2. COLLABORATE WITH **30** EXTERNAL PLANNING EFFORTS PER YEAR

Between FY2016 – FY2017, SEPTA has led a total of 5 planning studies and collaborated on a total of 67 planning efforts. Both SEPTA led and collaborative planning efforts contribute to more livable communities.

SEPTA led long-range planning efforts support a shared vision for livable communities by spurring economic development through improved access to jobs and services. Similarly, collaborative planning efforts with non-profit organizations, municipalities and cities improve the quality of life in the communities SEPTA serves through the development of better transportation services, streetscape design and transit-oriented development opportunities.

For SEPTA, long-range planning ensures that the Authority can continue to provide southeastern Pennsylvania with better services that benefit all residents.

FY2017 SEPTA Led Planning Studies	
Philadelphia Bus Network Choices Report	Initiated FY 2017
West Chester Rail Restoration of Service Feasibility Study	Ongoing
Broad Street Line Extension to the Navy Yard	Ongoing
King of Prussia Rail	Ongoing

### HOW WE'RE DOING:

Between FY2016 – FY2017, SEPTA has led a total of 5 planning studies and collaborated on a total of 67 planning efforts.

### WHAT DOES IT MEAN?

- **WHAT IS PLANNING?** Planning efforts help SEPTA and the communities it serves create a shared vision for the future, prioritize capital funding and provide better service. Plans require input from multiple stakeholders and are most effective when developed with wide community outreach and public engagement. This goal ensures that SEPTA keeps a high profile in community and regional planning efforts.
- **EXTERNAL PLANNING EFFORTS:** SEPTA currently participates in many comprehensive plans, transportation studies, neighborhood plans, streetscape designs, and station area or transit-oriented development (TOD) plans. All of these studies impact SEPTA and its customers in some way, from how a roadway functions to envisioning new development at a train station, to recommending new or improved service concepts.
- **STATION AREA PLANS:** This type of plan enables high-quality, community-supported improvements to SEPTA stations. Station Area Plans are most successful when SEPTA and local jurisdictions collaborate to plan not just for improved station amenities, but also to identify ways to encourage transit-supportive development, and improved multi-modal (pedestrian, bicycle, bus and vehicular) access to stations.
- **LONG-RANGE TRANSIT PLANS:** Long-range plans emphasize comprehensive analysis of existing systems, ridership trends, and demographic analysis to make strategic investments to serve current and future transit needs. Such long-range plans include studies of system expansion, existing facilities improvements to support long-term growth, and analysis of bus service networks.



### AGE-FRIENDLY

As the senior population continues to grow in southeastern Pennsylvania, SEPTA plays a vital role in helping to ensure that seniors can maintain independence and age in place. Over 100,000 seniors received the SEPTA Key senior card which allows seniors to ride for free or discounted rate on all bus, subway and trolley, and Regional Rail routes. In an effort to make it easier for seniors to sign up for the program, SEPTA coordinated with local and state Legislative District offices throughout the region to organize outreach.



### BIKES & TRANSIT

Bike parking at SEPTA stations helps promote multi-modal, non-motorized access to public transportation. In 2015, the year SEPTA's Cycle-Transit Plan was released, more than 500 bikes were parked at the 589 bike racks and 2 bike shelters installed at SEPTA stations. Since then, SEPTA has made major investments to increase and improve bicycle parking at Regional Rail, Market-Frankford Line, and Broad Street Line Stations. By 2020 SEPTA will increase bicycle parking capacity from 589 bike racks and 2 shelters in 2015 to 926 bike racks and 15 bike shelters –an increase of 50%.



### HUB OF HOPE

The Hub of Hope, a seasonal walk-in engagement center for homeless in Philadelphia, was located in Suburban Station. Now, through a partnership between SEPTA, the City of Philadelphia, and Project HOME, the Hub of Hope will expand, moving into a permanent location near Suburban Station to offer year-round services.

The new space is significantly larger and will provide services such as showers, laundry and referrals to other social agencies. The new Hub of Hope, to be operated by Project HOME and open in January 2018, was a collaboration between the City of Philadelphia & SEPTA.

### STATION ACCESSIBILITY IMPROVEMENTS

Station improvements that include accessibility features such as ramps, elevators, curb ramps, handrails, and guardrails help support a diverse customer base with varying mobility needs. In December 2017, SEPTA completed the installation of two new elevators at 40th Street to make that station, which serves several medical facilities, fully ADA accessible. Additional accessibility projects include, in various stages of design or construction, Arrott Transportation Center Station on the Market-Frankford Line, Susquehanna-Dauphin Station on the Broad Street Line, Paoli Station and Jenkintown-Wyncote Station on Regional Rail.





## IMPROVE ACCESS TO LOCAL FOOD VIA TRANSIT

HOST FIVE FARMERS MARKETS ON SEPTA PROPERTY BY 2020

Supporting farmers markets is one way SEPTA contributes to healthy communities in southeastern Pennsylvania. In FY2017, SEPTA hosted four farmers markets on SEPTA properties. This year SEPTA is making efforts to expand and meet the goal of hosting five farmers markets at SEPTA stations.

Many Philadelphians are challenged to access quality fresh food on a regular basis because it often requires traveling significant distances or paying more, in either case, a burden especially for those living in low-income communities. In attempts to improve food accessibility for all, SEPTA hosts several farmers markets in places where large numbers of people board or transfer every day to help provide a way for Philadelphians to more easily access quality fresh food as part of their daily commute.

### FOOD ACCESS VIA TRANSIT SEPTA Seasonal Farmers Market Locations\*



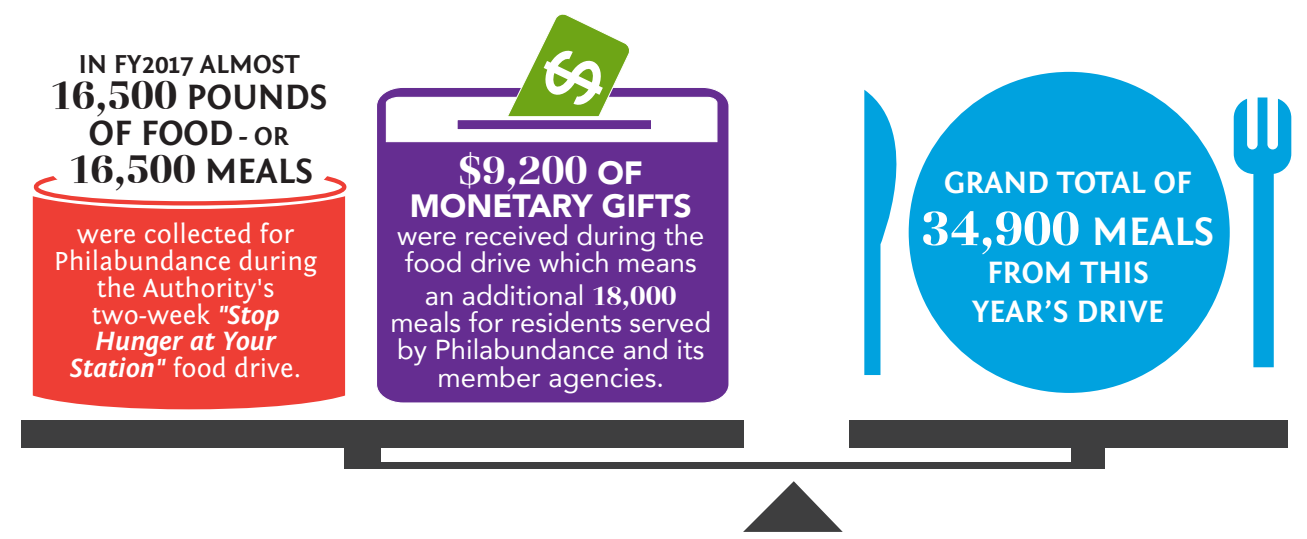
\*Farmers Markets are operated by the following partners: The Food Trust & The Enterprise Center

#### HOW WE'RE DOING:

SEPTA hosted four farmers markets on SEPTA property.

### Philabundance "Stop Hunger at Your Station"

Since 2009, SEPTA has held an annual two-week "Stop Hunger at Your Station" food drive. Through the annual food drive and other community service programs, SEPTA continues to demonstrate a commitment to improving the health and wellness of communities it serves in Southeastern Pennsylvania.



Since 2009, SEPTA customers and employees have donated more than

**155,500 POUNDS OF FOOD and APPROXIMATELY \$62,000** which is the equivalent to more than **261,500 MEALS**



#### COOKING DEMONSTRATIONS

For three years, farmers markets at Frankford Transportation Center and Olney Transportation Center have provided cooking demonstrations to inspire customers to cook with the produce sold at their stands. These demonstrations have attracted both SEPTA customers and employees and will continue in the 2018 farmers market season.



#### WALNUT HILL COMMUNITY FARM

The Walnut Hill Community Farm, located on a SEPTA property next to 46th Street Station on the Market-Frankford Line in West Philadelphia, has been run by The Enterprise Center since 2010. The farm generates fresh, local produce for community members and has distributed thousands of pounds of food to CSA participants.





## DEVELOP A HIGHLY SKILLED, HEALTHY & VERSATILE WORKFORCE

### IMPLEMENT FIVE-YEAR HUMAN RESOURCES MASTER PLAN

In FY2017, SEPTA made progress towards implementing a comprehensive Human Resources Master Plan, with seven focus areas:



Key Initiatives include progress towards restructuring SEPTA's New Employee Orientation program and streamlining the recruitment process that enables SEPTA to hire new employees.

A key theme in the master plan is transitioning Human Resources operations at SEPTA from "transactional" to "strategic". The HR Master Plan will help attract and retain a healthy and versatile workforce in addition to streamlining business processes associated with maintaining talent at SEPTA and, working to ensure it remains an employer of choice for the next generation of transit professionals. The master plan is structured based on mapping the "employee experience" and recommends initiatives to close gaps between existing and leading industry practices.

#### HOW WE'RE DOING:

SEPTA worked towards implementing a comprehensive Human Resources Master Plan.



#### TRAINING & CAREER ADVANCEMENT

In CY17, SEPTA added La Salle University to the list of schools providing a tuition discount to SEPTA employees, bringing the total number of colleges and universities offering a discount to SEPTA employees, and in some cases, spouse and dependents, to 13. **THE DISCOUNTS RANGE FROM 5% TO 40% OF THE NORMAL TUITION COST.**

#### WORKFORCE PLANNING AND HIRING



Number of employees that left the organization in FY2017

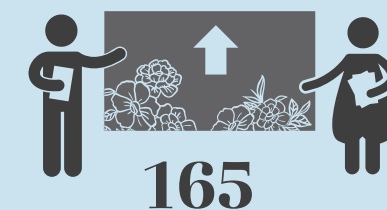
#### SEPTA VOLUNTEERS



Number of employees who volunteered at the Spring Clean-Up



Number of employees hired in FY2016



Number of employees who volunteered at the Flower Show



#### VOLUNTEER OPPORTUNITIES

SEPTA has continuously established a culture of volunteerism by providing opportunities for employees to service the community. In 2017, approximately 1,700 SEPTA employees volunteered in 17 different events throughout the region, such as the Philly Spring Clean-Up, the NFL Draft, a Philabundance food drive, and the Flower Show.

#### MANAGEMENT TRAINING

In July 2017, SEPTA launched a new 5-day training program for front-line supervisors. The program includes a wide range of management topics including Situational Leadership, Coaching, Group Dynamics and Problem Solving, practical discussions on the Family and Medical Leave Act, labor relations, and employment law and culminates with a team project that is presented to senior leadership. To date, 113 supervisors have completed the program. In 2018, SEPTA will conduct a comprehensive review of the management training programs and implement additional improvements.



#### AIM AD

SEPTA launched its Advancing Internal Management program for Assistant Directors (AIM-AD) in 2015. The AIM AD program, built on a successful AIM pilot program for Senior Management, is designed to develop future Assistant Directors in Transportation, Control Center, Vehicle & Equipment Maintenance and Construction. AIM AD graduated its first class in December 2016, and of the 27 who graduated, 15 have been promoted. The second cohort of 28 employees began classes in September 2017.

#### NEW EMPLOYEE EXPERIENCE

A new onboarding framework is being designed to immediately engage and inform new employees. The onboarding framework will include a welcome package, a new employee portal, and a refreshed new employee orientation structure.





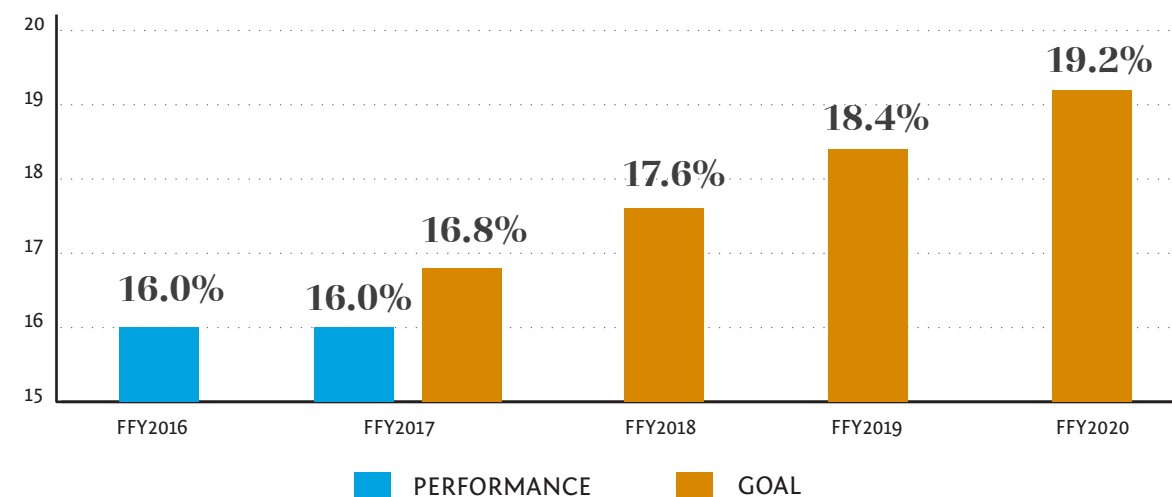
## SUPPORT REGIONAL BUSINESS EQUITY

INCREASE FFY 2016 BASELINE OF CONTRACTING DOLLARS COMMITTED TO SMALL, MINORITY AND WOMEN-OWNED COMPANIES BY **20%**

SEPTA is committed to expanding opportunities for small, minority and women-owned businesses through the Disadvantaged Business Enterprise (DBE) program. This program is intended to create an even playing field for these businesses by reducing burdens and fostering equal opportunity for the award of SEPTA contracts.

SEPTA's DBE office is one of only five certification agencies in the state, making it an essential resource for small, disadvantaged businesses in Pennsylvania. By providing DBE certifications and committing to award a certain percentage of SEPTA's annual contract dollars to DBEs, SEPTA is able to provide support to regional small businesses.

### DBE CONTRACTING DOLLAR PERCENTAGE



#### HOW WE'RE DOING:

In FFY2017, SEPTA awarded 16% of its contracting dollars to DBE's.

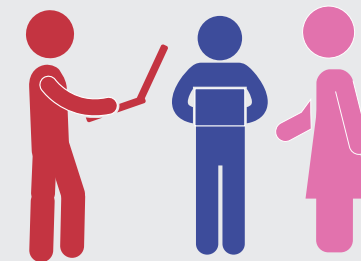
SEPTA's DBE Program Office also provides technical assistance, training, and other resources for small, minority, and women-owned businesses. SEPTA has some degree of market power in the region and an ability to have a positive impact on regional business equity by issuing a portion of its contracts to DBEs.



Number of new DBE certifications awarded in FFY2017: **48**



Total Contract Dollars Committed to Small, Minority & Women-owned Companies in FFY2017: **\$27,982,557**



Average number of DBE applications processed per staff member in FFY2017: **146**



Number of new DBE Firms granted Continued Eligibility in FFY2017: **389**



#### EDUCATION & AWARENESS

In FY2017, DBE's were provided with technical guidance and best practices on fulfilling DBE program requirements. A total of 45 email notices were disseminated alerting small, minority and women-owned businesses of upcoming contracting opportunities, including those classified under the "Rebuilding SEPTA for the Future" program, pre-bid/preproposal meetings, and various other outreach and networking events. The DBE Program Office conducted three DBE "Certification Workshops" to educate firms on the various certification programs available and the requirements and benefits associated with each. The DBE Program Office also nominated 120 DBEs to participate in an executive education program hosted by Inner City Capital Connections (ICCC).



#### OUTREACH EVENTS

The DBE Program Office participated in 21 outreach events in 2016. Among them, staff coordinated the "Meet the Primes" event, providing DBEs and other small businesses with information on SEPTA contracting opportunities. The event also provided firms an opportunity to network with prime contractors who exhibited at the event. The DBE Program Office also participated with regional entities and industry-wide organizations in various events such as Philly Tech Week, the Women's Transportation Seminar, and the Philadelphia Airport's Business Opportunities in Transportation workshop. SEPTA will continue to host and participate in similar outreach events in the future.









## ECONOMIC VITALITY

SEPTA is a business that supports vitality and economic growth throughout southeastern Pennsylvania. The Economic Vitality chapter of this Annual Report provides an update on progress towards positive economic impact. Institutionalizing sustainability best practices, increasing ridership throughout the region and growing positive financial impact of sustainability will support a fiscally efficient organization.





ECONOMIC VITALITY					
2020 GOAL					
	Increase Passenger Trips Per Capita 6% By 2020	Outperform Industry Annualized Growth Rate	Achieve ISO-14001 At Two Shops	Institute An Environmental Management Checklist For Capital Projects	Grow Positive Financial Impacts Of Sustainability Initiatives Annually
Baseline (FY2015)	80.6 UPT	\$3.90 (\$0.50 below most recent industry data)	1 Shop Certified	n/a	Grants: \$122,600,000 Revenue: \$418,696 Savings: \$218,265
FY2016	79.9 UPT per Capita	\$4.04 (\$0.36 below most recent industry data)	1 Shop Certified	Checklist models evaluated	Grants: \$2,600,000 Revenue: \$278,675 Savings: \$1,559,939
FY2017	75.3 UPT per capita	\$4.39 (\$0.15 better than most recent industry data)	1 Shop Certified	Checklist models evaluated	Grants: n/a Revenue: \$1,761,475 Savings: \$441,392
FY2018	n/a	n/a	n/a		n/a
FY2019	n/a	n/a	n/a		n/a
FY2020	n/a	n/a	n/a		n/a
2020 Target	84.8 UPT	n/a	2 Shops Certified	All Capital Projects Evaluated With Checklist	n/a





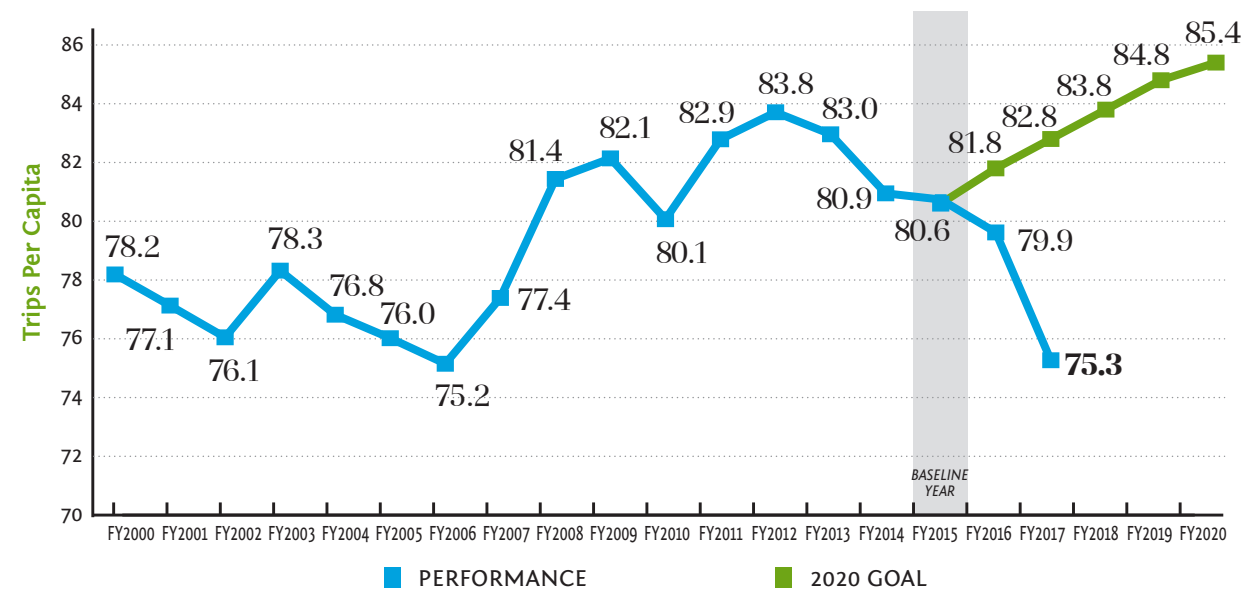
## INCREASE RIDERSHIP

INCREASE PASSENGER TRIPS  
PER CAPITA BY **6%** BY 2020

SEPTA is responsible for 1.1 million weekday passenger trips across the southeastern Pennsylvania region. Moving more passengers will make both SEPTA and the region more sustainable - whether it be thru transit-oriented development that reduces per capita GHG emissions or new service initiatives that improve system productivity.

From FY2016 and FY2017, SEPTA's trips per capita decreased by 5%. SEPTA plans to meet its ridership goals by using service expansions, enhanced service, innovative partnerships and a proactive approach to improving the customer experience.

### AVERAGE NUMBER OF ANNUAL SEPTA RIDES FOR EACH RESIDENT OF SE PA



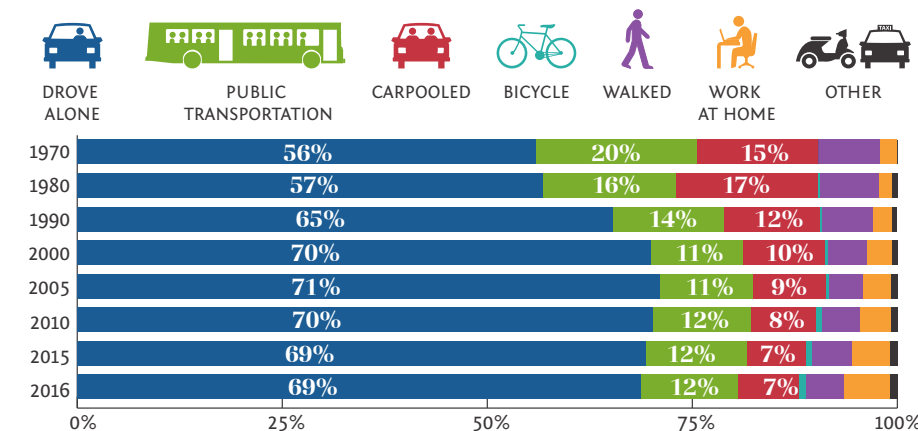
#### HOW WE'RE DOING:

Between FY2015 and FY2017, SEPTA's passenger trips per capita decreased by more than 6%.

In the United States, vehicle miles traveled has increased from 20.6 in 1990 to 26.2 in 2015, marking a 27% increase. Over this period, the vehicle miles traveled for Philadelphia remained flat at 9.7% and increased 3% in Southeastern PA from 15.7% to 16.4%. Both Philadelphia and Southeastern PA's vehicle miles traveled remain lower than the national average. This is a function of land use policies that promoted high density in the five-county region.

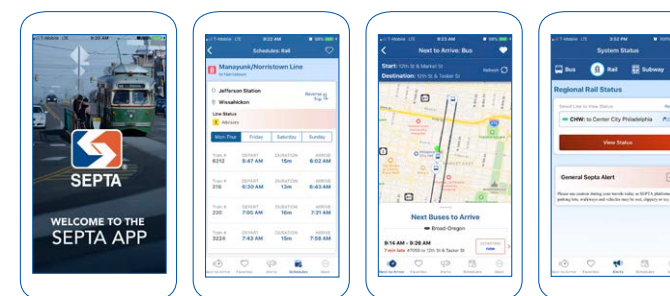
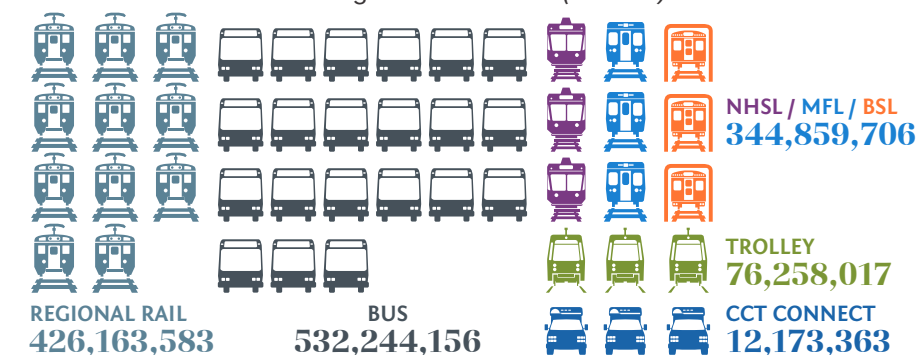
This density is transit-friendly and over the last few years has led to record breaking levels in SEPTA's ridership. In FY2016, Regional Rail set a new ridership record with 37.7 million trips. This increase was followed by increases in other rail modes such as subway, trolley, and high-speed lines. Although rail modes have increased, bus ridership has plateaued from the FY2012 peak. Looking ahead, SEPTA is examining ways to grow ridership across all modes.

### COMMUTE-TO-WORK SHARE, SOUTHEASTERN PENNSYLVANIA



### SEPTA MODES TRAVELED FY2017

Passenger Miles Traveled (millions)



#### REAL TIME APP

The official SEPTA apps for iPhone & Android, take the real-time tools found on the [septa.org](http://septa.org) website and make them available to customers on a smart phone. SEPTA has improved the functionality of these apps through installation of cellular tracking devices. The new app has been released and utilized by several hundred thousand riders.

#### EARLY ACTION MOZIO ON AIRPORT LINE

In 2017, SEPTA and Mozio piloted a mobile ticketing option on the Airport Line designed to attract corporate travelers and to test the demand for mobile payment. Mozio, a ground transportation booking engine, provided mobile ticketing and access to its general and corporate booking portals. Data showed a strong demand for mobile ticketing and strong potential for group bookings. SEPTA continues to pursue innovative ways to attract new riders on its Airport Line and to build an even easier experience for those visiting Philadelphia.



#### SERVICE PLANNING

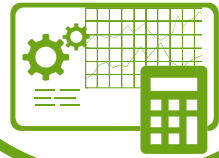
Each year, SEPTA evaluates route specific initiatives to grow ridership and improve system efficiency. This year, in addition to an internal and public stakeholder service plan evaluation, SEPTA contracted a consulting firm to evaluate the region's bus system and recommend improvements. All of these efforts combined will help SEPTA better serve current and future bus riders.

#### RIDERSHIP GROWTH INNOVATION TEAM

In 2017, SEPTA launched an internal Ridership Growth Innovation Team tasked with executing programs and partnerships to increase passenger trips per capita by 6%. Currently, this team is developing a strategic plan to grow ridership across all modes. By promoting increased ridership, these initiatives also encourage more efficient travel because full transit services create less emissions per capita than empty transit vehicles.



# GOAL 11



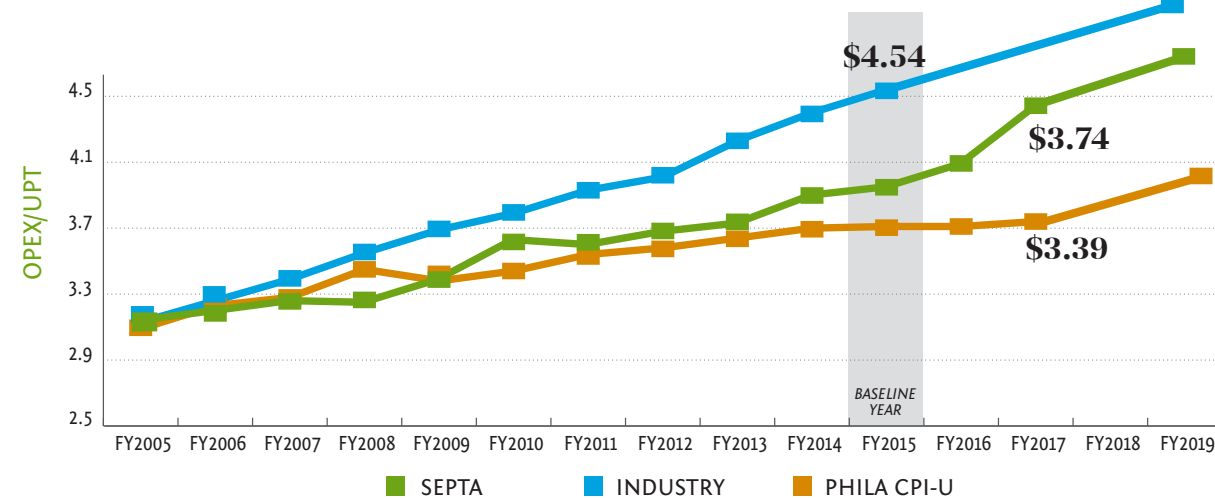
## IMPROVE OPERATING EXPENSE PERFORMANCE

### OUTPERFORM INDUSTRY ANNUALIZED GROWTH RATE

Operating expense per trip is used as a measure of SEPTA's economic efficiency and can be evaluated by comparing the cost of SEPTA's operations to the transportation industry. SEPTA has traditionally spent less money to operate services for unlinked passenger trips than peer agencies in the United States, and SEPTA is committed to continuously outperform the industry in the future.

SEPTA's sustainability programs and initiatives yield savings that assist in lowering operating costs, which is important to ensure that SEPTA remains economically viable and to allow SEPTA to continue to offer low cost fares to customers.

#### OPERATING EXPENSES OUTPERFORM INDUSTRY GROWTH RATE



\* Phila CPI-U measures the Consumer Price Index for Urban Consumers as a measure of inflation.  
 \*\* Industry data is based on National Transit Database (NTD) information. NTD is published on a one to two year lag.

#### HOW WE'RE DOING:

SEPTA spends \$0.15 less per unlinked passenger trip than the industry average.

From FY2016-FY2017, SEPTA's first ESCO project SAVED SEPTA **OVER \$200,000 IN ANNUAL UTILITY EXPENSES**. This was accomplished through energy efficiency projects that reduced energy consumption at **FIVE BACKSHOPS/DEPOTS BY 77,904 mmBtu**.

THAT'S ENOUGH ENERGY TO POWER **2,106 HOMES**



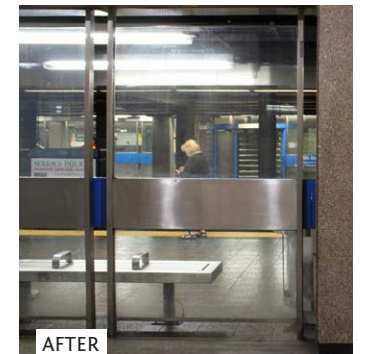
From FY2016-FY2017, SEPTA saved **\$148,699** by **RECYCLING** at employee facilities and passenger stations



#### PAPERLESS OFFICE

SEPTA strives for efficiency in daily operations. One such example is our continued transition to a paperless office. Digital record keeping increases the speed of document approval and review making office work more efficient. It also reduces the amount of paper SEPTA buys and must pay to recycle.

Since 2015, SEPTA has reduced its paper consumption by 470,500 pieces of paper, saving the Authority over \$2,000. The amount of paper saved is equivalent to approximately 56 trees.



#### OPERATING EFFICIENCIES

In November 2012, SEPTA released its first Energy Action Plan outlining eighteen initiatives to reduce energy demand, increase energy efficiency, and utilize less GHG intensive sources of energy. Together these initiatives have improved SEPTA's energy efficiency and have reduced operating costs by more than \$2 million annually. The plan has been updated with the 2018 Energy Action Plan, released in conjunction with this annual report.

#### LIFE-CYCLE SAVINGS

As multi-year contracts expire, SEPTA reviews contracts for potential life-cycle savings and incorporates sustainable contract specifications where possible. One such example is SEPTA's multi-year stockless paper and toner contract. SEPTA was successful in selecting a vendor that could provide stockless paper that is made of 30% post-consumer recycled material at no additional cost to the Authority. Another example of savings achieved through life-cycle analysis was evaluating the true cost of hybrid-electric bus batteries. After conducting a life-cycle analysis of the purchase and delivery of bus batteries, SEPTA determined that savings could be achieved through a Vendor Management Inventory system.

Finding ways to purchase products that are both environmentally friendly and cost competitive helps SEPTA to meet economic and environmental sustainability goals.





## INSTITUTIONALIZE ENVIRONMENTAL MANAGEMENT PRACTICES

1. ACHIEVE ISO 14001 CERTIFICATION AT 2 SEPTA FACILITIES
2. INSTITUTE AND COMPLETE AN ENVIRONMENTAL MANAGEMENT CHECKLIST FOR CAPITAL PROJECTS BY 2020

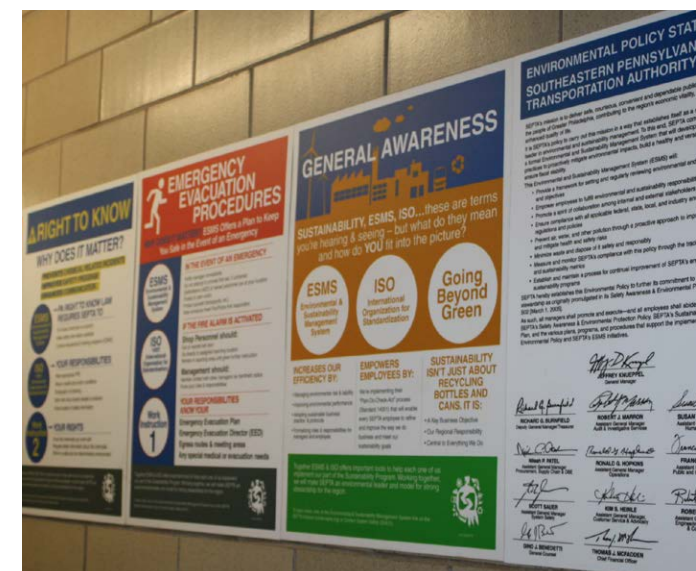
Successful environmental management practices mitigate risks to employees and the natural environment. They are also a way to formalize best practices that reduce both financial and material waste.

SEPTA is on the way to meeting the goal of achieving ISO 14001 Certification at two SEPTA facilities by 2020. Berridge Bus Backshop was recertified in 2016 and was recommended for recertification under the new, more rigorous, ISO 14001:2015 standard in October 2017. Less than ten transit agencies have achieved ISO 14001 Certification. SEPTA will pursue a second ISO certification at Wayne Rail Shop with the goal of certification by 2019.

SEPTA is in the process of evaluating design standards and construction guidelines in order to strengthen language that promotes building efficiency and waste reductions in both construction and operations. Once a complete review has occurred, these new standards will be integrated into an environmental management checklist.

### HOW WE'RE DOING:

SEPTA has achieved ISO 14001 Certification at 1 shop. An environmental management checklist will be launched system-wide with new construction project management software.



### ISO 14001 CERTIFICATION

ISO 14001 provides SEPTA with a framework to improve the environmental performance of operations. Improved operations can lead to more efficient workflow processes and hazard mitigation, which ultimately have a financial benefit. At SEPTA's ISO 14001 certified Berridge Shop, better record keeping and proper hazardous material disposal have made SEPTA less vulnerable to regulatory fines. The environmental systems management framework supports an institutionalized approach to environmental management best practices.



### ENVIRONMENTAL MANAGEMENT CHECKLISTS

SEPTA has experienced financial savings when sustainable best practices are integrated into renovations and operations at existing facilities and construction of new facilities. An environmental management checklist will help to formalize this process and ensure that SEPTA is continually improving construction operations.



GOAL  
13

FINANCIAL VALUE  
OF SUSTAINABILITY

GROW POSITIVE FINANCIAL IMPACTS  
OF SUSTAINABILITY INITIATIVES

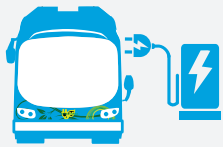
One of SEPTA's guiding principles as part of its Strategic Business Plan is to operate as a business. SEPTA's Sustainability Program advances this principle. By tracking the positive financial impacts of sustainability initiatives at SEPTA, which are evaluated based on the principle of "budget neutrality," SEPTA is able to develop and scale programs that provide the greatest financial yield. Having this information allows SEPTA to continue to grow its environmental and social impact while simultaneously improving its economic position.

Fiscal Year	GRANTS	REVENUE	SAVINGS	TOTAL POSITIVE FINANCIAL IMPACT \$124,632,200
FY2009	\$-	\$-	\$-	
FY2010	\$-	\$70,207	\$-	
FY2011	\$27,640,000	\$123,780	\$-	
FY2012	\$-	\$179,675	\$-	
FY2013	\$1,280,000	\$273,312	\$726,650	
FY2014	\$-	\$322,263	\$583,501	
FY2015	\$86,800,000	\$418,696	\$73,449	
FY2016	\$2,600,000	\$278,675	\$1,061,124	
FY2017	\$-	\$1,761,475	\$439,392	
TOTAL	\$118,320,000	\$3,428,083	\$2,884,116	

\*FTA's Resilience Grant

HOW WE'RE DOING:

From FY2016 to FY2017, SEPTA generated more than \$2.2 million from revenue and savings related to sustainability.



GRANTS

- Pennsylvania Energy Development Authority (PEDA) - for first Wayside Energy Storage System
- FTA's Low and No Emission (LoNo) Funding Program - for incremental costs of battery-electric buses
- FTA's TIGGER Program - for second Wayside Energy Storage System
- FTA's Clean Fuels Program - for incremental costs of hybrid buses
- FHWA CMAQ – for locomotive engine repower



REVENUE

- ACT 129 – rebates
- WESS – compensations from PJM for frequency regulation of electric grid
- Waste oil – resale
- Metal recycle revenue
- Print shop recycling revenue
- Gov Deals



SAVINGS

- Facility Energy Retrofit Savings
- Stormwater Fee Reduction
- Recycling – hauling savings



SURPLUS EQUIPMENT  
AUCTION

In August 2017, SEPTA began utilizing a new auction liquidation service to auction surplus items to the public. Action items include things like parts for buses SEPTA no longer has in the fleet and retired vehicles. Auctioning surplus not only provides a revenue source for SEPTA but promotes reuse.



ACT 129 REBATES

The Act 129 energy efficiency program requires electric distribution companies to reduce energy consumption. As a result, some of SEPTA's electricity providers offer rebates for energy efficiency upgrades. Since FY2011, SEPTA has capitalized off of this program and has generated \$411,110 in revenue.

FUEL SAVINGS

Since the beginning of FY2010, SEPTA have enhanced its fuel-savings initiatives by procuring more hybrid buses, and improving anti-idling efforts. To date, more efficient vehicles and operational efficiencies have yielded \$9,392,058 in fuel savings. Future savings are expected to result from gradual arrival of 525 new hybrid buses and 25 battery electric buses. Additionally, SEPTA's enhanced anti-idling efforts will further decrease idling time and fuel consumption.

VW SETTLEMENT

SEPTA has developed a list of projects that are worthy candidates for funding under the VW settlement, which will provide more than \$100 million in funding across Pennsylvania for projects that reduce emissions. Included on SEPTA's list are diesel utility fleet replacements and electric bus charging infrastructure.





SEPTA GHG Emissions Overview

Calendar Year	Emissions (Lbs CO2-E)	Prevented Emissions (Lbs CO2-E)	Emissions Savings Multiplier (Emissions Prevented/ Emissions Produced)
CY2006	1,016,293,166	2,616,358,006	2.57
CY2007	1,005,017,053	2,704,226,835	2.69
CY2008	1,004,573,763	2,810,186,803	2.80
CY2009	953,200,977	2,832,515,631	2.97
CY2010	975,643,194	2,903,907,804	2.98
CY2011	974,878,950	2,973,724,850	3.05
CY2012	861,322,296	2,944,100,753	3.42
CY2013	863,234,605	2,866,109,250	3.32
CY2014	852,772,372	2,809,782,695	3.29
CY2015	836,177,876	2,826,628,117	3.38
CY2016	827,787,645	2,702,445,512	3.26

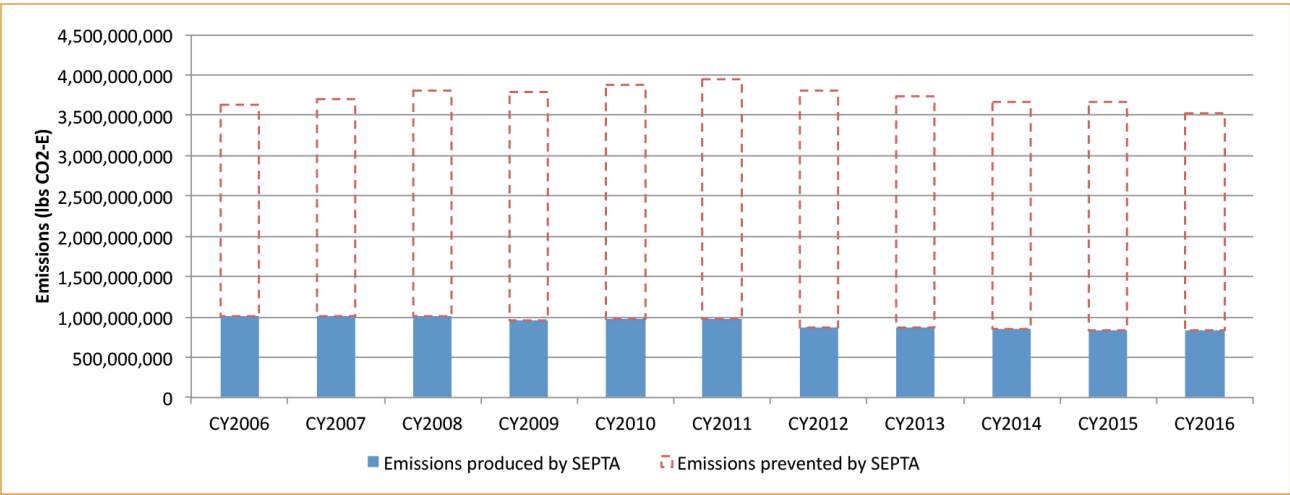
Emissions Produced by SEPTA

Calendar Year	Emissions (lbs CO2-E)	Per VM	Per RVH	Per PMT
CY2006	1,016,293,166	10.97	153.68	0.71
CY2007	1,005,017,053	10.73	150.47	0.68
CY2008	1,004,573,763	10.51	146.98	0.65
CY2009	953,200,977	9.82	137.99	0.61
CY2010	975,643,194	10.01	141.03	0.61
CY2011	974,878,950	9.94	139.28	0.60
CY2012	861,322,296	8.72	123.63	0.53
CY2013	863,234,605	8.65	123.38	0.55
CY2014	852,772,372	8.48	119.04	0.55
CY2015	836,177,876	8.29	114.18	0.54
CY2016	827,787,645	8.25	112.54	0.77

Emissions Prevented by SEPTA

Calendar Year	Emissions savings due to mode shift (Lbs CO2-E)	Emissions savings due to congestion relief (Lbs CO2-E)	Emissions savings due to land use (Lbs CO2-E)	Total emissions savings (Lbs CO2-E)
CY2006	602,164,856	132,456,100	1,881,737,050	2,616,358,006
CY2007	622,575,755	136,130,924	1,945,520,156	2,704,226,835
CY2008	646,945,052	141,568,680	2,021,673,071	2,810,186,803
CY2009	652,078,251	142,723,301	2,037,714,079	2,832,515,631
CY2010	668,861,395	144,885,790	2,090,160,619	2,903,907,804
CY2011	684,943,745	148,363,894	2,140,417,212	2,973,724,850
CY2012	677,782,176	148,280,932	2,118,037,644	2,944,100,753
CY2013	659,799,367	144,467,677	2,061,842,206	2,866,109,250
CY2014	646,848,459	141,563,015	2,021,371,222	2,809,782,695
CY2015	650,666,417	142,659,535	2,033,302,165	2,826,628,117

GHG Emissions Overview



GHG Inventory by Source

Source	Emissions Produced (Lbs CO2-E)	Percentage of Total Emissions
Revenue Vehicles	342,746,510	41.41%
Maintenance Vehicles	20,470,266	2.47%
On-Site natural gas	28,986,852	3.50%
Heating oil	6,698,747	0.81%
Steam	3,355,648	0.41%
Propulsion Electricity	338,324,042	40.87%
Building Electricity	87,205,581	10.53%

Emissions per Passenger Mile by Mode

Mode	Emissions (Lbs CO2-E) per PMT
NHSL/MFL/BSL	0.28
Regional Rail	0.42
Trolley	0.45
Buses	0.54
Single Occupancy Vehicle	0.87



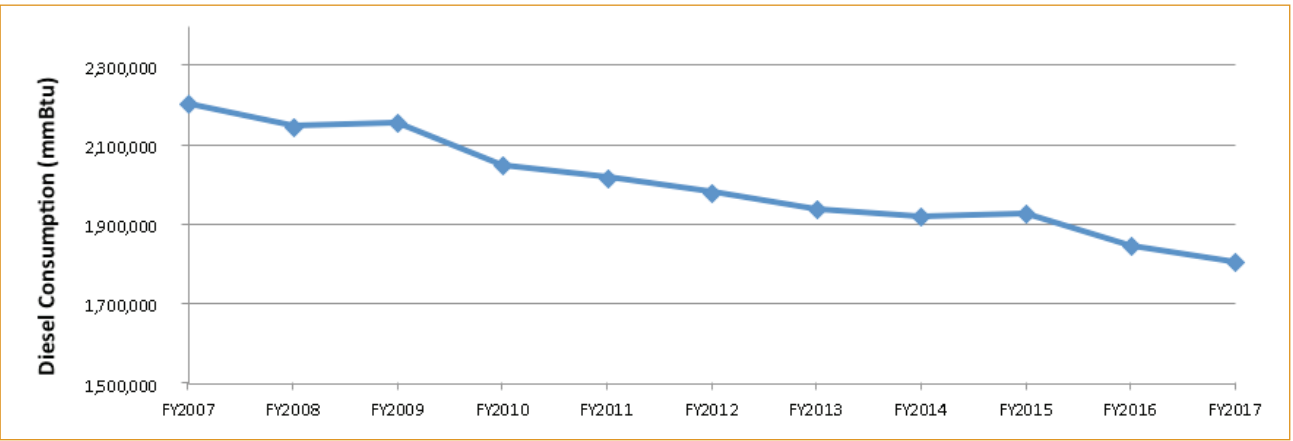
SEPTA Energy Consumption

	mmBtu	mmBtu per VM	mmBtu per RVH	mmBtu per PMT
FY2007	4,277,084	45.82	643.60	2.99
FY2008	4,302,392	45.78	640.89	2.81
FY2009	4,447,115	45.80	639.26	2.88
FY2010	4,324,235	44.56	630.53	2.78
FY2011	4,319,486	44.15	619.03	2.66
FY2012	4,203,948	42.76	598.78	2.58
FY2013	4,194,128	42.28	606.73	2.63
FY2014	4,265,908	42.46	602.45	2.76
FY2015	4,247,888	42.18	586.15	2.78
FY2016	4,037,206	39.94	545.56	2.58
FY2017	4,049,684	40.59	553.30	2.91

FY2017 Energy Consumption Breakdown

Source	mmBtu	% Energy Makeup
Diesel	1,803,714	44.54%
Gasoline	283,601	7.00%
Electricity	1,636,347	40.41%
Natural Gas	255,999	6.32%
Heating Oil	39,861	0.98%
Steam	30,162	0.74%

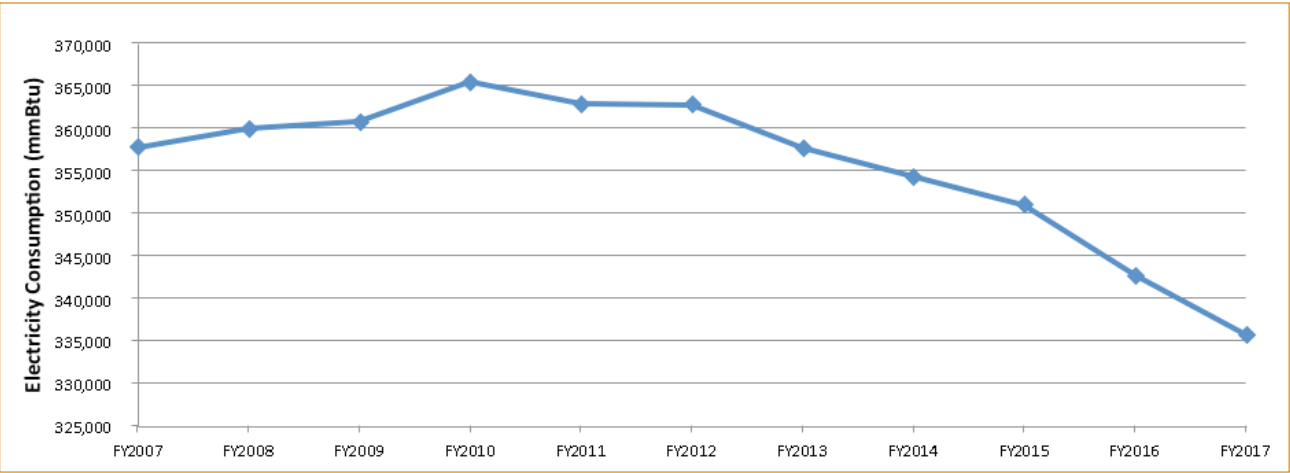
Diesel Fuel Consumption







Facility Electricity Consumption

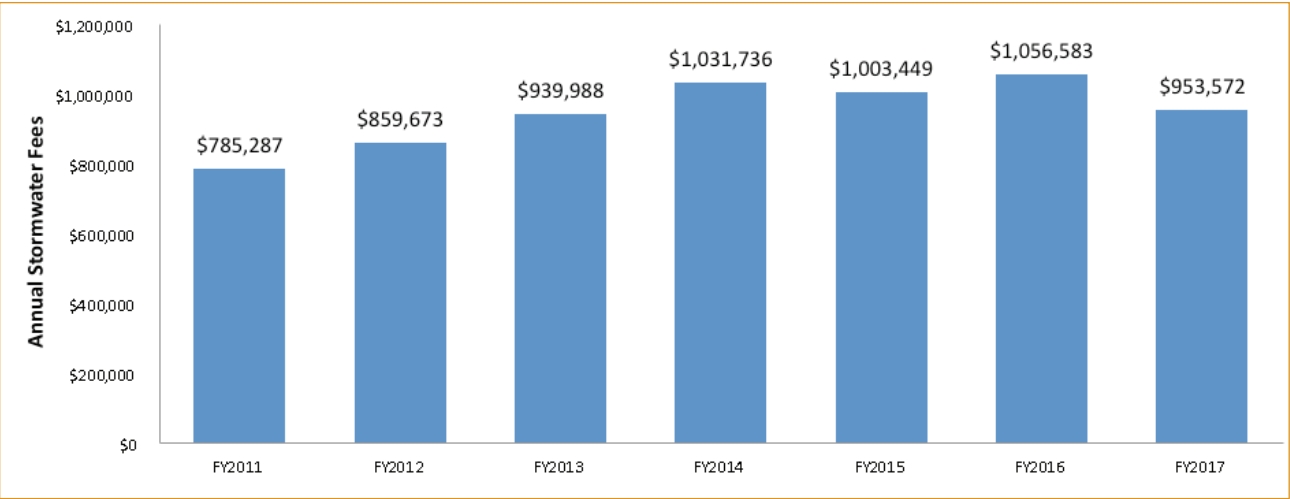


SEPTA Water Consumption

Fiscal Year	CCF	Gallons	Gallons Per VM	Gallons Per RVH	Gallons Per PMT
FY2009	162,409	121,481,784	1.25	17.46	0.079
FY2010	169,286	126,625,900	1.30	18.46	0.081
FY2011	152,575	114,126,440	1.17	16.36	0.070
FY2012	144,417	108,023,598	1.10	15.39	0.066
FY2013	150,445	112,533,194	1.13	16.28	0.071
FY2014	157,180	113,931,756	1.13	16.09	0.074
FY2015	177,549	132,806,544	1.32	18.33	0.087
FY2016	161,256	120,619,264	1.19	16.30	0.077
FY2017	145,131	108,557,716	1.09	14.83	0.078



SEPTA City of Philadelphia Annual Stormwater Fees



SEPTA Property Pervious/Impervious Surfaces Breakdown in Philadelphia County

Property in Philadelphia's Combined Sewer System:		Property in Philadelphia's Separate Sewer System:	
Impervious Roof Area	37.5 Acres	Impervious Roof Area	18 Acres
Other Impervious Area	47.32 Acres	Other Impervious Roof Area	29 Acres
Pervious Area	83.18 Acres	Pervious Area	43 Acres



Authority-Wide Waste & Diversion

	FY2013	FY2014	FY2015	FY2016	FY2017
TRASH	9,543	6,841	5,966	5,776	4,612
RECYCLING	14,500	12,398	13,711	15,734	6,623
TOTAL WASTE	24,043	19,239	19,677	21,510	11,235
DIVERSION	60.30%	64.40%	69.70%	73.10%	58.95%

Employee Generated Waste

	FY2013	FY2014	FY2015	FY2016	FY2017
TRASH	3,238	2,263	1,783	2,018	2,066
RECYCLING	372	341	347	424	377
DIVERSION	10.30%	13.10%	16.30%	17.40%	15.40%

Passenger Generated Waste

	FY2013	FY2014	FY2015	FY2016	FY2017
TRASH	4,087	3,531	3,230	3,041	863
RECYCLING	372	341	347	424	735
DIVERSION	17.50%	16.20%	21.80%	24.40%	46.01%

C&D Generated Waste

	FY2013	FY2014	FY2015	FY2016	FY2017
TRASH	2,218	1,047	953	717	486
RECYCLING	13,262	11,375	12,464	14,327	5,511
DIVERSION	85.70%	91.60%	92.90%	95.20%	91.90%





Collaborative Planning Efforts

		FY 2016	FY 2017
Bicycles Access & Trails	Abington Township Bike Plan	X	
	Bike MontCo		X
	Cobbs Creek Trail Study		X
	Forge to Refuge Trail Feasibility Study	X	X
	Fox Chase Lorimer Trail Feasibility Study	X	X
	High Trail Study		X
	Mantua Greenway	X	X
	Octoraro Greenway Feasibility Study	X	X
	Parkside Cynwyd Trail Feasibility Study	X	
Complete Streets and Streetscape Studies	Trail Access to Wawa Station Feasibility Study	X	
	Frankford Avenue/ Arrott Transportation Center Streetscape Plan	X	
	Market Street Transformation Study		X
	North American Street Corridor Study		X
	Route for Change – Roosevelt Boulevard Study	X	X
	Tacony Connector Street Study	X	
	Torresdale Station / Glen Foerd Access		X
	West Girard Avenue Streetscape Plan	X	
	Wyoming Avenue Streetscape Plan	X	
Other	Connections2045		X
	I-95 Corridor Improvements		X
	Lansdale Borough Comprehensive Plan		X
	Lower Eastwick Public Land Strategy		X
	Media Economic Development Strategy & Implementation Plan		X
	NEC FUTURE		X
	Northeast Corridor Through-Ticketing Study		X
	Old City Vision 2026	X	
	University City Transportation Study	X	
	Upper Merion Comprehensive Plan		X
	Walk Park Train Abington		X
Philadelphia 2035 District Plans and Follow-Up Studies	52nd Street Gateway		X
	Broad & Erie Task Force		X
	Far Northeast District Plan	X	X
	Lower Southwest District Plan	X	
	North Delaware District Plan	X	
	North District Plan		X
	Tioga Goals & Strategies Report	X	
	Transportation and Community Development Initiative Intersection	X	
	Studies: 20th & Moyamensing; 40th & Market		
	Upper North District Plan	X	X
	West District Plan		X
Service Extensions	Wissahickon Gateway		X
	MARC/SEPTA Commuter Rail Service Extension Ridership Analysis		X
	Paoli-Thorndale Regional Rail Extension Forecast Memo		X
	Philadelphia Zoo Passenger Rail Study	X	X
TOD & Station Area Plans	Regional Rail Service on the Northeast Corridor from Maryland	X	
	30th Street Station District Plan	X	X
	Access the Keystone		X
	Building on our Strengths: Evaluating Transit-Oriented Development (TOD)	X	
	Potential in Greater Philadelphia		
	Conshohocken Station Area Improvements	X	X
	Darby Transportation Center – Access & Development Opportunities Study	X	
	Eastwick Inter-Modal Center		X
	Exton Station – Phases II & III	X	X
	Ivy Ridge: Creating a Multi-Modal Hub	X	X
	King of Prussia Rail Station Area Planning		X
	Radnor Station Connectivity Study		X
	South Philadelphia Transportation Center Study		X
Trolley Modernization	Centennial District: Trolley Service Evaluation		X
	I-95 Richmond Street Improvements	X	X
	Island Avenue Reconstruction	X	X
	Light Rail on Delaware Avenue: a Renewed Look	X	
	Modern Trolley Station Design Guide: City Routes	X	X
	Modern Trolley Station Design Guide: Media / Sharon Hill Lines	X	X
	Transit on Delaware Avenue		X



FY17 Farmers Markets

	Months of Operation	Time	Produce Sourcing	SEPTA Routes	Address
Frankford Transportation Center	June - October	Tuesdays 2-6pm	Root Mass Farm	3, 5, 8, 14, 19, 20, 24, 25, 50, 58, 59, 73, 84, 66, 67, 88, R, MFL (Frankford TC)	Bustleton Ave. & Frankford Ave.
Olney Transportation Center	June - November	Tuesdays 2-6pm	McCann Farms, Ruth Bennett Community Farm	6, 8, 16, 18, 22, 26, 55, 80, L, BSL (Olney TC)	Broad St. & Olney Ave.
46th Street Station	May - November	Thursdays 4-7pm	On-site (Walnut Hill Community Farm)	21, 31, 64, MFL (46th St. Station)	4610 Market St.
Broad & Snyder	June - October	Tuesdays 2-6pm	Solly Bros. Farm	4,37, 79, BSL (Snyder Station)	Broad St. & Snyder Ave.



Number of SEPTA Volunteers

	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017
Spring Clean-Up (in partnership with the City of Philadelphia)	675	650	630	697	729	634	712
Flower Show (in partnership with the Pennsylvania Horticultural Society)	208	211	241	222	224	222	165

Workforce Planning and Hiring

Fiscal Year	Employees that left SEPTA	Employees Hired by SEPTA
FY2016	806	837
FY2017	733	864





Unlinked Trips Per Capita

Fiscal Year	Regional Population	Unlinked Passenger Trips	UPT per Capita
FY2000	3,849,647	300,707,480	78.1
FY2001	3,868,053	305,171,840	78.9
FY2002	3,882,567	295,270,159	76.1
FY2003	3,896,671	298,325,816	76.6
FY2004	3,914,630	301,018,217	76.9
FY2005	3,929,505	298,730,503	76.0
FY2006	3,946,328	296,587,290	75.2
FY2007	3,969,582	307,188,000	77.4
FY2008	3,991,897	325,118,000	81.4
FY2009	4,012,573	329,581,000	82.1
FY2010	4,008,994	320,984,000	80.1
FY2011	4,033,874	333,966,000	82.8
FY2012	4,053,776	339,288,000	83.7
FY2013	4,067,946	337,314,000	82.9
FY2014	4,081,026	330,155,000	80.9
FY2015	4,093,906	330,119,000	80.6
FY2016	4,095,710	326,085,000	79.7
FY2017	4,095,710*	308,300,000	75.3

\*Note: One year lag in population data availability



Operating Expenses Overview

YEAR	OPEX	UPT (in millions)	OPEX/UPT	Industry OPEX/UPT	Philadelphia CPI-U
FY2005	\$ 923,369	298.73	\$ 3.09	\$ 3.13	\$ 3.09
FY2006	\$ 933,904	269.59	\$ 3.15	\$ 3.26	\$ 3.23
FY2007	\$ 985,146	307.19	\$ 3.21	\$ 3.39	\$ 3.28
FY2008	\$ 1,041,623	325.12	\$ 3.20	\$ 3.55	\$ 3.45
FY2009	\$ 1,101,497	329.58	\$ 3.34	\$ 3.69	\$ 3.38
FY2010	\$ 1,147,754	320.98	\$ 3.58	\$ 3.79	\$ 3.44
FY2011	\$ 1,184,551	333.97	\$ 3.55	\$ 3.93	\$ 3.54
FY2012	\$ 1,232,262	339.29	\$ 3.63	\$ 4.01	\$ 3.58
FY2013	\$ 1,239,886	337.31	\$ 3.68	\$ 4.23	\$ 3.64
FY2014	\$ 1,270,436	330.16	\$ 3.85	\$ 4.40	\$ 3.70
FY2015	\$ 1,287,658	330.12	\$ 3.90	\$4.54	\$ 3.71
FY2016	\$ 1,318,576	326.09	\$ 4.04	n/a*	\$ 3.71
FY2017	\$ 1,353,073	308.30	\$4.39	n/a	\$ 3.74

\*Note: Two year lag in industry expense performance information.

FY2017 Ridership Breakdown

Mode	Unlinked Passenger Trips	Vehicle Miles Traveled	Passenger Miles Traveled
Regional Rail	33,209,489	20,508,262	426,163,583
Demand Response	1,704,463	13,298,905	12,173,363
NHSL/ MFL/BSL	93,879,889	16,969,011	344,859,706
Trolley	32,519,698	4,142,179	75,523,946
Bus	159,557,816	44,686,515	502,614,777

\*Ridership Breakdown based off of SEPTA's Revenue Model whereas the ridership chart is based off of SEPTA's projected ridership values from the National Transit Database



Grants

FY2011	EPA National Clean Diesel Campaign	\$1,200,000
	FTA State of Good Repair (Hybrid Buses)	\$15,000,000
	FTA Livability (33rd & Dauphin Loop)	\$5,000,000
	FTA Clean Fuels (Hybrid Buses)	\$5,000,000
	FTA TIGGER (Wayside Energy Storage)	\$1,440,000
FY2013	FHWA CMAQ (Locomotive Engine Repower)	\$1,280,000
FY2015	FTA Resilience Grant	\$86,800,000
FY2016	FTA NoLo (Electric Bus)	\$2,600,000
TOTAL		\$118,320,000

Revenue

FY2010	Waste Oil Resale	\$70,207
FY2011	Waste Oil Resale	\$123,780
FY2012	Waste Oil Resale	\$144,969
	ACT 129 Rebate	\$34,706
FY2013	Waste Oil Resale	\$139,597
	ACT 129 Rebate	\$133,715
FY2014	Waste Oil Resale	\$148,169
	ACT 129 Rebate	\$29,383
	WESS: grid regulation	\$144,711
FY2015	Waste Oil Resale	\$93,462
	ACT 129 Rebate	\$2,712
	WESS: grid regulation	\$322,522
FY2016	Waste Oil Resale	\$21,006
	ACT 129 Rebate	\$29,123
	WESS: grid regulation	\$228,546
FY2017	Waste Oil Resale	\$24,976
	ACT 129 Rebate	\$181,471
	Print Shop Recycling Revenue	\$2,047
	Gov Deals	\$121,499
	Metal Recycling Revenue	\$1,085,738
	WESS: grid regulation	\$77,486
Total		\$3,428,083

Savings

FY2013	Hybrid/Electric Bus Fuel Savings: 2012 vs. 2013	\$694,378
	Savings from Recycling	\$32,272
FY2014	Hybrid/Electric Bus Fuel Savings: 2013 vs. 2014	\$539,532
	Savings from Recycling	\$43,883
	Stormwater Fee Savings	\$86
FY2015	Savings from Recycling	\$73,449
FY2016	Hybrid/Electric Bus Fuel Savings: 2015 vs. 2016	\$986,200
	Savings from Recycling	\$74,924
FY2017	Savings from Stormwater	\$2,031
	ESCO #1	\$288,661
	Savings from Recycling	\$148,699
	Savings from Paper Reduction	\$2,000
Total		\$2,886,116



# GLOSSARY

American Public Transportation Association (APTA): a non-profit organization that advocates for the progression of public transit in the US

British Thermal Unit (BTU): a standard unit of energy

Combined Sewer System (CSS): a sewage collection system that collects both sewage and surface runoff

Combined Sewer Overflow (CSO): occurs when system’s capacity is exceeded and overflow sewage is released in the natural environment instead of reaching the sewage treatment plant

Construction and Demolition (C&D) waste: waste material produced at SEPTA’s construction and demolition sites

Centum Cubic Feet (CCF): one hundred cubic feet; standard unit of water consumption

Carbon Dioxide Equivalent (CO2e): a measure of carbon dioxide equivalents used to measure greenhouse gas emissions; determined by converting the global warming potential of various greenhouse gases to the equivalent amount of CO2 with the same global warming potential

Climate change: changes in global and regional climate patterns in response to increased levels of atmospheric greenhouses gases produced by the use of fossil fuels

Climate Resilience: the ability of a system to manage stresses and maintain function despite external changes imposed by climate change

Disadvantaged Business Enterprise (DBE): a small, minority or woman-owned businesses

Energy Savings Company (ESCO): a company specializing in the implementation of energy efficient technologies that develop contracts with organizations, like SEPTA, providing them with private capital and savings guarantees for the implementation of energy reduction solutions

Environmental and Sustainability Management System (ESMS): Internal SEPTA program based on the principles of the ISO 14001 Standard

Federal Transit Administration (FTA): offers financial and technical assistance to US public transportation agencies

Green acre: an area equivalent to one acre that consists of pervious surfaces, semi-impermeable surfaces, and/or surfaces fitted with other stormwater infrastructure

Greenhouse Gas (GHG): contributes to the atmospheric greenhouse effect, the leading cause of climate change; sources of which include fossil fuel consumption

Impervious surface: a surface, typically man-made, that does not allow liquid or precipitation to pass through

International Organization for Standardization (ISO): ISO 14001:2004 – Standard for environmental management

Kilowatt Hours (KWH): standard unit of energy; used specifically to measure energy that is being transmitted at a constant rate over a period of time

Miles per Gallon (MPG): a standard unit of fuel efficiency; measures vehicular miles traveled per gallon of fuel

Operational Expenditure (OpEx): money spent on a day-to-day basis to maintain operations

Passenger Miles Traveled (PMT): cumulative sum of distances ridden by each passenger; used as an efficiency metric

Pervious Surface: a surface that allows liquid and precipitation to pass through

Planning Effort: collaboration with community projects involving SEPTA; can include participation in TOD or area study plans with external parties

Planning Study: a comprehensive analysis of an aspect of SEPTA’s system. Planning studies may be Station Area Plans evaluating the impacts of a specific station on the surrounding community, or a Long-Range Transit Plans analyzing service routes and ridership trends

Revenue Vehicle Hours (RVH): hours traveled by vehicle while in revenue service; used as an efficiency metric

Sanitary sewage: liquid waste produced by homes and commercial buildings

Semi-impermeable surface: a surface that allows some liquid or precipitation to pass through

Single Occupancy Vehicle (SOV): a non-commercial car whose only occupant is the driver

Social Justice: equitable distribution of wealth, opportunity, privilege, and fairness within a society

Stormwater Fees: fee at an annually increasing rate charged to property owners in Philadelphia county based off of their area of impervious surface; goal of these fees is to reduce the amount of runoff pollution to Philadelphia’s sewer system and waterways and implement more stormwater management systems throughout the city

Transit Oriented Development (TOD): a type of community development that includes a mixture of housing, office, retail and/or other commercial development and amenities integrated into a walkable neighborhood and located within a half-mile of quality public transportation.

Unlinked Passenger Trips (UPT): a trip on one transit vehicle regardless of the type of fare paid or transfer presented

Vehicles Miles (VM): total mileage traveled by vehicles including miles traveled while out of service; used as an efficiency metric

*\*Definition courtesy of the Center for Transit-Oriented Development [www.ctod.org](http://www.ctod.org)*





