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## MESSAGE FROM THE GENERAL MANAGER



When SEPTA adopted its first-ever Sustainability Program Plan “SEP-TAINABLE” in 2011, the task was daunting – how does a regional transit agency in the midst of capital funding cuts and global uncertainty implement a new agenda as vast and complex as sustainability?

With every challenge comes opportunity, and we quickly realized that sustainability was not some burdensome new initiative but an organic evolution of SEPTA’s culture. In the six years that have followed, sustainability has been the lens through which we’ve built a more efficient, resilient transit system, which in turn has supported environmental stewardship, helped to build livable communities, and increased economic prosperity across southeastern Pennsylvania.

Notable achievements of the first-generation plan included:

- An Energy Action Plan, published in 2012, which has saved millions of dollars through innovative energy projects such as facility retrofits, wayside energy storage, hybrid-electric buses, and now battery-electric buses.
- A Climate Adaptation Plan, published in 2013, which served as the foundation for an \$87 million grant award from the Federal Transit Administration to implement an “Infrastructure Resiliency Program”.
- A Cycle-Transit Plan, published in 2015, which has been used as a framework for installation of strategic bike infrastructure at rail stations to encourage ridership growth.
- An Environmental & Sustainability Management System (ESMS) for the Berridge Shop, which was certified by the International Organization for Standardization (ISO) under its globally recognized 14001:2004 standard for environmental management.

In 2012, SEPTA became the first East Coast U.S. transit agency to receive the American Public Transportation Association (APTA) “Gold” designation in recognition of its early successes and comprehensive approach.

As SEPTA now pivots to a second-generation plan, some circumstances have changed. Funding cuts have been reversed and a comprehensive “Rebuilding the System” capital investment campaign is underway. The global economy has improved, and southeastern Pennsylvania is quickly emerging as a major force. Challenges remain, but the future is bright.

This program plan, entitled “SEP-TAINABLE 2020,” preserves the award-winning first-generation framework and adopts aggressive yet achievable targets for continuous improvement in environmental, social, and economic performance. The plan was developed through extensive consultation with stakeholders and features the following focus areas:

- Encouragement of Transit-Oriented Development (TOD) through participation in community and regional planning efforts.
- A Renewable Energy Plan exploring cost-effective opportunities for adoption of renewable energy to reduce greenhouse gas (GHG) emissions.
- A Stormwater Management Plan to reduce runoff and associated fees through a partnership with the Philadelphia Water Department.
- An expanded ESMS program to implement the environmental management principles and practices of ISO 14001 at additional SEPTA facilities.

Implementation of SEP-TAINABLE 2020 will continue to fulfill SEPTA’s commitment to communities across southeastern Pennsylvania in lasting and meaningful ways. I’m pleased now to share it with you.

Jeff Knueppel  
General Manager



# A Guide to SEP-TAINABLE 2020

## WHERE WE CAME FROM & WHERE WE'RE GOING:

In 2011, SEPTA launched its first five-year sustainability plan. The plan established a comprehensive, strategic framework for building a more sustainable SEPTA and, through SEPTA, a more sustainable region.

With the advent of a second-generation plan, SEP-TAINABLE 2020, SEPTA's Office of Innovation facilitated outreach events to engage field experts, stakeholders, and community members. Based on stakeholder feedback, SEPTA created new goals, established new targets for existing goals and redesigned the plan document to be more accessible and relevant to a wider audience.

The result, we hope, is a plan that helps SEPTA achieve shared sustainability goals while providing the region with safe, reliable and efficient transportation services.

## HOW TO NAVIGATE SEP-TAINABLE 2020:

### Three Pillar Approach:

SEPTA's approach to sustainability is based off of the triple bottom line: evaluating the Authority's performance with respect to its impacts on the 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.

## WHAT YOU CAN DO TO HELP:

By reading SEPTA's sustainability plan and visiting its sustainability webpage, you can learn more about how SEPTA affects various aspects of sustainability throughout the region. And of course, the best thing you can do to support our Sustainability Program is continue to ride SEPTA. The more riders SEPTA has, the deeper SEPTA's positive impact on regional sustainability becomes.



# NATURAL ENVIRONMENT






SEPTA's core business - moving people on public transportation - is inherently sustainable. Each of SEPTA's modes has a lower carbon footprint than a private car. But SEPTA is not resting on these laurels.

The Natural Environment chapter includes goals that focus on improving energy efficiency, reduce GHG emissions, improve water efficiency, reduce waste and mitigate potentially negative effects of stormwater through the installation of green stormwater infrastructure. Environmental goals support SEPTA's core business while stretching itself to continually be a better steward of the natural environment.





# NATURAL ENVIRONMENT

2020 GOAL			Baseline (FY2015)	FY2016	FY2017	FY2018	FY2019	FY2020	2020 Target
	DECREASE NORMALIZED GHG EMISSIONS 20%	lbs CO2-e Per / PMT	0.547 (CY14)	<b>0.532 (CY15)</b>	n/a	n/a	n/a	n/a	0.438
	DECREASE NORMALIZED ENERGY CONSUMPTION 10%	mBtu / PMT	2.75	<b>2.64</b>	n/a	n/a	n/a	n/a	2.48
	DECREASE NORMALIZED WATER CONSUMPTION 25%	Gallons/ PMT	0.087	<b>0.090</b>	n/a	n/a	n/a	n/a	0.067
	INCREASE GREEN ACREAGE BY 25 ACRES	New Greened Acres	0	<b>3.20</b>	n/a	n/a	n/a	n/a	25
	MAINTAIN A 25% DIVERSION RATE FOR WASTE PRODUCED BY PASSENGERS AT STATIONS	Tons Recycled/ Tons Total Waste	21.8%	<b>24.4%</b>	n/a	n/a	n/a	n/a	25.0%
	REACH AN 80% DIVERSION RATE FOR WASTE PRODUCED BY EMPLOYEES AT FACILITIES	Tons Recycled/ Tons Total Waste	82.4%	<b>84.4%</b>	n/a	n/a	n/a	n/a	80.0%





# GOAL

## 1

### REDUCE SEPTA'S CARBON FOOTPRINT

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

SEPTA produces greenhouse gas (GHG) emissions from its purchase of electricity, use of fuel, and powering buildings. As GHG emissions contribute to global climate change, SEPTA aims to

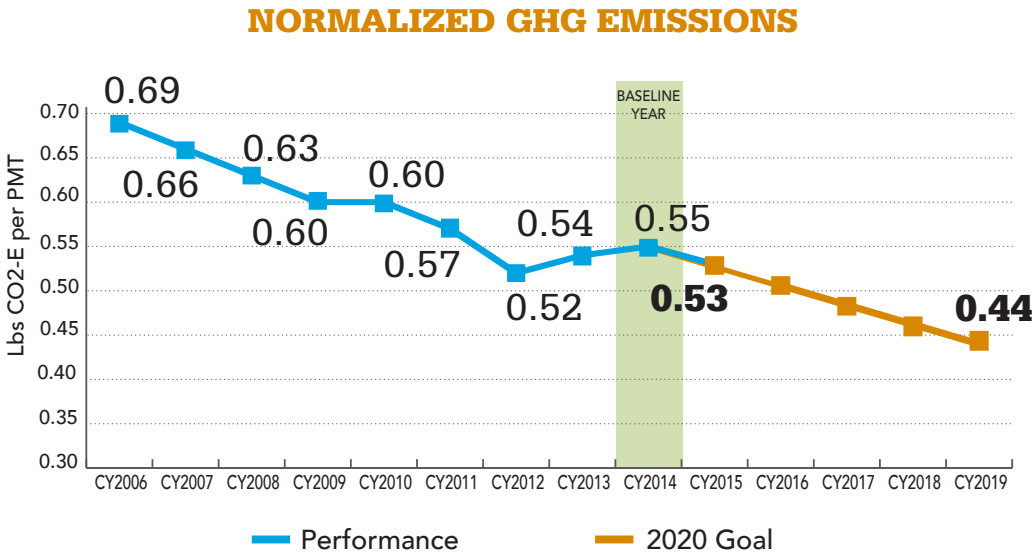
minimize its emissions while growing ridership.

The more people that ride SEPTA, the greater potential for positive environmental impact of the transit system. Getting people out of cars and onto public transit reduces pollution from driving and traffic congestion. Additionally, the more people that ride transit, the more efficient and sustainable the SEPTA system is – a full bus is more sustainable than a half-full one.

Thus, SEPTA measures both gross (total, non-normalized) GHG emissions AND ridership to measure SEPTA's GHG emissions, and divides total emissions by the number of passenger miles traveled (PMT) each year to track progress (normalized data).

**HOW WE'RE DOING:**

From CY2014 to CY2015, SEPTA reduced its normalized GHG emissions 3.6% putting SEPTA in range of its annualized goal.

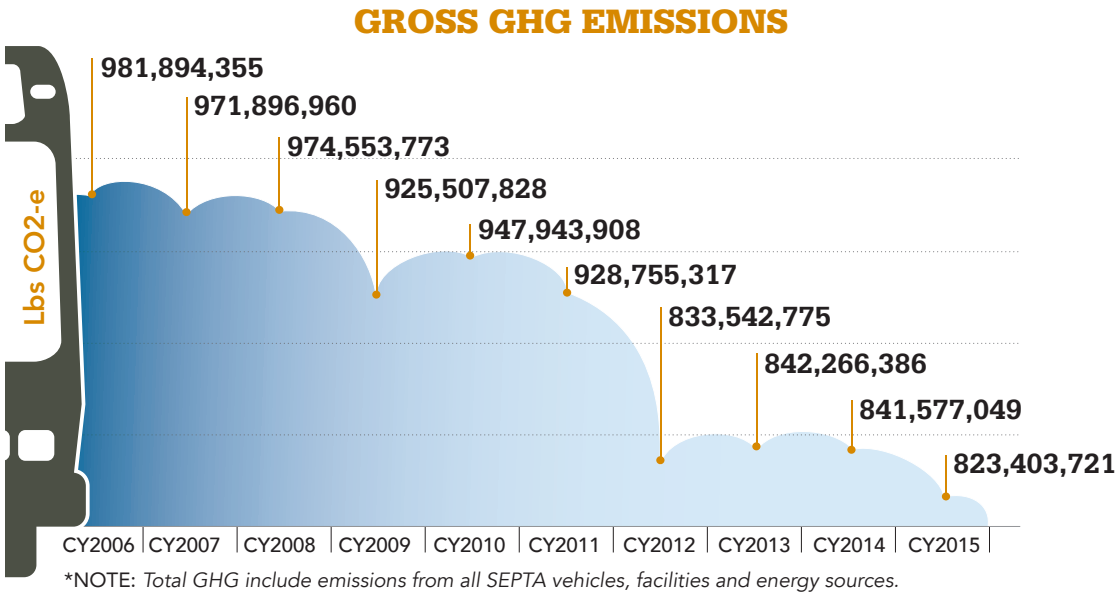


**WHAT DOES IT MEAN?**

- **Lbs CO2-E:** GHG emissions produced by SEPTA and SEPTA's energy providers.
- **Passenger Miles Traveled (PMT):** riders multiplied by average trip length, a measure used to normalize emissions.
- **Normalized GHG Emissions:** GHG emissions (lbs CO2-e) divided by ridership (PMT), used to ground performance in SEPTA's core business of transporting people.

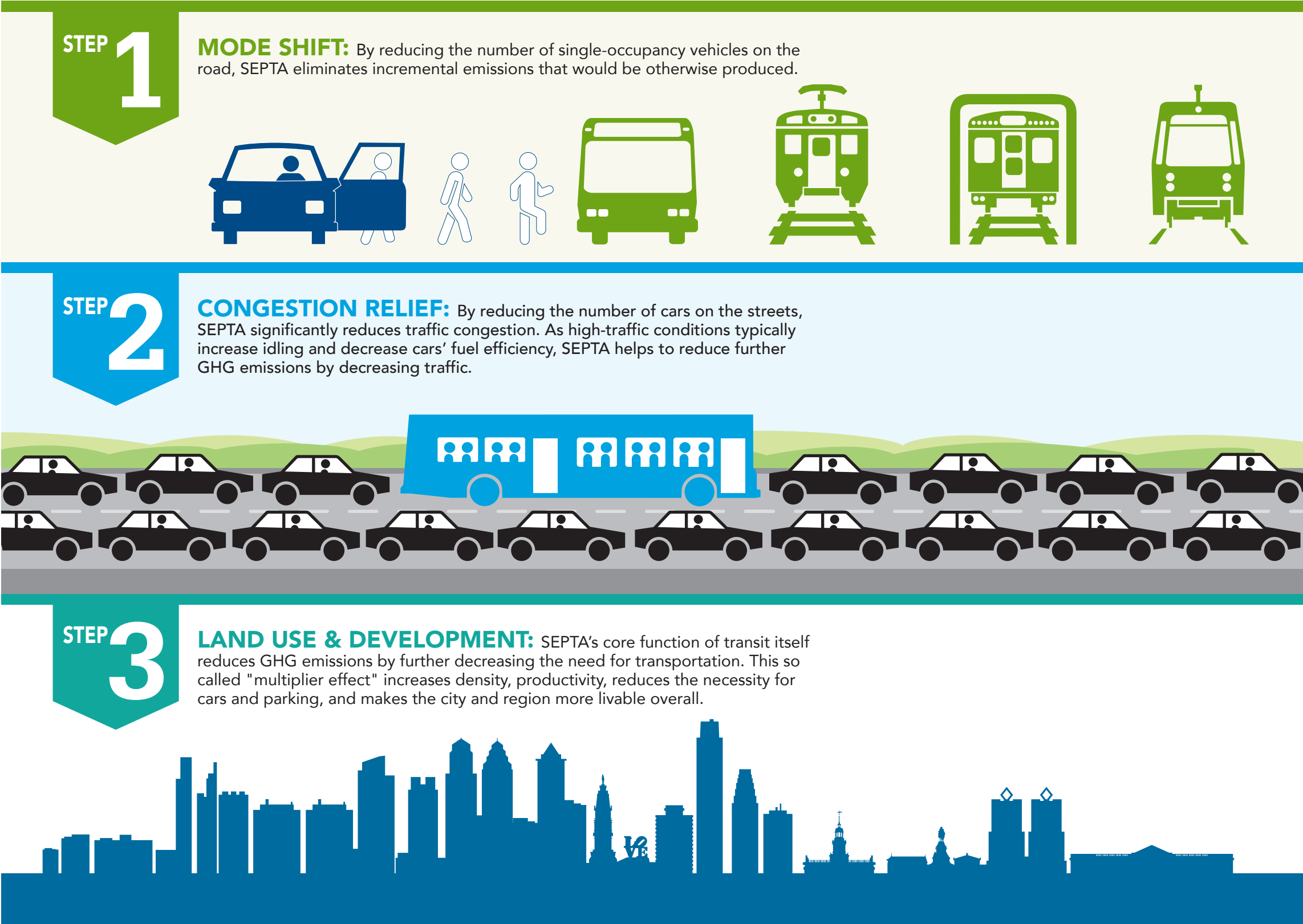
Since 2010, SEPTA has decreased its gross annual emissions by 124,540,187 pounds of CO2-E, a reduction of over 13%.

Approximately 82% of SEPTA's GHG emissions are generated transporting passengers through its various modes. The remaining 18% of SEPTA's emissions are produced maintaining SEPTA's operations by providing heating and electricity to passenger stations, depots, and offices, running maintenance vehicles, etc. SEPTA is committed to future reducing gross GHG emissions by investing in energy efficient vehicles, clean power and energy efficient building systems.





On top of reducing gross GHG emissions, in CY2015 SEPTA prevented the additional release of 1,282,150 metric tons of CO2-E from the transportation sector, equivalent to taking 272,797 cars off the road for one year. This is achieved by:



ELECTRIC BUSES

Beginning in 2017, SEPTA will pilot battery electric buses running on two routes in South Philadelphia.

ENERGY ACTION PLAN

In November 2012 SEPTA released its Energy Action Plan outlining eighteen initiatives to reduce energy demand, increase energy efficiency, and utilize less GHG intensive energy sources. Together these initiatives significantly reduced SEPTA's GHG emissions. SEPTA will be updating the Energy Action Plan as part of the Sustainability Plan.



HYBRID BUSES

Over the next five years, 525 hybrids will be added to more than 700 existing hybrids. By 2020 hybrids will represent 95% of SEPTA's bus fleet.

CHP PLANT

SEPTA is designing a combined heat and power (CHP) plant at its Midvale facility. This new plant will be powered by natural gas, a less GHG-intensive fuel than the electrical grid. The plant will reduce GHG emissions by 41% for nearly half of SEPTA's Regional Rail and will provide a resilient source of power in the event of a grid outage.



# GOAL 2

## IMPROVE ENERGY EFFICIENCY

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

SEPTA depends on energy for every aspect of its operations, from powering railcars and buses to heating stations and illuminating track signals. Energy inefficiency has negative environmental

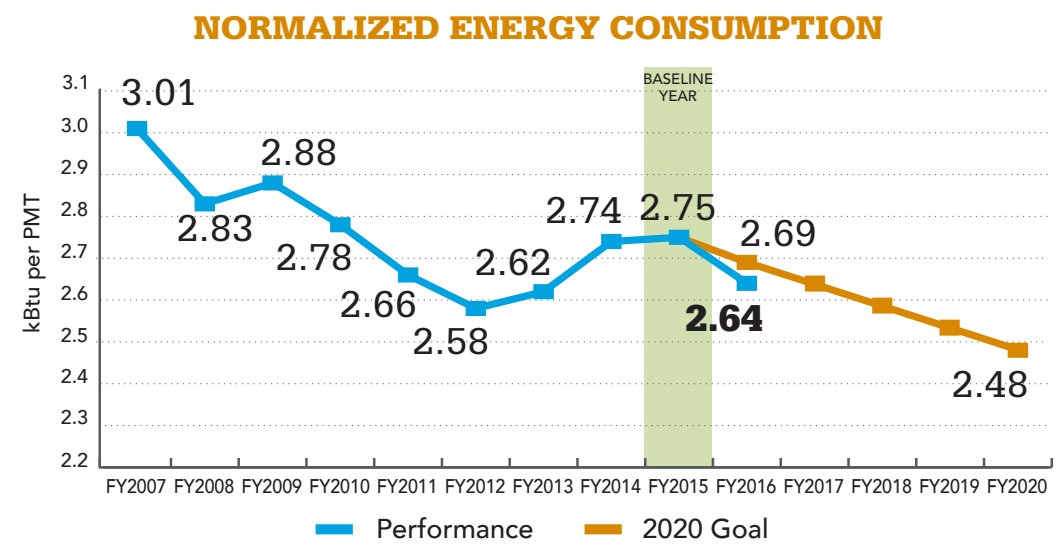
impacts including incremental GHG emissions and air pollution from energy generation.

The more people that ride SEPTA, the greater potential for positive environmental impact of the transit system. Getting people out of cars and onto public transit reduces the amount of energy consumed by single occupancy vehicles. Additionally, the more people that ride transit, the more efficient and sustainable the SEPTA system is – per person, a full bus is more efficient than one that is half-full.

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).

### HOW WE'RE DOING:

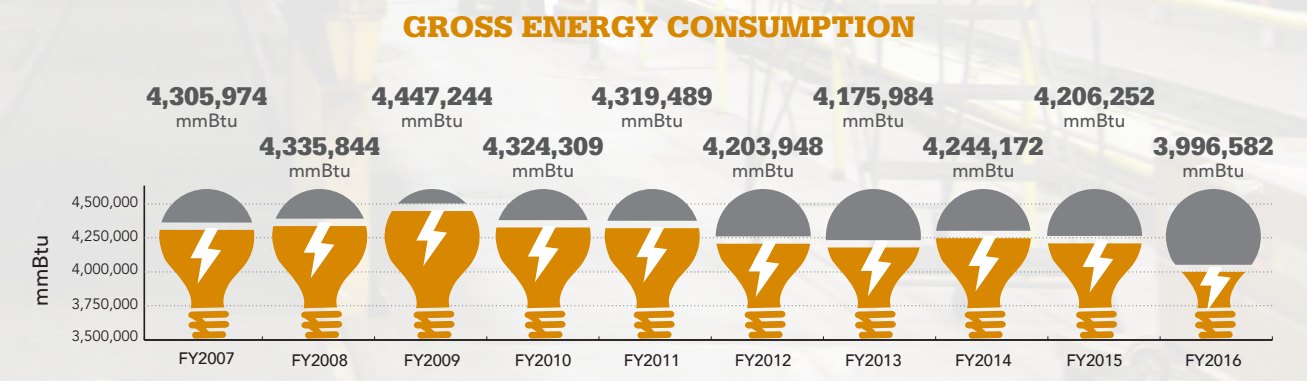
From FY2015 to FY2016, SEPTA reduced its normalized energy consumption by 4.0% putting SEPTA on track to exceed its goal.



### WHAT DOES IT MEAN?

- **kBtu:** Amount of energy consumed by SEPTA including fuel consumption and electricity consumption.
- **Passenger Miles Traveled (PMT):** riders multiplied by average trip length, a measure used to normalize emissions.
- **Normalized Energy Consumption:** Energy consumption (kBtu) divided by ridership (PMT), used to ground performance in SEPTA's core business of transporting people.

SEPTA's energy sources include electricity, diesel, gasoline, natural gas, heating oil, and steam. Since FY2011, SEPTA has decreased its gross energy consumption by 322,907 mmBtu, approximately a 7.5% reduction from baseline. This savings is equivalent to powering 8,664 houses for one year.

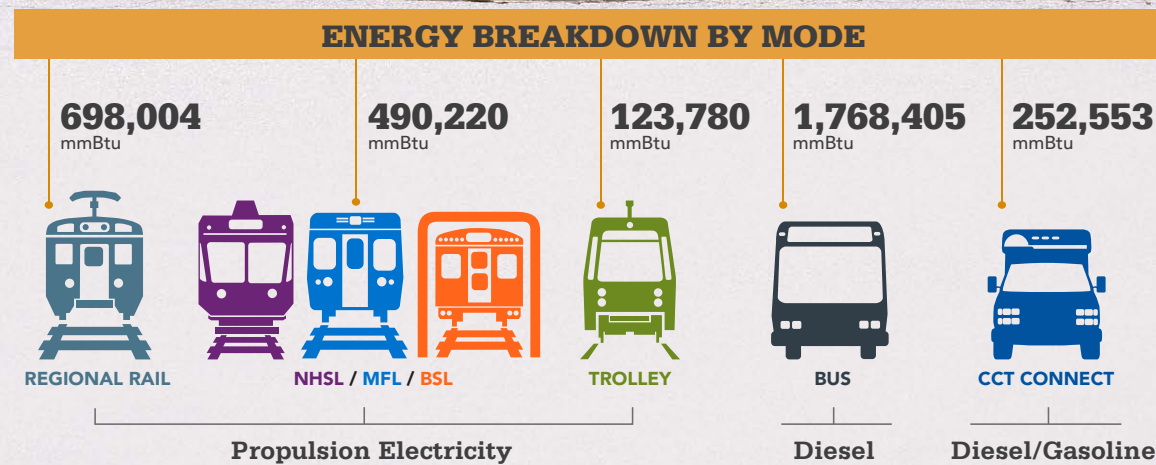






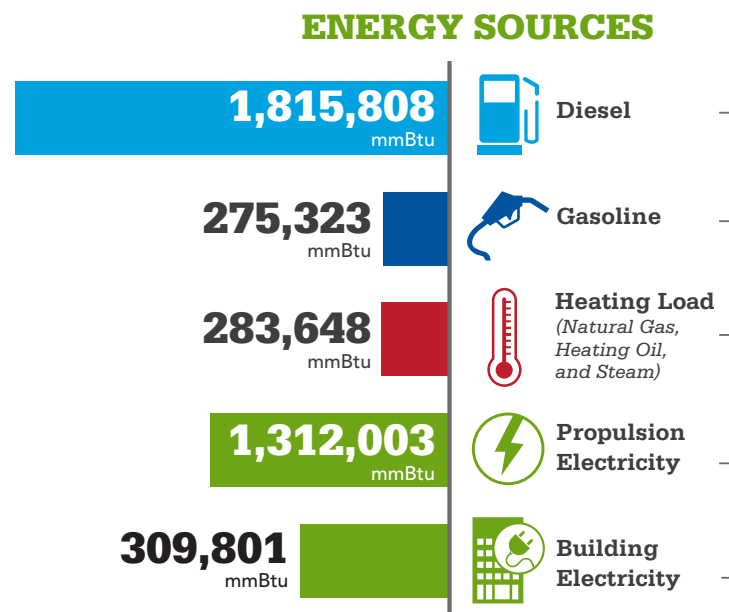
SEPTA's buses log more miles than any other mode, and therefore account for approximately half of all energy used to transport customers. SEPTA has been able to significantly reduce energy

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.



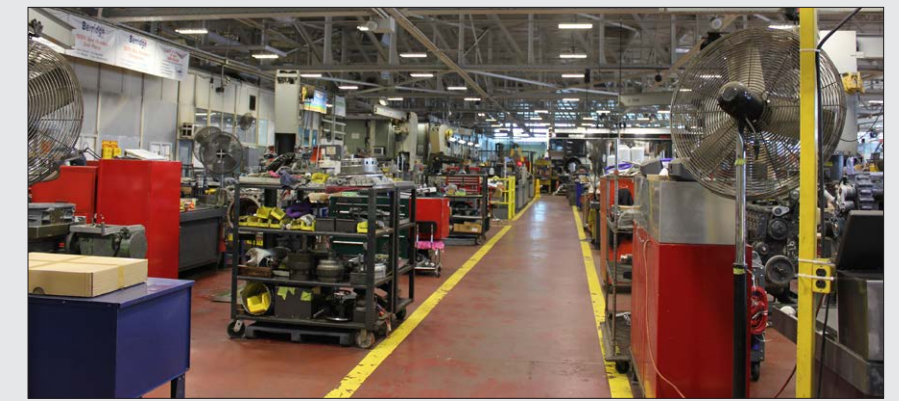
SEPTA's total energy consumption is measured in mmBtu (one million British thermal units). This metric normalizes energy consumption from a variety of generation sources including diesel gas, electricity, oil, and steam and can therefore act as a cumulative measurement for all of SEPTA's energy consumption.

Approximately 78% of the energy that SEPTA consumes is used to transport passengers by bus or rail. The remaining 22% is used in providing heating and electricity to passenger stations, depots, offices, and maintenance facilities.



**3,996,582**  
mmBtu  
the amount of  
energy SEPTA  
consumes annually,  
is equivalent  
**TO POWERING**

**107,233**  
HOUSES FOR  
ONE YEAR



## ESCOs

Through partnerships with Energy Savings Companies (ESCOs), firms that specialize in implementing energy efficient technologies to provide their partners with energy savings guarantees, SEPTA has continued to improve energy efficiency at its facilities. ESCO projects have already been installed at six facilities and four railcar fleets, and a master plan has been developed to scale the program in coming years.



## WAYSIDE STORAGE

SEPTA currently has two Wayside Energy Storage Systems (WESS) installed at two substations on the Market-Frankford Line. These systems allow SEPTA to capture, store and reuse energy created by braking trains. The success of these pilot projects paved the way for an additional 7 units that will soon be installed at other substations as part of a public-private partnership.

## MFL "M-4" RAILCAR LIGHTING

The launch of a project to replace incandescent lighting on all 220 Market-Frankford Line cars with more energy-efficient LED lighting began in 2015. Once completed, the lighting retrofits are estimated to save more than \$43,000 annually on energy costs.

## RENEWABLE ENERGY PLAN

In December 2016, SEPTA solicited RFP for a solar Power Purchasing Agreement (PPA). This is the first foray into the integration of solar power into SEPTA's energy supply. In 2017, SEPTA will publish its first Renewable Energy Plan to identify opportunities to further integrate renewable energy into SEPTA's energy mix.





# GOAL 3

## IMPROVE WATER EFFICIENCY

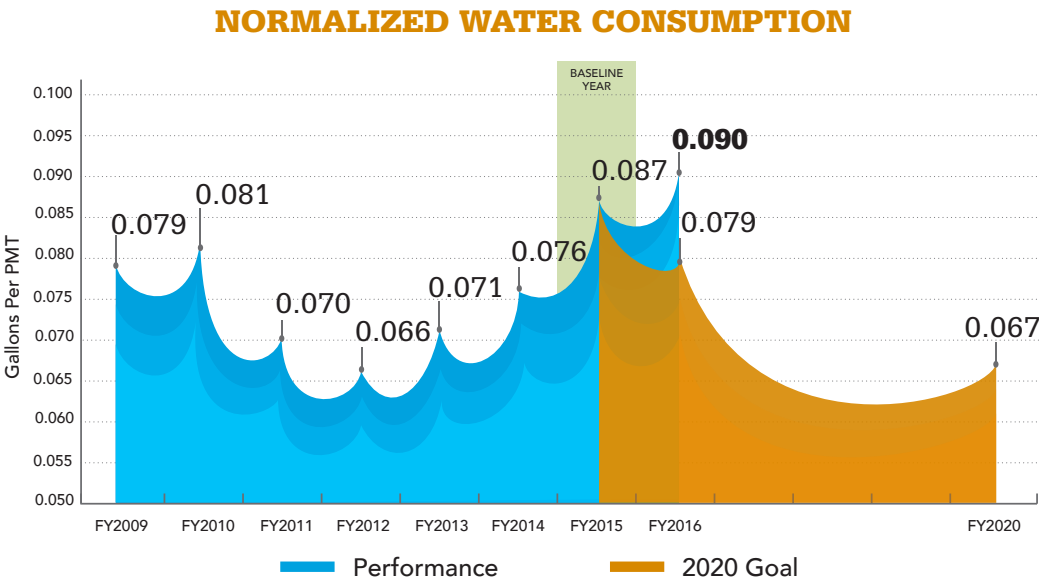
DECREASE NORMALIZED WATER CONSUMPTION BY **25% BY 2020**

Water is an essential part of SEPTA's operations from bus washers to bathrooms at passenger stations. SEPTA aims to decrease consumption in recognition of fresh water as a limited resource, particularly given the uncertain future impacts of global climate change on fresh water.

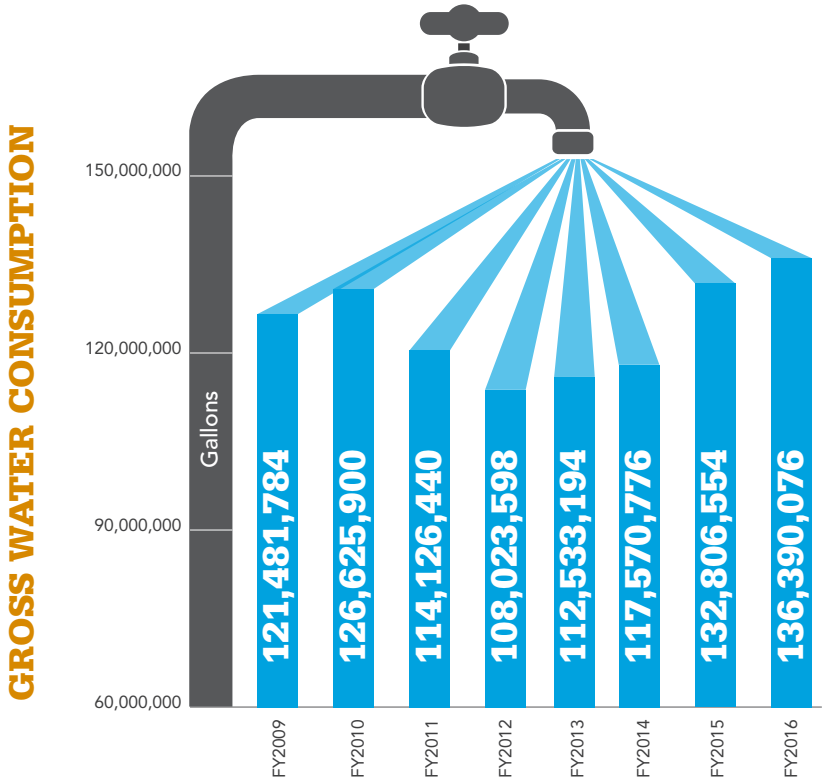
In order to understand water efficiency progress, two factors must be measured and compared – the gross (total, non-normalized) amount of water used and ridership. As ridership increases so might SEPTA's water consumption from additional passengers using SEPTA facilities or the need to run more service and therefore wash additional vehicles. In order to track SEPTA's progress, gallons of water consumed are divided by the number of passenger miles traveled (PMT) each year (normalized data).

### HOW WE'RE DOING:

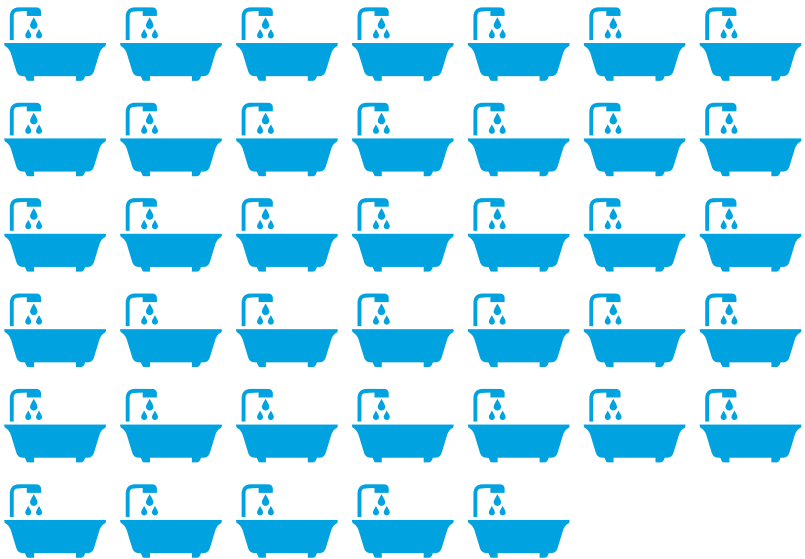
From FY2015 to FY2016, SEPTA increased its normalized water consumption. SEPTA is currently investigating the cause of the increase. An action plan will be developed to address increased water consumption at the Authority.



A large portion of SEPTA's water consumption comes from washing all buses and rail vehicles daily. In an effort to reduce water consumption at SEPTA facilities, bus washer replacements and water efficient fixtures are being integrated into capital improvement projects.



**In 2015, SEPTA saved 216,935 GALLONS** from bus washer retrofits at Midvale Depot. That's the equivalent of **5,423 40 GALLON BATHTUBS**



### WHAT DOES IT MEAN?

- **Gallons:** amount of water SEPTA consumes at its facilities and passenger stations.
- **Passenger Miles Traveled (PMT):** riders multiplied by average trip length, a measure used to normalize water consumption.
- **Normalized Water Use:** Water consumption (gallons) divided by ridership (PMT), used to ground performance in SEPTA's core business of transporting people.



### BUS WASHER RETROFITS

In FY2015 and FY2016, two new bus washers were installed at Midvale and Allegheny Depots. The washers run on reclaimed water reducing consumption.

### ESCO IMPROVEMENTS

As a part of forthcoming ESCO projects "low-flow" water fixtures will be installed to increase water efficiency.





## REDUCE STORMWATER RUNOFF

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

Runoff is generated when stormwater accumulates on roofs and impervious surfaces (like concrete and asphalt) and flows into sewer systems. In SEPTA's

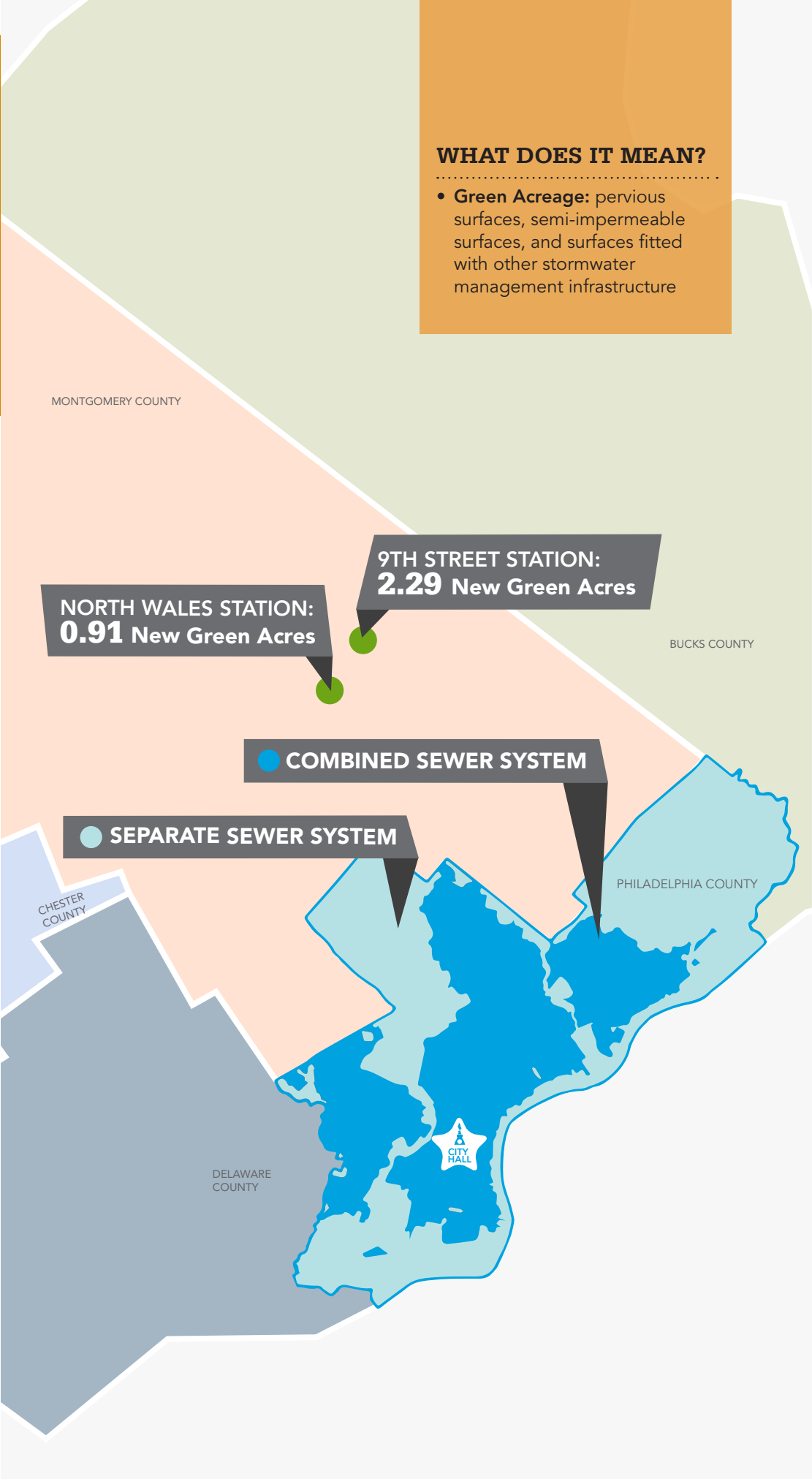
service area, there are both separate sewer systems and combined sewer systems from which runoff can pose negative environmental impacts.

In separate sewer systems (SSS), sanitary sewage (from households and commercial buildings) is piped directly to treatment facilities while stormwater runoff flows directly from the streets into local waterways. This stormwater runoff carries chemicals and pollutants picked up from streets and surfaces and generates pollution in these waterways. Conversely, in combined sewer systems (CSS), stormwater runoff joins sanitary sewage which are piped together to water treatment facilities. While CSS typically prevents pollution from untreated runoff, when the capacity of CSS is exceeded, typically due to excessive rainfall, the combined sewage overflows into local waterways untreated and both the stormwater runoff and sanitary sewage generate pollution.

In order to address these environmental concerns, SEPTA aims to increase the area of its permeable surfaces. SEPTA will continue to consider stormwater management in the design process of future building and renovation projects and will implement a Stormwater Management Plan outlining sites for future stormwater management projects.

### HOW WE'RE DOING:

From FY15 to FY16, stormwater projects at North Wales Station and 9th Street Station increased SEPTA's green acreage by 3.2 acres.



### WHAT DOES IT MEAN?

- **Green Acreage:** pervious surfaces, semi-impermeable surfaces, and surfaces fitted with other stormwater management infrastructure

### SOUTHERN STORMWATER PROJECT

SEPTA will be installing bio-retention basins and one large detention basin at Southern Depot to capture more than 8 acres of stormwater, making this SEPTA's largest stormwater management project to date.

### STORMWATER MASTER PLAN

The implementation of rain gardens, underground retention basins, and other green infrastructure have been utilized in many station and facility projects including Washington Lane Station, 23rd and Venago bus loop, 33rd and Dauphin, North Wales, Germantown Station, and Southern Garage. In 2017, SEPTA will build on the momentum of these successful projects and publish a Stormwater Master Plan to identify a list of properties where the installation of green stormwater infrastructure will be prioritized.

### 69TH STREET TRANSPORTATION CENTER GREEN INFRASTRUCTURE

The new West Terminal at 69th Street Transportation Center featured many sustainable design features, including two new green roofs and SEPTA's first green wall to reduce stormwater runoff. Green roofs and green walls will continue to be incorporated into passenger station designs as a stormwater management strategy.

### TREE PLANTINGS

Tree plantings have helped to capture and retain stormwater on SEPTA properties while helping to beautify the stations. SEPTA will continue to plant trees at passenger stations and SEPTA properties as part of the Authorities commitment to reduce stormwater runoff.







**WHY MANAGE STORMWATER:** In SEPTA's service area, there are both separate sewer systems and combined sewer systems, each of which threaten our local waterways. Green acreage and stormwater management features reduce the amount of water that enters these sewer systems and allows waste water and runoff to be naturally cleaned by the ground instead. By decreasing the amount of water that flows into our sewers, SEPTA can support efforts to reduce local water pollution while also beautifying transit facilities.

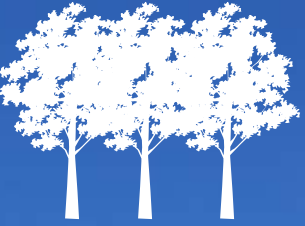

**SEPARATE SEWER SYSTEM:** sanitary sewage (liquid waste that goes down drains from households and commercial buildings) is piped directly to treatment facilities while stormwater runoff is piped directly from streets to local waterways.



**COMBINED SEWER SYSTEM:** stormwater runoff joins sanitary sewage and are piped together to water treatment facilities. When the capacity of the system is exceeded, untreated combined sewage flows directly into local waterways.

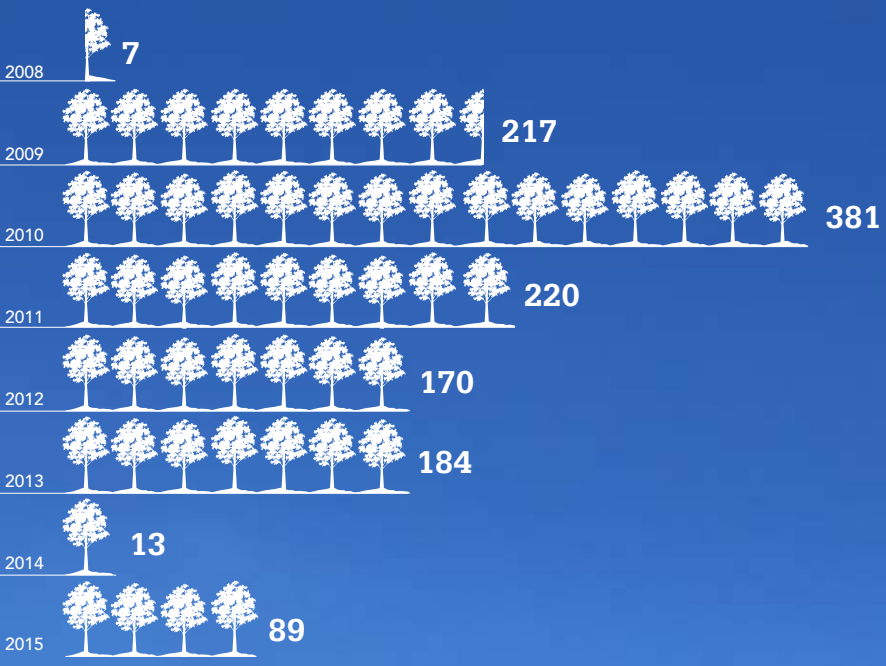


**25 MATURE TREES** can intercept up to **25,000** gallons of water annually. This means up to **1,281,000** gallons of water are intercepted annually by SEPTA's new trees.



**100 TREES** can sequester up to **4,800** lbs of carbon per year. This means up to **61,400** pounds of carbon are sequestered annually by SEPTA's new trees.

**1,281 TREES** have been planted from 2008-2015







# 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

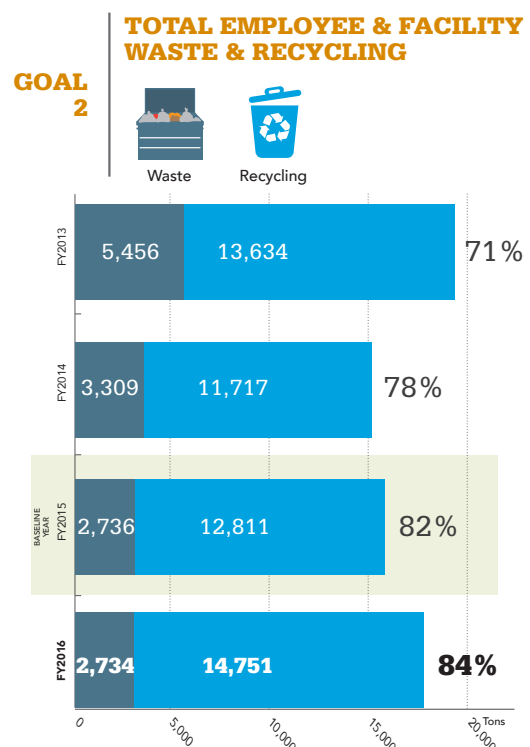
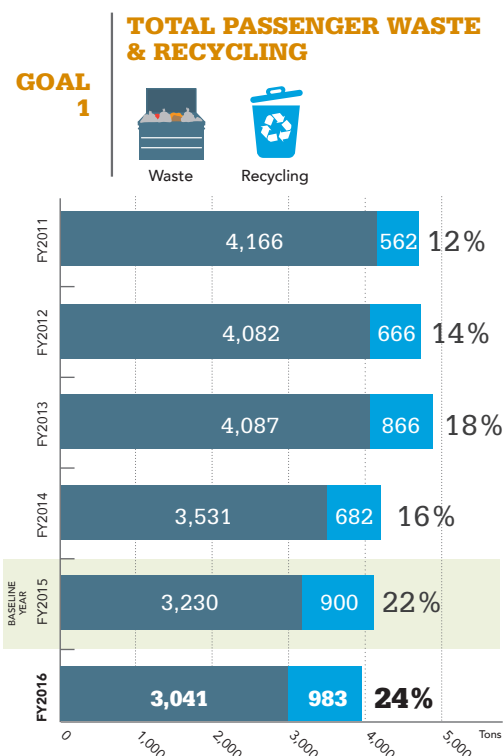
SEPTA will continue to facilitate recycling programs at facilities, look for new ways to reduce and reuse its waste products, and make it easier for passengers to recycle at stations by providing easy-to-use waste and recycling receptacles.

SEPTA collects waste at passenger stations, at SEPTA facilities, and at construction sites. SEPTA has established waste management as an environmental goal to minimize the harmful environmental impacts of landfills and reduce waste hauling costs.

In order to continue to mitigate negative environmental impacts due to waste disposal,

### HOW WE'RE DOING:

From FY2015 to FY2016, SEPTA reached a 24.4% passenger diversion rate and an 84% employee and facility diversion rate putting SEPTA on track to exceed both waste goals by 2020.



The majority of material SEPTA recycles is from construction and demolition projects. Recycling rates are uniformly lower when individuals, either passengers or employees, have the choice to recycle. While executing culture change on an individual level has proven more difficult than implementing systemic change, SEPTA continues to see growth in both passenger and employee recycling rates. The success of the program can be largely attributed to education of passengers and employees as well as an investment in combo waste and recycling units.

### WHAT DOES IT MEAN?

- **Passenger diversion rate:** The percentage of material that is recycled from SEPTA passenger stations
- **Facility diversion rate:** The percentage of municipal solid waste and construction & demolition waste recycled by employees

### STATION & FACILITY RECYCLING PROGRAMS

SEPTA has developed successful station and facility recycling programs with annual improvements in diversion rates as high as 50% at some facilities. SEPTA will develop new ways to engage passengers and employees on how to "recycling right" in order to improve recycling rates in the future.

### RECEPTACLE & LID REDESIGN

New side-by-side trash and recycling bins will be installed on the Broad Street Line, the Norristown High Speed Line, at Frankford Transportation Center, and at 69th Street Transportation Center, specially designed to help improve passenger compliance with the recycling program.

### EXPANSION OF HARD-PLASTICS RECYCLING

The industrial hard plastics recycling program has been expanded to all bus maintenance shops and depots. SEPTA will continue to explore new ways to expand this program.

### WOOD & DIRTY RUBBLE RECYCLING

SEPTA has developed a new contract for recycling various construction and demolition materials, including wood and mixed rubble. Recycling these materials has generated significant savings.





# HEALTHY COMMUNITIES & WORKFORCE





One of SEPTA's central goals is to provide equitable and accessible transportation service throughout Southeastern Pennsylvania. In addition to setting goals around mobility and connectivity throughout the service area, SEPTA's social sustainability goals strive to affect an even bigger positive change in the workforce and communities throughout the region.

The following goals include targets to increase participation of disadvantaged business enterprises, improve food access, invest in employee health and professional development, and provide social and economic opportunities in communities through the participation in ongoing local and regional planning efforts.





# HEALTHY COMMUNITIES & WORKFORCE

2020 GOAL	Baseline (FY2015)	FY2016	FY2017	FY2018	FY2019	FY2020	2020 Target
 <b>GOAL 6</b> 1. LEAD 3 PLANNING STUDIES PER YEAR 2. COLLABORATE WITH 30 EXTERNAL PLANNING EFFORTS PER YEAR	New goal: no baseline	<b>1. Initiated 1 new planning study</b> <b>2. Collaborated with 38 planning efforts</b>	n/a	n/a	n/a	n/a	1. Lead a total of 15 planning studies 2. Collaborate on a total of 150 planning studies
 <b>GOAL 7</b> HOST FIVE FARMERS MARKETS ON SEPTA PROPERTY BY 2020	4	<b>4</b>	n/a	n/a	n/a	n/a	5
 <b>GOAL 8</b> IMPLEMENT FIVE-YEAR HUMAN RESOURCES MASTER PLAN	New goal: no baseline	<b>Mater Plan Adopted with 23 initiatives</b>	n/a	n/a	n/a	n/a	
 <b>GOAL 9</b> INCREASE FFY2016 BASELINE OF CONTRACTING DOLLARS COMMITTED TO SMALL, MINORITY AND WOMEN-OWNED COMPANIES BY 20%.	New goal: no baseline	<b>16% (FFY2016)</b>	n/a	n/a	n/a	n/a	19.2%





### HOW WE'RE DOING:

In FY 2016, SEPTA collaborated with 38 planning efforts and initiated 1 new planning study. Three additional SEPTA-led planning studies are ongoing.

# GOAL 6

## INTEGRATE WITH LIVABLE COMMUNITIES

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

Through long-range planning, SEPTA is able to leverage transit to help develop livable communities.

SEPTA currently collaborates with non-profit organizations, municipalities and cities to develop comprehensive plans, transportation studies,

neighborhood plans, streetscape designs, and station area or transit-oriented development (TOD) plans. These planning efforts help SEPTA and the communities it serves create a shared vision for the future, prioritize capital funding and provide better service to its residents.

SEPTA also leads planning studies, facilitates partnerships and leverages existing assets to help create the most effective and influential transit service. By enabling well-designed and functional transportation assets, SEPTA spurs economic development: improving access to jobs and services, increasing property values, and reducing the impact of car ownership on household budgets.

Planning Studies	
WEST CHESTER RAIL: RESTORATION OF SERVICE FEASIBILITY STUDY	Initiated FY 2016
BETHLEHEM BRANCH EXTENSION CAPITAL/ OPERATING COSTS AND RIDERSHIP FORECAST	Ongoing
BROAD STREET LINE EXTENSION TO THE NAVY YARD	Ongoing
KING OF PRUSSIA RAIL EXTENSION	Ongoing

\*For a list of SEPTA's Collaborative Planning Efforts in FY2016, see the appendix.

### 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 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

TOD promotes mixed-use development where homes, retail and services are co-located, a quality importance to seniors. SEPTA tracks participation in its "Seniors Ride Free" program to support this age-friendly aspect of TOD.

### BIKES & TRANSIT

TOD promotes not only transit use, but also walking and biking. TOD reduces the need for automobile use by creating compact walking and biking friendly communities. In 2015, SEPTA completed its first Cycle-Transit Plan. SEPTA has also undertaken an inventory of rails to trails projects with its assets, which will continue to be implemented and updated through FY 2020.

### ADA ACCESSIBILITY

In November of 2015, SEPTA broke ground on an ADA accessibility and renovation project at 40th Street subway station. This project will install two new elevators increasing accessibility for community members. As 40th Street Station's location in West Philadelphia provides access to residential, educational, and medical centers, this renovation project will increase accessibility to numerous resources. In addition to this renovation project, ADA accessibility improvements are being implemented at many other stations as a part of SEPTA's Rebuilding the System initiative.

### TOD-SUPPORTIVE STATION IMPROVEMENTS

SEPTA has successfully coordinated station improvements with TOD construction. Two recent examples are Temple University Station in conjunction with Paseo Verde and Wayne Junction Station with the completion of Nicetown Court II. SEPTA is convening a internal TOD task force to help coordinate station improvements with TOD construction.



# GOAL 7



## IMPROVE ACCESS TO LOCAL FOOD VIA TRANSIT

### HOST FIVE FARMERS MARKETS ON SEPTA PROPERTY BY 2020

Many Philadelphians are challenged to accessing quality fresh food on a regular basis. Often times, finding healthy food requires traveling significant distances or paying more – a particular burden for those living

in low-income communities. In attempts to improve food accessibility, SEPTA hosts several farmers markets on its properties. SEPTA locates these 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.

#### HOW WE'RE DOING:

SEPTA currently hosts four farmers markets on SEPTA property

#### WHAT DOES IT MEAN?

- **Food Desert:** an urban area in which it is difficult to buy affordable or good-quality fresh food

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



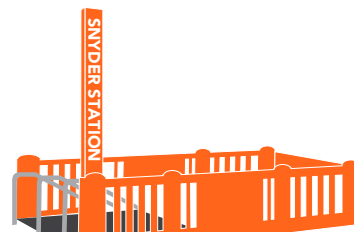
FRANKFORD  
TRANSPORTATION CENTER



OLNEY TRANSPORTATION  
CENTER



46TH STREET  
STATION



BROAD & SNYDER



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

Since 2009, SEPTA has held an annual two-week "Stop Hunger at Your Station" food drive. This year, donation sites were set up at 43 designated stations, several of which had SEPTA employees accepting food and monetary donations. This year, a specially wrapped "Stop Hunger at Your Station" SEPTA bus toured the region collecting items throughout the two weeks.

Through the annual food drive and other community service programs, SEPTA demonstrates a commitment to improving the health and wellness of communities it serves in Southeastern Pennsylvania.

#### PHILABUNDANCE

Almost  
**15,500 pounds  
of food** - or  
**15,500 meals**

were collected for Philabundance during the Authority's two-week "Stop Hunger at Your Station" food drive.

**\$9,000 of  
monetary gifts** were received during the food drive which means an additional 18,000 meals for residents served by Philabundance and its member agencies.

GRAND TOTAL OF  
**33,500  
MEALS**  
FROM THIS  
YEAR'S DRIVE

Since 2009, SEPTA customers and employees have donated more than **139,000 POUNDS OF FOOD** and **APPROXIMATELY \$53,000** which is the equivalent to more than

**245,000 MEALS**

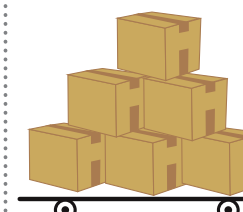


WALNUT HILL  
COMMUNITY FARM



Lbs of  
produce  
distributed  
in 2015  
=  
**2,000 LBS**

# of boxes donated to CHOP's  
early head start families in 2015



**1,325 LBS**



#### COOKING DEMONSTRATIONS

For two 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 demos have been extremely popular attracting both SEPTA customers and employees and will continue in the upcoming farmers market season.

#### WALNUT HILL COMMUNITY FARM

The Walnut Hill Community Farm, located on a SEPTA property next to 46th Street Station in West Philadelphia, has been run by The Enterprise Center generating fresh, local produce for community members since its inception in 2010. In 2015 the farm distributed 2,000 lbs of produce to its 125 members.





# GOAL 8

## DEVELOP A HIGHLY SKILLED, HEALTHY & VERSATILE WORKFORCE

### IMPLEMENT FIVE-YEAR HUMAN RESOURCES MASTER PLAN

#### HOW WE'RE DOING:

HR identified 23 distinct goals for the HR Master Plan.

As an employer of more than 9,000 employees, SEPTA strives to support the well-being and professional development of its workforce. SEPTA's Human Resources Master Plan was developed to ensure SEPTA 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 practices.

#### FIVE-YEAR MASTER PLAN FOCUS AREAS

**RECRUITMENT**  
  
Market SEPTA as an employer of choice.

**WORKFORCE PLANNING & HIRING**  
  
Streamline all aspects of hiring process.

**ONBOARDING NEW EMPLOYEES**  
  
Reimagine employee orientation and new employee classes.

**TRAINING & CAREER ADVANCEMENT**  
  
Expand training and apprenticeship opportunities for SEPTA employees.

**BENEFITS SUPPORT & PERFORMANCE MANAGEMENT**  
  
Evaluate the current performance management, compensation, pension and benefits of SEPTA employees.

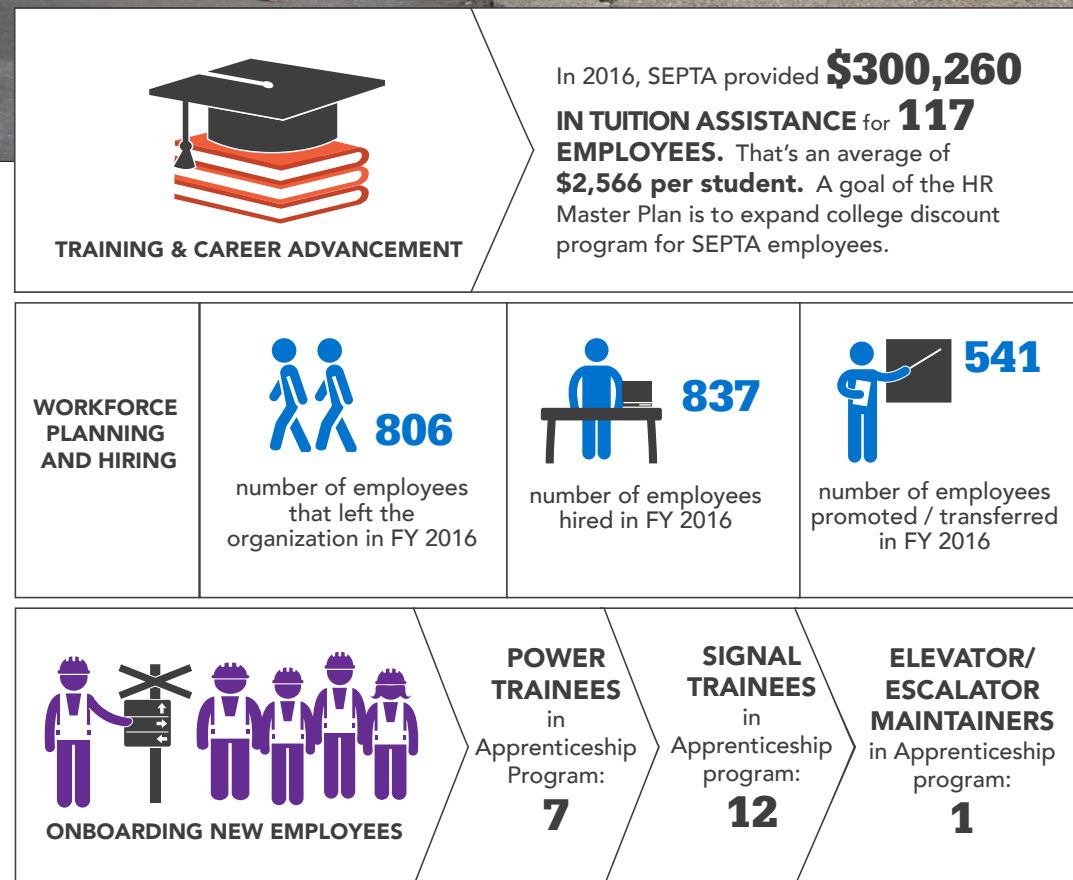
**ABSENCE MANAGEMENT & WELLNESS**  
  
Improve tracking of long-term absences. Grow wellness offerings to SEPTA employees.

**INFORMATION SYSTEMS**  
  
Improve data management, technology and communications in the HR Division.

A key theme in the master plan is transitioning Human Resources operations at SEPTA from "transactional" to "strategic" in seven focus areas. By making this transition, the Human Resources Division will help to advance SEPTA's Strategic Business Plan (FY2015-2019) goal to attract, develop and retain a diverse, healthy and versatile workforce, a crucial step in achieving a vision to become the region's preferred choice for transportation while providing a healthy work environment for employees.

#### WHAT DOES IT MEAN?

- Human Resources Master Plan:** Recommends five-year initiatives to improve the employee experience to increase the welfare of employees and ensure SEPTA remains an employer of choice.
- Distinct Goals:** Concrete goals set within the HR Master Plan to measure progress.



#### VOLUNTEER OPPORTUNITIES

SEPTA will continue to build a culture of volunteerism by providing volunteer opportunities for its employees that offer service to the community. SEPTA partakes in a Spring Clean-Up, an annual food drive for Philabundance, and sends volunteers to the Philadelphia Flower Show each year.

#### RECRUITMENT

In 2016 SEPTA launched the "It's Your Move" campaign. The theme of the campaign is to encourage potential employees to make their move to SEPTA, one of the country's best employers.

#### AIM AD

SEPTA launched its Advancing Internal Management program for Assistant Directors (AIM-AD) in 2015. The program is designed to develop future Assistant Directors in Transportation, Control Center, Vehicle & Equipment Maintenance and Construction. Candidates who are selected for the program participate in development activities including classroom training, acting roles, on-the-job training assignments with existing Assistant Directors, panel discussions with stakeholders and customers, director mentoring and shadowing, and cross-team projects. Based on the continued success of the program, SEPTA will continue to offer AIM AD program opportunities in 2017.



# GOAL 9

## SUPPORT REGIONAL BUSINESS EQUITY

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

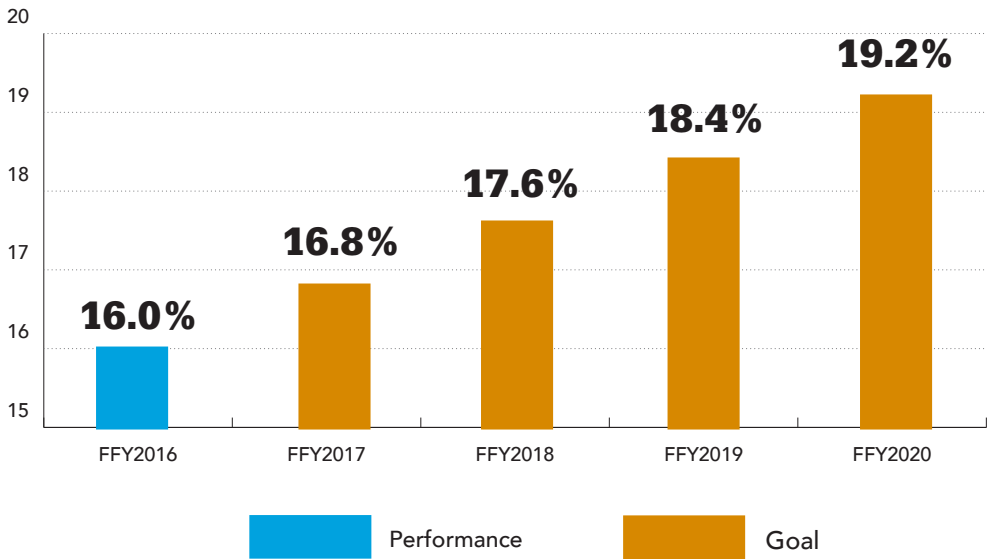
SEPTA is committed to expanding opportunities for small, minority and women-owned businesses. The DBE program is intended to even the playing field by reducing burdens on small businesses and fostering equal opportunity for the award of SEPTA contracts. By providing DBE certifications and committing to award a certain percentage of SEPTA's annual contract dollars to DBEs, SEPTA is able to provide support to regional small businesses.

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### HOW WE'RE DOING:

In FFY 2016 SEPTA awarded 16% of its contracting dollars to DBEs - 2% above its Federal goal of 14%.

### DBE CONTRACTING DOLLAR PERCENTAGE



### WHAT DOES IT MEAN?

- **DBE:** Disadvantaged Business Enterprise – A small business that is socially and economically disadvantaged, often minority or women-owned.
- **Contract Dollars:** The amount of money SEPTA allocates to external contractors within a given year.

As SEPTA wishes to support local business growth, it is committed to abide by equitable contracting practices and expand contracting opportunities for small, minority and women-owned businesses. SEPTA's DBE Program Office certifies DBEs and also provides technical assistance, training, and other resources for vendors looking to do business with us. SEPTA's substantial capital budget gives it a strong 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.

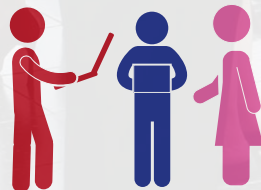


Number of new DBE certifications awarded in FY2015: **43**

SEPTA's DBE office is one of only five certification agencies in the state and one of three in the region making it an essential resource for small, disadvantaged businesses in Pennsylvania.



Average contract value per DBE firm in FY2015: **\$322,513**



Average DBE applications (for new certifications and continued eligibility) processed per employee in FY2015: **153.5**



Number of DBE Firms granted Continued Eligibility in FY2015: **264**

A high number of DBE firms who apply for and receive Continued Eligibility demonstrates the value and opportunity of DBE certification. DBE certification is considered by some industry professionals to be the gold standard certification for small, minority and women-owned businesses.

### EDUCATION & AWARENESS

In 2015, project partners and stakeholders were provided with technical guidance and best practices on fulfilling DBE program requirements. Additionally, a total of 25 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/pre-proposal meetings, and various other outreach and networking events. Furthermore, the DBE Program Office conducted two 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 participated in a Business Development Conference panel in association with Cheyney University's DBE/DB/SBE Supportive Services Centers. SEPTA will continue to host educational & awareness events in the future.

### OUTREACH EVENTS

The DBE Program Office participated in 11 outreach events in 2015. Among them, staff coordinated the "Doing Business with SEPTA" Informational and Networking Session outlining the future projects in SEPTA's pipeline. The event also provided DBEs and SBes an opportunity to learn from successful small firms and to network with representatives from various departments throughout the Authority. In addition, the department participated with regional entities and industry-wide organizations in various events like the Greater Philadelphia Small Business Expo and the Philadelphia Airport's Business Opportunities in Transportation workshop. SEPTA will continue to host similar outreach events in the future.



# ECONOMIC VITALITY

One of the guiding principles of SEPTA's sustainability program is that all sustainability related projects be cost-neutral or net-positive. While this rigorous standard could be perceived as limiting, it in fact spurred new and innovative ways to execute a sustainability program that benefits the bottom-line.

The final chapter of SEP-TAINABLE 2020, Economic Vitality, includes goals that expand SEPTA's positive economic impact by formulating sustainability best management practices, bringing new financial resources to bear and growing ridership throughout the region.





# ECONOMIC VITALITY

2020 GOAL	Baseline (FY2015)	FY2016	FY2017	FY2018	FY2019	FY2020	2020 Target
<b>GOAL 10</b>  INCREASE PASSENGER TRIPS PER CAPITA 6% BY 2020	80.6 UPT	<b>79.9 UPT per Capita</b>	n/a	n/a	n/a	n/a	84.8 UPT
<b>GOAL 11</b>  OUTPERFORM INDUSTRY ANNUALIZED GROWTH RATE	\$3.90 (\$0.50 below most recent industry data)	<b>\$4.04</b> (\$0.36 below most recent industry data)	n/a	n/a	n/a	n/a	n/a
<b>GOAL 12</b>  1. ACHIEVE ISO 14001 AT TWO SHOPS 2. INSTITUTE AN ENVIRONMENTAL MANAGEMENT CHECKLIST FOR CAPITAL PROJECTS	1. 1 Shop Certified 2. n/a	<b>1. 1 Shop Certified</b> <b>2. Checklist models evaluated</b>	n/a	n/a	n/a	n/a	1. 2 Shops Certified 2. All Capital Projects Evaluated With Checklist
<b>GOAL 13</b>  GROW POSITIVE FINANCIAL IMPACTS OF SUSTAINABILITY INITIATIVES ANNUALLY	Grants: \$122,600,000 Revenue: \$418,696 Savings: \$218,265	<b>Grants: \$2,600,000</b> <b>Revenue: \$278,675</b> <b>Savings: \$1,559,939</b>	n/a	n/a	n/a	n/a	n/a



# GOAL 10



## INCREASE RIDERSHIP

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

Moving people is SEPTA's core business. Moving more of them will make both SEPTA and the region more

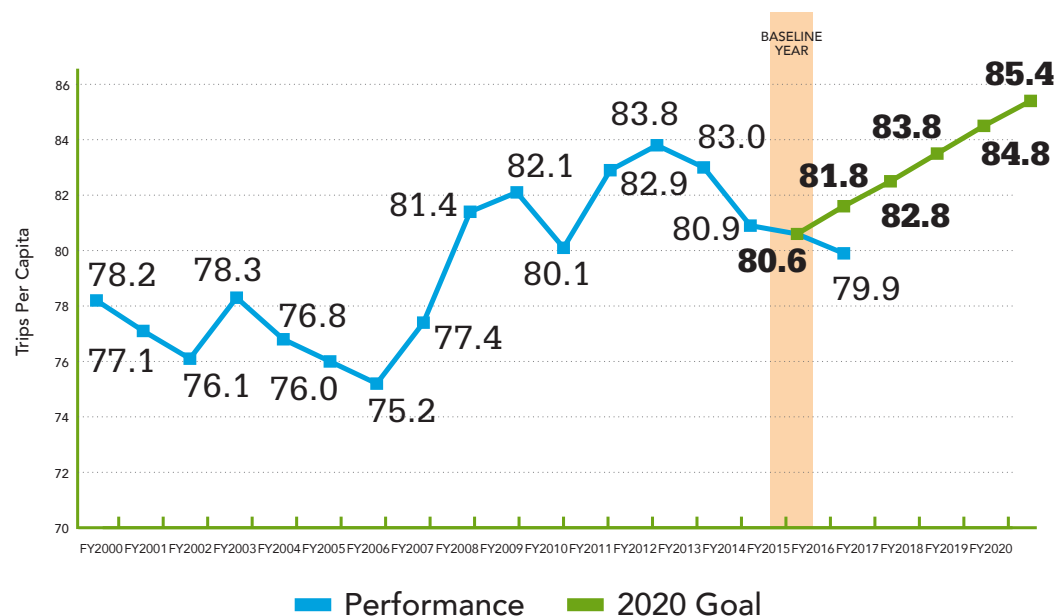
sustainable, whether it be thru transit-oriented development that reduces per capita GHG emissions or new service initiatives that improve system productivity.

SEPTA's goal to increase passenger trips per capita by 6% by 2020 will be accomplished through a multi-pronged approach; service expansions, enhanced service, innovative partnerships and a proactive approach to improving the customer experience.

#### HOW WE'RE DOING:

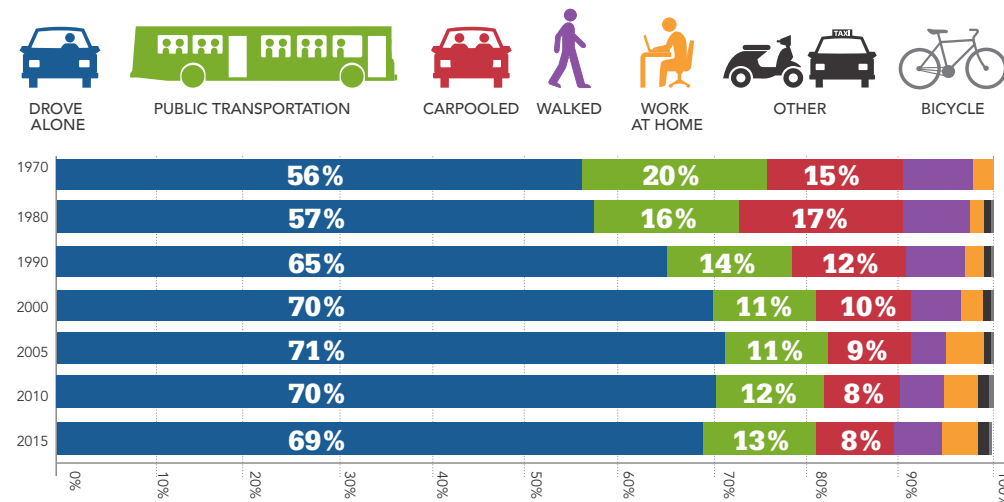
From FY2015 to FY2016, SEPTA's normalized ridership decreased by 1%. The new goal, to increase normalized ridership by 6% is based off of performance goals established by PennDOT's 2016 Performance Review of SEPTA, which is performed every five years.

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



Since the 1970s, vehicle ownership has become more popular and has resulted in an increase of commuters driving to work alone. The past decade has seen a revival of this trend, and SEPTA is continually seeking to capitalize off of this as an opportunity to expand its customer base.

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



#### WHAT DOES IT MEAN?

- **Unlinked Passenger Trip (UPT):** a trip on one transit vehicle regardless of the type of fare paid or transfer presented
- **Normalized Ridership:** SEPTA divides the number of UPT by the population of the 5 counties SEPTA serves

#### 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. The functionality of these apps will dramatically improve when better data is introduced to the system through installation of cellular tracking devices.

#### ANNUAL SERVICE PLAN

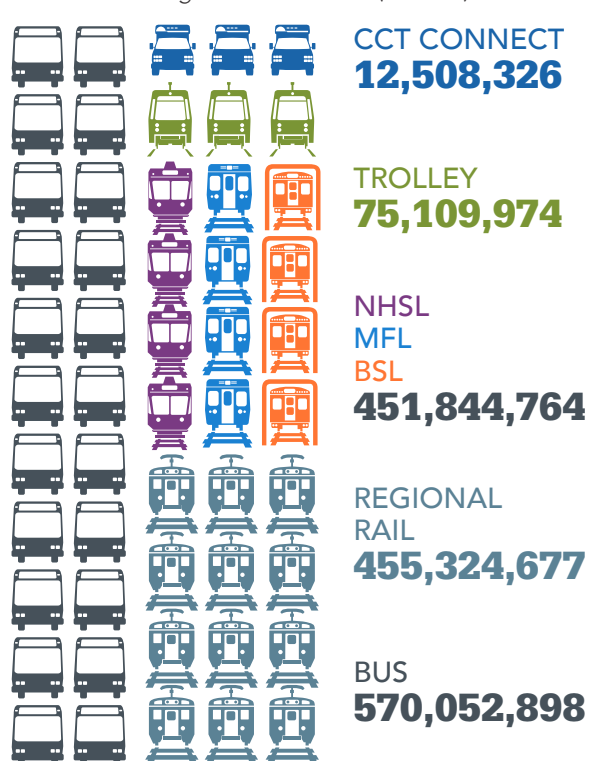
Each year, SEPTA evaluates route specific initiatives to grow ridership and improve system efficiency.

#### RIDERSHIP GROWTH INNOVATION TEAM

In 2017, SEPTA will launch an internal Ridership Growth Innovation Team. The Innovation Team's task will be to execute programs and partnerships to increase passenger trips per capita by 6%.

SEPTA buses log the most service miles of any mode in the SEPTA system. The 100 + bus routes across SEPTA's service area account for more than one third of SEPTA's total service annually. SEPTA's regional rail logs the second most miles traveled by passengers.

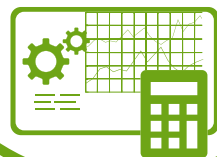
#### SEPTA MODES TRAVELED FY2016







# GOAL 11



## IMPROVE OPERATING EXPENSE PERFORMANCE

### OUTPERFORM INDUSTRY ANNUALIZED GROWTH RATE

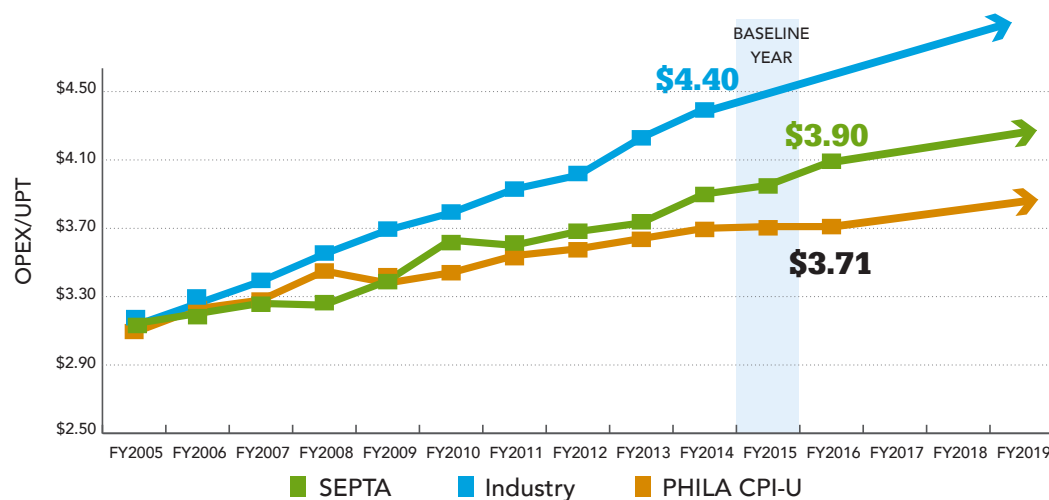
Operating expense per trip is used as a measure of SEPTA's cost-effectiveness. One way to gauge the economic efficiency of operations is

to compare the cost of SEPTA's operations to the transportation industry. SEPTA has traditionally spent less money to operate services for unlinked passenger trip than other transportation authorities in the United States, and SEPTA is committed to continuously outperform the industry in the future. It is important to keep operating expenses low to ensure that SEPTA is economically viable as a business and that it will continue to be able to provide affordable transit service to the region.

#### HOW WE'RE DOING:

SEPTA spends \$0.36 less per unlinked passenger trip than the industry average. In the United States there are more than 4,100 public transportation organizations ranging from large multi-modal systems to single-vehicle special service providers.

#### 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.

SEPTA calculates its operating expenditure by adding all of the expenses used to operate its transportation services, including overhead. This includes costs of fuel for buses, electricity for buildings and rail cars, and salaries of the employees who operate and fix the vehicles. SEPTA's sustainability programs and initiatives yield savings that lower operating costs.



**1** HYBRID BUS decreases gas consumption by an average of **0.55** MILES PER GALLON per year, saving SEPTA **\$986,000** in FY2016.



From FY 2015 – FY 2016 SEPTA REDUCED THE TOTAL AMOUNT OF ENERGY CONSUMED AT EMPLOYEE FACILITIES by **89,546** kWh. That's enough energy to power **89** HOMES and saves the authority **\$7,163.68** dollars.



BY CONTINUING TO INCREASE RECYCLING AT EMPLOYEE FACILITIES AND PASSENGER STATIONS, SEPTA SAVES MONEY THROUGH REBATES AND HAULING SAVINGS



In FY 2016, SEPTA SAVED **\$74,924** BY RECYCLING

#### WHAT DOES IT MEAN?

It is important to monitor SEPTA's operating expenditure as this is a key indicator of economic sustainability.

#### ISO 14001

In September of 2013, SEPTA's Environmental and Sustainability Management System (ESMS) received a certification under the International Organization for Standardization's 14001:2004 standard for environmental management at Berridge Shop. The impetus to develop, implement and maintain an ESMS is rooted in SEPTA's Sustainability Program, and its focus on creative ways to advance environmental stewardship, increase efficiency, and reduce operating costs. SEPTA will certify Wayne Shop to the new ISO 14001:2015 certification by 2020. Additionally, SEPTA will introduce an ISO Lite program to remaining SEPTA facilities. ISO Lite will focus on improving environmental compliance at SEPTA shops.

#### LIFECYCLE COSTING

In 2015, SEPTA launched a Green Cleaning Pilot. The pilot not only tracked the effectiveness of the cleaning products but also focused on quantifying the financial benefits of utilizing environmentally friendly cleaning products over time. Based on lessons learned from the Green Cleaning Pilot, SEPTA will begin to integrate Life Cycle Analysis (LCA) when evaluating certain products for purchase.

#### EFFICIENCY & RECYCLING

In November 2012, SEPTA released its Energy Action Plan outlining eighteen initiatives to reduce energy demand, increase energy efficiency, and utilize less GHG intensive sources of energy. Together these initiatives will improve SEPTA's energy efficiency and reduce operating costs by more than \$2M annually. The plan will be updated moving forward. Additionally, SEPTA will continue to reduce waste disposal costs through recycling and the installation of waste and recycling compactors.





# GOAL 12

## INSTITUTIONALIZE ENVIRONMENTAL MANAGEMENT PRACTICES

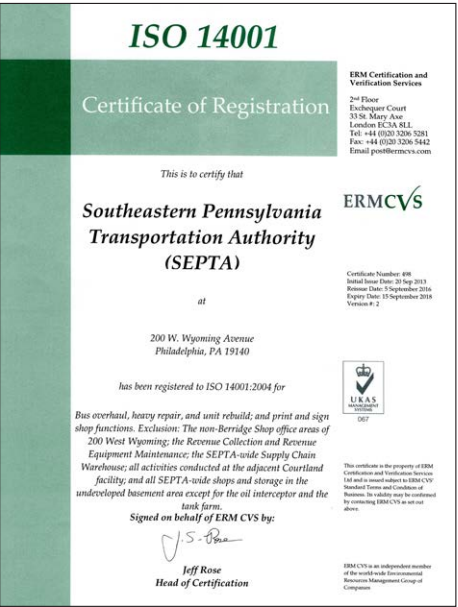
1. **ACHIEVE ISO 14001 CERTIFICATION AT 2 SEPTA FACILITIES**
2. **INSTITUTE AND COMPLETE AN ENVIRONMENTAL MANAGEMENT CHECKLIST FOR CAPITAL PROJECTS BY 2020**

SEPTA realizes financial savings when sustainable best practices are integrated into renovations of existing facilities, construction of new facilities and

operations at existing facilities. An environmental management standard like ISO 14001 provides SEPTA with a framework to improve the environmental performance of operations at SEPTA bus and rail shops.

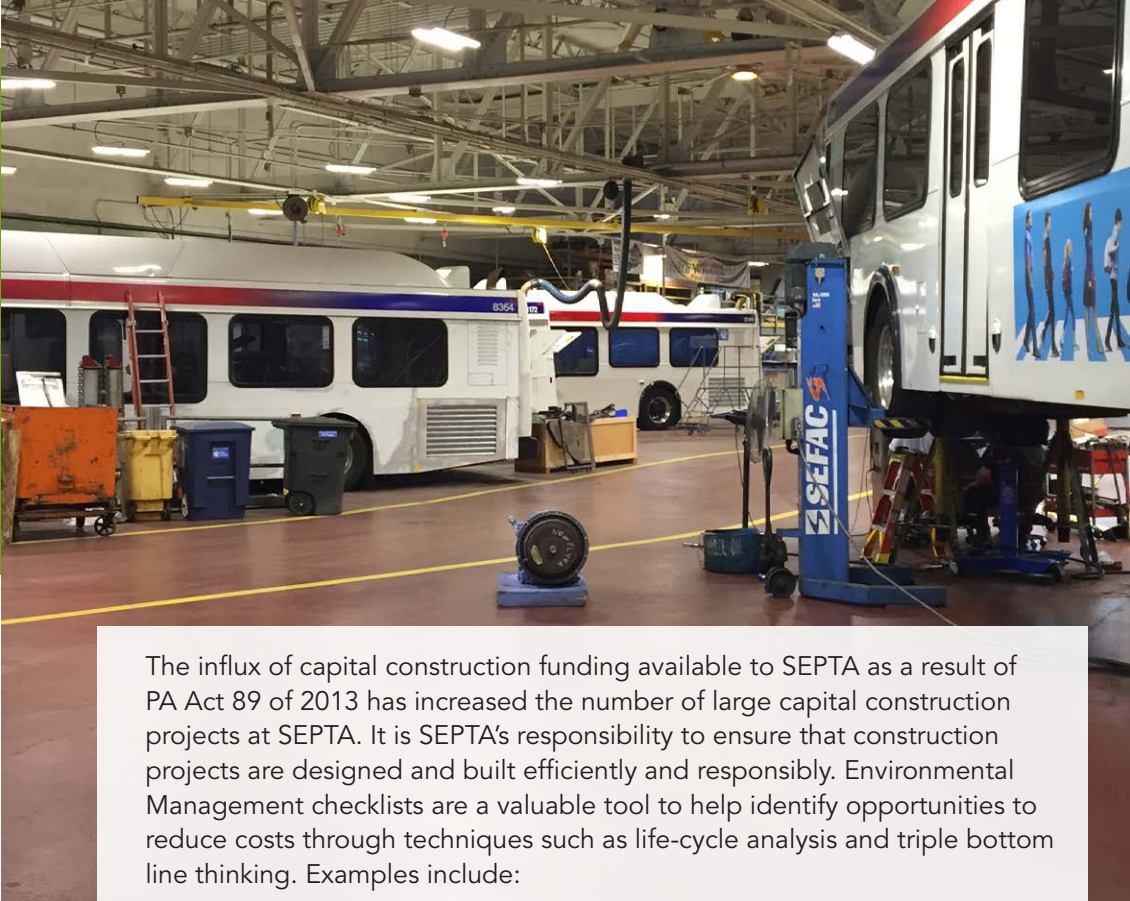
### HOW WE'RE DOING:

SEPTA has achieved ISO 14001 certification at 1 shop. An environmental management checklist is being vetted internally.



Establishing an environmental management checklist for the renovation of existing facilities and the construction of new facilities will result in financial savings for SEPTA in the form of reduced energy and water bills at the locations, reduced disposal costs and improved integration into the existing community. By prescribing to environmental management practices, SEPTA increases its environmental and economic sustainability ensuring that in the future it will continue to be able to provide service to the region. Examples of environmental management checklist focus areas include:

- Resource Allocation
- Climate & Risk
- Enhance Public Health and Safety



The influx of capital construction funding available to SEPTA as a result of PA Act 89 of 2013 has increased the number of large capital construction projects at SEPTA. It is SEPTA's responsibility to ensure that construction projects are designed and built efficiently and responsibly. Environmental Management checklists are a valuable tool to help identify opportunities to reduce costs through techniques such as life-cycle analysis and triple bottom line thinking. Examples include:

- Designing structure with a high percentage of solar reflectance index surfaces (SRI) will reflect sunlight and keep the building cooler in the hot summer months eliminating the need to over cool the building.



At Berridge Shop, nine significant aspects, or ways SEPTA's activities impact the environment, were identified as part of the ISO 14001 program. Better management of these environmental aspects can reduce costs and have a positive financial impact. Below are some examples:



### HAZARDOUS & NON-HAZARDOUS WASTE

Better storage and handling of hazardous waste can reduce injuries and fines.



### PERMIT COMPLIANCE & RECORD-KEEPING

Better permit & record keeping leads to more efficient management.



### REDUCE WATER AND ENERGY CONSUMPTION

From FY2015 to FY2016, Berridge Shop reduced both energy and water consumption generating \$21,000 in energy savings and \$6,880 in water savings.

### WHAT DOES IT MEAN?

- **ISO 14001:** An internationally recognized environmental management system standard.
- **Environmental Management Checklist:** A framework of performance objectives to help identify sustainable opportunities during planning, design, construction and operation.



### BERRIDGE BUS SHOP ISO 14001:2004

In September 2016, SEPTA recertified Berridge Shop under the ISO 14001:2004 certification. During the celebration, the employees and shop were presented with a certificate for all their hard work.





# GOAL 13



## FINANCIAL VALUE OF SUSTAINABILITY

### GROW POSITIVE FINANCIAL IMPACTS OF SUSTAINABILITY INITIATIVES

One of SEPTA's guiding principles is to operate as a successful business. SEPTA understands that in order to continue to do so, it is important to

track and replicate financially sound investments and programs.

By tracking the positive financial impacts of sustainability initiatives at SEPTA, the Authority knows which investments and programs provide the greatest financial yield. Having this information allows SEPTA to make financially informed decisions on whether to continue or expand programs helping SEPTA to continue to grow its environmental and social impact while improving its economic position simultaneously.

#### HOW WE'RE DOING:

In FY16, SEPTA generated \$3,939,799 from grants, revenue, and savings related to sustainability.

Fiscal Year	GRANTS	REVENUE	SAVINGS	TOTAL POSITIVE FINANCIAL IMPACT \$121,151,331
2009	\$-	\$-	\$-	
2010	\$-	\$70,207	\$-	
2011	\$27,640,000	\$123,780	\$-	
2012	\$-	\$179,675	\$-	
2013	\$-	\$273,312	\$726,650	
2014	\$-	\$322,263	\$583,501	
2015	\$86,800,000*	\$418,696	\$73,449	
2016	\$2,600,000	\$278,675	\$1,061,124	
Total	\$117,040,000	\$1,666,607	\$2,444,724	

\*FTA's Resilience Grant

#### WHAT DOES IT MEAN?

- **Positive Financial Impact:** SEPTA's sustainability program was grounded on the principle of "Budget Neutrality" meaning that projects must meet a rigorous financial standard of self-funding through:
- **Grants:** received from a variety of organizations to fully or partially fund sustainability projects
- **Revenue:** money given to SEPTA as a payment for services associated with sustainability
- **Savings:** reductions in operating costs; baseline operating costs taken before project implementation

#### HYBRID BUSES

Since the beginning of FY2010, the addition of hybrid buses to SEPTA's fleet has yielded SEPTA \$9,297,647 in fuel savings.

#### ACT 129 REBATES

The Act 129 energy efficiency program of 2008 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 \$229,639 in revenue.

#### LONO GRANT

In April 2016, SEPTA received a \$2.6M grant from the FTA's LoNo program to cover the incremental costs in purchasing 25 zero-emission battery-electric buses. This grant helped SEPTA to remain "budget neutral" while acquiring a state of the art technology. Battery electric buses are also expected to be less expensive to operate than diesel buses per mile, providing further positive financial benefits.



#### 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



#### REVENUE



- Act 129- rebates
- WESS- compensation from PJM for frequency regulation of electric grid
- Waste Oil- resale



#### SAVINGS

- LED Lighting- energy savings
- Stormwater Fee Reductions
- Hybrid Buses- fuel savings
- Electric Buses- fuel savings
- Wayside Energy Storage- energy savings
- Recycling- hauling savings





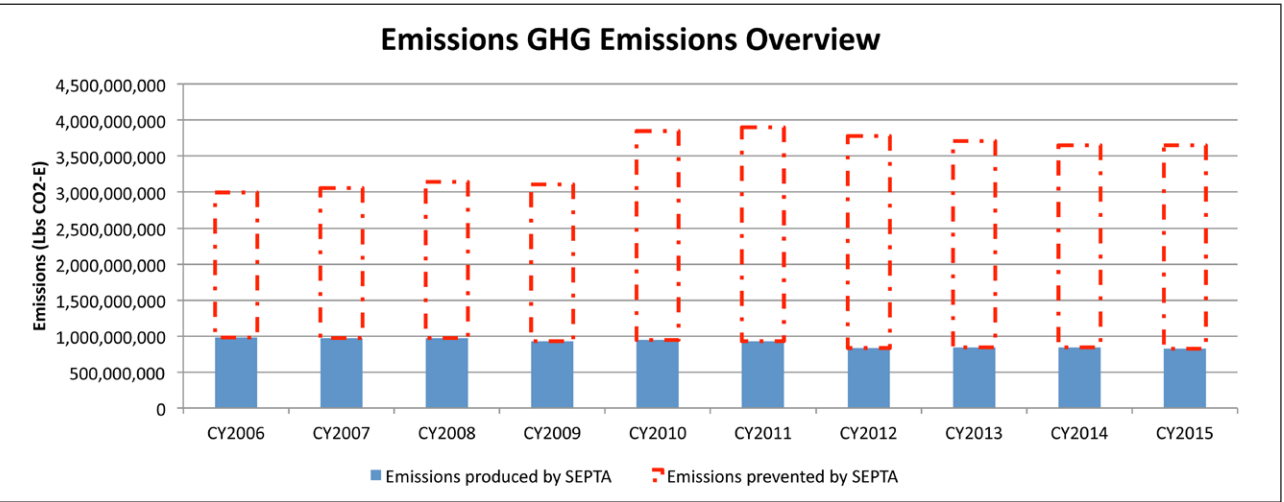
SEPTA GHG Emissions Overview			
Calendar Year	Emissions (Lbs CO2-E)	Prevented Emissions (Lbs CO2-E)	Emissions Savings Multiplier (Emissions Prevented/ Emissions Produced)
CY2006	981,894,355	2,014,193,150	2.05
CY2007	971,896,960	2,081,651,080	2.14
CY2008	974,553,773	2,163,241,751	2.22
CY2009	925,507,828	2,180,437,380	2.36
CY2010	947,943,908	2,903,907,804	3.06
CY2011	928,755,317	2,973,724,850	3.20
CY2012	833,542,775	2,944,100,753	3.53
CY2013	842,266,386	2,866,109,250	3.40
CY2014	841,577,049	2,809,782,695	3.34
CY2015	823,403,721	2,826,628,117	3.43

Emissions Produced by SEPTA				
Calendar Year	Emissions (lbs CO2-E)	Per VM	Per RVH	Per PMT
CY2006	981,894,355	10.60	148.48	0.69
CY2007	971,896,960	10.38	145.51	0.66
CY2008	974,553,773	10.20	142.58	0.63
CY2009	925,507,828	9.53	133.99	0.60
CY2010	947,943,908	9.73	137.03	0.60
CY2011	928,755,317	9.47	132.69	0.57
CY2012	833,542,775	8.44	119.65	0.52
CY2013	842,266,386	8.44	120.38	0.54
CY2014	841,577,049	8.37	117.47	0.55
CY2015	823,403,721	8.16	112.43	0.53



GHG Inventory by Source		
Source	Emissions Produced (Lbs CO2-E)	Percentage of Total Emissions
Revenue vehicles	348,522,970	42.3%
Maintenance vehicles	14,658,170	1.8%
On-site natural gas consumption	29,531,630	3.6%
Heating oil consumption	6,013,801	0.7%
Steam production	5,486,009	0.7%
Propulsion electricity	330,271,996	40.1%
Building electricity	88,919,146	10.8%

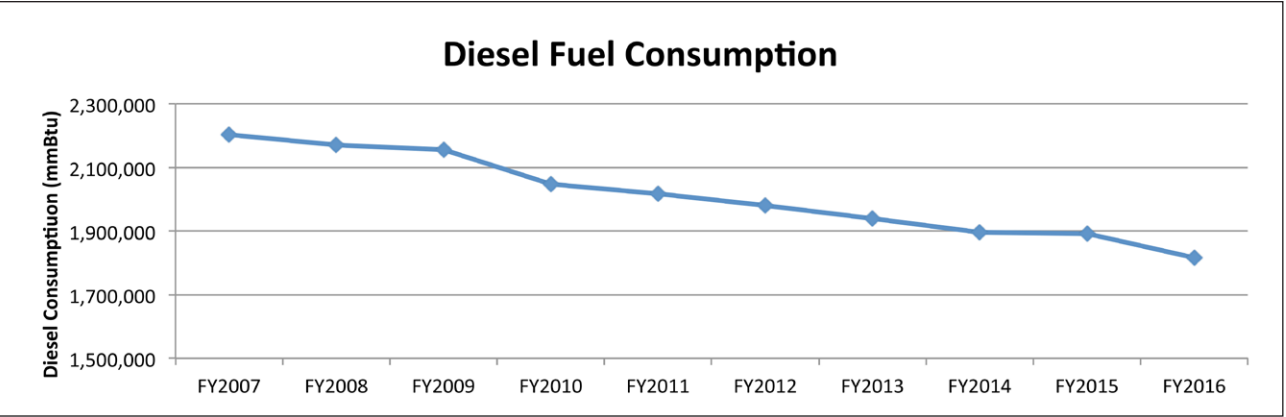
Emissions per Passenger Mile by Mode	
Mode	Emissions (Lbs CO2-E) per PMT
NHSL/MFL/BSL	0.28
Regional Rail	0.37
Trolley	0.43
Buses	0.60
Single Occupancy Vehicle	0.96



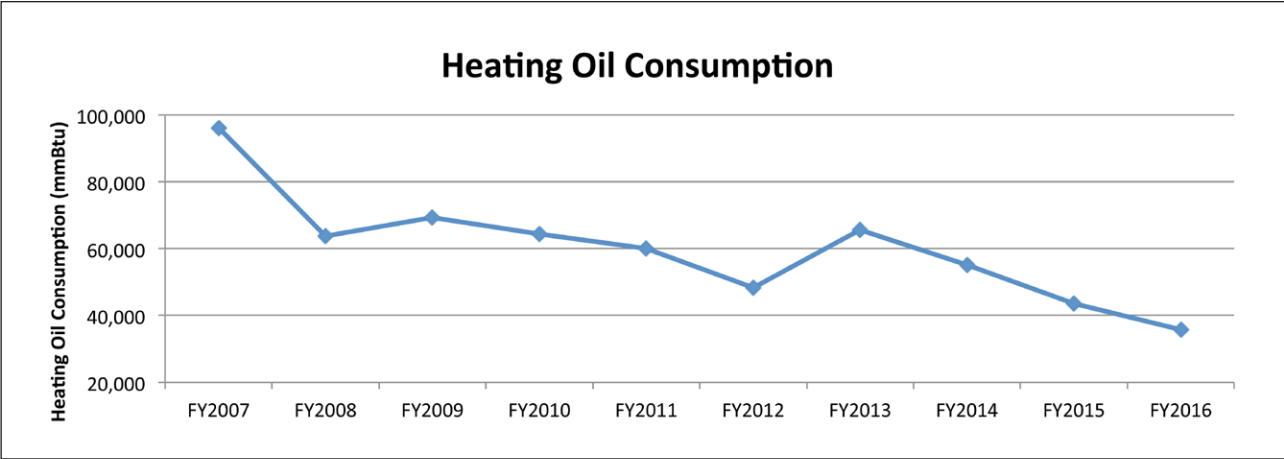
SEPTA Energy Consumption				
	mmBtu	mmBtu per VM	mmBtu per RVH	mmBtu per PMT
FY2007	4,305,974	46.13	647.94	3.01
FY2008	4,335,844	46.14	645.87	2.83
FY2009	4,447,244	45.80	639.28	2.88
FY2010	4,324,309	44.56	630.54	2.78
FY2011	4,319,489	44.15	619.03	2.66
FY2012	4,203,948	42.76	598.78	2.58
FY2013	4,175,984	42.10	604.11	2.62
FY2014	4,244,172	42.24	599.38	2.74
FY2015	4,206,252	41.62	578.81	2.75
FY2016	3,996,582	39.54	540.07	2.64

FY2016 Energy Consumption Breakdown		
Source	mmBtu	% Energy Makeup
Diesel	1,815,808	45.40%
Gasoline	275,323	6.90%
Electricity	1,621,805	40.60%
• 81% used for propulsion		
• 19% used in buildings		
Natural Gas	212,868	5.30%
Heating Oil	35,755	0.90%
Steam	35,025	0.90%

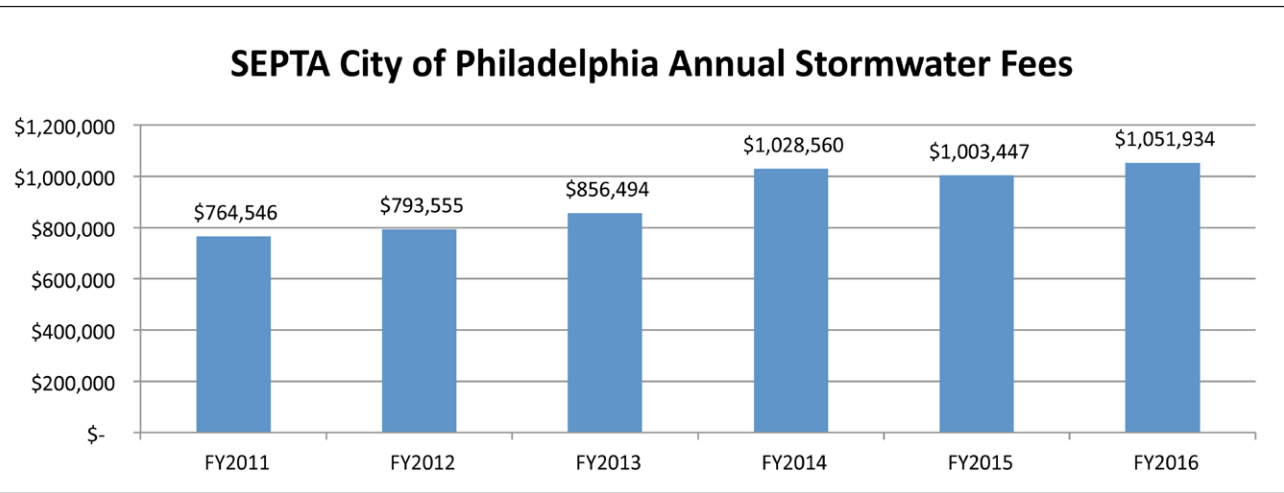
Emissions Prevented by SEPTA				
Calendar Year	Emissions savings due to mode shift (Lbs CO2-E)	Emissions savings due to congestion relief (Lbs CO2-E)	Emissions savings due to land use (Lbs CO2-E)	Total emissions savings (Lbs CO2-E)
CY2006	602,164,856	132,456,100	1,881,737,050	2,616,358,006
CY2007	622,575,755	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







SEPTA Water Consumption					
Fiscal Year	CCF	Gallons	Gallons Per VM	Gallons Per RVH	Gallons Per PMT
FY2009	162,409	121,481,784	1.251	17.46	0.079
FY2010	169,286	126,625,900	1.305	18.46	0.081
FY2011	152,575	114,126,440	1.166	16.36	0.070
FY2012	144,417	108,023,598	1.099	15.39	0.066
FY2013	150,445	112,533,194	1.134	16.28	0.071
FY2014	157,180	117,570,776	1.170	16.60	0.076
FY2015	177,549	132,806,544	1.319	18.33	0.087
FY2016	182,340	136,390,076	1.349	18.43	0.090



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 Acres	Impervious Roof Area	18 Acres
Other Impervious Area	47 Acres	Other Impervious Area	29 Acres
Pervious Area	84 Acres	Pervious Area	43 Acres

\*Pervious/ Impervious breakdown of SEPTA properties outside of Philadelphia County coming soon.



Authority-Wide Waste & Diversion				
	FY2013	FY2014	FY2015	FY2016
Trash	9,543	6,841	5,966	5,776
Recycling	14,500	12,398	13,711	15,734
Total Waste	24,043	19,239	19,677	21,510
Diversion	60.3%	64.4%	69.7%	73.1%

Employee Generated Waste				
	FY2013	FY2014	FY2015	FY2016
Trash	3,238	2,263	1,783	2,018
Recycling	372	341	347	424
Diversion	10.3%	13.1%	16.3%	17.4%

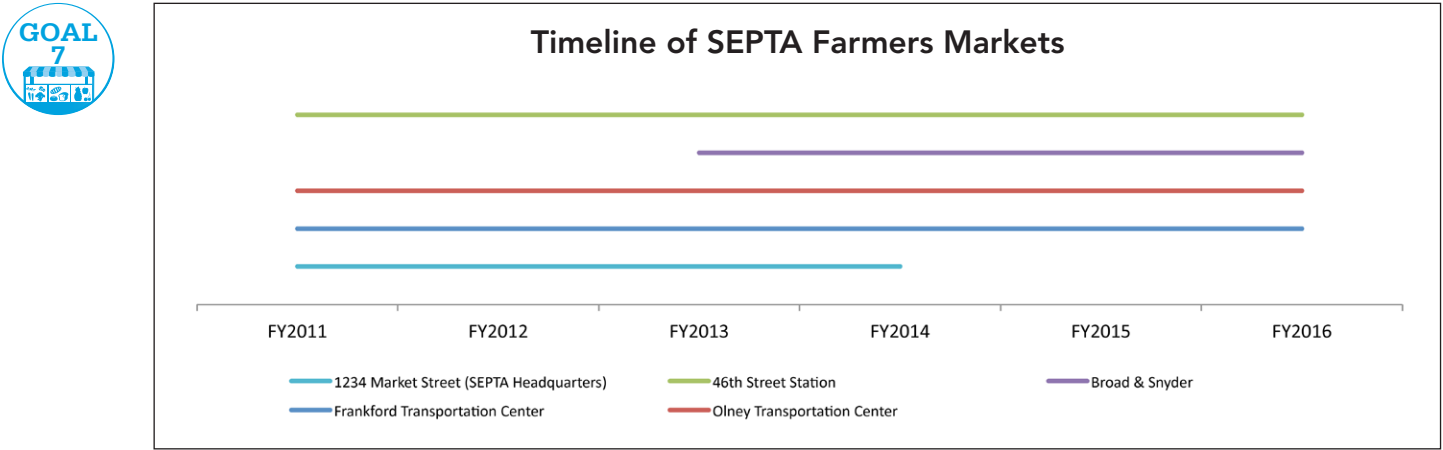
Passenger Generated Waste				
	FY2013	FY2014	FY2015	FY2016
Trash	4,087	3,531	3,230	3,041
Recycling	866	682	900	983
Diversion	17.5%	16.2%	21.8%	24.4%

C&D Generated Waste				
	FY2013	FY2014	FY2015	FY2016
Trash	2,218	1,047	953	717
Recycling	13,262	11,375	12,464	14,327
Diversion	85.7%	91.6%	92.9%	95.2%



GOAL 6

Planning Efforts	
Philadelphia 2035 District Plans and Follow-Up Studies	Far Northeast District Plan
	Lower Southwest District Plan
	North Delaware District Plan
	Upper North District Plan
	Tioga Goals & Strategies Report
	Transportation and Community Development Initiative Intersection Studies: 20th & Moyamensing; 40th & Market
Trolley Modernization	Modern Trolley Station Design Guide: City Routes
	Modern Trolley Station Design Guide: Media / Sharon Hill Lines
	Light Rail on Delaware Avenue: a Renewed Look
	Island Avenue Reconstruction
	I-95 Richmond Street Improvements
Complete Streets and Streetscape Studies	Route for Change – Roosevelt Boulevard Study
	Frankford Avenue/ Arrott Transportation Center Streetscape Plan
	Tacony Connector Street Study
	West Girard Avenue Streetscape Plan
	Wyoming Avenue Streetscape Plan
TOD & Station Area Plans	30th Street Station District Plan
	Building on our Strengths: Evaluating Transit-Oriented Development (TOD) Potential in Greater Philadelphia
	Darby Transportation Center – Access & Development Opportunities Study
	Conshohocken Station Area Improvements
	Ivy Ridge: Creating a Multi-Modal Hub
	Exton Station – Phases II & III
Bicycles Access & Trails	Abington Township Bike Plan
	Forge to Refuge Trail Feasibility Study
	Fox Chase Lorimer Trail Feasibility Study
	Mantua Greenway
	Octoraro Greenway Feasibility Study
	Parkside Cynwyd Trail Feasibility Study
	Trail Access to Wawa Station Feasibility Study
Service Extensions	Philadelphia Zoo Passenger Rail Study
	Regional Rail Service on the Northeast Corridor from Maryland
Other	Old City Vision 2026
	University City Transportation Study



FY16 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, 26, 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.

GOAL 8

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





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	4,093,906*	326,085,000	79.7

\*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	\$933,905	296.59	\$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	n/a*	\$3.71
FY2016	\$1,318,576	326.09	\$4.04	n/a	\$3.71

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



Grants		
FY2011	EPA National Clean Diesel Campaign	\$1,200,000
FY2011	FTA State of Good Repair (Hybrid Buses)	\$15,000,000
FY2011	FTA Livability (33rd & Dauphin Loop)	\$5,000,000
FY2011	FTA Clean Fuels (Hybrid Buses)	\$5,000,000
FY2011	FTA TIGGER (Wayside Energy Storage)	\$1,440,000
FY2015	FTA Resilience Grant	\$86,800,000
FY2016	FTA NoLo (Electric Buses)	\$2,600,000
Total		\$117,040,000

Revenue		
FY2010	Waste Oil Resale	\$70,207
FY2011	Waste Oil Resale	\$123,780
FY2012	Waste Oil Resale	\$144,969
FY2012	ACT 129 Rebates	\$34,706
FY2013	Waste Oil Resale	\$139,597
FY2013	ACT 129 Rebates	\$133,715
FY2014	Waste Oil Resale	\$148,169
FY2014	ACT 129 Rebates	\$29,383
FY2014	WESS: grid regulation	\$144,711
FY2015	Waste Oil Resale	\$93,462
FY2015	ACT 129 Rebates	\$2,712
FY2015	WESS: grid regulation	\$322,522
FY2016	Waste Oil Resale	\$21,006
FY2016	ACT 129 Rebates	\$29,123
FY2016	WESS: grid regulation	\$228,546
Total		\$1,666,608

Savings		
FY2013	Hybrid/Electric Bus Fuel Savings: 2012 vs 2013	\$694,378
FY2013	Savings from Recycling	\$32,272
FY2014	Hybrid/Electric Bus Fuel Savings: 2013 vs 2014	\$539,532
FY2014	Savings from Recycling	\$43,883
FY2014	Stormwater Fee Savings	\$86
FY2015	Savings from Recycling	\$73,449
FY2016	Hybrid/Electric Bus Fuel Savings: 2015 vs 2016	\$986,200
FY2016	Savings from Recycling	\$74,924
Total		\$2,444,724



# 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)







For more information about SEPTA's Sustainability Program,  
please visit: [www.septa.org/sustain](http://www.septa.org/sustain)