

SamTrans 2017 Sustainability Report



ACKNOWLEDGMENTS

This document was prepared by Louis Berger and Ascent Environmental under contract through the San Mateo County Transit District (District), administered by the District's Sustainability Program. Technical input was provided by staff in the following departments: Planning, Operations Financial Analysis, Facilities, Bus Maintenance, Bus Transportation, Bus Contracts, Real Estate and Property Development, Human Resources, and Marketing and Communications.



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INTRODUCTION

A Message from the General Manager/CEO

About SamTrans

Ridership and Operations

A Message from the General Manager/CEO

As a life-long Peninsula resident, I understand the important role our bus, paratransit, and shuttle services play in maintaining our quality of life and sustaining the economic vitality of our region. Serving over 40,000 riders each day in San Mateo County, SamTrans is committed to supporting a more sustainable region by providing affordable, accessible, environmentally-friendly mobility options to move people where they live, work, and play.

Corporate responsibility is vital for any organization, especially one impacting thousands of riders and hundreds of buses a day; its sustainability programs must focus both on its own operational impacts on the environment, as well as promoting a similar ethic within its customers and communities. I recognize the importance of SamTrans' sustainability efforts to help improve air quality within the Bay Area.

In FY2017, SamTrans elected to participate in a Community Choice Energy program that will provide SamTrans facilities with electricity from 100 percent renewable sources such as solar, wind, and geothermal. In addition, the SamTrans Board-adopted FY2017 Capital Budget includes investment in a pilot program to procure, operate, and maintain SamTrans' first fully-electric buses. Both actions will reduce pollution and climate-changing emissions within the Bay Area.

I am pleased to share this sustainability report, which summarizes our performance between FY2010 and FY2016, highlights key accomplishments, and identifies planned initiatives.

Sincerely,

Jim Hartnett
General Manager / CEO



About SamTrans

The District, also known as SamTrans, is the managing agency for three business units: 1) SamTrans, which operates fixed-route bus, paratransit, and shuttle services in the County; 2) Caltrain, which operates commuter rail service along the San Francisco Peninsula from San Francisco to Gilroy and is owned by the Peninsula Corridor Joint Powers Board; and 3) the San Mateo County Transportation Authority, which administers the countywide half-cent sales tax dedicated to transportation-related projects and programs in the County. The District also partners with other transit systems including BART, Santa Clara Valley Transit Authority (VTA), San Francisco Municipal Transportation Agency (SFMTA or Muni), and Alameda County Transit (AC Transit) to promote regional transit and efficient interagency connections.

SamTrans' Sustainability Program

Sustainability is a key component of the District's vision to be a mobility leader that provides safe transportation choices and a sustainable future. The District's Sustainability Policy outlines six key action commitments that support the operations of the agency.

The District is a strong supporter of the American Public Transportation Association's (APTA) Sustainability Program and participates in the annual Sustainability & Public Transportation Workshop as well as APTA's Sustainability committees. In 2011, the District received the APTA Sustainability Commitment Bronze Recognition for SamTrans operations.

San Mateo County TRANSIT DISTRICT

The District's Sustainability Policy commits the District to:

- **Streamline business practices** to reduce waste and improve operational effectiveness;
- **Evaluate and improve** the long-term resource efficiency of facilities and equipment, including the life-cycle return on investment;
- **Educate and incentivize** employees to integrate sustainability practices into their work and their personal lives;
- **Encourage business partners** to incorporate sustainability practices into their own operations;
- **Measure the environmental impacts** of activities on an ongoing basis, and set and meet targets to reduce our impacts; and
- **Deploy sustainability-themed** programs that encourage the use of public transit and that support our local communities.



Report Purpose and Scope

The District has prepared this report to quantify key sustainability indicators and summarize sustainability achievements for SamTrans operations in fiscal year (FY) FY2010 through FY2016. The goal of this report is to publicly share data on the District's sustainability performance that will allow SamTrans to establish benchmarks and sustainability reduction goals.

This sustainability inventory and report focuses specifically on the facilities, fixed-route bus, paratransit, and shuttle services under the operational control of SamTrans. This inventory also includes indicators for non-revenue vehicles and employee commuting across all three District units due to overlapping roles. The District has prepared a separate sustainability inventory and report for Caltrain operations that does not include either non-revenue vehicles or employee commuting to avoid double-counting.

This report includes the following sustainability indicators: revenue and non-revenue fleet fuel usage, employee commute, displaced or avoided customer trips, facility energy usage, water usage, waste generation and diversion, greenhouse gas (GHG) emissions, and criteria air pollutants. GHGs include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) and are presented in this report as metric tons of carbon dioxide equivalent (MTCO₂e). Sustainability indicators are normalized by total SamTrans ridership including fixed-route bus, paratransit, and shuttle services.

Ridership and Operations

In San Mateo County, each day SamTrans serves over 43,000 riders through its bus, paratransit, and shuttle services. Between FY2010 and FY2016, ridership measured as total passenger boardings per year decreased by over 1.2 million trips (9 percent), and passenger miles traveled decreased by 11 million miles (15 percent). This decline in overall ridership is primarily attributed to decreased bus ridership, and is generally related to the economic downturn, decrease in gas prices (eroding some of the cost competitive edge of transit for choice passengers), and limited financial ability of SamTrans to increase service levels during this time period. In contrast, paratransit ridership has increased in recent years, mirroring San Mateo County's growing aging population. SamTrans is actively engaged in efforts targeted at increasing bus ridership, including evaluating new travel markets, targeting mobility improvements for youth and seniors, expanding marketing strategies around social media and mobile technologies, and developing a Customer Experience Taskforce.

Table 1 summarizes SamTrans' service operation metrics. Total vehicle miles traveled (VMT) declined by almost 252,000 miles between FY2010 and FY2016, a 2 percent decrease. During the same time period, the service population (the population of San Mateo County) increased gradually from 720,496 to 768,122 million people, or 7 percent. This means that SamTrans ridership has not increased at the same pace as San Mateo County's population, resulting in a declining number of trips per capita over the last seven years.



Table 1. SamTrans Service Operation Summary

	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
Passenger Miles Traveled	75,114,296	66,867,227	67,753,560	63,831,352	64,137,761	63,898,769	64,091,394
Boardings	14,714,270	13,978,007	13,380,219	12,994,888	13,510,234	13,743,557	13,440,131
Service Population	720,496	729,292	740,568	748,761	756,371	764,379	768,122
Vehicle Miles Traveled	12,336,524	11,615,458	11,611,199	11,711,993	11,943,049	11,919,978	12,084,554

HYBRID POWER

2

SAMTRANS SUSTAINABILITY PERFORMANCE

- Achievements
- Sustainable Performance Summary
- GHG Inventory
- Criteria Air Pollutants
- Energy Use - Fleet
- Energy Use - Facilities
- Water
- Waste and Diversion

CA 58295

Achievements



Facility energy use decreased by 26 percent

Overall facility energy use declined by more than 26 percent between FY2010 and FY2016. SamTrans currently uses natural gas for space heating and electricity for lighting, office equipment, maintenance equipment, and HVAC.



Total water consumption decreased 39 percent

In response to California's historic drought, SamTrans implemented a number of water-saving conservation measures, and decreased water consumption by more than a third between FY2010 and FY2016.



Greenhouse gas emissions decreased by 14 percent

In FY2016, SamTrans generated 4,754 fewer metric tons of GHGs compared to FY2010. Although ridership has declined during this time period, SamTrans has reduced its overall emissions at a faster pace.



Simple. Smart. Green.

Sustainability Programs

In addition to the energy, water, and waste initiatives described earlier, SamTrans has also implemented a number of other strategies and partnerships in the previous three fiscal years in support of the agency's commitment to sustainability. These include:

SamTrans Sustainability Webpage

The SamTrans sustainability website (<http://www.samtrans.com/about/Sustainability>) highlights the environmental and community benefits of riding public transit, as well as the agency's ongoing commitment to sustainability in operating and maintenance programs, capital projects, long-term planning, and everyday business practices. The Sustainability in Action subpage provides details on specific projects and initiatives.

Bay Area Transit Sustainability Working Group

SamTrans meets quarterly with SFMTA, VTA, BART, SFO, and other Bay Area transportation agencies to share best practices and support each other in sustainability efforts.

Resiliency and Sea Level Rise

SamTrans proactively assesses vulnerabilities and adaptation options at SamTrans facilities through the Technical Advisory Committee for the San Mateo County Sea Level Rise Vulnerability Assessment.

Earth Day

Each April, SamTrans celebrates Earth Day with public and employee events. Past events include a sustainable scavenger hunt, a tour of the Shoreway Recycling Center and Transfer Station, and "Lunch and Learn" presentations by the Bay Area Water Supply and Conservation Agency, Sustainable San Mateo County, and Peninsula Clean Energy. In addition, special "Earth Day Every Day" headsigns are displayed on all buses each Earth Day, to encourage the public to ride SamTrans as a sustainable transportation alternative to driving alone.

SamTrans received a 2015 BizSMART@Work Award from Recology and RethinkWaste for achievements in recycling and composting.

Sustainable Performance Summary

Table 2: Sustainability Indicator Summary for FY2016 Compared to FY2010

The direction of the bus indicates whether the change in the sustainability indicator per boarding (rider) reflects a positive step toward greater sustainability. For example, an increase in GHGs makes SamTrans less sustainable, and moves the bus to the left (regressed). A decrease in the water consumed makes SamTrans more sustainable, and moves the bus to the right (improved).

Generated GHG emissions or criteria air pollutants (CAPs) are emissions directly or indirectly generated by SamTrans operations, excluding any emissions that may be offset. Displaced/avoided GHG or CAP emissions are associated with emissions that would have been generated by passenger vehicles whose trips have been assumed to be displaced by persons taking SamTrans instead. The net GHG or CAP emissions is equal to the sum of generated and displaced emissions.

Indicator	Percent Change between FY2010 and FY2016 ¹	
	← Less Sustainable	More Sustainable →
GHG Emissions Generated		 6% 0.29 fewer pounds per boarding
Net GHG Emissions		 1% 0.02 fewer pounds per boarding
Energy Use in Facilities		 19% 0.38 fewer kBTU per boarding
Energy Use in Revenue and Non-Revenue Fleet		 5% 1.34 fewer kBTU per boarding
Criteria Air Pollutants Generated		 25% 0.01 fewer pounds per boarding
Water Consumed		 34% 0.21 fewer gallons per boarding
Waste Generated	20% 0.02 additional pounds per boarding	
Waste Diverted ²		 16_{p.p.} 16 additional percentage points of waste was diverted

¹ Waste data was not available until FY2014. Therefore, waste performance is compared to FY2014.

² Diversion is measured as the percent of total waste generated that was diverted from landfill through recycling or composting. The diversion rate is not normalized by boarding.

Table 3: SamTrans Sustainability Indicator Areas¹

Indicator	Unit	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
Greenhouse Gas Emissions								
Generated	MTCO ₂ e/year	34,126	32,037	35,435	31,782	31,671	30,563	29,372
Displaced/Avoided	MTCO ₂ e/year	-11,975	-10,676	-10,634	-9,871	-9,757	-9,519	-9,323
Net Total	MTCO ₂ e/year	22,151	21,361	24,801	21,911	21,914	21,044	20,049
Criteria Air Pollutant Emissions²								
Generated	Tons	381	345	380	314	301	281	259
Displaced/Avoided	Tons	-128	-103	-94	-78	-69	-60	-53
Net Total	Tons	253	242	286	236	232	221	206
Facility Energy Use								
Electricity	kWh	5,466,402	4,999,144	4,937,101	4,959,179	5,085,783	4,944,275	5,003,459
Natural Gas	therms	108,719	110,598	108,695	110,442	96,605	68,336	48,305
Total Facility Energy Use	kBTU	29,521,443	28,114,946	27,712,992	27,962,983	27,011,604	23,702,536	19,936,472
Revenue and Non-Revenue Fleet Vehicle Energy Use								
Diesel	Gallons	2,753,510	2,546,084	2,836,600	2,439,629	2,380,852	2,450,796	2,211,076
Gasoline	Gallons	132,659	126,956	174,468	186,670	255,723	113,511	309,280
CNG	GGE	0	0	0	12,113	16,172	16,172	0
Biodiesel	Gallons	0	0	16,640	45,621	45,411	6,918	0
Non-Revenue Fleet Energy Use	kBTU	4,137,645	3,772,309	3,883,053	3,447,986	3,543,411	3,394,840	3,298,156
Total Vehicle Energy Use	kBTU	396,828,991	367,471,463	415,692,626	367,376,618	368,269,618	355,148,286	343,999,067
Water								
Consumed	Gallons	9,062,020	9,064,264	9,092,688	10,248,348	10,376,256	9,623,020	5,487,328
Waste and Recycling								
Generated	Tons	NA ³	NA ³	NA ³	NA ³	894	977	977
Diverted	Percentage	NA ³	NA ³	NA ³	NA ³	15%	31%	31%
Employee Commuting								
Vehicle Miles Traveled	Miles	4,959,995	4,956,852	4,817,647	4,746,473	4,675,299	4,944,279	4,842,125

Notes: Totals may not add due to rounding. MTCO₂e = metric tons of carbon dioxide equivalent; FY = fiscal year; kWh = kilowatt hours; kBTU = thousand British thermal units; CNG = compressed natural gas; GGE = gasoline gallon equivalent.

¹ This sustainability inventory and report focuses specifically on the facilities, fixed-route bus, paratransit, and shuttle services under the operational control of SamTrans. This inventory also includes indicators for non-revenue vehicles and employee commuting across all three District units due to overlapping roles. The District has prepared a separate sustainability inventory and report for Caltrain operations that does not include either non-revenue vehicles or employee commuting to avoid double-counting.

² Includes ROG, NO_x, CO, PM₁₀, and PM_{2.5}.

³ These data were either not available or incomplete. For the purposes of consistency with the rest of the inventory, GHG emissions from waste between FY2010 and FY2013 were assumed to be the same as data in FY2014.

GHG Inventory

Greenhouse gas emissions (GHGs) are primarily generated by burning fossil fuels (such as gasoline and diesel used in vehicles) – but also through chemical reactions, the decay of organic waste, agricultural production, and industrial processes. In this inventory, emissions of carbon dioxide, methane, and nitrous oxide are calculated into a carbon dioxide equivalent (CO₂e) according to their global warming potentials, which measures the pollutants' insulating effect (i.e., ability to warm the earth's atmosphere or 'greenhouse effect'). Other GHGs, such as sulfur hexafluoride and refrigerants, are excluded from this inventory at this time, though they may be added in future inventories.

In FY2016, SamTrans generated approximately 29,372 metric tons of CO₂e. To compare that figure to overall Bay Area transportation emissions, the Metropolitan Transit Commission (MTC) estimated that approximately 30.2 million metric tons of CO₂e were emitted by cars, trucks, motorhomes, and motorcycles in FY2011.

SamTrans also displaces emissions that would have occurred if travelers chose to travel by private automobile. Figure 1 shows a line graph of SamTrans' net GHG emissions, with generated and displaced emissions highlighted as bars for each fiscal year. In this chart, displaced emissions are equal to the emissions avoided by passengers riding SamTrans instead of driving their personal cars. Over the past seven years, emissions generated from SamTrans operations decreased by approximately 14 percent. However, primarily as a result of decreased ridership over the same period, displaced emissions decreased approximately 22 percent. The result is a reduction of 2,102 MTCO₂e from FY2010 to FY2016.

Between FY2010 and FY2016

Net GHG emissions declined by

2,102



METRIC TONS OF CO₂e

Which is EQUAL to removing emissions from

444



VEHICLES ON THE ROAD

OR the amount of carbon sequestered by

1,990



ACRES OF FOREST IN ONE YEAR

Although total ridership (including all modes: fixed-route bus, paratransit, and shuttle) decreased from FY2010 to FY2016, GHG emissions have decreased more quickly.



14%

Decrease in MTCO₂e generated since FY2010

9%

Decrease in boardings since FY2010

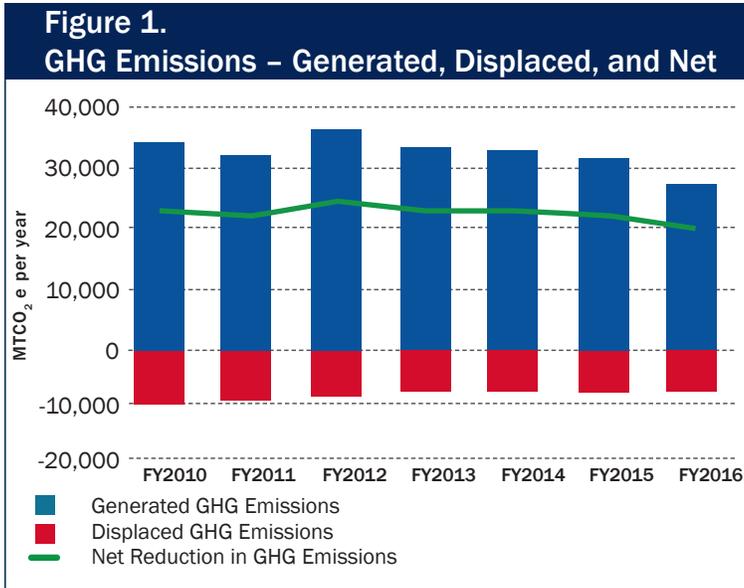


Figure 2 shows the percent breakdown of sources contributing to GHG emissions generated by SamTrans operations. Figure 2 highlights only GHG emissions generated by SamTrans (and excludes displaced trips), and reveals an overall slight decreasing trend. Figure 2 and Figure 3 show that the overwhelming majority of emissions are generated by diesel use in buses, which contributed approximately 76 percent of all GHG emissions in FY2016.

As shown in Table 2, SamTrans has reduced emissions per boarding as measured in pounds (lbs) per CO₂e. Converting the bus fleet from diesel to electric will dramatically reduce the agency’s GHG emissions. In FY2017, SamTrans initiated a capital project to procure the agency’s first set of electric buses.

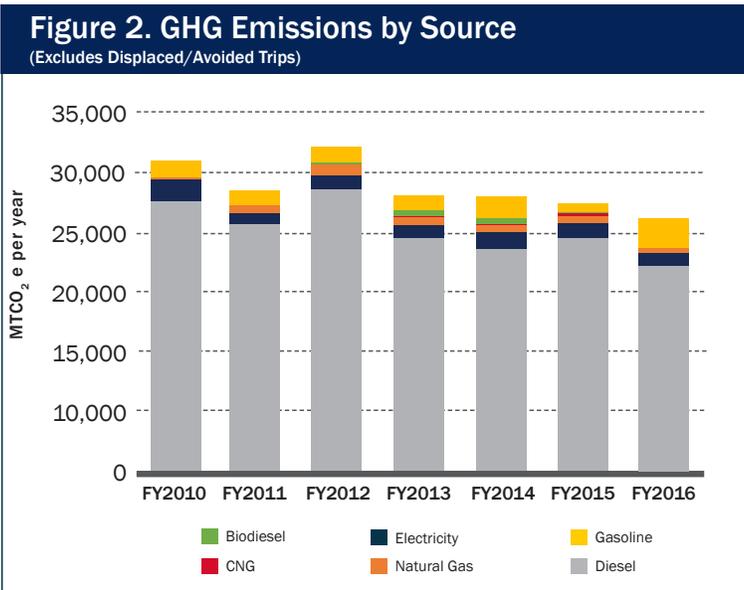
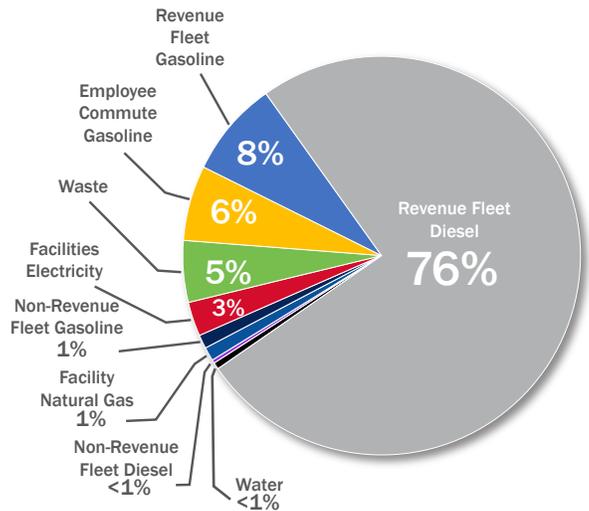


Figure 3. FY 2016 Percentage of GHG Emissions by Source



Employee Commuting

Employee commuting VMT and associated GHG and criteria air pollutant emissions were calculated for the sake of completeness. As shown in Figure 3 above, employee commute contributes approximately 5 percent of total SamTrans GHG emissions. However, because of data limitations, several important assumptions apply: for any SamTrans employee in FY2016, emissions were estimated based on the anonymized zip code for each employee.

The total number of employees per work location were provided for certain years and used to interpolate values for remaining years. Furthermore, it is assumed that all employees were employed full time, and the vehicle mix was based on a region-average vehicle mix from the California Air Resources Board’s Emission Factor database (EMFAC 2014). The American Community Survey (ACS) was used to estimate the share of employees who drive in single occupancy vehicles, carpool, and take alternative modes such as transit, walking, or biking. According to the 2014 ACS, 65.7 percent of Bay Area residents drive alone and 9.9 percent carpool (ACS 2014). For SamTrans, the actual percentage of employees driving personal vehicles may be lower, due to the agency’s transit-oriented workforce and headquarters located in close proximity to transit stations. In the future, SamTrans may choose to use an employee commute survey to improve the agency’s estimate.

Criteria Air Pollutants

Criteria air pollutants (CAPs) include pollutants that cause smog, acid rain, and have been linked to negative health effects. SamTrans vehicles emit CAPs when they burn fossil fuels like diesel and gasoline, but they also displace CAPs that otherwise would have been emitted if passengers had chosen to drive instead of taking public transit.

In Figure 4, the net reduction in CAPs is shown in a line graph, where the generated and displaced CAPs are shown in bars above and below the line. CAPs generated by SamTrans operations have decreased by about 33 percent from FY2010 to FY2016. Displaced and net CAPs have also decreased during this time period.

Figure 5 shows the percent breakdown of sources contributing to the CAPs generated by SamTrans. Over 93 percent of CAPs from agency operations are from diesel fuel use in buses. As SamTrans transitions over time from diesel to electric-powered buses, the agency's CAP emissions will continue to decrease, since electric-powered buses do not emit tailpipe CAPs.

Figure 4. Criteria Air Pollutants - Generated, Displaced, and Net

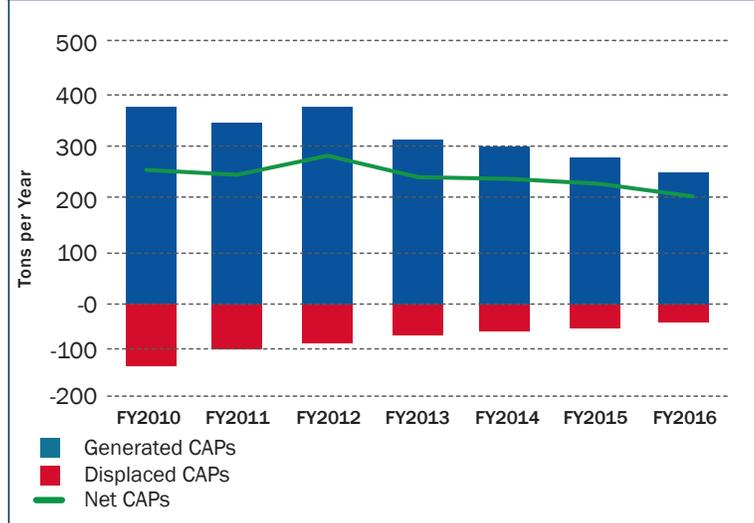
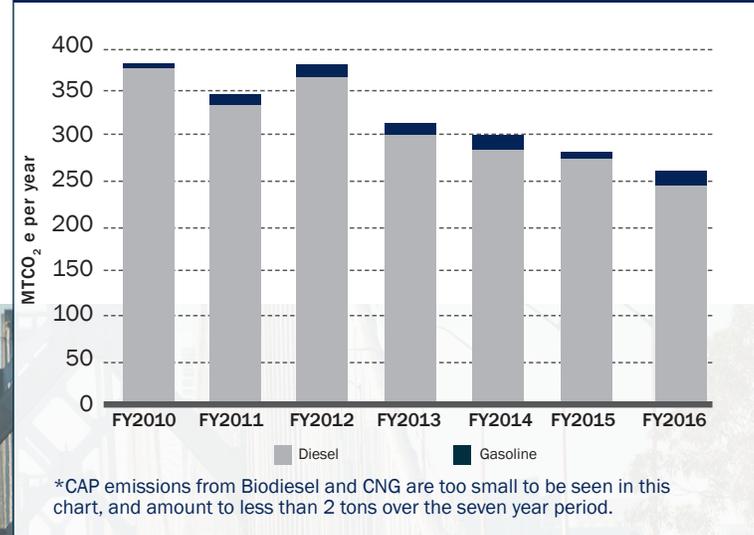


Figure 5. Criteria Air Pollutant Emissions by Source Type (Excludes Displaced/Avoided Trips)



Energy Use

Fleet (Revenue and Non-Revenue)

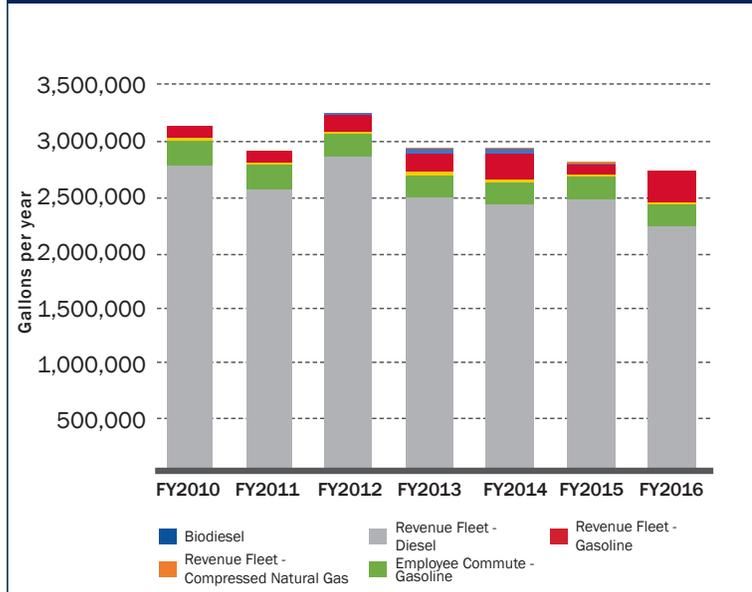
SamTrans' fleet consists of revenue vehicles and non-revenue vehicles, including contractor operations under SamTrans' operational control. SamTrans' revenue vehicle fleet operates on diesel, gasoline, biodiesel, and compressed natural gas (CNG). The directly operated bus route (SamTrans fixed-route) used only diesel fuel. The contracted fixed-route buses and shuttles used diesel, gasoline, biodiesel, and CNG. The paratransit such as Redi-Wheels and RediCoast used diesel and gasoline fuel. SamTrans' non-revenue vehicle fleet includes gasoline-electric hybrid employee pool cars, supervisor cars, maintenance trucks, and specialty vehicles, such as money-collection and ticket vending machine trucks that use diesel and gasoline.

Energy use by revenue fleet makes up the majority of SamTrans' energy use, as measured in thousand British thermal units (kBTU): in FY2016, diesel and gasoline for buses made up 93 percent of all energy consumed by SamTrans.

Diesel fuel consumed by revenue fleet, primarily fixed-route bus service, constitutes the majority of the fuel used by SamTrans. More than 2,200,000 gallons were consumed in FY2016. Figure 6 illustrates the amount of fuel used, in gallons, between FY2010 and FY2016. Diesel use decreased by 20 percent between FY2010 and FY2016. The only fuel type to increase during the past seven years was gasoline, which increased by approximately 281,696 gallons.

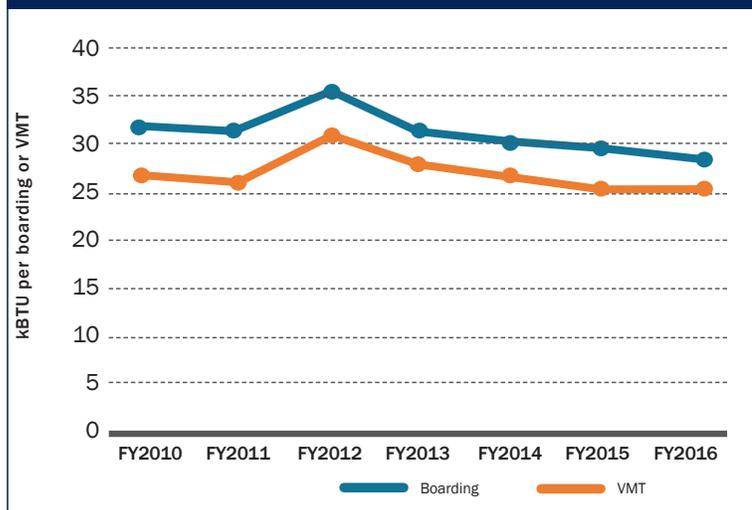
Figure 7 illustrates the fleet energy intensity between FY2010 and FY2016. The graph shows that energy intensity spiked in FY2012, then gradually decreased. The graph shows that fuel consumption per boarding or per vehicle mile traveled has declined slightly since FY2010.

Figure 6. Fuel Use by Fuel Type



*Compressed Natural Gas (CNG) is measured in gallons of gasoline equivalent

Figure 7. Fleet Energy Use per Boarding and VMT



Facilities

SamTrans operates four primary facilities: Central Administrative Offices (Central), North Base Maintenance and Operations Facility (North Base), South Base Maintenance and Operations Facility (South Base), and Brewster Depot (currently used by contracted bus and paratransit services). These facilities use electricity for lighting, office equipment, maintenance equipment, and HVAC. Certain facilities also use natural gas for space heating. SamTrans is also responsible for electricity use (lighting) at the Pacifica and Colma Park & Rides. SamTrans, Caltrain, and the San Mateo County Transportation Authority all operate out of Central. However, the energy use and emissions associated with Central are only included in the District (also known as SamTrans) inventory, because the District is the managing agency for all three business units. Figure 8 identifies the percent breakdown of facilities consuming energy in FY2016. As shown in Figure 9 and 10, facility electricity, natural gas, and energy intensity (kBTU per boarding and kBTU per VMT) have decreased from FY2010 to FY2016.

Figure 8. Percentage of Energy Use by Facility (FY2016)

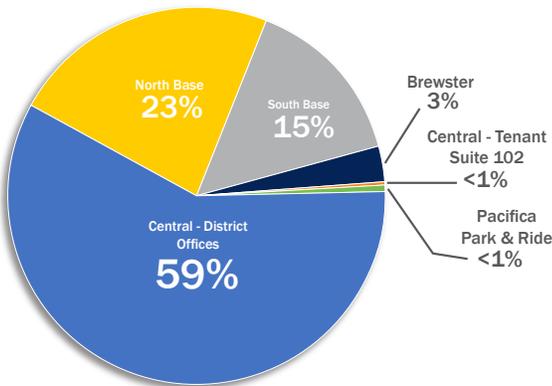


Figure 9. Facility Energy Use

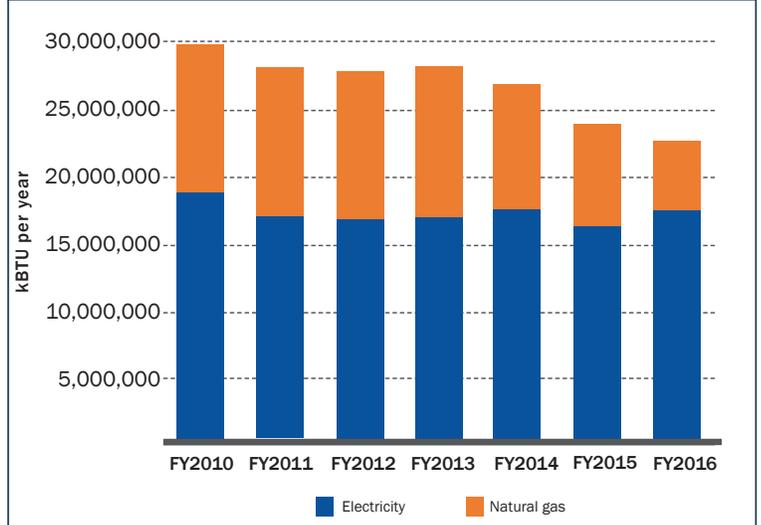
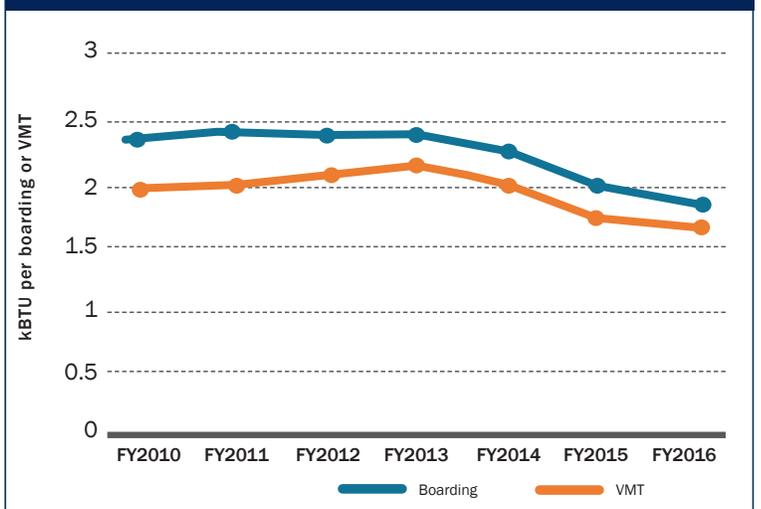


Figure 10. Fleet Energy Use per Boarding and VMT



The District is currently working on a project to replace existing high-intensity discharge (HID) lighting at North Base and South Base with energy-efficient light-emitting diodes (LEDs), which are 80 percent more efficient and require less maintenance. In addition, the District will defray some of the capital costs through an energy efficiency rebate partnership with Pacific Gas & Electric and San Mateo County Energy Watch.





In response to California's historic drought, SamTrans has reduced water use by nearly 50 percent from FY2014 to FY2016, by adjusting exterior wash schedules, reducing landscape irrigation, installing high-efficiency faucet aerators, promptly fixing leaks, and providing water-savings tips in restaurants and kitchens. SamTrans recycles 70-85 percent of the water used to wash buses.

Water, Waste, and Diversion

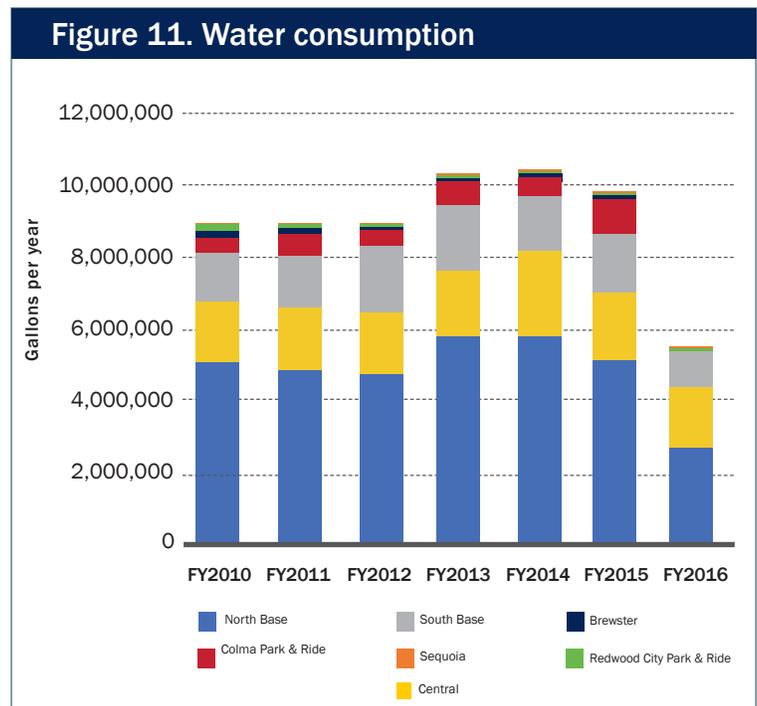
Water

SamTrans uses water for bus washing, limited outdoor irrigation, and typical commercial water uses such as restrooms and showers. Emissions are generated indirectly through the combustion of fossil fuels in electricity generation that provides electricity for water delivery, conveyance, and treatment. Although SamTrans does not directly control these emissions, they are included in this inventory because any emissions are a consequence of SamTrans' use of the water.

In response to California's historic drought, SamTrans implemented a number of conservation measures including: reducing the frequency of exterior bus washing by half; reducing landscape irrigation; installing high-efficiency faucet aerators and showerheads in customer and staff restrooms; promptly fixing leaks; and providing water-saving tips through restroom and kitchen signage. Overall, SamTrans' water conservation efforts in facilities, fleet, and employee behavior and messaging have reduced water use by 47 percent in FY2016 compared to baseline year FY2014 (approximately equivalent to the state drought baseline calendar year 2013). SamTrans continues to employ these conservation measures in its daily operations and maintenance practices. Moving forward, SamTrans is also exploring capital projects to replace aging sprinkler systems with water-efficient drip irrigation.

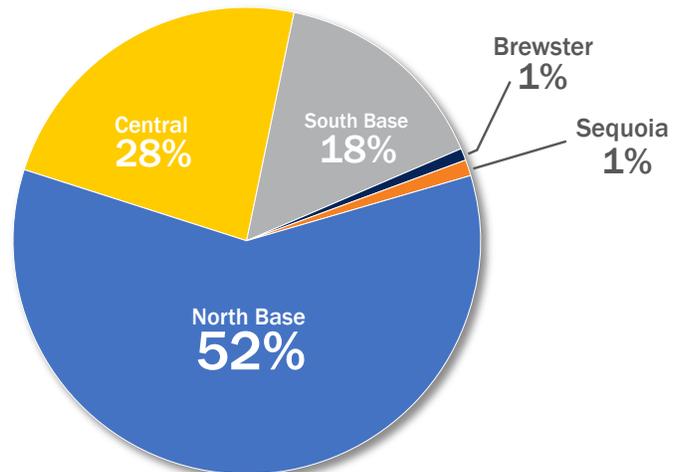
Figure 11 shows total water usage between FY2010 and FY2016. Overall, water use has declined substantially over the past three years, going from over 9,000,000 gallons in FY2010 to less than 5,500,000 gallons in 2016—a reduction of almost 40 percent. SamTrans' water reduction is equivalent to over 5 Olympic-sized swimming pools.

Figure 12 identifies the percent breakdown of facilities consuming water in FY2016. The North Base facility consumed the largest percent of total water, followed by the Central and South Base facilities. The Sequoia facility used only a small percentage of water, and water use was temporarily eliminated at the park and ride locations.



Note: PR-RWC = Redwood City Park and Ride, PR-Colma = Colma Park and Ride, SB = South Base, NB = North Base

Figure 12. Percentage of Water Use by Facility (FY 2016)



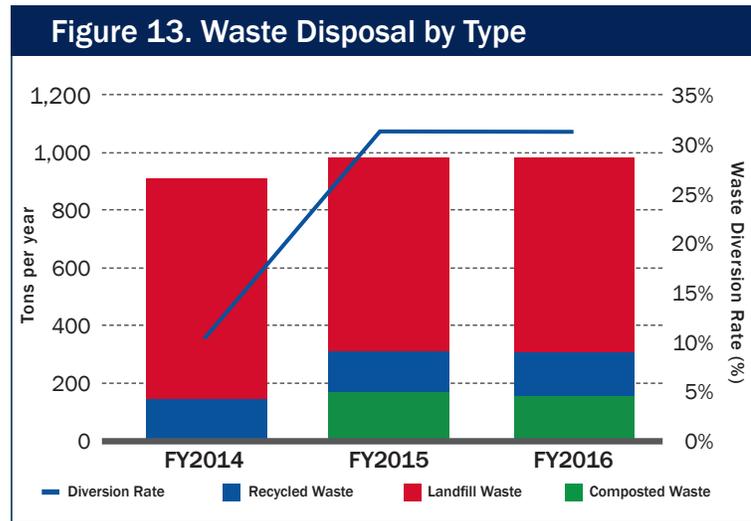
Waste and Diversion

SamTrans-generated waste consists of municipal waste from passengers (paper, food scraps, bottles and cans, other common recyclables) and employees (from typical office activities and low-impact maintenance activities). Industrial maintenance waste such as hazardous waste and large metal scrap recycling are not included in this inventory.

The waste and diversion rates are estimated through invoices from SamTrans' waste service provider. For the purposes of this inventory, SamTrans assumes that all landfill, recycling, and organics collection containers are 80 percent full when collected each week. This assumption may overstate the actual amount of discards generated and diverted. However, this is the best estimate available, as SamTrans' waste hauler does not report customer waste by actual weight, only volume of container capacity and scheduled pickup frequency.

Figure 13 shows total landfilled, recycled, and composted waste as bars for each fiscal year. The total diversion rate, measured as the percent of total waste diverted as recycling or compost, is shown as a blue line. In FY2016, 69 percent of SamTrans' waste by weight was landfilled, or 977 tons. The next-largest category is composted waste, at 16 percent, followed by recycled waste at 15 percent.

SamTrans' total diversion rate has increased significantly in the last two years, increasing from approximately 15 percent in FY2014 to 31 percent in FY2016 (Figure 13). This is largely as a result of adding a composting service at Central. In FY2017, that program was extended to the Bases and Brewster as well, and will continue to drive up SamTrans' diversion rate.



SamTrans trains and encourages employees to compost and recycle waste.

In FY2015, the District introduced composting service at Central, and in FY2017 extended the program to North Base, South Base, and Brewster. This program includes not only the service, but also upgraded waste bins and signage. Employees can also review the SamTrans Waste Sorting Training Manual to check what goes in the compost, recycle, and landfill/trash bins. The initiative has helped SamTrans to double the District's diversion rate in the last two years.

3

CURRENT AND PLANNED INITIATIVES



Current and Planned Initiatives

Electric Bus Pilot Program

As part of the Advanced Clean Transit Initiative, the California Air Resources Board (CARB) has set a state-wide goal of transforming all transit fleets to zero-emissions bus technology by 2040. The District has been collaborating with the ARB and other Bay Area transit agencies on efforts to further reduce emissions from the conventional bus fleet by phasing in zero emissions bus purchases leading up to this milestone. SamTrans is a partner in Zero Emission Bay Area (ZEBA), a Bay Area regional transit agency consortium that operates twelve zero-emission fuel cell buses. SamTrans also participates in the ARB Advanced Clean Transit Workgroups and Transit Subcommittees to inform the development of the Advanced Clean Transit rule.

The SamTrans Board-adopted FY2017 Capital Budget includes investment in a pilot program to procure, operate, and maintain SamTrans' first fully-electric buses. This budget includes the installation of the necessary charging infrastructure for these vehicles at North Base. SamTrans will conduct a competitive procurement process to identify the vendor for the 10 proposed battery-electric buses (40-foot, slow/depot charge). Incorporating electric buses into SamTrans' fleet will advance state air quality goals and support SamTrans' Strategic Plan goal to strengthen fiscal health by controlling operating costs. Electric buses will have zero criteria air pollutant emissions and dramatically lower greenhouse gas emissions compared to diesel buses.

Commitment to Renewable Energy

By summer 2017, SamTrans will use 100 percent renewable and 100 percent GHG emission-free electricity to power all its facilities. In March 2017, the SamTrans Board of Directors voted to expand the agency's use of renewable electricity by partnering with Peninsula Clean Energy, San Mateo County's Community Choice Energy Program.



Peninsula Clean Energy will supply 100 percent renewable power from sources such as solar, wind, and small hydroelectric. SamTrans chose Peninsula Clean Energy's service package due to its reliability, cost, environmental benefits, administrative procedures, and compatibility with future SamTrans operations. The electricity will still be delivered in partnership with PG&E on PG&E's infrastructure and supported by PG&E's billing and customer service. Through this effort, SamTrans will reduce its carbon footprint from electricity use by 40 percent, equivalent to the annual carbon emissions of 200 cars or 100 homes.



