

Appendix 21
City & County of San Francisco
San Francisco International Airport (SFO)
San Francisco, California

The San Francisco Airport Commission is committed to environmental leadership, natural resource stewardship, and climate action. The Airport Commission is focused on minimizing the environmental impact of San Francisco International Airport (SFO), including reducing the generation and landfilling of waste. SFO's Five Year Strategic Plan includes a goal to achieve zero waste by 2021 and SFO's Zero Waste Plan roadmaps the efforts required to enable SFO to become a closed-loop circular campus in the years that follow. SFO's current materials management program primarily consists of source separation of compostable and recyclable materials to divert these streams from the landfill. To maximize onsite source separation, and prioritize source reduction, SFO is partnering and providing outreach and education to tenants, service providers and Airport employees, through a newly launched Green Business Program.

The State of California and the City and County of San Francisco have established landfill diversion requirements through legislation. SFO's program not only complies with but exceeds these requirements. The policies and directives underlying the City and County and State programs assist SFO's efforts and provide Airport staff the opportunity to develop and implement innovative source reduction, onsite reuse and offsite recycling services, among other programs.

SFO takes an interdepartmental approach to achieving strategic plan sustainability goals, including advancing progress toward zero waste. Rather than dictating programs from a singular environmental department, sustainability policies, plans, and programs are owned by unique but unified divisions across SFO, based upon their scope of service delivery (i.e. Planning, Design and Construction, Facilities Operations). SFO's Sustainability and Environmental Policy Section leads work defined by SFO's Strategic Plan, Sustainability Plan, and Climate Action Plan by teaming with staff from multiple sections to implement these Plans' defined measures, which includes material recovery, recycling, and composting. For example, contracting for materials hauling is managed by Planning, Design, and Construction; and Facilities Operations oversees SFO's Materials Recovery Areas (MRAs) where all materials are collected by the hauler. This includes handling all the materials generated at SFO, including recyclables and compostables.

SFO currently generates about 12,000 tons of solid waste per year. Intensive source separation of solid waste is undertaken at SFO by collecting compostable and recyclable materials which are then hauled to a third-party certified composting facility or recycled by the hauler. As a result, SFO currently achieves about 57% recycling rate for the generated solid waste. SFO intends to achieve zero waste generation by 2021, as stipulated in SFO's 2017-2021 Strategic Plan, through various efforts detailed in this study.

Airport custodial services are provided by Facilities Section personnel. Engagement of this stakeholder group is key to SFO's program. Custodial staff are encouraged to make recommendations for improvements based on their hands-on experience, direct knowledge and challenges. SFO has hosted focus group sessions with the custodial team, along with members of the Safety, Health and Wellness Unit, to provide a space for two-way communication regarding materials management and to identify

opportunities for improving this system and worker experience. SFO has also coordinated program improvements with the waste hauler based upon the feedback from the custodial team, as well as tenants. This practice has resulted in a strengthened sense of ownership from the custodial staff, who are acknowledged as the “zero heroes” in the airport’s Zero Waste Plan.

Materials management activities are currently managed by the Facilities Operations Section custodial staff and maintenance activities, the Sustainability and Environmental Policy deliver the Green Business Program and the Planning, Design, and Construction Section are responsible for the redesign of the materials sorting bins and management of the materials hauling contract. The materials hauling contract lists handling costs in terms of dollars per ton for each material stream. SFO receives a collection fee discount for recyclable materials, specifically metals and cardboard. The Facilities Operations Section monitors the status of waste management activities, including the procurement of equipment. The Sustainability and Environmental Policy Section measures and tracks the program’s metrics including materials procured, diverted, landfilled, and associated greenhouse gas emissions. The materials hauling contractor provides monthly data reports detailing the quantities of various waste materials generated at SFO; at one time, these reports were provided quarterly. To better understand the facility’s waste streams and identify opportunities for improvement, SFO has completed waste characterization studies, passenger studies, and facility audits; recycling and waste management status reports, sustainability reports, and developed an Airport Zero Waste Plan and a Sustainability Strategy.

SFO is currently implementing employee training on reduction, reuse, recycling, composting, and other materials management strategies during on-boarding/new employee training and at recurring trainings with tenants. SFO has materials management rules, regulations, and policies for employees and tenants; these requirements and policies encourage materials reduction practices, for example, paper use reduction, but also require onsite source separation and sorting.

When feasible, SFO reuses furniture, carpet, and tile from renovations and follows the San Francisco Environment Code, Green Building Code for City Buildings requiring all projects over 10,000 sq. ft. meet a USGBC LEED v4 Gold minimum. This sets strict requirements for materials allowed to enter SFO’S campus through new construction or renovation projects, including those led by tenants. Construction projects must also comply with the State, City and Airport’s construction and demolition debris requirements. Waste cooking oil is also collected and converted into renewable fuel by SFO’s service provider. Some natural gas is generated from the compostable waste stream at the haulers facilities and is collected for use as renewable compressed natural gas by the waste hauler’s fleet servicing the airport. SFO’s green purchasing policy is administered by the City and County of San Francisco, but expanded to tenants through the San Francisco International Airport Green Business Program. Items purchased under this policy include products or supplies that are reusable, recyclable, compostable, sustainably sourced, made from recycled content, or packaged in bulk. These items include paper products, furniture, equipment, and office and cleaning supplies and can be easily sourced through the City-run website: sfapproved.org.

SFO has developed an Airport Zero Waste Plan as a resource for decision-making associated with projects, policies, and practices that may impact materials management, whether directly or indirectly. This Roadmap

further the underlying policies and requirements of the Environment Code and FAA guidance on the topic. It includes all waste materials and their lifecycles; it also prioritizes circular, regenerative, and reuse strategies. SFO has also developed maps of the Materials Recovery Areas (Figure 1); a “What Goes Where” guide (Figure 2) which describes items acceptable for recycling, composting, and landfilling; and Material Recovery Guides containing contact information and resources for what, where, and how to recycle and reuse items and properly handle and dispose of others (e.g. universal, electronic, hazardous waste). An example Material Recovery Tenant Guide is included at the end of this case example. These resources help engage all campus stakeholders SFO’s required and voluntary materials management practices.

SFO provides designated containers for various waste types in the terminals, employee offices, tenant spaces and other areas. SFO has developed a program to address materials sorting in passenger areas, leased spaces, and materials recovery areas.

When SFO decided to upgrade, standardize, and improve the terminal’s public facing waste bins, a study of passenger behavior supported the redesign of the signage for the bins, including incorporation of new iconography that relates to items most often found in an airport, straightforward phrasing, and color coordination to ensure the new Airport bins would be effective in promoting proper materials sorting in passenger areas.

Deploying the full-scale implementation of the new bins in the terminals is constrained by cost, which will be borne by each capital project as it comes online. Therefore, operations worked to develop an interim solution to retrofit all existing bins with new lids and labels that introduce the new Airport-wide standard for materials sorting and signage (Figures 3 to 7). This interim solution enables SFO’s passengers to improve source separation of materials into compostable, recycling, and landfilled categories at present time rather than waiting until each capital project is delivered. When the projects do come online, these updated bins will be reused and rotated across the campus to non-terminal facilities. Another element of this program is central solid waste collection areas, which have been designated as Materials Recovery Areas. The new messaging with the combination of iconography, color, and wording that is used on the public facing bins was carried through to these areas and the associated compactors and bins (Figures 8 and 9). This provides consistency of messaging throughout the materials recovery stream.

SFO requires source separation of materials by concessionaires, airlines, and other tenants. SFO’s Rules and Regulations state that tenants shall maximize recycling and composting by providing separate, marked containers for recyclables, compostables, and landfill waste. Tenants are required to source separate and ensure that employees and customers do so as well. The tenants’ agreements specifically prohibit mixing of recyclable or compostable materials in a landfill-bound waste container. Terminal concessionaires’ back of house spaces and the Materials Recovery Areas where they deliver source-separated materials feature the same color coding and iconography of containers as used in the terminals and disposal areas. Materials Recovery Areas are increasing restricted (badged) access as well as cameras to identify improper material delivery and aid in follow-up education as needed. SFO also has the authority to issue fines for non-compliance with environmental requirements under the SFO’s Rules and Regulations.

Additional requirements placed on food and beverage concessions at SFO to guide source reduction and sustainable materials selection are SFO’s Food Service Waste Reduction Ordinance and SFO’s

Sustainable Food and Beverage Policy. Beyond banning the use of polystyrene foodware containers, the Airport Policy, adopted prior to opening SFO and industry's first LEED Gold terminal (Terminal 2 in 2011), requires tenants use un-bleached paper products and compostable to-go containers and utensils; this, paired with updated materials sorting signage, is meant to streamline and simplify the material system for tenants and passengers alike.

To motivate and support tenant participation, SFO launched a Green Business Program. The program is based on the State of California's Green Business Program, administered locally by the City and County of San Francisco and San Mateo County. The Green Business Program provides tenants with the necessary tools, training, and resources to increase back-of-house compostable and recyclable materials source separation, among other operational sustainability measures. To support these efforts, SFO is providing back-of-house material collection containers, labeling, and training as well as "concierge" level support to help tenants overcome initial challenges with source separation, sorting, and more. Information about the Green Business Program is provided to tenants and is included at the end of this case example.

Tenants participating in the Green Business Program pay discounted waste permit fees per leased space and receive additional savings if they hold multiple trash permits, which can add up to \$2,500 per year per trash permit. In addition to this financial incentive, the program also provides a mechanism for recognizing participating tenants, beyond those offered at the state-level (e.g. posting all certified businesses on the statewide and County websites and Green Business logo for certified tenants to display and post online. SFO has featured certified tenants on SFO's website and celebrates those certified at biannual All Tenant Meetings. Recognizing that convenience is a key factor for tenants with limited labor, space, time, and other resources, SFO has developed maps and guides to aid the tenants in materials management and educational efforts.

To support tenant participation, SFO conducts outreach during an annual tenant meeting, by hosting tenant walks, and emailing and calling tenants directly. Airport staff host site visits scheduled based upon the availability of the prospective Green Businesses to identify high impact energy, water, or materials measures for the tenants to implement.

SFO has implemented a voluntary food donation program titled *SFO Unites Against Hunger*. SFO has partnered with Waste No Food, a local non-profit organization that provides a mobile and web-based marketplace for Airport tenants to post excess packaged food they have that is past its sell date but still consumable. Tenants place the food into one of four refrigerators conveniently located throughout SFO. Qualified non-profit charities near the donors who have been vetted by Waste No Food can then claim the food. The program is looking to expand to include prepared foods in the near term. Some of the airlines also donate toiletries from international flights through Airline donation programs.

SFO regularly shares information about its programs and tools with other airport facilities around the Country, including by participating in the ACI-NA Waste Management Working Group.

In the future, SFO intends to continue certifying its tenants under the Green Business Program; updating the waste management webpage with new materials and resources; modifying and adding Materials Recovery Areas; updating public space materials sorting bins, container messaging and color-coordinated

lids; and upgrading compactor access and material bin scale technologies. SFO will also continue to address materials and recycling in the Airport Commission offices as well as coordinating with airlines to address deplaned materials. SFO's Zero Waste Plan includes enhanced source separation and procurement strategies to address capacity limitations, and will be built on expanded partnerships and effective behavior change-based programs targeting key stakeholders. SFO recognizes that starting small and conducting frequent and on-going coordination with stakeholders are important foundations from which to build a successful program. In the long-term, SFO is considering the use of compactor sensor technology to allow SFO to monitor on-site waste generation rates.

MATERIALS RECOVERY AREAS WHAT GOES WHERE?

Compost



Recycle



Landfill



Figure 2: "What Goes Where" guide; courtesy of San Francisco International Airport



Figure 3: Standard signage on existing bins (see Figure 6); courtesy of San Francisco International Airport

GRAPHIC MESSAGING

FEBRUARY 2017



GRAPHIC PLACEMENTS

Recycle



Compost



Landfill



Figure 4: Standard signage integrated on new Materials Sorting Bins; courtesy of San Francisco International Airport



Figure 5: Standard signage integrated on existing bins; courtesy of San Francisco International Airport

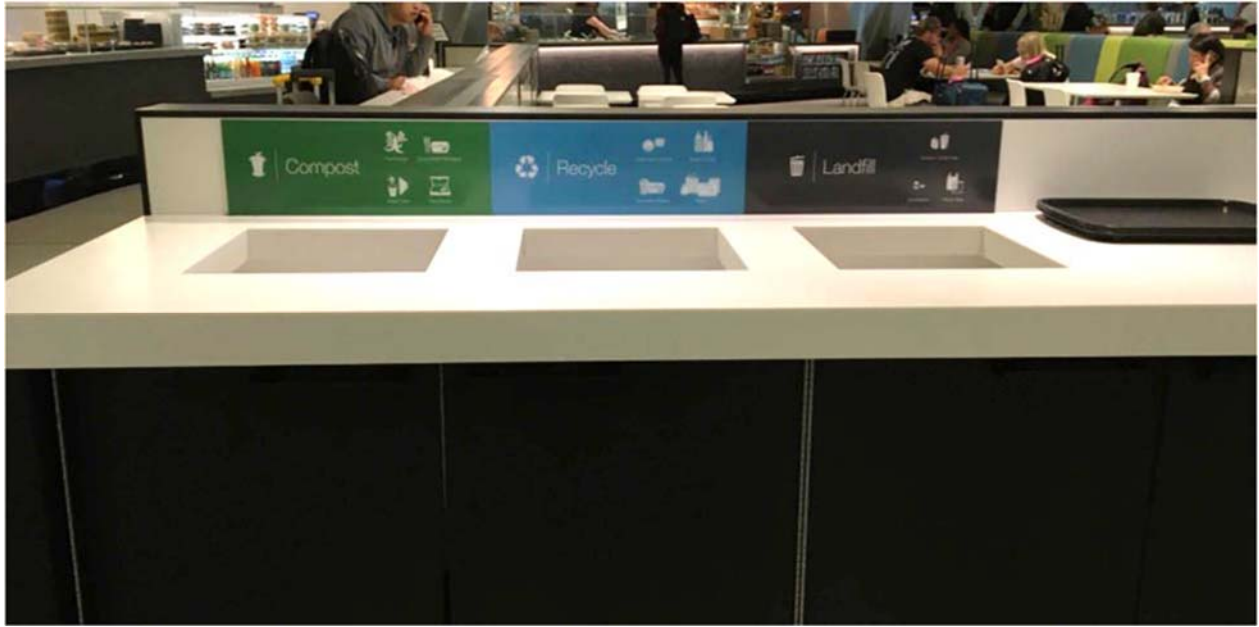


Figure 6: Standard signage on built-in Materials Sorting Bin Stations; courtesy of San Francisco International Airport



Figure 7: Standard signage in Materials Recovery Area; courtesy of San Francisco International Airport



Figure 8: Standard signage on Materials Recovery Area compactors; courtesy of San Francisco International Airport

MATERIALS RECOVERY TENANT GUIDE

Have an item and not sure how to reuse, reclaim, recycle or dispose of it? Read on, visit Recycleworks.org or earth911.com or email: greenbusiness@flysfo.com

Material Type	Airport Service Provider	Contact Information	Additional Resource
Compost, Recycling, Landfill Materials		Jennifer Acton x1-8380 Airport Duty Managers x1-5222 Revenue Development x1-4500 SFOConcessions@flysfo.com	Materials Recovery Areas Map https://sfoconnect.com/sfo-green-business-program greenbusiness@flysfo.com
Edible Food – DONATE IT!	Unite Against Hunger	For a list of service providers visit the following resource websites: www.smchealth.org/environ/toxic	www.recycleworks.org/ www.earth911.com www.recyclewhere.org
Universal Waste Recycling <i>(batteries, pesticides, mercury-containing equipment)</i>	San Mateo County Health	www.smchealth.org/environ/toxic For a list of SMC haulers visit link below: www.smchealth.org/sites/main/files/file-attachments/hazwaste_hauler_list.pdf	Very Small Quantity Generator (VSQG) Program: (650) 655-6217 www.smchealth.org/vsqq
Liquid Waste <i>(fats, oils, grease)</i>	Darling International	Revenue Development x1-4500 Airport Duty Managers x1-5222	
Surplus Items <i>(furniture, electronics, office supplies)</i>		For a list of service providers visit the following resource websites: Requirements for project Construction & Demolition Waste Please contact: Jennifer.Acton@flysfo.com	www.recycleworks.org/ www.recyclewhere.org
Construction & Demolition Materials			

Interested in applying these resource recovery actions @ home? Visit to learn where household items go: Recycleworks.org (scroll to bottom of the page) or Recyclewhere.org. For household toxic waste collection (batteries, light bulbs, paint, motor oil, etc.) visit: flowstobay.org/toxic

DISCLAIMER - This partial list serves as a reference only. The mention of a company does not constitute an endorsement by the Airport. For more resources visit websites listed above or www.smchealth.org/environ/toxic.

SFO's Green Businesses

Save Money. Gain Customers. Get Recognized.



Interested?

Your runway to growing greener starts by contacting our team: greenbusiness@flysfo.com or 650-821-8380.

The Program

SFO's Green Business assistance program is aimed at increasing energy and water efficiency, generating cost-savings, reducing waste, and creating a healthier environment for all employed at or traveling through our Airport. A recognized global leader in sustainability, SFO seeks to engage its tenants in achieving a higher environmental operational standard by offering this new eco-concierge service to help its partners cut costs and conserve finite resources.

The Benefits

				
REDUCE COSTS	SAVE MONEY	GAIN RECOGNITION	EXPAND WEB PRESENCE	PROMOTE WELLNESS
Reduce costs through discounted trash permit fees (>\$1000 annually)	Save money via efficiency upgrades that achieve utility savings	Gain recognition at annual environmental awards	Expand web presence through features on SFO, City, County and Green Business Program websites	Increase employee health, morale & productivity

3 Easy Steps

- 1 Register** to gain your green business checklist at GreenBusinessCA.org. Be sure to register your location as **SFO Airport** and list your zip code as **94128** to ensure that you receive the correct checklist. Fill out as much of the form as you can.
- 2 Host a site visit** with our team to review your checklist and learn new environmental practices to implement that can save you money.
- 3 Finalize** by submitting documentation to confirm all checklist items are complete. Certified businesses receive a certificate, electronic logo and window decal to display and use in marketing materials.

Gain Green Support

San Francisco International Airport

Water Conservation

(650) 821-8380
flysfo.com/sustainability

- Free efficiency improvement evaluation
- Free water saving devices
- Custom access to rebates for high efficiency fixtures and water savings retrofits

Waste Cooking Oil Collection

(415) 647-4890

- Collection of cooking oil for food services via Darling International, Inc in designated Courtyard
- Free containers for collecting cooking oil

Recycling & Composting

(650) 821-8380
flysfo.com/sustainability

- Free on-site assistance, including customized outreach materials and staff/management training
- Free containers for back of house use
- Deep discount on trash permit free to all certified businesses

Green Building

(650) 821-5065

- Free assistance on SFO requirements for all TIs
- Recognition program for all SFO LEED certified buildings

San Francisco Department of the Environment

Energy Efficiency

(415) 355-3778

- Free on-site energy efficiency assessment
- Customized action planning and financing options for efficiency improvements

Green Purchasing

(415) 355-3766
SFOEnvironment.org/toxics-health

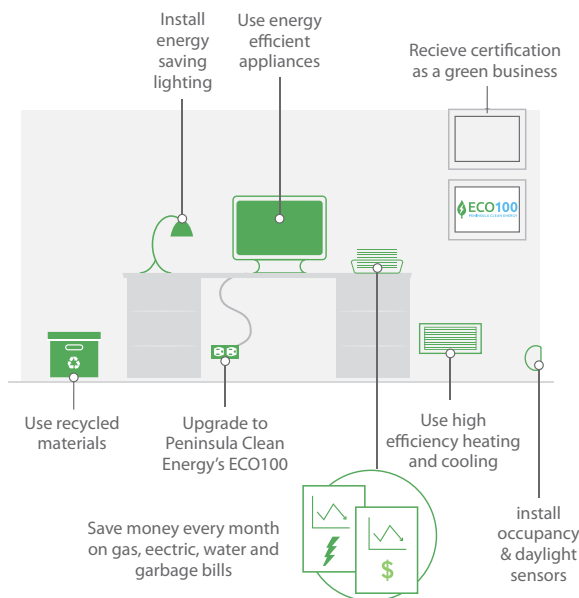
- Free assistance in choosing environmentally preferable alternative cleaning products, office supplies, equipment, etc.

Clean Transportation

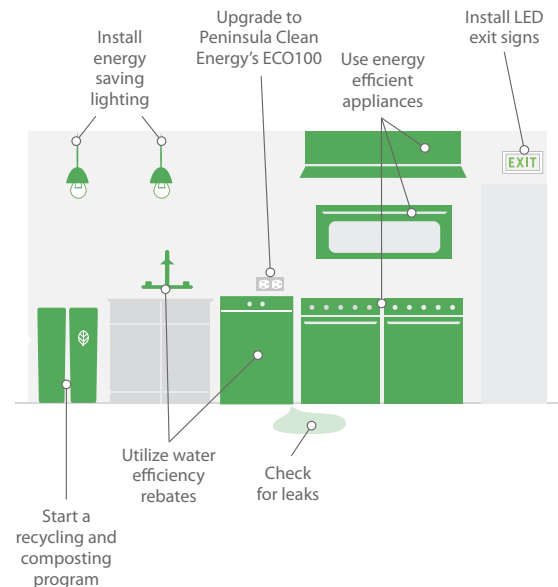
(650) 588-8170
Commute.org

- Free assistance to help employees find carpool/vanpool partners, start a commuter benefits program, and learn more about workplace EV charging.
- Free Emergency Ride Home (<http://commute.org/employer-services/221-emergency>) to support your employees who walk, bike, take transit, carpool or vanpool to and from work

Support Your Office



Transform Your Restaurant



Register to access your green business checklist at GreenBusinessCA.org. Fill out as much of the form as you can. When filling out the form, be sure to register your location as **SFO Airport** and list your zip code as **94128** to ensure that you receive the correct checklist.

