

SMaRT Station® Annual Report 2022-2023

SMaRT Partners — Mountain View, Sunnyvale



Fiscal Year Recap and Look Ahead

The SMaRT Station® (SMaRT) had a busy year of serving the Sunnyvale and Mountain View communities. In addition to processing 142,780 tons of municipal solid waste (MSW) and diverting 50% of all incoming materials from the landfill, SMaRT successfully completed several equipment upgrades. During this year, the station reduced emissions by moving from propane- and diesel-powered forklifts to electric forklifts, purchasing a hybrid excavator and installing solar panels on its roof. SMaRT also began using state-of-the-art robotic arms to assist staff with identifying and pulling recyclables from the waste stream. These accomplishments were achieved in the face of numerous challenges, such as increased costs of shipping and labor associated with inflation, supply-chain shortages, and recycling market fluctuations.

Looking ahead to the 2023-2024 fiscal year, SMaRT will complete the upgrade of its source-separated food scraps system, and finish resurfacing the tip floor. SMaRT solar panels will begin operation in 2024. SMaRT will also continue to make progress on the NextGen project.

SMaRT Station NextGen Project Update

The SMaRT Station currently has two processing systems, one for MSW and one for source-separated recyclables. The NextGen Project will upgrade the existing MSW processing system to allow for processing of MSW and source separated recyclables on a single integrated system.

In October, staff issued a request for proposals (RFPs) to design, provide, and install waste processing equipment that would create a single integrated system. Staff will review the proposals received in early January 2024.

The area at the SMaRT Station where incoming refuse trucks tip the garbage is called the tipping floor. The combination of a continuous flow of heavy trucks, loading equipment that move the garbage, and the corrosive liquid that drains from the garbage has damaged the tipping floor and it needs to be resurfaced. As part of the NextGen project, the 40,000 square foot tipping floor will be resurfaced at the end of 2023.



Dawn S. Cameron
Public Works Director, City of Mountain View



Ramana Chinnakotla
Environmental Services Director, City of Sunnyvale

Costs, Revenues and Diversion 2022-2023

Financial Summary of Costs and Revenues

	Mtn. View	Sunnyvale	Totals
Population by City	83,864	156,234	240,098
Cost Sharing Percentage	26.1%	73.9%	
COSTS (in thousands)			
Operating costs	\$4,828	\$12,834	\$17,662
Landfill Fees and Taxes	\$1,295	\$4,553	\$5,849
Organics Diversion costs	\$850	\$2,466	\$3,316
Capital Replacement Fund	\$77	\$203	\$280
Host and Land Rent Fees to General Fund	\$290	\$752	\$1,042
Total Costs	\$7,341	\$20,807	\$28,148
REVENUES (in thousands)			
MRF Recovered Recycling Revenues	\$18	\$39	\$57
Source Separated Recycling Revenues	\$96	\$172	\$268
Public Haul Fees collected	\$116	\$1,031	\$1,147
Office Rent	\$4	\$11	\$15
Total Revenues	\$234	\$1,252	\$1,487
NET COSTS (in thousands)	\$7,107	\$19,555	\$26,662

SMaRT Station Diversion Summary

(in tons)	Mountain View	Sunnyvale	Other Jurisdic-tions	Totals
MSW delivered to SMaRT Station	39,775	84,371	2,325	124,146
MSW Public haul	1,650	14,659		
Total MSW Delivered to SMaRT Station	41,424	99,031	2,325	142,780
MSW disposed at Kirby Canyon landfill	26,477	63,297	1486	91,260
MSW material diverted from the landfill at the SMaRT Station	14,948	35,734	839	51,521
Organics brought to SMaRT Station	959	13,765		14,725
Recyclables brought to SMaRT Station	4,709	21,795		26,504
TOTAL DELIVERED	47,093	134,591	2,325	184,009
Total amount of material delivered to the SMaRT Station and diverted from the landfill	20,616	71,294	839	92,749
ALL DIVERSION ¹				50%
MSW DIVERTED ²				36%

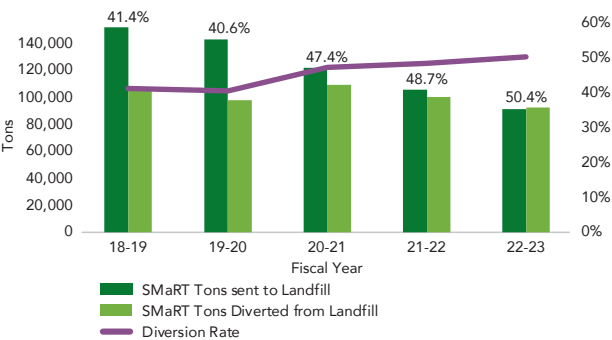
Notes:

1. Overall facility diversion is over 49%, not a formula for each city
2. Diversion from municipal solid waste is over 35%, not a formula for each city
3. "Other Jurisdictions" refers to Los Altos and Santa Clara, who used SMaRT as a backup processor during this fiscal year.

Marketing Success

Percentages shown on these charts for diverted and marketed materials reflect material weight.

Materials Diverted from the Landfill over the last 5 Years

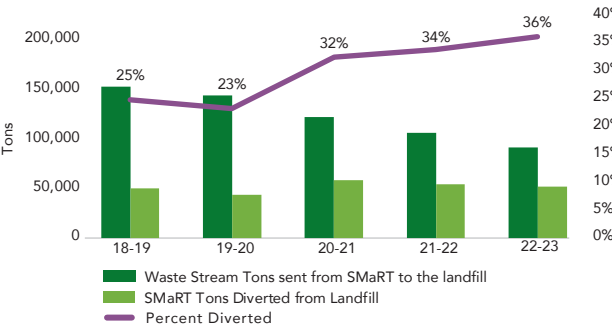


This chart shows how much of the MSW, recyclables, yard trimmings and food waste received by SMaRT is sent for recycling and sent to the landfill. The percent of materials diverted from the landfill is called the Diversion Rate.

In FY20-21, the City changed its organics diversion requirements, resulting in an increase in diversion of MRF fines.

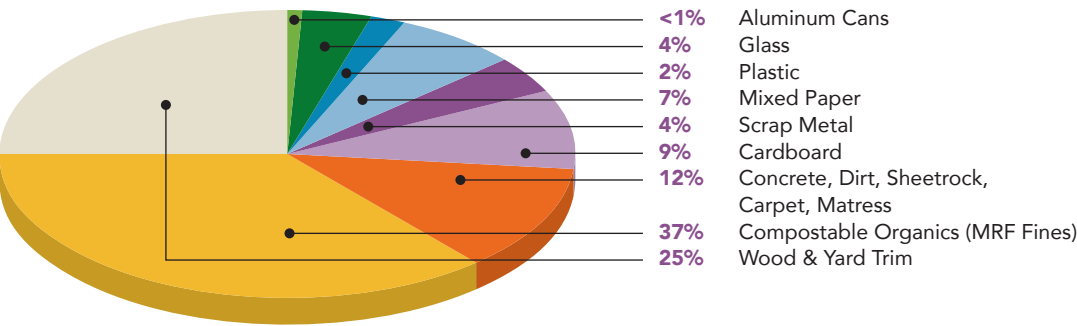
In FY21-22, SMaRT stopped receiving waste from Palo Alto and yard waste from Mountain View.

MSW Diverted from the Landfill over the last 5 Years



This chart shows how much of the waste stream was diverted from the landfill and sent for composting after being processed at the SMaRT Station.

SMaRT Station All Materials Marketed



SMaRT Station Recycling Market Update

The SMaRT Station receives, separates and processes recyclables from Sunnyvale and Mountain View residents and Sunnyvale businesses. After processing the materials, SMaRT Station Operator Bay Counties SMaRT Inc. (BCS) sells the recyclable materials to buyers who turn the materials into new products. The price that BCS sells the recyclables for varies depending on economic and logistical conditions. While the demand and prices for recyclables fluctuates, BCS continues to manage the ups and downs by forming strategic partnerships with buyers and optimizing the space at the facility to store materials until they are sold.



BCS also started new initiatives to divert materials during the 2023 fiscal year. BCS began selling glass to Halo Glass Recycling, a new facility opened by E. & J. Gallo Winery to supply the glass for the company’s beverage bottles.

SMaRT Station Highlights

New Technology at the SMaRT Station

Electric Forklifts

The SMaRT Station is going electric! In the summer of 2022, SMaRT deployed five new electric forklifts as part of its Forklift Replacement Plan. These new forklifts replaced most of the facility’s retired propane- and diesel-fueled forklifts. These electric forklifts are reducing the SMaRT Station’s greenhouse gas emissions and are more energy-efficient than the previous fuel-fired forklifts. The older propane-run forklifts used about 1,200 gallons of fuel per month. The new electric forklifts have reduced fuel usage by 88% to only 150 gallons per month. The project has the same impact as removing 9 metric tons of carbon dioxide from the atmosphere each year. SMaRT installed new charging stations onsite to charge the new forklifts.

Robotic Arms

As part of the recycling process, professional sorters pull recyclable material off the SMaRT Station’s recycling line. Sorting is a challenging job, so SMaRT Station operator Bay Counties SMaRT Inc (BCS) is trying out robots to help their sorting staff. In January 2023, three robotic arms began recovering recyclables from the SMaRT Station recycling line. The robots were chosen because of their small footprint, ease of installation, and successful recovery of objects in tight locations. These robots, developed by Everest Labs, use a software called RecycleOS to quickly scan and understand what is on conveyor belts. The software then directs the robotic arms to pick and remove the valuable recyclables from the lines. The robotic arms assist the sorting staff in recovering valuable materials and increasing diversion from the waste stream. Periodic audits of the robots have demonstrated a pick rate of over 85%. These robotic arms are leased by BCS with a grant from the Recycling Partnership.



Food Scrap Processing System Upgrade

Food scraps from City of Sunnyvale residents, restaurants, and grocery stores are collected by the franchise hauler in trucks and unloaded at the SMaRT Station. The processing machines break and discard plastic or compostable bags. After going through a few more steps, food scraps are converted into a liquid mash. This mash is nutrient-rich and can be used as fertilizer, an energy source and animal feed. In the coming years, the City plans to use the mash as an energy source for the anaerobic digesters at Sunnyvale’s Water Pollution Control Plant.



The existing system is old and needs constant repair and maintenance. The City received a \$3 Million grant from the California Department of Resources Recycling and Recovery (CalRecycle) to replace the existing system. This upgrade includes a depackaging machine that efficiently separates food from the bags. The upgrade also includes a grinder to break down the organic material, and a walking floor to efficiently transport the organics.

The new system is expected to come online in early 2024.

Partners in Leadership 2022-2023

CITY OF SUNNYVALE

Mayor Larry Klein
Vice Mayor Omar Din
Councilmember Russ Melton
Councilmember Alysa Cisneros
Councilmember Richard Mehlinger
Councilmember Murali Srinivasan
Councilmember Linda Sell
City Manager Kent Steffens

CITY OF MOUNTAIN VIEW

Mayor Alison Hicks
Vice Mayor Pat Showalter
Councilmember Margaret Abe-Koga
Councilmember Ellen Kamei
Councilmember Lisa Matichak
Councilmember Lucas Ramirez
Councilmember Emily Ann Ramos
City Manager Kimbra McCarthy