



# City of Sunnyvale

## Agenda Item

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**16-0844**

**Agenda Date: 9/20/2016**

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### **REPORT TO COUNCIL**

#### **SUBJECT**

City-wide Residential Food Scraps Collection Program for Single-Family Households and Small Businesses that Use Commercial Cart Service

#### **REPORT IN BRIEF**

Between March and December of 2015 the City and Specialty Solid Waste & Recycling (Specialty) provided an innovative food scraps collection pilot program to more than 500 households in five Sunnyvale neighborhoods. The pilot provided a split cart (repurposed from the City's "split-cart" recycling program) to each household. Residents were asked to place food scraps in one side of the cart and garbage in the other for weekly collection by a split-body truck.

The purpose of the pilot was to test the feasibility and suitability of the split carts for food scraps collection. The amounts of food scraps and garbage collected in the pilot areas were carefully measured in order to gauge resident participation rates and food scraps capture rates. Contamination levels (i.e., garbage in the food scraps) were monitored. Staff also tested various outreach methods and messages for clarity and effectiveness.

The tonnage data and resident feedback generated during the pilot program was analyzed to draw conclusions on this method for diverting food scraps from single-family homes. This information was combined with estimates of the cost for collecting and diverting the food scraps and compared to the cost of the present system in which food scraps are, for the most part, disposed in a landfill.

Based on the food scraps capture and participation data, and estimates of the net cost of implementing this program Citywide, staff is recommending that Council direct staff to implement a split-cart food scraps collection program for all single-family households, as well as 300 small businesses that have residential-style garbage cart service. The food scraps would be processed into animal feed ingredients at the Sustainable Organic Solutions (SOS) facility in Santa Clara, consistent with the contract that the City recently entered into with Bay Counties Waste Services (BCWS) and its SOS partner. Full implementation is projected to divert about half of food scraps generated, or about 4,000 tons or more per year of food scraps. The net cost of adding the program is already anticipated in the budget, so the program could be implemented within the current long-term financial plan for the Solid Waste Fund.

This item was heard by the Sustainability Commission on August 15, 2016 and the Commission voted unanimously to advise Council to follow the staff recommendation and select alternative 1, directing staff to implement a split-cart curbside collection program to collect food scraps along with garbage for single-family households and small businesses that use commercial cart service.

#### **BACKGROUND**

On April 23, 2013, Council approved a Zero Waste Strategic Plan (ZWSP) and directed staff to take actions that would lead to the City achieving ZWSP goals that call for 75 percent solid waste diversion by 2020 and 90 percent diversion by 2030. The most recent state-calculated diversion rate for Sunnyvale shows that the City diverted 64% of its solid waste during 2014. The diversion rate will be updated in the fall of 2016.

New equipment installed in 2015 at the Sunnyvale Materials Recovery and Transfer Station (SMaRT Station®) has increased the combined amount of recyclables and organics captured from the incoming mixed waste “garbage” stream from the previous recovery rate of 18 percent to the new recovery rate of 31 percent or more, a nearly unprecedented achievement in the industry. This is a big step toward the diversion goals. However, meeting the ambitious ZWSP diversion goals will require both continued SMaRT Station recovery of recyclables and organics as well as collection of source-separated organics such as food scraps.

Meeting the City’s diversion goals also complements new State mandates for commercial organics collection and recycling. New and expanded organics collection and diversion programs are generally considered the most effective and lowest cost methods to divert materials that remain in the waste stream, help local businesses comply with the state mandate, and achieve the Council’s ZWSP goals.

A waste characterization study conducted by the City found that food scraps from the commercial and residential sectors were the largest remaining portions of the City’s total waste stream, comprising about 26 percent of the amount disposed. Focusing on single family households, food scraps made up about 33 percent (8,000 tons per year) of the amount of garbage collected from this sector.

Commercial organics are already being collected from larger generators consistent with the requirements of AB 1826, which was signed into law in 2014. It appears that the California Air Resources Board is moving to impose similar statewide requirements for mandatory residential organics collection as part of its Short Lived Climate Pollutants (SLCP) strategy. Stopping (or greatly reducing) the flow of organics into landfills will reduce emissions of methane, a potent greenhouse gas, generated in landfills.

Therefore, staff has targeted residential food scraps diversion as the next major step in the ZWSP.

### **EXISTING POLICY**

Council Policy 3.2.4 - Zero Waste Policy

- Reduce the amount of Sunnyvale waste being disposed
- Encourage residents, businesses and agencies to reuse, reduce, and recycle

Climate Action Plan (CAP)

- LW-2.2. Select materials to be targeted for diversion and diversion methods, services, or technologies based on the results of the Zero Waste Strategic Plan.

### **ENVIRONMENTAL REVIEW**

The food scraps collection program would not require an additional (fourth) cart or collection truck on the residential routes since the food scraps material will be collected in the split cart along with the garbage. These operations are consistent with the Negative Declaration approved by Council on January 30, 1990 when the franchise with Specialty was awarded. Therefore, no additional CEQA

review is required.

### **DISCUSSION**

Many cities are implementing food scraps diversion programs. Staff conducted a review of a number of these programs. With this information, staff designed a pilot program designed to take advantage of the particular situation in Sunnyvale and to determine the response in several diverse neighborhoods. The City of Mountain View, a SMaRT Station partner city, conducted a pilot utilizing a different approach.

In designing the approach to diverting more residential food scraps from disposal, staff focused on six program characteristics.

- Minimizing collection costs and impacts
- Maximizing diversion of food scraps and other organics
- Making the highest and best use of all organics collected
- Maximizing flexibility in marketing options
- Making it as convenient as possible for residents so as to maximize participation and compliance with program guidelines
- Minimizing the cost of program implementation

### **Sunnyvale Pilot Program**

The pilot program began in March 2015 for 500 households in five economically diverse neighborhoods across the City. Staff targeted three different housing types (single family, townhouses, and a mobile home park) to test for variations in cart usage by residents and any unanticipated collection or customer acceptance issues. Each household was given outreach material prior to the program start date with details about the program.

During the pilot, existing black garbage carts were removed and replaced with 64- or 96-gallon 50/50 split carts similar to the split recycling carts in use, but with a different lid color (black for garbage and yellow for food scraps). The Sunnyvale pilot took advantage of the City's experience using split recycling carts. Sunnyvale residents are familiar with split carts, and Specialty is familiar with the operation of a split cart system. Households also received small countertop containers for collecting food scraps along with two boxes of plastic liners for each container. Materials accepted in the program were food scraps (including meat and bones) and food soiled paper (pizza boxes, paper towels, etc.). See Attachment 1 for a summary of the pilot program that includes examples of outreach materials, details about data collected during the pilot, and post-pilot survey results. Data was collected using "lid flipping" by staff who walked the pilot areas and surveyed and recorded each cart's contents, by hand sorting of the material at the SMaRT Station, and by using a survey.

Results from the program were very positive. The lid flipping observations found that 73 percent of households participated. The portion of available food scraps diverted from the garbage was also high, at 62 percent. While participants early on voiced concern about a lack of space for garbage in the garbage side of the cart, only a small number (6 percent) actually overfilled their cart. When asked if they were to receive a 70/30 split cart (such a cart was provided to the Friday route halfway through the pilot), the majority thought they could fit all their garbage in the 70% side of the cart. In a post-survey questionnaire 64 percent of participants supported City-wide implementation of the split cart program.

**Mountain View Pilot Program**

Mountain View conducted its pilot during the same time Sunnyvale's pilot was running at 980 households in a portion of the Old Mountain View neighborhood. In the Mountain View pilot, participants placed food scraps in their yard waste cart for weekly collection. Garbage was collected weekly in 415 households and every-other-week (EOW) in 565 households. The existing yard waste service level for Mountain View residents is every-other-week, so for the pilot participants, moving to weekly yard trimming/food service was an increase in service levels for yard waste

Similar to Sunnyvale's pilot, data was collected through visual cart audits, samples of cart materials, and a survey. Participants received similar outreach materials prior to the program as well as a countertop pail and plastic liners. See Attachment 2 for a summary of Mountain View's pilot program.

Though there are several plusses to the Mountain View approach, Sunnyvale staff has concluded that the Mountain View method of generating a food/yard mix is not viable in Sunnyvale. It does not produce a material that can be used for the highest beneficial use, and, more importantly, it is unlikely that there will be a long-term market for this material.

**Processing of Food Scraps**

During the pilot program, an interim processing method was used due to the relatively small amount of material collected. For a full-scale program, high-volume and long-term contracts are needed.

California currently has very limited food scraps processing capacity due to difficulties in getting new facilities financed, located, and permitted. Staff researched potential processing facilities in order to assure the City of a place to process its source-separated food. On January 5, 2016, Council awarded two contracts for food scraps processing services:

1. A primary contract was awarded to BCWS in partnership with SOS for delivery of pre-processed commercial and residential food scraps to the SOS facility in Santa Clara, where it will be converted into an animal feed ingredient.
2. A backup contract was awarded to Recology's Blossom Valley North compost facility in Vernalis for aerobic windrow composting to create a soil amendment.

In recommending these vendors, staff focused on making sure that they could handle the levels of contamination observed in the pilot program. Both vendors use mechanical equipment that screens out contaminants and can produce marketable material from the food scrap generated in the pilots.

**Program Costs**

Implementing the food scraps program following the Sunnyvale pilot design will incur startup costs and ongoing annual costs. Table 1 shows the estimated one-time costs for startup of the new program. These include the net cost of replacing seven existing collection trucks and more than 30,000 garbage carts with new split-body trucks and spilt carts. This comprises the portion of the cost of these items that has not already been reimbursed to the contractor, less the salvage value of the trucks and carts. Other costs include the kitchen pails, bags, and outreach materials.

Table 1

| <b>Estimated One-Time Startup costs</b>   |             |
|---|-------------|
| Net cost of truck replacement             | \$450,000   |
| Net cost of cart replacement              | \$350,000   |
| Kitchen pails                             | \$120,000   |
| Pail liner bags                           | \$25,000    |
| Cart labels                               | \$110,000   |
| Assembly & delivery of carts, pails, bags | \$115,000   |
| Outreach materials                        | \$30,000    |
| Total                                     | \$1,200,000 |

Table 2 shows the annual costs of providing food scraps collection City-wide. Ongoing costs will include the additional collection cost (seen by the City as depreciation over the ten-year life of the trucks and carts) and the cost of processing the food scraps, minus the cost savings resulting from less material being delivered to the landfill. The net cost of processing, minus disposal, depends on the level of participation by residents. As discussed, food scraps diversion in the pilot was 62%. For full-scale implementation, a diversion of 50% is assumed. Higher diversion would result in slightly higher annual net cost. (The revisions to the Kirby Canyon Landfill contract made in 2012 allow waste reduction savings to be realized.)

Table 2

| <b>Estimated Additional Annual Costs</b> |            |
|--|------------|
| Extra cost of spilt-body trucks          | \$18,000   |
| Extra cost of split carts                | \$134,000  |
| Replacement of kitchen pails             | \$5,000    |
| Cost of processing                       | \$340,000  |
| Savings in disposal costs                | -\$277,000 |
| Total                                    | \$220,000  |

### **Recommendation and Evaluation**

Staff is recommending expansion of the food scraps pilot to the entire City using the collection method of the Sunnyvale pilot and the processing contracts in place. The following discussion outlines the proposed program relative to the six program characteristics presented earlier in this report

#### **Minimizing collection costs and impacts**

The split-cart system allows for collection of food scraps in the same cart and truck as the garbage so a separate food scraps cart and route and additional collection trucks are not necessary. This is certainly desirable compared to adding a separate food scraps cart and collecting with a separate collection vehicle.

#### **Maximizing diversion of food scraps and other organics**

Diversion of food scraps was very high, at 62 percent, as was participation in the program, at 73 percent. These results indicate that a significant majority of residents are willing to and interested in separating food scraps.

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*Making the highest and best use of all organics collected*

The US EPA Food Recovery Hierarchy is as follows:

- Reduce the amount generated
- Feed hungry people
- Feed animals
- Industrial uses such as fuel conversion and digestion
- Composting
- Landfill or Incineration

Sunnyvale will continue to encourage source reduction. Feeding people food scraps discarded from households at a municipal scale is not feasible. Therefore, feeding animals is the highest use, while digestion, fuel conversion, and composting are also methods to possibly have available as back-up. Collecting food scraps as a source separated material allows for the highest and best use of the material. Both allowing food scraps to be collected with mixed waste and then partially removed by processing, and mixing it with other materials such as yard trimmings, preclude the highest and best uses.

*Maximizing flexibility in marketing options*

Availability of markets as well as monetary value for organic materials changes over time in response to changes in demand for the finished products. Costs to process various types of materials also change in response to changes in government regulations, and costs of land, energy, etc. This can alter market acceptance standards in ways that may, in the future, produce unpredictable changes in the relative values of yard trimmings and food scraps. As a result, keeping the two types of organics separate keeps processing and marketing options open and allows for flexibility in where the materials can be sent.

If food scraps are mixed in with yard trimmings the end product cannot be used as animal feed or organic compost, thus lowering its value and increasing the processing cost. Even now, it is difficult to find a vendor willing to accept mixed organic material in the quantities that such a Sunnyvale program would produce and staff anticipates markets will tighten further as more municipal food scraps collection programs come on line in coming years

Also, compost made solely from yard trimmings collected by the City's existing program enjoys strong demand from commercial organic farms in the region. If, as in some communities, food scraps are added to the yard trimmings for collection, organic farms will not purchase the compost made from the food/yard mix.

In coming years there will also be potential for the pre-processed food scraps material to be sent to the Sunnyvale Water Pollution Control Plant to be processed in anaerobic digesters and used to produce electricity for the Plant. The proximity to the Plant is ideal since it is adjacent to the SMaRT Station thereby minimizing hauling costs and impacts, and the costs for processing will likely be competitive. Staffs of both programs have been in conversation about this promising project and are designing a pilot program.

As with any material generated in a waste stream, it is desirable to have multiple options (and active contracts) for processing. If a contractor is unable to accept material for any reason, an alternative must be immediately available.

*Making it as convenient as possible for residents so as to maximize participation and compliance with program guidelines*

Staff has found that providing easy to understand labeling on collection carts achieves better participation than relying on outreach messaging alone. This is especially true when new residents arrive who have not seen the City's outreach material. The two compartments of the split cart send an excellent visual reminder of the City's expectation that food scraps are to be separated from the rest of the garbage.

Further, Sunnyvale residents are familiar with the split cart concept, as they already separate recyclable paper from containers in the recycling split cart. And adding a split cart for garbage and food scraps serves as an incentive for residents to keep the food scraps out of the garbage to maximize the amount of space on the garbage side.

*Minimizing the cost of program implementation*

The Sunnyvale pilot has demonstrated that a full-scale program can be implemented at a reasonable cost and within established budget constraints. The ongoing annual cost of diverting 4,000 tons per year with a split cart food scraps collection program is estimated to be about \$220,000, with one time startup costs of \$1,200,000.

By having two contracts in place for food scraps processing, the City is ensured a stable price for the next five years

It is the judgment of staff that while the "collection" costs of the split cart/truck program exceed the costs for alternatives (such as processing at the SMaRT Station and mixing with yard trimmings), the benefits of high diversion, high quality product, marketability, and best use justify the higher collection costs.

**FISCAL AND RATE IMPACTS**

Both the start-up costs and the annual costs of implementing the food scraps program city-wide are within the amount provided in Project 830910, the Zero Waste Strategic Plan, which is funded throughout the Solid Waste Fund's 20-year financial plan. Therefore, no fiscal adjustments are needed if approved.

Rate impacts, as seen by individual ratepayers, will vary depending on the capacities of the split carts that BCWS purchases and the cart sizes selected by customers when the program is implemented. BCWS, in consultation with City staff, is currently discussing cart design and size options with potential cart vendors. With Council approval, vendors are prepared to give firm pricing. Note that there is a physical limit on how small a split cart can be and still have it direct the two types of material into the correct sides of the truck hopper.

Rate-setting specialists HF&H Consultants are under contract to the City to analyze the new cart sizes and calculate rates that are consistent with the City's existing Cost of Service rate policy. HF&H can do this work once a decision is reached on the number and capacities of carts to be offered. The reconfiguring of the rates to accommodate the split garbage/food cart should not increase the overall amount of revenue collected, and will be just a rebalancing of the amounts charged based on cart capacity and subscription levels. Staff would then return to Council with a recommendation for adoption of new rates.

In order to allow an earlier rollout, the Proposition 218 notices for the June 21, 2016, Council rate adoption included a section of contingent "Split-Cart Food Scraps" rates for residential and commercial cart customers. This section shows three ranges of cart sizes, with a rate cap for each size. So if it is possible to start the program rollout before the next rate-setting process, Council can adopt rates without an additional Proposition 218 notice process if the new rates are at or below these cap amounts. Optimistically, the truck purchase, cart design and purchase, and rate adjustments can be accomplished toward the end of this fiscal year. If not, the program will be rolled out in early FY 17/18 under the FY 17/18 Proposition 218 noticing rate structure.

### **PUBLIC CONTACT**

Public contact was made by posting the Council agenda on the City's official-notice bulletin board outside City Hall, at the Sunnyvale Senior Center, Community Center, and Department of Public Safety; and by making the agenda and report available at the Sunnyvale Public Library, the Office of the City Clerk, and on the City's website.

### **ALTERNATIVES**

1. Direct staff to implement a split-cart curbside collection program to collect food scraps along with garbage for single-family households and small businesses that use commercial cart service.
2. Direct staff to pursue a different approach to diversion of food scraps from single-family households.
3. Take no action.

### **STAFF RECOMMENDATION**

Alternative 1: Direct staff to implement a split-cart curbside collection program to collect food scraps along with garbage for single-family households and small businesses that use commercial cart service.

The recommended program provides a low cost method of diverting a significant portion of the largest remaining waste stream component that is still being disposed in the landfill. Pilot program results indicate that most residents will sort food scraps from other garbage and put them into the designated collection container. This program will be a cost-effective way to reduce landfill disposal of Sunnyvale garbage.

Prepared by: Karen Gissibl, Environmental Programs Manager

Reviewed by: Mark A. Bowers, Solid Waste Programs Division Manager

Reviewed by: John Stufflebean, Director, Environmental Services Department

Reviewed by: Kent Steffens, Assistant City Manager

Approved by: Deanna J. Santana, City Manager

### **ATTACHMENTS**

1. Summary of Sunnyvale's Food Scraps Pilot Program
2. Summary of Mountain View's Food Scraps Pilot Program
3. Excerpt of Minutes from August 15, 2016 Sustainability Commission Meeting