RecycleSmart School Education Program

2017 Excellence Award Entry
Educational Program
Central Contra Costa Solid Waste Authority
Janelle Cameron
janelle@recyclesmart.org
925-906-1801 x108
RecycleSmart School Education Program
Central Contra Costa Solid Waste Authority:
Danville, Lafayette, Moraga, Orinda, Walnut
Creek and unincorporated areas of Contra
Costa County, California
Population: 220,800
Cost per Household: $1.83
Annual Budget: $160,000
1) Executive Summary

The Central Contra Costa Solid Waste Authority (RecycleSmart) is a public agency that includes the communities of Danville, Lafayette, Moraga, Orinda, Walnut Creek, and portions of unincorporated Contra Costa County, California. There are six school districts within the service area and 58 schools are participating in the schools program, including all 49 public schools.

The RecycleSmart School Education Program was created to engage students and teachers in waste prevention and recycling and to create greater awareness of the importance of diverting materials from landfills.

The program was revamped in 2012 to focus on diversion performance by providing the technical assistance, training and incentives to help schools “walk the talk” and achieve RecycleSmart’s goal of 75% diversion. This involved engaging the whole school community (teachers, students, custodians, principals, district facility managers) to increase recycling and composting at each school site and in every school district.

The results have been dramatic and measured diversion has increased from 19% in 2012 to 59% in 2017.

Program features include:

- East Bay Municipal Utility District food recycling program – 39 schools participate in the food recycling program that transforms food scraps into renewable energy. An additional 14 schools divert food scraps through composting.

- Wastebusters awards program – recognizing schools that meet the awards criteria and achieve high diversion rates (50%, 60% and 75%). 20 schools were recognized as Wastebusters in 2017.

- Student scholarship program – awarding up to $4,000 to high school seniors who have made a significant contribution to waste prevention and recycling at their school sites. Seven seniors were awarded scholarships in 2017.
2) Research

RecycleSmart initiated its school recycling program in 2000 to assist schools in recycling education and program implementation. Program staff worked with students and teachers to initiate projects related to waste prevention and recycling. But the students and teachers were not empowered to make real change at their school sites and by 2011 diversion rates had stalled at under 20%.

Beginning in 2012, RecycleSmart revamped the program to focus on increasing diversion at each school, assisting schools to implement new programs based on the programs that the students had at home, engaging students, parents, teachers, faculty and staff at every level, and creating a service learning model where students could contribute significantly to the success of the recycling and composting programs at their schools.

Program enhancements were designed based on surveys of other school recycling education programs, including Alameda Green Schools Challenge, Castro Valley Sanitary District Green Ribbon Schools, City of Palo Alto Zero Waste Schools, and San Francisco Department of the Environment Food to Flowers.

RecycleSmart provided technical assistance to facility managers and custodial staff (in addition to parents, teachers, students, and administrators) to implement new recycling and composting programs to divert materials from landfills. Participation and diversion rates have increased steadily since 2012 toward the RecycleSmart goal of 75% by 2020.

Comprehensive Recycling and Composting

RecycleSmart manages the collection contracts for its member agencies and oversees the residential and commercial programs, but under state law, school districts are not required to participate in these programs or subscribe to these services. RecycleSmart worked with each of the school districts to
align their comprehensive recycling and composting programs to those provided to residential and commercial customers in the RecycleSmart service area. Creating the same messages for participation at home, work, school is a key element to the success of the education program. Since the recycling containers are consistent at home and at school, it is much easier for everyone to sort into the right cart.

Blue recycling carts or bins are for items like metal (including aluminum foil), glass bottles and jars, hard plastic containers and clean paper.

Green compost carts are for items like food scraps, yard trimmings, food-soiled paper like cups, plates, napkins, paper towels and other weak or wet paper, like tissues.

The landfill trash carts or bins are black or gray. At schools, typical landfill trash includes things like snack packaging (chip bags, granola bar wrappers, yogurt tubes and other “squirtables”), straws, plastic utensils, and plastic baggies.

**Food Scrap Recycling**

Schools in the RecycleSmart service area participate in the anaerobic digestion program offered through the East Bay Municipal Utility District. Food scraps collected from schools are digested at the waste water treatment plant and the biogas created from the process is used for energy and the digestate is used as a soil amendment. Students learn about the digestion process through classroom presentations and the RecycleSmart lesson plan.
RecycleSmart Lesson Plan

To ensure that all students understand how the recycling and composting process works and why it is important, RecycleSmart developed a lesson plan aligned to the Common Core social studies and science standards in analysis, classification, description, and problem solving.

Teachers are asked to teach the lesson before the first day that lunch is served at school. Students identify and sort the three types of materials (recyclables, food scraps, and landfill) and create a poster to display in their classrooms.

3) Planning and Goal Setting

The target audience for the program was primarily the school site community (students, parents, faculty, and staff). However, as with other outreach and education programs, we anticipate an ancillary impact as students and teachers take the lessons that they have learned at school and apply them at home.

Our SMART (Specific – Measurable – Attainable – Relevant – Time-bound) goals and objectives are:

1. Assist every school in the RecycleSmart service area to recycle and compost.
2. Provide direct support and program incentives to achieve 50% diversion by 2015 and 75% diversion by 2020.
To achieve these goals, we have developed several tactics:

**Direct Technical Assistance and Green Team Support**

Program staff provide direct technical assistance to schools throughout the service area and assist each school to form an on-site green team. Green teams can be led by a parent, teacher or student, but require the sign-off of the custodian and principal. Green teams:

1. Work together to develop a plan, conserve resources and influence behavior changes.
2. Implement and maintain projects under program.
3. Receive recognition after successfully implementing projects under the program and reaching diversion goals.
4. Apply to become a Wastebuster school to earn a monetary reward and additional benefits.

**Wastebusters Awards**

The Wastebusters program rewards schools for achieving specified levels of diversion.

- $1,500 for reaching 75% diversion and above
- $750 for reaching 60% diversion
- $500 for reaching 50% diversion

Approximately 20 to 25 schools qualify for Wastebusters awards each year and RecycleSmart issues approximately $20,000 in awards annually.

In addition to the monetary award, schools that reach 75% receive a plaque and a visit from the mayor or councilmember representing the community in which the school is located.

**Student Scholarships**

Recognizing that is more difficult to implement sustainable recycling programs in high schools, RecycleSmart partnered with Mt. Diablo Recycling in 2014 to create a scholarship program for high school seniors. The approach builds on the
service-learning model where students are able to contribute to the success of the recycling programs at their schools while learning about leadership, organization, communication, negotiation, and project management. Students demonstrating leadership in waste prevention and recycling can be awarded up to $4,000. Students must make measurable progress in implementing waste prevention, recycling or composting programs at their schools and submit an application with an essay and video describing their work. An example student video is available at the link below.

https://youtu.be/RDaCoy06JaU

School Recycling Program Budget

The school recycling program budget is one of the biggest line items in the RecycleSmart discretionary budget. A total of $160,000 annually is allocated to the program. This includes:

- $94,000 for program staff
- $30,000 for purchase of internal containers, custodial carts, posters, stickers and other outreach materials and equipment
- $20,000 for Wastebusters awards
- $16,000 for student scholarships

The program is funded through RecycleSmart’s share of revenues from the sale of recycled materials collected through the residential and commercial collection programs. The cost is equivalent to $1.83 per household based on the approximately 87,000 households within the service area.

Timeline

The program is implemented on an annual basis each school year and consists of the following activities.

**August-September**

- Meet with Green Teams at each school site
- Conduct on-site assessments
- Plan new programs or new program features
- Faculty meetings to present lesson plans

**October-March**

- Classroom presentations and assemblies
- Green Team training and waste audits
- Custodial training and technical assistance
Implementation of new program features

April-June
- Wastebuster awards and assemblies
- Student scholarships
- Recycling center tours

July-August
- Program reporting and analysis
- Planning for next school year

4) Implementation

Green Team Training

In developing the school recycling program, RecycleSmart took care to develop a consistent approach across the service area. It is important that Green Teams take advantage of best practices and learn from each other.

For example, when it came time to implement food scrap collection, the “Save the Earth Club” from Alamo Elementary paid a visit to Walnut Heights Elementary in Walnut Creek to learn best practices for adding food scraps composting to their recycling program.

Back in 2012, Walnut Heights Elementary was one of the first schools in the Walnut Creek School District to divert food scraps and compostable paper from the landfill and into the compost bin. Alamo Elementary was the first school in the San Ramon Valley Unified School District to follow suit.

The “Save the Earth Club,” made up of fourth- and fifth-graders, learned from these experts how easy it could be to switch to a three-stream system of compost, recycling and landfill trash. Walnut Heights students showed the system used by the school to keep all of that good compost from being put in the landfill where it will do harm to the environment by emitting methane, rather than becoming rich soil that would benefit a garden. Tips for having a
successful program include bin “trios” with clear sorting signs, sorting instruction through lesson plans, and student monitors at lunch, equipped with aprons and pickers, to help advise kids and pull out mistakes.

Taking the knowledge from Walnut Heights, students from Alamo’s “Save the Earth Club” expanded their earth-saving efforts to include “capturing” food scraps. Thanks to the visit, Alamo’s students, staff and parents were better prepared for any bumps in the road and gleaned helpful information to make their own food scraps composting program fit their school’s needs.

At Walnut Heights Elementary, initially, the student lunch monitors were given flexible roles to help students determine what was compostable, recyclable and disposable. Soon after implementing the composting program, it was noticed that teams who had specific roles operated more efficiently. That quickly developed into the roles of a “picker” and a “sifter”. The role of a picker is to help students identify which materials belong in which category. The role of a sifter is to identify and remove any contamination from each of the bins. The program has given students a sense of pride that they are doing something to help the Earth.

Custodial Support

Schools are often resource-constrained and the custodial staff are typically over-burdened with the many tasks they need to do to keep their schools clean and safe. To ensure that new recycling and composting programs do not have a negative impact on the custodial staff, RecycleSmart program staff work closely with the custodians and Green Teams to identify ways to ensure proper sorting of materials and streamlining collection and aggregation. Methods include:

- **Labeling and color-coding** – RecycleSmart provides internal collection containers, stickers and posters that are color-coded (blue for recycling, green from compost and black or gray for trash) and include pictures and descriptions of what is supposed to go in which bin.

- **Dual dollies and other equipment** – Custodial equipment, including rolling
carts, dual dollies, trash pickers, and clear bags help custodial staff streamline their operations and help Green Teams keep materials properly sorted.

- **Classroom compost pails** – The RecycleSmart program encourages a shared responsibility for the program between students, faculty, and custodial staff. To reduce the burden on the custodial staff for removing compostable materials from the classrooms, it is a student job to bring the classroom compost bucket to the cafeteria during lunch to dump the paper towels, tissues and food scraps from the classroom into the green bin. Students also participate in consolidating recycling from the classrooms to centralized locations. This type of service learning helps students connect the concepts that they are learning with practical implementation of related tasks.

- **Mini-landfill bins** – Since so little material generated in a classroom actually has to be thrown away, many schools are converting to min-landfill bins that hang on the side of the recycling bin. This method reduces the work of the custodial staff and shows students how much can be recycled and composted.

**Partnerships**

RecycleSmart works with many community partners to leverage the work of its program staff and provide more resources to our schools.

- **Republic Services** is the collection service provider and a partner in the school recycling program. In addition to collection services,
Republic provides on-site technical assistance, tours of its transfer station and landfill, and recycling truck assemblies (where students can see how a recycling truck works).

- **Mt. Diablo Recycling** is the recyclables processor for the RecycleSmart service area. Mt. Diablo also collects and redistributes reusable items, provides tours of its recycling facility and contributes funding to the student scholarship program.

- **Sustainable Contra Costa** supports the local Green Teams and service organizations, including Sustainable Lafayette and Sustainable Danville. These organizations provide volunteers and resources for the school Green Teams.

- **The Crayon Initiative** is a national non-profit that collects used and broken crayons from schools in the RecycleSmart service area and melts, reforms, and repackages them for children’s hospitals.

5) **Results**

Diversion results are measured based on the collection service volumes at each school for recycling, compost and trash. RecycleSmart is on target to reach its SMART goals, including:

- Comprehensive recycling and composting collection at each school site – All schools in the RecycleSmart service area receive recycling collection and nearly all schools that are eligible to receive food scraps collection are currently enrolled in the program.

- 50% diversion by 2015 – Measured diversion reached 50% in 2015 and 59% in 2017 with 12 schools exceeding the 60% and 15 schools exceeding 75% diversion.

---

**RecycleSmart Schools Diversion Rate Based on Collection Service Volumes**

- **Trash**: 41%
- **Food Waste**: 40%
- **Green Waste**: 5%
- **Recycling**: 15%
In 2017:

- 20 schools qualified for Wastebuster awards
- 15 schools reached over 75% diversion
- 12 schools reach over 60% diversion
- 7 schools reached over 50% diversion
- 7 high school seniors received scholarships

### RecycleSmart Service Levels and Diversion Rate by School District

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acalanes</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>–</td>
<td>33%</td>
<td>0%</td>
</tr>
<tr>
<td>Lafayette</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>5</td>
<td>–</td>
<td>70%</td>
<td>7%</td>
</tr>
<tr>
<td>Moraga</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>–</td>
<td>71%</td>
<td>3%</td>
</tr>
<tr>
<td>Mt. Diablo</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>–</td>
<td>54%</td>
<td>0%</td>
</tr>
<tr>
<td>Orinda</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>54%</td>
<td>0%</td>
</tr>
<tr>
<td>Walnut Creek</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>–</td>
<td>79%</td>
<td>10%</td>
</tr>
<tr>
<td>San Ramon Valley</td>
<td>17</td>
<td>17</td>
<td>14</td>
<td>14</td>
<td>3</td>
<td>29%</td>
<td>0%</td>
</tr>
<tr>
<td>Private</td>
<td>9</td>
<td>9</td>
<td>4</td>
<td>9</td>
<td>–</td>
<td>47%</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>58</td>
<td>47</td>
<td>54</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Based on collection service volumes and volume to weight conversion factors
2. Recycling and trash self-hauled by district staff

### 6) Evaluation

RecycleSmart has learned that to be successful, school education programs need to expand beyond classroom presentations and field trips. Students and teachers can be involved in designing service learning programs that actually create real change at the school site level. Students and teachers can be a key driver of the “social infrastructure” at a school – changing the behavior of students and faculty and getting them to participate in recycling and composting programs. However, students and teachers don’t always know how to go about developing collection infrastructure and working with custodial staff, facilities managers and administrators to change the “physical infrastructure” needed to increase recycling and composting and reduce trash generation at school.
New programs need to be carefully developed to address impacts to custodial staff. But there are opportunities to streamline sorting and aggregation of materials and deliver them to the proper bins for collection.

Every school has its own institutional culture and communication systems in place. Programs can’t be cookie-cutter, but need to be designed around the unique issues at each school site.

In designing our school recycling education program, we looked to other models to avoid “reinventing the wheel.” Similarly, we are happy to share our information and resources, some of which are included on our website at: www.recyclesmart.org/schools.

The RecycleSmart School Education Program can be readily replicated in other communities. Tasks for developing a pilot program at a school district would include:

1. Gather lesson plans, outreach materials, signs and sticker ideas from other programs, including RecycleSmart
2. Conduct a site assessment at each school to identify opportunities for increasing waste prevention, recycling, and composting activities
3. Recruit an on-site Green Team leader who will be the point-person at each school
4. Recruit the on-site Green Team (faculty, students, parents) that will support the on-site Green Team leader
5. Work with Green Teams to develop an action plan for each school identifying the equipment needs, outreach approach, and roll-out schedule for the enhanced services
6. Support Green Teams in presenting the action plan to the on-site administration, custodial staff and district-level facilities managers for approval
7. Work with staff from the collection service provider to deliver enhanced services (increased recycling and composting service, right-sizing of landfill trash services)
8. Assist on-site Green Teams to implement action plan, train students, facility and staff
9. Monitor and document findings and observations to take into consideration for expanding pilot to other districts