

FRUITA MONUMENT HIGH SCHOOL - RECYCLING CLUB

Recycling Resources Economic Opportunity Fund Grant Program

FINAL EVALUATION REPORT

Patti Clark/Candice Mashburn

8/24/2009

Table of Contents

ORGANIZATION INFORMATION 3

WORK PLAN4

GRANT PROJECT INFORMATION..... 4

APPENDIX.....8

Recycling Resources Economic Opportunity Fund Grant Program

Fruita Monument High School – Recycling Club Final Evaluation Report

I. ORGANIZATION INFORMATION

- 1. Agency Name: Fruita Monument High School**
- 2. Project Title: FMHS Recycling Club Pilot Recycling Program**
- 3. Name of Project Manager: Patti Clark**
- 4. Project Manager e-mail address and phone number:
patclark@mesa.k12.co.us 970-254-6633**
- 5. Name of person(s) completing this report: Patti Clark/Candice Mashburn**
- 6. E-mail address and phone number of person(s) completing this report:
patclark@mesa.k12.co.us 970-254-6633**

II. WORK PLAN

Deliverable	Completion Date	Comments (if deliverable <u>was not completed</u>, please explain why or progress made)
Purchase of Bins	9/01/08	
Set out bins and monitor usage (will be done throughout school year)	9/03/08	
Waste Stream Analysis	12/08/08	
Presentation to School Board		Club members attended a district Energy Advisory meeting on 12/01/08 and got the chance to talk to people from other area agencies and schools - many of whom were very interested in the possibilities of initiating a recycling program.

III. GRANT PROJECT INFORMATION

1. Executive Summary

The Fruita Monument High School Recycling Club was formed in the spring of 2008 by two friends – Candice Mashburn and Emma Kimball - who shared the same goal of having a recycling program at the school. Previously, there had been no efforts to collect recyclables. The girls organized their friends and found a sponsor for the club. Their first efforts included obtaining cardboard boxes to serve as containers for cans and plastic bottles. The group soon realized another alternative needed to be found, as the boxes began to deteriorate. The Recycling Resources Economic Opportunity Fund grant program enabled the Recycling Club to realize their goal of having a viable, sustainable recycling program. The grant funds were used to purchase heavy-duty plastic recycling bins for use in the classrooms and hallways of the high school. Funds were also used to purchase materials to conduct a waste stream analysis, and to purchase paper recycling bins to further promote the paper recycling program already in place. The program has been promoted not only within the school, but in other schools and organizations throughout the community. The program has been and continues to be a success, with 20-30 members participating and meeting on a weekly basis to share lunch, share ideas, and collect recyclables.

2. Project Description & Overview of Work Completed

Upon receiving grant funds, all deliverables were completed before January 2009. Fruita Monument High School now has a bin in nearly every classroom and 20 large bins throughout the hallways. The Recycling Club is responsible for emptying bins on a weekly basis, or as needed. After purchasing Monument Refuse, Waste Management has continued to provide free servicing pickup of the recyclables.

We also completed the waste stream analysis. The results of this have shown that our program is making a big difference but that there are a few areas for improvement. Also, the waste stream analysis results have been a very helpful tool for showing students and other groups that recycling can make a difference as well as for talking about the impact and future of this type of program in the school district. We discovered that the amount of potentially recyclable waste is very large percentage of the total waste stream.

Since reception of grant monies, we have been in contact with Mr. Anderson, who is responsible for Mesa County Valley School District's energy usage and waste disposal. By working with him, the leaders of the Recycling Club were able to make a short presentation to the District Energy Board. Mr. Anderson has also been our contact within the district for discussions about initiating a district-wide program. On top of that, our partnership with him has inspired the Recycling Club to expand our efforts to not only recycling plastics and aluminum, but also promoting more responsible energy usage at Fruita Monument High School. So, although we have been collaborating with the District, we are still in the process of really proposing district wide recycling. We also attended a school board Energy Advisory meeting and got the chance to talk to people from other area schools - many of whom were very interested in the possibilities of getting a recycling program.

The Recycling Club also expanded to include the paper-recycling program that was already in place at the school. The school's special needs students in the Side By Side program have been responsible for collecting paper for recycling. They are now also members of the Recycling Club, and additional bins were purchased with remaining grant funds for paper recyclables.

3. Summary of Findings & Results

We have seen a great increase in general awareness since we put out all of the bins at the beginning of the 2008/2009 school year. It is very helpful to have color designated receptacles for recycling and for trash. Another thing that is probably contributing to the higher level of awareness is that we have a large club, many members, supporters, and staff who are constantly promoting recycling around the school. We have also been making a lot of new and interesting posters to help people remember to recycle bottles and cans. This part of the program has expanded so that we are now recycling 65% of the total recyclable bottles and cans/metal (by weight). This number may actually be a

little higher than it sounds because we forgot to empty the bottles that were in the waste of liquids and the metal that was in the waste was very heavy bolts and scrap.

The waste stream analysis was most helpful in showing us what we still need to work on. For example, we are only catching 43% of total recyclable paper, magazines, and cardboard. Other areas that we could expand to include are recycling organics and getting rid of polystyrene in the school. The data from the waste stream analysis has been hard to convert into an estimate of how much we could potentially be saving by recycling more because the values of recyclables are changing so much right now. Overall, the Waste Stream Analysis had helped us to be more aware of how much progress we have made and what remains to be done. The results have also been very helpful for giving other schools and idea of what they are attempting to do and what is the best way to go about doing it.

4. Summary of Unanticipated Outcomes or Roadblocks

Monument Refuse, the company that was picking up our recyclables weekly, was purchased last year by Waste Management. Waste Management has graciously agreed to continue the free weekly pickup of recyclables. While this did not have an immediate impact on the recycling program, we realize we are dependent upon their generosity and the possibility exists that at some point in time another option may need to be considered.

5. Communication of Project

The group has shared its findings with other schools and members of the community via the Energy Advisory board. The results of our waste stream analysis have also been posted on the school's website at <http://fmhs.mesa.k12.co.us/clubs/RecyclingClub.htm> , which is available to the public.

6. Future Impact of Project

The success of our program has resulted in increased awareness and interest throughout the school district. Other schools have heard about our program and have either expressed an interest in starting their own or have already done so. Students of all ages are becoming aware of the importance of recycling and will undoubtedly carry that knowledge with them throughout their lifetime.

7. Financial Summary

The grant funding provided the club with the opportunity to purchase durable, highly visible containers in place of the cardboard containers previously used. In addition, the group was able to purchase the materials and equipment needed to safely conduct the

waste stream analysis, which allowed them to study the effectiveness of their efforts and plan for future needs.

Budget Category	Items	Expenses
Materials under \$5000	Recycling Bins for cans and plastic bottles	\$2,969.15
	Misc. Safety Equip. for Waste Stream Analysis	
	Recycling Bins for paper	

8. Final Conclusion

One of the greatest things about our project is that it has helped us learn a lot about how to conduct a recycling program in a school setting. This information is very valuable for other people in our region interested in recycling. We have good data from the Waste Stream Analysis that helps people see how much of a difference recycling can make. We have been presenting this information to people in our community, and have been invited to speak for other groups like the League of Women Voters as well. However, the biggest difference our program is making is in educating the students and staff of Fruita Monument High School about recycling and the environment. Just in the short time that we have had recycling, the students and staff have all learned to use the bins and are aware of the benefits of this program because of the posters we hang up and the fact that we have so many members promoting the program. Our program is a success. We could not have accomplished this without the support and funding of the RREO grant program.

Appendix

Community Leaders Contact Information

Eric Anderson

Resource Conservation Manager, Mesa County Valley School District #51

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League of Women Voters of Mesa County

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Grant Metrics

Date project fully operational:

September-08

(Based on deliverables- month that impact of grant would have changed volumes/job creation/participants)

Diversion Rates:

(Choose one material per box. Only list those collected over the grant cycle. Must be listed as "tons". See tab labeled "Conversion Tables" if needed.)

Material Diverted #1 <input type="text" value="Aluminum"/>	
Tons Diverted	
July-08	0
August-08	0.08
September-08	0.16
October-08	0.16
November-08	0.16
December-08	0.12
January-09	0.12
February-09	0.16
March-09	0.12
April-09	0.16
May-09	0.12
June-09	0
Total	1.36

Other div. material:

Material Diverted #2 <input type="text" value="Plastics"/>	
Tons Diverted	
July-08	0
August-08	0.13
September-08	0.25
October-08	0.25
November-08	0.25
December-08	0.19
January-09	0.19
February-09	0.25
March-09	0.19
April-09	0.25
May-09	0.19
June-09	0
Total	2.14

Other div. material:

Material Diverted #3 <input type="text"/>	
Tons Diverted	
July-08	
August-08	
September-08	
October-08	
November-08	
December-08	
January-09	
February-09	
March-09	
April-09	
May-09	
June-09	
Total	0

Other div. material:

Material Diverted #4 <input type="text"/>	
Tons Diverted	
July-08	
August-08	
September-08	
October-08	
November-08	
December-08	
January-09	
February-09	
March-09	
April-09	
May-09	
June-09	
Total	0

Other div. material:

Material Diverted #5 <input type="text"/>	
Tons Diverted	
July-08	
August-08	
September-08	
October-08	
November-08	
December-08	
January-09	
February-09	
March-09	
April-09	
May-09	
June-09	
Total	0

Other div. material:

Material Diverted #6 <input type="text"/>	
Tons Diverted	
July-08	
August-08	
September-08	
October-08	
November-08	
December-08	
January-09	
February-09	
March-09	
April-09	
May-09	
June-09	
Total	0

Other div. material:

Material Diverted #7 <input type="text"/>	
Tons Diverted	
July-08	
August-08	
September-08	
October-08	
November-08	
December-08	
January-09	
February-09	
March-09	
April-09	
May-09	
June-09	
Total	0

Other div. material:

Material Diverted #8 <input type="text"/>	
Tons Diverted	
July-08	
August-08	
September-08	
October-08	
November-08	
December-08	
January-09	
February-09	
March-09	
April-09	
May-09	
June-09	
Total	0

Other div. material:

End use of diverted materials:

(Describe where materials are going [e.g., MRF, new products, reuse])

MRF

Number of Permanent Jobs Created:

(Include full-time & part time paid positions. 1 FTE = 2080 Hours Worked)

NA

Type of Permanent Job(s) Created:

(Provide titles of jobs created)

NA

Average Salaries of Jobs Created:

(Average of all jobs created)

Average Monthly Customers for FY 08:

(July 1, 2007 - June 30, 2008)

1500 student population

Average Monthly Customers for FY 09:

(Estimate or customer lists)

Ave. Monthly Amount	
July-08	0
August-08	1500
September-08	1500
October-08	1500
November-08	1500
December-08	1500
January-09	1500
February-09	1500
March-09	1500
April-09	1500
May-09	1500
June-09	0
Ave. / FY 09	1250

2008 FMHS Wastestream Analysis Report

For CDPHE Grant Deliverable 12/8/08

Data & Observations:

FMHS Wastestream by weight		
Weighed 10/23/2008		
Category	Lbs.	Comments
Paper	84.7	
Magazines	70.4	
Cardboard	51.8	
Plastic bottles	22.0	Some still had liquid in them, oops!
Metal	16.8	including structural bolts
Wax Paper	42.4	McDonald's cups, fries containers
Soil	2.5	
Plastic/ foil wrappers	39.0	
Rubber	33.6	1tire, 19basketballs
Grease/oil	6.0	
Wood	2.8	
Organics/ food	62.2	
Glass	1.8	
Textiles	3.2	
Polystyrene	3.0	
Hazardous	2.8	insulation, lime away, expo marker, battery
TOTAL	445.0	

This table (left) shows only the part of our wastestream that is bound for the landfill.

Recycled Material by weight		
Weighed 12/03/2008		
Category	Type	Lbs.
Paper	Newspaper	166.2
	Office paper	83.8
Bottles & Cans	Cans	42.55
	Plastic Bottles	268.91
TOTAL		561.46

FMHS Total Annual Wastestream			
	Pounds per dumpster	Pounds per week	Pounds per school year
Paper (not recycled)	84.7	338.8	12535.6
Magazines (not recycled)	70.4	281.6	10419.2
Recycled newspaper		166.2	6149.4
Recycled office paper		83.8	3100.6
Cardboard (not recycled)	51.8	207.2	7666.4
Plastic bottles (not recycled)	22	88	3256
Recycled plastic bottles		268.91	9949.67
Metal (not recycled)	16.8	67.2	2486.4
Recycled cans		42.55	1574.35
Wax Paper	42.4	169.6	6275.2
Soil	2.5	10	370
Plastic/ foil wrappers	39	156	5772
Rubber	33.6	134.4	4972.8
Grease/oil	6	24	888
Wood	2.8	11.2	414.4
Organics/ food	62.2	248.8	9205.6
Glass	1.8	7.2	266.4
Textiles	3.2	12.8	473.6
Polystyrene	3	12	444
Hazardous	2.8	11.2	414.4
TOTAL		2341.46	86634.02
Dumpsters per week	4		
Weeks per school year		37	

Observations:

-FMHS is currently recycling:

~about 73% of plastic bottles

~about 30% of paper

~cans (cannot be calculated as a % because the categories were different in the landfill-headed waste sort and the recycling sort)

-FMHS now recycles 24% of our total wastestream

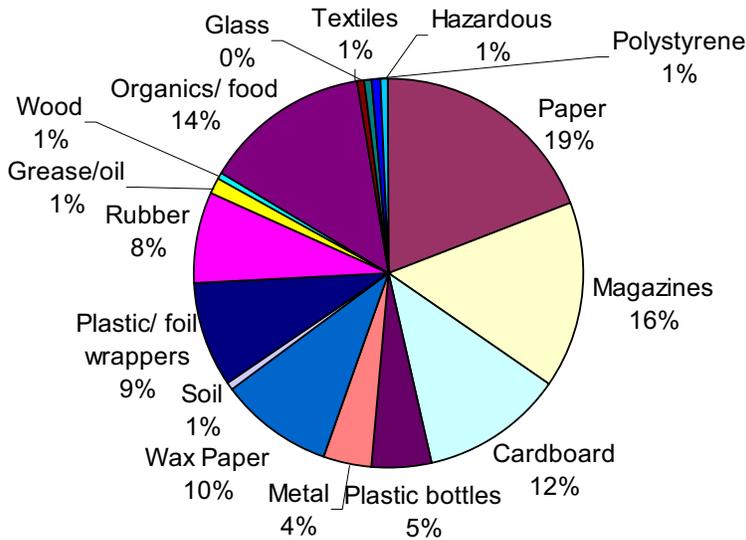
~66% of the total wastestream is recyclable; we are therefore only recycling 36% of all recyclable materials

-Paper accounts for 37% of the total wastestream, 70% of this is thrown away

-FMHS does not currently have cardboard recycling set up, but we are working to incorporate it into our program

-BUT, we save about 20774Lbs. of waste from going to the dump every year!

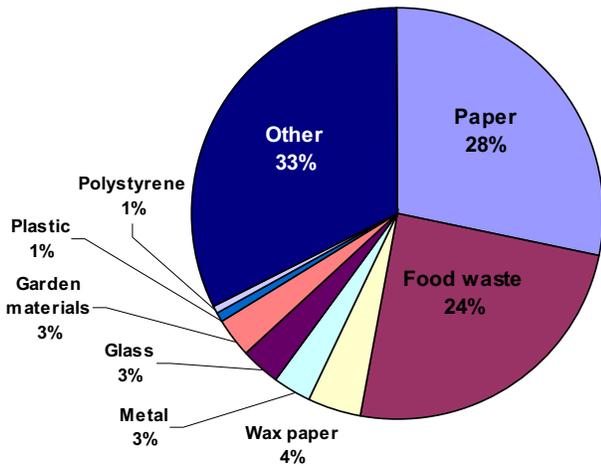
FMHS Wastestream by Percent Weight



This represents the contents of one of the two trash dumpsters on campus that are both emptied twice a week and sent to the landfill. (Wednesday & Friday)

Typical School Waste Stream by % Weight

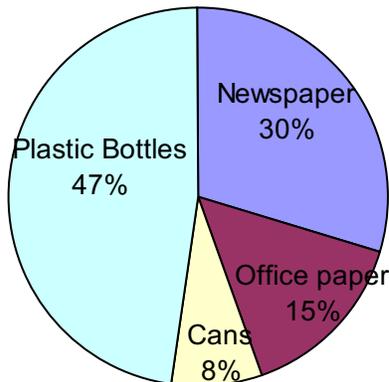
EPA 1993 Education Waste Characterization Study



Included for comparison:

The biggest difference we can see is that FMHS has significantly less food waste. This may be because FMHS has an open-campus (including lunch hour) and this school may not have.

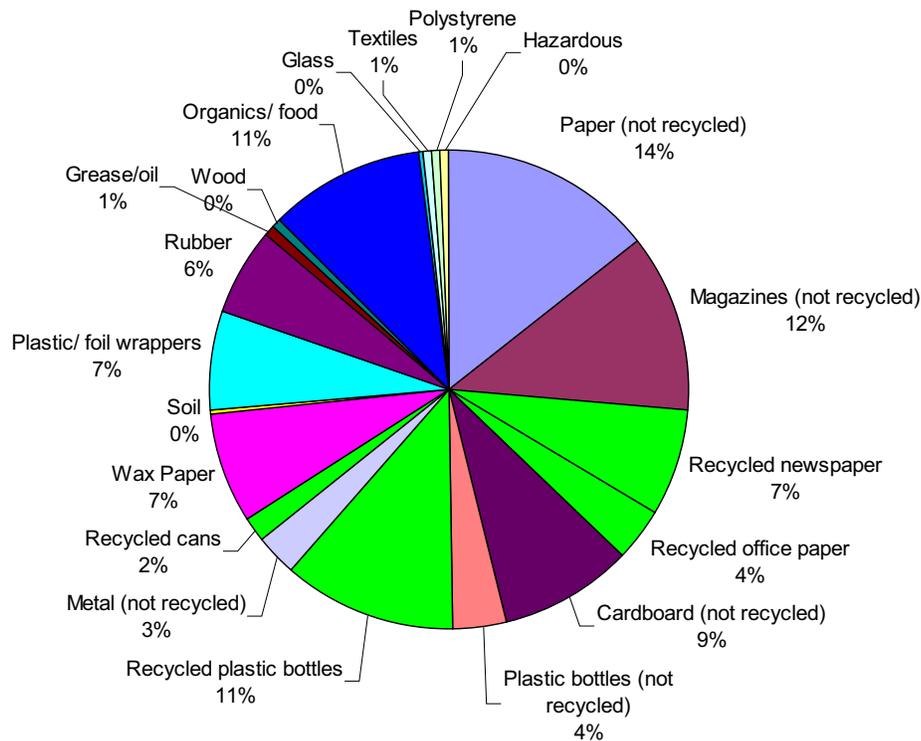
Recycle Material by Percent Weight



This represents one week's worth of recycling. All recycling is collected and stored in one location and picked up once a week. Paper is picked up on Thursday and bottles & cans (excluding glass containers) are picked up on Friday. We do not currently have cardboard recycling set up.

FMHS Annual Wastestream 2008 by Percent Weight

*includes recycled and not recycled materials



*Bright green segments represent recycled materials

Conclusions:

We were very happy with the results we got from this analysis because they reflect not only the progress we have made so far with our recycling program, but also the potential progress we have to make. As you can see, we are now recycling more bottles than we are throwing away, and are on our way to recycling this kind of percentage of other materials. Another great thing this data will help us do is estimate the profit or savings from recycling some of our wastestream instead of paying for it to be hauled away. This is an issue that we know other schools in our district are interested in, as well as members of the school board's energy management and conservation committee. We hope that we will be able to use this report as an instrument to show the incredible potential every school has to make a difference, and to investigate ways we can improve our program here at Fruita Monument.











RECYCLING

Club

Wednesday

@ lunch

IN THE LIBRARY

