

**TOWN OF MOUNTAIN VILLAGE
 GREEN TEAM COMMITTEE MEETING
 TUESDAY, JANUARY 15, 2019, 2:00 PM
 2ND FLOOR CONFERENCE ROOM, MOUNTAIN VILLAGE TOWN HALL
 455 MOUNTAIN VILLAGE BLVD, MOUNTAIN VILLAGE, COLORADO
 AGENDA**

Item #	Time	
1.	2:00	Call to Order
2.	2:05	Approval of the November 27, 2018 Minutes
3.	2:10	Discussion & Updates Regarding: A. Green Team Quarterly Report (20 Mins) B. Proposed Mountain Village Meadows Composting (Knox 15 Mins) C. Document Review Plan (Jett 20 Mins)
4.	3:05	Items for Consideration A. Clean-Up Day Committee B. GHC Inventory (February Agenda) C. Single Use Plastics Ban
5.	3:10	Next Steps
6.	3:20	Other Business
7.	3:30	Adjourn

**TOWN OF MOUNTAIN VILLAGE
MINUTES OF THE NOVEMBER 27, 2018
GREEN TEAM MEETING DRAFT**

The meeting of the Green Team Committee was called to order by Jonathan Greenspan on Tuesday, November 27, 2018 at 2:00 p.m. in Mountain Village Town Hall, 455 Mountain Village Boulevard, Mountain Village, Colorado.

Attendance:

The following Green Team Committee members were present:

Jonathan Greenspan, Vice Chair and Mountain Village Resident
Patrick Berry, Mountain Village Town Council
Bruce MacIntire, Mountain Village Town Council
Jeff Proteau, Telluride Ski and Golf Company
Heidi Stenhammer, Telluride Mountain Village Owner's Association

The following were also in attendance:

Kim Montgomery, Town Manager (Staff)
Christina Lambert, Deputy Town Clerk (Staff)
Kim Wheels, Eco Action Partners
Heather Knox, Eco Action Partners
Mike Follen, Mountain Village Resident

The following Green Team Committee and Staff members were absent:

Cath Jett, Chair and Mountain Village Resident
Savanna Wagner, At Large Member
Zoe Dohnal, Business Development & Community Engagement Coordinator (Staff)
Michelle Haynes, Director of Planning and Development Services (Staff),

Consideration of Approval of Minutes:

October 23, 2018 Green Team Committee Meeting Minutes

On a **MOTION** by Heidi Stenhammer and seconded by Patrick Berry, the Green Team Committee voted unanimously to approve the October 23, 2018 meeting minutes as presented.

Discussion and Committee Follow Up/Next Steps:

➤ Agenda Item 3A- 2019 Green Team Meeting Dates:

- **NEXT STEPS:** Discussion took place and the Green Team Committee **APPROVED** the following 2019 Green Team meeting dates:

- January 15
 - February 19
 - March 19
 - April 2
 - May 21
 - June 18
 - July 16
 - August 20
 - September 17
 - October 15
 - November 19
 - December 17
- There was a spring break/end of the season conflict with April 16. The group agreed that April 2 would work better for everyone. Christina Lambert will book the Town Council conference room and will send out calendar reminders for the approved dates.
 - The December 25, 2018 meeting has been cancelled due to Christmas. There will be no meeting in December.
- Agenda Item 3B- Carbon Reduction Analysis for the Food Share Program:
 - **NEXT STEPS:** Discussion took place and the Green Team Committee **DIRECTED** Eco Action Partners to make minor edits to the document provided to the committee. They are to make the edits and resend the document to the committee.
 - The Green Team Committee **DIRECTED** Eco Action Partners to provide the committee with survey information. Eco Action Partners also needs to meet with Michelle Haynes and Zoe Dohnal in the future to try and make the survey even better for next year.
 - Agenda Item 3C- Recommendation from the Green Team on the Community GHG Inventory:
 - **NEXT STEPS:** Discussion took place and the Green Team Committee **DIRECTED** Eco Action Partners to make minor edits to the document provided to the committee. Eco Action Partners have to make these minor edits prior to submitting packet materials for the upcoming Town Council meeting. An electricity provision needs to be added to the document. The final document should be added to the Town Council packet, but Eco Action Partners needs to only highlight the high points during the actual presentation to Town Council. They are to reach out to the Town Clerk's office to request to be put on the December 13, 2018 Town Council meeting agenda. They will provide the agenda item title, who is presenting the item and how much time will be needed to present.

- Agenda Item 3D- Green Team Quarterly Report:
- **NEXT STEPS:** Discussion took place and the Green Team Committee **DIRECTED** Christina Lambert to send out the most recent completed Green Team Committee quarterly report, so it could be used as a reference. Christina was also directed to send out an email with upcoming Green Team Committee quarterly report deadlines. Christina Lambert and Kim Montgomery are to discuss and set the deadlines. The deadlines should include: 1st draft due date, comments and feedback due date, Town Council meeting packet due date.
 - Jonathan Greenspan volunteered to create the first draft of the Green Team Committee quarterly report. The Green Team Committee **DIRECTED** Jonathan Greenspan to create this document prior to the deadline.
 - The Green Team Committee **DIRECTED** Christina Lambert to send out a Google Doc when appropriate, so everyone can provide input and edit accordingly.
 - The Green Team Committee discussed needing to create an Annual Work Plan. The Green Team Committee **DIRECTED** Christina Lambert to add this to the January agenda. They **REQUESTED** that this be the only agenda during that meeting. Some of the topics that should be discussed are the following: Budget, Composting Incentive Program, Education and the Cleanup Event.

Other Business:

- Single Use Plastics:
- Jonathan Greenspan provided a brief update regarding the survey on banning single use plastics.

There being no further business, on a **MOTION** by Jeff Proteau and seconded by Bruce MacIntire, the Green Team Committee voted unanimously to adjourn the meeting at 3:32 p.m.

Reminder:

The December Green Team Committee meeting was cancelled. The next meeting will take place on Tuesday, January 15, 2019 at 2:00 p.m. in the Mountain Village Town Hall Conference Room.

Respectfully submitted,

Christina Lambert

Deputy Town Clerk
Town of Mountain Village



Mountain Village Green Team Quarterly January 18, 2019 Accomplishments

Created an incentive for composting in HOAs

This incentive program was launched officially in late August/early September leaving little time for HOAs to implement. The budget was reduced for 2018 to \$5k and increased to \$25k for 2019.

There are still some unanswered details to get worked out such as what to do with the final product and expected yields

Bike to school program

This was a program that encountered logistical details that need to be worked out, but a worthwhile program. The Green Team acted as the support group, which led students biking to school from Mountain Village. However, biking in adverse weather conditions and the distance was considered a long way for some of the kids. The discussion was to utilize the gondola to help solve this issue.

Farm to table program

Great program and highly utilized. Funding will be increased to \$30k for 2019. The Market on the plaza will have 2 tents for pick up, and possibly one at Village Court Apartments for additional pick up. 20% of the participants in this program reside in VCA. A report of possible greenhouse gas reductions was produced.

Community clean up day

Our flagship activity. Approximately 100 participants cleaned up many areas of the Village. Numerous trash bags of many types were picked up. Chairs, tires, old signs and snowboards were some of the items collected. There were approx. 6-8 yards of trash collected. In 2019, the Green Team will host an expanded event. This will help flow participants to the core, and allow for businesses to be involved. This event has an expanded budget and potential involvement with TSG employees, as well as Town employees. We plan to have a weighing and dumpster sizing component added to the event to get more concrete data on how much trash was collected.



Single use plastics ban

One of the the biggest accomplishments of the Team. This has local, state, national and world impacts. The impacts for ecotourism alone are great. The goal is to reduce single use plastics, and if it can't be recycled then eliminate the item.

The Green Team is ready to start the education portion and assist with the implementation of the ordinance. A survey was done throughout the communities of Mountain Village, and Telluride, and there was an overwhelming amount of support for it. The intention is to have both towns simultaneously approve the ordinance at the same time.

Eco Aartners greenhouse gas emissions presentation

The 2017 report was vetted by the Green Team. This was then presented to Town Council. Further work to be done on this.

Other happenings

- Cath Jett nominated for the vacancy on the Green Team as the replacement for the resignation of Marti Prohaska, who moved away. Cath was also nominated to chair the Green Team.
- A work plan was developed to help guide and show measurables of current and potential upcoming topics. To be approved by Council.
- Discussion of having a meeting with the Ecology Commission of Telluride about shared issues.
- Upcoming waste audit with an EPA grant which will be presented to the Green Team, and produce results by 2020. This will serve as information for the group and town to use.

Thank you for your continued support,
The Green Team

To: Mountain Village Green Team
From: Heather Knox, EcoAction Partners
RE: Proposed Composting Program in Mountain Village

The following is a proposal for a composting program in Mountain Village.

Mountain Village Meadows is a suggested location due to its density of full-time year-round residents, who generally care about the environment. Community planning has been in the process in the Meadows, and I have received feedback that there is space available for a variety of amenities and services, such as composting. Additionally, there is parking and public transit that serves the Meadows, so other MV residents could access this location for composting their household food waste if they desire. Additionally, a number of Meadow's residents and HOA board members have expressed interest in composting: Fairway Four, North Star, Parker Ridge, Prospect Creek, Coyote Court.

Composting food waste significantly decreases methane that is produced from food decomposing anaerobically in the landfill. Methane is a greenhouse gas with a global warming potential of approximately 84 times more potent than Carbon Dioxide in the short term*. Thus, converting food waste into compost and using it in soil has a significant impact on reducing GHG emissions, a primary goal of Mountain Village.

In November of 2017 EcoAction Partners applied for and was awarded a Mini-Grant from the Colorado Department of Health and Environment for 2 Earth Cube Composters, educational materials, and miscellaneous equipment (scale, scoop for woodchips, etc) for the Town of Ophir. The Town of Ophir was selected because of the strong community interest in composting, having a community garden, and a committed group of citizens called The Ophir Self Reliance Committee, who were willing to take on operations of the program once the equipment was installed. Ophir is also a compelling community due to the possibility of it getting cut off from services because of the avalanche paths that cross the single access road in and out of town. Composting food waste ensures that would be handled/processed even if the town were to be cut off from waste pickup for a few days.

Ophir has 74 households, with approximately 200 residents. The composting program has been an overwhelming success - so successful, in fact, that the 2 composters cannot keep up with the

volume/usage. To keep it going successfully, the Town of Ophir was recently awarded a second Mini-Grant in November 2018. This grant will allow Ophir to expand their waste facility and to purchase 2 additional Earth Cube Composters. In the 9 months that the composting program has been operational, at the end of 2018, Ophir had diverted over 5,100 pounds of food waste from the landfill. This is an average of 21.5 pounds per day, which equates to about 0.11 pound per day per person.

The only state requirement for composting household food and yard waste of volumes under 100 cubic yards in process at any given time, is registering the system with the state of Colorado, and providing an annual report on the volume diverted. Thus, individuals in Ophir record the weight of their waste when dropping it off at the composter, which is a simple process. Additionally, the compost created cannot not be sold; it must be used locally. I can provide more information on regulations if interested.

The Meadows Zoning Density*, not including Big Billies, is approximately double of Ophir's. If Big Billies is included it is nearly triple. Zoning density is not the same as population, but it provides a good estimate, which is helpful in sizing an appropriate composting unit.

BUILDING NAME	Zoning Designation LAND USE	UNITS	PERSON EQUIV. DENSITY	BUILT DENSITY
Fairway Four	EMP CONDO	23.0	69.00	69.00
Mountain View	EMP APT (Mtn View)	30.0	90.00	90.00
Timberview	EMP CONDO	8.0	24.00	6.00
Northstar	EMP CONDO	3.0	9.00	9.00
Spring Creek	EMP CONDO	13.0	39.00	39.00
Parker Ridge	EMP CONDO	18.0	54.00	54.00
Prospect Creek	EMP CONDO	14.0	42.00	42.00
Prospect Plaza	EMP CONDO	5.0	15.00	15.00
Boulders	EMP CONDO	21.0	63.00	45.00
Coyote Court	EMP CONDO	10.0	30.00	30.00
Cassidy Ridge	EMP CONDO	3.0	9.00	9.00
	Totals	148.0	444.00	408.00
Big Billies	DORM EMP	149.0	149.00	149.00
	Totals	297.0	593.0	557.0

The CDPHE Recycling Resource Economic Opportunity (RREO) Mini-Grants fund up to \$25K, and are open each year in the fall. The Mini-Grant application is straightforward. The regular CDPHE RREO Grants are open in February and are available for up to \$1M, but these applications are much, much more competitive and involved. Both the Mini-Grants and the Regular RREO grants value matching funds, as well as letters of support. Additionally, grants submitted from an entity with a budget of

\$500K or greater is helpful. As a result, EcoAction Partners can write the grant and is a good partner to administer the grant, but if MV were to be the grant applicant, the application is stronger due to the financial strength of the MV government vs. EcoAction Partners small annual budget.

I recommend 2 options for composters. There are other brands of composters, but these two have been successful in mountainous climates. Both types/brands have pros and cons.

1. Earth Cubes

Pros: Compact size; simple 120V electrical requirement; no moving parts; minimal investment/cost.

Cons: A minimum of 2 earth cubes are required due to one Earth Cube being used at a time, due to a required 30 day “resting period” while the composter completes the process (it is locked during this time). Difficult to unload; requires manual labor of shoveling compost (preferably) into a Bobcat or Skid Steer for transport to location of use.

Process: Residents collect their food and yard waste and bring it to the composting center. Here, they weigh the compost and record the weight, then dump the food and yard waste into Earth Cube A. They then put an equal amount of wood chips into the composter to cover the food waste. Once Earth Cube A fills completely, Earth Cube A is closed and locked for 30 days. During this time, Earth Cube B is available for residents to use. After 30 days, Earth Cube A is unlocked and unloaded. The compost is allowed to stand in a location for approximately 30+ days before it is put to use on landscaping.

2. Rocket Composter*

Pros: Continuous feed, automated system; 14 day turn around for compost generation.

Cons: Larger size; location requires a concrete pad, and 208V electrical; greater investment.

Process: Residents collect their food and yard waste and bring it to the composting center. Here, they weigh the compost and record the weight, then dump the food and yard waste into the Rocket Composter. They then put an equal amount of wood chips into the composter. The Rocket does all of the work moving the compost along. In 14 days compost is deposited out of the machine. Generally compost should stand in a location for approximately 30+ days before it is put to use on landscaping.

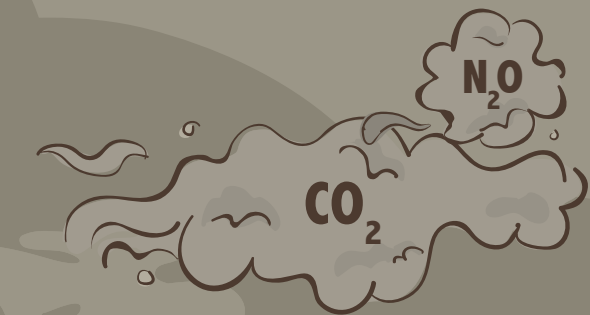
Thank you for considering composting in Mountain Village. Let's get the discussion going on moving forward to bring it to reality in 2019!

Next steps:

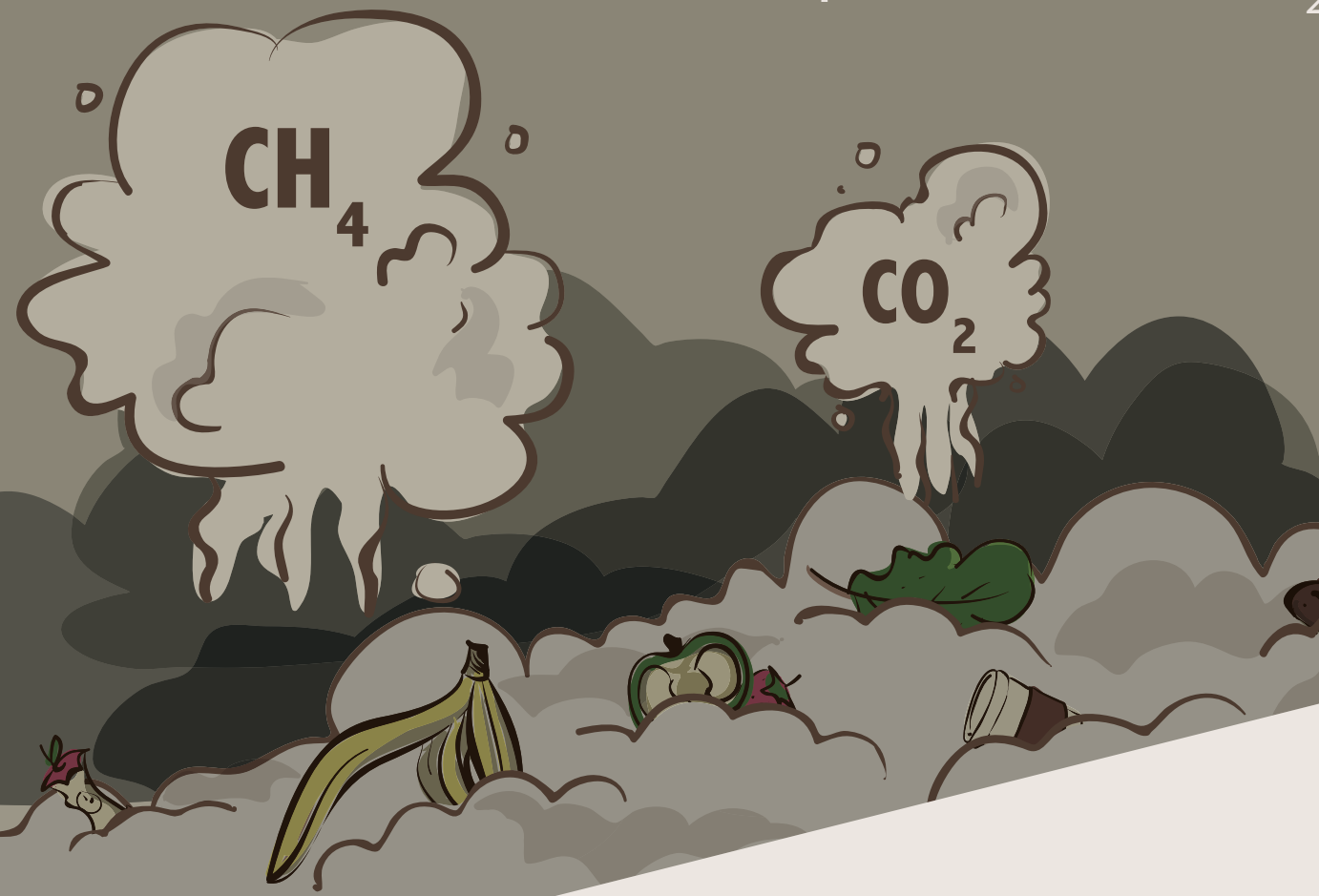
- Determine if there is Green Team support for composting in Mountain Village
- In the Meadows location?
- Green Team field trip to Ophir to see Earth Cubes in operation
- What type of Equipment is preferred based on the information provided?
- MV survey on interest from residents on composting?
- Would Green Team like EcoAction Partners to assist with a potential Mini-Grant in the fall of 2019? If so, EcoAction can provide a short presentation on the Mini-Grant to the Green Team so we can start determining the operations and answers that will need to be addressed.

Composting Protects the Climate

Food scraps in landfills generate methane, a greenhouse gas with a global warming potential 84x more potent than CO₂ in the short term.



Incinerators also emit climate pollutants



...but when converted into compost and applied to the land, compost sequesters carbon.



One research project found that ½ inch of compost applied to rangeland sequestered the equivalent of **1 metric ton of CO₂e/hectare over three years.**

This level of sequestration on half of California's rangeland would offset **42 million metric tons of CO₂e**, which is equal to the annual greenhouse emissions from California's commercial and residential energy sectors.

SOURCES:

Gunnar Myhre, Drew Shindell, et. al, Anthropogenic & Natural Radiative Forcing, Climate Change 2013: *The Physical Science Basis. Contribution of Working Group I to Fifth Assessment Report of Intergovernmental Panel on Climate Change*, Cambridge University Press, 2013, p. 714.
"Can Land Management Enhance Soil Carbon Sequestration?" Marin Carbon Project web site, accessed April 2016.
Rebecca Ryals and Whendee L. Silver, "Effects of organic matter amendments on net primary productivity and greenhouse gas emissions in annual grasslands," *Ecological Applications* (Ecological Society of America), 1 January 2013, 23:46-59. doi:10.1890/12-0620.1
Brenda Platt, Nora Goldstein, Craig Coker, and Sally Brown, *The State of Composting in the U.S.: What, Why, Where, & How*, Institute for Local Self-Reliance (ILSR), June 2015.
Brenda Platt, Eric Lombardi, and David Ciptet, *Stop Trashing the Climate*, Institute for Local Self-Reliance (ILSR), 2008.



COMPOST: Impacts More Than You Think

Composting is the aerobic decomposition of organic materials by microorganisms. It transforms raw materials—such as leaves, grass clippings, garden trimmings, food scraps, animal manure, and agricultural residues—into compost, a valuable earthy-smelling soil conditioner, teeming with life.

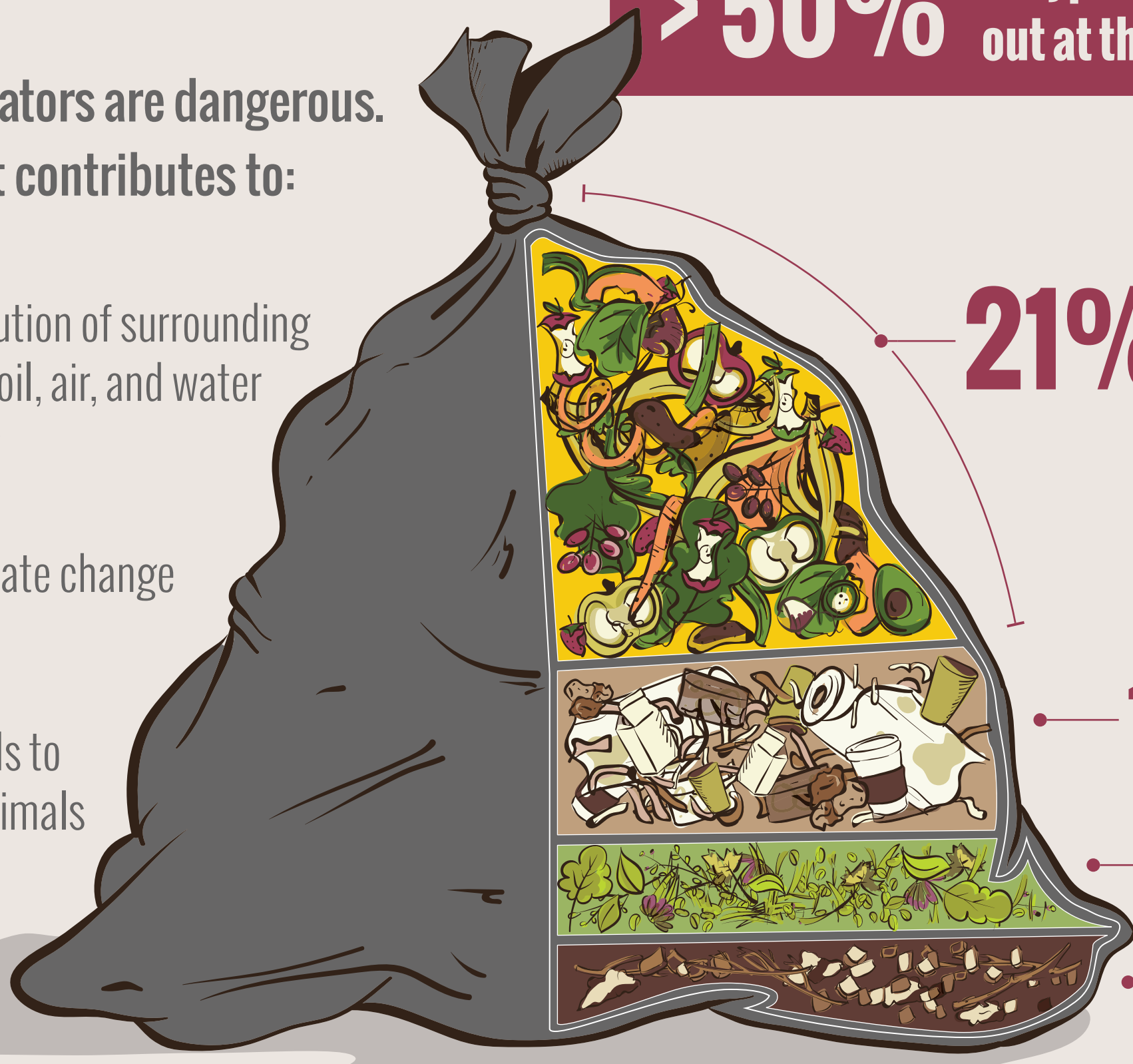
One Person's Trash is...
...another's black gold.

Every year, U.S. landfills and trash incinerators receive **167 MILLION TONS** of garbage.

> 50% of typical municipal garbage set out at the curb is compostable.

Landfills and incinerators are dangerous. Every bag thrown out contributes to:

-  Pollution of surrounding soil, air, and water
-  Climate change
-  Health hazards to humans and animals



SOURCES:

Brenda Platt, Nora Goldstein, Craig Coker, and Sally Brown, *The State of Composting in the U.S.: What, Why, Where, & How*, Institute for Local Self-Reliance (ILSR), June 2015.
 US EPA, *Advancing Sustainable Materials Management: Facts and Figures 2013*, June 2015, pp. 12, 46.
 Brenda Platt, Eric Lombardi, and David Ciplet, *Stop Trashing the Climate*, Institute for Local Self-Reliance (ILSR), 2008.
 Brenda Platt, Bobby Bell, and Cameron Harsh, *Pay Dirt: Composting in Maryland to Reduce Waste, Create Jobs & Protect the Bay*, Institute for Local Self-Reliance (ILSR), May 2013.
 Mike Ewall, *Trash Incineration Factsheet*, Energy Justice Network web page, <http://www.energyjustice.net>, accessed April 2016.



The Earth Cube™

The Neighborhood-Based Composting System

**Urban Composting of Food Waste
Made Simple, Easy and Affordable**

Each Earth Cube can receive up to 50 lbs./day total feedstocks

The Earth Cube is an in-vessel composting system that is designed specifically to empower local communities and organizations to compost food waste with confidence, right in the neighborhood, where the food scraps are generated. The totally enclosed Earth Cube is designed for **urban and suburban composting** efforts.

This system is perfect for people who are **passionate about being green** and want to do **closed-loop composting** and **keep vital food nutrients in our local neighborhoods and gardens**.

Why pay to have nutrients hauled away and then purchased again as soil amendments?

Earth Cube Key Benefits:

- Affordable
- Deters Animals/Bugs/Pests
- Odor Control
- Neat Appearance
- Simple and Easy to Operate
- Fast, Hot Composting
- Kill Pathogens, Weed Seeds
- Small Footprint
- Start Small, Grow Over Time

We've used our 25+ years of commercial composting experience to make the Earth Cube the simplest, easiest, fastest, lowest-cost system for community-based composting of food waste. We've worked hard to make the Earth Cube **affordable** for almost any community.

The Earth Cube is designed for small communities and small commercial users such as:

- neighborhoods
- community gardens/pea patches
- churches/non-profits
- downtown associations
- small businesses
- farmers' markets
- schools and colleges
- day care centers
- summer camps
- retreat centers



The Earth Cube In-Vessel Composting System



Integrated Roof Biofilter to Filter Odors



Aeration and Mixing Systems

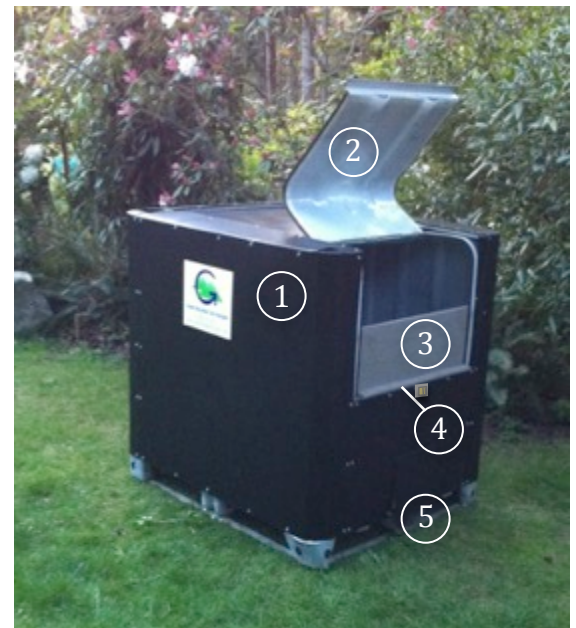
- **Oxygen for Hungry Microbes - The Positive Aeration System.** The Earth Cube's ventilation system creates a convective loop, drawing fresh air in through the bottom of the compost pile. Warm compost air rises and pulls this fresh air into the compost pile, up through the pile and out the roof-mounted biofilter. Our optional Plug-In Aeration Systems use electrical power to boost oxygen levels, reduce odors and improve composting performance.
- **Mixing Made Simple – The Auger-Powered Portable Mixing System.** To break down waste more quickly and speed the composting process, your Earth Cube comes complete with a portable mixing auger that is attached to a battery-powered or corded 3/8" power drill (sold separately). The compost can also be turned with a standard pitchfork or garden fork.



Other Key Features

The Earth Cube comes with many thoughtful design features for hot, aerobic composting, including:

1. **Complete Enclosure – The Fully Self-Contained Earth Cube.** The Earth Cube is designed to prevent access to the compost by animals and bugs.
2. **Easy Access to Your Compost – The Compost Access Port.** The Earth Cube gives you easy access to your compost. In addition, the access port latches securely and can be locked to keep critters out.
3. **Maximize Your Capacity – The Removable Front Wall.** As your Earth Cube becomes more full, the Earth Cube incorporates a removable front wall that keeps the compost from spilling out, maximizing internal capacity.
4. **Easy on the Back – The Wear/Lever Bar.** When you mix your compost or empty the vessel, the Earth Cube Lever Bar provides a fixed point of leverage. This cuts your workload essentially in half, and saves your back.



Specifications

- Daily input capacity: up to 50 lbs. of total feedstocks/day (e.g., 30 lbs./day of food waste, 20 lbs./day of cover material).
- Total capacity: ~1.4 cubic yards (285 gallons).
- External dimensions: 48" long x 40" wide x 45" high.
- Internal dimensions: 46" long x 38" wide x 38" high.
- Accepts vegetable scraps, cooked foods, meat, dairy, paper products. (meat/dairy may require additional cover material for odor control.)
- Recommended cover materials: wood shavings, wood chips, shredded landscape/garden waste and saw dust.
- Expected in-vessel time: 21-30 days (assuming temperatures maintained at 120-140 deg F).
- Recommended curing time after discharge: 1-2 months.

Earth Cube Pricing: \$2,995/vessel (plus freight)

The Earth Cube comes complete with:

- A 24" compost mixing auger (attached to a power drill, 3/8" chuck, 18V+, drill not included).
- A 36" stainless steel temperature probe for monitoring compost temperatures.
- A user-friendly compost instruction manual with photos, insights, tips and tricks.

Options:

- **Plug-In Aeration System:** Add \$365/vessel. Power your aeration from the grid. Includes 110V AC blower, mechanical timer and cord.
- **Freeze Protection System:** Add \$99/vessel. This plug-in heating system provides freeze protection for severe cold.
- **Supplemental Insulation Package:** Add \$295/vessel. Super insulate your Earth Cube for composting in cold climates.
- **Compost Divider Panel:** Add \$195/vessel. Creates two compost piles inside your Cube. Great for single vessel installations.
- **Web-Based Temperature Measurement:** Add \$495/vessel. Monitor compost temperatures via your cell phone.



Earth Cube Temperature Probe and Mixing Auger

Green Mountain Technologies, Inc.

5350 McDonald Ave
Bainbridge Island, WA 98110

Quote

Date	Quote #
10/26/2017	898

Name / Address	
EcoAction Partners 36 Porphyry St Ophir, CO 81426	
Main Phone	Main Email

Ship To	
EcoAction Partners 36 Porphyry St Ophir, CO 81426	
Terms	Rep
	VC

Description	Qty	Cost	Total						
Earth Cube Composting System 48"L x 40"W x 45"H 1.4 Yard capacity Includes temperature probe and mixing auger	2	2,995.00	5,990.00T						
Earth Cube Plug-In Aeration System, Includes blower and timer, optional Requires access to 110V power	2	365.00	730.00T						
Earth Cube Freeze Protection	2	99.00	198.00T						
Earth Cube Additional Insulation Package	2	295.00	590.00T						
Customer Freight, Shipping & Handling Freight prices are subject to change	1	970.00	970.00T						
Current Lead time is 6-8 weeks Quote is valid for 30 days Terms and conditions are attached									
Out-of-state sale, exempt from sales tax		0.00%	0.00						
<table border="1"> <tr> <td>Phone #</td> <td>Fax #</td> <td>E-mail</td> </tr> <tr> <td>802.368.7291</td> <td>802.368.7313</td> <td>pam@compostingtechnology.com</td> </tr> </table>			Phone #	Fax #	E-mail	802.368.7291	802.368.7313	pam@compostingtechnology.com	Total \$8,478.00
Phone #	Fax #	E-mail							
802.368.7291	802.368.7313	pam@compostingtechnology.com							

What to

COMPOST



CO₂ + H₂O + C + N = compost

YES

**food scraps
under 6"**

***harder foods
such as broccoli
stalks, pineapples
& corn cobs
cut into pieces
2" or less**

AND:
eggshells
dryer lint
hair
clippings
pet hair
pine
needles
leaves
paper tea
bags
kleenex
weeds

hay
dairy
dust bunnies
grass clippings
toothpicks
vacuum contents
nut shells
coffee grounds
stale bread
pumpkin seeds
old pasta
fruit rinds
paper napkins

garden trimmings
plate scrapings
house plants
clippings
soy and nut milks
shredded paper
(not to exceed 10% of mix)
cotton fabric
(cut in small pieces)
flowers
(stalks cut under 6")
meat
(cut in small pieces)
dead house plants
(stalks and roots trimmed
under 6")

NO

**non
biodegradable
products**

bones
poop: dog, cat, human
compostable plastics
big items over 6"
stickers on produce
cigarette butts
paper plates
sticks



**OPHIR
SELF-RELIANCE
COMMITTEE**



COLORADO
Department of Public
Health & Environment



January 4 2019

Heather Knox
EcoAction Partners
355 W. Colorado Ave.
Telluride, CO 81435

Ref: Q-19-0001

Dear Heather,

We have put together preliminary figures for the purchase of the Rocket® composter. You will be able to see first-hand how our proven technology can help your residential community become more sustainable saving removal costs when treating food scraps and closing the recycling loop using the compost onsite. We want to help contribute to your ability to reduce hundreds of tons of food scraps that we send every year to the landfills as well as to reduce CO2 emissions when transporting your food scraps. One of the most important benefits for the community is that the Rocket composter is an ideal educational tool, which could be incorporated into your community sustainable initiatives. The finished compost is ideal for vegetable garden, flowerbeds, and lawns where the students can see how to close the recycling loop onsite!

Without any food waste figures, we can't recommend a specific Rocket size however we have quoted below some options based on preliminary ball park estimates. We recommend performing a food waste audit to determine the amount of food waste to manage.

Preliminary ballpark estimates:

Each resident could produce between 170 to 253 lbs per year depending on many variables. Those figures translate into 34 to 50 gallons per year accordingly.

Residential community with 150 residents - 14 to 21 gallons per day.

Options:

a) An A700 Rocket® composter (Capacity: 25 gallons of food waste per day)

Residential community with 300 residents - 28 to 41 gallons per day.

Options:

a) An A900 Rocket® composter (Capacity: 65 gallons of food waste per day)

Residential community with 450 residents - 42 to 62 gallons per day.

In option "a" we are considering extra capacity for some food waste from a grocery store and/or pre-commercial restaurant food waste.

Options:

a) An A1200 Rocket® composter (Capacity: 130 gallons of food waste per day)

b) An A900 Rocket® composter (Capacity: 65 gallons of food waste per day). Option available only for the low end scenario of 42 gallons per day.

Residential community with 600 residents - 56 to 82 gallons per day.

In options "a" we are considering extra capacity for some food waste from a grocery store and/or pre-commercial restaurant food waste.

Options:

a) An A1200 Rocket® composter (Capacity: 130 gallons of food waste per day)

b) An A900 Rocket® composter (Capacity: 65 gallons of food waste per day). Option available only for the low end scenario of 56 gallons per day.



In order to reach close to 100% capacity, the Rocket® composter need to be fed 2-3 times during the day depending when food scraps are produced.

The Rocket® composter runs at 85% capacity in order to allow for peaks in your operation. Our technology requires a bulking agent, in this case wood chips, which accounts for 50% of the total capacity of any Rocket®. The adequate mix is 50% of food waste and 50% of wood chips.

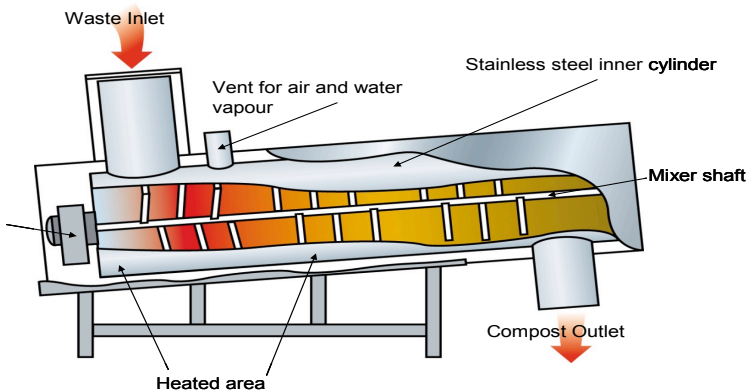
All Rocket@s of different scale are manufactured in the same design. All models have an angled cylinder with a steel shaft inside. The shaft has angled blades attached and is turned by a gearbox. The machine is insulated and encased in a stainless steel protective cover. The Rocket® has an electrical control unit which is visible at the inlet end of the machine. The majority of the machine is manufactured from the highest-grade stainless steel for durability and to meet our quality manufacturing standards. There are no moving parts outside the machine. Very little noise can be heard when the machine is running for approximately one minute every hour.

The latest Rocket® technology uses a low power motor to reduce the power consumption and running costs. All machines require a small amount of electricity to introduce additional heat into the Rocket® at the start of the process, via a thermostatically controlled low power heating system. This assists meeting ABPR and similar regulations in the UK. The running cost varies depending on the ambient temperature and the type of waste material being processed. All Rocket@s are powered from a standard 208 Volts plug socket and require a covered location when situated outside.

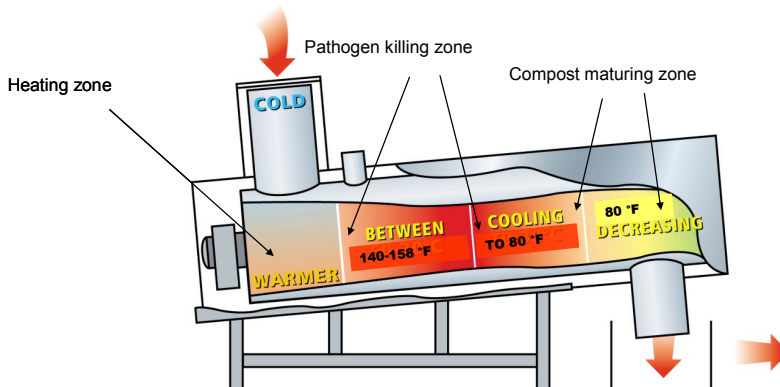
The Rocket® is designed to compost all food scraps including meat and fish, but in order to do that you need to provide the machine with the right feedstock. The simplest way to do this is using a mix of equal volumes of food scraps and wood chips (50%/50%). We recommend using wood chips for the following reasons:

- 1.- Provides much needed carbon to the composting mass, as food scraps is often very high in Nitrogen.
- 2.- Gives the composting mass good structure inside the Rocket® which helps the shaft aerate the mix correctly.
- 3.- Generally free, as wood chips are considered a waste product. If it is not something that you produce on site we can assist you with finding a tree surgeon or landscape gardener in you area who can provide the wood chips.

Food scraps and wood chips (material) are fed into the machine via the inlet hopper on the top of the machine. Once the material enters the Rocket® the whole process is fully automated with the shaft programmed to turn at regular intervals to aerate the mass and move it through the vessel.



As the material works its way through the vessel it passes through various stages of the composting process where temperatures of 140 F plus are reached, making sure that all pathogens that may be present due to the inclusion of meat and fish are destroyed. The majority of heat generated is achieved due to the activity of the microbes in the Rocket®, however there is also an external, thermostatically controlled heat blanket that ensures the appropriate temperatures are maintained throughout the composting process. The whole process is continuous with a residence time of only 14 days. As food scraps is fed into the Rocket® it forces material further through the machine and the compost is disposed through the outlet on the bottom of the Rocket®.



Main attributes of the Rocket® composter:

- Dramatically reduces food scraps disposal costs. (Refer to exhibit A)
- Reduces transportation costs and carbon dioxide emissions (CO₂).
- Immediate treatment eradicates vermin problems and pest control costs.
- Eliminates trash-related odors.
- Eliminates the need for garbage bags and other non biodegradable products. (Refer to exhibit A)
- Avoids greenhouse gas emissions coming from rotten food in landfills (Methane).
- Removes trash bins from the streets and sidewalks maintaining them clean.
- Contributes to the decrease of number of waste collection vehicles on streets which emit CO₂.
- Unique solution to treat organic waste where it is being produced.
- Allows compost to go back to its origins thus closing the loop of recycling.



Pricing - Please find the basic terms for the Rocket composter:

A1200 Rocket® composter

Model A1200 (1) Shipping (2) Rocket® Composter Installation and training costs (3)	\$125,400
------------------------------------------------------------------------------------	-----------

- (1) Temperature datalogger included. Prices do not include applicable taxes.
- (1) For the installation of the A1200 we use a crane. We are including ½ day of a crane rental which should be enough to download it from the truck and place it on the final site with no additional maneuver. If there is need to maneuver the crate in order to place the unit which will require more than half ½ day, the client will need to cover the extra time. Client is responsible for installing fan and exhaust pvc pipes.
- (2) Rocket composter installation & training has to take place on the same day, otherwise additional costs could be charge. It is require providing 208 volts outlet to connect the system (wiring is not included) or a power converter is required. Installation & training must take place within 6 months from the date of the delivery, otherwise installation & training charges will have to be charge again but at the current rate when re-scheduling.

A1200 Rocket® composter + Bin lift system

Model A1200 + Bin lift system (1) Shipping (2) Rocket® Composter Installation and training costs (3)	\$142,700
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- (3) Temperature datalogger included. Prices do not include applicable taxes.
- (2) For the installation of the A1200 we use a crane. We are including ½ day of a crane rental which should be enough to download it from the truck and place it on the final site with no additional maneuver. If there is need to maneuver the crate in order to place the unit which will require more than half ½ day, the client will need to cover the extra time. Client is responsible for installing fan and exhaust pvc pipes.
- (4) Rocket composter installation & training has to take place on the same day, otherwise additional costs could be charge. It is require providing 208 volts outlet to connect the system (wiring is not included) or a power converter is required. Installation & training must take place within 6 months from the date of the delivery, otherwise installation & training charges will have to be charge again but at the current rate when re-scheduling.

One A900 Rocket® composter

Model A900 (1) Shipping (2) Rocket® Composter Installation and training costs (3)	\$52,400
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- (1) Temperature datalogger included. Prices do not include applicable taxes.
- (2) Shipping costs include delivery to a loading dock where the client is responsible to get the crate out of the trailer using a forklift or directly from the truck. The crates weights approximately 3,000 pounds. There will be an additional charge for any additional maneuvering and for not delivering to a loading dock. The client is responsible for transporting the unit to the final destination where installation will take place. Client is responsible for installing fan and exhaust pvc pipes.
- (3) Rocket composter installation & training has to take place on the same day, otherwise additional costs could be charge. It is require providing 208 volts outlet to connect the system (wiring is not included) or a power converter is required. Installation & training must take place within 6 months from the date of the delivery, otherwise installation & training charges will have to be charge again but at the current rate when re-scheduling. ----

Rocket® Composter

Model A700 (1) Shipping (2) Rocket® Composter Installation and training costs (3)	\$36,800
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- (1) Temperature datalogger included. Prices do not include applicable taxes.
- (2) Shipping costs include delivery to a loading dock where the client is responsible to get the crate out of the trailer using a forklift or directly from the truck. The crates weights approximately 1,100 pounds. There will be an additional charge for any additional maneuvering and for not delivering to a loading dock. The client is responsible for transporting the unit to the final destination where installation will take place. Client is responsible for installing fan and exhaust pvc pipes.
- (3) Rocket composter installation & training has to take place on the same day, otherwise additional costs could be charge. It is require providing 208 volts outlet to connect the system (wiring is not included) or a power converter is required. Installation & training must take place within 6 months from the date of the delivery, otherwise installation & training charges will have to be charge again but at the current rate when re-scheduling. ----



Your residential sites can eliminate their food scraps removal costs for life, reduce their CO2 foot print, avoid contributing to the increased production of methane and leachate in landfill and save energy as the food scraps does not have to travel many miles to landfill. We can truly close the loop of recycling using compost made from their food scraps in garden beds and for landscaping on the same property where waste is generated!

Education is a core element to our company; we firmly believe that to take care of our environment, we need to contribute educating young people. Our solution, the Rocket® composter has been use at educational institutions as a tool to teach the students sustainability among other subjects. Education is an important part where we all should work together for the development of our future sustainability leaders. We believe that this is the ideal way to change our actual behavior towards the environment.

Payment Terms	50% down payment upon receipt of purchase order. Balance payable upon notification of shipment from the manufacturing facility.
Delivery	Delivery time of 12-16 weeks from receipt of purchase order and from receipt of down payment.
Exclusions	Non standard work during installation of Rocket® composter.
Validity	Quote will be valid for 30 days from the date issue.

We are offering your community the ideal solution to stop paying expensive food scraps removal costs. You can invest in the Rocket composter, which will save you money. Your community, a place committed to sustainability will be affording its residents, staff and community the opportunity to learn about composting, resource management, energy savings, landfill diversion, carbon reduction, greenhouse gases, among other subjects, an essential part of a sustainability program.

Please contact me with any questions. We look forward to working with you on this important project.

Sincerely,

Gerardo Soto



Exhibit A

Economics of the Rocket® composter

Every food operation is different having many different variables involved, therefore it is difficult to calculate hard numbers for all the savings that the Rocket® composter could potentially achieve. The following are some of the savings that a typical food operation shall be able to achieve under normal circumstances:

- Reduces food scraps disposal costs significantly
- Reduces compost costs for green areas
- Reduces pest control costs
- Additional Savings
 - Cleaning garbage dumpsters
 - Reduction of garbage bags
 - Reduction of other cleaning products
- Value creation from being Green. It is challenging to quantify but definitely creates value among stockholders, stakeholders and employees.

Videos

A900 Rocket composter

<http://www.youtube.com/watch?v=RIm3ftcXzr8>

A1200 Rocket (Bin lift system)

<http://www.youtube.com/watch?v=cNBq0oQr9I8>

Educational video - Food for thought; the missing link

<http://www.youtube.com/watch?v=UtJQ3NgHJDQ>

**Exhibit B
Pictures and Specifications**

A1200 Rocket®



- Size: 23.0 ft long, 4.6 ft width, 5.9 ft high
- Capacity: 1,850 gal of mixed waste per week
925 gal of food scraps per week
2,775 gal of food scraps per week when used with waste pulper (macerator and dewaterer)
- Power Consumption: Approximately 20kWh per week
- Power Req: Single phase 208 Volts
- Outside Site Requires a covered location
- Weight (Empty): 8,820 Pounds
- Heater Element: 2 x 1kWh – Thermostatically controlled
- Does not include bin lift system

A1200 Rocket® with bin lift system



Products are supplied subject to any specification as to weight, size, dimensions, finish and physical properties as may be published generally by FWE. Particulars in catalogs, drawings, brochures and other printed material are illustrations only.

Rocket® A900

Size: 13.1 ft long, 3.3 ft width, 5.3 ft high

Capacity: 925 gal of mixed waste per week
460 gal of food scraps per week
1,385 gal of food scraps per week
when used with waste pulper
(macerator and dewaterer)

Power Costs: Approximately 30kWh per week

Power Req: Single phase 208 Volts

Weight (Empty): 1,100 Pounds

Outside Site Needs a covered location

Data Logger Records temperatures inside the
In vessel at 4 different probes.



Residence time 14 days

Products are supplied subject to any specification as to weight, size, dimensions, finish and physical properties as may be published generally by FWE. Particulars in catalogs, drawings, brochures and other printed material are illustrations only.

Rocket® A700



Size: 9.9 ft long, 3 ft width, 4.6 ft high

Capacity: 370 gal of mixed waste per week
180 gal of food waste per week
555 gal of food waste per week
when used with waste pulper
(macerator and dewaterer)

Power Costs: Approximately 26kWh per week

Power Req: Single phase 208 Volts

Weight (Empty): 660 Pounds

Outside Site Needs a covered location

Data Logger Records temperatures inside the
In vessel at 4 different probes.

Residence time 14 days

Products are supplied subject to any specification as to weight, size, dimensions, finish and physical properties as may be published generally by FWE. Particulars in catalogs, drawings, brochures and other printed material are illustrations only.



Food Waste Composting



YES PLEASE

PLEASE NOTE:

Drain any excess liquids
Cut whole vegetables / fruit into smaller pieces



raw meat/fish/poultry



cooked meat/fish/poultry



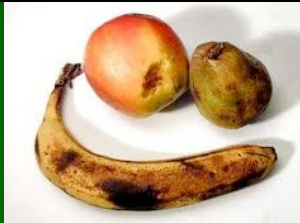
bread & egg shells



coffee grounds & tea bags



fruit & veg prep scraps



out-of-date fruit & vegs



plate scrapings



end of service leftovers



NO THANKS

PLEASE NOTE:

NO biodegradable OR compostable starch liners –
ONLY use **compostable PAPER liners**



large bones & fat trimmings



large volumes of baked beans



cling film, kitchen foil & paper towels



single serving sachets



paper cups, packaging & wooden stirrers



serviettes & napkins



milk, yogurt & custard



soups, sauces & gravies

If you want to go fast, go alone. If you want to go far, go together. ~ African Proverb

Document Collaboration tools have a lot of benefits. Some of these include:

- Increased productivity
- Brainstorming ideas
- Faster problem solving
- Enhanced creativity
- Faster execution of ideas
- Builds a sense of community
- Did you know that teams can create documents 33% faster with a document management tool that cuts out the need for attachments? *(Source: Highq)*
- According to Econsultancy, workers send and receive about 15 emails that include attachments per day.
Over 59% of managers miss vital information simply because they can't find it or never see it. *(Source: LinkedIn)*

1. Google Docs:

- Benefits:
 - Works with Mac, PC, Linux, and most other operating systems
 - Free
- Negatives:
 - If you are using Microsoft Office or Pages, your documents may not have the same functionality in Google Docs.

[Here is this document in Google Docs.](#) To collaborate. Click the pencil icon in the upper right corner of the menu and choose: SUGGESTING

2. Microsoft Office 365 (Word Live, Excel Live, etc.)

- Benefits:
 - Works with Microsoft Office Products
 - Familiarity
- Negatives:
 - Pay to Use
 - Mobile and web apps limit functionality of desktop versions

[Here is this document in Word Live](#)

To collaborate, go to the Review Tab (not available on-line) and make sure that Track Changes is highlighted.

3. Dropbox Paper

- Positives:
 - Interfaces directly with Dropbox
 - Easy to use
- Negatives:
 - Limited functionality compared to MS Office Products – but improving!

[Here is this document in Dropbox Paper](#)

And here are some tips to using Paper. I'm learning this one too!

<https://www.dropbox.com/help/paper/doc-collaboration>

Try them all out!