

Customer Problems

Target customers are independent elementary schools, which have three problems that GreenSoil addresses.

Differentiation to attract students

Independent elementary schools compete to attract students through differentiation. Two areas that schools see as important features of differentiation are projectbased learning and an image of sustainability. Schools without these differentiating factors lose potential students, and thus lose out on potential revenue.

Lack of project-based learning

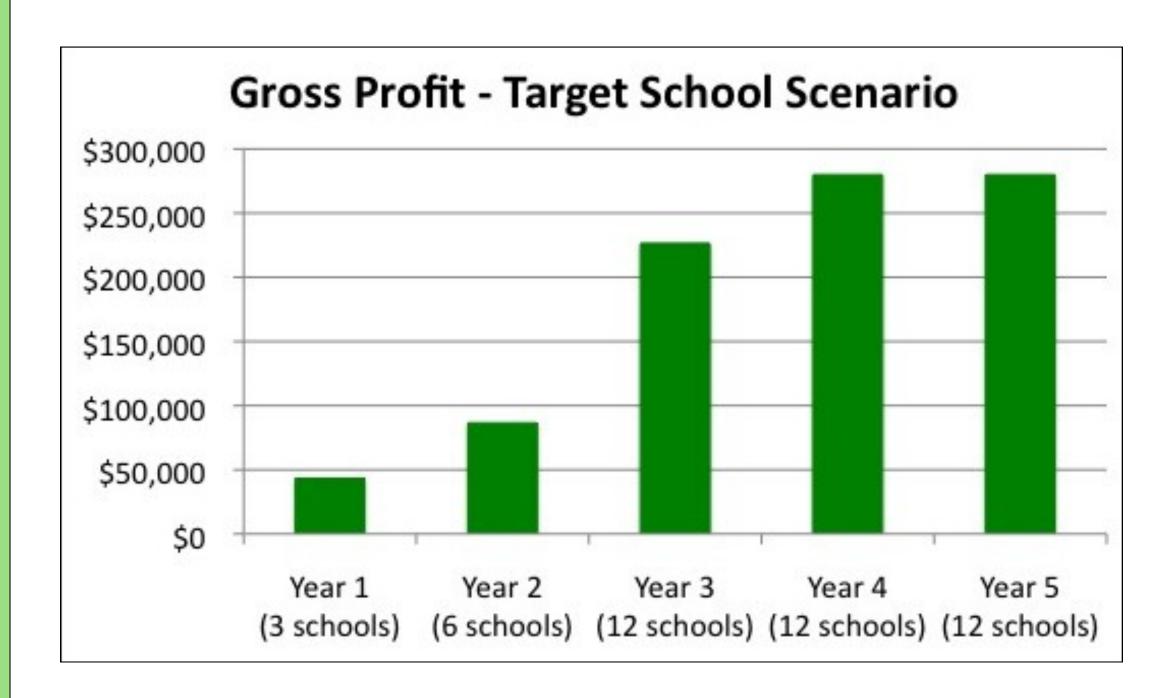
Project-based learning is a teaching method that uses hands-on projects as the foundation for instruction, and is becoming recognized as a highly effective way for students to learn. However, K-12 schools lack access to hands-on projects for curricula, and lack the resources to develop these projects. As a result, project-based learning is under-utilized and education suffers.

Waste hauling costs

32% of waste in K-12 schools is made up of food waste, and schools are currently paying to have it hauled away to landfills. This waste problem is an emerging issue as budgets are being tightened while waste hauling costs continue to rise. Santa Barbara schools currently pay \$72 per ton to have their waste hauled to the local landfill. A pilot school composting program in Austin has saved the participating schools an average of \$545 each month.

Funding Model GreenSoil sells worm castings, a high quality organic fertilizer, to fund its operations.

The funding model to pay for the services that GreenSoil provides is direct sales of worm castings that are created at the schools. GreenSoil sells their worm castings to local garden centers, nurseries, and parents of students at the partner schools. Worm castings are harvested and bagged every two weeks and then sold monthly. GreenSoil's product helps small garden stores connect with their unique customer base, allowing these stores to differentiate from big box garden centers that are beginning to offer more organic products.













Distribution of Target Schools in Los Angeles County, CA

Solution

GreenSoil is an educational composting service for schools, turning food waste into organic fertilizer.

Students Separate Waste:

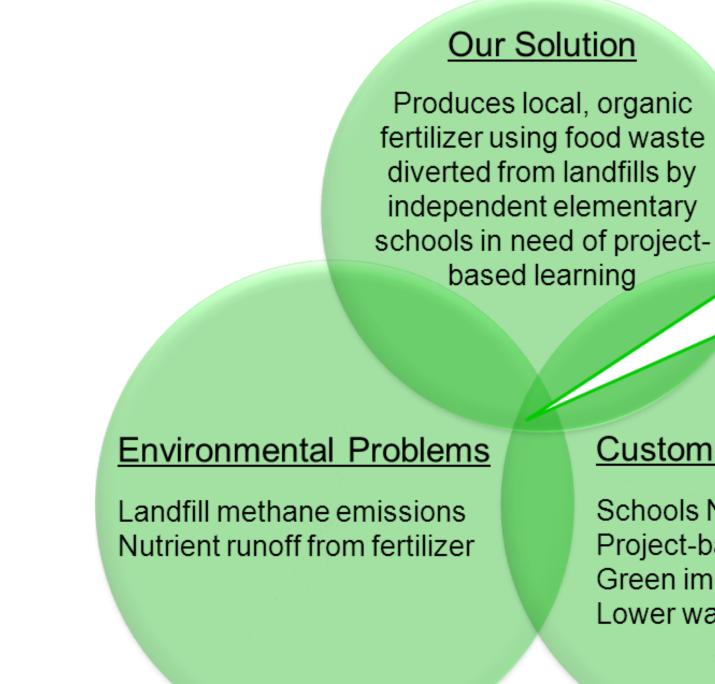
- Divert food waste from landfills
- Save schools money by lowering waste hauling fees
- Motivate students to compost at home

Flow-Through Vermicomposting System:

- Platform for project-based learning
- Compost on-site at the schools
- Decreases carbon footprint and improves green image
- Produces worm castings

Worm Castings:

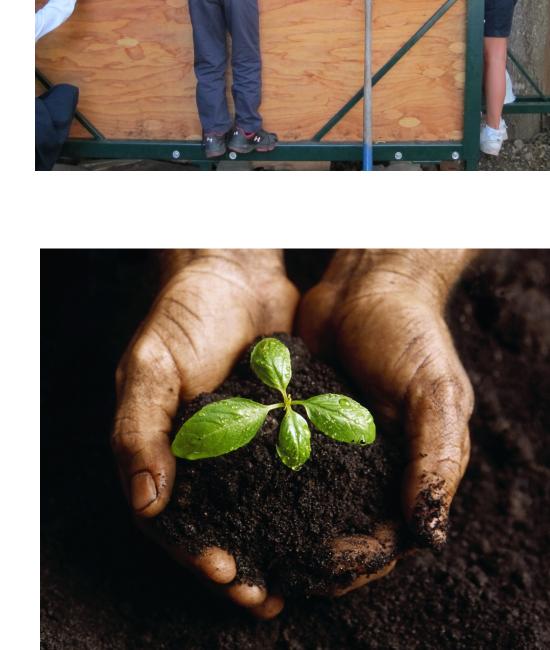
- Highly demanded, effective organic fertilizer
- Sold to local garden stores and parents of students
- Sales fund GreenSoil services
- Encourage the use of organic fertilizer



Pilot Program

As of March 2012, the vermicomposting system is producing worm castings and GreenSoil staff have led several educational programs for students, including the school's Science Discovery Night. In April 2012, harvesting and bagging of the castings will begin, and the first bag of castings will be sold through a local Santa Barbara garden store that has agreed to partner with GreenSoil. The pilot program identified that partnering with larger schools will result in higher profit margins.

	Laguna Blanca	Target School	
Number of students	80	350 - 450	
Grade levels	K – 12	K – 5	
Number of campuses	3	1	
Lunch system	Catered	On-site cafeteria	
Waste generation rate	0.93lbs/student/wk	1.28lbs/student/wk	
Monthly service fee	No	Yes - \$200 Yes \$1.86	
Learning curve efficiencies	No		
Net profit per pound of	\$1.04		
castings			



GreenSoïl

Customer Problems Schools Need: Project-based learning Green image Lower waste-hauling costs

GreenSoil partnered with Laguna Blanca School to validate assumptions and develop the business model.

Environmental Problems

GreenSoil addresses the problems associated with landfilled food waste and the use of synthetic fertilizers.

Food Waste

Landfills are quickly reaching capacity. Food waste makes up nearly 14% of waste deposited into landfills nationwide, less than 3% of which is recovered, leaving approximately 33 tons of food waste to enter US landfills every year.

On average, food waste is the heaviest component of municipal solid waste due to its high water content. Transporting this heavy waste burns fossil fuels and food waste decomposes anaerobically in landfills.



Synthetic Fertilizers

Synthetic fertilizers are used extensively to improve soil nutrient supply. However, this use results in many environmental problems. Synthetic fertilizers:

- Are produced using fossil fuels
- Result in negative human health effects

Customer Research

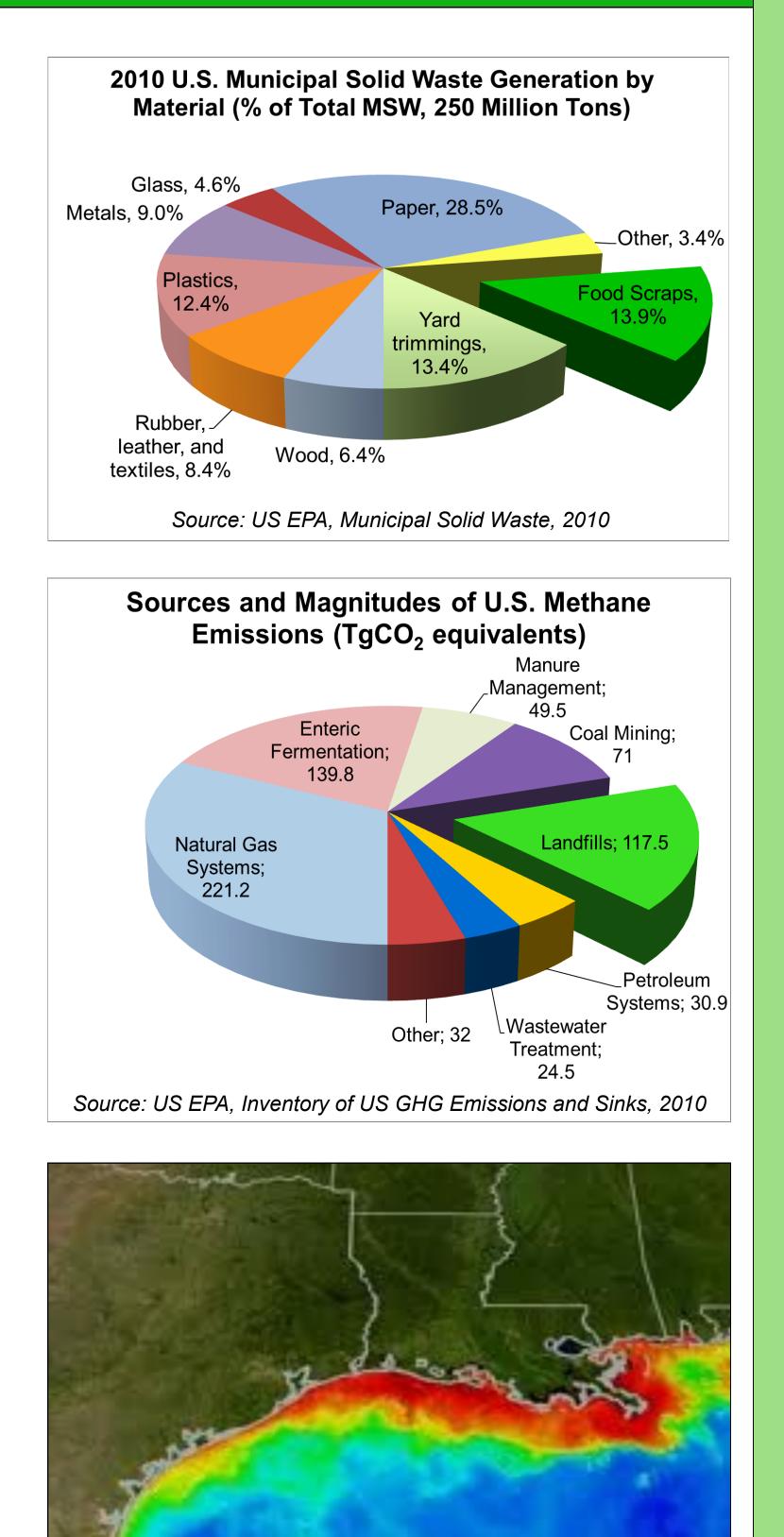
One year of customer research, including expert interviews, customer interviews, surveys, and a summer internship took place in order to test GreenSoil's hypotheses and assumptions. Research findings guided business model pivots and iterations, ultimately leading to the current GreenSoil business model.

Winter '11 - Interviewed UCSB		Sur Trained
- Interviewed OCSB		
		Initiate
- Intervie	ewed large end-users	school
	Spring '1	1
	- Interviewed ret	ailers
- Surveyed schools		ols
- Attended conference		
1	Summer apprentice	eship
8	Senior living comm	nunitie
13	Garden centers an	d nur
14	Large users of ferti	lizer
20	Industry experts	
50	Independent schoo	ols

Methane Emissions

Anaerobic decomposition of food waste in landfills is third largest source of methane emissions in the United States. Methane is a powerful greenhouse gas, with a global warming potential 25 times that of CO_2 .

- Cause an overuse of phosphorous as we approach Peak phosphorous - Cause eutrophication of nearby waterways from runoff



Above: Gulf of Mexico. Synthetic fertilizer runoff contributes to dead zones

Extensive customer research guided the formation of GreenSoil.

