



WESTLAKE HIGH SCHOOL: CARBON REDUCTION CHALLENGE



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INTRODUCTION & GOALS

Westlake High School is a Science and Math Magnet School located in South Fulton County and services over 2,300 high school students. After contacting the school's administration, the school elected to partner with us in the Carbon Reduction Challenge for the Summer of 2019. This project will reduce carbon emissions by instituting a recycling program at the school. In addition, inspired by the Sope Creek elementary project from last year, we will work with ninth grade science teachers at the school to incorporate learning about conservation into their curriculum. About 15% of waste produced by schools is recyclable so this will significantly decrease the amount of waste that goes into landfills. The co-benefit of conservation lessons taught to the students in the learning manual will inspire them to lead greener lives and to pass these lessons on, thus compounding the carbon savings.

COST CALCULATIONS

Cost for Recycling Service

$$(\$200 \text{ one time fee}) + \left(\frac{\$126.50}{\text{month}} \right)$$

Cost for Recycling Bins Throughout School

$$\frac{\$5.97 * 1 \text{ Bin}}{1 \text{ Bin Classroom}} *$$

$$\frac{50 \text{ Classrooms}}{1} = \$298.55$$

Cost for Recycling Bins in Cafeteria

$$\frac{\$19.97 * 4 \text{ Bins}}{1 \text{ Bin Cafeteria}} *$$

$$\frac{4 \text{ Cafeteria Bins}}{1} = \$79.88$$

Cost for Recycling Bags

$$\frac{\$42.43}{\text{Box of Bag}} * \frac{\text{Box of Bags}}{250 \text{ Bags}} * \frac{1 \text{ Bag}}{\text{Classroom}} * \frac{50 \text{ Classrooms}}{1} * \frac{1 \text{ Bag}}{\text{Week}} * \frac{36 \text{ Weeks}}{\text{School Year}} = \$305.50$$

$$\frac{\$24.72}{\text{Box of Bag}} * \frac{\text{Box of Bags}}{100 \text{ Bags}} * \frac{1 \text{ Bag}}{\text{Cafeteria Bin}} * \frac{4 \text{ Cafeteria Bins}}{1} * \frac{1 \text{ Bag}}{\text{Day}} * \frac{5 \text{ Days}}{\text{Week}} * \frac{36 \text{ Weeks}}{\text{School Year}} = \$177.98$$

CARBON FOOTPRINT CALCULATIONS

Carbon Emissions Reduced by Recycling

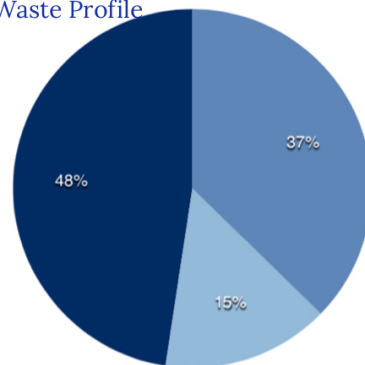
$$\frac{2950 \text{ Waste Generated}}{1 \text{ Day}} * \frac{15\% \text{ Waste}}{\text{Total Recyclable}} * 65\% \text{ of Waste that Makes it Into Recycling} * 89\% \text{ of Usable Recycling} = 256 \text{ lbs of Recyclable Waste Generated per Day}$$

$$\frac{256 \text{ lbs of Recyclable Waste Generated}}{1 \text{ Day}} * \frac{5 \text{ Days}}{\text{Week}} * \frac{4 \text{ Weeks}}{\text{Month}} * \frac{\text{ton}}{2000 \text{ lbs}} * \frac{2.447965 \text{ ton CO}_2\text{e}}{\text{ton recycled}} = 8.827$$

Metric Tons of Avoided per month CO2 Emissions

● Compostable ● Recyclable ● Others

High School Waste Profile



CURRENT STATUS

- Recycling plan has been presented to Westlake administration
- Waste disposal service has been contacted about the price change and dumpster delivery costs
- In the process of adding the recycling service to the waste disposal plan as well as purchasing bins

CO- BENEFITS

Partnering with a high school provides the opportunity to take the carbon reduction challenge into the classroom.

- incorporating a learning manual that introduces carbon reduction and footprints into the current curriculum of AP Environmental, Biology, Chemistry classrooms
- provide an interactive experience for the students to see simple ways they can make a great difference in school and at home
- recycling will offer a vision of group involvement to achieve success.

NEXT STEPS

Some changes that will lead to even greater carbon reduction and cost changes that we recommend the school make in the future but will require district approval are:

- 1.) Light retrofitting: Replacing 100 of the school's current lighting with more efficient LED bulbs will bring 2245% return on investment with a payback period of 11 months
- 2.) A compost system for food waste: Over 37% of a typical high school's waste is food waste
- 3.) A school garden: Can teach students more about conservation and be a good use of composted organic waste