

# Matt Hirota – University of California, Merced



**Matthew Hirota joined the team at UC Merced in 2011 as the Waste Reduction/Recycling Coordinator.** During his first year, he accelerated the recycling program by using multimedia and social networking to engage the staff and students. He also implemented a composting program that was able to capture pre-consumer and post-consumer food waste as well as compostable food packaging, making UC Merced one of the first organizations in Merced County to implement food waste composting. He has established partnerships with local businesses to increase diversion of hard to recycle items such as Styrofoam and plastic bags. Matt's hard work, forward thinking and tireless efforts are helping UC Merced reach its goal of being the first educational institution to produce zero landfill waste, which they plan to achieve by the year 2020.

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# Smart Waste Bins



UC MERCED  
**triplezero**  
zero net energy. zero landfill waste.  
zero net greenhouse gas emissions.

# Problem A: Bins Overflowing





# Problem B: Trash on the Ground



# Suspect A: Raccoons





# Suspects: Guilty as charged



# Problem C: Contamination



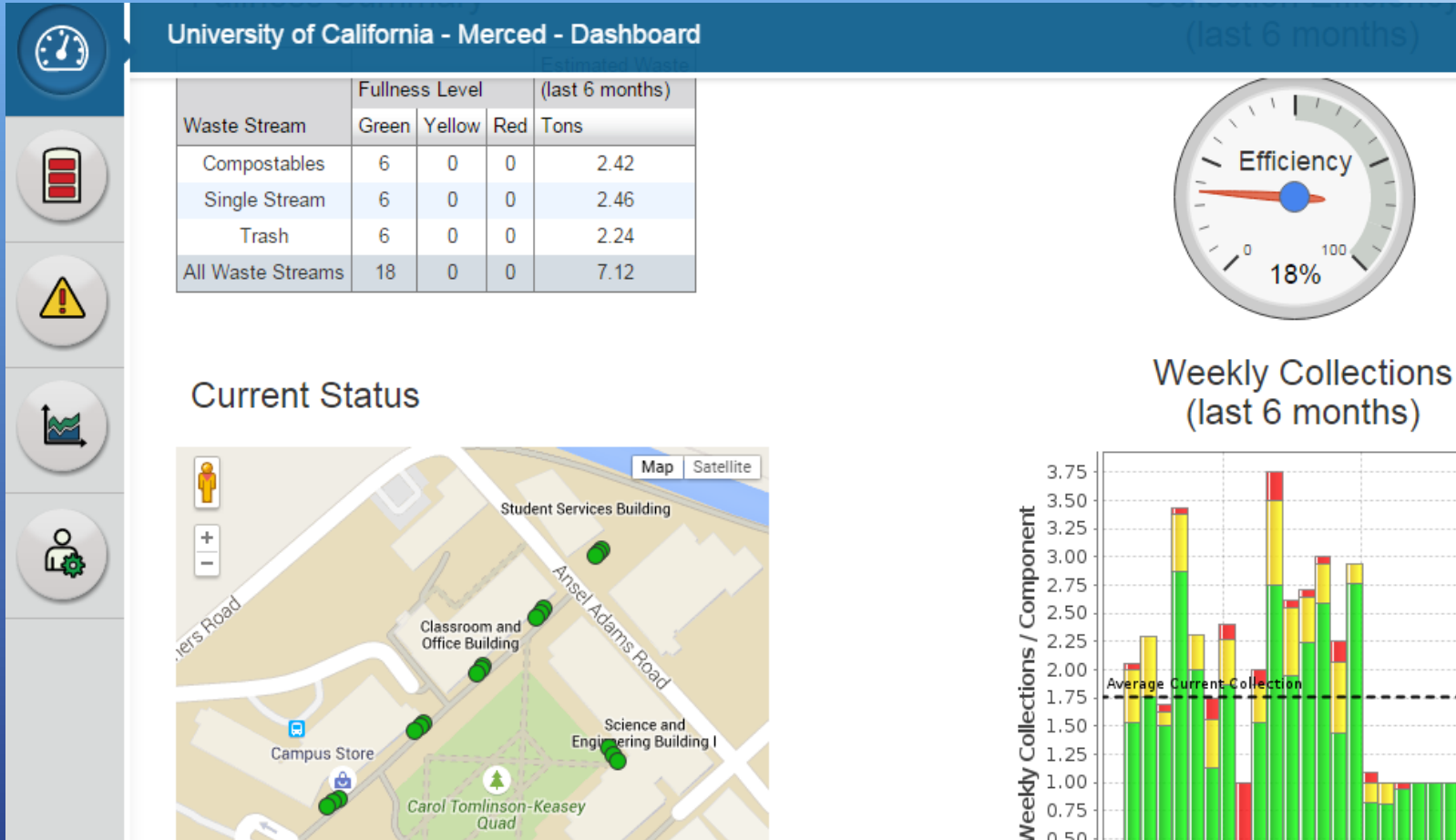


# Solution: Solar Compactors





# Online Interface



# Less Contamination



# Highlights

- Emails when bins are reaching capacity
- Compacts material
- Raccoon proof
- Less trash on ground
- Minimal overflow issues



# Lessons Learned

- Compost needs to be emptied every other day
- Waste material gets really smelly after a few days
  - Cockroaches
  - Flies, maggots
- 4 out of the 18 circuit boards died in the first year
  - Possibly due to hot climate
  - All covered under one year warranty
- Good for high traffic areas

# Nothing is perfect



# Labor Comparison

## Regular Bins

- Collected 1 to 2 times a day (364 hours a year)
- Pick up trash blown across campus (260 hours a year)
- 624 hours a year

## Solar Compactors

- Collected every other day (156 hours a year)
- Cleaning Solar Compactors (156 hours a year)
- 312 hours a year



# Labor Saving vs Cost

- Labor savings @\$40 hour x 312 hours = \$12,480 per year
- Each set of three costs approximately \$12,000
- Pays for itself in six years

# UCMERCED

Matthew Hirota

Waste Reduction/Recycling Coordinator

University of California, Merced

5200 N Lake Road

Merced, CA 95343

phone: **209-228-2344**

email: **[mhirota@ucmerced.edu](mailto:mhirota@ucmerced.edu)**

web: **[recycle.ucmerced.edu](http://recycle.ucmerced.edu)**