An overview of CR&R’s exciting new project

- CR&R’s project is a source separated, municipal organic residuals to bioenergy and soil amendments enterprise.
- It is the most ambitious project of its kind in California to date and a pioneer in addressing energy and carbon recovery from these abundant sources of biomass in California.
- Project was designed to serve the recycling needs of CR&R’s contract cities and to fuel the cleanest waste collection fleets currently available.
- Phase one of this project is complete and operating (October 2016). Phase two is estimated to be completed early in 2017.
- Contact Mike Silva, Project Director (MichaelS@CRRMail.com) for further information.
CR&R Anaerobic Digestion Facility
Regional Organics Recycling - 335,000 TPY
CR&R MATERIALS MANAGEMENT INFRASTRUCTURE

- 50 Municipal Contracts
- 12 Processing Contracts
- 900 Trucks
- 1,500 Employees
- 2.5 Million Customers served
- 10 Solid Waste Service Centers
- 5 Transfer Stations / MRFs
- 2 Landfills
ANAEROBIC DIGESTION PROJECT OVERVIEW

We will convert all of organic (yard and food) wastes into fertilizer and renewable natural gas the (RNG) to run our truck fleet.

This program will keep organic wastes out of the landfill where they would naturally degrade and release methane into the atmosphere.

Methane is 84 times more damaging to the atmosphere than carbon dioxide.

Compressed Natural Gas (CNG) is the cleanest burning fossil fuel. Renewable Natural Gas (RNG) has an even lower carbon intensity.

Anaerobic digestion (AD) is simply replicating Mother Nature in a more controlled and cost effective environment.
ANAEROBIC DIGESTION - FLOW CHART
ANAEROBIC DIGESTION PROJECT OVERVIEW

Our process runs 24/7 – 365 days/year and is fully automated.

Our process provides maximum flexibility – waste mix, solids and liquids, different temperatures. Four different mixes and temperatures can be run simultaneously.

The system will generate enough renewable natural gas to run our entire fleet of CNG vehicles, with a surplus, entirely from our collected green and food wastes.

Our process is fully enclosed with zero untreated emissions and has the highest energy conversion rate in the industry due to its design and controls.

The plant will handle 335,000 tons per year, generate 4 million gallons per year (DGE) of RNG, and create about 250,000 tons of soil products per year.

The plant will use “recycled” water from the local waste water treatment plant.
CARBON INTENSITY

* Amount of carbon emitted per unit of energy consumed (California Air Resources Board)
FINANCIAL INCENTIVES

- **SB 1386 / AB 2313**
  - RNG in grid and pipeline connect reimbursement

- **Assembly Bills 1594 & 1826**
  - Organics Mgmt

- **Assembly Bill 341**
  - 75% Recycling

- **AB 32 / SB 32**
  - Green House Gas Reduction

- **AQMD Grants**
  - $500,000 Phase 1
  - $900,000 Phase 2

- **CEC Grants**
  - $4,520,000 Phase 1

- **Low Carbon Fuel Standard (LCFS)**

- **RIN Credits**
  - Phase 1
  - Phase 2

- **Excise and Sales Tax Rebate**

- **RIN CalRecycle**
  - $3,000,000

- **Assembly Bills 1594 & 1826**
  - Organics Mgmt

- **CEC Grants**
  - $4,520,000 Phase 1
ORGANICS MANAGEMENT OVERVIEW

**LANDFILLING**
- 75% Energy Recovery
- 75% Emissions Capture
- 0% Nutrient Recovery

**COMPOSTING**
- 0% Energy Recovery
- 0% Emissions Capture
- 100% Nutrient Recovery

**ANAEROBIC DIGESTION**
- 100% Energy Recovery
- 100% Emissions Capture
- 100% Nutrient Recovery

the face of a greener generation
ANAEROBIC DIGESTION FACILITY
All Phases
- Organics Receiving Building
- First loads of green waste unloading
- Completely automated feed system
Construction
- Control building construction
CNG/RNG Filling Station
- Time fill station for CNG trucks
- System will be capable of filling CR&R’s entire fleet of CNG vehicles with carbon negative Renewable Natural Gas (RNG)