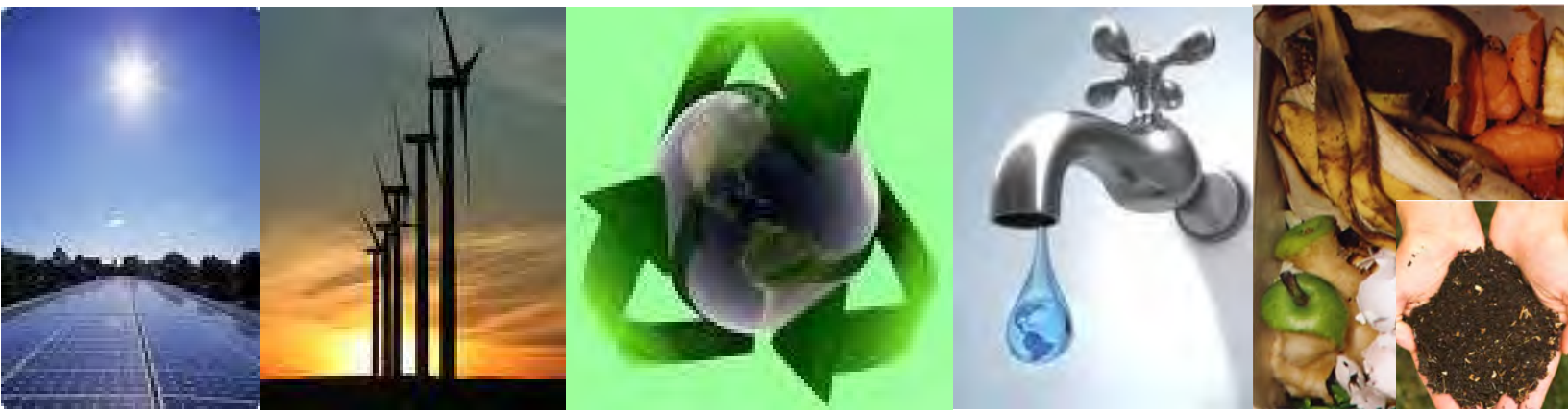
Raritan Valley Community College
Environmental Assessment:
MOU SemiAnnual Report
August 10, 2012



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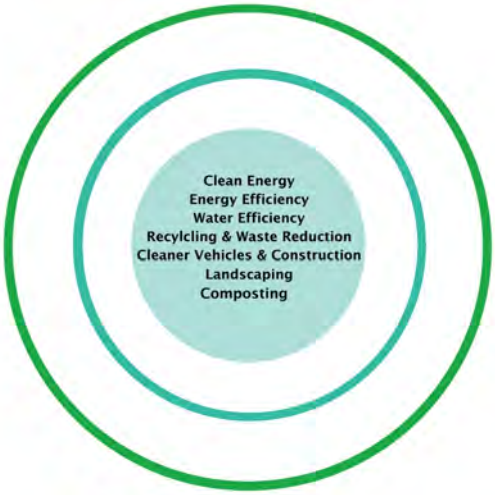
Accomplishments

Reductions of 16,647 MTCO2e



Memorandum of Understanding

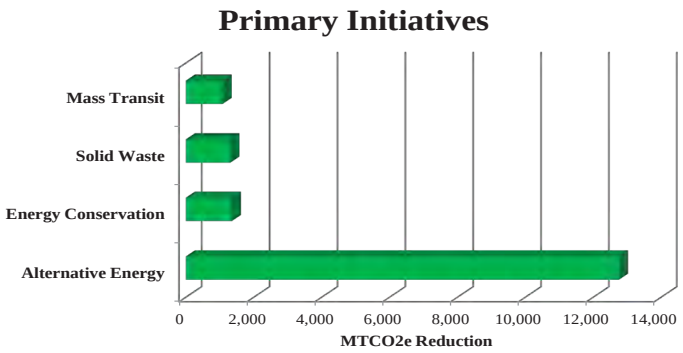
On June 16, 2009, Raritan Valley Community College signed a Memorandum of Understanding (MOU) pledging to become an environmental steward by implementing a number of green initiatives that would reduce its carbon footprint and further improve our planet's environment. This partnership with the United States Environmental Protection Agency (EPA) and Raritan Valley Community College has resulted in reducing energy, water and solid waste production across campus operations.

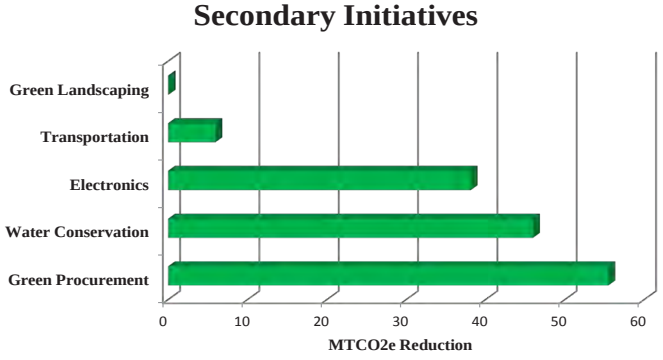
Reduction in Environmental Footprint

In the last few years, Raritan Valley Community College has provided five updates documenting its green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint for the organization. Due to the progressive green efforts of the organization, the college has managed to reduce its carbon footprint by 16,647 MTCO2e* and saved an estimated $3,400,000 in operating expenses.

*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Savings (MTCO2e)
Energy Conservation	1,351.2
Alternative Energy	12,757.8
Water Conservation	46.0
Solid Waste	1,309.7
Green Procurement	55.5
Green Landscaping	0.1
Electronics	38.1
Mass Transit	1,082.7
Transportation	6.0
Total (MTCO2e)	16,647.0





Measurement and Continuous Improvements

EPA uses these environmental conversion models to calculate metric tons of carbon dioxide equivalents:

Greenhouse Gas Equivalencies (GHG) Calculator converts GHG reductions into scenarios that can be easily communicated to the public.

eGRID Version 1.1 (2007) which converts standard metrics for electricity, green energy, fuel use, chemical use, water use, and sustainable materials management into MTCO2e.

The EPA WARM Model which helps calculate GHG emission reductions from several different waste management practices, including source reduction, recycling, combustion, composting and landfilling.

The EPA Pollution Prevention (P2) Cost Calculator that estimates cost savings associated with GHG reductions.

Certain environmental data points cannot be converted to MTCO2e because scientific models do not currently exist. As methodologies improve, environmental assessments will be updated to include any new GHG reduction estimates.

Greenhouse Gas Equivalencies

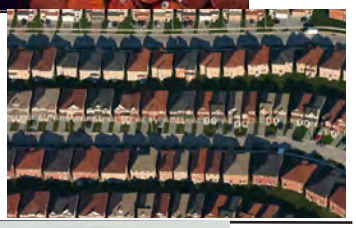
What does the reduction of 16,647 MTCO2e represent ?
The organization's effort is equivalent to any one of the following:

- Annual greenhouse gas emissions from 3,264 vehicles

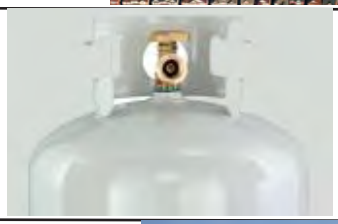
- Carbon dioxide emissions from 1,866,256 gallons of gasoline

- Carbon dioxide emissions from 38,714 barrels of oil consumed

- Carbon dioxide emissions from the energy use of 1,441 homes for one year

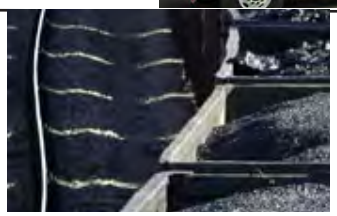


- Carbon dioxide emissions from 693,625 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 220 tanker trucks

- Carbon dioxide emissions from burning 90.6 railcars' worth of coal (over 1 1/3 miles long)



Environmental Metrics	June 2009 MOU	March 2010 Update	Nov 2010 Update	Jul 2011 Update	Jan 2012 Update	Jul 2012 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation / Energy Star								
Total Savings (MTCO2e)		***121.9***	***122.3***	***497.1***	***319.1***	***290.8***	***1,351.2***	***$190,612***
Miscellaneous Energy Conservation		(160,698.5 kwh) 41,900.5 therms	(160,698.5 kwh) 41,900.5 therms	232,048 kwh 56,400 therms	196,000 kwh 28,000 therms	(11,000 kwh) 52,000 therms	1,240.9	$175,022
Motors and Transformers								
Lighting Project Fixtures (Bulbs and Ballast)								
High Temp Hot Water Pipe Replacement								
HVAC, Chiller & Electrical								
Replace T12 bulbs with T5 bulbs		25 bulbs	67 bulbs	72 bulbs	92 bulbs	92 bulbs	2.8	$395
Replace T8 bulbs with T5 bulbs						80 bulbs	0.3	$40
Bulb Replacement (LEDs)						50 bulbs	1.1	$155
Gas Savings (pool heat exchanger)		4,000 therms	4,000 therms	4,000 therms	4,000 therms	4,000 therms	106.1	$15,000
Fuel Oil Savings								
Steam Savings								
Alternative Energy								
Total Savings (MTCO2e)	**1,750.0**	**2,626.5**	**2,334.9**	**2,334.9**	**1,751.5**	**1,960.1**	**12,757.8**	**$1,798,312**
On-Site Solar		2,000 kwh	2,000 kwh	2,000 kwh	2,000 kwh	277,000 kwh	216.1	$29,412
On-Site Wind								
On-Site Geothermal								
On-Site Combined Heat and Power (1.4 MW)	2,198 MWh	2,560 MWh	1,354 MWh	2,343 MWh	656 MWh	725 MWh	12,541.7	$1,768,900
Purchase of Green Energy/Green Power								
Water Conservation / WaterSense								
Total Savings (MTCO2e)	***0.2***	***0.1***	***0.4***	***0.4***	***10.3***	***34.6***	***46.0***	***$33,603***
Miscellaneous Water Conservation					3,988,800 gal	13,683,800 gal	44.2	$32,307
Low Flow/Hands Free Faucets (66)	33,000 gal	24,750 gal	22,000 gal	22,000 gal	16,500 gal	16,500 gal	0.3	$246
Low Flow Toilets (8)					16,000 gal	16,000 gal	0.1	$59
Low Flow Shower Heads								
Low Flow Urinals (9)	41,400 gal	31,050 gal	27,600 gal	27,600 gal	20,700 gal	20,700 gal	0.4	$309
Waterless Urinals (4)			106,667 gal	106,667 gal	80,000 gal	80,000 gal	0.9	$682
Solid Waste Recycling								
Total Savings (MTCO2e)		***634.6***	***194.8***	***269.3***	***106.9***	***104.1***	***1,309.7***	***$18,160***
Mixed Recyclables (includes Wastewise)		34 tons	14.4 tons	93 tons	9.6 tons	10.4 tons	463.2	$6,456
Pallets Waste Avoided/Wood Recycled								
Steel Recycled during Deconstruction								
Concrete recycled								
Asphalt recycled								
Ceiling Tiles recycled								
Carpet recycled								
Recycled C & D Waste (Construction Waste)								
Cardboard (construction/non-construction/sharp containers)		90 tons	23 tons		24 tons	11 tons	458.8	$5,920
Mixed Metal (construction/non-construction)								
Paper, Mixed		73 tons	23 tons			11 tons	375.6	$4,280
Plastic, Mixed (bottles, construction/non-construction, sharp containers)								

Environmental Metrics	June 2009 MOU	March 2010 Update	Nov 2010 Update	Jul 2011 Update	Jan 2012 Update	Jul 2012 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Blue Wrap								
Can / Bottle Recycling								
Mixed Organics								
Food Donation (Waste diversion)								
Biosolids & Food Waste Recycling/Composting		9 tons	5 tons	10.64 tons	8 tons	2 tons	6.9	$1,386
Fluorescent Bulbs			1044 lbs	509 lbs	437 lbs	900 lbs	0.2	$58
Waste Oil Recycled					110 gal		1.3	$19
Magazines/ThirdClass Mail								
Newspaper								
Office Paper								
Textbooks								
Phonebooks								
Dimensional Lumber								
Fly Ash								
Aluminum Cans								
Glass								
HDPE / LDPE / PET								
Appliances								
Non-Ferrous Metals								
Fats, Oils, Grease Recycled					165 gal		2.0	$28
Ballast (mixed metal)			147 lbs	93 lbs		400 lbs	1.7	$13
Green Procurement								
Total Savings (MTCO2e)		***10.9***	***16.3***	***5.6***	***11.1***	***11.6***	***55.5***	***$3,120***
Purchase of Materials with Recycled Content		5600 reams paper 3200 @ 100% PostC 2400 @ 30% PostC	8400 reams paper 4800 @ 100% PostC 3600 @ 30% PostC	6800 reams 30% PC	6000 reams 30% PC	4400 reams 30% PC	41.3	$3,120
Purchase / Use of Compost Socks								
Purchase of EPEAT Products					115 desktops	150 desktops	14.1	
Use of Recycled Steel during Construction								
Use of Recycled Iron during Construction								
Use of Recycled Plastic during Construction								
Use of Recycled Aluminum during Construction								
Use of Recycled Concrete / Asphalt during Construction								
Use of Coal Combustion Products								
Green Landscaping								
Total Savings (MTCO2e)		***0.0***	***0.0***	***0.0***	***0.0***	***0.1***	***0.1***	***$16***
Green Roofs						600 sq ft	0.1	
Porous Pavement								
Grass								
Low/no mow area								
Green Space								
Re-use of Collected Stormwater		2,000 gal	2,000 gal	3,000 gal	1,500 gal	500 gal	0.0	$16
On-Site Re-use of Compost								
Moisture Sensing Sprinklers								
Number / Acres of Trees								

Environmental Metrics	June 2009 MOU	March 2010 Update	Nov 2010 Update	Jul 2011 Update	Jan 2012 Update	Jul 2012 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Reflective Roof								
Synthetic Turf								
Native Plants								
Leaves Composted								
Electronics / EPEAT								
Total Savings (MTCO2e)		***14.6***	***5.2***	***7.7***	***5.3***	***5.3***	***38.1***	***$623***
Recycling of Electronics		18,250 lbs (400 units)	5,998 lbs	1,917 lbs	337 lbs	830 lbs	21.9	$547
Re-Use/Donation of Used Computers				26 units (208 lbs)			0.2	$4
Toner/Ink Recycling and Use of Recycled Ink				140 cartridges	105 cartridges	105 cartridges	14.3	$28
Battery Recycling			466 lbs	246 lbs	978 lbs	500 lbs	1.8	$44
Mass Transit								
Total Savings (MTCO2e)			***216.5***	***216.5***	***324.8***	***324.8***	***1,082.7***	***$1,359,400***
Miles Avoided			485,500 mi	485,500 mi	728,250 mi	728,250 mi	1,082.7	$1,359,400
Transportation								
Total Savings (MTCO2e)		***1.5***	***1.3***	***1.3***	***1.0***	***1.0***	***6.0***	***$2,081***
Hybrid Vehicles		1 car (9 mo.)	1 car (8 mo.)	1 car (8 mo.)	1 car (1/2 yr)	1 car (1/2 yr)	6.0	$2,081
Electric Vehicles								
Biodiesel Vehicles								
Clean Construction Vehicles								
LNG Vehicles								
Alternate Fuel Vehicles								
Smartway Transporters								
Bike Racks								
LEED Projects								
Total Savings (MTCO2e)								***$0***
Silver - 10%								
Gold - 17%								
Platinum - 20%								
MTCO2e Savings								
Total (MTCO2e)	***1,750.2***	***3,410.1***	***2,891.6***	***3,332.8***	***2,529.9***	***2,732.4***	***16,647.0***	***$3,405,927***
Energy	0.0	121.9	122.3	497.1	319.1	290.8	1,351.2	$190,612
Alternative Energy	1,750.0	2,626.5	2,334.9	2,334.9	1,751.5	1,960.1	12,757.8	$1,798,312
Water	0.2	0.1	0.4	0.4	10.3	34.6	46.0	$33,603
Solid Waste	0.0	634.6	194.8	269.3	106.9	104.1	1,309.7	$18,160
Green Procurement	0.0	10.9	16.3	5.6	11.1	11.6	55.5	$3,120
Green Landscaping	0.0	0.0	0.0	0.0	0.0	0.1	0.1	$16
Electronics	0.0	14.6	5.2	7.7	5.3	5.3	38.1	$623
Mass Transit	0.0	0.0	216.5	216.5	324.8	324.8	1,082.7	$1,359,400
Transportation	0.0	1.5	1.3	1.3	1.0	1.0	6.0	$2,081

Raritan Valley Community College Additional Green MOU Accomplishments and Cost Savings

2012

Sustainability Award
As a result of RVCC's efforts to improve stormwater runoff and water conservation, in June RVCC was awarded the Sustainability award from the Sustainable Raritan Initiative associated with Rutgers University. Much of the stormwater work was done for RVCC's River Friendly certification.

GreenPower Partnership
The College has become an EPA GreenPower partner and as of July 1 will be purchasing 10% green power (in addition to the standard power mix).

WasteWise Partnership and Solid Waste Recycling
RVCC has installed two filtered water bottle filling stations, for a total of three stations on campus. The stations enable people to fill reusable water bottles with filtered chilled tap water, reducing the cost and waste of disposable water bottles.
RVCC continues to be a WasteWise partner and participates in the New Jersey WasteWise Business Network. RVCC has signed up for WasteWise's Food Recovery Challenge program.
The College's book store now follows a "no bag" policy, under which customers are encouraged to put purchases in their backpacks rather than being offered a bag.
The College continues to send all bio-degradable kitchen waste to an off-site composting facility. In addition, in June 2011, the College began collecting post-consumer organic waste in select areas on campus. There are currently eight post-consumer collection bins in place, including two in the cafeteria. Bin placement and signage have been adjusted to improve the collection process and consumer education. The College expects to increase its composting program in the coming academic year.

Sustainable Design, Construction, and Operations Practices
RVCC broke ground on the new Student Center, which will be LEED Gold and include a rainwater harvesting system.
The College is evaluating whether to pursue LEED Silver certification for the West Building.
A 600 square foot green roof has been created over the Faculty Lounge in Hunterdon Hall. The green roof trays contain a wide variety of locally native plants, which store and filter stormwater.
RVCC is still seeking an economical Green Seal certified cleaner for general cleaning on campus.

GreenScapes
The College is working to incorporate its GreenScapes policy into its bidding process. One expected outcome is increased recycling of construction debris.

Transportation and Commuter Programs
In April, two electric car chargers went live on campus. The College is participating in ChargePoint America, a program to provide electric vehicle charging infrastructure to nine selected regions in the United States, made possible by the American Recovery and Reinvestment Act through the Transportation Electrification Initiative administered by the Department of Energy. The program's objective is to accelerate the development and production of electric vehicles to substantially reduce petroleum consumption, reduce greenhouse gas production, and create jobs. The College installed two bollards, each with Level 1 and Level 2 chargers, to serve four preferred parking spaces outside of the West building.