

Cushman & Wakefield
Environmental Assessment:
MOU SemiAnnual Report
April 13, 2011 (rev. May 6, 2011)



**Environmental Protection Agency Region 2** 

#### **Accomplishments**

Reductions of 107,539 MTCO2e





## **Memorandum of Understanding**

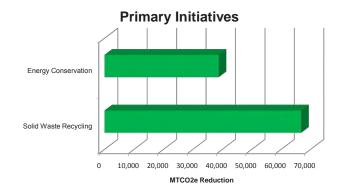
On December 12, 2008, Cushman & Wakefield signed a Memorandum of Understanding (MOU) pledging to become an environmental steward by implementing a number of green initiatives that would reduce its carbon footprint and further improve our planet's environment. This partnership with the United States Environmental Protection Agency (EPA) and Cushman & Wakefield has resulted in reducing energy, water and solid waste production across their entire operations.

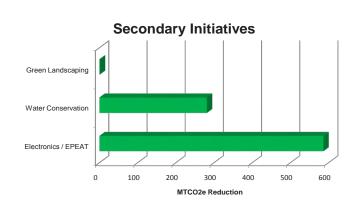
## **Reduction in Environmental Footprint**

In the last three years, Cushman & Wakefield has provided four updates documenting their green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint for the organization. Due to their progressive green efforts, the organization has managed to reduce its carbon footprint by 107,539 MTCO2e\* and saved an estimated almost \$10,000,000 in operating expenses.

\*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO2e)	Cost Savings (est.)		
Energy Conservation	38,804.4	\$8,709,931		
Water Conservation	281.3	\$295,460		
Solid Waste	67,865.9	\$949,635		
Green Landscaping	1.0	\$0		
Electronics / EPEAT	586.5	\$16,530		
Total	107,539.2	\$9,971,556		





## **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.

The EPA GHG Conversion Tool 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.

### **Accomplishments**

Reductions of 107,539 MTCO2e



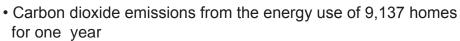
## **Greenhouse Gas Equivalencies**

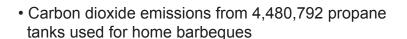
What does the reduction of 107,539 MTCO2e represent? The organization's effort is equivalent to any one of the following:

Annual greenhouse gas emissions from 21,086 vehicles



- Carbon dioxide emissions from 12,055,942 gallons of gasoline
- Carbon dioxide emissions from 250,091 barrels of oil consumed





- Carbon dioxide emissions from gasoline carried by 1,418 tanker trucks
- Carbon dioxide emissions from burning 586 railcars' worth of coal





Environmental Metrics	Dec 2008 MOU	Dec 2009 Update	Dec 2010 Update	Total Conversion (MTCO2e)	Cost Savings (Est.)
Energy Conservation/Energy Star					
Total Saving (MTCO2e)		24,319.4	14,485.0	38,804.4	\$8,709,931
Miscellaneous Energy Conservation		180,474,473 kbtu	107,493,412.4 kbtu	38,804.4	40,100,001
Motors and Transformers					
Lighting Project Fixtures (bulbs and ballast)					
High Temp Hot Water Pipe Replacement					
HVAC, Chiller & Electrical					
Bulb Replacement (CFLs, LEDs)					
Gas Savings			1		
Fuel Oil Savings					
·					
Alternative Energy					
Total Savings (MTCO2e)					
On-Site Solar					
On-Site Wind					
On-Site Geothermal					
On-Site Combined Heat and Power					
Purchase of Green Energy/Green Power					
Water Conservation/WaterSense					4
Total Savings (MTCO2e)		299.5	(18.2)	281.3	\$295,460
Miscellenaeous Water Conservation		125,822 kgal	(7,638 kgal)	281.3	
Low Flow/Hands Free Faucets					
Low Flow Toilets					
Low Flow Shower Heads			<u> </u>		
Low Flow Urinals			<u> </u>		
Waterless Urinals	-		-		
Solid Waste/Industrial Materials Reuse/Green Products					
Total Savings (MTCO2e)		30,988.4	36,877.5	67,865.9	\$949,635
Mixed Recyclables (includes Wastewise)		4,102.3 tons	4,424.72 tons	23,692.5	\$341,081
Reduction/Green Products					
Re-Use/Purchase of Materials with Recycled Content					
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 during Construction		61.5 tons	461.97 tons	16.7	\$20,939
Use of Coal Combustion Products					
Concrete Recycled during Deconstruction					
Steel Recycled Offsite during Deconstruction					
Recycled C & D Waste (Construction Waste)					
Cardboard (construction/non-construction/sharp containers)		797.8 tons	796.85 tons	6,511.1	\$63,786
Mixed Metal (construction/non-construction)		38.6 tons	66.92 tons	559.3	\$4,221
Mixed Paper		4,039.4 tons	4,749.79 tons	29,160.7	\$351,568
Mixed Plastic (bottles,construction/non-construction,sharp containers)		8.5 tons	30.32 tons	59.4	\$1,553
Mixed Organics			59.17 tons	20.7	\$2,367
Food Donation (Waste diversion)					
Food Donation (Waste diversion)  Biosolids and Food Waste Recycling / Composting		1,303.5 tons	1,730.17 tons	2,669.7	\$121,347

Environmental Metrics	Dec 2008 MOU	Dec 2009 Update	Dec 2010 Update	Total Conversion (MTCO2e)	Cost Savings (Est.)
Carpet Recycled			3.31 tons	24.0	\$132
Waste Oil Recycled	1				
Magazines / Third Class Mail	1				
ewspapers	1				
office Paper	+ +	132.4 tons	506.28 tons	3,782.3	\$25,547
honebooks	+ +	0.1 tons	0.1 tons	0.4	\$8
xtbooks	+ +		1	-	
imensional Lumber	+	0.6 tons	11.08 tons	22.1	\$467
y Ash	+	3.2.20	1		Ŧ :='
uminum Cans	+ -	3.6 tons	8.45 tons	164.4	\$482
opper Wire	+ +	3.0 10.10	1.43 tons	9.5	\$57
lass	+ -	3.6 tons	4.9 tons	2.8	\$340
DPE	+ -	5.0 (01)3	7.0 (0115	2.0	ΨΟΨΟ
DPE	+ -		10.7 tons	18.7	\$428
T	+ -	0.9 tons	4.05 tons	7.9	\$428 \$198
pliances	+ -	0.9 10118	0.35 tons	1.3	\$198 \$14
	+ -	2.2 tons	+	<del>                                     </del>	
-Ferrous Metals	+	2.3 tons	3.04 tons	50.1	\$214
, Oils, Grease	+ -	223.4 tons	120.9 tons	1,032.9	\$13,772
een Landscaping					
al Savings (MTCO2e)		0.8	0.2	1.0	\$0
en Roofs					
us Pavement	1 1		1	İ	
S	1 1		1		
/ No Mow Area	i				
en Space	† †				
se of Collected Stormwater	1				
site Re-use of Compost / Mulch	+ +		<del> </del>		
sture Sensing Sprinklers	+ -		<del> </del>		
nber / Acres of Trees	+ -		<del> </del>		
lective Roof	+ -				
thetic Turf	+ -				
ive Plants	+ +		<del>                                     </del>	<del>                                     </del>	
aves Composted	+ -	3.7 tons	0.9 tons	1.0	
ectronics/EPEAT					
otal Savings (MTCO2e)		226.3	360.2	586.5	\$16,530
cycling of Electronics		140.9 tons	147.8 tons	461.9	\$11,548
-Use/Donation of Used Computers		0.4 tons	53.55 tons	124.6	\$2,158
ner/Ink Recycling and Use of Recycled Ink					
tery Recycling		31.7 tons	38.9 tons		\$2,824
rchase of EPEAT Products					
		55,164.2	E4 242 0	107 520 4	\$0.074 EEC
		22 764 7	51,342.0	107,539.1	\$9,971,556
tal (MTCO2e)			4		00
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# Cushman & Wakefield Additional Green MOU Accomplishments and Cost Savings

2011

Cushman & Wakefield continues to build on their corporate sustainability successes. Since the Green MOU signing in December, 2008, over 107,500 metric tons of carbon dioxide equivalent have been reduced and the company has saved an estimated nearly \$10,000,000 dollars in going green.

As of this report, 406 properties under management shared their individual building Portfolio Manager energy usage account information with the C&W Corporate Master Account. Properties in the Master Account represent 91.5 million sq. ft. of commercial real estate, with an average property size of 225,260 sq. ft.

#### **Eligibility for Energy Star**

In 2010, 31% of the properties analyzed within the Portfolio have earned the ENERGY STAR label or have a label application in process, while another 25% of the buildings are eligible to apply for the label. This analysis was measured by looking at current eligibility as of December 2010, therefore a total of 253 properties were included.

#### **Building Owners and Managers Association (BOMA) 7-Point Challenge**

In 2008, C&W endorsed BOMA's 7-Point Challenge and committed to work with clients in an attempt to decrease energy consumption by 30% across the firm's managed portfolio by 2012 (as measured against an "average building" measuring a 50 on the ENERGY STAR® benchmarking tool).

Ninety (90) out of the 253 buildings currently meet or exceed BOMA's 7-Point Challenge energy reduction target. This represents 55% of the buildings included in the analysis, or 67% of the total square footage analyzed.

To determine the percentage reduction across the Portfolio, C&W utilized the EPA ENERGY STAR guidance for measuring the energy reduction achievements against the BOMA target. As of this report, the energy use of the analyzed is 33% less than the national average source energy use intensity, based on a square foot-weighted average.

#### Tracking Waste in EPA's WasteWise Re-TRAC Tool

C&W became a WasteWise Partner in September 2009. In 2010, the Company was named the EPA WasteWise New Partner of the Year. As of this report, 189 properties under management are registered as reporting locations under C&W's account in Re-TRAC. One hundred forty one (141) of the 189 properties have entered 2010 data on waste reduction activities. For these 141 properties, the total annual municipal solid waste disposed was 11,514 tons, while the waste reduction activities amount to 13,251 tons. In total, the properties generated 24,765 tons of waste with an overall diversion rate of 53.5% for the 141 properties.