



Alameda County

**SUSTAINABILITY**

*Local Action, Global Impact.*

# Green Purchasing Leadership: 100% Recycled Copy Paper

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# Shifting to Cost-Effective 100% Recycled Copy Paper

- Background
- Reducing Paper Use
- Getting to Know  
Recycled Paper
- **Environmental Impacts & Calculators**
- **CALL TO ACTION!**



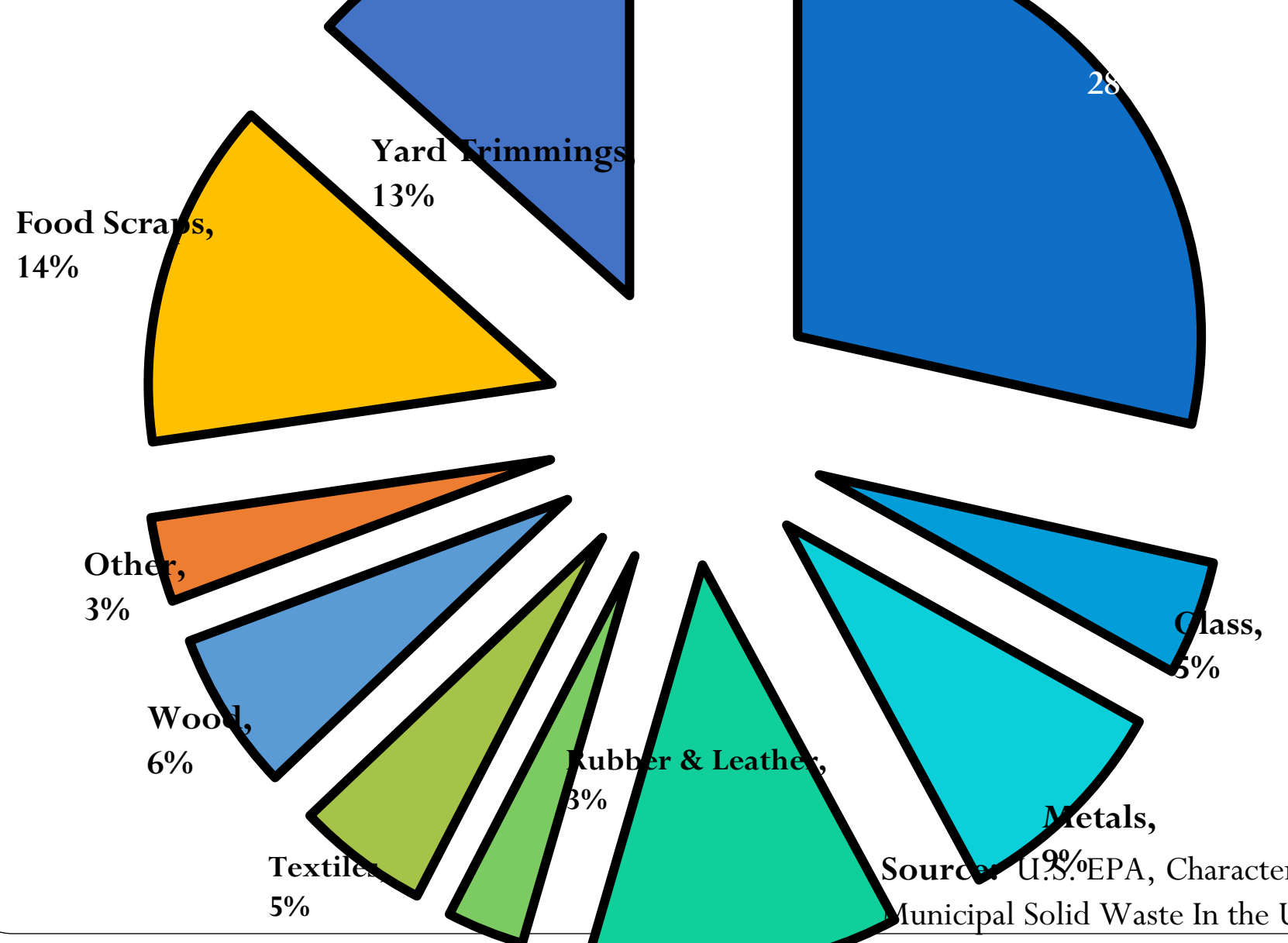
# Why Paper?



Photo Credit: Telstar Logistics

# Materials Generated in the U.S.

250 Million Tons (Before Recycling)



Source: U.S. EPA, Characterization of Municipal Solid Waste In the United

# Paper Overview

- **Over 70 million tons of paper generated**
  - 65.6% (nearly 46 million tons) recycled
  - Paper collected for recycling:
    - **55% recycled into new paper products in the U.S.**
    - 39% exported – *largest U.S. export by volume*
- **U.S. paper recycling reduces U.S. GHG emissions equivalent to taking 28 million cars off the road for a year**
- **Recycling = Jobs**
  - **Top Green Jobs sector in CA - 25%**
  - **75% Recycling > Projected 1.5 million new U.S. jobs**



## Sources:

U.S. EPA Paper Recycling Website, <http://www.epa.gov/osw/conserves/materials/paper/faqs.htm>;

More Jobs, Less Pollution: Growing the Recycling Economy in the U.S., <http://www.recyclingworkscampaign.org/>

# Printing & Writing Paper Recycling Trends

- Used to manufacture recycled copy paper
- 11.5 million tons = 54.5% recycled in 2012



Source: American Forest & Paper Association,  
<http://www.paperrecycles.org/statistics/recovery-of-printing-writing-papers>

# Paper Use Reduction



45% of the paper printed in offices ends up in the bin by the end of the day.

- Xerox study

# Paper Use Reduction Resources



- **Bay Area Paperless Outreach Plan**

<http://www.sccgov.org/sites/iwm/biz/Pages/PaperLess-Plan-Step-By-Step-Summary.aspx>

- **CalRecycle Paper Waste Prevention**

<http://www.calrecycle.ca.gov/Paper/Prevention/>

<http://www.calrecycle.ca.gov/ReduceWaste/Business/FactSheets/Campaign.htm>





# EPA and GSA:

## 100% Recycled Paper Experience

- **U.S. EPA Region 9**
- **Purchasing ONLY 100% Postconsumer Recycled Copy Paper – Process Chlorine Free since 2002**
  - Supports Environmental Management System (EMS) and Zero Waste Policy
  - Cost has dropped significantly (+\$60/case to under \$40/case)
- **U.S. EPA Headquarters - EMS requires 100% postconsumer recycled copy paper / process chlorine free**
- **U.S. General Services Administration Region 9**
  - **Shifted to 100% Postconsumer Recycled Paper in 2012**
  - Cost lower than 30% recycled paper
  - Leading initiative with federal customers



# 100% Recycled Copy Paper Leaders (Limited Listing)

## States

- Washington
- New York

## Local Govt.

- **ALAMEDA COUNTY**
- Seattle
- San Francisco
- Mill Valley
- Los Angeles
- Marin County



## College and Universities

- University of Oregon
- Middlebury University
- Humboldt State University
- Bowdoin College
- Bates College
- University of Puget Sound
- University of Wisconsin Oshkosh
- Princeton University
- University at Buffalo

# Pacific Southwest Federal

## 100% Recycled Paper Customers

- General Services Administration
- Environmental Protection Agency
- Department of Justice
- Office of the Honorable Nancy Pelosi
- Department of Labor
- Forest Service
- FDIC
- Department of Education
- National Park Service
- Office of the Secretary of Defense
- Navy
- Air Force
- Army
- Department of Interior
- Department of Treasury
- Department of Homeland Security
- Department of Agriculture
- Department of Commerce

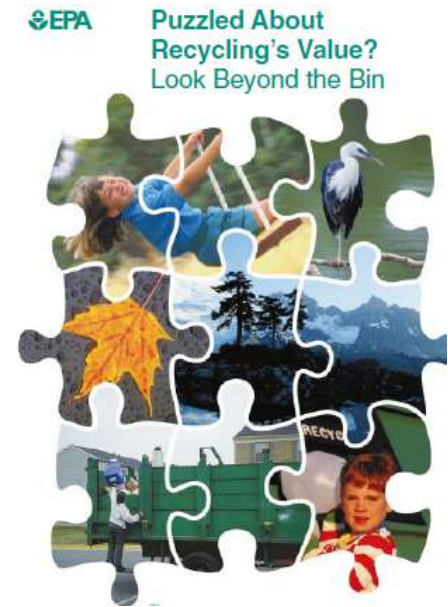
# Environmental Calculator: U.S. EPA Recycled Content Tool

[http://www.epa.gov/climatechange/wycd/waste/calculators/ReCon\\_home.html](http://www.epa.gov/climatechange/wycd/waste/calculators/ReCon_home.html)

- **Converts recycled products into associated greenhouse gas emissions and energy conserved**  
**Input:** Weight of Paper & Recycled Content (%)
- **EPA Region 9 Results: 100% Recycled Paper (2003 -2010)**
  - **Greenhouse Gas Emissions:** -2881 Metric Tons of Carbon Equivalent (MTCE)
  - **Energy:** Conserved 3,055 Million Metric BTU (MMBtu)
    - **Passenger Cars off the Road for One Year: 144**
    - **Gallons of Gasoline Avoided: 24,577**

# Recycled Office Paper

- Reduces hazardous air pollutant emissions by 90%
- Reduces net greenhouse gas emissions by 70%  
of carbon dioxide equivalents
- Reduces particulate air emissions by 40 %
- Reduces solid waste by 49%
- Reduces total energy consumption by 43%
- Reduces absorbable organic halogen  
emissions to water by 100%
- Reduces suspended solids by 30%



**Source:** U.S. EPA, "Puzzled About Recycling's Value: Look Beyond the Bin" referencing Environmental Defense Fund,  
<http://www.epa.gov/osw/conservation/downloads/benefits.pdf>

# External Tool - Environmental

## Benefits:

### Paper Calculator 3.2

<http://calculator.environmentalpaper.org>



**Environmental Paper Network**

#### Lifecycle Environmental Impact

The following is a break down of the environmental impact of your choices for different grades of paper.

Clear Values, Start Again	Baseline Paper	Target I Paper
Paper	Uncoated Freesheet (e.g. copy paper)	Uncoated Freesheet (e.g. copy paper)
Quantity per year	100000 Tons	100000 Tons
% Postconsumer	30	100
Wood Use	261,331 tons 261,331 tons more	0 tons
Net Energy	2,932,166 million BTU's 754,658 million BTU's more	2,177,508 million BTU's
Greenhouse Gases	498,068,795 pounds CO <sub>2</sub> equiv. 144,793,812 pounds CO <sub>2</sub> equiv. more	353,274,983 pounds CO <sub>2</sub> equiv.
Water Consumption	1,948,788,940 gallons 785,300,460 gallons more	1,163,488,480 gallons
Solid Waste	169,651,084 pounds 52,568,964 pounds more	117,082,120 pounds

## Environmental Indicator 30% Recycled Paper

## 100% Recycled Paper

NO <sub>x</sub>	917,993 pounds 77,844 pounds more	840,149 pounds <a href="#">Hide Extended Result Set</a>
Purchased Energy	2,190,250 million BTU's 63,227 million BTU's more	2,127,023 million BTU's
SO <sub>2</sub>	2,603,585 pounds 150,732 pounds more	2,452,853 pounds
Particulates	525,850 pounds 213,468 pounds more	312,382 pounds
Hazardous Air Pollutants (HAP)	220,824 pounds 135,553 pounds more	85,271 pounds
Volatile Organic Compounds (VOCs)	253,758 pounds 110,400 pounds more	143,358 pounds
Total Reduced Sulfur (TRS)	39,275 pounds 14,277 pounds more	24,998 pounds
Total Suspended Solids (TSS)	1,518,252 pounds 502,287 pounds more	1,015,965 pounds
Chemical Oxygen Demand (COD)	2,243,634 pounds	2,859,138 pounds 615,504 pounds more
Biochemical Oxygen Demand (BOD)	894,458 pounds 226,399 pounds more	668,059 pounds

# Environmental Paper Calculator 3.2 Results (Examples)

## Wood Use

Wood use measures the amount of wood required to produce a given amount of paper. The number of typical trees assumes a mix of hardwoods and softwoods 6-8" in diameter and 40' tall. Calculated collaboratively by Conservatree, Environmental Defense Fund, and Environmental Paper Network.

The Baseline Paper uses 261,331 tons, made from about 1,680,000 [trees](#)

The Target I Paper would use 261,331 tons less, made from about 1,680,000 fewer [trees](#)

## Greenhouse Gases

Greenhouse gases, including carbon dioxide (CO<sub>2</sub>) from burning fossil fuels and methane from paper decomposing in landfills, contribute to climate change by trapping energy from the sun in the earth's atmosphere. The unit of measure is CO<sub>2</sub> equivalents. The average car emits 11,013 pounds of CO<sub>2</sub> in a year.

The Baseline Paper uses 498,068,795 pounds CO<sub>2</sub> equiv., the equivalent of about 45,226 [cars/year](#)

The Target I Paper would produce 144,793,812 pounds CO<sub>2</sub> equiv. less, the equivalent of about 13,148 fewer [cars/year](#)

## **Sulfur dioxide (SO<sub>2</sub>)**

Chemical compound produced when boilers burn fuel that contains sulfur. Of the fuels used in the paper industry, oil and coal generally contain the highest quantities of sulfur. Sulfur dioxide contributes to air pollution problems like acid rain and smog. The average 18-wheel truck emits 5.5 pounds of SO<sub>2</sub> in a year.

The Baseline Paper produces 2,603,585 pounds, the equivalent of about 473,379 [18-wheelers/year](#)

The Target I Paper would produce 150,732 pounds less, the equivalent of about 27,406 fewer [18-wheelers/year](#)



# Region 9 – Results FY12 and FY3

## Over 48 Million Sheets of 100% Recycled Paper Purchased

Metric	Amount Saved
Wood Use	580 tons less (~ over 3,700 40-ft.trees)
Greenhouse Gases	2,468 Metric Tons of Carbon Equivalent less
Energy Conserved	2,617 MMBTUs less (~ 21,063 gallons of gas)
Water Conserved	1,740,619 gallons
SO2 Emissions	334 pounds less
Particulate Emissions	473 pounds less
Hazardous Air Pollutants	300 pounds less
Total Suspended Solids	1,113 pounds less

**Sources:** Environmental Paper Network Paper Calculator Version 3.2. <http://www.papercalculator.org>

U.S. EPA's ReCon Calculator <http://go.usa.gov/YUeQ> [Greenhouse Gas Emissions and Energy Conserved].

# Call to Action – Join Us!

- **TAKE ACTION:** Reduce paper use, buy recycled & track and communicate your progress.
- Share your feedback with us!





# Thank You!

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# Paper Conversion Factors

- **PURCHASING UNIT:** 1 Box/Case of Copy Paper = 5,000 sheets (10 Reams) = 50 pounds
- 1 Ream of Copy paper = 500 sheets = 5 pounds
- 1 Ton of Copy Paper =  $\sim$  200,000 sheets

