Note: I sent this letter to the Board of Education of the Guilderland Central School District, Guilderland, NY, USA in Feb. 2005, as part of an effort to convince the Board to switch the district's paper purchases to 30% post-consumer recycled. At present, I'm less certain what I think of recycled paper, because less habitat can reduce the suffering of wild animals. Detailed calculations of the net suffering impact of recycled paper are complicated, and I don't now have a strong opinion about whether recycled paper is good or bad on balance.
--Brian Tomasik, 3 Aug. 2014

Dear Mr. Brinkman and Board of Education:

I am twelfth-grade student at Guilderland Central High School and co-president of its Student Environmental Action Coalition (SEAC). The purpose of this letter is to propose a policy regarding the purchase of recycled paper by the Guilderland Central School District. Enclosed is a draft of this policy for your consideration.

The policy would require the District to purchase recycled white copy paper containing at least thirty percent post-consumer waste (PCW) content instead of virgin white copy paper whenever that recycled paper fulfills the requisite specifications, including its ability to perform adequately in copiers and printers. This PCW content is recommended by the Environmental Protection Agency's (EPA) "Paper Products Recovered Materials Advisory Notice II (RMAN II)," which "encourages state and local agencies to use the recommendations in […] Paper RMAN II when purchasing paper and paper products."[1]

The policy would also strongly encourage all faculty and staff members to identify and implement, wherever feasible, strategies for paper use reduction, such as double-siding handouts and other materials. It is hoped that the latter portion of the policy could not only augment the environmental and human health benefits afforded by the purchase of recycled paper, but could also attenuate the cost increase that is likely to result from the same.

The purchase of recycled paper, as this policy would require, is beneficial for the following reasons:

1. **Traditional virgin paper contributes substantially to deforestation.** In 1993, wood pulp consumed 18.9 percent of the wood harvested globally;[2] that already significant portion jumps to 41.8 percent when only "industrial" wood (that used for purposes other than fuel) is considered. Further, the World Commission on Forests and Sustainable Development estimates that by 2050, more than half of the industrial wood harvest will be devoted to paper.[3] Overall, the wood used in virgin pulp is 55 percent secondary-growth, 29 percent plantation-grown, and 16 percent old-growth.[4] Unless it is otherwise labeled, virtually all virgin paper contains some old-growth fiber and thereby

[1] This document can be found in Federal Register, 8 June 1998, Volume 63, Number 109, pages 31214-31217.

[2] Janet N. Abramovitz and Ashley T. Mattoon, Paper Cuts: Recovering the Paper Landscape (Washington, D.C.: Worldwatch, 1999) 60 and references therein.

[3] Abramovitz and Mattoon 20, 63, and references cited therein.

[4] Abramovitz and Mattoon 21 and reference cited therein.

contributes to the demise of old-growth forests, which, because they are relatively unimpacted by humans, contain centuries-old trees and complex biodiversity. These beautiful forests provide purified water, wildlife habitat, opportunities for recreation, and genetic diversity, while sequestering carbon dioxide to help mitigate global climate change.[5] It is therefore appalling that only twenty percent of the world's old-growth forests remain in fair condition[6] and that all but five percent in the U.S. are gone, according to the Organization of Economic Cooperation and Development.[7] In fact, natural forest cover is being lost at an annual rate of approximately 13.7 million hectares (33.9 million acres)—or roughly the size of Greece.[8] Recycled paper can alleviate this destruction of forests by diminishing the need for virgin wood as a fiber source. Given that the District annually purchases approximately 2,500 cases[9] of completely virgin copy paper,[10] a switch to just 30% PCW copy paper would conserve 450 trees every year.[11]

2. **The environmental consequences of virgin paper production extend beyond logging.** The pulp and paper industry, which consumes four percent of global energy, is the fifth greatest industrial energy user worldwide and the second greatest in the US. Part of the reason for such extraordinary energy demands is that it takes at least 2 to 3.5 tons of wood to manufacture one ton of virgin paper;[12] the creation of one ton of recycled paper, in contrast, only requires slightly more than one ton of old paper.[13] This results in 35 percent energy savings of recycled copy paper over virgin, which amount to 3.95 equivalent barrels of oil or 22.0 million kilojoules (20.8 million BTUs) per ton of paper recycled.[14] Based on these figures, the District would conserve 412 million kilojoules (390. million BTUs) or 74.1 equivalent barrels of oil every year by purchasing just 30% PCW copy paper; that's 13.0 kilojoules (12.4 BTUs) each second, enough energy to continuously power 217 sixty-watt light bulbs!

3. While virgin paper's massive energy consumption contributes indirectly to air pollution, **paper production entails direct air emissions as well**. A few of the pollutants released from mills

[5] Tree Free Campus: Students Take Action to Defend Forests, Rainforest Action Network (RAN), 31 Aug. 2003 <http://www.ran.org/ran_campaigns/old_growth/campus/campus.pdf>.

[6] Paper Campaign Facts, Forest Ethics, 8 July 2003 <http://www.forestethics.org/paper/facts.html> and reference therein.

[7] Allen Hershkowitz, Ph.D., "Chapter 1 The Upstream Benefits: Reducing Pollution and the Use of Virgin Resources," Too Good to Throw Away: Recycling's Proven Record, Feb. 1997, Natural Resources Defense Council (NRDC), 4 August 2003 <http://www.nrdc.org/cities/recycling/recyc/recyinx.asp> and reference cited therein.

[8] Abramovitz and Mattoon 20, 62, and reference cited therein.

[9] Robert Paquette, "Re: Guilderland Paper Purchases," Email to Student Environmental Action Coalition (SEAC), 29 Oct. 2002.

[10] Robert Paquette, Letter to the author, 24 Dec. 2002.

[11] Trees Into Paper, Conservatree, 26 Oct. 2002 <http://www.conservatree.com/learn/Enviro_Issues/TreeStats.shtml>.

[12] Abramovitz and Mattoon 26 and references cited therein.

[13] Abramovitz and Mattoon 37 and references cited therein.

[14] Allen Hershkowitz, Ph.D., "Tables," Too Good to Throw Away: Recycling's Proven Record, Feb. 1997, NRDC, 4 August 2003 <http://www.nrdc.org/cities/recycling/recyc/recytbls.asp>.

include acetone, carbon monoxide, chlorine compounds, hydrochloric acid, methanol, nitrous oxides, particulates (which cause respiratory irritation), sulfuric acid, sulfur oxides, and volatile organic compounds. Some of these emissions exacerbate ozone depletion, while others are greenhouse gases; kraft pulp mills release sulfur compounds that are redolent of addle eggs.[15] Federal US law acknowledges the dangers of these emissions: "[P]ulp and paper facilities emit significant quantities of HAP's [Hazardous Air Pollutants…]. Some of these pollutants are considered to be carcinogenic, and all can cause toxic health effects following exposure, including nausea, headaches, respiratory distress, and possible reproductive effects."[16] Recycled paper can diminish these emissions; the EPA has estimated that each ton of 100% recycled paper precludes more than thirty kilograms (sixty pounds) of air pollution. However, since this figure was calculated in the 1970s, the current pollution reductions are probably somewhat lower because of efficiency improvements at pulp and paper mills since that time.[17]

4. **The manufacture of one metric ton of virgin paper requires more water**–44,000 to 83,000 liters (12,000 to 22,000 gallons) in the US—**than the creation of a metric ton of any other industrial product.**[18] Each year, the entire US pulp, paper, and paperboard industry creates 5.871 *trillion* liters (1.551 trillion gallons) of wastewater.[19] Based on EPA's estimate that a ton of 100% recycled paper conserves 37,000 liters (9,900 gallons) of water,[20] the District's purchase of copy paper with just 30% PCW would annually save 700,000 liters (190,000 gallons) of water.

5. **Wastewater from the virgin pulp and paper industry contains thousands of types of particles**—among them, compounds that haven't yet been identified—which can acidify, cloud, and deoxygenate streams and lakes, thereby killing fish and other species.[21] Among the numerous chemicals discharged into the water are absorbable organic halides, chloroform, methylene chloride, pentachlorophenols, and trichlorophenols.[22] The interaction of chlorine bleach and wood pulp creates dioxins and furans,[23] to which humans are predominantly exposed through food, especially beef, dairy products, fish, pork, and poultry.[24] Dioxin, the same chemical that contaminated Love Canal, New

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[15] Abramovitz and Mattoon 28-29 and reference cited therein.

[16] "40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants for Source Category: Pulp and Paper Production," Federal Register 61.47, 8 Mar. 1996: 9383 and passim.

[17] Environmentally Sound Paper Overview: Essential Issues Part III – Making Paper: Content, Conservatree, 14 Dec. 2002 <http://www.conservatree.com/learn/Essential_Issues/EIPaperContent.shtml>.

[18] Abramovitz and Mattoon 27 and references cited therein.

[19] Hershkowitz, "Chapter 1" and reference cited therein.

[20] Recycled Office Products. Undated document comparing resource use and pollution generation by recycled and virgin paper. Compiled from U.S. EPA and the Maine Energy Education Program by Recycled Office Products Co., Inc., 44 Grove St. Bangor, ME, 04401.

[21] Abramovitz and Mattoon 29 and reference cited therein.

[22] Hershkowitz, "Chapter 1" and reference cited therein.

[23] Environmentally, Part III.

[24] Dioxins and Furans, EPA, 4 Aug. 2003 <http://www.epa.gov/epaoswer/hazwaste/minimize/dioxfura.pdf>.

York, and Times Beach, Missouri, as well as the herbicides in Agent Orange, is classified by both the World Health Organization's International Agency for Research on Cancer and the National Toxicology Program of the US Department of Health and Human Services as a "known human carcinogen."[25] Besides contributing to cancer, it has been demonstrated in animal studies that dioxins and furans can depress the immune system, damage developing fetuses, and impair reproductive capacity. Dioxins and furans can also alter hormone levels in animals and humans[26] and may contribute to diabetes.[27] These deleterious effects are all the more frightening because of EPA's warning in a 2000 draft reassessment of dioxin: "It is likely that part of the general population is at, or near, exposure levels where adverse effects can be anticipated."[28] Fortunately, recycled paper mills generate fewer dioxins and furans because they utilize old paper that has already been bleached.[29]

6. **Paper comprises forty percent of municipal solid waste and constitutes the single greatest portion thereof**, according to EPA**.**[30] The US throws away 40 million metric tons (44 million tons) of paper annually, which is more than the People's Republic of China, the world's most populous country, consumes in a year.[31] This paper ends up in landfills or incinerators, which waste valuable fiber resources while releasing toxic pollutants.[32] The manufacture of just one ton of 30% PCW recycled paper averts the addition of two cubic meters (three cubic yards) of materials to landfills.[33]

7. **Buying recycled paper augments demand for the product and increases production.** This, in turn, supports community recycling efforts and encourages mills to research and invest in recycling equipment—which further establishes recycling systems, reduces prices, and makes recycled paper more available. At the same time, the District's termination of its purchase of virgin paper would signal to non-recycled manufacturers that consumers are increasingly turning away from products which place an unsustainable burden on the earth's resources.

8. **Numerous institutions, organizations, and businesses already purchase recycled paper.** The federal government is one of them, and every state has at least one executive order or law supporting the purchase of products, like paper, that are made with recycled materials.[34] Businesses

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[25] What's Dioxin?, Center for Health, Environment, and Justice (CHEJ), 26 Oct. 2002 <http://www.chej.org/dioxin.html> and references cited therein.

[26] Dioxins.

[27] What's and references cited therein.

[28] "EPA Draft Report Cites Cancer Risks From Dioxin," CNN, 17 May 2000, 31 Aug. 2003 <http://www.cnn.com/2000/HEALTH/cancer/05/17/dioxin.epa.02/>.

[29] Environmentally, Part III.

[30] Paper and Paperboard Products, 29 Oct. 2002, EPA, August 31, 2003 <http://www.epa.gov/msw/paper.htm>.

[31] Abramovitz and Mattoon 38 and reference cited therein.

[32] Environmentally Sound Paper Overview: Essential Issues Part II – What's Going On?, Conservatree, 14 Dec. 2002 <http://www.conservatree.com/learn/Essential_Issues/EIGoingOn.shtml>.

[33] Recycled Office Products.

ranging from Staples, Inc.[35] to Raincoast Books—the Canadian publisher of *Harry Potter and the Order of the Phoenix*[36]—have taken steps to advance the sale and use of recycled paper. Bates College,[37] James Madison University,[38] Rutgers, the University of Virginia,[39] and the University of Vermont[40] are among the many schools that purchase paper containing recycled content.

9. **It would enhance the District's leadership role in promoting innovative solutions.** As well as bringing the District positive publicity, the policy would provide an opportunity to educate students about environmental issues and ways to address them. Perhaps most importantly, the policy would set a good example to students, parents, and citizens, both within and beyond the District, of the importance of taking small but essential actions that help to ensure a more sustainable world for posterity.

Thank you for your attentive consideration of this letter.

Sincerely,

Brian Tomasik
218 Old Stage Road
East Berne, NY 12059-1854

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34 Susan Kinsella, Recycled Paper: The Best Choice, Mar. 2000, Conservatree, 26 Oct. 2002 <http://www.conservatree.com/paper/PaperTypes/RPCrecypprFactSheet.pdf>.

35 Cat Lazaroff, Staples Plans Move to Recycled Paper, 12 Nov. 2002, Environmental News Service (ENS), 17 July 2003 <http://ens-news.com/ens/nov2002/2002-11-12-06.asp>.

36 Canadian Firm Prints Potter on Green Pages, 19 June 2003, ENS, 4 August 2003 <http://ens-news.com/ens/jun2003/2003-06-19-11.asp>.

37 Bates College Lewiston, ME (Project Status, Spring 1998), Spring 1998, National Wildlife Federation (NWF), 20 July 2003 <http://www.nwf.org/campusecology/pdfs/bates_paper.pdf>.

38 James Madison University Recycled Paper Purchasing Facilities Management Harrisonburg, VA (Project Status, Spring 1997), Spring 1997, NWF, 20 July 2003 <http://www.nwf.org/campusecology/pdfs/jamesmadison.pdf>.

39 Tree.

40 University of Vermont Recycled, Chlorine-free Paper Purchasing Burlington, Vermont (Status of Project, Spring 2000), Spring 2000, NWF, 17 July 2003 <http://www.nwf.org/campusecology/pdfs/uvm_paper.pdf>.