

2010: It's Easy Being Green

Green Team Proposal to The City of Morgantown, City Council

Fact Sheet

Air Quality

- The U.S. Environmental Protection Agency estimates that indoor pollution from Volatile Organic Compounds (VOCs) is responsible for more than 11,000 deaths a year in the United States from cancers, kidney failure, and respiratory problems.ⁱ
- In 1999, Monongalia County ranked among the dirtiest/worst 10% of all counties in the U.S. in terms of nitrogen oxides emissions (smog/soot).ⁱⁱ
- Based on EPA's most current data, Monongalia County ranked among the dirtiest/worst 20% of all counties in the US in terms of an average individual's added cancer risk from hazardous air pollutants.ⁱⁱⁱ

Waste/Recycling

- Approximately one-third of America's trash consists of product packaging.
- The average household discards approximately two pounds of organic waste each day.
- In the United States, each person generates an average of 4 pounds of garbage per day.^{iv}
- By weight, about 37 percent of all municipal solid waste in the United States is paper and cardboard.^v
- Food and yard waste combined accounts for nearly 25 percent of our solid waste.^{vi}
- Metals account for the fourth largest percentage of our rubbish.^{vii}
- Disposable batteries make up 20 percent of the hazardous waste in landfills.^{viii}
- The average household uses thousands of plastic bags yearly.^{ix}
- The EPA estimates that 136 million tons of building-related construction and demolition (C&D) debris was generated in the U.S. in a single year.^x

Water Use/Water Quality

- One square foot of impervious surface generates 9 times the surface runoff as one square foot of pervious surface material.
- The State of West Virginia has 722 impaired or threatened waterbodies within 31 different watersheds.^{xi}
- 14 percent of West Virginia's surface waters have *reported* problems.^{xii}
- In West Virginia, there are ten communities, totaling hundreds of pipes, overflowing raw sewage into the Ohio River and its tributaries.^{xiii}
- In the past, the U.S. Environmental Protection Agency estimated that 850 billion gallons of raw sewage and stormwater from Combined Sewer Overflows (CSOs) are discharged into the nation's waterways each year.^{xiv}

Energy Use and Efficiency

- Buildings in the United States account for 40 percent of U.S. energy consumption.^{xv}
- In the U.S., our energy-related activities account for three-quarters of our human-generated greenhouse gas emissions, mostly in the form of carbon dioxide emissions from burning fossil fuels.^{xvi}
- 30 percent of energy used in buildings is used inefficiently or unnecessarily.^{xvii}
- 86 percent of U.S. annual energy use is created by the combustion of fossil fuels.^{xviii}
- If you replaced your 75-watt incandescent light bulb with a 20-watt compact fluorescent, you'd get the same amount of light but save 1,300 pounds of CO2 and \$55.^{xix}

Built Environment

- The World Resources Institute has reported that only 22 percent remains of the world's irreplaceable "frontier forests"—areas of "large, ecologically intact, and relatively undisturbed natural forests." And only about 3 percent still remain with temperate zones (i.e.: United States and Europe).^{xx}

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- Wood frame residential construction in the United States is a leading cause of global deforestation.^{xxi}
- About 10 percent of the world's industrial roundwood is used by the U.S. construction industry, and most of that for residential buildings.^{xxii}
- Students with the most daylighting in their classrooms progressed 20% faster on math tests and 26% faster on reading tests in one year than those with less daylighting.^{xxiii}
- The green construction market was 2% of non-residential construction starts in 2005; 10-12% in 2008; and will grow to 20-25% by 2013.^{xxiv}

Local/Regional Consumerism

- A study in Iowa found that a regional diet consumed 17 times less oil and gas than a typical diet based on food shipped across the country.^{xxv}
- Local food systems reduce chemical use and transportation food miles.^{xxvi}

General Pollution/Toxicity Concerns/Emissions

- In 2002, Monongalia County ranked among the dirtiest/worst 10% of all counties in the U.S. in terms of total environmental releases.^{xxvii}
- 6 percent of houses in Monongalia County have a high risk of lead hazards.^{xxviii}
- 6,000 million metric tons of carbon dioxide (CO₂) were released into the atmosphere in 2005 worldwide.^{xxix}
- The United States contributes about 20% to the global greenhouse gas emissions annually.^{xxx}
- Greenhouse gas emissions have increased 70 percent between 1970 and 2004.^{xxxi}

Economics/Investing/Investments

- If every American home replaced their 5 most frequently used light fixtures or the bulbs in them with ones that have earned the ENERGY STAR, we would save close to \$8 billion each year in energy costs, and together we'd prevent the greenhouse gases equivalent to the emissions from nearly 10 million cars.^{xxxii}
- The U.S. EPA estimates that the 2,500 buildings that have earned the ENERGY STAR label for energy efficiency through 2005 save a combined \$350 million on their energy bills when compared with similar buildings having average energy consumption.^{xxxiii}
- By 2009, 82% of corporate America is expected to be greening at least 16% of their real estate portfolios; of these corporations, 18% will be greening more than 60% of their real estate portfolios.^{xxxiv}
- The Environmental Protection Agency estimates the nationwide value of improved office worker productivity from indoor environmental improvements (such as high quality indoor air, access to views and natural light) to be \$20 billion to \$160 billion.^{xxxv}
- Green buildings deliver: 3.5 percent Higher Occupancy Rates, 3 percent Higher Rental Rates, a 7.5 percent Average Increase in Building Values and a 6.6 percent higher ROI.^{xxxvi}
- An upfront investment of 2% in green building design, on average, results in life cycle savings of 20% of the total construction costs – more than ten times the initial investment.^{xxxvii}
- Building sale prices for energy efficient buildings are as much as 10% higher per square foot than conventional buildings.^{xxxviii}
- Building green stimulates the economy by creating a demand for green jobs and workers that can contribute directly to creating a sustainable future. If the proposed green economic recovery program is instated, the US economy could generate 2 million green jobs in as short a stretch as two years.^{xxxix}

ⁱ Edwards, Lynn, and Julia Lawless. The Natural Paint Book: A complete guide to natural paints, recipes and finishes. Great Britain: Rodale, 2002, p.28.

ⁱⁱ www.scorecard.org

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- ⁱⁱⁱ www.scorecard.org
- ^{iv} http://www.thisland.illinois.edu/57ways/57ways_27.html
- ^v http://www.thisland.illinois.edu/57ways/57ways_28.html
- ^{vi} http://www.thisland.illinois.edu/57ways/57ways_28.html
- ^{vii} http://www.thisland.illinois.edu/57ways/57ways_28.html
- ^{viii} <http://www.articlesbase.com/home-improvement-articles/tips-on-how-to-reduce-household-waste-746063.html>
- ^{ix} <http://www.articlesbase.com/home-improvement-articles/tips-on-how-to-reduce-household-waste-746063.html>
- ^x U.S. Environmental Protection Agency (1997). U.S. EPA Characterization of Building-Related Construction and Demolition Debris in the United States.
- ^{xi} An impaired or threatened waterbody is any waterbody that is listed according to section 303(d) of the Clean Water Act. A waterbody is considered impaired if it does not attain water quality standards. Standards may be violated due to an individual pollutant, multiple pollutants, thermal pollution, or an unknown cause of impairment. A waterbody is considered threatened if it currently attains water quality standards but is predicted to violate standards by the time the next 303(d) list is submitted to EPA. The 303(d) list is a comprehensive public accounting of all impaired or threatened waterbodies, regardless of the cause or source of the impairment or threat. (Information Source: www.scorecard.org)
- ^{xii} The percentage of surface waters with impaired or threatened uses is the approximate percentage of surface waters in an area with impaired or threatened uses due to a loss in water quality. Some waterbody types (such as estuaries, wetlands and lakes) are typically measured in square miles or acres. For the sake of comparison, Scorecard measures all these waterbodies in linear miles. Impaired and threatened water mileage for lakes and estuaries was calculated using the distance for a line running through the middle of the waterbody. The exceptions to this method include the Great Lakes, Long Island Sound, Delaware Bay, and Chesapeake Bay. Coastline mileage was used for these larger waterbodies. (Information Source: www.scorecard.org)
- ^{xiii} www.healthyrivers.org
- ^{xiv} www.healthyrivers.org
- ^{xv} Elizabeth, Lynne and Cassandra Adams. Alternative Construction: Contemporary Natural Building Methods. New York: John Wiley and Sons, Inc., 2005, p.36.
- ^{xvi} United States Environmental Protection Agency
- ^{xvii} U.S. Environmental Protection Agency, ENERGY STAR program. "Useful Facts and Figures." No date referenced. 1 June 2007 <http://www.energystar.gov/index.cfm?c=energy_awareness.bus_energy_use>.
- ^{xviii} Ibid. Total consumption is 99.89 Quadrillion Btu, Fossil Fuel Consumption is 85.96 Quadrillion Btu. Percent from fossil fuel is $85.96/99.89 = 86\%$
- ^{xix} www.citizenpower.com
- ^{xx} Elizabeth, Lynne and Cassandra Adams. Alternative Construction: Contemporary Natural Building Methods. New York: John Wiley and Sons, Inc., 2005, p.5.
- ^{xxi} Elizabeth, Lynne and Cassandra Adams. Alternative Construction: Contemporary Natural Building Methods. New York: John Wiley and Sons, Inc., 2005, p.6.
- ^{xxii} Elizabeth, Lynne and Cassandra Adams. Alternative Construction: Contemporary Natural Building Methods. New York: John Wiley and Sons, Inc., 2005, p.6.
- ^{xxiii} Heschong Mahone Group (1999). Daylighting in Schools: An Investigation into the Relationship Between Daylighting and Human Performance.
- ^{xxiv} McGraw Hill Construction (2009). Green Outlook 2009: Trends Driving Change.
- ^{xxv} <http://74.125.93.132/search?q=cache:3X6gNRUsIJUJ:100milediet.org/why-eat-local+A+study+in+Iowa+found+that+a+regional+diet+consumed+17+times+less+oil+and+gas+than+a+typical+diet+base+d+on+food+shipped+across+the+country.&cd=2&hl=en&ct=clnk&gl=us>
- ^{xxvi} <http://cfpub.epa.gov/ncer/abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/9020/report/0>
- ^{xxvii} www.scorecard.org
- ^{xxviii} www.scorecard.org
- ^{xxix} Inventory of U.S. Greenhouse Gas and Sinks: 1990-2005. "USEPA #430-R-07-002, Table 2-16: U.S. Greenhouse Gas Emissions by Economic Sector and Gas with Electricity-Related Emissions." April 2007. 14 June 2007 <<http://www.epa.gov/climatechange/emissions/usinventoryreport.html>>.
- ^{xxx} World Resources Institute. "Climate Analysis Indicators Tool (CAIT)." 2007. 14 June 2007 <http://cait.wri.org/cait.php?page=yearly>>. U.S. is listed at 5,912 for 2004, while the world is listed at 27,043. Percentage for U.S.: $5,912/27,043 = 21.86\%$.
- ^{xxxi} IPCC, 2007: Climate Change 2007: The Physical Science Basis. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Summary for Policymakers, section B.
- ^{xxxii} "A Guide to Energy Efficient Heating and Cooling" United States Environmental Protection Agency (May, 2005)
- ^{xxxiii} The U.S. EPA ENERGY STAR Program's E-Newsletter Covering Energy Management for the Financial Markets (Summer 2006)
- ^{xxxiv} (Source: McGraw Hill Construction (2007). Greening of Corporate America SmartMarket Report.)

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^{xxxv} Environmental Protection Agency

^{xxxvi} McGraw-Hill 2006 Green Building SmartMarket Report

^{xxxvii} Kats, G. (2003). The Costs and Financial Benefits of Green Buildings: A Report to California's Sustainable Building Task Force.

^{xxxviii} Miller, N., Spivey, J. & Florance, A. (2007). Does Green Pay Off?

^{xxxix} Political Economy Research Institute & Center for American Progress (2008). Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy.