

Table 2-2. BNL Pollution Prevention, Waste Reduction, and Recycling Programs.

Waste Description	Type of Project	Pounds Reduced, Reused, Recycled or Conserved	Waste Type	Potential Costs for Treatment and Disposal	Cost of Recycle, Prevention	Estimated Cost Savings	Project Description Details *
Motion sensors in Building 725	Energy Conservation	N/A	Greenhouse Gas/ Energy Conservation	N/A	\$0	\$6,000	Installation of motion-sensored lighting in hallways, restrooms, and conference rooms in Building 725.
LED lighting in Building 490 Conference Room	Energy Conservation	N/A	Greenhouse Gas/ Energy Conservation/ Manpower	\$2,940	\$4,000	\$3,710	Forty 65-watt incandescent bulbs were replaced with LED bulbs; savings of \$1,190 per year in energy costs and \$2,520 per year manpower costs.
Sewage sludge	Publicly Owned Treatment Works (POTW)	3,000	Low-level Radiological Waste	\$500,000	\$35,000	\$465,000	Rad constituents were eliminated from within the Sewage Treatment Facility; the sludge is now sent to a POTW.
Alkaline batteries	Recycling	174	Industrial Waste	\$10	\$0	\$10	Two hundred pounds of alkaline batteries were collected and sent for recycling.
Bio-diesel tank	Alternative Fuels	0	Greenhouse Gas/ Energy Conservation	\$0	\$0	\$0	Per DOE Order, BNL is utilizing different alternative fuels to operate maintenance vehicles.
Motion sensors for labs*	Energy Conservation	N/A	Greenhouse Gas/ Energy Conservation	N/A	\$0	\$5,817	Installation of motion detector lighting in common areas of Buildings 490 and 463.
"Bio-Circle Cleaner" parts washer	Substitution	640	Hazardous Waste	\$10,000	\$0	\$10,000	Eliminates the need for toxic solvents, chemical storage, and disposal associated with the cleaning of vacuum parts.
Aerosol can disposal system	Recycling	528	Hazardous Waste	\$42,708	\$0	\$42,708	Empty aerosol cans are recycled as scrap, rather than sent to the Waste Management Division as hazardous waste. Eight units (F&O=5; CA=1; NSLS=1; BES =1) each handle 66 lbs of hazardous waste.
Electronic recycling	Electronic Recycling	39,880	Electronic Waste	\$99,700	\$0	\$117,238	After an extensive audit review, BNL's electronic waste (e-waste) is now collected by the Laboratory's metals recycler, which guarantees that all e-waste is recycled in the most environmentally friendly manner.
Electronic Reuse	Reuse	23,287	Electronic Waste	\$58,218	\$0	\$58,218	The Laboratory tracks electronic equipment and takes a reuse credit for transfer of equipment to another user.
Building demolition recycling	Recycling	14,000,000	Industrial Waste	\$540,190	\$32,000	\$508,190	On-site demolition products (steel and concrete) are segregated, recycled, and reused.
System One parts cleaner	Substitution	1,280	Hazardous Waste	\$10,677	\$0	\$10,677	Central Fabrications and Motor Pool each purchased a System One parts washer to re-distill dirty solvent, eliminating the need for a vendor. Removed grit and sludge are mixed with the waste oil.
Animal bedding conveying system	Composting	74,000	Low-level Radiological Waste	\$780,192	\$0	\$780,192	Animal bedding material is no longer sent to sanitary landfill; it is now conveyed to a dumpster that is emptied or composted at the stump dump.
Lead acid batteries	Recycled	4,200	Universal Waste	\$29,896	\$0	\$29,896	Avoids hazardous waste disposal costs for approximately 40 lbs. of lead per battery.
Short half-life waste - CA	Decay in Storage	142	Radioactive Waste	\$48,848	\$0	\$48,848	During 2011, 21 boxes of filters from Buildings 914 and 918 (147 ft ³) were managed in accordance with BNL decay-in-storage requirements, rendering the wastes eligible for volumetric release.
Short half-life waste - MO	Decay in Storage	40	Radioactive Waste	\$1,640	\$0	\$1,640	During 2011, 5 gallons of low-level radioactive waste were managed as Regulated Medical Waste in accordance with BNL decay-in-storage requirements, rendering the wastes eligible for volumetric release.
Cooling Tower chemicals - MEL	Source Reduction	4,000	Industrial Waste	\$9,000	\$0	\$9,000	Ozone water treatment units were installed on cooling towers at the National Space Radiation Laboratory and the Relativistic Heavy Ion Collider Research Facility (1004) for biological control of cooling water. These systems eliminate the need for water treatment chemicals (typically, toxic biocides), save labor, and reduce analytical costs for monitoring cooling tower blowdown.
Blasocut machining coolant	Recycled/ Reused	45,280	Industrial Waste	\$110,580	\$0	\$120,180	Central Shops Division operates a recycling system that reclaims Blasocut machining coolant and supplies it Laboratory-wide. In 2011, 5,660 gal. (45,280 lb.) of Blasocut lubricant were recycled. Recycling involves aeration, centrifuge, and filtration. This a
Fluorescent bulbs	Recycled	20,220	Universal Waste	\$143,926	\$20,000	\$123,926	Fluorescent bulbs are collected and sent to a recycling facility under the Universal Waste exemption rule.

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Tyvek	Recycled	92	Industrial Waste	\$4	\$0	\$11	BNL is recycling tyvek through Garment Recovery Systems.
Used motor oil	Energy Recovery	11,320	Industrial Waste	\$28,130	\$0	\$28,130	Used motor oil from the motor pool and the on-site gas station is given to Strebel's Laundry Service to fire their boilers. In 2011, they collected 1,415 gallons of oil at no charge to BNL, which avoided the costs for disposal and 29 shipping drums (\$50/drum).
Office paper	Recycled	372,000	Industrial Waste	\$17,670	\$0	\$25,110	Cost avoidance based on \$95/ton for disposal as trash.
Cardboard	Recycled	252,000	Industrial Waste	\$11,970	\$0	\$15,750	Cost avoidance based on \$95/ton for disposal as trash, plus \$30/ton revenue.
Electronic Waste	Recycled	39,800	Industrial Waste	\$1,891	\$0	\$19,393	Cost avoidance based on \$95/ton for disposal as trash, plus \$200/ton revenue.
Metals	Recycled	241,400	Industrial Waste	\$11,467	\$0	\$117,626	Cost avoidance based on \$95/ton for disposal as trash, plus \$200/ton revenue.
Bottles/cans	Recycled	45,000	Industrial Waste	\$2,138	\$0	\$2,138	Cost avoidance based on \$95/ton for disposal as trash.
Construction debris	Recycled	512,000	Industrial Waste	\$14,080	\$0	\$11,520	Cost avoidance based on \$45/ton difference for disposal as trash.
	TOTALS	15,687,283		\$1,972,933	\$52,000	\$2,086,216	

* Cost savings of projects funded by the BNL Pollution Prevention Council will be tracked for 3 years.