



May 8, 2006

To: Board of Education

From: Art Rainwater

Subject: Cost of Personal Appliances to the District

Question: What is the impact of allowing MMSD staff to have coffeemakers and other small appliances such as refrigerators for their personal use in classrooms, offices, etc. Can you estimate the annual cost of this practice?

Response: Doug Pearson and his staff had researched this earlier in the year after an article had appeared elsewhere.

The first table reflects MG&E's estimate annual cost per appliance. The second table includes actual counts for most buildings and estimated counts for the rest (yellow) per appliance. This may include some district owned appliances as well.

The estimated cost per year for these items is approximately \$22,407.00.

Please see attached Tables for Details

How much energy does it use?

Here are typical yearly consumption figures for some common small appliances.

Keep in mind these estimates will vary with your staff's use of appliances, and some products continue to draw power even when turned off. This "leakage" will increase the appliance's energy consumption by a few watts an hour.

Appliance	Time in use	kilowatt/hours used per year	Cost per Year
Aquarium	24 hours/day	700	\$70.00
Clock	24 hours/day	36	\$3.60
Clock radio	24 hours/day	44	\$4.40
Coffee maker	30 minute/day	128	\$12.80
Computer	4 hours/day	520	\$52.00
Dehumidifier	12 hours/day	700	\$70.00
Box Fan	4 hrs/day, 180 days/yr	144	\$14.40
Heater (portable)	3 hours/day, 120 days/yr	540	\$54.00
Microwave oven	2 hours/week	89	\$8.90
Radio (stereo)	2 hours/day	73	\$7.30
Refrigerator (small, dorm size)	24 hours/day	340	\$34.00
Refrigerator (frostfree 16 cubic feet)	24 hours/day	642	\$64.20
Refrigerator (frostfree 18 cubic feet)	24 hours/day	683	\$68.30
Television (color)	3 hours/day	264	\$26.40
Toaster oven	1 hour/day	73	\$7.30
VCR	4 hours/day	30	\$3.00

—source: eren, Department of Energy

Note: The kWh/year numbers shown on the spreadsheet are from the department of energy.

To calculate the cost, we used a blended kWh cost figure of \$.10 which may need to be adjusted to meet the electrical rates in your area.

Building	Coffee Pots	Cost	Microwaves	Cost	Refrigerators	Cost	Total Cost
Allis Elementary	1	\$ 12.80	17	\$ 151.30	23	\$ 632.50	\$ 796.60
Chavez	7	\$ 89.60	11	\$ 97.90	15	\$ 412.50	\$ 600.00
Crestwood Elementary	1	\$ 12.80	9	\$ 80.10	12	\$ 330.00	\$ 422.90
Elvehjem Elementary	4	\$ 51.20	3	\$ 26.70	11	\$ 302.50	\$ 380.40
Emerson Elementary	3	\$ 38.40	8	\$ 71.20	15	\$ 412.50	\$ 522.10
Falk Elementary	6	\$ 76.80	7	\$ 62.30	14	\$ 385.00	\$ 524.10
Franklin Elementary	1	\$ 12.80	9	\$ 80.10	12	\$ 330.00	\$ 422.90
Glendale Elementary	1	\$ 12.80	0	\$ -	2	\$ 55.00	\$ 67.80
Hawthorne Elementary	0	\$ -	2	\$ 17.80	6	\$ 165.00	\$ 182.80
Huegel Elementary	4	\$ 51.20	10	\$ 89.00	10	\$ 275.00	\$ 415.20
Kennedy Elementary	1	\$ 12.80	5	\$ 44.50	4	\$ 110.00	\$ 167.30
Lake View Elementary	0	\$ -	9	\$ 80.10	11	\$ 302.50	\$ 382.60
Lapham Elementary	2	\$ 25.60	3	\$ 26.70	14	\$ 385.00	\$ 437.30
Leopold Elementary	1	\$ 12.80	5	\$ 44.50	4	\$ 110.00	\$ 167.30
Lincoln Elementary	1	\$ 12.80	0	\$ -	2	\$ 55.00	\$ 67.80
Lindbergh Elementary	2	\$ 25.60	3	\$ 26.70	2	\$ 55.00	\$ 107.30
Lowell Elementary	1	\$ 12.80	9	\$ 80.10	12	\$ 330.00	\$ 422.90
Mendota Elementary	1	\$ 12.80	9	\$ 80.10	12	\$ 330.00	\$ 422.90
Midvale Elementary	1	\$ 12.80	9	\$ 80.10	12	\$ 330.00	\$ 422.90
Muir Elementary	1	\$ 12.80	9	\$ 80.10	12	\$ 330.00	\$ 422.90
Randall Elementary	1	\$ 12.80	9	\$ 80.10	1	\$ 27.50	\$ 120.40
Sandburg Elementary	3	\$ 38.40	3	\$ 26.70	8	\$ 220.00	\$ 285.10
Shorewood Elementary	2	\$ 25.60	8	\$ 71.20	3	\$ 82.50	\$ 179.30
Stephens Elementary	5	\$ 64.00	9	\$ 80.10	12	\$ 330.00	\$ 474.10
Thoreau Elementary	1	\$ 12.80	9	\$ 80.10	12	\$ 330.00	\$ 422.90
		\$ -		\$ -		\$ -	\$ -
Blackhawk/Gompers	5	\$ 64.00	10	\$ 89.00	15	\$ 412.50	\$ 565.50
Cherokee Middle	6	\$ 76.80	0	\$ -	6	\$ 165.00	\$ 241.80
Hamilton/Van Hise	7	\$ 89.60	19	\$ 169.10	21	\$ 577.50	\$ 836.20
Jefferson Middle	4	\$ 51.20	12	\$ 106.80	13	\$ 357.50	\$ 515.50
O'Keefe/Marquette	11	\$ 140.80	21	\$ 186.90	15	\$ 412.50	\$ 740.20
Sennett Middle	2	\$ 25.60	3	\$ 26.70	9	\$ 247.50	\$ 299.80
Sherman/Shabazz	12	\$ 153.60	19	\$ 169.10	30	\$ 825.00	\$ 1,147.70
Spring Harbor	2	\$ 25.60	2	\$ 17.80	2	\$ 55.00	\$ 98.40
Toki/Orchard Ridge	3	\$ 38.40	27	\$ 240.30	28	\$ 770.00	\$ 1,048.70
Whitehorse/Schenk	11	\$ 140.80	22	\$ 195.80	30	\$ 825.00	\$ 1,161.60
Wright	1	\$ 12.80	9	\$ 80.10	12	\$ 330.00	\$ 422.90
		\$ -		\$ -		\$ -	\$ -
East High	16	\$ 204.80	26	\$ 231.40	24	\$ 660.00	\$ 1,096.20
La Follette High	12	\$ 153.60	19	\$ 169.10	23	\$ 632.50	\$ 955.20
Memorial High	12	\$ 153.60	19	\$ 169.10	23	\$ 632.50	\$ 955.20
West High	12	\$ 153.60	39	\$ 347.10	36	\$ 990.00	\$ 1,490.70

Building	Coffee Pots	Cost	Microwaves	Cost	Refrigerators	Cost	Total Cost
		\$ -		\$ -		\$ -	\$ -
		\$ -		\$ -		\$ -	\$ -
Administration	25	\$ 320.00	15	\$ 133.50	30	\$ 825.00	\$ 1,278.50
Allied	4	\$ 51.20	2	\$ 17.80	4	\$ 110.00	\$ 179.00
Brearly	4	\$ 51.20	2	\$ 17.80	4	\$ 110.00	\$ 179.00
Hoyt Elementary	8	\$ 102.40	4	\$ 35.60	8	\$ 220.00	\$ 358.00
		\$ -		\$ -		\$ -	\$ -
	208		445		574		\$ 22,407.90