



ENVIRONMENTAL MANAGEMENT DIVISION

MEMORANDUM

TO: Bruce Walden, Chief Administrative Officer
FROM: Bill Gray, Public Works Director *WG*
Rod Fletcher, Environmental Manager *RAF*
DATE: November 4, 2004
RE: Battery Recycling

Action Requested

No action is requested, this memorandum is for informational purposes.

Background

The Illinois Student Environmental Network (ISEN) initiated a household battery collection program for Champaign County residents in 2002. Several drop-off sites were established in Champaign, University of Illinois, and in Urbana. Their program collected over 7000 lbs. (about 70,000 batteries) during the past year and a half. According to ISEN, they currently have accumulated about 2000 lbs. and they have no funds to pay for processing, hence they suspended the program. It costs ISEN just over \$1.00 per pound to recycle these batteries.

Household batteries typically include both rechargeable and non-rechargeable batteries commonly used in homes. Examples of rechargeable batteries include nickel-cadmium (NiCad) used to power cell phones, and screwdrivers, drills, etc. Non-rechargeable batteries such as alkaline or button batteries power, flashlights, watches, etc. The vast majority of household batteries are non-rechargeable alkaline and zinc-carbon batteries (A, AA, AAA, C, D, 6-volt, and 9-Volt).

In 2003 ISEN sent 3500 lbs. of batteries to their processor Battery Solutions. According to Battery Solutions the chemistries of the batteries, by weight, were 85% alkaline, 7% lead, 7% nickel, less than 1% lithium, less than 1% silver, and less than 1% contained mercury.

In 1996, Congress adopted the "Mercury-Containing and Rechargeable Battery Management Act." The Act was implemented to "phase out the use of mercury in batteries and provide for the efficient and cost-effective collection and recycling or proper disposal of nickel cadmium batteries,". Since the Act was established, consumer alkaline and zinc carbon "household" battery types available for sale in the U.S. since mid-1996 are manufactured with no mercury (USEPA). However, the Act does allow button cell batteries to be manufactured with mercury. These batteries may contain up to 25 mg (milligrams) of mercury per battery and typically range from 3 mg to 11mg according to the National Electrical Manufacturers Association (NEMA).

Illinois does not require the recycling of any batteries, except for lead-acid batteries typically used in vehicles. Staff has also contacted a dozen Illinois cities and found that Park Ridge has a similar battery program to ISEN's that ranges in cost between all batteries \$2000 - \$4000 per year.

In terms of impact to the environment, concern is not with the volume of waste they comprise, but rather with the amount and toxicity of their heavy metal components. It should be recognized that concerns, especially for mercury, is virtually non-existent, for alkaline batteries today. But heavy metals such as nickel and cadmium, and mercury found in button batteries do exist, but in relatively small quantities as compared to toxicity of other landfilled materials such as pesticides, herbicides or household cleaning chemicals. Nonetheless, the metals found in household batteries today can be recycled.

Options

Staff has compiled the following options for consideration:

1. City could financially assist with ISEN'S program for all batteries – \$3500/yr. (would recommend making available to only Urbana residents)
2. City could financially assist ISEN only for recycling of rechargeable and button batteries – cost \$500/yr.
3. Develop a city-administered program for options above without ISEN's involvement– approximately same cost as above.
4. Do nothing

Financial Impact

Given a cost of approximately \$4000/yr., the recycling tax fund could absorb this cost on an ongoing annual basis without increasing the recycling tax.

Recommendations

Staff has no specific recommendations.