E D M O N T O N P U B L I C S C H O O L S

December 10, 2002

TO: Board of Trustees

FROM: A. McBeath, Superintendent of Schools

SUBJECT: Recipients of the 2002 General Scrap Iron and Metals Scholarships

ORIGINATOR: B. Holt, Executive Director Instructional and Curricular Support Services

RESOURCE STAFF: Carol Anne Inglis, Anne Mulgrew

INFORMATION

In September of 1999, General Scrap Iron and Metals, a company that deals in recycling a variety of scrap metals, established three scholarships with the district. The purpose of the awards is to provide public recognition of student performance and an additional incentive for students to excel at school. The scholarships are available to one student for each of grades 6, 9, and 12. The values of the scholarships to be awarded are: $1000 at grade 12; $500 at grade 9; and $100 at the grade 6 level.

The applicants are required to write an article, report, or essay that deals with the recycling of metals and demonstrates the following selection criteria:

- completeness of application
- originality of thinking
- relationship of topic to the work of General Scrap Iron and Metals
- writing that is focused on topic and demonstrates overall unity and coherence
- information obtained on the Internet and through other research is incorporated in the submission and cited in the bibliography

The two recipients of the 2002 General Scrap Iron and Metals Scholarships are Veronica Tomcej, former student of Lynnwood School and Tanya Brkin, former student of M. E. LaZerte School.

Appendix I contain the reports written by the two recipients. The scholarship at the grade 9 level was not awarded this year.

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APPENDIX I – Reports of Veronica Tomcej and Tanya Brkin

REPORT OF VERONICA TOMCEJ
GRADE 6 LYNNWOOD SCHOOL

HOW METAL RECYCLING HELPS OUR ENVIRONMENT

How does the recycling of metals help our environment? Scrap metals are present in our everyday lives. Scrap metals such as food cans, pie plates, aluminum cans, and old household pots can be found around the house. Nails, bolts, and metal bars from concrete are often found around construction sites. Recycling these metals provides us a way of reusing these metals, instead of disposing of them. This report will explain some ways about how recycling metals protects our environment.

The first way is that it reduces the amount of material going into landfill sites. Landfill sites usually have limited capacity. If the amount of matter going into the landfill is reduced, then it will extend the lifetime of the site. Also, the actual site affects the environment. The area has to be cleared before digging a hole in the ground to build it, the waste inside releases gaseous fumes, and dirty, bacteria-filled liquid leaks into underground water streams.

A second way is that this method reuses a non-renewable natural resource. Metals out of ore will eventually run out, and people will have to turn to another substance to take the place of metal. Recycling metals will greatly increase the amount of time left before this crisis takes place.

The third way is that recycling of metals has less of an environmental impact than mining. Mining may accidentally contaminate water, encourages roads to be built, and (surface mining in particular) damages the environment. This causes many lost habitats for wildlife, which include mammals, amphibians, birds, insects, trees, shrubbery, grasses, flowers, mosses, and fungi.

A fourth way is that recycling of metals reduces the amount of energy needed for metal-processing factories. This saves coal, gas, and in some cases, the need to build dams for hydroelectricity.

The fifth way is that recycling metal minimizes the amount of pollution in the air, and in the water. Smelters, which process raw ore, may produce pollutants that are released into the air, or that leach into the water.

The last way is that recycling metals encourage companies, and the public to recycle other materials such as glass, paper, cardboard, and plastic. These materials consist of things like jars, bottles, high and low grade paper, corrugated cardboard, consumer goods boxes, bags, milk jugs, containers, and many other items. If everybody recycled what they could, the earth would be a happier, healthier, and greener place to live.

In conclusion, the recycling of metals benefits everyone, and everything, in a positive way.

BIBLIOGRAPHY

"It's In The Bag!", guide to the blue bag recycling program, City of Edmonton, 1999.

REPORT OF TANYA BRKIN
GRADE 12 M. E. LAZERTE SCHOOL

WHAT ARE THE BENEFITS OF RECYCLING SCRAP IRON AND METALS?

Many products that would have been considered waste and been disposed of have become reusable many times over because of recycling of scrap iron and metals. Recycling of scrap iron and metals is not a new concept. Since man started working with metal, he learned that it can be reused and recycled. It was during World War I and World War II that metal recycling boomed. Since then, over the years recycling has evolved into a multibillion-dollar industry that not only benefits our economy, but our environment as well.

There are many benefits to the environment as a result of scrap iron and metal recycling. When raw metals such as copper are mined in open pit mines, this damages the landscape and the waste, called tailings, discarded around the mine causes many environmental concerns. Water is used in the cooling processes throughout processing of raw material and pollution is a problem for the wildlife and communities in the area. By avoiding many steps involved in obtaining raw metals, recycling is more efficient and environmentally friendly.

By recycling scrap metals, the amount of "mining and consumer wastes, air and water pollution, use of raw materials from the ground, as well as the amount of energy used would be cut by more than 70 percent."[1] For instance, the "industry's overall steel recycling rate is nearly 64 percent"[2] and the "aluminum cans are 20 percent cheaper to recycle than to make and also require 5 percent of the energy."[3] This will not only benefit the recycling plant and the environment, but the cheaper price of metals will benefit the secondary industries that will use the recycled metals to make new products. As a result of lower production costs for the factories, the market price of their products may also decrease which will benefit the consumer. The whole community benefits from recycling.

Recycling plants are a good alternative to landfills and incineration. "Metals such as lead, cadmium, copper, and mercury vaporize in intense heat"[5] and contribute to the air pollution. If we were to leave them in the landfills, on a hot day they would slowly vaporize into the air; and by incinerating them, the problem would be accelerated further because of the high temperatures involved in combustion. The metals that have reacted with the rainwater also pollute the runoff from the landfill site. This is the biggest concern for the environment because the water run-off can go deep under ground and travel great distances through many under water canals. Pollution is therefore a global issue since it affects more than just environment around the landfill. Other problems that arise from landfills and incineration are the high cost and no benefits "from the process except for the disposal."[6] In the incineration, it is possible to convert the heat generated to energy that is of some use but it would be very costly and not very convenient. The pollution risks would outweigh the benefits of an energy source. Recycling on the other hand can "reduce solid waste by approximately 25 percent,"[7] helps conserve energy, and can generate profit to help cover the cost of running the plant.

"Iron and steel are the most recycled materials used today."[8] They are collectively known as ferrous scrap and come from car parts, household appliances, various cans, etc. Some of that scrap comes directly from factories as the material that was left over from production while other scrap comes from the general population that used the product but no longer needs it or has any use for it. Recycling of ferrous scrap usually involves separating it into different grades of quality and melting it. The recycling process of ferrous scrap is very efficient.

Although the recycling process produces some byproducts and there still exists a possibility of pollution, when compared to the pollution caused from mining of raw materials or disposing of scrap metals, the pollution that may be caused by the recycling plant is minimal. The plants are dedicated to ensuring that the waste from their factories is managed properly. "The oil collection system was

developed at the plants to capture all residual oils left from cutting and stamping scrap material. All of the run-off at the receiving docks, as well as the storm water run-off, is drained to the underground oil water separator and carefully monitored."[9] The fact that the scrap is processed and stored in the same facility decreases the chances of accidental spillage during any kind of shipping of materials. The process of recycling is safer for the environment overall.

Recycling is becoming more wide spread, as the people are increasingly aware of its importance. It is a safer and easier method of using and reusing our natural resources without doing damage to the environment around us. While pursuing that goal, recycling has brought many job opportunities along with it. As the methods of recycling improve with time, the more efficient and cheaper it will be to recycle. Recycling scrap iron and metals is something that has created many environmental and economic benefits for the community. Educating the kids and getting the schools more involved in recycling is the key to the success of this industry.

FOOTNOTES

[1] http://www.isri.org/isri-downloads/rsmcbe.pdf, "Recycling of Scrap Materials Contributes to a Better Environment", Institute of Scrap Recycling Industries Inc.
[2] http://www.recycle-steel.org/index2.html, "Fact Sheet: A Few Facts About Steel-North America's #1 Recycled Material," Steel Recycling Institute
[3] "Recycling", Noel Grove; National Geographic Magazine, July 1994, page 102
[4] http://www.bmicorp.com/index.htm, "Earth Cycle:Conserving Our Natural Resources," Bodner Metal and Iron Corporation. [diagram omitted]
[5] "Recycling", Noel Grove; National Geographic Magazine, July 1994, page 99
[6] http://www.isri.org/industryinfo/alternative.htm, "Recycling: The Economical and Environmentally Intelligent Alternative to Landfilling and Incineration", Institute of Scrap Recycling Industries Inc.
[7] http://www.isri.org/industryinfo/alternative.htm, "Recycling: The Economical and Environmentally Intelligent Alternative to Landfilling and Incineration", Institute of Scrap Recycling Industries Inc.
[8] http://www.isri.org/industryinfo/alternative.htm, "Recycling: The Economical and Environmentally Intelligent Alternative to Landfilling and Incineration", Institute of Scrap Recycling Industries Inc.
[9] http://www.baymetal.com/epa.htm, "EPA and Environmental", Bay Metal Inc.

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1. http://www.isri.org, Institute of Scrap Recycling Industries Inc.

2. www.exn.ca, Discovery Channel Canada

3. "Recycling", Noel Grove; National Geographic Magazine, July 1994

4. http://www.bmicorp.com, Bodner Metal and Iron Corporation

5. http://www.recycle-steel.org, Steel Recycling Institute

6. http://www.westburymetals.com, Westbury Metals Group Inc.

7. http://www.baymetal.com/index.html, Bay Metal Inc.