

**Date and time:** Wednesday March 16 2016 11:00 am - 12:30 pm

**Weather:** Pr 4mm; RH 55%; BP 100.4 kPa; SW 40 kmh; T 14° C

**Activity:** A tour of London's Municipal Recycling Facility.

The light rain and gloomy skies of 11:00 am saw me pull into the administration building of the MRF, short for Municipal Recycling Facility. I was greeted by personable Facility Manager Anne Boyd who would take *The Bulletin* on an exclusive tour to show us exactly what happens to the bottle, cans, cardboard and other recyclables that people throw into their blue boxes every week.



Readers can take the quick visual tour that Anne introduced me to by tracing the various lines that run through the chart above, a reasonable approximation to the actual layout of the facility. Two bluebox streams enter the facility at the top of the chart. The streams are called “containers” and “paper”. Our first stop was the Pre-sort Room, as shown in the image next page.

The MRF employs some 45 workers, most of them sorting, as the four shown below are doing. The conveyor belt for the “container” line moves along at a good



clip and sorters must be constantly on the alert for non-container items such as cardboard boxes, which pass over to the paper line, just off-image to the left. Other materials such as plastic bags are tossed into chutes, destined for landfill. I watched the sorter on the left trying to stay ahead of the stream. Some cans arrive in bags which must be emptied. This worker had to seize the bag on his left and throw it up the line so that he'd be ready to deal with it when it came along a few seconds later. Sorters must cultivate a rare combination of cognitive speed and athleticism. They sort an average of 3000 items every hour, a bit less than one per second. I imagined that when they turn in for the night they see an endless stream of unclassifiable items!

The paper line operates just off-image to the left. Both lines leave the Pre-sort Room at the far end, after which they divide, according to the diagram in the chart above. The container line makes a hard right on its way to a magnetic sorter that pulls all steel items out of the stream and sends it down to a storage bin prior to baling and transport to a steel smelter. Non-magnetic items not pulled from the container line continue on to an air-sorter that uses gravity (pulling down) and an airstream (blowing up) to separate cardboard and paper from glass and metal. There is a compelling magic in the way items hesitate and tumble a bit before "deciding" which way to go — up or down? Lighter materials such as plastic bottles, milk cartons, and so on, continue to a perforator where they are punctured

and flattened before rejoining the container line. Glass tumbles down to a separate area where it is collected in containers for shipping to a firm in Guelph that grinds it up for use in the glass industry. Two more sorting machines await the rest of the containers, both of them hi-tech. First, an optical sorter uses infrared light to detect two types of plastic that I will label here as “soft” or “hard.” The sorter is so fast that the conveyer belt runs faster than I can and, as each item is identified to type, a perfectly timed jet of air blows it into the correct chute. Aluminum and cardboard containers follow the stream of hard plastics. In a sorting room for containers, workers throw hard plastics and cartons into storage bunkers and check for items that don’t belong in the line which now consists of mixed (softer) plastics. Aluminum items are removed from the line by a hi-tech current-inducing sorter that exploits the electrical properties of aluminum. The current launches the can into a storage bunker that is taken to the metals area, as below. There we stand at the head of a stairway that leads down to the metal-processing area that ends the metal



stream of the container line. A large blue crushing machine in the background compresses cans and other metal products into heavy, baled box-shaped units. The units are then stacked into the super-heavy pallets seen arranged behind us in two rows (aluminum on the right, steel on the left). Both metal types will be trucked away to smelters (operated by other companies) to begin a new life in what is

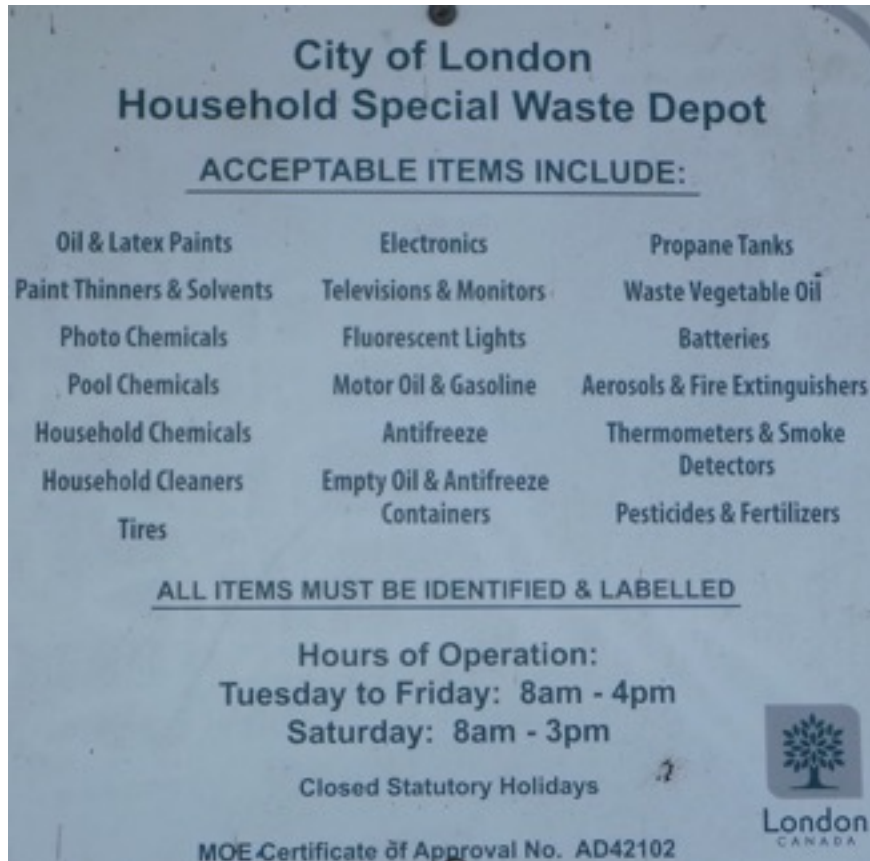


becoming a never-ending cycle in which the same atom of iron, for example, may end up in a can again — or in a car. Anne communicates with me through the headphones we both wear.

But what about the “paper” line? After leaving the Pre-sort Room, the paper line enters a large screening machine that floats the cardboard above toothed rollers while the residue enters a second screening system and then on to the Paper Sort Room. Here, workers sort materials by hand into newsprint, paper box material, and fine paper, all of which then goes off to their respective baling machines. Then off they go to Ontario pulp mills to be reborn.

A loud buzzer sounded at twelve noon. The conveyor belts stopped, the sorting machines died, and workers headed for the lunch room. Anne had to be elsewhere so she directed me to the Landfill area where the small percentage of rejected items, mostly garbage, ends up. I drove as far as the HSW or Household Special Waste facility (shown below) where a staff member informed me that the Landfill road system had become impassable for vehicles like my van, thanks to the morning rains. So I poked around the HSW, instead. This sadly underused facility takes in a huge variety of “special” waste, including everything from old paint to electronics. The sign on the next page says it all. Periodically we drive out to this facility ourselves to deposit a 10 kg bag of batteries, mostly from cameras. “You should come here at night said one worker, “The gas flare is spectacular.” What gas flare I wondered. “The methane comes out of our composting operation but must be burned off. Some day we’ll figure out a product it can be used for.”





As for the landfill, less than three percent of material entering the MRF by truck ends up in the landfill. Anne told me that one of their operational goals is to keep dropping that percentage year over year. The closest I got to landfill was the low, grassy hill in the landscape above, obscured by signage. This was all landfill starting in 1978 and ending a few years later. Then it was covered by a layer of clay, then soil, then seeded with vegetation.

We close this Bulletin with a summary of the history, operations and economics of the MRF. Construction of the facility was completed in August of 2011 at a total cost of \$22.4 million. The money came from an \$18 million grant from the Federal Gas Tax Fund and \$4.4 million from industry product stewards through Ontario's Waste Diversion Organization. One of the most efficient waste management operations in North America, the MRF is owned by the City of London and operated by the Miller Waste Management company. Miller hires and pays the personnel who work at the MRF in a partnership arrangement with the city. For example, the city pays Miller a processing fee for work done by its employees while Miller shares the revenue from its sales to industry with the city.

The MRF currently takes in 28,000 tonnes from the city and another 7,000 tonnes from area municipalities: Alymer, Mayhem, Central Elgin, Dutton-Dunwich, Malahide, St, Thomas, Thames Centre, and West Elgin. Western University also sends recyclables to the MRF. Miller sells its products to industry: cardboard, newsprint, boxboard, aluminum scrap, steel scrap, pelletized plastic and so on. It shares the sales revenue with the city, leaving a revenue-neutral wake. Miller on the other hand, makes a profit, but figures are not available as Miller is privately held.

Readers who wish to take an e-tour of the MRF are invited to click on the following link, where the whole operation is summarized in a video:

<https://www.youtube.com/watch?v=c2Tr-U0nALM&feature=youtu.be&list=PL981myVISwVMPcrMDUDDw9EodOPlbabaG>

We urge on everybody, as do the two youthful tour guides in the video, to **MAKE SURE THAT BLUE BOXES GET THE RIGHT ITEMS IN THEM**. According to Anne Boyd, if households would only do this properly the Pre-sort Room could be eliminated!