

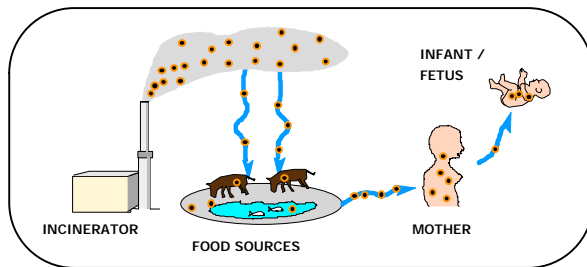
## **ENVIRONMENTAL IMPLICATIONS**

### **Q: Why is pollution produced by trash incineration?**

A: Because trash is an inherently contaminated fuel (unlike, say, natural gas), a wide variety of toxins are released when it is burned. Of particular concern are dioxins and furans, heavy metals (mercury, lead, cadmium), particulates, and hydrochloric acid. In addition, over 190 other organic chemicals are found in incinerator exhaust. Many of these are known to have toxic properties but very few have ever been studied for health effects. There are good reasons to believe that the toxic impacts that are now known are only the tip of the iceberg.

### **Q: Does waste disposal pose a health risk in Lexington? Or is it just a concern in North Andover where the incinerator is located?**

A: Some of the most dangerous pollutants, such as mercury and dioxin, are concentrated in the food chain and come into Lexington in food (see Figure 2). Lexington residents are probably exposed to these chemicals to about the same extent as people living near the incinerator.



**Figure 2 Toxic substances like dioxin and mercury are emitted by incineration and are concentrated in the food chain. Infants (and the fetus exposed through the mother) are most vulnerable to toxic effects.**

### **Q: Are pollution levels high enough to be of concern?**

A: For FDA data, we know that levels of mercury in foods such as swordfish and freshwater fish are high enough to put child development at risk when such foods are consumed by women of child-bearing age. The Center for Disease Control estimates that 10% of children are at risk due to mercury consumed by their mothers. Levels of dioxin in our diet are also above recognized safe levels. Trash incineration is the major known source in Massachusetts of both of these pollutants. These are just examples of the most well-known problems - many other less well-known toxins are being emitted, but have not been evaluated for health impacts.

### **Q: Don't our incinerators have "state of the art" pollution controls?**

A: All incinerators must meet Maximum Achievable Control Technology (MACT) standards for pollution reduction. These standards are based on the equipment that is available on the market - they do not set standards according to health protective criteria. Such controls remove only part of the pollution and do not function well during start-up or cool-down periods. Furthermore, most new pollution controls do not reduce the actual amount of toxins generated. Instead, they reduce smokestack emissions by capturing toxins in "fly ash". This ash is mixed in with the rest of the incinerator ash and deposited in ash landfills. Thus, the better the air pollution controls work, the more toxins are stored in landfills. And eventually, all landfills leak.

### **Q: What happens to the ash from the NESWC incinerator?**

A: The ash from the NESWC incinerator is deposited in a special ash landfill in Peabody. This ash represents about one-fourth of the weight of the trash sent to the incinerator. It contains a variety of toxic materials and cannot be placed in a regular municipal landfill. Massachusetts incinerators produce 700,000 tons of such ash each year. Five of the six ash landfills in Massachusetts are scheduled to close in the next decade. (The estimated year of closure for the Peabody landfill is 2006).

### **Q: How much pollution is avoided by Lexington's recycling program?**

The Massachusetts DEP has calculated certain environmental benefits of Lexington's recycling and composting program using a model developed by the Northeast Recycling Council. They found that in 1999 our recycling/composting efforts

- Reduced greenhouse gas emissions by 1,251 metric tons of carbon equivalent.
- Saved 42,478 million BTUs of energy, enough to provide power to 227 households per year.
- Reduced overall airborne pollutants by 6,833 metric tons.
- Reduced overall waterborne pollutants by 19 metric tons.

### **Q: If we ignore the toxic pollution problem, would incineration be an environmentally benign waste disposal option?**

A: Not necessarily. Incineration has other problems that have to be considered. A significant increase in the release of greenhouse gasses occurs when materials are incinerated rather than recycled or composted. And because of the energy investment required to replace recyclables with virgin materials, incineration of recyclables wastes energy, even if the incinerator facility has a generator to produce electricity during the burn.

**Q: Have any health organizations concluded that trash incineration is a public health concern?**

The public health risks resulting from the volume and/or toxicity of the waste stream, as well as incineration in particular have been addressed by numerous health organizations including the National Academy of Sciences. The American Public Health Association and the Massachusetts Medical Society have advocated for incinerator moratoriums in specific resolutions. Some states have banned trash incineration entirely because of the associated pollution problems.

**Q: Will the environmental benefits of increasing our recycling still exist if the NESWC incinerator finds other trash to replace ours and continues to burn at full capacity?**

A: Yes. The most serious problem we are trying to solve is the regional impact of multiple incinerators and landfills. The waste stream pollution that appears in our food in Lexington is a result of contributions from many facilities. The particular site at which trash is processed does not make much difference in this regard. When we reduce our trash by a certain amount, less trash is processed regionally, fewer raw materials are processed to replace the recyclables, and the regional pollution burden is reduced accordingly. The pressure to expand disposal capacity is also eased. We can't solve the entire solid waste problem by ourselves, but by increasing our recycling and reducing our waste, we will be doing our part and hopefully our efforts will be matched by other communities to bring about a complete solution.

**Q: I thought the reason for recycling was to save trees.**

A: When recycling programs started in the 1970's, saving natural resources was one of the commonly stated objective. It is still a good reason to recycle. But now there are even more compelling reasons for recycling, such as reducing waste stream pollution, cutting greenhouse gasses, and saving on disposal costs.