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You live in Ashland, a community of 325,000 residents. Ashland's current landfill has been filling very quickly, and the landfill manager estimates that in another two years it will be at maximum capacity. Now the community must decide what to do about waste disposal after the landfill is capped and sealed. Some say a new landfill should be built. Others are interested in building an incinerator to burn the trash. Some people think Ashland shouldn't spend much money on waste disposal but instead should invest in reducing waste in the first place.

You can already see this isn't going to be an easy decision. There are lots of things to consider—jobs, environmental health, and cost, just to name a few. The mayor has organized a meeting with various stakeholder groups with the hope that a good plan for dealing with future waste emerges from the meeting. Your stakeholder group must present a well-articulated, compelling plan for dealing with Ashland's waste. Your goal is for the mayor to choose and move forward with your plan.

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Name Date

Group 1: Landfill Workers United

By your calculations, a new landfill could be built for $210,000 per acre. Other people, though, have estimated that costs could run much higher.[1] You have determined that a new 1,000-acre landfill could accommodate your community's trash for the next 100 years. Building such a large landfill would allow you to take in trash from other communities for a fee. Other landfills are charging $14 a yard to take waste.[2] There are 4,840 yards in an acre, so that's a lot of money to help pay for the landfill.

It's really important to support a trash disposal industry in our community, since a lot of people are employed in trash collection and disposal. A larger landfill could employ even more people. Since factories in Ashland have been closing, there are a lot of residents looking for jobs.

One possible hurdle is getting a permit to build such a large landfill in town. The cheapest land is near the homes of Ashland's poorest people. If you have to locate the landfill in a more expensive part of town, the cost will increase significantly. Another option would be to locate the landfill outside the town's limits, but then costs from driving the trucks further will also raise your operating costs. You'd really prefer to locate it in the part of town where property costs are lowest.

The total cost to build this landfill would be $210 million. If you translate the cost to a per-capita figure, that's $646 per resident. While many residents couldn't afford to pay this, you're confident that there's a way to pass along the cost of the new landfill to taxpayers. A couple of years ago the people of Ashland managed to pay for a new bridge that cost $250 million.

You know a lot of people aren't crazy about building another landfill. Although landfills have a plastic liner to protect the surrounding soil and groundwater, it's public knowledge that they eventually break and can leak hazardous materials into the environment.[3]

D'ARCY NORMAN, http://www.flickr.com/photos/dnorman/3590939898/

A bulldozer moves trash at a landfill.

You're hoping to convince people that burying trash in a landfill would be cheaper and cleaner than an incinerator, which is a facility that burns trash. Incinerators pose a risk to public health. Burning trash produces a group of toxic chemicals, including dioxins which can cause cancer.[4]

Questions for Your Group

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6. What do you think critics will say in response to your plan?

1 Elizabeth Royte, *Garbage Land* (New York: Little, Brown and Company, 2005), 75.
2 Royte, 64.
3 Royte, 57.
4 World Health Organization, "Dioxins and Their Effects on Human Health," Fact Sheet No. 225, 2010, www.who.int/mediacentre/factsheets/fs225/en/index.html.

Name Date

Group 2: Waste-to-Energy Enthusiasts

There are 89 waste-to-energy plants in the U.S.; they burn 13% of the nation's garbage.[1] Waste-to-energy plants are incinerators that capture energy from burning trash. A waste-to-energy plant could generate electricity for homes in Ashland, resulting in cheaper electricity bills for Ashland residents. You want to bring this technology to Ashland, where people are looking for ways to lower their electricity bills.

Incinerators reduce the volume of garbage that has to be buried in a landfill. Burning trash can reduce its weight by 75%.[2] Because the ash that results from incineration must be buried in a landfill, you propose that the incinerator be built right next to the existing landfill. You will need to ensure that the landfill has adequate capacity for disposing of the ash over the coming years.

Convincing people to build a waste-to-energy plant won't be easy. No new waste-to-energy plant has been built in the U.S. since 1996. Incinerators face a lot of public opposition because burning trash releases chemicals such as lead, mercury, and dioxins. Lead and mercury can damage the nervous system,[3] and dioxins can cause cancer.[4]

Some people are afraid that building an incinerator will discourage recycling. After all, a waste-to-energy plant runs on trash. People also argue that the amount of energy saved through recycling is greater than the energy generated by burning trash.[5] In Denmark, local governments have created laws to make sure that recyclable materials do not end up in incinerators.[6] You might be in favor of doing something similar in Ashland.

The cost of building an incinerator could run more than $500 million,[7] higher than the cost of a landfill. If the waste-to-energy plant is a publicly owned utility, taxpayers will bear its cost. On the other hand, you could entice a private company to open the plant, lowering the initial costs to taxpayers.

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Energy can be recovered from trash burned in an incinerator.

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1 Elizabeth Royte, *Garbage Land* (New York: Little, Brown and Company, 2005), 77.
2 Royte, 79.
3 U.S. Department of Labor, Occupational Safety & Health Administration, "Safety and Health Topics: Toxic Metals," www.osha.gov/SLTC/metalsheavy/index.html (accessed May 24, 2010).
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5 Brenda Platt, Institute for Local Self Reliance, "Resources up in Flames: The Economic Pitfalls of Incineration versus a Zero Waste Approach in the Global South," 2004, p. 25. www.ilsr.org/recycling/upinflames.pdf
6 Elisabeth Rosenthal, "Europe Finds Clean Energy in Trash, but U.S. Lags," *The New York Times,* April 12, 2010.
7 Estimate based on Frederick County Government, "Frederick Regional WTE Facility Bond Size Estimate," www.frederickcountymd.gov/documents/Utilities & Solid Waste Management/Solid Waste Issues & Initiatives/Frederick-Carroll Cost Share Estimate.PDF (accessed May 11, 2010).

Name Date

Group 3: Citizens for Corporate Responsibility

Many of the items available at stores in your community are designed according to the principle of *planned obsolescence,* which means they are designed only to last for a certain amount of time before they break. That's how companies can get people to keep buying new products. In fact, manufactured products and packaging make up 72% of household waste in the U.S.[1] You want to hold companies accountable for the trash they create.

Some communities have already started doing this. For example, the state of Maine passed a law that requires electronics manufacturers to bear the cost of recycling or disposing of items at the end of their useful lives.[2] You propose Ashland should pass a similar law. You think that if enough cities and states adopted this type of law, manufacturers would start making more durable products that don't have to be replaced as often.

If electronics manufacturers alone were held accountable for disposing of electronics waste in Ashland, that could result in a significant reduction of waste. While only a small percentage of the current waste stream is electronic waste, "e-waste" is growing two to three times faster than any other type of waste.[3] Encouraging producer responsibility for other types of consumer goods would reduce waste even further.

Ashland probably still needs a waste disposal facility for some things. Landfill Workers United estimates that a new landfill would cost about $200,000 per acre to build. Your accountant has discovered that the real cost of a new landfill would be closer to $500,000 an acre if all permitting and construction costs are included. It looks like an incinerator would be even more expensive, especially since you still need a landfill for the ash resulting from incineration. According to Recycle Ashland, building a recycling facility would be cheaper than building a landfill or an incinerator.

Some people have expressed concern that companies forced to take back broken goods would simply make items more expensive, thus passing along the burden to consumers. You've thought about that possibility, but considering the average income in Ashland, you doubt that prices could be raised very much. Otherwise, no one would be able to buy luxuries like electronics.

©ISTOCKPHOTO/ILEXIMAGE

E-waste includes discarded computers and other electronics.

Questions for Your Group

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1 Franklin Associates, A Division of ERG, as cited in US EPA, "Municipal Solid Waste Generation, Recycling, and Disposal in the United States, Detailed Tables and Figures for 2008," 2009, Table 23, www.epa.gov/waste/nonhaz/municipal/pubs/msw2008data.pdf (accessed June 11, 2010).

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3 US EPA, "Electronic Waste and eCycling," www.epa.gov/ne/solidwaste/electronic/index.html (accessed May 12, 2010).

Name Date

Group 4: Recycle Ashland

Your organization thinks it's high time to build a recycling facility in Ashland. Building a recycling plant would reduce the community's need for an expensive new landfill or incinerator. Plus, it would save natural resources, cut energy use, and reduce air pollution.[1]

A recycling facility in San Francisco cost $38 million,[2] and another in Indiana cost $8.2 million.[3] If these numbers are any indication, building a recycling plant will be much cheaper than paying for a new landfill or an incinerator, both of which would cost hundreds of millions of dollars. A recycling plant also could employ ten times more people than a landfill or incinerator.[4]

Experts estimate that over 60% of Ashland's waste could be recycled. If Ashland opened its own recycling plant, it could sell the reclaimed materials to help pay to keep the plant operating. One challenge may be finding markets to sell all of the recycled materials to. Items like aluminum and steel are big money makers, but you'll be lucky to break even on glass.[5]

While recycling could become a money-making venture for the city, that's beside the point. Because a recycling facility is much cheaper to build than a landfill or incinerator, it's by far more economical than building a landfill or incinerator.

You will need to educate people about what is recyclable and encourage them to recycle more, which will take money and time. One example of a program that encourages recycling is in the city of Seattle—people are required by law to recycle; those who put recyclables in their garbage may be fined.[6] To further encourage recycling, Seattle provides recycling services free of charge, while residents are charged money for throwing away garbage.[7]

Unfortunately, not all materials can be recycled at this time. That could mean that either a small new landfill will need to be built, or Ashland could pay another community to take its waste.

HDR ENGINEERING, INC. AND J.R. MILLER & ASSOCIATES

Materials are sorted and baled at a recycling facility.

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1 Elizabeth Royte, *Garbage Land* (New York: Little, Brown and Company, 2005), 145.
2 Royte, 263.
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Name Date

Group 5: Citizens for Environmental Justice

Did you know that the percentage of people of color who live within 3 kilometers of hazardous waste facilities is about two times higher than the percentage of people of color who live 5 kilometers or further away from them? Or that the poverty rate close to a hazardous waste facility is 20%, whereas it is 13% farther away from hazardous waste facilities.[1]

Ashland's current landfill is only a few miles away from a neighborhood where mostly immigrants live. The people who live in this neighborhood are considered "working poor." Most have low-paying jobs, many in factories. Because some of them do not speak English well, and others simply don't have any spare time, these residents have not organized a strong environmental justice campaign. Your group wants to ensure that Ashland's waste no longer ends up near their homes.

Modern landfills are lined with thick plastic so that waste can't contaminate the surrounding soil and groundwater. Unfortunately, these plastic liners don't last forever. Eventually they break and leak leachate (the liquid that comes from our garbage) into soil and groundwater.[2] Despite Ashland's best efforts, hazardous wastes like paint and batteries, as well as everyday items like bleach and nail polish remover, have ended up the landfill, making the leachate toxic. If the plastic liner breaks, you fear that people in the surrounding neighborhood will become ill.

You have similar concerns with building an incinerator. Burning trash in incinerators releases toxic chemicals such as dioxin and mercury. These are known to have serious effects on human health, including cancer.[3] Plus, the toxic ash left over from burning trash still must be taken to a landfill.

You think that if Ashland's leaders vote to build a new waste facility, they should locate it far away from the immigrant community. If that means that it will cost more because the land elsewhere is more expensive, then you think that people who live in wealthier neighborhoods should pay the extra cost through higher property taxes. However, since no one wants pollution in their backyard, you would be in favor of a solution that ensures everyone's safety.

PHOTO BY CRAIG MORSE, www.culturesubculture.com

Community members campaign against a new landfill.

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Name Date

Group 6: People for Packaging Reform

Your group formed a few years ago when you learned that one-third of Ashland's trash is from packaging. Packaging waste takes the form of boxes, tissue paper, mailing envelopes, packing peanuts, plastic cushioning material, metal cans, and plastic and glass containers. Natural resources like trees, water, and oil are required to create these materials. Using these resources once, only to have them end up in a landfill, is not responsible.

One example of reduced packaging is flat pack furniture; it is designed to fit in the smallest box possible. If a company had to ship a fully assembled chair from Indonesia, where it was made, it would have to put the chair in a giant box. That would mean fewer chairs could fit on the cargo ship that traveled across the ocean to deliver it to the store where it is sold. And cargo ships don't run on air; they use natural resources, too (in this case, diesel fuel made from petroleum).

Reducing the amount of materials that we discard—a concept called *source reduction*—has benefits beyond saving natural resources. Source reduction reduces greenhouse gas emissions (that contribute to climate change) more than any other means of dealing with waste, including recycling.[1]

Also, source reduction would be much cheaper than alternative options. For example, it costs an average of $50 to incinerate a metric ton of garbage and between $10 and $40 to landfill a metric ton.[2] Although it's cheaper than a landfill or incinerator, processing recycled materials also costs money. Source reduction is free!

You propose that Ashland pass a law requiring all manufacturers to use minimal packaging. If a company does not use minimal packaging, it should not be allowed to sell products in Ashland, where residents have to pay to dispose of the packaging.

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More packaging waste is made from paper than from any other material.

Of course, this doesn't completely solve the problem of dwindling landfill space. Ashland will still need to find a solution for disposing of non-packaging wastes, which likely means investing in one of the following: a landfill, an incinerator, or a recycling facility.

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