

Iowa Department of Natural Resources, Field Office 2

COMPANY BACKGROUND



The Field Services and Compliance Bureau of the Iowa Department of Natural Resources (DNR) includes six field offices throughout the state. The staff serve as local representatives of the Environmental Services Division and a primary task is to help people understand programs of the Environmental Services Division. Staff conduct routine inspections of all facilities permitted by the Environmental Services Division, responds to spills and address public inquiries. Field offices provide a localized extension of the resources and technical assistance programs of the DNR.



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PROJECT BACKGROUND

Construction and Demolition Waste (C&D) has been a growing issue in Iowa for almost ten years. This project was set up to research alternatives for diverting C&D waste away from the landfills of Iowa. The Landfill of North Iowa and the Mason City area was a starting point and test area for this project. As the internship progressed another large waste stream was identified from the growing bio-fuel industry in Iowa. Diatomaceous Earth (DE) is a by product of the bio-diesel process and has been a challenge for landfills and the Iowa DNR. The project included researching diversion alternatives for DE.

INCENTIVES TO CHANGE

From 1998 to 2005, the amount of C&D waste entering Iowa's landfills grew 3.2 percent. This almost 115,000 tons of waste puts a greater strain on Iowa's landfills and has a large potential to be reduced at the source, the construction job site. C&D waste diversion techniques across the country have yielded up to 90 percent waste diversion on some sites.

The growing bio-fuel industry will put a new stress on landfills in Iowa. Waste from the by-products of the bio-fuel processes is a new and largely un-researched area and will present a new challenge for landfills. Because some of these wastes are considered very desirable by niche markets the potential for diversion is present.

RESULTS

C&D Waste Diversion Alternatives

The alternatives researched showed a high potential for success when used both individually and combined. Techniques include: better front end planning, onsite recycling/sorting, deconstruction of buildings, donation of good materials, and materials substitution. These alternatives, though cost effective in many parts of the country, may not be as feasible in all locations at the present time.

The cost of tipping fees, availability of dedicated sorting facilities and the presence of reuse market opportunities all play a significant role in the success of C&D diversion efforts. Ongoing education efforts aimed at contractors, property owners and municipalities will provide the information necessary regarding regulatory obligations as well as reuse possibilities that currently exist. Funding to support new market ventures, transfer stations, and recycling activities will also promote landfill diversion and help ease the growing burden on Iowa's landfills.



Diatomaceous Earth Diversion Alternatives

Diatomaceous Earth in its raw form has been used for many years for many different purposes. DE is used as a filter media in the biofuels generation process and the spent material is landfilled. Opportunities for reuse were investigated and additional study is needed to determine the feasibility of various options. Research on alternative filter media and process modifications may also eliminate the generation of waste DE and result in a more economical and sustainable option.

Project	Annual Cost Savings	Environmental Results	Status
CONSTRUCTION AND DEMOLITION DIVERSION ALTERNATIVES	UP TO \$320,000 PER LANDFILL	UP TO 12,560 TONS	RECOMMENDED
DIATOMACEOUS EARTH DIVERSION ALTERNATIVES	\$24,300 PER FACILITY	270 TONS PER FACILITY	FURTHER RESEARCH NEEDED