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Career Paper: Solid Waste Management and Recycling

Description of the Field

Solid waste management and recycling is a fast and continually growing field in our country and abroad. This is a wide-open field for people with a variety of backgrounds, both academic and experiential. People within the solid waste management field apply the use of proven, effective tools to reduce the volume and toxicity of solid wastes and manage the recycling and or disposal of remaining wastes in the most environmentally sound fashion (Doyle, 1999).

Generally, the priorities of those in the solid waste management field include waste source reduction, recycling, landfills and incineration and clean waste combustion, an offspring of incineration. However, a growing number of professionals are becoming involved in recycled product design, composting and other innovative technologies related to the reduction and disposal of wastes.

With hundreds of thousands of jobs across the country and throughout the international realm, people within waste management can choose from a variety of employment options. Such opportunities are found within every sector, on every level of government and draw people from a wide range of educational as well as non educational backgrounds. This being the case, professionals in this field can carry almost any title: solid waste management supervisor, program supervisor, recycling coordinator, chemist, geologist, community relations staff, environmental engineer, landfill manager, product

designer, truck driver, solid waste technician and the list goes on (Fasulo, & Walker, 1995).

Solid waste management supervisors or professionals (the titles are commonly interchangeable), recycling coordinators and solid waste technicians are three of the most prominent positions within this field. These positions draw from multiple disciplines, interact with and carry out work on all levels of our society.

At the lesser involved or multitasked end of the spectrum are solid waste management technicians. Generally, such positions are concerned with the actual movement and treatment of solid wastes, especially within the landfill facility. Primary responsibilities include distribution and compaction of materials in a landfill, inspection of incoming trucks and the driving of earth moving equipment. To a lesser extent, these positions focus on determining waste sources and proper methods of removal (Fasulo, & Walker, 1995).

At the upper level are solid waste management professionals, supervisors, and recycling coordinators. People in these positions generally work in one of four areas; waste source reduction, recycling, clean waste combustion or sanitary landfill management (Doyle, 1999). Increasingly, composting and design strategies are being added to the list in addition to the convergence of these focus areas under one title; Solid Waste Management Supervisor, Coordinator or Chief.

Solid waste management professionals are involved in conducting studies on solid waste management, providing solutions for the treatment and containment of wastes, and make recommendations for collecting, moving, storing and disposing of solid wastes. Additionally, many are responsible for analyzing the cost effectiveness of disposal

methods, monitoring and directing the cleanup of land and water and writing environmental impact reports. Work within the public to reduce waste and increase recycling rates has also come to be another major responsibility of this position (Cohen & Roy, personal communication, November 2, 2004). Waste management professionals truly cross into every discipline.

An interview with Erica Spiegel (personal communication, November 4, 2004), the Solid Waste Management Supervisor at the University of Vermont, described how comprehensive the waste management profession can be. As a supervisor, Erica manages the recycling, waste disposal and surplus property disposal at the University. To that, she supervises four truck drivers and laborers who are responsible for the collection of waste and recycling on campus, manages a trash hauling contract, coordinates special projects and recycling collection (e.g. donated items during Student Move Out), is responsible for the maintenance of equipment and vehicles, manages a budget and makes recommendations for capital improvements, and works with vendors, custodial and dinning service to endure proper disposal of wastes and recyclables. Furthermore, Erica determines and sets policies related to campus waste, collects and tracks data on waste management, and works with students on a variety of projects.

Likewise, Marc Roy and Andrea Cohen (personal communication, November 2, 2004), both program managers at the Vermont Department of Environmental Conservation, held similar responsibilities. Differences were mainly due to working for the state rather than a private establishment. Included in these differences were larger staffs to oversee, more extensive individual projects and increased emphasis on compliance and enforcement of solid waste regulations.

In addition to general mangers and supervisors, Recycling Coordinators, contribute in large part to the solid waste management field. Unlike solid waste management supervisors, recycle coordination positions work mainly within the specifics of recycling. People in these types of positions work closely with waste haulers and spend a good deal of time in material recovery facilities. These positions also focus a large amount of energy on educating the public on the value of recycling and proper recycling and sorting. Here the goal is to improve recycling rates and more and more, to find new markets for collected goods (Careers in focus: Environment, 1999).

Work Conditions

Since waste is created in every town, city, county and state, waste management professionals have the option of working in almost any setting in the public, private or nonprofit sector. Most upper level, managerial and administrative positions are set offices, labs and conference rooms with minimal time in the field or in waste management facilities. Many technicians, conversely, spend most of their work time outdoors and in waste facilities (Fasulo, & Walker, 1995).

Over 300,000 positions can be found nationwide within the solid waste management field. Of those positions the public sector constitutes a little less than half while the private sector supplies about fifty percent and the nonprofit sector under ten percent (Doyle, 1999).

Within the public sector, a waste management professional may be employed at the local, state or federal level. Now that recycling and waste management programs have found their ground state governments have taken over for employing most waste management staff. Federal level positions have dwindled to a few, with the main focus on

data collection, analysis and technology transfer, rather than initiating new programs. The number of federal employees also fluctuates with each administration and what issues are politically popular at the time (Doyle, 1999).

Unlike the national level, state governments are quite active in creating legislation and planning for solid waste management. Most are concerned with municipal landfills including meeting the criteria for “safe” landfills and placement of such facilities. Almost all states have been working to improve existing areas as standards on placement, design, construction and closure change (Doyle, 1999). While most of the recycling and reduction programs are initiated on the state level, collection and implementation of these programs are done at the local level. The local government is home to many recycling coordinators and people in similar positions (Fasulo, & Walker, 1995).

Although public governmental positions perform a variety of tasks related to waste management, the actual movement of wastes is generally contracted out to private companies. These companies, now only made up of a small number, transport over seventy five percent of our total national solid wastes. Like the public sector, private companies hire a wide range of people from plant operators and laborers to compliance specialists, engineers and lawyers.

Comprising the smallest portion, close to ten percent, of waste management employees is the nonprofit sector. Positions in this area include such titles as lobbyists, planners, environmental scientists, lawyers, fund-raisers, public education specialists, and recycling service providers (Fasulo, & Walker, 1995).

No matter where or what the job, all occupations come with good and bad, ups and downs, limitations and rewards**.** The most often cited limitations in the waste

management field are lack of funding, government (or corporate) bureaucracy, drops in public participation and recycling rates, and fluctuating markets for recycled materials (Cohen, Plunkett, Roy, Spiegel, personal communication, November 4, 2004). Unlike the private sector, government employees are at the whim of the legislature. Many times laws are passed that are difficult to implement or are felt by solid waste management professionals to be inappropriate. Likewise, the every fluctuating economy has greater effects on the budgets and work force of federal, state, and local level programs. Still, in any sector burnout and consequent frustration are often seen as common limitations to the job. As Erica Spiegel (personal communication, November 4, 2004) stated, "I have been doing the same basic job for almost ten years. It gets monotonous sometimes…seeing paper in the trash and being frustrated that not all students are recycling on campus."

On the other hand, rewards from working in waste management range from restoring the environment and helping the public through environmental and health education and similar programs to punishing violators of environmental laws. Other benefits of such positions include social interactions, the ability to use multiple skills and making a visible difference in society (Cohen, Plunkett, Roy, Spiegel, personal communication, November 4, 2004).

Career Paths

The level of education and or experience required to enter the field of solid waste management varies within each area and level of focus. For some no education or experience is needed, while others require a bachelors or masters degree. Although about 170 colleges and universities offer courses in hazardous and solid waste management and only four offer masters programs, the majority of professionals in this field come from

varied educational backgrounds. Individuals often hold degrees in engineering, geology, chemistry, environmental science, environmental studies or related areas (Fasulo, & Walker, 1995). Previous hands on experience may be an additional or the only requirement for many positions. Other skills seen as a must in the waste management field include enthusiasm, communication skills, leadership and creativity (Cohen, Plunkett, Roy & Spiegel, personal communication, November 4, 2004).

Entry level positions may range from internships, summer employment and research projects to waste management technicians or lower level managerial positions. Generally, it is only the managerial positions that require a bachelors degree (usually in science) while technicians are often trained on the job. In any case, experience is essential to moving up.

A graduate degree has been the norm in building a lasting career in most environmental areas. This, however, has yet to be the case in waste management. Since there is no true standard for entering the field of solid waste management, there likewise is no standard for developing one's career within the field (Doyle, 1999). Given that waste management encompasses many areas of our environment, both social and physical, a multidisciplinary education has led many individuals to higher level positions. Still, the best education in this field comes through practical experience and only time can give one that. Supervisory and higher level duties almost exclusively come with time on the job (Roy, personal communication, November 2, 2004).

As new technologies and crises emerge so too do new employment opportunities. Additionally, a growing number of colleges and universities offer solid and hazardous waste management certification courses for professionals currently in the field. These

certifications include environmental assessment and remediation, integrated solid waste management and environmental health, lending to further specialization and development of occupations within waste management (Grassroots Recycling Network, 2004).

Lifestyle

Careers in the waste management field tend to stick to the eight hour, five days a week work routine. Although some part time positions exist, most people work full time forty hour or more work weeks. Time spent in meetings, conferences and on weekends varies with each position and with each employer. Travel, likewise, is subjected to such variations with most professionals doing minimal, if any, out of town travel.

Work settings of waste management professionals are quite often the standard office environment. Little work is done at home, and time not spent in the office may be spent in labs, waste facilities, or working with the public (Cohen, Plunkett, Roy & Spiegel, personal communication, November 4, 2004). The only real variation from this is the job of a landfill operator or waste management technician. Such positions require the majority of work to be spent outside or in waste facilities. Additionally, these positions tend to do minimal office or lab work.

Expected incomes within the waste management field also vary as greatly as do the choice of positions. Annual salaries range from the low end of about 16,000 dollars to the highest paying positions of nearly 80,000 dollars. Again, this range differs within each sector, type of position, previous education and is highly dependent on years of experience (Doyle, 1999).

Issues

As Americans continue to produce more waste each year, solid waste professionals must continually rethink waste management. With the average American creating around four pounds of trash per day, totaling to over one hundred and eighty million tons per year, a major concentration has been placed on waste reduction (Grassroots Recycling Network, 2004). Recently, recycling rates have dropped as landfills continue to fill and close. In rethinking management, solid waste professionals need to figure out a way to educate millions of people on the importance and value of waste reduction and recycling while also forcing that behavioral change to happen. The majority of work here, especially the educational aspect, must be done on a local and state level (Cohen, personal communication, November 2, 2004).

Even if recycling rates do rise, a problem still exists. Without a market for recycled goods and materials, recycling cannot work. This current key issue has many waste management professionals searching for new and emerging markets. One investigation is experimenting with turning solid waste incineration ashes into a usable material in concrete construction. If successful, this new capability would reduce landfill sizes and protect the public from environmental and health impacts of poor waste management (Abishdid & Chatila, 2003).

At the state level Vermont is currently forming a media campaign on backyard trash burning, revising compliance standards and methods, and studying bioreactor landfills as well as vapor releases at gas stations (Cohen, Plunkett, Roy & Spiegel, personal communication, November 4, 2004). Additionally, both the local and state levels of waste management are working hard to increase recycling rates.

Electronics and computer disposal, e- waste, has been another growing issue. Due to the magnitude of the waste stream and to the toxicity of such materials, this area has become increasingly important in the solid waste management field (Spiegel, personal communication, November 4, 2004). Also, since recycling of electronic materials has not been fully developed, much of this waste is placed in landfills (Bruvoll, 1998).

With increased quantities and toxicities of materials being placed in landfills, new facility placement has become an ever larger controversial issue. Waste facilities are needed by all, but the mentality of "not in my backyard" still exists (National Recycling Coalition, 2004). Often landfills and combustion centers are placed in low income and minority communities. An even greater issue now will be finding the open space to place a landfill.

Research Methods of the Field

In general, individuals in the waste management field do little if any actual research. Much of the work done is completely reactive to the multitude of waste management problems. Professionals in this field may gain new information through networks of their peers and colleagues, local, state and federal organizations or through conferences and reading professional journals. Such journals include "BioCycle," "Resource Recycling" and "Waste Age" (Cohen, Plunkett, Roy & Spiegel, personal communication, November 4, 2004).

Conclusions

While researching this topic and in talking to people in the field I have found myself revisiting many old questions. I originally became interested in waste management from an environmental prospective, but as I have become more involved in

the field it is the social aspects surrounding waste management that have caught my attention. Thus far, recycling has been at the forefront of my interest in solid waste management. The questions that I and many in the field have been asking are why do people fail to participate in recycling programs? Why do our trash piles keep growing? And how can we get more people to participate?

Throughout the assignment I thought a good deal about those questions and many more and have honestly come up with nothing to solve them all. That, however, has only inspired me to continue to participate in the field and more specifically with recycling and education programs.

Additionally, I realized how much I could never stand to have a standard desk job. But, since the solid waste management field offers a variety of jobs all over the world, not all waste management jobs require a standard work life.

People Interviewed

Cohen, Andrea. Solid Waste Program Manager: Waste Management Division. Vermont Department of Environmental Conservation. Interviewed in person. November 2, 2004

Plunkett, Nancy. Waste Reduction Manager: Chittenden Solid Waste District. Interviewed over phone. November 1, 2004

Roy, Mark. Recycling and Waste Reduction: Section Chief. Vermont Department of Environmental Conservation. Interviewed in person. November 8, 2004

Spiegel, Erica. University of Vermont: Recycling, Waste Management & Surplus. Interviewed over phone. November 4, 2004

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