Illegal solid waste disposal in western Montana Missoula County: A case study

Shannon Lee McNew

The University of Montana

Let us know how access to this document benefits you.
Follow this and additional works at: https://scholarworks.umt.edu/etd

Recommended Citation
https://scholarworks.umt.edu/etd/8608

This Thesis is brought to you for free and open access by the Graduate School at ScholarWorks at University of Montana. It has been accepted for inclusion in Graduate Student Theses, Dissertations, & Professional Papers by an authorized administrator of ScholarWorks at University of Montana. For more information, please contact scholarworks@mso.umt.edu.
Permission is granted by the author to reproduce this material in its entirety, provided that this material is used for scholarly purposes and is properly cited in published works and reports.

** Please check “Yes” or “No” and provide signature **

Yes, I grant permission  
No, I do not grant permission  

Author’s Signature

Date: 5/3/95
ILLEGAL SOLID WASTE DISPOSAL IN WESTERN MONTANA
MISSOULA COUNTY, A CASE STUDY

by
Shannon Lee McNew, R.S.
B.A. Connecticut College, 1987
presented in partial fulfillment of the requirement
for the degree of
Master of Science
The University of Montana
1995

Approved by:

[Signature]
Chairperson

[Signature]
Dean, Graduate School

May 4, 1995
Date
TABLE OF CONTENTS

LIST OF TABLES ....................................................................................................... iii

Chapter

1. INTRODUCTION .................................................................................................. 1

2. TYPES OF ILLEGAL DISPOSAL ........................................................................... 7
   Theft of Services ............................................................................................... 10
   Burning Waste ............................................................................................... 13
   Improper Storage of Waste ............................................................................. 14
   Illegal Dumping ............................................................................................... 14
   Abandonment ................................................................................................. 16
   Unlicensed Landfills ....................................................................................... 18
   Licensed Landfill Abuse .................................................................................. 20

3. ENVIRONMENTAL AND HUMAN HEALTH EFFECTS OF ILLEGAL DISPOSAL .......... 23
   Animal Nuisances .......................................................................................... 23
   Leachate ......................................................................................................... 25
   Gas Generation .............................................................................................. 26
   Water Quality Degradation .......................................................................... 28
   Hazardous Substance Release ....................................................................... 30
   Air Toxics ....................................................................................................... 32
   Ash Disposal ................................................................................................. 35

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Chapter

4. THE REGULATORY FRAMEWORK .............................................................38
   State Regulations ..................................................................................38
   Local Regulations ................................................................................43

5. ENFORCING SOLID WASTE DISPOSAL VIOLATIONS IN
   MISSOULA COUNTY ................................................................................51
   Detection ................................................................................................55
   Consequences .......................................................................................57
   Swift Action .........................................................................................59
   Consistency .........................................................................................60

6. CONCLUSIONS AND RECOMMENDATIONS ...........................................67
   Regulatory Changes ............................................................................72
   Enforcement Changes ..........................................................................74
   Education Campaigns ..........................................................................78

Appendix

1. LIST OF LANDFILLS IN MISSOULA COUNTY .......................................82
2. COUNTY SOLID WASTE REGULATIONS, RESCINDED .......................83
3. MISSOULA MUNICIPAL CODE GARBAGE REGULATIONS .................86
4. MISSOULA CITY-COUNTY HEALTH CODE, REGULATION 3 ............91
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Types of Illegal Disposal</td>
<td>9</td>
</tr>
<tr>
<td>2. Illegal Disposal Regulations and Enforcement Efforts</td>
<td>69</td>
</tr>
<tr>
<td>3. Enforcement Program Weak Points</td>
<td>72</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

Getting rid of garbage used to be easy. No one had to containerize, transport, separate, characterize, treat, bury or regulate it. One simply had to discard it and forget about it. As people became more sedentary, settling into villages and towns, garbage habits did not change. Around 500 B.C., Troy citizens threw garbage out into the streets or simply left it rotting on the floor.¹ The sheer amount of waste began to cause problems. Athens organized the first municipal garbage dumps, and passed laws prohibiting throwing garbage in the streets. Yet, “the narrow crooked streets of Athens were heaped with refuse” and the municipal dumps “cluttered the city’s outskirts and threatened the Athenians’ health.”² In medieval times lackadaisical waste management continued. For example, in Paris, citizens simply cast garbage out of windows well into the fourteenth century. Some attempt was made to cart the garbage out of the city, but by 1400, “the mounds of garbage beyond the city gates were so high that they posed an obstruction to the defense of Paris.”³

Even the Renaissance did not usher in a new way to manage garbage. Cities grew, leading to overcrowded housing, concentration of the poor and

³Melosi, 8.
sick in slums, polluted waterways, and ever increasing piles of filth. Plagues ravaged countries and continents, while “most people continued to discard garbage and rubbish in helter-skelter confusion.” People in Edinburgh still threw their trash into the streets at night, hoping the scavengers would pick it up in the morning. Most large cities passed laws to address the growing garbage problem, but few were consistently obeyed or enforced.

The Industrial Revolution changed the urban environment forever. Black smoke choked the skies, soot settled in thick layers on buildings, streets, people and vegetation. Factories drew ever increasing numbers of people into the cities. And garbage, sewage and animal wastes piled up, putrefying in streets and alleys, contaminating rivers and drinking water supplies.

Since those days, society has realized the dangers associated with the waste we produce. Not managed properly, landfills attract pests, poison groundwater, and, if burned, emit toxic smoke and ash. Waste management is no longer free, or even cheap. State and federal regulations impose strict standards, and require expensive monitoring and protective measures to control potential problems.

Not everyone is willing to recognize the dangers of poor disposal practices, and without that recognition, paying for a service that use to be free seems like an unnecessary burden. In Montana, it is still acceptable for ranchers to dispose of their waste on their property without the benefit of

---

5 Melosi, 8.
6 Ibid.
7 Ibid., 16.
environmental review. Until 1991, even companies which produced huge amounts of potentially dangerous waste could do the same.

Perhaps in this light, finding trash piles in the woods, or an unlicensed dump in a ravine should not be surprising. Nevertheless, it is disturbing, and in some places in western Montana, all too common.

Kevin Lynch, author of *Wasting Away*, claims "trash is the most visible and annoying form of waste, but unlike sewage or air pollution or toxic chemicals, it is rarely dangerous." It might be that Mr. Lynch is defining trash as litter, and not including the rotting organics that attract disease-carrying pests or the hazardous components that can contaminate water, soil, and air. Or, it might be he truly believes that, although unsightly, trash is nothing more than a nuisance.

A truck load of household waste is dumped in a pond near the Clark Fork River. Diapers, pizza boxes, cigarette butts, and household cleaners lay on or drift near the bank. A badly damaged car battery pokes out of the shallow water. A startled frog leaps into the water from a floating, discarded tire. The sight is sickening, the waste truly "visible and annoying." But there is obviously life in the pond. Except aesthetically, perhaps the trash will not alter the ecosystem at all.

On the other hand, lead from the battery may produce neurological dysfunction in the aquatic life and can bioaccumulate in the food chain. Diapers and other organics may momentarily overload the pond with nutrients and contribute to a noxious algae bloom. A resulting oxygen

---

deficiency may lead to a fish kill. An unidentified endangered or threatened plant, insect or animal species may be wiped out.

Later, after the waste sinks to the bottom, a child playing in the water might cut his or her foot on a rusting food can or broken bottle. Pathogenic bacteria and viruses from the diapers may find their way into new mammalian hosts, and continue to spread. A fisherman may catch a fish high in lead and other heavy metals and serve it to his young children, who are most affected by lead contamination.

Not all illegally dumped garbage winds up in the water. Some of it is left in the woods, where it can attract wild animals or provide fuel for toxic fires. Some accumulates where it was generated providing a haven for insects and rodents known to spread disease. Still other garbage is set on fire in burn barrels, piles, and wood stoves choking out toxic smoke and fumes, leaving behind contaminated ashes.

The effects of garbage go beyond annoyances and potential damages to environmental and human health. Illegal disposal also has economic ramifications. Businesses forced to increase garbage service to accommodate people illegally using their dumpsters see a corresponding increase in collection costs. Owners of property where illegal dumps are discovered sometimes must bear the cost of clean up, regardless of who generated the waste. Taxpayer money is spent on detection, investigation, and prosecution of illegal dumping. Waste management companies periodically donate clean up and or disposal costs for abandoned garbage, money that could be spent on other community projects like household hazardous waste collections. In addition, by avoiding collection and/or disposal costs, illegal dumpers reduce
the landfill's customer base. As a result, the costs of federally-required landfill improvements must be spread over a smaller number of customers.

This leads to the issue of fairness. If one or two companies dispose of their waste illegally, perhaps it won't produce any detrimental environmental affects. But those one or two businesses which avoid solid waste disposal costs may undercut businesses who follow regulations by producing goods and services more cheaply, thereby affecting the entire business community. If all companies began ignoring the rules in order to compete, Missoulians would find themselves living in a garbage dump. In theft of services, additional garbage may not force a business to increase their container volume or collection frequency. However, even if it does not put a dent in a business's pocketbook, they may resent the fact that they have to pay for service, while others apparently do not. This is also true for residential targets of theft of services. These accounts are not billed on a volume basis so additional garbage will not increase their garbage bills. However, the idea that someone is taking advantage of them or is getting away with something, makes them angry.

The extent of illegal disposal has not been evaluated in western Montana. In Missoula County, the estimates are subjective. Jim Carlson, the director of the Environmental Division of the City-County Health Department often says, “You could find at least one illegal dump up every draw of the county.” Ken Anderson, Air Quality Specialist at the department,

---

9In some circumstances, especially if the waste is hazardous, one company's careless actions can have major environmental ramifications. For instance, AJ's laundry, which disposed of dry-cleaning fluid by pouring it on the ground and into a sump is thought to be the major cause of tetrachloroethylene contamination in Missoula's sole source drinking water aquifer. As a result of the pollution, Mountain Water Company had to shut down two public water supply wells, at no small cost to its customers.
indicates burn barrel use is prevalent in the rural areas. Shannon McNew, the Environmental Health Specialist responsible for illegal disposal investigations, estimates almost every dumpster in the county has been the target of theft-of-services. The potential environmental and human health impacts of illegal dumping have convinced the Missoula City-County Health Department that the problem cannot be ignored. In the past two years, the Department has improved its ability to regulate, detect, and prosecute illegal dumping. This paper outlines the progress Missoula has made and offers recommendations for continued improvement of the program. In addition, other western Montana counties, concerned with illegal disposal, may be able to use some of Missoula's ideas to increase their effectiveness of enforcing illegal dumping regulations.
CHAPTER 2
TYPES OF ILLEGAL SOLID WASTE DISPOSAL
IN MISSOULA COUNTY

In Montana, with few exceptions, all waste except clean fill must go to a licensed facility for disposal.\textsuperscript{10} Solid waste is defined in the Montana Solid Waste Management Act, the state legislation controlling solid waste disposal, as:

All putrescible and nonputrescible wastes, including but not limited to garbage; rubbish; refuse; ashes; sludge from sewage treatment plants, water supply treatment plants or air pollution control facilities; construction and demolition wastes; dead animals, including offal; discarded home and industrial appliances; and wood products or wood byproducts and inert materials. "Solid waste” does not mean municipal sewage, industrial wastewater effluents, mining wastes regulated under the mining and reclamation laws administered by the department of state lands, slash and forest debris regulated under laws administered by the department of state lands, or marketable byproducts.\textsuperscript{11}

Recyclables are omitted by definition. If a material is reused or recycled it is not considered a waste.

Solid waste is further defined by administrative rule. Until 1993, when the Solid Waste Bureau revised its regulations, solid waste fell under one of three waste groups. As defined in the rule:

Group I wastes include and are limited to those solid wastes classified or identified as hazardous wastes in 40 CFR 250.1.

\textsuperscript{10} Missoula County solid waste regulations define clean fill as "uncontaminated soil, dirt, rock, gravel, and portland cement concrete free of reinforcing steel.” The state definition is similar.

\textsuperscript{11} MCA 75-10-203(11), 1993.
Group II wastes include decomposable wastes or mixed solid wastes containing decomposable material but exclude regulated hazardous wastes.

Group III wastes include wood wastes and non-water soluble, essentially inert solids.\textsuperscript{12}

In 1993, the Bureau dropped "Group I wastes", in effect excluding those hazardous wastes governed by a complex matrix of federal and state statutes and rules. However, hazardous waste generated by households is exempt under the state and federal hazardous waste laws, and by default, is still managed as solid waste.

Montana divides waste facilities into several categories based on the type of waste each can accept. Class III landfills are limited to untreated wood wastes and non-water soluble, essentially inert solids. Inert wastes include brick, rock, uncontaminated soil, concrete and tires. Class II landfills can accept putrescible and non-putrescible solid wastes, excluding hazardous, radioactive and nuclear wastes. Commercial composters can take organic material, although their license usually restricts them to a particular subset of putrescible wastes. For instance, many composting operations can accept only yard waste and other untreated wood waste.

Browning Ferris Industries (BFI) operates the only Class II landfill in Missoula County. Expensive federally-mandated improvements forced a second Class II facility in Seeley Lake to close in 1993. The state has issued about ten Class III licenses in Missoula County, the majority of which belong to private companies for the purpose of disposing of their own waste. Two Class III landfills are open to the public: Norm's Quality Parts and Recycling

\textsuperscript{12}\textit{ARM 16.14.503(1)(b), 1992.}
on Highway 93 south of Buckhouse Bridge and Wheeler’s Class III landfill adjacent to West View Trailer Park west of Reserve Street in Missoula. The state Solid Waste Division has issued one composting license in Missoula County. EKO-Kompost adjacent to the Wastewater Treatment Facility next to the Clark Fork River accepts clean yard waste from the public.\textsuperscript{13}

Illegal disposal occurs when waste ends up somewhere other than a licensed facility. The term also includes disposing of waste through illegal means, such as using a container belonging to another residence or business. In total, there are about seven types of illegal disposal commonly occurring in Missoula County.

\begin{table}
\centering
\begin{tabular}{|c|}
\hline
Theft of Services \\
Burning Waste \\
Improper Storage \\
Illegal Dumping \\
Abandonment \\
Unlicensed Landfills \\
Abuse of Licensed Landfills \\
\hline
\end{tabular}
\caption{Types of Illegal Disposal}
\end{table}

\textsuperscript{13}See appendix A for list of landfills in Missoula County.
Theft of Services

One type of illegal dumping is theft of services. Most commonly, this term refers to dumping waste in a garbage container maintained for the use of another house or business. BFI assesses commercial and residential accounts differently. Commercial accounts, those that use dumpsters or other mechanically dumped containers, are billed on a volume basis; the more garbage a business generates, the more they must pay. BFI does not limit the number of businesses or residences that can use one dumpster, as long as all the waste generated fits into the container. Similarly, a business can allow other people to use the dumpster for garbage disposal. However, without permission, the business owner has to pay for someone else’s garbage involuntarily, and it is considered theft of services. Residences, on the other hand, are assessed on a per-household basis. As a result, with or without permission, using a container belonging to another residence is theft-of-services.

Theft of services can be a problem wherever garbage service is not included in the tax base. When residents have to contract for garbage collection, many decide not to. It is often easier, and certainly cheaper, to dispose of trash in a neighbor’s can or a commercial dumpster than to haul the waste to the landfill.

In most of Missoula County, where individuals must sign up and pay for collection service, theft of services is a common problem. Marshall Ski Area in East Missoula has a dumpster at the bottom of the road. In an effort to deter illegal dumpers, the resort locked the dumpster, but bags continued

---

14 The Seeley Lake area has created a waste district which collects money for collection and disposal through the tax base.
to show up beside the container. Finally, they called the Health Department. After a month of looking through garbage, the investigator determined the garbage belonged to a renter in Milltown. Several weeks later, more garbage appeared, this time in the dumpster. Apparently someone had bent the aluminum lid and shoved the waste into the container. Again the Health Department investigated, and found the garbage belonged to a renter in Bonner. Both renters now have garbage service.

Theft of services does not always involve a container. Missoula County has many dirt roads, impassable to garbage trucks. BFI routinely designates central collection points for homeowners who live up these canyons and draws. Unfortunately, these collection points can attract illegal dumpers. As with many other collection points, people without BFI accounts routinely left garbage at the bottom of Larch Camp Road in the Pattee Canyon drainage. Broken bags and spilled garbage often littered the road and adjacent Forest Service land. Tired of the mess and subsequent animal problems, the Forest Service, BFI and Health Department worked together to find solutions to the ongoing problem. The Health Department sent numerous Notices of Violation for theft of services and failure to use containers, but garbage from other homes without accounts continued to appear. Finally, the Forest Service refused to allow any more garbage collection on their property. BFI moved the collection site up the road, off Forest Service property and out of sight from the main road. All the homeowners agreed to use containers, and, to date, the Health Department has not received any more complaints about the situation.
Another type of theft of services is leaving hard-to-dispose of items at businesses which generate similar waste. Oil, gas and antifreeze routinely show up after hours at garages and auto shops. Increasingly, people leave refrigerators and other chlorofluorocarbon (CFC)-containing appliances at repair shops and recycling centers. Because these chemicals deplete atmospheric ozone which protects the earth from harmful ultraviolet radiation, the federal government recently passed legislation requiring certified CFC removal from these appliances before disposal or recycling. This effort is curbing CFC release into the atmosphere and slowing corresponding ozone destruction. However, it has also made disposal of these items more expensive. Unfortunately, it is hard to identify the generator of abandoned car products or appliances. As a result, unless someone sees and reports the incident, business owners must assume responsibility for the disposal or recycling of the material, which in some cases can be quite costly.

Ernie's Reconditioned Appliance Store on West Broadway recently went out of business. For years the store had to cope with abandoned appliances left at their doorstep. Even after the store closed, refrigerators continued to show up. One night, the City Police Department responded to an off-hours complaint, and found seven refrigerators behind the empty building. They confiscated four, which still had doors on them, as an immediate safety threat to children in the area. BFI donated the cost of processing the confiscated appliances. The other three, however, were left to

---

15CFC’s used to be included in a wide variety of products and industrial processes. Industry has replaced CFC's with less damaging chemicals in many of applications. However, it is still commonly used in refrigerant systems.
the property's owner, who had moved out of state. The property was up for sale, and the bank had initiated foreclosure. The uncertain ownership status made it difficult to find someone to take responsibility for putting up a "No Dumping" sign and disposing of the abandoned appliances. In the end, the bank addressed the problem, not wanting the property to carry any additional liabilities for prospective buyers.

**Waste Burning**

A second type of illegal disposal is burning household or business waste. Traditionally, people have used burning barrels and wood stoves to discard all or a portion of their waste. Missoula's infamous poor air quality restricts the problem in the city. Most city residents are acutely aware of air pollution issues, and would immediately report a burning barrel of garbage. However, outside the city limits, on private roads or in the secluded draws, burn barrels are relatively common. One does not have to venture far to find the telltale sign: 55 gallon drums with air holes cut in the bottom, full of ashes and partially burnt garbage. Henry Schmidt has been burning and burying garbage on his property since he moved to Schmidt Lane, located in the 100 year floodplain of the Clark Fork River, less than 2 miles from the city limits. His four or five barrels are lined up across the road from his house, and are used until they collapse from the weight of the ashes and years of use. The Health Department has repeatedly warned him to stop burning, to no avail.
Improper Waste Storage

Improper storage of solid waste violates local and state solid waste regulations. People without curbside collection will sometimes store putrescible waste over the seven day limit, causing nuisance odor and pest problems. Often the waste piles up in old truck beds and trailers. When the waste is stored indefinitely, it becomes a type of illegal disposal. One extreme case involved a rental house on South Eighth Street West in Missoula. The occupants of the building apparently never hauled their garbage to the landfill. It piled up on the backporch, until it reached the ceiling. Partially torn garbage bags littered the yard; unbagged garbage littered the house. The Health Department was unsuccessful at getting the residents to clean up. Finally, the house burned down, the occupants fled, and the landlords were left with a tremendous mess.

Companies have also been found guilty of illegal storage. In 1992, Western Materials was in the process of applying for a Class III landfill license. A landfill cannot begin operating until it is licensed. The company was storing demolition debris from on-site and off-site projects, with the intention of eventually burying the material. As is often the case, the demolition debris contained a combination of group II and group III wastes. Western Materials was ordered to remove the waste, and was fined $500. Over a year later, they received a state Class III landfill license.

Illegal Dumping

A fourth type of illegal disposal, abandoning trash in woods, alleys, vacant lots, or waterways is what people traditionally consider illegal
dumping. Like theft of services, this kind of activity is often more of a problem in areas where the tax base does not fund garbage service. However, it may also be prevalent in counties or waste districts which do not offer curbside collection and make homeowners haul their trash to central collection sites.

This type of illegal disposal is a problem in Missoula County. Sometimes it seems as though every ravine sports an illegal dump site. Unfortunately, these sites are often located on steep slopes or the banks of ponds and streams. That which makes dumping easier, makes clean up harder.

The Health Department investigated one such site up the Wallace Creek drainage, near Clinton, Montana. People had thrown trash over the side of an old mining operation turnout. The banks were steep, over 60% slope, and ended at the edge of a stream and marshy area. About 200 yards south of the turnout, the stream entered a small reservoir used for recreation and irrigation. The garbage included thirty or more game carcasses, appliances, oil cans, kitchen waste, junk mail, batteries, household paints, paint thinner, antifreeze, bug sprays, mattresses and other furniture, yard waste, bicycle parts and disposable diapers. While one family could feasibly create this much trash in a year, evidence indicated several families dumped waste at this site. During a hearing on the case, one defendant said her family had used the site for years. However, the amount of trash at the site would indicate that they probably used other sites as well.

The generators of the trash are not always the culprit. In the Deer Creek drainage, just east of Pattee Canyon in Missoula, the Health
Department investigated an illegal dump site. Shannon McNew recovered names and an address which indicated all the garbage came from one source. The Sheriff's office contacted the suspect, who turned out to be an elderly woman, aghast at the accusation. She had hired two men, who advertised in the Missoulian and the Messenger, to haul her yard waste and garbage to BFI in Missoula. A canceled check and vehicle description led to the perpetrators who were tried and convicted in court. Later, this same turnout was used by a boy whose mother had given him money to take the household trash to the landfill.

**Abandonment**

A closely related type of illegal dumping is abandonment. When a company leasing space goes out of business, the property owner is sometimes left with a pile of garbage to deal with. In early 1993, Santino's Bakery closed its doors. Months later, the Health Department received a complaint about garbage behind the old bakery. Upon investigation, sanitarian Mary Lou Gilman found old appliances and machinery, as well as, decomposing breads and flour. Mr. Santino, who filed for bankruptcy, no longer lived or worked in Montana. The Health Department contacted the owner of property, who unhappily cleaned it up.

People abandon all sorts of things: dilapidated trailers, burned out houses, old cars and trucks. A trailer or house which remains on site, even if it is condemned, may not fall under solid waste regulations. However, if vandalism or time turn it into a garbage heap which includes rotting organics, a defacto illegal dump site has been created. As a result of a
dispute, a landlord moved a renter's mobile home from a homesite in Frenchtown to another parcel he owned in the area. At the time, the mobile home owner was in jail. Abandoned and unsecured, the trailer soon became a target of vandals. Kitchen waste, clothing, medicine, appliances, furniture and children's toys surrounded the trailer. The Health Department contacted the trailer's owner, out of jail and living in Missoula. She refused to clean it up, saying she planned to sue the property owner. The landlord also refused to remove the waste. Months later, the trailer, sold at a sheriff's auction, was removed from site. The surrounding mess remained, until the Health Department arranged for its clean up as part of a community service sentence.

People often abandon old cars and trucks on roadsides, in fields, or even in driveways. Kevin Lynch suggested the problem is exacerbated in rural areas. In Wasting Away, he writes,

> Exhausted vehicles, for example, are too few to attract a junk dealer, and must be transported too far to reach an operating scrapyard... Paradoxically, then, the scarcity of rural vehicles causes them to be highly visible after death, and the marginal damage of a piece of solid wastes is substantially greater in the rural landscape than in the urban one.\(^{17}\)

The Montana legislature recognized the "junk vehicle problem" over twenty years ago, and enacted tough legislation to create and fund a program to collect junk vehicles. Car and truck owners pay a small fee when they transfer titles or renew motor vehicle registrations. When a car becomes junk, the state will transport and dispose of it "free of charge." In Missoula

\(^{16}\)Technically, both parties were responsible for the clean up.  
\(^{17}\)Lynch, 60.
County alone, the Junk Vehicle program has collected and crushed 6,750 tons or 13.5 million pounds of cars and trucks since it began in 1973. Last year, the county hauled about 500 cars and trucks. Already, in the first quarter of fiscal year 1995, the county has hauled 300 cars. This program is one of the only illegal disposal projects with funds dedicated to clean up.

Unlicensed Landfills

Operating illegal landfills constitutes a sixth type of illegal disposal. These landfills operate without a license and, consequently, without benefit of an environmental review, annual inspections or approved operating procedures. While the number of unlicensed landfills has dramatically decreased in the state, the Health Department continues to uncover illegal sites. In late 1992, sanitarian Doug Kikkert noticed a truck full of sheet rock and other construction debris heading south from Missoula. Since Missoula’s landfill is north of the city and the Bitterroot landfill has long since closed, he followed the truck. It pulled into a farm off Highway 12 in Lolo, where the driver prepared to dump sheet rock, nails, wood, paper, metal and other waste into a large hole. The farmer admitted he used the larger pieces of sheet rock for weed control and soil enhancement in his mountain fields. The rest of the material he buried. The Health Department ordered him to dig up the waste and take it to a licensed Class II facility, thereby “closing” the landfill.

In late 1992, the Round Up Bar on Route 200 burned to the ground. The structure was completely destroyed, leaving behind noncombustible appliances, metal, glass and concrete. The owners of the bar wanted to push
the remaining waste into the basement and bury it, which would have created, in essence, an unlicensed landfill. The Health Department quickly put a stop to those plans, and insisted the waste go to a licensed Class II facility.

A common illegal landfilling violation involves companies burying their waste on their own land. Actually, until 1991 when the legislature deleted the exemption from the Montana Solid Waste Management Act, this activity was legal, and widely used. Even then, the exemption only applied in those cases where the activity would not endanger public and environmental health. Unfortunately, that part of the regulation was completely overlooked in Missoula County. For years, Stone Container buried asbestos, mill waste, and worker's waste in old settling ponds near their Frenchtown facility. High groundwater and poorly managed burial made the site a potential environmental disaster. In spite of these problems, the company was allowed to continue operating their own landfills until the law changed in 1991.

Even before the law changed in 1991, companies could not bring in waste from off-site for disposal without a license. In 1987, the Health Department investigated a complaint at Western Materials' South Avenue gravel pit. Jim Carlson found a gas station sign sticking out of the quarry, as well as other demolition debris and employee garbage at the site. Dave Orbe, manager of the company, admitted Western Materials had been throwing demolition waste into the quarry for years. At the time, the exemption which allowed companies on-site disposal was not clear, so the Health Department requested a clarification from the state Solid Waste Bureau. Jim Leiter responded:
As you are aware, a person, which can be a business, may dispose of their own waste upon their own ground as long as they do not create a nuisance. In this regard, the exclusion does not extend to employees of a firm dumping their wastes into the company's site, but only to business related waste materials... Generally, we regard a company's own wastes as those which are created at the company site as a result of the normal conduct of business, not to imported waste materials belonging to someone else.\textsuperscript{18}

Since 1991, companies must dispose of all solid waste in a licensed landfill. Stone Container tried to, but because of environmental considerations could not, license its settling pond landfills. It did get a Class III license for a portion of its waste stream, limiting refuse to basically inert materials and untreated wood waste. Stone now manages its Group II wastes by recycling and disposal at BFI in Missoula.

\textbf{Abuse of Licensed Landfills}

The last type of illegal disposal is abuse of existing, licensed landfills. Some landfills, especially Class III's, will accept material their licenses exclude. Ron Wheeler, who owns a Class III facility adjacent to West View Trailer Park, has been cited repeatedly for having mixed construction debris and other Group II wastes at his site. When health officials discussed the problem with Mr. Wheeler, he invariably answered he was planning to pull all the Group II waste out and take it to the BFI landfill. However, placement of most of the waste on a steep, unstable slope and the frequency of the noted violation would indicate most of this illegal material gets buried at the site.

\textsuperscript{18}Jim Leiter now manages BFI's landfill in Missoula.
Sites which do not maintain adequate supervision attract illegal dumpers. The City of Missoula owns a gravel pit and Class III landfill on the north side of town. The state denied the application for a landfill license for several years because the unfenced site was often unattended. Inspections by the state and local health department repeatedly noted the presence of unauthorized material such as household waste, appliances and yard waste.\textsuperscript{19} In 1994, the City fenced the site and the state granted the license. Employees lock the gate whenever the site is unattended. No further illegal dumping violations have been noted for the gravel pit. However, in September 1994, a BFI employee on his way home from work saw a man with a yellow pickup truck dumping yard waste at the gate. When the defendant was contacted by the Health Department he whined, “This wasn’t a problem before they fenced the site” indicating he probably used the gravel pit for yard waste disposal in the past.

Illegal disposal covers a wide array of activities: theft of services, burning, storage, dumping, abandonment, burial of wastes, and misuse of licensed landfills. Unfortunately, all of these activities occur in Missoula County on a regular basis. Every week, the Health Department receives complaints about some type of illegal disposal and through its enforcement program, is beginning to deal with the problems. However, before exploring enforcement options, it is important to understand the potential environmental and human health impacts of illegal disposal. After all, if illegal disposal had only visual impacts, the Health Department, charged

\textsuperscript{19}Ed Clay, director of the Public Works Department which runs the gravel pit, admitted most of the illegally dumped material was not taken to BFI, but rather buried in the pit.
with protecting human and environmental health, would not allocate the resources needed for these programs.
CHAPTER 3
ENVIRONMENTAL AND HUMAN HEALTH EFFECTS OF ILLEGAL DISPOSAL

Throughout the last century, many potential environmental and human health effects of solid waste disposal have been explored and have led to significant changes in the way solid waste is managed. Garbage that is disposed of illegally, by dumping, burning or other means, is in essence, a throwback to once-acceptable waste management methods. It stands to reason that garbage still handled with out-dated methods would continue to pose risks.

Animal Nuisances

The open dump has long been illegal in Missoula County. From flies to grizzly bears, exposed garbage attracts a variety of pests and other animals. At the turn of the century, pests were recognized as the primary problem associated with garbage. By providing feeding grounds and nesting areas for insects, rodents and other mammals, garbage fueled the spread of diseases such as typhoid fever and cholera. Even though many of these diseases have now been brought under control, these pests are still disease vectors. A single housefly (Musca domestica) can carry as many as 6,500,000 germs, travel 20 miles and lay 2700 eggs in 30 days.20 Flies are vectors for typhoid fever, paratyphoid and other salmonella infections, dysentery, cholera, dysentery, cholera,

anthrax, diarrhea or gastroenteritis, conjunctivitis, trachoma, possibly pulmonary tuberculosis, and poliomyelitis.\textsuperscript{21} Rats and mice carry germs, fleas, lice, mites and intestinal parasites. A rat drops 25 to 150 pellets of feces, 10 to 20 ml of urine and several hundred hairs per day.\textsuperscript{22} Even bulky wastes with no organic components can provide a haven for field and deer mice which have been linked to the spread of Hantavirus. Bulky wastes, such as tires and appliances, can collect water, allowing mosquitoes to breed. While Montana hosts few mosquito-transmitted diseases, in 1981 the Montana Department of Health and Environmental Sciences noted equine encephalitis, carried by several native mosquito species, is detected annually.\textsuperscript{23} Equine encephalitis can affect both horses and humans.

Illegally dumped garbage can also attract larger wild animals. Some animals such as raccoons may carry rabies. Others, like grizzly and black bears, can be dangerous if they come into contact with humans. After decades of allowing, even encouraging, bears to feed on garbage, the National Park Service administrators recognized the dangerous situation being created. However, bear sightings and feedings were extremely popular with tourists. As a result, the Park Service was slow to wean the bears off waste. Bill Schnieder, author of \textit{Where the Grizzly Walks}, claimed, “Tourists became ridiculous in their efforts to see or feed bears. They forgot that these were wild animals, and not surprisingly, bear-caused injuries became more

\textsuperscript{21}Salvato, 901-902.
\textsuperscript{22}Salvato, 928.
And then, on August 13, 1967, the unthinkable happened. Grizzlies, accustomed to feeding on garbage, attacked and killed two young women in two different campgrounds in Glacier National Park. Several years later, another grizzly which routinely fed on garbage, killed a male camper in Yellowstone. After these incidents, the Park Service instituted and followed strict bear guidelines, closing garbage dumps and educating campers.

Despite these horrible incidents, most animals eat garbage to their own detriment. Once the garbage dumps closed in the National Parks, the Grizzly populations plummeted. Bears, accustomed to feeding on garbage, ransacked campgrounds, tourist camps and ranches looking for food. Schneider reports, "Here, bears became 'raiders' and were usually killed. Officials trapped a few grizzlies and transplanted them into nearby backcountry, but the bears often returned to cause more trouble. These repeated [sic] offenders were either sent to zoos or killed." Other less threatening animals, such as raccoons, become viewed as pests and may also be trapped and killed. If they escape intentional removal, they may swallow and suffocate on plastic wrappings or ingest toxic materials along with the food. In addition, they may grow accustomed to an unhealthy diet, shortening their life spans and inhibiting their reproductive capabilities.

Leachate

Covering discarded solid waste will deter most animals and insects. However, simply burying waste does not remove all the risks. Regardless of

---

25 Ibid., 41.  
26 Ibid., 41-42.  

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
whether the waste is buried, groundwater and infiltrating surface water will combine with liquid and decomposing waste to form leachate. The leachate's composition depends on the solid waste and the physical, chemical and biological activities within the fill or trash pile, but, in general, leachate is a relatively high-strength, soluble organic waste with high concentrations of inorganic constituents. Leachate can leave the fill at the surface or seep into the ground. Heavy metals and other contaminants in the liquid can pollute groundwater and kill nearby vegetation. If the acidic solution flows into surface water, it can kill fish, algae and other aquatic life. Birds and mammals which feed on the poisoned fish may die or suffer reproductive difficulties. In both ground and surface water, leachate can cause a depletion of dissolved oxygen and introduce bacterial and viral contamination, minerals and nutrients and hazardous substances.

Gas Generation

Decomposing garbage generates landfill gas - a mixture of gases made up almost entirely of methane (CH\textsubscript{4}) and carbon dioxide (CO\textsubscript{2}). Trace quantities of other gases account for the odor of landfill gas and pose potential health risks. For instance, five of 48 volatile organic compounds (VOC's) commonly found in landfill gas have been demonstrated to be carcinogenic. However, the greatest threat from landfill gas comes from the mixture of CO\textsubscript{2} and methane. Both are odorless, colorless gases, making

\begin{footnotesize}
\begin{itemize}
\item[27] Solid Waste Association of North America (SWANA), Course Manual for Manager of Landfill Operations Training Course (Silver Spring, Maryland: Governmental Refuse Collection and Disposal Association, Inc., 1989) II-12.
\item[28] Ibid., VI-5.
\item[29] Ibid., VI-8.
\end{itemize}
\end{footnotesize}
their detection impossible without monitoring equipment. Carbon dioxide is heavier than air and can displace oxygen in soil and confined spaces. In water, CO$_2$ will decrease water hardness and can combine with groundwater to form a weak carbonic acid. Methane, a byproduct of anaerobic decomposition, is lighter than air, will also displace oxygen, and is extremely explosive.$^{30}$ Since these gases follow the route of least resistance, restrictive layers such as frost, saturated soil, clay or synthetic caps reduce vertical movement, and increase horizontal distances traveled. Gases migrate until their path is intercepted by a less restrictive layer or an opening such as pipes, conduits, drain tile, basements, crawl spaces, cracks in floors, and collection or extraction systems. In enclosed spaces, they can accumulate to dangerous levels, and have caused injuries and deaths on and near landfills. Restrictive layers also increase the likelihood the gas will come into contact with groundwater.

In addition, both methane and carbon dioxide are considered major greenhouse gases. While the ramifications of global warming are hotly debated, the EPA warns greenhouse gases may cause a rise in global temperatures, initiation of “weather extremes” including harsher and more frequent storm events, and the melting of polar ice caps with a resulting rise in sea level.$^{31}$

$^{30}$Methane’s LEL is 5%, UEL is 15%. While it won’t explode at concentrations over 15%, it will burn.

Water Quality Degradation

Discarding waste in or near water creates additional problems. Even organic wastes, which usually are not considered toxic, can devastate aquatic environments. In his book, Environment and Man, Richard Wagner states, “The most common pollutants are organic. These materials are not poisonous to stream life, nor do they affect pH, necessarily. Their effect is more subtle.”³² The bacteria that break down organic wastes use oxygen in the process. The more waste, the more bacteria; the more bacteria, the greater the demand for oxygen. This demand for oxygen is called the biological oxygen demand, or BOD. As bacteria use up the available oxygen in the water, other life forms suffer. Vertebrates require the most oxygen for survival and are the first to be affected.

In warm, still water, a high organic load can lead to anaerobic conditions. As aerobic bacteria use up all the available oxygen, they are replaced with anaerobic decomposers. These bacteria produce different end products often with foul-smelling results.³³ Wagner reports, “While methane, CH₄, is odorless, amines have a fishy smell, hydrogen sulfide, H₂S, smells like rotten eggs and some phosphate compounds have a wormy smell. When added to the smell of decaying fish or algae, the shift to anaerobic conditions is not a pleasant one.” ³⁴

Another common problem with organic wastes in water is the fertilizing affect of decomposition. Bacteria and other microorganisms reduce the organic wastes to simple organic and inorganic compounds, which in turn

---

³³See table, Wagner, 111.
³⁴Wagner, 111.
can be absorbed more readily by higher organisms. This phenomenon, an increase in productivity due to nutrient loading, is known as eutrophication. The most conspicuous and common symptom is an algal bloom. Freedman, author of *Environmental Ecology*, states:

> In the extreme case of very productive hypertrophic water, there can be noxious algal blooms, an off-flavor of drinking waters, the production of toxic substance by algae and other microorganisms, periods of hypolimnentnic oxygen depletion causing kills of fish and other biota, and the evolution of noxious gases such as hydrogen sulfide.\(^{35}\)

Garbage high in phosphorus content usually generates the most biological activity since phosphorus, especially in the form of ionic orthophosphate, is the most common limiting factor in fresh water.\(^{36}\) Inorganic nitrogen is the next most limiting chemical, and occasionally a micronutrient, such as molybdenum (Mo) or silicon (Si) can limit primary productivity.\(^{37}\)

While this condition drastically changes a body of water as long as there is nutrient loading, studies have shown that the water will recover rapidly if the source of phosphorus or other limiting factor is removed.\(^{38}\) In most cases, illegal dumping will cause a pulse of activity. However, dump sites used continuously over the years can have a long-term effect on the quality of nearby water.

Decomposing garbage can also affect the pH levels of neighboring surface waters. Sheehan et al., editors of *Effects of Pollutants at the Ecosystem Level*, contend that changes in pH can “drastically affect the


\(^{36}\)Bill Freedman, 160.

\(^{37}\)Bill Freedman, 163.

\(^{38}\)Bill Freedman, 179.
structure and function of the ecosystem, both directly and indirectly.\textsuperscript{39} The reproductive success of some fish and amphibians diminishes in acidic waters.\textsuperscript{40} Acidic pHs increase the concentration of heavy metals in the water through increased leaching from the sediments.\textsuperscript{41} Sheehan also reports that pH can affect the chemical form, solubility and toxicity of pollutants, especially toxic metals, in water. "A decrease in pH of 1 unit from any reference (pH 1-10) resulted in an increase of lead by a factor of 2.1 in the blood of exposed rainbow trout (Hodson et al, 1978)."\textsuperscript{42}

**Hazardous Substances**

On land or in water, hazardous components of discarded waste can increase the damaging effects of illegal disposal. Household waste often contains toxic materials. Many household cleaners are caustic and can burn vegetation, react with other chemicals, cause fires, poison animals and/or pollute surface and groundwater. Waste antifreeze is poisonous to animals, but attracts them with its sweet taste. Used oil can fuel fires, and in quantity can produce oil slicks and contaminate water supplies.\textsuperscript{43} In 1977, the FAO reported that oil affected the chemoreceptors in some fish species, interfering with food location and feeding response.\textsuperscript{44} Mitchell et al. (1972) found certain bacteria stopped feeding when exposed to low concentrations of oil, although their ability to feed was apparently not affected.\textsuperscript{45}

\textsuperscript{39}Patrick Sheehan et al., Effect of Pollutants at the Ecosystem Level: Scope 22. (New York: John Wiley and Sons, 1984) 14.
\textsuperscript{40}Ibid., 39.
\textsuperscript{41}Ibid., 14.
\textsuperscript{42}Hodson et al., 1978 as cited by Sheehan et al., 42.
\textsuperscript{43}Lead is a neurotoxin and Cd and Cr are suspected carcinogens.
\textsuperscript{44}Sheehan et al., 30.
\textsuperscript{45}Ibid.
Household wastes can contribute dangerous levels of heavy metals to the environment. Paint manufactured before 1978 may contain lead pigment. Used oil may also contain lead, as well as cadmium and chromium. The greatest source of lead in the residential waste stream comes from batteries. Lead acid batteries account for nearly 65% of the lead in the residential waste stream, while rechargeable nickel-cadmium batteries make up almost half of the discarded cadmium. Lead affects almost every system in the body, with the exception of the respiratory system. Even relatively small doses can lead to learning disorders and reduced IQ in children. Higher doses can cause kidney disease, peripheral nervous system dysfunction, reproductive disorders and even death. Lead has similar effects in birds and mammals. Cadmium and chromium are both suspected carcinogens.

Pesticides are another common component of the household waste stream. The purpose of pesticides, to kill unwanted plants or animals, explains their potential for damaging the environment if they are carelessly discarded. Some substances, such as diatomaceous earth, used for the control of ants, may do little damage in a landfill or dumpsite. However, in uncontrolled situations, most pesticides will affect far more than their intended target. For instance, malathion, a common household pesticide, is used for the control of lawn and garden insects. But the label warns against using it near water, because it will kill fish and aquatic life stages of amphibians. Diazinon, another widely available pesticide used to control lawn and garden insects, is toxic to fish and wildlife and will kill birds feeding on the treated area. Not all pesticides will kill non-target species. 

Richard Denison and John Ruston, 52.
outright, but their effect can be just as devastating. In the 1960's the banned chlorinated pesticide DDT accumulated in the food chain and led to a dangerous depletion in the bird of prey population. While it did not kill the birds directly, it affected their reproductive capability. The birds began laying thin-shelled eggs, which would break during incubation. DDE, a biodegradation product of DDT, decreased reproductive success in ringed turtle-doves and herring gulls by affecting courtship and nesting behavior.47

Halogenated solvents, like chlorinated pesticides, are persistent in the environment. While they work well for their intended use, they break down very slowly once they are discarded. Unfortunately, their use is widespread; they are found in everything from rug cleaners to spot removers to engine degreasers. Even a small amount can be toxic to humans and other animals. Perchlorethylene is an irritant and carcinogen that can affect the liver, kidneys, eyes, upper respiratory system and the central nervous system.48 Sindermann et al. (1980) found a relationship between chlorinated hydrocarbon pollution and skeletal deformities in fish, which hampers their swimming, feeding and escape ability.49

Air Toxics

Burning garbage creates another set of problems. As with all types of illegal disposal, the consequences of burning depend on the type and quantity of waste burned. Theoretically, burning only paper, cardboard and untreated woodwaste will generate less pollution than a mixture of plastics, metals and

47Sheehan, 30.
48NIOSH, 208.
49Sindermann et al. as cited by Sheehan et al., 33.
household hazardous waste. No studies assess burning behavior in Missoula County. However, a recent survey in Illinois tried to identify the fraction of people that burn only paper and cardboard. The results were inconclusive. A phone survey indicated that 59% of the residents burn only paper and wood products, while a field study suggested just 35% burned paper, cardboard and wood scrap exclusively.50

A 1994 EPA-sponsored study in Illinois indicated burn barrels, per pound of garbage burned, emitted more particulate than permitted by the regulatory standard for incinerators. The EPA defines particulate matter as “solid matter or liquid droplets from smoke, dust, fly ash, and condensing vapors that can be suspended in the air for long periods of time.”51 Particulates reduce visibility, damage paint, and coat vegetation, perhaps affecting photosynthesis and respiration. In animals, they can cause breathing and other respiratory problems, ultimately leading to increased respiratory disease, lung damage, and possibly premature death. Children, the elderly, and people suffering from heart or lung disease are most affected.

The study also found burn barrels emit more volatile organic compounds (VOC’s), per pound of garbage burned than permitted by the regulatory standard for incinerators. VOC’s are coming under increasing scrutiny for their potential of damaging human and environmental health. The EPA has listed five VOC’s as probable carcinogens.52

Carbon monoxide (CO) measurements followed the same pattern. Carbon monoxide, a colorless, odorless gas, combines readily with

51Ibid., 4.
52SWANA, II-12.
hemoglobin, reducing its oxygen-carrying capacity. Joseph Salvato, author of *Environmental Engineering and Sanitation*, reports, "Hemoglobin has a greater affinity for carbon monoxide than for oxygen - about 210 to 1."\(^{53}\) Carbon monoxide can cause nausea, vomiting, headache, drowsiness, dizziness, weakness, loss of consciousness, and even death in otherwise healthy individuals. Even at low concentrations, the gas can affect people with cardiovascular problems by lowering their exercise tolerance.\(^{54}\)

The study reported dioxin and furan emissions at more than twice the allowable levels and estimated the emissions may actually be about 17 times higher than in incinerators with spray-dryer absorption scrubbers and fabric filters. Louis Blumberg and Robert Gottlieb, authors of *War on Waste*, claim "dioxin and its related compounds have been conclusively proven to cause cancer in animals and are suspected of causing cancer and birth defects in humans. Some toxicologists contend that these compounds also damage the genetic, neurological, and immunological systems."\(^{55}\) They quote Donald Barnes, director of the EPA Science Advisory Board, as saying about dioxin, "Molecule for molecule, this is the most potent carcinogen we've ever seen in the laboratory."\(^{56}\)

The researchers found burn barrels produced sulfur dioxide emissions 1.5 times levels permitted for incinerators. However, they caution that sulfur dioxide emissions from burn barrels will vary widely. Using incinerator research data, they report that the mass fraction of sulfur in solid waste

---

\(^{53}\)Salvato, 81. \\
^{54}\)Salvato, 74. \\
^{56}\)Ibid.
ranges between 0.2 and 0.4 percent. The oxidation of sulfur to sulfur dioxide varies from 14 to 90 percent. As a result, they suspect some burn barrels actually emit even higher amounts of sulfur dioxide. Sulfur dioxide is a colorless gas with a characteristic pungent odor at high concentrations. The EPA lists several environmental and health effects of sulfur dioxide in its booklet, “What You Can Do to Reduce Air Pollution.” It is one of the major components of smog, and can impair visibility. At high enough concentrations it can produce respiratory tract problems and breathing difficulties, especially among asthmatics. The acidic nature of sulfur dioxide can harm vegetation and metals, and its eventual oxidation in the atmosphere leads to acid rain.

Ash Disposal

Environmental impacts of burning also depend on how people ultimately dispose of the remaining ashes. Based on a phone survey, the Illinois study reported 36 percent of respondents dump or scatter ash in ditches, fields, forest, or driveways; 35 percent set it out for waste haulers or transport it to a landfill; 12 percent place it in the garden or till it into farmland; 9 percent bury or dump it in low areas for fill; and 8 percent pile and leave it unmanaged to be dissipated by the wind. In Missoula County, the bulk of the ashes are probably not disposed of in a sanitary landfill. Although hauling companies will collect cold ashes in 32 gallon (or smaller) containers, it is unlikely that those who burn their garbage subscribe to

---

57EPA, 5.
58On the other hand, burn barrels emitted less nitrogen oxide and hydrogen chloride, per pound of garbage burned, than permitted for incinerators. These lower emissions were primarily the result of lower temperatures and lower oxygen availability in burn barrels.
collection service. Since the haulers do not charge on a volume basis, there is little incentive to reduce the volume of garbage before it is collected. As a result, the majority of ashes in Missoula County are probably managed by one or more of the other methods listed. Unfortunately, disposal in a sanitary landfill is the only method which significantly reduces the potential environmental and human health impacts.

The EPA-Illinois study also assessed semi-volatiles and metals from the ash of three study burns. Using the Base Neutral Acid (BNA) procedure, they found no semi-volatiles. The Toxicity Characteristic Leachability Procedure (TCLP) detected no heavy metals except barium and lead, which were below the concentrations currently considered hazardous by RCRA definition. However, the researchers warn that they did not observe household batteries or other wastes in the burn barrels that may contribute large doses of heavy metals to the ash. In addition, the ash grab samples contained no obvious metal fragments, which could increase the concentration of leached metals in the sample. In their recommendations for additional studies, the researchers suggest sampling a large number of existing burn barrels to determine probable metal concentrations, as well as conducting research to determine the toxicity of burn barrel ash to humans, plants, and animals.

The repercussions of illegal disposal vary widely depending on the type and amount of waste as well as the location and method of disposal. However, it is not always possible to quantify environmental damages based 

\[59\] The Illinois survey listed "saving landfill space" as one motivation of garbage burners.
on those factors. Usually a single, isolated incident will cause a pulse of pollution the environment can absorb. Yet, additional environmental stresses can multiply the effects of a seemingly innocuous event. Plant and animal species have adapted to survive within certain ranges of physical, chemical and biological constraints. Sheehan et. al. suggest:

In general, this means each species exists in an environmental compromise, not always living in the optimal range for all essential functions. Any pollutant stress limits the range of functional response available to the organism prior to its reaching the threshold of damage. Other adverse environmental conditions aggravate the already stressed species. Therefore, combinations of stress can be expected to cause adverse responses at lower pollutant concentrations.\(^\text{60}\)

Pollutants can cause harmful, devastating effects without immediately visually impacting the environment. Therefore, it is impossible to visually assess illegal disposal’s short and long term environmental and human health implications at a particular site. In general, greater quantities and greater toxicity of waste will cause more harm than smaller, less toxic quantities. However, because of possible cumulative impacts, almost all illegal disposal has the potential for creating harm, and as such, must be minimized to the greatest extent possible.

\(^{\text{60}}\)Sheehan et al., 41.
CHAPTER 4
THE REGULATORY FRAMEWORK

Inarguably, regulations are a key part of any enforcement program. First, a rule must make the act illegal, and secondly, it must provide a penalty for violations. This paper is limited to illegal disposal of solid waste, which, by definition, means it is prohibited by law. Montana state law bans most unlicensed solid waste disposal. However, Missoula County relies on local regulations to control theft of services and property owner disposal of household waste on his or her own property. Counties with less extensive local solid waste regulations might not address these types of disposal.

State Regulations

The Montana Solid Waste Management Act is the state law regulating solid waste disposal. This law prohibits, with few exceptions, disposing or storing solid waste without a license. Prohibiting an activity is only the first step. Solid waste regulations must also be usable - enforcement personnel have to understand them and be able to clearly convey the regulations (and reasoning behind them) to defendants. It seems straight forward enough, but when Missoula County stepped up prosecution in 1992, it took several cases before they figured out how the Act should be applied.

The problem lies in the inclusion of part 2 of MCA 75-10-212. Titled “Disposal in unauthorized area prohibited -- exception,” 75-10-212 states:
(1) No person may dispose of solid waste except as permitted under this part.
(2) It shall be unlawful to dump or leave any garbage, dead animal, or other debris or refuse:
   (a) in or upon any highway, road, street, or alley of this state;
   (b) in or upon any public property, highway, street, or alley under the control of the state of Montana or any political subdivision thereof or any officer or agent or department thereof;
   (c) within 200 yards of such public highway, road, street or alley or public property;
   (d) on privately owned property where hunting, fishing, or other recreation is permitted, provided this subsection shall not apply to the owner, his agents, or those disposing of debris or refuse with the owner's consent.

Notice that the first statement is an umbrella, while the second deals with a few specific circumstances. The prohibitions cover dumping on or near roads, on public property and on private property where recreation is allowed. They do not address privately owned land not open to public recreation or where the property owner gives permission to dump. For a time the Missoula County Attorney's Office was confused by the strange combination of specific situations. They dismissed subsection (1) because of its vagueness. So the Health Department had to try to make its cases fit into one of the stated prohibitions in subsection (2).

The Wallace Creek dumpsite, which generated the first court cases in 1992, was within 200 yards of a public road, satisfying condition (c). In addition, it was on private land where recreation was allowed, and the owner had not given permission to the defendants to dump waste there. A second site in the Deer Creek drainage was also within 200 yards of a public roadway and was located on private land. The property owners, Champion
International, had “open recreation” and “no dumping” policies again satisfying several of the conditions.

However, before long, the Health Department investigated a case that did not easily fit into one of those categories. At a dump site near the Clark Fork River, waste was left piled in the woods, more than 200 yards from a public road. The land was thought to be private, but the Health Department had difficulty determining who owned the property. At that point, the Deputy County Attorney reevaluated her interpretation of the law. She determined a later section of the Act, 75-10-221, clarifies 75-10-212(1). It states:

Except as provided in 75-10-214, no person may dispose of solid waste or operate a solid waste management system without a license from the department.

With this clarification, the Health Department stopped trying to force situations to conform with the provisions of 75-10-212(2). But one has to wonder why the legislature singled out those specific instances. The answer lies in the history of Montana lawmaking. The first solid waste management laws were passed during the thirty-ninth legislative assembly in 1965. Chapter 35 created an “Act Providing for the Protection of the Public Health by Establishing Controls of Refuse Disposal Areas.”\(^{61}\) This chapter also prohibited unlicensed disposal:

Section 3. **Dumping in an unlicensed area is prohibited.** No person, partnership, company or corporation shall hereafter dispose of

---

\(^{61}\)Laws of Montana. Chapter 35. 1965
any garbage rubbish or refuse in any place except as permitted under this act.\textsuperscript{62}

During the same session, the legislature amended the General Highway Law. Section 11-110 of Chapter 197 establishes word for word what is now found in the Solid Waste Management Act 75-10-212 (2), conditions a, b, and c.\textsuperscript{63} Four years later, in 1969, lawmakers added condition d, making it unlawful to leave any waste on privately owned property where recreation is allowed, to the General Highway Law, as an anti-littering clause.\textsuperscript{64} The legislature never actually combined the two sections into the Solid Waste Management Act. This change occurred during recodification in 1978. The Montana Codes Commissioner chose to group the solid waste laws together without editing for redundancy. For clarity’s sake, the special conditions listed in 75-10-212 (2) should probably be deleted. In fact, all of 75-10-212 could be deleted. Consider the two statements:

75-10-212(1) No person may dispose of solid waste except as permitted under this part.

75-10-221 Except as provided in 75-10-214, no person may dispose of solid waste or operate a solid waste management system without a license from the department.

These statements say exactly the same thing. If a person leaves a pile of trash in the woods, he or she is guilty of violating both statements. Since the former statement is less specific, one must refer to the second for clarification. Ironically, the legislature has provided two sets of penalties for

\textsuperscript{63}Laws of Montana. Chapter 197, Section 11-110. 1965.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
illegal disposal. If a defendant is convicted under the former statement the penalty shall not exceed $100 and/or 30 days in the County jail. If a defendant is convicted under the latter statement the penalty shall be not less than $50 or more than $500 per offense, each day constituting a separate offense. As a result, when using the state law, Missoula County charges all defendants under 75-10-221, thereby creating the potential for higher penalties.

Another part of the Solid Waste Management Act can also be confusing. In 1991, Missoula Senator Fred Van Valkenburg introduced legislation which made illegal dumping an "absolute liability" offense. The purpose of this clause is to make prosecution easier. One does not have to prove the defendant "knowingly, negligently or purposely" dumped the waste, only that he or she dumped it.

Initially, Missoula County took it one step further. The Health Department believed the clause meant a person was absolutely responsible for his or her waste. The generator had to ensure the waste was properly disposed of and, if it was not, he or she could be held accountable. Under this assumption Missoula County filed a compliant against Sharon Godkin, whose garbage had been found in and on the banks of a small pond near the Clark Fork River. The investigator of the case found many pieces of mail which indicated she generated the garbage. In court, Ms. Godkin pleaded not guilty. She said she paid a friend to take the garbage to the dump. This friend, who she did not know very well, had left town without leaving a forwarding address. Judge Clark ruled that she took reasonable measures to legally dispose of her trash. He argued that she could not be expected to
follow her hire to the dump to ensure it got there. "Absolute liability" did not mean "cradle-to-grave" responsibility; the Health Department still needed to prove who dumped the waste, but did not have to establish a state of mind.

To those unaccustomed to working with the Montana Solid Waste Management Act, the statute can prove quite confusing. Through trial and error, Missoula County was able to figure out how best to apply the law, and which sections are best ignored. Other counties may find these lessons useful.

Local Regulations

As mentioned previously, there are a few circumstances the state does not regulate. For instance, burying one's waste on one's own land is specifically exempted from the state law. Section 75-10-214 reads:

(1) (a) This part may not be construed to prohibit a person from disposing of his own solid waste that is generated in reasonable association with his household or agricultural operations upon land owned or leased by that person or covered by easement or permit as long as the disposal does not create a nuisance or public health hazard or violate the laws governing the disposal of hazardous or deleterious substances.

(2) The exclusions contained in subsection (1) of this section do not apply to a division of land of 5 acres or less made after July 1, 1977, that falls within the definition of subdivision in Title 76, chapter 4, part 1 or the Montana Subdivision and Platting Act in Title 76, chapter 3.

This section has been included, in some form, since the first state solid waste law was passed in 1965. Its inclusion was driven from a property rights standpoint, not a public health perspective. It has been amended over the years to reduce potential health implications, most recently during the 1991
legislative session. However, the caveat "as long as the disposal does not create a nuisance or public health hazard or violate the laws governing the disposal of hazardous or deleterious substances" is not the safety catch the legislature may have intended it to be. A Lolo farmer who threw all of his garbage in a low spot near the Bitterroot River did not create a nuisance. No neighbors lived close enough to be bothered by the pile's sight or smell. It may have caused a public health hazard - it certainly had that potential. But the Missoula County Attorney's office worried that the Health Department may have to prove the public health had indeed been threatened, instead of theorizing that it might have been. No charges were filed in this case.

One does not have to rely solely, or even primarily, on state law to address illegal disposal. In fact, the state is well advised to leave many of the specifics to local governments. Montana sports a surprising variety of waste management systems. Almost every county has its own unique combination of arrangements. A city and county may share a landfill, may each have their own, or may transport waste out of county for disposal. Landfills can be publicly or privately owned, as can hauling systems. Local governments can form refuse districts, which can be comprised of a city, a portion or all of a county, or a portion or all of several counties. These districts allow local governments to collect solid waste management fees through the property tax system. In some districts, only disposal cost is covered, in others collection is also included. Areas without districts must rely on service charges to fund the system. In this situation, customers must sign up and pay for collection service or pay a tipping fee at the landfill gate.
Each arrangement gives rise to its own specific illegal disposal problems. Those districts which cover both collection and disposal would have no theft of services problems, since everyone has service, and should have relatively little illegal dumping. However few, if any, districts provide such complete coverage. Most districts collect money for landfilling costs only, and leave collection up to individual customers. Residents can either sign up with a hauling service or they take their waste to the dump or one of many roll-off boxes. In this situation, some people will not want to sign up for collection service, but may feel transporting their garbage to the landfill or roll-off container is too inconvenient. As a result, they may choose to burn it or a dump it in a nearby ravine. Residents of neighboring areas without tax-based services may take advantage of “free disposal” by using roll-off boxes or containers maintained for district residents. In some areas, the hauling service is volume-based, giving consumers incentive to reduce their volume of garbage, sometimes through illegal means such as burning or dumping. In theory, areas like Missoula, which do not collect money for waste management through the tax base, have the most illegal disposal problems, spanning the full range from theft-of-services to illegal landfilling.

The Solid Waste Management Act insists local government, defined as a county, incorporated city or town, or a duly organized refuse disposal district, retain primary responsibility for adequate solid waste management. By giving local governments the ability to “control the disposition of solid waste generated within their jurisdictions”, the Act affirms rule-making authority of those bodies. However, local governments

---

65 MCA 75-10-102.1(d) 1993 and MCA 75-10-103.7 1993.
66 MCA 75-10-112.16 1993.
have had to deal with solid waste disposal long before the Montana Solid Waste Management Act came into existence and could do so by the authority granted by the "General Powers of Local Government." In addition, local boards of health have long been responsible for solid waste management. In 1895, the legislature instituted the duties of local boards of health:

It is the duty of the Board of Health to establish in the county or any part hereof, such sanitary rules and regulations as may be necessary to prevent the outbreak or spread of infectious or contagious disease.\(^{68}\)

In 1907, Montana lawmakers expanded the duties to specifically include garbage regulation:

The local or county board of health shall have power to abate all nuisances affecting the public health; to destroy, prevent, and remove all sources of filth and causes of sickness and disease...\(^{69}\)

In the past 85 years, the law has not changed much. The law now states:

Local boards shall ... supervise destruction and removal of all sources of filth that cause disease; ... adopt rules that do not conflict with rules adopted by the department ... for the removal of filth that might cause disease or adversely affect public health.\(^{70}\)

Since such a variety of governmental entities can manage solid waste, at times there are overlapping regulations. And it may be difficult to

\(^{67}\)MCA 7-1-4123 (2). 1993.

\(^{68}\)Wilber F. Sanders, Esquire, ed., The Complete Codes and Statutes of the State of Montana in Force July 1, 1895, Together with the Constitution of the United States and of the State of Montana with the Amendments thereto, Sec.2861, (Helena, Montana: L.P. Sanders, 1895) 244.

\(^{69}\)W. Choate, Commissioner, The Revised Codes of Montana of 1921: Containing the Permanent Laws of the State in Force at the Close of the Seventeenth Legislative Assembly of 1921 vol. 1 Sec.2469 (San Francisco: Bancroft - Whitney Co.) 980.

\(^{70}\)MCA 50-2-116 1(f); (k)(ii). 1993.
ascertain what laws are in effect for a particular region. As with all laws, the most stringent supercedes more lenient laws.

In Missoula County, both the City-County Board of Health and the City Council have addressed the particulars of solid waste management. They cover basic sanitation, such as requiring all garbage be stored in containers and transported every seven days, as well as illegal disposal.

Until recently, Missoula’s county regulations were relatively vague. They covered most situations by outlawing burning of any garbage and regulating the burial of waste. Burial was only permitted in areas “wherein the Health Officer’s opinion the practice will not be offensive or cause a health problem to surrounding residents.” No one could store waste in such a manner as to create a public nuisance, constitute a safety or health hazard or “be to any degree offensive.”

However, there were some glaring holes in the county regulations. They did not address theft-of-services. Illegal dumping, such as leaving one’s trash in the woods, had to be awkwardly condemned as “illegal storage of solid waste.” By 1994, the 1973 definitions were hopelessly dated. The now interchangeable terms “refuse, garbage, and rubbish” delineated specific types of trash. But perhaps the biggest problem with the county solid waste regulations were the penalties for violations. Upon conviction defendants would be fined “not less than $10 or more than $50 for each offense,” the lowest penalties prescribed in all the regulations. Such penalties were comical in light of the amount of resources needed for a court conviction. As a result, these rules were rarely utilized by the Health Department, except as

71 See appendix B.
an emphasis in Notices of Violation. When contacting a defendant about an illegal dumping incident, the investigator included a section on which laws have been violated. By citing both state and county regulations, the department hoped to underscore the seriousness of the violation. However, should a case go to court, the Department would not charge the defendant under the county regulations.

Missoula's city regulations are enforced up to four and one half miles outside the city limits, consistent with the Missoula Municipal Code. Since these regulations are more thorough than the county's and Missoula's city limits do not incorporate the entire urban area, this buffer zone has proven to be very convenient for the Health Department. Like the county regulations, the code prohibits burning. But it also prohibits *all* burial of waste without a license and bars the use of a dumpster or container maintained for another business or residence. Penalties, upon conviction, are up to $500 or six months in jail per offense. However, like the county regulations, the terminology is not up to date and illegal dumping must be cited as “littering”.

After years of working with the outdated county solid waste management regulations, the Missoula Health Department proposed changes to the regulations to its board. It did so as part of a package of revisions establishing a cohesive Health Code for the department. Many of the changes to the solid waste regulations were cosmetic. For instance, the definition of “solid waste” replaced “rubbish,” “garbage” and “refuse.” In addition, illegal dumping was specifically addressed, whereas before the

---

72See appendix C.
reference was vague. Now when a person leaves garbage in the woods they can be cited under VIII(A):

No person shall dump, store, place or leave or cause to be dumped, placed or left any solid waste upon any public or private property within the county, unless the solid waste is clean fill and permission has been granted by the property owner or owners.\(^{73}\)

Other changes, three in particular, were more substantial. First of all, theft-of-services was officially outlawed in the entire county. Secondly, burying one's own waste on one's property, the exemption allowed by the Montana Solid Waste Management Act, was severely limited. This regulation now reads:

No person shall bury any solid waste on public or private land within the county, unless:
(1) the solid waste qualifies as clean fill and permission has been granted by the property owner or owners; or
(2) the solid waste is organic agricultural or silvicultural waste; and the solid waste originated on the property where it is to be buried; and the Department determines that the practice will not be offensive or endanger public or environmental health; or
(3) the site is licensed as a landfill by the Montana Department of Health and Environmental Sciences.\(^{74}\)

Ranchers can no longer bury household waste on their property, only organic agricultural and silvicultural waste. This addition should limit the environmental impacts of the state's exclusion from licensing.

The final addition to the County regulations represents the biggest change. The department noticed most of its illegal dumping and theft of services problems involved renters. As a result, it proposed that landlords

\(^{74}\)Missoula City-County Health Code, Regulation 3, Section VII. 1994.
provide garbage service to all rental units. With little comment from the public, the board passed this regulation, and in general, most landlords readily complied. This provision has already provided satisfactory solutions to several theft-of-services problems, and will hopefully prevent many problems in the future.

Missoula County has a matrix of regulations to diminish the potential human and environmental health impacts of improper waste disposal. By identifying weak areas in the state law, the Health Department has been able to bolster local regulations to ensure Missoula citizens are protected. Of course, having regulations in place is not the end of the story - they also must be enforced.
Enforcement is an essential component of environmental regulation. The EPA insists, "Without enforcement, environmental laws would be largely words on paper." In Missoula County, most residents obey the solid waste rules. But without consistent enforcement, the non-abiding minority may grow larger. The EPA suggests, "Enforcement stays the hand of the would-be violator and encourages the person who wants to comply. It does this chiefly by creating a fear of detection and an assurance of fairness." A person may fear being caught and having to suffer the consequences, but he or she also wants to know others will not be free to ignore the law and enjoy the benefits, such as saving money or increasing profits. James M. Strock, EPA's Assistant Administrator for Enforcement prefaces the agency's manual of Environmental Criminal Enforcement by saying:

Enforcement prevents pollution. Enforcement minimizes risk. EPA enforcement makes clear that the American people view environmental degradation as not only an unacceptable business practice, but as an assault on our shared notions of responsible citizenship.

---

76 Ibid.
77 Ibid., preface.
The Montana Solid Waste Management Act gives local governments the authority to “enforce the rules of the department or a local board of health pertaining to solid waste management through the appropriate county attorney.”\textsuperscript{78} In addition, it specifically addresses enforcement of 75-10-212, “Disposal in unauthorized area prohibited.” It states:

The provisions of 75-10-212 shall be enforced by all highway patrol officers, sheriffs, policemen, and all other enforcement agencies and officers of the state of Montana. In addition, game wardens have the right to enforce the provisions of 75-10-212 on public property and on private property where public recreation is permitted.

In Missoula, the county regulations promulgated by the Board of Health must be enforced by the Health Officer or her designates. The city regulations, on the other hand, give primary responsibility to the police department within the city limits and to the Health Department within the four and a half mile zone outside the city limits.

The City-County Health Department actually handles most solid waste enforcement in the city and throughout the county. However, the broad enforcement authority granted by the various regulations allows other organizations to participate as well. For instance, city police and county deputies investigate complaints, and then will usually refer them to the Health Department for follow up. Some private land managers investigate dumps on their property although they may turn the information over to the Health Department for prosecution. Federal land managers on the other hand usually work independently. They have their own regulations which cover illegal dumping. On occasion, when both federal and non-federal lands

\textsuperscript{78}MCA 75-10-112.7, 1993.
are involved in a case, the Forest Service will coordinate their efforts with the Health Department. Even private citizens may try their hand at enforcement. One woman, tired of the people across the street using her dumpster, retrieved several bags of their garbage and deposited them on the defendants’ front lawn. When they still did not “get the hint,” she called the Health Department.

The goals of enforcement are two-fold: to gain compliance with the law and to deter would-be violators. Peter Nielsen, the Unit Supervisor of the Environmental Health Division in Missoula, insists, “Our first priority in all cases is to correct the problem, or bring the facility into compliance with the law or regulation.” In some instances, this goal is easily achieved. A person caught burning garbage only has to put out the fire and make arrangements to dispose of garbage appropriately in the future. But most illegal disposal cases prove more difficult. When an illegal dump is discovered, the department first tries to find the generator of the waste. If the generator did not dump the garbage, the perpetrator must be sought. If neither the generator or the guilty party can be located and held accountable, the department must turn to the unhappy property owner to clean up the mess. On occasion, if the Department feels the situation represents an immediate health threat, they will initiate clean up. However, since the Department has no fund dedicated to illegal disposal clean up and cost recovery is difficult, they step in only in emergencies.

The Health Department uses several levels of enforcement to encourage compliance: informal verbal communication, written Notices of

79 Peter Nielsen, Memorandum to Health, Water Quality and Air Pollution Control Board members, January 24, 1994.
Violation and Orders to Take Corrective Action (collectively called NOV's for short), and court action. In the past, the Department relied largely on verbal communication with defendants. Written documentation was inconsistent and scarce. Repeat offenders would be issued warning after warning, because there was no tracking system. Formal NOV's were often not followed by compliance checks. As a result, many violations went uncorrected with no repercussions to the defendant.

In 1991 and 1992, Health Department staff increased sufficiently to allot more resources to enforcement. In a January 24, 1994 memo, Peter Nielsen pronounced, "During the past 18 months, the Environmental Health Division has improved its abilities to conduct investigations of environmental crime, and we have increased the amount of enforcement accomplished."

The department did this primarily by writing more NOV's and taking more cases to court. In the memo, Peter Nielsen reported that since July 1992 (when the department started keeping track of how many NOVs were written), they issued 38 Notices of Violation for illegal disposal violations, 25 of which resulted in compliance with no further action required from the department. In addition, the Health Department filed 11 legal complaints with Justice Court. Since January 1994, the department has written 40 NOV's for illegal solid waste disposal, at least 20 of which resulted in compliance with no further action. During that time, the Department filed three complaints in Justice Court. The drop in the number of cases going to trial does not signify a return to more lenient days. A case is still more likely to end up in court now than before 1992. However, the Department has

80ibid.
recognized that court cases take up far more time than administrative actions. In its document on environmental enforcement, the EPA states:

> Administrative actions are usually the most expeditious way of dealing with a violation. They are resolved quickly, and they absorb less staff time than cases in the ... court system. ... Preparation of civil judicial cases requires more staff effort and money than administrative enforcement, and judicial cases sometimes take several years to complete.\(^8^1\)

However, compliance is only half of the equation; enforcement is also used to deter others from breaking the law. In his January memo, Peter Nielsen theorized that widespread public knowledge of the Department’s enforcement work provided some level of deterrence in the community.\(^8^2\) To achieve deterrence, the EPA recommends creating a “credible enforcement presence.”\(^8^3\) To do this, an agency must foster a dependable likelihood of detection, issue serious consequences when violations are discovered, ensure swift agency action, and maintain fair and consistent responses.

**Detection**

The likelihood of detection is low in illegal dumping cases for a number of reasons. People tend to dump in secluded places, often at night, watching to make sure no one sees them. With theft-of-services, the evidence is neatly hidden in a container and conveniently whisked away weekly. Those who use burn barrels usually burn garbage out of sight from passers-by, or in areas where potential witnesses would not consider it a crime. Burning garbage in

\(^8^1\) EPA, *Environmental Criminal Enforcement*, 15-16.
\(^8^2\) Peter Nielsen, Memo, January 24, 1994.
\(^8^3\) EPA, *Environmental Criminal Enforcement*, 15-16.
woodstoves, since it happens behind closed doors, is almost undetectable. The color of smoke may give them away, but such evidence usually goes unnoticed and is short-lived. A significant number of illegal dumping cases involve hard-to-trace trash such as yard waste or appliances. Even easily traceable garbage, such as household waste with discarded mail, may stay hidden for years - sometimes long enough for the culprit to move out of the area, making them harder to contact. And finally, most landfills in Missoula County are located away from heavily traveled roads. Unapproved materials can be easily hidden in secluded sections or beneath approved waste.

The low detection rate is not lost on potential violators. Peter Nielsen and Shannon McNew interviewed Don Dilsworth of Rainglow Services about an illegal landfilling complaint on company property. In an investigation report, Shannon McNew recalled the conversation:

Dilworth[sic]: You know we try to do the right thing ... we could have dumped it anywhere between here and Paradise.
Peter: Not legally.
Dilworth: No, but it would have been easy. We could have driven up any canyon and no one would have seen us. No one would know.\(^{84}\)

With increased prosecution and the attendant publicity, the likelihood of detection is rising. The community is becoming more aware and less tolerant of illegal dumping. Consequently, more people are reporting dump sites, and offering clues as to who may have committed the crime. In addition, the department has increased time spent on investigation and is able to discover who the culprit is in more cases. However, due to the nature of illegal disposal, detection rates will probably remain relatively low.

\(^{84}\)Shannon McNew, "Investigation Report", 11 March 1993, Rainglow File, Missoula City-County Health Department, Missoula, Montana.
Consequences

As a result, the Health Department has focused on the second aspect of creating a credible enforcement presence, issuing serious consequences when violations are discovered. In the past, the most serious repercussion a violator had to face was a stern letter insisting he/she clean up the mess OR ELSE. Few, if any, illegal dumping cases went to court even if violations continued. In all fairness, the Department did not have the personnel to pursue such actions. However, there was also a strong emphasis on simply correcting the problem. If a site was cleaned up, they felt there was no reason to pursue other types of enforcement. Once personnel increased, the Department reevaluated its policies. In hard to detect crimes, the punishment must go beyond “clean it up and don’t do it again” if it is to act as a deterrent. Peter Nielsen likes to use the following analogy:

A man is traveling on a lonely highway in the middle of the desert. Up ahead, there is a stop sign. He slows down long enough to make sure no one else is coming, and then speeds through the intersection. If he traveled that road frequently and knew the highway patrol often watched that intersection, he’d be more vigilant. If he’s late for an appointment, he may risk getting a ticket anyway, and not come to a complete stop. However, if the penalty was not a $20 fine, but death, he’d probably come to a full stop every time.

Peter Nielsen is not, by any means, advocating the death penalty for traffic violators or illegal dumpers. However, penalties must be high enough to deter companies and individuals who only get caught once in a while. For this reason, the Health Department will not always wait to see if the violations have been corrected before initiating court action. In several cases
they have requested the county attorney file a complaint even before they write the administrative clean up order.

Simply taking a case to court and getting a guilty conviction is no guarantee the defendant will be duly fined. Crimes against the environment have traditionally been regarded as petty offenses by the Justice community. Jonathan Turley, writing Counterpoint to a *Wall Street Journal* editorial, insisted, “Few violent offenders could do the damage of an Exxon Valdez. Yet a person will spend more time in federal prison today for writing a single bad check than for severely damaging Prince William Sound.” In recent years attitudes about environmental crime have started changing. People are beginning to realize the long-term and potentially far-reaching affects of environmental crime. A *Missoulian* editorial from February of this year proclaimed:

> What one congressional committee has termed a decade-old culture of tolerance for environmental crime within the U. S. Justice Department is giving way to a harder line. Under the leadership of Attorney General Janet Reno, the Justice Department’s environmental crime section is stepping up enforcement of environmental laws, promising to prosecute more violators and seek greater penalties.

Attitudes are changing at the local level as well. In February, 1994, Missoula’s Board of Health, Air Pollution Control Board, and Water Quality District Board adopted a resolution which recognized “environmental crime is still a relatively new concept as compared to what has conventionally been

---

defined as ‘crime’.\textsuperscript{87} The boards urged “the Missoula community to view and respond to environmental crimes with the same seriousness as ‘conventional’ crimes” and declared they “clearly intend that environmental laws are meant to be enforced and that we intend for the Missoula City-County Health Department staff to detect and document environmental crime in the community and seek prosecution adequate to deter those who harm our environment.”

In an attempt to educate Missoula’s judges on this changing outlook, Peter Nielsen routinely passes along articles and reports emphasizing the seriousness of these crimes and the deterring-effect of large penalties. As a result of these activities, the department has seen a trend of increasing fines for convicted defendants involved in illegal disposal.

Swift Action

The third aspect of creating a credible enforcement presence is ensuring swift agency action. The EPA suggests that when a company or individual sees that agency response to detection of a violation is “quick and unavoidable, they know they cannot escape the consequences by giving excuses or gaining time through lengthy bargaining.”\textsuperscript{88} On a local level, swift action is important, but perhaps for different reasons. If the Department is slow in responding once they discover a violation, the defendant, judges, and the public may get the impression that the violation is not very serious. It will be harder to convince the defendant to quickly correct the violation, and

\textsuperscript{87}The Missoula City-County Health Board, the Missoula Air Pollution Control Board, and the Missoula Water Quality District Board, “Message on Environmental Crime,” February, 1994, Board Minutes, Missoula City-County Health Department, Missoula, Montana.

\textsuperscript{88}EPA, Environmental Criminal Enforcement, 19.
may confirm the impression that “government is just hassling the little guy.” In court, significant delays in initiating action may make it harder to convince the judge to levy substantial fines.

For the same reasons, the timeliness of the departmental response is important in subsequent circumstances: when determining the amount of time to give a defendant to correct a violation, in doing compliance inspections, or in initiating further enforcement actions if a violation is not corrected. By consistently fulfilling its obligations on time, the Department will foster a reputation that it “means business,” and future defendants may be more likely to correct the violations the first time around.

**Consistency**

Maintaining fair and consistent responses, the last aspect of creating a credible enforcement presence, is a priority for the department.

Representative John Dingell (D., Mich.), answering a *Wall Street Journal* editorial sneering at prosecution of environmental crime, wrote:

> Like it or not, that is the law, and the law must be upheld unless or until it is changed. Further, as long as it is the law, it should be applied equally. Honest companies and individuals should not be penalized when dishonest rivals are allowed to skirt the law with impunity.  

Frequently, when investigators confront a defendant with illegal disposal allegations, he answers, “But other people (or companies) do this all the time, and you haven’t done anything to them.” During the summer of 1993, the Montana Department of Transportation (MDT) was doing some

---

work on Reserve Street in Missoula. They allowed their contractor to pile the old asphalt on the bank of a busy interchange, and then they buried it to smooth out the slope. Around the same time, the Health Department filed charges against two companies for illegally landfilling asphalt. The state Solid Waste Bureau was adamant that old asphalt was a Group II waste, and as such either had to be recycled or disposed of in a Class II facility. However, they categorized MDT’s use of asphalt as fill as recycling. Needless to say, the recently charged companies, who also only wanted to use the material as fill, were incensed. Unable to convince the Solid Waste Bureau of the inequity of the situation, the Health Department decided to treat MDT’s site as a landfill, and required them to bring in appropriate cover material. The prospective cost of six inches of clay over the entire site prompted MDT to reevaluate their plan. They chose to limit the fill area and truly recycle any remaining old asphalt they generated. Later in the summer, an individual asked to use asphalt in the same manner as MDT - to lessen the slope of an adjoining road bed. Unlike the MDT site, he had plenty of clay to cap the material. At first, the Solid Waste Bureau was not going to allow the activity. However, the Health Department pointed out the incongruity. When faced with the prospect of having to change their policy toward MDT, the Bureau decided the individual was also “recycling” the asphalt.

The Health Department realizes the only way to treat everyone equally and fairly is to interpret the law literally and apply it consistently. Allowing exceptions, without going through a formal variance process, creates an impression of favoritism and establishes bad precedents. For example, the Montana Solid Waste Management Act clearly states no person shall operate
a solid waste management system without a license. However, in 1992, the Solid Waste Bureau allowed Champion International in Bonner to start using a landfill before it was licensed. The permission, which was not established in writing, was intended to be a one-time solution for some fire debris. But the company continued to use the unlicensed landfill until the Health Department discovered the activity and issued an immediate cease and desist order. With this order, the Department put the state on notice that it will not tolerate casual exceptions to the requirements established in state law. Incidentally, the order also saved Champion money. Their unapproved operating procedures were creating unsafe fire conditions. After licensing, they had to go back in and rearrange the waste they already landfilled. Had they continued the unlicensed filling, they would have had to move around much more material.

Deciding whether to take an individual or company to court is not always straightforward. The Health Department has tried to be consistent by establishing general guidelines and using the committee approach to decision making. In general, the cases most likely to go to court are those where the Health Department suspects the defendants knowingly committed the act, when the act endangered human or environmental health or where the defendant had been previously cited or warned. Usually, at least three people are involved in the decision to prosecute: the investigator, the Unit Supervisor of Environmental Health and the appropriate city or county attorney.

The Health Department must also decide what fines to recommend to the court. Initially, the Department relied solely on the judge's discretion.
Inevitably, the court issued penalties at or near the lower limits permitted by law. Unhappy with the small fines the court repeatedly imposed, the Department rethought its laissez-faire position. At a minimum, fines should represent the avoided cost of proper disposal plus a deterrent factor. Peter Nielsen, in a presentation to the Idaho Environmental Health Association, summed up the old way to calculate fines as, "I don't know, Joe, what do you think?" Uncomfortable with the subjectivity of this method, Peter Nielsen borrowed an equation from the Water Quality Act, and tailored it to fit Health Department regulations. The Health Department now calculates its recommended penalties by applying the following steps:

**STEP 1: Calculate Statutory Maximum Penalty**

**STEP 2: Calculate Economic Benefit**

**STEP 3: Assign Significance Factor (0 to 50%)**

**STEP 4: Assign State of Mind Factor (0 to 50%)**

**STEP 5: Assign Compliance with Corrective Action Order Factor (0 to 50%)**

The final equation for assessing the penalty is as follows:

\[
\text{Proposed penalty} = \text{EB} + \text{EB} (\text{SF} + \text{MF} + \text{CF})
\]

where

- \(\text{EB} = \) Economic Benefit
- \(\text{SF} = \) Significance Factor
- \(\text{MF} = \) State of Mind Factor
- \(\text{CF} = \) Compliance with Corrective Action Order Factor

The statutory maximum penalty is calculated by multiplying the maximum fine per offense by the number of days of violation. Sometimes,

---

when an offense first occurred can be difficult to establish. During investigations, the Health Department tries to pinpoint when the illegal activity took place. However, if this is not possible, the Department will use the date of complaint or the date of the investigation as the first day of violation. The violation continues until the illegal activity has stopped and, if applicable, the site has been cleaned up.

For example, Rainglow Services buried railroad ties and rail car waste sometime in late 1992 or early 1993. Shannon McNew discovered the violation during an investigation on adjacent land on March 8, 1993. Rainglow completed clean up of the site on May 31, 1993. Since the exact day of violation could not be ascertained, the department used the day of discovery to the final day of clean up as the length of violation, which equaled 66 days. The maximum penalty set by the Montana Solid Waste Management Act is $500 per offense.\(^{91}\) Therefore, the maximum statutory penalty was $500 x 66 days, totaling $33,000. This value must be determined to ensure the proposed penalty does not exceed the amount permitted by law. It also serves to capture the defendants' undivided attention, as they realize the possible costs of their actions.

The economic benefit a defendant received by breaking the law is usually determined by the amount of money they saved by not taking the waste to the landfill. However, it may also include the value of delayed capital investment and avoided operation and maintenance expenses. In the Rainglow example, when they completed cleanup of the site, the company gave the Health Department copies of its receipts for disposal at BFI in

\(^{91}\text{MCA 75-10-232.}\)
Missoula. The receipts totaled $3,878, which the Department used as Rainglow's economic benefit with no further costs attached.

The significance factor is a combination of the seriousness of the violation and the impact the violation had or may have had on human and environmental health. For Rainglow, the Health Department valued the significance factor at 40%. Operating an illegal landfill is one of the most serious violations of the Solid Waste Management Act. However, because of the location of Rainglow's property, the buried wastes had a low potential for causing environmental harm.

The state of mind factor considers whether the violation was committed knowingly, negligently, or purposely. The Health Department had issued two previous NOV's to Rainglow, both for illegal disposal violations. In addition, Rainglow is in the waste disposal business, and as a result, should be aware of pertinent solid waste regulations. Therefore, the health department valued the state of mind factor at the full 50%.

The final factor, compliance with administrative corrective action orders, is based on whether the defendant corrected the violation in a timely manner. In this case, once the violation was confirmed, the company cooperated with the investigation by providing a backhoe and operator, and cleaned up the site quickly. As a result, the Health Department valued the compliance factor at 0%.

The final equation to determine Rainglow's proposed penalty was as follows:

\[
\text{proposed penalty} = \$3,878 + \$3,878(0.40 + 0.50 + 0) \\
= \$7,368
\]
Prior to using this formula, the highest penalty Missoula Justice Court imposed for an illegal disposal violation was $500. However, with the formula, the Department can defend substantially higher penalties. After all, it only seems fair that a defendant at least be fined the economic benefit plus a deterrent factor. Since the $7,368 fine could be justified, Rainglow ended up settling out of court for $2,500 and 50 hours of community service. The service, which included use of backhoes and trucks to clean up illegal dump sites was valued at about $75/hour, for a total sentence of approximately $6,250.

Overall, the Health Department has taken quite a few steps to increase its effectiveness in enforcing the state and local solid waste laws and regulations. The first priority is still compliance, but the Department realizes there must be more of a penalty than "clean it up and don't do it again," if enforcement is to have any deterrence value. Therefore, the Department will continue to take more cases to court, and work to get higher penalties from those who endanger Missoula's environment.
CHAPTER 6
CONCLUSION AND RECOMMENDATIONS

Illegal disposal occurs all too frequently throughout Western Montana. Missoula County, most which does not provide tax-based garbage service, suffers from the spectrum of illegal disposal activities. The Missoula City-County Health Department has recognized the potential human and environmental health impacts of improperly disposed solid waste and has taken several steps to decrease the amount of waste ending up other places besides licensed landfills and composting facilities.

The first step in combating illegal disposal is to have clear, concise statutes and rules prohibiting the practices and providing penalties when the rules are violated. The Missoula Health Board's recent adoption of the new Health Code, which includes revised solid waste regulations, completes the needed regulatory umbrella. Table 2 lists the seven types of illegal disposal commonly occurring in Missoula County and indicates which statutes and rules apply to each one. The regulations can be found in appendices B through D.

Table 2 also summarizes the Department's recent advances in enforcement. The first of these listed is the "renter's clause," newly established in the City-County Health Code, which mandates landlords supply all rental units with garbage collection service. This provision should decrease the incidence of theft-of-services, indeterminate storage, and illegal
dumping in the County. This clause may also reduce other types of illegal disposal, such as burning and illegal landfilling. However, the Health Department's experience is that homeowners are just as likely (perhaps even more so) to commit the latter violations as renters.

The recent revision of the county solid waste regulations also helps to clarify portions of the law, and will continue to prove useful in establishing and explaining violations. Most significantly, the Department no longer has to refer to illegal dumping as storage or littering, terms which minimize the seriousness of the violation.

In addition to clarification, the new county regulations severely restrict all unlicensed burial of solid waste. No household garbage can be buried anywhere in the County without a license from the state Solid Waste Bureau. While regulation alone cannot prevent illegal disposal, establishing a firm, fair standard, based on risk to human and environmental health (instead of politics) is a step in the right direction.
<table>
<thead>
<tr>
<th>TYPE OF ILLEGAL DISPOSAL</th>
<th>APPLICABLE REGULATIONS</th>
<th>CURRENT ENFORCEMENT EFFORTS BY MCCHD</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEFT</td>
<td>County</td>
<td>MCCHC Reg. 3, sec. VIII(B) MCC 8.28.100(D)</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>MMC 8.28.100(D)</td>
</tr>
<tr>
<td>BURNING</td>
<td>State</td>
<td>ARM 16.8.1302 MCCAPCP MCCHC Reg. 3, sec. VI MMC 8.28.140</td>
</tr>
<tr>
<td></td>
<td>County</td>
<td>MMC 8.28.140</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>MMC 8.28.140</td>
</tr>
<tr>
<td>STORAGE</td>
<td>State</td>
<td>MCA 75-10-221 McCHC Reg. 3, sec. IV(A)(2), sec. IV(B), sec. IV(D) sec. VIII(A)</td>
</tr>
<tr>
<td></td>
<td>County</td>
<td>MMC 8.28.060(C), 8.28.080, 8.28.110</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>MMC 8.28.060(C), 8.28.080, 8.28.110</td>
</tr>
<tr>
<td>DUMPING</td>
<td>State</td>
<td>MCA 75-10-112, 75-10-221 McCHC Reg. 3, sec. VIII(A)</td>
</tr>
<tr>
<td></td>
<td>County</td>
<td>MMC 8.28.100, 8.28.130</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>MMC 8.28.100, 8.28.130</td>
</tr>
<tr>
<td>ABANDONMENT</td>
<td>State</td>
<td>MCA 75-10-221, 75-10-500</td>
</tr>
<tr>
<td></td>
<td>County</td>
<td>McCHC Reg. 3, sec. IV(C), sec. VIII(A)</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>MMC 8.28.080, 8.28.100</td>
</tr>
<tr>
<td>ILLEGAL LANDFILLING</td>
<td>State</td>
<td>MCA 75-10-221 McCHC Reg. 3, sec. VII</td>
</tr>
<tr>
<td></td>
<td>County</td>
<td>MMC 8.28.140</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>MMC 8.28.140</td>
</tr>
<tr>
<td>ABUSE OF EXISTING LANDFILLS</td>
<td>State</td>
<td>MCA 75-10-221 ARM 16.14.503, 16.14.504</td>
</tr>
<tr>
<td></td>
<td>City</td>
<td>MMC 8.28.140</td>
</tr>
</tbody>
</table>
The use of burn barrels has not yet been targeted in the Department's new emphasis on reducing illegal disposal. However, one new regulation may significantly reduce the amount of garbage burned in wood stoves. Missoula's Air Pollution Control Board recently passed new air quality regulations which included a requirement that woodstoves be replaced by cleaner burning pellet or gas stoves upon property transfer. While reducing Missoulians' closet garbage-burning behavior was not a goal of this new regulation, fewer people are likely to burn household waste in these new stoves.

Through its increased enforcement activities, the Health Department has created a "credible enforcement presence" in the community. Its reputation of dealing quickly, firmly and consistently with violators of environmental regulations both encourages transgressors to cooperate with Health Department orders and acts as a deterrent to other, would-be violators. Establishing a credible enforcement presence affects all types of illegal disposal across the board and should continue to reduce the amount of improperly disposed solid waste in the County.

The new penalty structure, a revision of the Water Quality Act's penalty equation, is part of creating a credible enforcement presence. But perhaps more than any other aspect, it has the potential to influence current and would-be violators. Money gets people's attention. By drastically raising the stakes of illegal disposal, companies and individuals may reevaluate the risks of breaking the law. Like creating a credible enforcement presence, the
penalty structure can have an impact on all types of illegal disposal. However, to date, the department has only applied it to illegal landfilling.

In the past year, Missoula’s junk vehicle program has gained speed. Richard Corrigan, the junk vehicle coordinator, has aggressively pursued removal of junk vehicles throughout the County. While this program has a narrow focus, it addresses one of the most visible forms of abandoned garbage. One would be hard pressed to say Missoula has a junk vehicle problem, but if the program ended, junk vehicles would once again litter Missoula’s landscape.

The last current enforcement effort is actually a state activity. Since 1991, the Solid Waste Bureau has grown from 2.5 FTEs (Full Time Equivalents) to 13 FTEs This increase has allowed the state to become more active in licensing and inspecting Class II and Class III landfills across the state. As operators grow accustomed to the heightened state activity, they pay more attention to what goes into their landfills and how the facilities are managed.

Of course, despite these efforts, Missoula does not have the “ultimate enforcement program.” As the current changes become institutionalized, the Health Department should focus on further improvements. Table 3 suggests where the Department might concentrate these efforts. The table outlines where weaknesses exist in the current regulatory/enforcement structure for each type of illegal disposal.
<table>
<thead>
<tr>
<th>TYPES OF ILLEGAL DISPOSAL</th>
<th>WEAK POINTS IN CURRENT ENFORCEMENT PROGRAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEFT</td>
<td>Homeowners not required to have service</td>
</tr>
<tr>
<td>BURNING</td>
<td>Still prevalent in county</td>
</tr>
<tr>
<td></td>
<td>No efforts specifically targeting garbage burning</td>
</tr>
<tr>
<td>STORAGE</td>
<td>Homeowners not required to have service</td>
</tr>
<tr>
<td></td>
<td>Several highly visible “storage” areas not yet addressed</td>
</tr>
<tr>
<td>DUMPING</td>
<td>Still prevalent in county</td>
</tr>
<tr>
<td></td>
<td>Investigative skills lacking for hard-to-identify waste</td>
</tr>
<tr>
<td></td>
<td>Refrigerators and other appliances becoming more common</td>
</tr>
<tr>
<td></td>
<td>No mechanism for clean up of unidentified waste</td>
</tr>
<tr>
<td>ABANDONMENT</td>
<td>None identified</td>
</tr>
<tr>
<td>ILLEGAL LANDFILLING</td>
<td>Hard to detect on large tracts of land</td>
</tr>
<tr>
<td>ABUSE OF EXISTING LANDFILLS</td>
<td>Infrequent county inspections</td>
</tr>
</tbody>
</table>

**Regulatory Changes**

Having recently rewritten the county solid waste regulations, the Health Department plans no major rule modifications in the near future. However, if illegal disposal continues to be a problem, there are other regulatory changes the Department may want to consider. For instance, the Health Board could extend the “renter's clause” to all residents. Such a universal requirement may meet with more opposition from the public than the “renter's clause.” Some people will invariably view it as an invasion of
property or personal rights. However, the Health Department was pleasantly
surprised at the general support for (or rather lack of protest against) the
renter's clause. Landlords largely regarded the regulation as a property
protection measure. Piles of garbage became one less thing they had to worry
about. In addition, many landlords were aware of some of the problems the
law would address, since their dumpsters had been the target of illegal
dumpers.

An even more drastic regulatory change would be to create a waste
district and collect money for disposal and collection through the property
taxes. Any increase in property tax meets with fierce public opposition
these days, and it would require a well orchestrated campaign to gain public
approval. In order to create a district, the County Commissioners must
propose it and ask any incorporated towns if they want to be included. If a
city council refuses to take part, the Commissioners must omit the city from
the district proposal. The Commissioners then must hold a public hearing,
advertised through normal channels as well as by mailing a notice to every
property owner in the proposed district. Property owners have three weeks to
protest, and more than 50% must do so in writing to halt the formation of the
district.

While it takes a significant effort to oppose the district at the hearing
stage, it would probably be quite a challenge to get the Commissioners and
City Council members to agree to the proposal. These elected officials would
not form a whole new layer of government easily; the need for the district
would have to be clearly shown. Illegal dumping, in and of itself, could

probably not justify the creation of the district unless it became a problem of epic proportions. This is unlikely, and other, less drastic avenues exist for dealing with illegal disposal. For the time being, the Health Department should focus on these other options.

**Enforcement Changes**

Probably the single biggest change the Department could make in its enforcement program would be creating the ability to issue tickets for routine violations. Currently, if a fine is to be collected, a city or county attorney must file a complaint in the appropriate court. Neither the city nor the county have dedicated an attorney to the Health Department. As a result, the Department must wait in line for limited attorney time. Because of the work involved in preparing a case for trial, a year may pass before the most straightforward complaints are even filed. In many cases the defendant will plead guilty; the whole incident could have been wrapped up in a few weeks instead of dragging on for months.

A precedent exists for issuing tickets. The Health Department currently has ticketing power for woodstove burning violations. The United States Forest Service also has ticketing power for illegal disposal violations. In the Federal system, unless the ticket is contested, the defendant must pay a pre-set fine within a certain amount of time.

---

93In the past two years, the County Attorney's office has given more time to the Health Department. The Department works almost exclusively with Deputy County Attorney Martha McClain. This arrangement has allowed Ms. McClain to become familiar with environmental health laws and has greatly increased the ability of the Department to effectively use counsel. However, Ms. McClain still has to work on cases from other departments. No one can argue that there is not enough work in Environmental Health alone to keep an attorney busy, but the resources are not available to dedicate a position to the Department at this time.
There are a few hurdles to ticketing, but with work these obstacles can be overcome. For instance, ticketing would require a more rigid fine scale than currently exists. In order for the court clerks to assess fines, the Department and the courts must agree on a preset ticket amount for each circumstance. Illegal disposal encompasses a wide array of activities, and many cases exhibit "special circumstances." However, these special cases can be dealt with in the traditional manner of filing a complaint in court, as can those cases in which the Department feels higher penalties are justified.

Another problem with ticketing is that, when a defendant pays his ticket, he can also appear before the judge. At that time, the judge does not have access to the Department's information, and therefore must base a plea for dismissal on the defendant's story. Inevitably, judges will dismiss cases or lower fines based on this one-sided information. If this happens in the majority of cases, ticketing will be of little use.

A second improvement the Department can make in its enforcement program is better tracking of information. Peter Nielsen started the process by filing all NOV's in a separate Chronological File, and establishing a system for filing information on cases where legal action is a possibility. However, the Department deals with hundreds of people each year for a variety of infractions, and comes nowhere close to creating a paper file for each defendant. The NOV file allows the Department to count the number of NOV's issued each year, but will not provide easy retrieval in the future. In addition, it will not provide information on how many NOV's a particular individual has been issued over the years.
Currently, all complaints that come into the office are written on a three part form. The top copy is filed, the second and third copies go to the appropriate sanitarian. When the investigation is complete, the sanitarian fills out the rest of the form, and turns in the second copy and keeps the third for his or her records. The complaints are entered into the computer. The data base program has fields for the complainant's name and address, the defendant's name and address, the date, the nature of the complaint, and the inspector's actions. After the information has been entered into the computer, the forms are filed chronologically. The biggest problem with this system is the computer program can only recall complaints chronologically. At this time, entering the information onto a computer is nothing more than a waste of time. The Department has a part-time computer programmer, who could retool the program to be more useful. It should be possible to call up information based on each one of the fields. The Department would be able to print out a list of all solid waste complaints, of all complaints about a particular defendant, and all complaints coming from a certain source. Such information would allow the Department to get a better grasp on prevalence of illegal disposal complaints (as well as other types of complaints). At this time, the Department has no idea what proportion of complaints are about solid waste. Enhancing the computer program could also provide the department with valuable information about past offenses, which could help convince a judge to convict a defendant or levy a fair penalty.

Individual record keeping should also become a Departmental focus. The sanitarians who do most of the illegal disposal investigations are responsible for a variety of tasks, from restaurant inspections to issuing
septic permits. Since they are pulled in so many directions, time is always short. Paperwork, especially documenting investigations or confirming oral agreements, is not always a priority. However, those notes, reports and letters, can be invaluable during later investigations and enforcement procedures. In its manual for environmental enforcement, the EPA insists, "An expertly prepared inspection report, which clearly documents violations and includes samples or polluted materials, can be highly persuasive to a judge, a jury or an administrative law judge." In addition, written documentation that a defendant was warned repeatedly or failed to clean up a site by an agreed upon date can be very persuasive in court. Increased court activity has brought the need for better record keeping to the forefront. But investigators who have more to do than "just fill out paperwork," need to be constantly reminded of its importance.

Along those same lines, the Department should invest in investigative skills training for those sanitarians who routinely conduct illegal disposal field work. Learning some of the "tricks of the trade," like interviewing techniques, would help investigators get more information and make more efficient use of time.

Certainly other agencies already have "experts" in this field, and the Health Department should explore ways to integrate deputies, police officers and other enforcement personnel into the investigative process. The foundation for such cooperation already exists. Doug Chase, Missoula's Sheriff, invited Health Department personnel to an Environmental Crimes workshop in the spring of 1994. The workshop provided excellent

---

94EPA, Environmental Criminal Enforcement, 11.
information about how federal and state agencies might provide assistance to local officials in criminal cases.

In addition, the Health Department recently received a complaint about illegal dumping on Forest Service land near the Idaho border. During the initial investigation, Shannon McNew from the Health Department and Joe Kipphut from the Forest Service crossed paths and compared notes. Different complainants had turned in two different people for the dumping. Using the interviewing expertise of Forest Service Special Agent Bill Fox, the agencies were able to uncover a series of illegal dumping incidents on public and private land. As a result of this cooperative (and successful) effort, the investigators from the two agencies agreed to share more information. However, at this time, the agreement is an informal one and would be lost in the event of personnel turnover.

Education Campaigns

Regulations and enforcement actions are not the only tools for combating illegal disposal. Education strategies can and should be used to reach would-be violators before they break the law. Most people instinctively know it is wrong to dump trash in the woods or over a bank. It is a covert act, done in secrecy. No defendants look up in surprise and exclaim, “You mean that is illegal?!” when confronted with their crime. However, some types of disposal would illicit such a remark, namely theft of services, illegal landfilling of one’s own waste on one’s property, and burning. While it would not take care of the problems entirely, education of the public about which acts are illegal, may cut down on the frequency of the violations. However,
Kevin Lynch warns, "Attitudes are largely unaffected by preaching and publicity. People are usually unaware of their own wasting behavior, or they suppress it. They live with their incongruities."\(^{95}\)

Of course, not all types of illegal disposal are suited to a Health Department sponsored education campaign. Theft of services, while prevalent, does not have public health implications. Many people would dismiss the campaign as a grab for more profits by BFI. Theft of services is probably best handled through Notices of Violation and the newly established mandatory garbage service for all renters.

Illegal landfilling of one's own waste is probably not a widespread violation in Missoula. An education campaign would have to target a very specific group of landowners to be cost effective. It would be possible, though time consuming, to cross reference all landowners of large holdings with the BFI customer list, and send out information to those without garbage service. However, the time spent may yield few changes in behavior. Follow up would be costly, and may be seen by some as an invasion of privacy. Considering all the drawbacks, it is unlikely the Health Department would commit the need resources to such a campaign.

Illegal burning, on the other hand, is perfectly suited for an educational effort. The activity is prevalent throughout the county; a broad publicity campaign would probably reach many people who burn, or know people who burn garbage. The public health issues associated with burning are quite clear, and can be concisely summarized in public service announcements and soundbites. The campaign could play on issues already

\(^{95}\)Kevin Lynch, 54.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
in the forefront of many Missoulians' minds: poor air quality and garbage incineration. And with any luck, a successful campaign would have a two-fold effect. First of all, it should reduce the number of violations by teaching violators the dangers they create by burning. Secondly, it should increase the number of neighborhood watchdogs, those people who will call the Health Department and report on-going violations. The Health Department will be able to handle these complaints in two ways: either rush out to the site and ticket the violator, or send a form letter warning them to stop burning waste.

A campaign to reduce the amount of garbage burned in Missoula County could consist of several facets:

- a brochure created in conjunction with open burning requirements. This brochure could be partially or wholly funded by the Fire Protection Fund which consists of donated money from the open-burning permit system.
- a story in the local papers and concurrent interviews on local talk-radio stations.
- newspaper advertisements
- radio public service announcements (PSA's)
- a professionally produced PSA video. The department has used the services of KECI, a local station, to produce water quality PSA's, and could do the same for burning garbage. It could be pretty simple emphasizing that burn barrels exceed the allowable emissions for municipal waste incinerators.
- billboards
A coordinated campaign would probably be the most successful -bombarding the public with garbage burning information for two weeks to a month. However, the Department will have to be prepared for an onslaught of complaints, and should make sure it can respond to the majority of them to get the most benefit from such a undertaking.

The Health Department has made many positive changes in its enforcement of illegal disposal violations. In its endeavor to continue to improve the program, the department must take care not to lose sight of other solid waste management issues. Embalming waste in landfills may prevent most of the environmental and health concerns associated with illegal disposal, but it is not the only, or necessarily the best, management method for solid waste. Source reduction, recycling and composting can have tremendous impacts on public health, and as such, the Health Department should play a role in their promotion. By creating and promoting a holistic approach to solid waste management which emphasizes alternatives to waste creation and disposal, the Department can best assure Missoula and Montana will continue to be "the last best place."
# MISSOULA COUNTY LANDFILLS
## December 1994

<table>
<thead>
<tr>
<th>Landfill</th>
<th>Status</th>
<th>Location</th>
<th>Legal</th>
<th>Contact Person</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class II</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BFI of Montana</td>
<td>Current</td>
<td>Missoula; North of I-90</td>
<td>T13 R19 S9</td>
<td>Max Bauer, Jr</td>
<td>543-3157</td>
</tr>
<tr>
<td>Champion International</td>
<td>Closed</td>
<td>Bonner; Clark Fork site</td>
<td>T13 R18 S20</td>
<td>Dick Shimer</td>
<td>258-2100</td>
</tr>
<tr>
<td>KG Drew Landfill</td>
<td>Closed</td>
<td>Seeley Lake</td>
<td></td>
<td>Kerry Drew</td>
<td></td>
</tr>
<tr>
<td>Stone Container</td>
<td>Closed</td>
<td>Frenchtown</td>
<td>T14 R21 S11 14 23 24</td>
<td>Laura Kosmalski</td>
<td>626-4451</td>
</tr>
<tr>
<td><strong>Class III</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clark Fork Compost</td>
<td>Current</td>
<td>Turah (Bauer landfill)</td>
<td>T13 R18 S35</td>
<td>Greg Kenneth</td>
<td>543-4210</td>
</tr>
<tr>
<td>Msla City Street Dept</td>
<td>Closed</td>
<td>Missoula; Hwy 93 S</td>
<td>T12 R20 S1</td>
<td>Ed Clay</td>
<td>721-7623</td>
</tr>
<tr>
<td>Msla City Street Dept</td>
<td>Current</td>
<td>Missoula; Northside</td>
<td>T13 R19 S16</td>
<td>Ed Clay</td>
<td>721-7623</td>
</tr>
<tr>
<td>Frank Bauer Landfill</td>
<td>Relicensed</td>
<td>Turah</td>
<td>T13 R18 S35</td>
<td>Clark Fork Compost</td>
<td>543-4210</td>
</tr>
<tr>
<td>Norm’s Recycling</td>
<td>Current</td>
<td>Missoula; Hwy 93 South</td>
<td>T12 R20 S1</td>
<td>Norm Close</td>
<td>728-8833</td>
</tr>
<tr>
<td>Pyramid Lumber</td>
<td>Current</td>
<td>Seeley Lake</td>
<td>T16 R15 S3</td>
<td>Todd Johnson</td>
<td>677-2201</td>
</tr>
<tr>
<td>Stimson Lumber</td>
<td>Current</td>
<td>Bonner; Blackfoot site</td>
<td>T13 R18 S21</td>
<td>Dick Shimer</td>
<td>258-2100</td>
</tr>
<tr>
<td>Stone Container</td>
<td>Current</td>
<td>Frenchtown</td>
<td>T14 R21 S11 14 23 24</td>
<td>Laura Kosmalski</td>
<td>626-4451</td>
</tr>
<tr>
<td>Washington Construction</td>
<td>Closed</td>
<td>Missoula; North Reserve</td>
<td>T13 R19 S7</td>
<td>James Brouelett</td>
<td>728-2450</td>
</tr>
<tr>
<td>Western Materials</td>
<td>Current</td>
<td>Missoula; Target Range</td>
<td>T13 R20 S36</td>
<td>Dave Orbe</td>
<td>543-8218</td>
</tr>
<tr>
<td>Wheeler Landfill</td>
<td>Current</td>
<td>Missoula; Wheeler Road</td>
<td>T13 R19 S6</td>
<td>Bill Wheeler</td>
<td>549-3118</td>
</tr>
<tr>
<td><strong>Composting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EKO-Kompost</td>
<td>Current</td>
<td>Missoula; 3700 Compost</td>
<td>T13 R19 S18</td>
<td>T. Munnerlynn</td>
<td>721-1423</td>
</tr>
</tbody>
</table>
Appendix B

Missoula County Solid Waste Regulations
Rule #2
Rescinded upon adoption of Missoula City-County Health Code in July, 1994

PREAMBLE

Because of heavy concentrations of populations developing in Missoula County, the Missoula City-County Board of Health finds it necessary to enact rules and regulations covering garbage, refuse and rubbish storage and handling, pursuant to 69-4509 (f) and (k)(ii), R.C.M., 1947. Experience has demonstrated that public health problems are often associated with the improper disposal of refuse in urban and rural areas.

Research and demonstration of refuse disposal programs has shown that the application of the basic principles of sanitation result in substantial reduction in eh insect and rodent population. In addition, there is a significant relationship between the incidence of certain diseases in both humans and animals and improper refuse disposal. it is well known that many hazards and nuisances such as fire, smoke, odors and unsightliness result from improper refuse practices.

The following regulations are adopted to set forth standards for proper storage, handling and disposal of solid wastes.

SECTION 1: Definitions

The following definitions shall apply in the interpretation and enforcement of this rule. The work “shall” as used in this rule indicates a mandatory requirement.

(A) Garbage - Putrescible animal and vegetable wastes resulting from the handling, preparation, cooking and consumption of food.

(B) Refuse - All putrescible and non-putrescible solid waste, except body wastes, including garbage, rubbish, street cleaning, dead animals, yard clippings, and solid market and solid industrial wastes.

(C) Rubbish - Non-putrescible solid waste consisting of both combustible and non-combustible wastes, such as paper, cardboard, abandoned vehicles, tin cans, wood, glass, crockery and similar materials.

(D) Sanitary Landfill - A method of disposing of refuse on land without creating nuisances or hazards to public health or safety by utilizing the principles of compaction and burying. The refuse is confined to the smallest practical area and volume, and covered with a layer of earth or wood waste at the conclusion of each day’s operation or at such more frequent intervals as may be necessary.

(E) Incineration - The process of burning combustible refuse to ash at high temperatures in receptacles especially designed for this purpose and approved by the State Board of Health.
(F) Composting - The decomposition of organic waste to a relatively stable humus-like material. A micro-biological decomposition producing heat and liberating primarily only carbon dioxide and water.

(G) Person - An individual, group of individuals, partnership, firm, corporation, association, company, county, city, village or improvement district.

(H) Health Officer - Missoula City-County Health Officer or his authorized representatives, including any peace officer so authorized.

(I) Board of Health - Missoula City-County Board of Health.

SECTION 2: Storage and Collection

Every person owning or in possession of any dwelling, flat, boarding house, lodging house, restaurant, hotel, apartment, eating house or place of business where food is sold or prepared for human consumption, either on or off the premises, shall maintain at all times in a place easily accessible to the garbage collector, and where it will not be a public nuisance, or in any degree offensive, one or more tight metallic or plastic containers with overlapping tight fitting covers in which shall be placed all garbage accumulated on the premises. The containers shall have a capacity of not less than ten nor more than fifty-five gallons. No containers shall be used to hold materials weighing more than seventy pounds or hot ashes. The containers are to be placed, at the appointed time of collection, at the rear property line adjacent to the alley or the front curb where no adequate alley exists; except that in cases specifically approved by the Health Officer another location may be designated. Persons living in the same apartment house may use a single garbage receptacle in common. All organic matter, such as food, etc., shall be wrapped in paper or plastic before being deposited in the garbage container.

In addition, there shall be permitted within the county commercial type containers upon which there shall be no restrictions as the size of the container, or of the weight of material placed therein; provided that they are of the type that can be mechanically dumped by the garbage collector and have tight covers.

When garbage is places outdoors in garbage containers, racks, stakes or holders must be provided to hold all such garbage containers. Such garbage racks, stakes or holders must be so designed and installed as to secure and hold said garbage containers so that they cannot be spilled, tipped, and overturned and the contents strewn on the ground. Further, they must be so designed and installed to facilitate cleaning around them.

SECTION 2.1: Enforcement Procedure

Whenever, upon inspection of any premise on which garbage, rubbish or refuse is stored or disposed of, the Health Officer finds that conditions or practices which violate these rules the health Officer shall give notice in writing of such violations to the person owning or in possession of such premise, and shall stipulate a time period for correction of said violation.

Service of notice may be effectuated by personal service or by mail, using certified mail with a return receipt.

The violation correction time shall be determined by the Health Officer and shall be dependent on conditions observed at the time of inspection. At the end of the time period, the health Officer shall make a re-inspection, and if he finds that such condition or practices have not been corrected, he may initiate legal action against the person, owning or controller of the premises. In addition, at his option, the Health Officer may contract with any person.
to correct the situation. Actions to recover the expenses incurred thereby shall be brought by the county attorney as provided by Section 69-4519 (91), R.C.M., 1947.

SECTION 3: Transportation

No person shall remove any garbage or carry it through the roads of the county, except in vehicles having metallic or metal-lined bins with proper covers so that the garbage will not be offensive. The garbage must be protected from the wind and rain and be loaded in such a manner that none of it shall fall, drop or spill upon the ground. Rubbish and refuse shall be transported is such a manner as not to litter a roadway.

SECTION 4: Burning and Burying of Garbage, Refuse or Rubbish

No person shall burn or bury any garbage, refuse or rubbish within any yard or open space within the county. However, burying may be permitted in areas wherein the Health Officer's opinion the practice will not be offensive or cause a health problem to surrounding residents.

SECTION 5: Storage of Refuse and Rubbish

No person shall store or allow to be stored, within any yard or open space within the county, any refuse or rubbish where said storage will create a public nuisance or be to any degree offensive or where in the Health Officer's opinion the storage of refuse or rubbish may constitute a safety hazard or health hazard to the neighboring residents.

SECTION 6: Inspections

The Health Officer or sanitarian is hereby authorized to make such inspections as are necessary to determine satisfactory compliance with this rule.

The owner or occupant of a property shall give the Health Officer or sanitarian free access to the property at reasonable times for the purpose of making such inspections as are necessary to determine compliance with the requirements of this rule.

SECTION 7: Penalties

Any person who violates any provision of this rule or any provision of any regulation adopted by the Board of Health pursuant to authority granted by this rule, shall, upon conviction, be punished by a fine not less than ten dollars and not more than fifty dollars for each offense. This penalty may be invoked in addition to any remedies sought pursuant to Section 2.1 of the Rule.

SECTION 8: Conflict of Ordinances, Effect of Partial Invalidity

In any case where a provision of this rule is found to be in conflict with a provision of any zoning, building, fire, safety or health ordinance or code of the City or County of Missoula, the provision which in the judgment of the Health Officer, established the higher standard for the promotion and protection of the health and safety of the people shall prevail.

If any section, subsection, paragraphs, sentence clause or phrase of this rule should be declared invalid for any reason whatsoever, such decision shall not affect the remaining portions of this rule which shall remain in full force and effect; and, to this end, the provisions of this rule are hereby declared to be severable.

Effective Date

This rule shall be effective on and after the 1st day of July, 1973.
Appendix C
Missoula Municipal Code
Chapter 8.28
GARBAGE AND RUBBISH *

Sections:

8.28.101 Definitions.
8.28.020 Jurisdiction.
8.28.030 Enforcement authority
8.28.040 Containers--Zoning permit requirement
8.28.050 Containers--Commercial.
8.28.060 Containers--Residential.
8.28.070 Containers--Supply and use.
8.28.080 Keeping property and containers clean.
8.28.090 Distribution of handbills.
8.28.100 Littering.
8.28.110 Removal of litter at construction and other sites.
8.28.120 Transportation requirements.
8.28.130 Dumping on vacant lots.
8.28.140 Burning and burying garbage.
8.28.150 Violation--Penalty.

8.28.010 Definitions. For the purposes of this chapter, the following works shall have the meanings set out below:

A. “Commercial garbage container” means watertight, insectproof, durable metal or plastic containers having tight-fitting lids which are so designed as to be mechanically dumped, and so that they cannot be dumped over by children or animals.

B. “Garbage” means putrescible animal and vegetable wastes resulting from handling, preparation, cooking and consumption of food.

C. “Litter” means any quantity of uncontainerized paper, metal, plastic, glass or miscellaneous solid waste which may be classed as trash, debris, rubbish, refuse, garbage or junk.

D. Notice. The city shall give “notice” under this chapter by one of the following methods:

1. Delivering written notice at the place of business of the owner through which a rental agreement was made if the property is nonowner occupied;
2. Mailing a written notice by registered or certified mail to the owner, agent, occupant, or lessee at the address held out by him as the place for receipt of communications or in the absence of such designation, to his last known address;
3. Delivery of written notice by hand to owner, agent, occupant, or lessee.

E. “Person” means an individual, group of individuals, partnership, firm, corporation, association, company, county, city, village, or improvement district.

* For statutory provisions authorizing the city to regulate the disposition and removal of ashes, garbage and other offensive matter, and to levy a tax therefor, see MCA 7-14-4105 and 7-14-4106.
F. "Private property includes, but is not limited to, the following exterior locations owned by private individuals, firms, corporations, institutions or organizations: yards, grounds, driveways, entranceways, passegeways, parking areas, working areas, storage areas, vacant lots and recreation facilities.

G. "Public property" includes, but is not limited to, the following exterior locations: streets, street medians, roads, road medians, catch basins, sidewalks, strips between streets and sidewalks, lanes, alleys, public rights of way, public parking lots, school grounds, municipal vacant lots, parks, playgrounds, other publicly-owned recreation facilities and municipal waterways and bodies of water.

H. "Refuse" means all putrescible and nonputrescible solid waste except human body wastes, including garbage, rubbish, street cleanings, dead animals, yard clippings, and solid market and solid industrial wastes.

I. "Residential Garbage Container." A "residential garbage container" is designed to be emptied manually, shall have a capacity of not less than ten gallons and not more than thirty-two gallons, and shall have two handles located on opposite sides of the container, located not lower than twenty-two inches above the bottom, shall be watertight, insectproof, have overlapping tight-fitting lids, and be constructed of durable metal or plastic.

J. "Rubbish" means nonputrescible solid waste consisting of both combustible wastes such as paper, cardboard, abandoned vehicles, tin cans, wood, glass, crockery, lawn clippings, and similar materials. (Ord. 2138 S1, 1980; Ord. 2096 S1, 1979).

8.28.020 Jurisdiction. The provisions of this chapter shall apply to all areas within the city and to all areas within four and one-half mile radius of the city limits. (Ord. 2096 S2, 1979.)

8.28.030 Enforcement authority. A. The police department has the primary responsibility for enforcement of all provisions of this chapter. members of units assigned to special parking details in downtown or other commercial areas (patrolmen, meter maids) have authority to enforce in their normal course of duty violations of this chapter.

B. The city-county health officer has primary responsibility to make the determinations required in Sections 8.28.050(D) and 8.28.080(F). In addition the city-county health officer has primary responsibility for enforcement of all provisions of this chapter outside the city limits but within four and one-half miles of the city limits. The city-county health officer also has authority to enforce all provisions of this chapter within the city.

C. The health officer and chief of police are authorized to delegate enforcement authority to such officers and/or inspectors within the health department or police department as he deems appropriate. (Ord. 2096 S13, 1979).

8.28.040 Containers—Zoning permit requirement. A. A zoning compliance permit shall not be issued for construction of commercial buildings and multiple-dwelling units until plans for the adequacy, location, and accessibility of garbage and rubbish containers and facilities have been reviewed and approved by the city zoning officer.

B. No certificate of occupancy shall be issued for the premises until the city zoning officer has approved the garbage and rubbish containers and facilities. (Ord. 2096 S8, 1979)

8.28.050 Containers—Commercial. A. Commercial garbage containers shall be kept covered at all times.

B. Commercial garbage containers shall be placed on a hard level surface for emptying.

C. Commercial garbage containers shall be emptied at intervals of seven days or less.

D. Commercial garbage containers are required of all of the following: All trailer courts and mobile home parks with four or more units, hotels, motels, retirement homes, nursing homes, hospitals, schools, establishments selling food or drink for consumption on or off the premises, and apartments or apartment complexes having four or more living units or
any other establishment which in the judgment of the city-county health officer generates sufficient refuse to warrant a commercial container. Exceptions to this requirement may be granted by the city-county health officer upon a finding that the container is unnecessary or impracticable. (Ord. 2096 S6, 1979).

8.28.060 Containers—Residential. A. Residential garbage containers shall weigh not more than seventy pounds when fully loaded.
B. Residential garbage containers shall be kept covered at all times.
C. All residential garbage containers shall be emptied at intervals of seven days or less, unless the volume of garbage generated during this interval is normally less than the capacity of the containers.
D. Installation of sunken residential garbage containers after the effective date of the ordinance codified in the chapter shall not be permitted.
E. Residential garbage container racks must be provided to hold all such containers. Racks must be so designed, installed and maintained as to secure and hold the containers so that they cannot be spilled, tipped and overturned and the contents strewn on the ground. The requirement for racks shall be waived where containers must be placed for collection at the curb because no alley exists. In such cases, containers shall be at the curb for no longer than twelve consecutive hours. However, all provisions of Section 8.28.140 and subsection B of this section still apply. (Ord. 2096 S5, 1979)

8.28.070 Containers—Supply and use. A. Every person owning or in possession of property from which refuse is generated shall maintain at all times in a place easily accessible to the garbage collector, and where it will not be offensive or a public nuisance, one or more residential or commercial garbage containers as defined in this section. The capacity of the containers shall be adequate to hold all refuse generated between collections.
B. All garbage accumulated on the premises shall be placed in the garbage containers.
C. Rubbish consisting wholly of lawn clippings, leaves, nonfood garden wastes, cardboard boxes, foliage trimmings and small pieces of waste lumber for collection may be stored in garbage containers or next to the garbage rack for pick up in plastic bags or neatly tied into bundles or placed in sturdy cardboard boxes. No rubbish or garbage shall be placed out for collection in paper bags or sacks.
D. No garbage, refuse or litter container shall be stored or set out for collection in the public right-of-way so as to impede or block public access or use or constitute a hazard or nuisance.
E. Any garbage, refuse or litter container which is not watertight, has sharp edges, which does not conform to prescribed standards or which has defects likely to hamper collection or injure the person collecting the contents thereof or the public generally, shall be replaced promptly by the owner or user of the container upon receipt of written notice of such defects. Failure to do so within ten days of notification shall constitute a violation of this section. (Ord. 2096 S4, 1979).

8.28.080 Keeping property and containers clean. A. It is the duty of the owner, agent, occupant, or lessee of property to keep premises free of litter, rubbish and garbage. This requirement applies not only to loose litter, but also to materials that already are or become trapped at such locations as fence and wall bases, grassy and planked areas, borders, embankments, and other lodging points.
B. It is the duty of the owner, agent, occupant, or lessee of property to keep garbage and rubbish containers of property reasonably clean and free of offensive odors.
C. Owners, agents, occupants, or lessees whose properties face on municipal sidewalks and boulevards are responsible for keeping that portion of the sidewalks and boulevards adjacent to their property free of garbage, litter and rubbish. Owners, agents, occupants, or lessees whose properties face on alleys are responsible for keeping that half of the alley adjacent to the property free of garbage, litter and rubbish.
D. It is unlawful to sweep or push litter from sidewalks and boulevards into streets.
E. It is the duty of every owner of vacant property to keep that property free of litter.
F. If an owner, agent, occupant, or lessee of property fails to remove litter on his or her property within then days after notice by the city-county health officer or police department, the litter will be removed by the city and the owner or his appointed agent, occupant, or lessee billed for the cost thereof.
G. If, in the determination of the city-county health officer a litter situation exists that constitutes an “emergency” to the city or neighboring property owners, the city may remove the litter and bill the owner, his appointed agent, occupant or lessee of the property for the cost thereof after making a good faith effort to notify by telephone or in person, the owner, agent, occupant or lessee of the problem and giving him or her a twenty-four hour period to remedy the problem. (Ord. 2096 S10, 1979).

8.28.090 Distribution of handbills. It is unlawful for any person to throw, scatter, distribute or cause to be thrown, scattered or distributed upon or along any of the sidewalks, streets avenues or alleys of the city, any bills, posters, dodgers, cards or other advertising matter of any kind. (Prior code S13-2).

8.28.100 Littering. A. It is unlawful for any person to throw, discard, place or deposit litter in any manner or amount on any public or private property within a four and one-half mile radius or city limits except in containers or areas lawfully provided therefor.
B. In the prosecution charging a violation of subsection A of this section from a vehicle, proof that the particular vehicle described in the complaint was the origin of the litter, together with proof that the defendant named in the complaint was at the time of the violation the registered owner of the vehicle, shall constitute in evidence a presumption that the registered owner was the person who committed the violation.
C. It is the duty of very person distributing or casing to be distributed commercial handbills, leaflets, flyers or any other advertising and informational material to take reasonable measures to keep such materials from littering public or private property.
D. It is unlawful for any person to deposit household garbage or refuse in garbage or refuse containers maintained for the use of other residences or establishments. (Ord. 2096 S3, 1979).

8.28.110 Removal of litter at construction and other sites. A. any owner or occupant of an establishment or institution at which litter or rubbish is attendant to the packing, unpacking, loading or unloading of materials at exterior locations hall provide suitable containers for the disposal and storage of such litter and rubbish and shall make appropriate arrangements for the collection thereof.
B. It is unlawful for the owner, agent or contractor in charge of any construction or demolition site to cause, maintain, permit or allow to be caused, maintained or permitted, the accumulation of any litter or rubbish on the site before, during and after completion of the obstruction or demolition project.
C. It is the duty of the owner, agent or contractor to have on the site adequate containers for the disposal of litter and rubbish and to make appropriate arrangements for its collection and transportation to an authorized facility.
E. It is the duty of the owner, occupant, contractor, or agent to remove at the end of each working day any litter and rubbish which has not been containerized. (Ord. 2096 S7, 1979).

8.28.120 Transportation requirements. A. It is unlawful for any person to remove any garbage or carry it through the streets of the city except in vehicles having metallic or metal-lined bins, with covers so that the garbage shall not be offensive. The garbage must be protected from the wind and rain and be loaded in such a manner that none of it shall fall, drop, blow or spill upon the ground.
B. It is unlawful for any person to carry any rubbish on the streets except in vehicles having bins, containers, or enclosures so designed that no material loaded within shall fall,
drop, blow or spill upon the ground or public thoroughfare. Any load containing paper must be covered while moving through the streets. All rubbish so carried must be loaded into the transportation vehicle in such a manner that none of it shall fall, drop, blow or spill upon the ground.

C. The duty and responsibility imposed by subsections A and B of this section shall be applicable alike to the owner of the truck or other vehicle, the operator thereof and the person, firm, corporation, institution or organization from which residence or establishment the cargo originated. (Ord. 2096 S9, 1979).

8.28.130 Dumping on vacant lots. It is unlawful for any person to dump, place or leave or cause to be dumped, placed or left upon public property, including any of the streets, avenues or alleys of the city any rock, gravel, dirt, earth or soil, garbage or rubbish, unless permission to do so is first obtained from the street department of the city or to dump, place or leave or cause to be dumped, placed or left upon any vacant or unoccupied private lot or lots within the city or a four and one-half mile radius of the city limits any rock, gravel, dirt, earth or soil on private property, unless permission to do so shall be first obtained from the owner or owners of the vacant or unoccupied lot or lots. (Ord. 2096 S12, 1979).

8.28.140 Burning and burying garbage. Except in the case of composting, it is unlawful for any person to burn or bury any garbage, rubbish, or litter in any yard or open space within the city or a four and one-half mile radius of the city limits unless a disposal site license has been obtained from the Solid Waste Bureau of the Montana State Department of Health and Environmental Sciences. (Ord. 2096 S11, 1979).

8.28.150 Violation—Penalty. It is a misdemeanor for any person to do any act forbidden or to fail to perform any act required by the chapter. Every person convicted of a violation of any provision of this chapter shall constitute a separate offense. (Ord. 2096 S14, 1979).
Appendix D
Missoula City-County Health Code
Regulation 3: Solid Waste Management

I. PURPOSE. The purpose of this rule is to establish standards for proper storage, handling and disposal of solid waste to protect public health, safety and the environment.

II. AUTHORITY. Authority for regulations promulgated in this rule is provided for in 50-2-116, MCA, under which a local health board may adopt rules that do not conflict with rules adopted by the Montana Department of Health and Environmental Sciences for the removal of filth that might cause disease or adversely affect public health.

III. DEFINITIONS. The following definitions shall apply in the interpretation and enforcement of this rule.
(A) "Class II landfill" means a facility licensed by the State of Montana to accept group II and group III wastes.
(B) "Class III landfill" means a facility licensed by the State of Montana to accept group III wastes only.
(C) "Clean fill" means uncontaminated soil, dirt, rock, sand, gravel, and portland cement concrete free of reinforcing steel.
(D) "Group I wastes" means hazardous wastes as defined by 40 CFR 250.1 and ARM 16.14.503.
(E) "Group II wastes" means decomposable household and commercial wastes, or mixed solid wastes, excluding hazardous wastes. Examples include but are not limited to the following:
   (a) Municipal and domestic waste such as garbage and putrescible organic materials, paper, cardboard, cloth, glass, metal, plastics, street sweepings, yard and garden wastes, digested sewage treatment sludges, water treatment sludges, ashes, dead animals, offal, discarded appliances, vehicle parts, and properly sterilized medical wastes; and
   (b) commercial and industrial wastes such as packaging materials, containers, and any liquid or solid industrial wastes which are chemically or biologically decomposable and which are not classified or identified as hazardous waste in 40 CFR 250.1, crop residues, manure and food waste.
(F) "Group III wastes" means untreated wood wastes and non-water soluble solids, such as brick, rock, and portland cement concrete.
(G) "Litter" means any quantity of paper, cardboard, metal, plastic, glass, or other miscellaneous solid waste which is not disposed of in a garbage container.
(H) "Person" means any individual, firm, partnership, company, association, corporation, city, town, local governmental entity, or any other state, federal, or private entity, whether organized for profit or not.
(I) "Solid waste" means all putrescible and nonputrescible wastes, including but not limited to garbage, rubbish, refuse, ashes, sludge from sewage treatment plants, water supply treatment plants or air pollution control facilities; construction and demolition wastes; dead animals, including offal; discarded home and industrial appliances; and wood products or wood byproducts and inert materials.

91

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
IV. STORAGE AND COLLECTION. (A) Any person owning, controlling, or in possession of property from which any group II waste is generated shall maintain at all times in a place easily accessible to the garbage collector, and where it will not be offensive or a public nuisance, one or more residential or commercial garbage containers as defined in this rule.

1. The capacity of the containers shall be adequate to hold all refuse generated between collections.

2. All group II waste and litter accumulated on the premises shall be places in the garbage containers and delivered by a commercial garbage collection company or by the generator to a Class II landfill or transfer station after an accumulation period of not more than seven days.

3. Effective August 15, 1994, in all areas of Missoula County that have available commercial garbage collection services, the owner of any rental dwelling, including apartments, rental manufactured homes, duplexes, or single family rental units, shall subscribe to commercial garbage collection, transportation and disposal of all group II waste generated on the premises. Garbage collection shall occur on an interval of not more than seven days.

4. Residential containers:
   (a) shall be designed and manufactured as garbage containers and have a capacity of not less than ten or more than thirty gallons. No containers shall be used to hold hot ashes or liquids. No containers shall be left out for collection which weigh more than seventy pounds; and
   (b) shall have tight-fitting lids and be kept covered; and
   (c) shall be placed at the rear property line adjacent to the alley or on the front curb where no adequate alley exists; in some cases, if approved by the department, another location may be designated. Residential containers may not be placed on a public street or road more than 12 hours before or eight hours after the time of collection; and
   (d) shall be equipped with racks, stakes or holders to securely hold garbage containers when they are placed outdoors so the containers cannot be spilled, tipped or overturned by animals or wind. They must be designed and installed to facilitate cleaning around them; and
   (e) shall not be recessed into the ground; and
   (f) may consist of plastic bags when filled solely with grass clippings or leaves, provided that each bag is closed with a tie and does not exceed fifteen pounds.

5. Commercial containers:
   (a) shall be constructed to be mechanically dumped by the garbage collector; and
   (b) shall have no restrictions as to size of the container or weight of the material placed therein; and
   (c) shall be kept covered at all times; and
   (d) shall be placed on a hard level surface for emptying; and
   (e) shall be required of all of the following: trailer courts with three or more units, hotels, motels, retirement homes, nursing homes, hospitals, schools, establishments selling food or drink for consumption on or off the premises, and apartments or apartment complexes having three or more living units or any other establishment which in the judgement of the Department generates sufficient solid waste to warrant a commercial container.

6. No commercial or residential containers shall be stored or set out for collection in the public right-of-way so as to impede or block public access or use or constitute a
hazard or nuisance.

(7) Any solid waste container which is not watertight, has sharp or ragged edges, which does not conform to prescribed standards or which has defects likely to hamper collection or injure the person collecting the contents thereof or the public generally, shall be replaced promptly by the owner or user of the container.

(8) It is the duty of the owner, agent, occupant or lessee of property to keep garbage containers maintained by them reasonably clean and free of offensive odors.

(B) It is unlawful for the owner, agent or contractor in charge of any construction or demolition site to cause, maintain, permit or allow to be caused, maintained or permitted the accumulation of any litter or other solid waste on site before, during or after completion of the construction or demolition project.

(1) It is the duty of the owner, agent, or contractor in charge of any demolition project:

(a) to have adequate containers for the disposal of litter and other solid waste generated on site; and
(b) to provide for disposal at a properly licensed solid waste facility; and
(c) to remove any litter and other solid waste which has not been containerized at the end of each working day.

(C) No person shall store or allow to be stored any solid waste on public or private land within the county where it will create a public nuisances, or be to any degree offensive or if the Department determines it may constitute a public health, environmental health or safety hazard.

(D) It is the duty of the owner, agent, occupant or lessee of property to keep premises free of litter and other solid waste.

(E) It is unlawful to sweep or push litter or other solid waste from sidewalks and boulevards into streets.

V. TRANSPORTATION. (A) Odorous solid waste shall be completely containerized during transportation so that it will not be offensive.

(B) Solid waste must be covered, containerized, or tied to the vehicle during transportation.

(C) Solid waste shall be loaded and transported is such a manner that none of it shall fall, drop or spill upon the roadway or ground.

VI. BURNING SOLID WASTE. No person shall burn any solid waste on public or private land within the County, unless the burning is permitted in accordance with the Missoula City-County Air Pollution Control Program regulations.

VII. BURYING SOLID WASTE. (A) No person shall bury any solid waste on public or private land within the County, unless:

(1) the solid waste qualifies as clean fill and permission has been granted by the property owner or owners; or
(2) the solid waste is organic agricultural or silvicultural waste; and the solid waste originated on the property where it is buried and the Department determines that the practice will not be offensive or endanger public or environmental health; or
(3) the site is licensed as a landfill by the Montana Department of Health and Environmental Sciences.

VIII. ILLEGAL DUMPING. (A) No person shall dump, store, place or leave or cause to be dumped, stored or left any solid waste upon any public or private property within the county, unless the solid waste is clean fill and permission has been granted by the property owner or owners.
(B) No person shall dump, place or leave or cause to be dumped, placed or left any solid waste in residential or commercial containers maintained for the use of other residences or establishments.

IX. HAZARDOUS WASTE. No person shall transport, store or dispose of any Group I waste except as provided for in ARM 16.44.
WORKS CITED

“All Crimes are Serious: It’s Time to Get Tough with Environmental Crooks.” Missoulian. 2 February 1994.


95

Missoula City-County Health Board, The Missoula Air Pollution Control Board, and the Missoula Water Quality District Board. "Message on Environmental Crime." Board minutes. Missoula, Montana: Missoula City-County Health Department, DATE.

Nielsen, Peter. "Memorandum to Health, Water Quality and Air Pollution Control Board Members." Missoula, Montana: Missoula City-County Health Department, January 24, 1994.


