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Stephen T. Carroll
The University of Montana

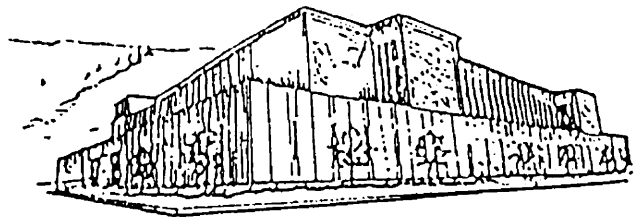
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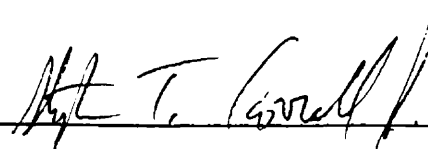
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TRASH TALKIN'
The 1992 MontPIRG Recycling Survey and the issues and politics of
Missoula's solid waste

by

Stephen T. Carroll Jr

B. S., University of Maine 1986

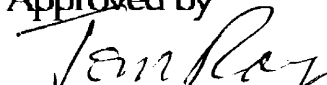
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for the degree of

Master of Science in Environmental Studies

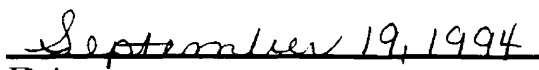
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SUMMARY

This professional paper builds on the MontPIRG recycling survey I designed and conducted in November 1991, giving more than a report of percentages and accumulated data. In this paper I chronicle the events leading up to the survey, the effect of and reactions to the survey, and I conclude by recommending a direction for waste reduction in Missoula.

My involvement with recycling and solid waste issues began in October 1989 with Recycle Missoula!. University students and community members organized this small non-profit group because of their desire to see more recycling in Missoula. To encourage greater recycling RM! started a free pickup of recyclables in the University District. Using an old moving van, and many RM! volunteers collected recyclables weekly for three years. The truck run and other educational activities RM! took on succeeded in generating interest and enthusiasm for recycling and waste reduction.

Curbside collection of recyclables has become common in most areas of the country. Over the last twenty years municipalities across the country have scrambled to find solutions to limited landfill capacity and rising garbage collection costs. Missoula with its small population base, geographic isolation, and relatively abundant landfill space faces no such "crisis." Missoula, without a perceived crisis, has little or no impetus for solid waste reduction, making the success of the Recycle Missoula! collection more surprising.

A year after RM! established its weekly collection run, BFI (Browning Ferris Industries), the local waste hauler and landfill owner, introduced their "modified curbside program" or Blue Bag Program. Many in the community criticized BFI's recycling program: At best this limited recycling program does not go far enough toward waste reduction; at worst it is an attempt to placate the communities desire for recycling with an inadequate program. BFI's Blue Bag

Program pointed out the lack of citizen involvement in local solid-waste management, leading RM! and several community groups to urge the mayor and county commissioners to establish a task force to increase the public's voice. The Missoula Solid Waste Task Force began meeting in January 1991, with the intent to increase citizen involvement in solid waste decisions, and to recommend ways Missoula could work to reduce solid waste.

The most contentious issue the task force dealt with was residential recycling. Environmental groups on the task force argued for the implementation of a institutionalized curbside recycling program. Other members of the Task Force, primarily BFI and the recycling businesses, advocated a *laissez faire* approach. They insisted establishing institutionalized recycling should wait for regional markets to improve.

Both sides agreed that for curbside recycling to succeed citizens would have to pay for the service. Task force members had different opinions about the community's willingness to pay for curbside recycling. BFI argued that their customers already complain about rates and would not pay additionally for recycling. Brad Martin of MontPIRG(Montana Public Interest Research Group), and I representing Recycle Missoula! believed the enthusiasm for the RM! collection proved people would pay for curbside recycling. The debate over the community's willingness to pay for curbside recycling provided the impetus for my survey.

In the summer of 1991 I began designing an extensive phone survey. I worked on this project in conjunction with the MontPIRG.

We designed the survey to find out whether Missoulians will support a source-separated curbside recycling program. To determine support for such a program we analyzed responses to three key questions: whether respondents were willing to participate in a curbside recycling program in which they

separated their recyclables; whether those who indicated they would participate would pay for such a service; and if respondents were willing to support a recycling service that charges everyone a flat rate regardless of participation. In addition we asked questions concerning household hazardous waste, oil recycling, and buying recycled products.

The survey includes residents of the Missoula urban area with listed phone numbers. Volunteers recorded responses from 390 Missoulians using randomly selected numbers. We conducted the survey on November 21, 23, 25, 27, and December 2, 1991. The sample size of 390 falls within the 95% confidence interval with a standard error of +/- 5%.

The survey clearly indicates a strong community support for curbside recycling. Of the 390 Missoulians surveyed, 73 percent said they will participate in a source-separated curbside recycling program; 54 percent indicated they will pay at least \$1.00 to \$3.00 per month for curbside recycling, 35 percent from \$3.00 to \$4.00 per month, and 25 percent up to \$5.00 per month. I divided the sample population into several subgroups. These subgroups include people:

- 1) who do not currently recycle
- 2) who take recyclables to a collection center or drop-off bin on their own
- 3) who use the BFI Blue Bag service
- 4) who participate in the RM! curbside program
- 5) who pay a regular garbage bill

For all subgroups I found strong support for source-separated curbside recycling. Interestingly, while willingness to participate is high for all categories of recyclers, we found participants in RM! and BFI Blue Bag recycling programs had the highest numbers with 85 percent and 82 percent respectively willing to participate.

The strongest argument in favor of curbside recycling in Missoula came from the responses of the 45 people who indicated they do not currently recycle.

- 89 percent of non-recyclers would recycle if it was more convenient; 93 percent said they recognize recycling as beneficial.
- 71 percent would participate in a source-separated curbside recycling program.
- 53 percent would pay at least \$1.00 to \$3.00 per month for this program; 33 percent would pay at least \$3.00 to \$4.00 per month; 24 percent would pay up to \$5.00 per month.
- 51 percent would support a flat-rate fee system.

At the time of the survey release I used the survey results to advocate establishing of a curbside recycling program. Despite the survey results many on the task force remained unconvinced that curbside recycling is a viable option for Missoula. The final task force report did not include a residential recycling recommendation.

Curbside recycling is a popular idea, and will increase recycling rates- if our goal is to increase recycling, then a curbside program seems appropriate. But if our goal is produce less garbage, then curbside recycling is a mediocre strategy at best. Waste reduction does not necessarily result from recycling. Through recycling certain items including glass and aluminum, are diverted from the landfill. Other items, including office paper and leaf and yard waste, constitute a greater portion of the waste stream and are rarely included in traditional curbside recycling programs. Further, curbside recycling provides no impetus for people to reduce their consumption, thereby creating less waste in the first place. Although a way for us to use resources more efficiently, recycling is still an energy intensive process involving transportation and re manufacture. We need to consider recycling as the last waste-reduction option, what we do with materials we can't compost or reuse.

In this paper I propose that a volume-based garbage rate structure provides a better strategy for reducing garbage. Volume-based rates link the cost

of garbage collection with the amount of waste disposed. An individual who generates less garbage pays less for collection than someone who generates more waste thereby proving an incentive to reduce waste through limiting consumption, reusing materials, and composting. Linking cost to the amount of service used is a well-established concept; the public is familiar with paying for many public services such as power and water this way. Many communities have implemented volume-based rates to reduce waste and provide more equitable garbage services, an Missoula would benefit from their lead.

In the remainder of this professional paper I present a more detailed analysis of the issues surrounding the MontPIRG recycling survey and the events leading to and resulting from it. In Chapters 1 through 3 I describe the events leading to the survey, outline the survey process, and report on the results. In Chapter 4 I describe the reaction to and impact of the survey. I conclude the paper with an argument for the establishment of a volume-based garbage rate structure for Missoula(Chapter 5).

Background on Missoula Solid-Waste Issues

Throughout the U. S. municipalities face difficult solid-waste management decisions. In many areas, overextended landfills, increased garbage collection rates, ground-water contamination, and an enraged citizenry define the "garbage crisis." The rush for solutions has produced a dramatic increase in recycling programs nationwide. In 1988 the US. had approximately 1000 curbside recycling programs; by 1991 we had close to 4000(Glenn 1992).

The Missoula solid-waste situation differs from much of the rest of the country. It is hard to imagine a city of comparable size with fewer incentives to examine its garbage situation. The driving force behind most waste-reduction efforts is a real or perceived lack of landfill space. But unlike most areas of the country, the Missoula landfill has yet to near its capacity. Browning Ferris Industries(BFI), which owns and operates the Missoula landfill, estimates another fifty years' worth of space left in the landfill. An abundance of landfill capacity enables BFI to charge low garbage rates-BFI customers pay only about \$10 a month. In comparison garbage disposal customers in many parts of the country pay household garbage bills of \$60 to \$80 a month resulting from \$100 per ton tipping fees (the amount charged the municipal or private waste hauler for dumping at the landfill)(Ujihara and Portney 1989).

Besides owning and operating the Missoula landfill, BFI Missoula owns a Class D hauling license permitting them to be the sole garbage hauler in Missoula County. As a result, Missoula's local governments are free of the responsibility of operating a major landfill and providing garbage-hauling services. BFI's monopoly allows Missoula city and county officials little involvement in or knowledge of solid-waste issues in their jurisdiction.

Consequently residents are left virtually voiceless in how garbage is handled in their city.

Recent federal regulations have highlighted conditions certain to put pressure on the Missoula landfill. In 1991, under the authority of the Resource Conservation and Recovery Act (RCRA), the Environmental Protection Agency (EPA) adopted 40 CFR Part 258. The new regulations, known as Subtitle D, set minimal technical requirements for landfill operation. These new regulations require landfills to have liners, leachate collection systems, groundwater monitoring, closure and post-closure care, and provide for financial assurance.

Large corporations, including BFI and WMX, have supported the new federal regulations largely because they have the financial ability to meet the new federal landfill regulations. Smaller public and private landfills in Montana, unable to meet these regulations, will close by 1996 or face heavy federal penalties. With the closure of landfills in the area, the Missoula landfill will increasingly become a regional facility. Already, BFI hauls garbage from Mineral, Granite, and Ravalli Counties to Missoula. We can assume regionalization will cut into Missoula's landfill capacity and push BFI to increase its size.

Recycling in Missoula

Nationwide the rush to recycle has outpaced the ability to process the amount of materials recycled, resulting in gluts and weak recycling markets. Missoula's relatively small population base and geographic isolation compounds the situation here. A low population base provides too little material for local redemption centers to secure long-term contracts with large recycling plants. Missoula is also far from most markets for materials, increasing transportation

costs. For a resident this means hauling a truckload of recyclables to a Missoula recycling center yields hardly enough money to pay for the gas.

Although dealing with weak recycling markets, both Montana Recycling Inc. and Pacific Steel and Recycling have operated recycling redemption centers in Missoula for decades. These centers accept and broker traditional consumer recyclables including tin cans, aluminum, glass, cardboard, newspaper, some plastics, and office paper. In addition the centers deal in scrap metals, appliances, and car batteries.

Besides these two businesses, two non-profit groups have operated recycling programs in town. Friends to Youth operated a subscription recycling service for a number of years to raise funds for their youth counseling efforts, discontinuing the service in 1990 due to lack of funds to pay drivers. Recycle Missoula! provided a curbside collection in the University District of Missoula from October 1989 to November 1992.

Recycle Missoula!

In the fall of 1989 Environmental Studies Department students from the University of Montana along with a handful of community members organized Recycle Missoula!(RM!). Organizers founded RM! because of their desire to see curbside recycling in Missoula. Many graduate students from areas of the country where curbside recycling programs have been established for years, and many residents desire to see a curbside program in the city. I became involved with Missoula solid-waste issues through my volunteer work with RM!.

RM! decided to advocate curbside recycling and to act directly to promote and encourage recycling. If RM! wanted to see curbside recycling established in town, then what better way to advocate for that change than to offer a curbside recycling service as an example? RM! decided to operate a free curbside collection of recyclables to demonstrate how curbside recycling could succeed in

Missoula, setting two goals: to generate support for curbside recycling in the community, and to continue the collection program until Missoula had a comprehensive curbside recycling program in place.

A member donated an old moving van for collections. We mapped out a route in the University District and canvassed the neighborhood to explain the program to residents. From October 1989 until November 1992 RM! collected recyclables every Wednesday using volunteer labor. Through those three years RM! collected aluminum, glass, tin cans, some plastics, cardboard, newspaper, and ledger paper. RM! also built and maintained two recycling bins in the downtown area, located at Wordens and the Broadway parking lot.

At the height of the collection effort RM! provided pickups for approximately 2100 residences, including the 1500 residences of the University District served by the weekly program. In addition the Lower Rattlesnake, McCormick, Northside/ Westside, and Triangle neighborhood groups each used the RM! truck one Saturday per month to collect recyclables in their areas.

The BFI Blue Bag Program

In the fall of 1990 BFI announced that starting in January 1991 they would offer a "modified curbside recycling service". BFI calls this service the Blue Bag Recycling Program, similar to programs they have implemented in other parts of the country, including Houston, Boise, and Pittsburgh (Erlanger, 1991). The Blue Bag Program allows BFI customers to recycle aluminum, newspaper, and tin cans. People place these recyclables in a blue plastic bag, and set the bag out for collection with the garbage. Customers purchase the plastic bags, made by Glad, at area stores. BFI workers collect the blue bags during the regular garbage pickup, throwing the bags in the packer truck with the garbage. At the end of the collection run BFI trucks dump bags and garbage together at the landfill, and

employees pull blue bags out of the waste and transport them to Montana Recycling for sorting.

RM! criticized the Blue Bag Program for several reasons. Our initial criticism focused on the Blue Bag Program's limited range of accepted materials. The program includes only aluminum, newspaper, and tin excluding many currently recycled items most notably glass, a commonly recycled material, and cardboard, a commodity with a local market (Stone Container in Frenchtown).

Our second area of criticism is the program's focus on consumer convenience, encouraging to customers to mix or comingle three categories of recyclables in the blue bags. Comingling leads to contamination, which occurs when customers incorrectly include regular garbage in the blue bags or include recyclables not collected in the program including glass. BFI stated that they will bury contaminated or torn bags. Contamination also results in less marketable materials. For example, it is difficult for the redemption center to sell a ton of newspaper to a manufacturer that is soaked with pop backwash and six pack rings.

Lack of consumer education poses an additional concern with comingling. Consumers benefit from separating recyclables by gaining knowledge about their garbage, especially about the composition and volume of their waste. For example, a household separating and recycling their aluminum, tin, newspaper, and glass will notice the percentage of these materials and the composition of their remaining garbage. This knowledge encourages consumers to make decisions that lead to waste reduction. Unfortunately the Blue Bag Program does the opposite. The Blue Bag Program requires minimal separation and relies on the throw-away mentality of traditional garbage collection. One of BFI's selling points for Blue Bag Program is its ease and convenience- it fits consumers'

normal garbage routines. The public, though, learns little about waste reduction when it relies on the old out-of-sight, out-of-mind garbage routine.

RM! also objects to the Blue Bag Program's reliance on disposable plastic bags. In some areas, including Pittsburgh's Blue Bag Program, workers separate the plastic bags on a conveyer belt, bale them, and send them for recycling (Erlanger 1991). In Missoula the bags become part of the waste stream. BFI argued that the bags take up relatively little landfill space. However, while plastic constitutes a minor percentage of landfill volume, the disposable bags are an offensive waste of non-renewable resources.

Many community activists speculate that BFI intends the Blue Bag Program to serve more a public relations gambit than as a real effort to reduce waste. Through the BFI Blue Bag Program BFI can claim they offer curbside recycling while continuing the same collect it and bury it routine.

In many areas of the country large waste industries, responding to community activism, have implemented limited recycling schemes. The industries use recycling programs as schemes to promote an image of environmental responsibility, diverting attention from unpopular incineration or landfill plans (Blumberg and Gottlieb 1989). In Missoula, BFI may have felt community pressure to offer recycling and turned to a program that promised visibility for the company, convenience for the consumer, and required little change in their operation. The program neglects the most important goal, waste reduction.

RM! held a number of meetings and discussions concerning our response to BFI's program. RM!'s initial concern focused on the blue bags, but the discussion soon turned to BFI's program illustration of lack of citizen input in local solid waste decisions. BFI heralded their program as an answer to curbside recycling. If BFI could implement a program that many criticized as inadequate

and call it curbside recycling, what real chance had we to implement more-comprehensive recycling programs in the city?

Concern by this critical lack of citizen involvement in solid-waste issues, RM! members Shannon McNew and Brian McNitt urged Mayor Kemmis and the Missoula County Commissioners to formulate a citizens task force on solid waste. They hoped that a task force would develop plans and provide a public voice in future solid-waste decisions. By the end of 1990 local government officials committed themselves to the idea of the Missoula Solid Waste Task Force.

Before the task force met, RM! MontPIRG urged BFI to delay implementation of the Blue Bag Program until the task force had a chance to review and study the service. RM! felt that if BFI put the program into place before such a review, it would compromise the task force's ability to evaluate other recycling options. Additionally, RM! felt implementing this program would confuse the public. People accustomed to the co-mingled, three-item strategy would require reeducation if the task force recommended a more-comprehensive program. RM!, MontPIRG, and twelve other community groups composed a letter outlining these concerns and asking BFI to hold off on implementing the program until the task force studied the program. We sent this letter to BFI and the local media; BFI never responded.

Missoula Solid Waste Task Force

In January 1991 Mayor Kemmis and the county commissioners appointed fifteen members to the Solid Waste Task Force. Task Force members included businesses, environmental, and local government representatives, along with a number of at-large citizens. The task force set a goal of developing an integrated solid-waste plan for Missoula.

Early on, task force members recognized that any discussion on recycling¹³ promised to be contentious. BFI, Montana Recycling, Recycle Missoula!, and MontPIRG all had representatives on the task force and all had a vested interest in recycling. task force members agreed that by starting their work with recycling issues the group had a good chance of becoming polarized, seriously compromising their ability to work on other solid-waste issues. The task force decided to discuss other solid-waste issues before dealing with recycling. The task force began by organizing committees to come up with strategies for composting, household hazardous waste, and recycled product procurement. Discussions concerning recycling waited until almost a year after the start of the task force.

When discussion finally turned to recycling, the issue, as expected, proved contentious. Both MontPIRG, represented by Brad Martin, and I, representing RM!, came to the task force committed to establishing curbside recycling in Missoula, while the recycling businesses and BFI just as strongly opposed any institutionalized form of curbside recycling.

Pro-curbside members felt that the task force should recommend establishing comprehensive curbside recycling in Missoula. We believed that curbside recycling was a step Missoulians were ready for and one that would result in significant waste reduction.

BFI, represented by Jim Lieter, and Montana Recycling, represented by Doug Stewart, advocated a market-based approach to recycling. They argued that tenuous markets in western Montana would make it too costly to run a curbside program. They advocated waiting for economic conditions to improve before institutionalizing any sort of comprehensive recycling program.

Two factors influence BFI's public positions. First, BFI Missoula is a volume-based business; the more volume of garbage they bury in the Missoula

landfill, the more money they make. Waste reduction runs contrary to their objective; making more money. Second, like most businesses, BFI is consumer conscious and concerned about its public image. BFI, committed to running a convenient service at low cost, realizes that a comprehensive recycling program costs customers money. BFI management avoids publicly endorsing programs that could raise customers rates. Thus in task force meetings BFI continually opposed comprehensive curbside recycling, contending that their customers would object to paying for such a program.

Montana Recycling joined BFI in opposition to curbside recycling, raising the same objections based on the weak, unpredictable markets for recyclable materials. Montana Recycling entered into a partnership with BFI with the Blue Bag Program in 1990 and also worked to implement BFI's container RecycleNO' program in 1992. In 1993 BFI bought Montana Recycling. The businesses presented a united front through two years of Task Force meetings.

Both sides in this debate agreed that neither the city nor county had the necessary funds or the political will to run a curbside recycling program. Additionally Task Force members all recognized that people would have to pay for curbside recycling.

The RM! curbside collection provided a fine example of why free curbside recycling is unrealistic for Missoula. Our weekly collections in the University District proved to be wildly successful. We estimated that 40 percent of the households participated in the University District at the height of the collection effort. Due to increasing amounts of materials each week, after a year and a half of collection we restructured the truck collection. RM! switched to picking up cardboard and newspaper one week, and glass, tin cans, aluminum, and plastic the next.

RM!'s program succeeded because it relied solely on volunteers. The money from the sale of the recyclables totaled about \$40 a week, paying for gas, insurance, and funds for educational projects. If RM! paid the required ten volunteers a week the collection effort would have been impossible. In Missoula the sale of recyclables alone can't support curbside recycling. To succeed, a program needs funding beyond the money generated by materials sale to cover the costs of the curbside service.

While everyone agreed a curbside program would cost consumers, debate focused on whether people would pay for recycling. Discussions followed a predictable pattern. BFI argued that curbside recycling was impractical in Missoula because of its cost. Basing their opinion on the number of calls they receive from customers complaining about current rates, they argued that people would oppose paying for curbside recycling. I pointed to high participation rates in the neighborhoods where we offered curbside recycling. RM! and MontPIRG believed Missoula residents had sufficient enthusiasm and desire for curbside recycling to succeed and they would pay.

While this debate was played over and over again, neither side had anything tangible to back its position. BFI based its opinion on those people agitated enough to phone and complain, an argument devoid of numbers or an indication that people calling were representative of BFI customers as a whole. Those calling to complain were likely the same people who habitually complain about city services and taxes.

Our position was no more grounded in fact. We based our argument on estimated participation rates in the neighborhoods that may not mirror the rest of the city.

Without a clear idea of the willingness of people to support curbside recycling the arguments were pointless. Discussions were unproductive and led

to a standstill. Because they offered a do-nothing approach , the impasse favored¹⁶ BFI's position. In addition, BFI's arguments and opinions held a great deal more weight with the Task Force and local government than did our position. Pro-curbiside members saw we needed to determine how many Missoulians were willing to participate in and pay for curbside recycling. If we wanted to establish curbside in Missoula we needed data to support our opinion that people would pay.

CHAPTER II

Survey Development, Implementation and Validity

Recycling turned Missoula Solid Waste Task Force discussions into indecisive quagmires. Brad Martin of MontPIRG and I were keenly interested in ending the standstill on the Task Force by conducting a scientifically valid and defensible survey of the public's attitude toward curbside recycling. We believed this was the best way to gather the necessary data to end the stalemate. We decided MontPIRG would fund the survey and provide support and I would design, implement, and report on the results.

I intended to use the survey to influence public policy, making it essential that the data I collected and results I obtained be scientifically valid and defensible. To get the most accurate and reliable information I designed and conducted a phone survey, assuring a high response rate. A phone survey also allowed a more random and non-biased sampling of public opinion. I began designing the survey in May 1991, finishing in October.

My sample population for this survey included all residents in the Missoula urban area with listed phone numbers. The sample excluded Milltown and Lolo listings and University of Montana dorm residents. Callers selected numbers randomly using a standardized dice and template method. Because the sample population only included residents with phones, the survey under-represented households without phones and may for this reason under-represent low-income people.

To conduct this survey I enlisted the help of many volunteers. Ten to twelve volunteers worked up to three hours each of the four survey dates. We used phones at the Missoula County Environmental Health Office on Thursday 21 November, Saturday 23 November, Monday 25 November, Wednesday 27

November, and Monday 2 December 1991. We conducted the weekday phone interviews between 6 PM and 9 PM, the one Saturday session between 1 PM and 4 PM

I took a number of steps to assure the validity of the survey results. I spent a significant amount of time writing and rewriting survey questions to eliminate as much bias as possible. Because numerous volunteers asked the survey questions I ensured they were all well versed in non-biased sampling techniques. Every night of the survey I facilitated a 45-minute presentation on non-biased phone-calling techniques and gave specific instructions for this survey. I supplied each volunteer with a list of specific calling instructions and reminders. In addition I monitored volunteers interviews to screen for potential problems.

I worked closely with Dr. Paul Miller of the University of Montana Sociology Department and Dr. William Chaloupka of the University of Montana Political Science Department. Both professors helped with writing and administering this survey.

The survey focused on whether Missoulians would pay for a source-separated curbside recycling program. To determine support I asked three primary questions in the survey:

- Are Missoulians willing to participate in a source-separated curbside recycling program?
- Will people pay, and how much will they pay for such a program?
- Will people support a flat-rate fee system that charges everyone the same regardless of participation?

In addition to asking these questions, I designed the survey to gather as much information as possible on Missoulian's recycling habits and attitudes. I asked questions concerning participation in local recycling programs. Other questions explored what factors motivated people to recycle. Interested in their knowledge of solid-waste issues besides recycling, I also asked a series of questions

concerning household hazardous waste, recycled products, and motor-oil recycling(I report on the details of the other solid waste issues in Appendix .)

The sample size of 390 falls within the 95% confidence interval with a standard error of +/- 5%. Volunteers recorded responses from 390 Missoulians.

I concluded the survey by asking several demographic questions . Callers asked persons' ages, education, incomes, and occupations. In addition callers asked people if they received monthly garbage bills, whether they rented or own their homes, how many people they lived with, if they were related to the people they lived with, if they were married, and whether they had children.

I had callers ask demographic information for two reasons. Collecting numbers on age, sex, income, and education of the respondents enabled me to further break the sample into subgroups and further analyze responses. I was also able to compare my results to census figures and determine how closely the sample conformed to actual census data on the Missoula population.

This sample population of 390 individuals closely matched numbers for age and income from US census data for Missoula. The sample had 7 percent of people between the ages of 18 and 21; the 1990 US census data for Missoula puts 10 percent of the population in this age class. The age bracket with the highest percentage was the 31 to 40 range with 29 percent, corresponding closely to the 23 percent census figure for this age group. The percentage of individuals aged 61 to 70 tapers off a bit to 6 percent as does the census figures for 60 to 69 at 8 percent. A slight increase was noticed in the percentage of people over 70 at 10 percent of the survey population; the census shows 12 percent in this range (Figure 1).

Figure 1
AGE
(n=389)

Survey			US Census/ Missoula(1990)	
age in years	number	%	age in years	%
18-21	26	7	18-21	10
22-25	41	10	22-24	9
26-30	47	12	25-29	12
31-40	111	29	30-39	23
41-50	67	17	40-49	15
51-60	37	10	50-59	9
61-70	23	6	60-69	8
over 70	37	10	70+	12

The income level of the survey population also matched closely with the US census data(Figure 2).

Figure 2
INCOME (n=308)

Survey Results			US Census/ Missoula (1980) (income by household)*	
	number	%		%
\$5000 to \$10,000/yr	54	15		20
\$10,000 to \$15,000/yr	48	14		17
\$15,000 to \$20,000/yr	46	13		15
\$20,000 to \$50,000/yr	134	38		30
\$50,000 or more a year	26	7		3

The census gives no data on education with which to compare survey results. Education level was fairly evenly spread among the categories. The survey showed 5.7 percent of the sample had less than a high school education, 20 percent were high school graduates, 35 percent had some college experience, 17.6 percent were college graduates, and 21.5 percent had done some graduate work.

Survey Questions and Results

The following details the questions callers asked respondents and summarizes the results, including much of the reasoning behind the survey design and specific questions. I have also critically analyzed and interpreted the survey results. Volunteers recorded responses from 390 Missoulians. The sample size of 390 falls within the 95 percent confidence interval with a standard error of +/- 5 percent.

The survey aptly begins with the question "Do you recycle." I began the survey with this question for two reasons. First, I wanted to determine the percentage of Missoulians who currently recycle. Second the question served to divide the sample population into two subgroups, "recyclers" and "non-recyclers."

An overwhelming majority of Missoulians, 88.5 percent(345), stated they recycle. At first inspection it is encouraging that so many Missoulians recycle, but this response may be less meaningful than it appears. Many people may perceive a "yes" answer as the "right" response to the question even though they don't recycle, making the percentage of recycling Missoulians lower than the survey indicates.

I wrote three follow-up questions for recyclers that would help determine characteristics and motivations behind people's recycling habits. These questions also helped determine what people meant when they said they recycled. How much and how often people recycle is valuable information when developing a comprehensive curbside recycling program.

Callers first asked those who said they recycle how often they recycle and read a series of choices. Forty two percent(141) of respondents said they recycle

once a month, 24 percent(81) recycle once every two months, 16 percent(53) once²² a week, and 9 percent(29) recycle every six months.

Callers next asked recyclers what materials they recycle. Not surprisingly the most frequently recycled items were aluminum(96 percent), newspaper(71 percent), glass(46 percent), cardboard(33 percent), and tin(32 percent). The least frequently recycled items were plastics(23 percent), ledger paper(10 percent), and computer paper(10 percent). Aluminum and newspaper are easy to recycle in Missoula and are well established in the public's mind as recyclable. While Missoula recycling rates for aluminum, newspaper and glass are laudable, the results of this question show a great need for education concerning paper recycling.

Again, these survey results for the number of materials recycled may be deceptive. If 88 percent of Missoulians recycle, and the recycling rates for aluminum, newspaper, and glass are as high as they are, why push for a more comprehensive recycling strategy? This argument BFI used in Task Force meetings to minimize the need for more proactive strategies. However the survey only loosely defined the criteria for whether a person recycles: a recycler could be anyone from an individual who recycles his or her aluminum can at work, to a person who sorts and separates eight categories of recyclables at home.

Following the question about what materials people recycle, callers asked respondents why they recycled. Callers carefully refrained from prompting people with suggestions, because a respondent could interpret a list of reasons as the "right answers." Callers recorded as many answers as respondents gave to this question. The most frequent first responses were environmental reasons.

Encouragingly Missoulians choose to recycle for environmental reasons. We often assume that economics are a primary motivator, but that Missoulians

recycle for reasons other than money reflects a growing environmental awareness among the public. This attitudinal shift is necessary to implement more comprehensive and potentially costly waste-reduction measures.

To further break the sample population into subgroups, I had callers ask recyclers what primary method or service they used to recycle. This question worked to divide recyclers into three subgroups: Recycle Missoula! recyclers, BFI Blue Bag recyclers, and those who recycled on their own. Recycle Missoula! recyclers were any persons currently participating in the Recycle Missoula! free curbside collection program available once a week to residents living in the University District, and once a month to people in the McCormick, Westside, Lower Rattlesnake and triangle neighborhoods. BFI Blue Bag recyclers were those who indicated they used BFI's free modified curbside program. People who recycled "on their own" were those who took their recyclables to a recycling center or local charity.

Breaking the sample population into subgroups allowed me to determine whether significant differences existed in these group's responses. I was also able to compare responses between groups.

The majority of recyclers 82 percent(283), answered that they take their recyclables to a recycling center or give them to a local charity, 8 percent(28) of respondents identified BFI Blue Bag as their recycling method, and 10 percent(34) separated their recyclables for Recycle Missoula! pickups.

That only 8 percent of the population used BFI's Blue Bag program was confirmed as an accurate percentage by Jim Lieter of BFI at a Task Force meeting to present the survey results(Task Force meeting 5 March 1992). This number is quite low for a program offered free to the entire city. The low numbers probably result from BFI's lackluster promotion of the service. Many people have surmised that BFI implemented this convenience-oriented recycling program to claim, for

publicity's sake, that they had a curbside collection effort in Missoula. Needless to say, 8 percent of the population using a program that accepts a limited number of items, introduces another disposable item, and buries many bags due to contamination, is hardly accomplishing significant waste reduction.

Callers asked specific questions to each of the four main subgroups: Non-recyclers, BFI recyclers, Recycle Missoula! recyclers, and on-my-own recyclers. The specific subgroup questions served to determine the respondents' degree of knowledge and participation in the various city recycling options.

For non-recyclers I wanted to know if they were aware of recycling options available in Missoula. What factors precluded them from recycling and what would motivate them to recycle? I had callers ask the following seven questions of the non-recycling subgroup:

- Can you name ways in Missoula that people can recycle?
- Do you see any benefit in recycling?
- If yes what are those benefits?
- Why don't you recycle now?
- Would you recycle if it were more convenient for you?
- Would you take your recyclables to a neighborhood drop-off box?

The forty-five people who indicated they did not currently recycle gave encouraging responses. Overall, non-recyclers felt recycling was beneficial, would recycle if it was more convenient, and supported the idea of a fee-based curbside recycling program. Ninety-three percent of the people in this category said there was a benefit in recycling. Non-recyclers said recycling protected the environment, saved resources and energy, and saved landfill space. Eighty-nine percent of non-recyclers said they would recycle if it was more convenient (only 4 percent mentioned money). Non-recyclers also identified the main impediment to recycling as being too much of a hassle. When asked if they knew of ways to recycle in Missoula, 45 percent did not, 23 percent mentioned Montana Recycling, 14 percent had heard of BFI Blue Bag, 7 percent had heard of RMI, 7

percent knew of drop-off locations, and 5 percent mentioned Pacific Steel and Recycling. From this information, given a convenient and comprehensive recycling method many non-recyclers would recycle. Callers did not prompt respondents with answers or choices.

For both the Recycle Missoula! and BFI Blue Bag subgroups I wanted to know why people chose to participate in these specific programs,—for convenience or because it was a free service for example. I also wanted to discover how much they knew about the service they used. For example the BFI Blue Bag program only collects newspapers, tin cans, and aluminum cans. One of the criticisms of the program is its reliance on comingling items and its lack of consumer education. BFI stated in their announcement of the program that they would discard and bury contaminated bags (contaminated meaning bags with items not included in the program, whether those items are grass clippings or glass bottles.) Contamination is inherent with comingled items, decreasing the market value of the materials. If a large percentage of BFI customers believed the program included glass, cereal boxes, and magazines, and included them in the blue bags, then a majority of the bags would be discarded and buried in the landfill.

We asked the following four questions to BFI Blue Bag users:

- Why do you participate in the BFI Blue Bag Program?
- What materials does BFI collect with its Blue Bag Program?
- Are there other materials you feel they should collect?
- Is there another service or method you use to recycle?

We asked the following four questions to Recycle Missoula! participants:

- Why do you participate in the Recycle Missoula! program?
- What materials does Recycle Missoula! collect?
- Are there other items you feel they should collect?
- Is there any other recycling service or method you to recycle?

Callers asked BFI Blue Bag recyclers if they knew what materials BFI accepts in their program. If a respondent named three, two, or one of the

included recyclable materials, we considered it a correct answer. If the respondent included an item not included in the program, such as glass, we considered it an incorrect answer. The clear majority of BFI Blue Bag users did not know what was included in the program: 66 percent answered this question incorrectly. As stated before we (RM!) criticized the BFI program for its limited range of materials accepted and for allowing comingling of recyclables. That people included items the program fails to accept indicates that people want to and expect to recycle a wider range of materials. The high percentage of people using the Blue Bag Program unaware of the scope and limit of the program validates the earlier criticisms.

Callers asked respondents in both the RM! group and the BFI Blue Bag group for the reason they recycle with their respective programs. Both groups indicated that they use these programs because of convenience, an obvious motivator. Non-recyclers, BFI recyclers, and Recycle Missoula! recyclers all made convenience a high priority. These results make a strong case for curbside as a way to increase recycling rates and reduce waste.

Callers asked people who recycle on their own where they take their recyclables and if they used a secondary service or method to recycle. In this group 61 percent of the people took their recyclables to Montana Recycling, 17 percent used drop-off bins, and 10 percent took materials to Pacific Steel and Recycling. Few people had a secondary recycling scheme; 71 percent had none, 10 percent used drop-off bins, and 7 percent took items to Pacific Steel and Recycling.

Willingness to Participate in and Pay for Curbside Recycling

My primary purpose for the survey was to determine whether Missoulians would pay for curbside recycling. Thus the survey asked three

primary questions designed to determine overall willingness to participate in and pay for a curbside recycling program. Callers asked every respondent in the survey:

- Would you participate in a source-separated curbside recycling program?
- Would you pay for a source-separated curbside recycling program
- Would you support a flat rate fee system for curbside recycling

The first of these questions introduced the idea of source-separated curbside recycling. Callers explained source-separated curbside recycling to respondents as a program in which "individuals separate their recyclables such as newspaper, cardboard, aluminum, tin cans, and glass, at home to later set out at the curb for a weekly or monthly pickup."

The crucial survey question asked people if they would pay for a curbside program. In wording this question I had to ask whether people would pay and introduce a foreign concept: few people realize that a curbside recycling program in Missoula will require individuals to pay. Most people still expect to get money back for recycling or at least have their recyclables collected for free. Thus the question had to explain the situation briefly and in a non-biased manner:

As in many communities, a curbside recycling program may not be possible in Missoula unless individuals pay for the service. What would be the maximum you would pay per month for this service...

At this point the caller read off a list of monthly charges starting at zero and increasing to over \$5.00.

The third question concerning support for curbside recycling asked respondents whether they would support a flat-rate fee for a curbside recycling service. In designing this question I wanted to know if people would pay one set rate for curbside pickup regardless of participation. In other words, a program such as this would charge everyone in the city the same flat rate, and individuals

could choose whether to participate—a similar concept to everyone paying for sewage treatment or fire protection through their taxes. Theoretically if everyone paid the program would raise sufficient funds to run a comprehensive program taking into account fluctuating market conditions. The callers read this question:

If a curbside recycling service that charged everyone a flat rate regardless of participation kept rates lower, would you support this program at or below the monthly fee you just identified?

The majority of Missoulians indicated that they would participate in and pay for a curbside recycling program. Of the 390 Missoulians questioned 73 percent said they would participate in a curbside recycling program, 4 percent said it would depend on the cost and 23 percent were not interested. In response to the most critical question of the survey, 54 percent(212) of Missoulians expressed a willingness to pay at least \$1.00 to \$3.00 per month for a source-separated curbside recycling program, 35 percent(133) will pay at least \$3.00 to \$4.00 per month, and 25 percent(96) will pay up to \$5.00 per month. Respondents favored a system in which everyone pays: 56 percent(217) said they favor a flat-rate fee system for curbside recycling.

The overwhelming majority of Missoulians want to participate in a curbside recycling program. More important a majority of people will pay for a curbside recycling program. Although 54 percent is a slim majority, paying for curbside recycling is a new concept for most people. No information on this idea had been presented to Missoulians before this survey. Remarkably a majority of citizens accustomed to free recycling services and low garbage rates are willing to pay for curbside recycling.

A majority of respondents also endorsed the flat rate, unsurprising since those who have already said they would pay probably support having everyone else pay. However, it shows that the majority of Missoulians feel the cost of a program should be shared.

Callers asked the willingness to participate, pay, and flat-rate fee questions of each of the four subgroups (Recycle Missoula! recyclers, BFI Blue Bag recyclers, non-recyclers, and on my own recyclers). I had to specially word this question for RM! and BFI Blue Bag participants. RM! and BFI Blue Bag participants already had a free curbside recycling program. An individual in either of these groups would have little reason to support a new fee-based system. I had to write the questions so as to make things equal for all respondents in the survey.

We intended the RM! collection run to be a demonstration and to continue only until a comprehensive recycling program was established. The participation question for RM! reflected this:

Recycle Missoula! started collecting recyclables in neighborhoods to provide a model of how such a program might work in Missoula. However its original intent was to be replaced by a curbside recycling program run by private business or government. knowing this would you support such a program?

When BFI announced their Blue Bag Program they indicated it was a first-step program they could replace with a more comprehensive service if supported by the community. My survey question then followed this reasoning, asking people if they would be interested in a more comprehensive recycling program:

The BFI BB program has been characterized as a first-step recycling program, to be replaced by a more comprehensive citywide recycling program if the community supported such a switch. Knowing this, would you be interested in a voluntary citywide curbside recycling program where individuals separate materials such as glass, aluminum, news, tin, and cardboard at home and then set them out at the curb or alley for a weekly or monthly pickup by private business or government?

Before conducting the survey I met with BFI representatives to allow them to see the survey questions. In particular, I wanted them to see this question and

indicate whether they felt it gave a fair characterization of their program. Both Jim Lieter and Max Bauer of BFI reviewed this question and indicated no reservations.

All the sub-groups we measured showed strong and consistent support for curbside recycling. This consistency showed universal support and lends creditability to the survey results. In each subgroup we sampled the support for recycling paralleled percentages in other groups.

For people who recycle on their own, 70 percent would participate in a curbside recycling program, 53 percent would pay at least \$1.00 to \$3.00 per month, 34 percent would pay at least \$3.00 to \$4.00 per month, and 25 percent would pay up to \$5 per month. Of on-your-own recyclers 55 percent would support the flat-rate fee system. The support for curbside recycling from this subgroup yields a great deal of information and has added importance because the majority of respondents(272) fall into this category. People in this group are already committed to recycling to one degree or another. It can be assumed that for these recyclers the convenience of curbside is attractive.

Recycle Missoula! recyclers registered the highest degree of support for curbside recycling: 85 percent would participate in a source-separated curbside recycling program, 65 percent would pay at least \$1.00 to \$3.00 per month, 48 percent would pay at least \$3.00 to \$4.00 per month, 30 percent would pay up to \$5.00 per month, and 56 percent would support a flat-rate system.

RM! recyclers had the highest percentages of any subgroup showing they valued the convenience and service of curbside recycling enough to pay for it. RM! recyclers were the only people in the sample participating in a source separated curbside program and their high degree of support endorses the concept of curbside recycling.

The responses from BFI Blue Bag recyclers provide an interesting comparison to the responses of the RM! subgroup. Again, as in all the groups I measured, we found support for curbside recycling: 82 percent would participate in a source-separated curbside recycling program and 61 percent would pay at least \$1.00 to \$3.00 per month for this program. Support fell off some at higher fee-per-month categories: 25 percent would pay at least \$3.00 to \$4.00 per month, and 18 percent would pay up to \$5.00 per month.

Blue Bag participants came second only to RM! recyclers in their support for curbside recycling: 85 percent for RM! and 82 percent for Blue Bag recyclers. Because people in both groups took the initiative to participate in a curbside program already, it follows that they would support curbside recycling.

The BFI Blue Bag subgroup registered the lowest degree of support in the top two pay categories. They were significantly lower than numbers from the RM! group and were the lowest of any groups measured.

When BFI introduced this program both RM! and MontPIRG urged BFI to hold off on implementing the program until the Task Force had a chance to review and study the service. As I outlined Chapter 1, we felt that if the program went into place before such a review, it would compromise the Task Force's ability to evaluate recycling options. Implementation of the Blue Bag Program before the Task Force decided would make it more difficult for the Task Force to consider all programs as equal alternatives. In addition, implementing this program would confuse the public. People, we argued, would become accustomed to the comingled, three-item strategy and would require reeducation if the Task Force recommended more comprehensive program

The low support for higher pay categories appears to confirm these earlier concerns. According to the survey the Blue Bag subgroup did not place a high priority on paying for recycling. Their opinion maybe influenced by their

participation in the free but limited Blue Bag program. Jim Lieter gave credit to this possibility during the 5 March 1992 Task Force meeting at which I presented the survey results. Referring to the low numbers for the BFI Blue Bag group he indicated BFI had possibly taught "the wrong lesson" through their program, the wrong lesson being that it is unnecessary to pay for curbside recycling.

I also separated out and analyzed responses from individuals who pay a regular garbage bill. I determined who pays a regular garbage bill by having callers ask this question at the end of the survey along with other demographic information. I designed this question in anticipation of arguments from BFI and the recycling businesses. Based on the many complaints from customers about their current garbage rates, BFI contended at many Task Force meetings that their customers would refuse to pay for curbside recycling. As it turned out 53 percent(206) of the sample population paid a regular garbage bill. The other 47 percent consists of apartment dwellers, for whom the cost for garbage collection is passed on through the rent, and people who choose not to have a weekly garbage service.

The 206 people who pay a regular garbage bill indicated a strong desire to participate in and pay for a curbside recycling program: 75 percent would participate in a curbside program, 57 percent would pay up to \$1.00 to 3.00 per month, 33 percent would pay at least \$3.00 to \$4.00 per month, 21 percent up to \$5.00 per month, and 55 percent expressed support for a flat-rate fee system.

Of non-recyclers 71 percent indicated a willingness to participate in a curbside recycling program. Non recyclers also supported paying for recycling as much as any of the other groups questioned: 53 percent would pay at least \$1.00 to \$3.00 per month, 33 percent would pay at least \$3.00 to \$4.00 per month, 24 percent would pay up to \$5.00 per month, and 51 percent would support a flat-rate fee for curbside recycling.

This group of non-recyclers may have provided the strongest evidence that Missoulians are willing and ready to support more-comprehensive solid waste solutions. Predictably the RM subgroup, the on-my-own subgroup, and the BFI Blue Bag subgroup supported more-comprehensive recycling. This portion of the population has already taken the initiative to recycle. Non-recyclers make quite a transition, though, from not bothering to recycle to indicating that they will pay for a source-separated curbside recycling program.

The response from non-recyclers also provides a good test of the survey's overall validity. The response from non-recyclers toward paying for curbside recycling matches quite closely with the response from recyclers to the same question illustrating a consistency of response throughout the whole sample. This fact lends a great deal of credibility to the survey results.

Demographic Information

I concluded the survey by asking several demographic questions. Callers asked the person's age, education, income, and occupation. In addition callers asked people if they received a monthly garbage bill, whether they rented or own their home, how many people they lived with, if they were related to the people they lived with, if they were married, and whether they had children.

I had callers ask this demographic information for two reasons. Collecting numbers on age, sex, income, and education level of the respondents, enabled me to further break the sample into subgroups. Thus I could further analyze responses based on age, income, and education. Next I was able to compare my results to census figures and determine how closely the sample conformed to actual census data on the Missoula population. (I outlined this comparison in Chapter 2)

Callers asked participants to describe their level of education as one of six options. The survey numbers revealed that willingness to participate and pay for curbside recycling increases steadily with education.

Willingness to participate in a source separated curbside recycling program:

- 45% of those with less than a high school education
- 54% of high school graduates
- 77% of those with some college education
- 78% of college graduates
- 83% of those who have done some graduate work

Willingness to pay at least \$1.00 to \$3.00 per month breaks down the following way:

- 27% of those with less than a high school education
- 33% of high school graduates
- 61% of those with some college education
- 63% of college graduates
- 64% of those who have done some graduate work

Callers asked people their age and then placed them in one of eight age categories. Willingness to pay for curbside recycling is strongest among those aged 18 to 30 and drops off after age 60.

- 78 percent of those between the ages of 18 and 30 were willing to participate in a curbside recycling program, 76 percent for those between 31 and 60, 50 percent for 61 and over.
- 69 percent of those between the ages of 18 to 30 would pay at least \$1.00 to \$3.00 per month for curbside. (56 percent for 31 to 60, and 23 percent for 61 and over).
- 52 percent of those between the ages of 18 to 30 would pay at least \$3.00 to \$4.00 per month. (33 percent for 31 to 60 year old, and 5 percent for 61 and over).

Like questions concerning age and education callers asked respondents their level of income and gave them a choice between five categories. Generally, the higher income groups were more inclined to pay and participate in curbside recycling, ranging a 85 percent willingness to participate in the over \$50,000 per year group to 67 percent in the \$15,000 to \$20,000 per year group. In the over \$50,000/year group 69 percent would pay at least \$1.33/month, while 54 percent

in the \$15,000 to \$20,000 per year group would pay this amount. Surveys done in³⁵ other parts of the country have shown higher support and participation in households with higher incomes (Bagby, Diangson, and Patterson 1989)

The survey results clearly indicated widespread support for curbside recycling in Missoula. Majority support held true for all categories measured, whether based on current recycling habits, whether respondents paid garbage bills, or based on demographics. Even the forty five people who admitted they do not currently recycle supported curbside recycling. Most importantly the majority of Missoulians indicated they will pay for a curbside recycling program even though for most people , paying for such a service is a new concept. Prior to the survey no education had been presented to orient people toward the idea. The survey proves that the attitude essential for building a successful curbside recycling program exist in this community. The survey shows Missoulians are ready for a change in the way we manage our solid waste.

The challenge for us upon completing the survey analysis was to make the case for establishing curbside recycling based on these results.

Other Solid Waste Questions

In addition to questions concerning recycling, I also wrote a series of questions dealing with other related solid-waste issues. Callers asked respondents about their knowledge of household hazardous products, recycled products, BFI's one-can rate, and oil recycling all issues the Task Force had discussed.

Callers asked respondents to name products in their home that might be classified as hazardous, and then asked if they knew how to properly dispose of these substances.

Respondents gave somewhat confusing answers to the household hazardous waste questions. Of those responding to the question, 41 percent said they knew how to dispose of household hazardous waste. We can't verify through this question whether a person knows how to properly dispose of a hazardous product. Fewer people may know how to dispose of these products than answered yes. But even excluding those people, the majority of Missoulians do not know how to dispose of hazardous waste—a major concern for a city that sits above a sole-source aquifer.

To develop markets for recyclables we need to "close the loop" by purchasing products made from recycled materials. I wanted to see how willing people were to buy recycled products, so I had callers ask people three questions concerning the purchase of recycled products:

- Do you buy products made from recycled materials?
- Would you buy recycled products if they were more available?
- Are you willing to pay more for these recycled products?

Results indicate that Missoulians have a strong interest in purchasing recycled products. Eighty-six percent of respondents said they buy products made from recycled materials. Of those who do not buy recycled products, 84 percent would if these items were more available, and over half of respondents (53 percent) would pay more for recycled products.

The responses to these questions may again may be misleading. Respondents may have perceived buying recycled products as the "right thing to do," making difficult to know how many people answered these questions truthfully. A great deal of misleading "green" advertising makes it difficult for

consumers to know if their purchases are actually recycled. It would have been beneficial to have asked a question determining peoples knowledge of recycled products, to determine, for example, what percentage of the population is familiar with the terms pre- and post-consumer waste. The most encouraging and revealing data concerning recycled products is that 53 percent of the sample population would pay more for these items. This question deals with economic preferences making the response more likely honest. It also reveals a real desire by the respondents to make consumer-based decisions that work to protect the environment.

We then asked respondents whether they recycled their used motor oil. Just as with the questions concerning hazardous waste, the public's awareness of oil recycling is a major concern where we rely on a sole source aquifer. Less than half of Missoulians, 41 percent, said they recycle their used motor oil. A statistic perhaps less troubling than it appears. Many people indicated to callers that they take their vehicles to a service station for oil changes, and did not know if the facilities changing their oil recycled it. Many service stations in Missoula recycle their oil although some do not. It is a serious concern that so many people either do not recycle their oil or do not know if it is recycled. I could have more effectively worded the question by initially asking people if they changed their own oil and then asking if they recycle it, giving better data on the habits and knowledge of "do-it-yourselfers". On the other hand few people may have admitted to disposing of their motor oil improperly. In a related question, callers asked if people were aware of BFI's relatively new motor oil collection program. 38 percent of the sample population were aware of the program.

Next callers asked about was BFI's reduced garbage collection rate for people who use only one can. Individuals who sign up for this program receive \$1.00 off regular garbage collection rates. While BFI contends this constitutes a

variable-rate structure, the \$1.00 reduction in garbage fees gives little incentive to³⁸ recycle or reduce. I found 23 percent of respondents aware of BFI's one-can-rate garbage-collection program. That 23 percent of the Missoula population know of the one-can rate reflects BFI's less-than-enthusiastic endorsement and advertisement of this program.

The results from this section of the survey raise many concerns and questions. In particular, results from the household hazardous waste and oil recycling questions clearly point out the need for more education on these subjects. We could conduct entire surveys, though, on these issues. Despite some low numbers people show a willingness to change their habits for environmental reasons. Missoulians' willingness to purchase recycled products is encouraging because it clearly shows a desire to make consumer-based decisions that work to protect the environment.

Reaction and Inaction

As encouraging as the survey results were, the Task Force had an equally discouraging reaction and subsequent inaction. The survey showed irrefutable evidence that Missoulians would support curbside recycling and I felt presenting these results to the Task Force would begin the of toward establishing a citywide program. However I underestimated the waste industry's objections and local government indifference to the issue.

We first reported the results of this survey to the media at a press conference held at the University of Montana. The results generated a great deal of interest in the press and resulted in a front page article in the Missoulian, news stories on two radio stations, and interviews on KUFM and KGVO.

The presentation of the survey results to the Task Force followed the media presentation. All Task Force members received a copy of the press version of the survey results. While the survey results generated much interest and discussion, no comprehensive recommendation ever emerged from the Task Force. Despite the survey's numbers the business community remained unconvinced. BFI first disputed the survey's validity and then stated they flat out did not believe the results. The polarization of opinion on the Task Force present before the survey continued to the end.

Expecting the Task Force to directly recommend the implementation of a curbside program was unrealistic. Neither the city nor county has the money to run a curbside service. BFI is the only licensed waste hauler in the area, and had already stated their lack of interest in curbside recycling until market conditions changed.

MontPIRG Director Brad Martin and I felt there was a way around the business and government intransigence. Prior to the survey the Task Force discussed the possibilities of establishing a solid waste district in Missoula, which under state law counties can create. Section 7-13-203(1) Montana Codes Annotated(MCA) states that "whenever it becomes necessary, the commissioners may create a solid waste management district for the purpose of collection and or disposal of solid waste." Through a waste district, local government can set mill levies(increases in property taxes) as a funding source. Local government could use these funds to implement a variety of solid-waste programs, and possibly establish a curbside recycling service.

For two months following the release of the survey results Brad Martin and I worked to build support for the eventual formation of the Missoula Solid Waste District. By establishing a waste district, we thought it possible for local government to set up a mechanism to contract with private enterprise to offer curbside recycling. A waste district with an accompanying solid-waste board would also assure the public has a voice in solid waste decisions.

We lobbied Task Force members using the survey results as an indication of community support for more proactive strategies for solid waste. We gained verbal support from the majority of members for a recommendation in favor of a solid-waste district, but too little support to overcome the objections of the business members. Additionally, many of those who told us they supported the idea remained silent in the meetings when we discussed the issue. The final Task Force report did not recommend formation of a solid waste district.

The inability of the Task Force members to reach consensus made it impossible to include any type of residential recycling recommendation in the final report. BFI and Montana Recycling continued to endorse a market-based approach, with MontPIRG and RM! continuing to push for more proactive

approaches. This stalemate finally led to two conflicting recommendations for residential recycling written into the final Task Force report. The Task Force report includes the survey results in an appendix.

At the time of this writing the future of the Task Force report is unclear. Task Force coordinator Shannon McNew presented the report to the Missoula City Council's Conservation Committee in February 1993. The committee found the report overwhelming, balking at the suggestion of a full-time Health Department employee assigned to solid waste (one of the report's recommendations). Because of the Conservation Committee's reservations, McNew drafted a policy statement for the City Council and County Commissioners, including a recommendation to set up a Solid Waste Advisory Board. McNew presented this policy statement to the County Commissioners in April 1993. The Conservation Committee tabled the statement to wait for details concerning the Solid Waste Advisory Board.

A year later the city and county have yet to act on the policy statement, which is itself a watered down version of the Task Force report. Despite a survey that proved a majority of Missoulians support curbside recycling and two years of Task Force meetings, local government chose to ignore the report and we see little change in the management of Missoula's solid waste. What has changed is the level of community interest and activism on the issue, which has become virtually non-existent, convenient for those comfortable with and invested in the status quo.

The Task Force proved to be a failure. The Task Force was to bring all the parties involved in this potentially contentious issue to the table to work together to develop a plan that all could endorse. The Task Force failed because it assumed all those at the table to be equal when they were not. BFI is a huge corporation committed to burying garbage in Missoula with little interference.

caught on the other side were smaller groups including MontPIRG and Recycle 42
Missoula! The Task Force setting worked well for BFI because they were able to
control the issue by dragging out discussions for months, eventually wearing out
media interest and citizen activism. RM! was able to capture support and
enthusiasm of the community through its truck run and other public events, but
in Task Force meetings Recycle Missoula! was no match for the maneuvering and
strategy of BFI.

The Task Force failed because the parties were unequal, and because
participants paid unequal attention or had unequal investment. While BFI,
MontPIRG, and RM! had near perfect attendance at meetings over two years,
many participants only made every third meeting. County Commissioner
Barbara Evans attended perhaps four meetings over the two years. Without a full
commitment of all participants, especially local government leaders, the Task
Force discussions became isolated arguments. Instead of community based-
decision making on an important environmental and social issue, the Task Force
became a forum for RM! and BFI to debate their philosophical differences in the
basement of the Health Department Building.

Conclusions

I conducted the MontPIRG recycling survey with a specific goal in mind: to determine whether the necessary support to implement curbside recycling exists in Missoula. The survey results indicated widespread support in Missoula for a source-separated curbside-recycling program. The majority of Missoulians are willing to participate in such a program and pay a monthly fee for the service.

The community strongly desires a more comprehensive approach to waste reduction. The willingness to pay for curbside recycling in Missoula represents the type of attitudinal change required for comprehensive approaches to solid-waste reduction to succeed. The challenge is to turn this willingness into a tangible solid-waste reduction strategy for Missoula. But the best strategy may not be curbside recycling.

Curbside recycling programs increase the amount of material recycled, and as the survey proved the community supports the idea. If we want to merely recycle more in Missoula, establishing curbside recycling is a reasonable strategy. But if we want to reduce the amount of garbage we generate, then curbside recycling is only a partial and inadequate policy.

Curbside recycling is an inadequate solid waste reduction strategy because it focuses on a small portion of the municipal waste stream, and provides little incentive for curbing consumption. Through recycling many tons of glass, aluminum and tin are diverted from the landfills. These materials, though, only represent about 15% of the municipal waste stream. Paper and yard waste constitute a far greater portion of the waste stream and are rarely included

in traditional curbside recycling programs. Despite this discrepancy the vast majority of solid-waste activity and public attention focuses on recycling

Recycling fails to address people's consumption and the resulting waste. In a traditional curbside recycling program an individual may dutifully place their beer and pop bottles out for weekly recycling, but also leave a larger mound of grass clippings, microwavable dinner trays, paper cups, and banana peels for the garbage truck. Our over-consumption of goods and materials wastes vast amounts of resources and energy, only portion of which we see at the curb for garbage collection. A comprehensive waste-reduction strategy will encourage people to cut down on waste by creating less in the first place pushing them to avoid disposable, over-packaged, and unnecessary items. A more comprehensive strategy will also encourage composting, reuse, and recycling.

Recommendation for Volume Based Rates

The most comprehensive waste-reduction strategy is a volume-based garbage rate structure. Volume-based rates link the cost of garbage collection with the amount of waste disposed. In simplest terms this means an individual who generates less garbage pays less for collection. Linking cost to the amount of service used is a well-established concept; the public is familiar with paying for many public services such as power and water in this manner. Communities have implemented volume-based rates throughout the country as they seek ways to reduce waste and provide more equitable garbage services (Skumatz, 1991). In every program studied, volume-based rate structures have reduced the overall amount of solid waste collected (Alderden, 1990).

Communities have employed three major types of volume-based rate schemes: a subscribed variable can system; a bag, tag/sticker system; and a weight-based system. In a variable can system customers sign up for specific

levels of service. For example, customers may have the choice to sign up to use one, two, or three cans per month, and are billed according to the level of service they select. In a bag/tag system customers purchase tags which they affix to garbage bags or they buy garbage bags from the waste hauler. The more tags or bags set at the curb, the more tags or bags customers purchase (Skumatz 1990). Weight-based rates have also begun to attract attention. In this system the hauler weighs the garbage at the time of collection and bills the customers for the number of pounds disposed. This last system, although labor intensive for the waste handler, is considered to be more equitable for consumers (Skumatz 1991). I will refer generally to rate systems that tie cost to the amount disposed as volume-based rates or VBRs.

The most important benefits of VBRs are the incentives created for consumers to reduce waste. Because consumers pay less for generating less waste they will look for methods to reduce what they throw away. VBRs give consumers an incentive to reduce waste in the first place by limiting their consumption of unnecessary or over-packaged goods, composting their yard waste, and increasing their recycling.

Consumer education is an additional benefit of VBR's. In their efforts to reduce waste, consumers learn about the composition and volume of their own waste stream. This knowledge helps people make more conscious decisions about their consumption patterns based on how their choices influence the amount of waste they produce.

For VBRs to effectively reduce waste, consumers must have convenient ways to reduce their garbage (Harder 1992). Fortunately, Missoula has a number of facilities and services available for people to reduce their waste. Pacific Steel and Recycling and Montana Recycling operate large, well-established facilities in Missoula. Both businesses accept a wide range of materials for recycling.

- **Pacific Steel and Recycling** has traditionally dealt with large volumes of scrap metal from industry but is beginning a transition toward the consumer market. In the last year Pacific has begun accepting all #1 and #2 plastics, becoming the only center in town to do so. In addition, Pacific has remodeled its facility to make it more convenient for individuals.

- **Montana Recycling/BFI** has centers throughout the state. Within the last year they have merged with BFI. Montana Recycling and BFI have collaborated on the Blue Bag Program and on operating recycling bins in town. These six recycling bins, located at some of the major grocery stores, provide consumers with another option to recycle conveniently. Individuals can deposit newspapers, aluminum cans, steel cans, glass and some plastics in these bins. The program, called BFI Recycle *NOW*, is sponsored by local businesses who buy advertising space on the bins.

- **Missoula Valley Recycling(MVR)** began offering a subscription-based recycling service in the spring of 1992. MVR used the survey results as an indication of the feasibility of offering such a service in Missoula. MVR obtained a hauling license from the Public Service Commission allowing them to haul recyclables for a set fee within a ten-mile radius of the main post office on Kent Street. For approximately \$5.00 per month MVR picks up recyclables once a month from any area resident. Unlike the BFI Blue Bag Program, MVR emphasizes source separation and educates people on the importance of presorting their materials. MVR collects all major categories of recyclables, including Christmas trees in January.

- **Eko Kompost** may be the best kept environmental secret in Missoula. Eko-Kompost takes the sludge from the Missoula sewage treatment plant, composts it with wood chips from the local mills, and creates a marketable garden supplement. Besides providing the invaluable benefit of diverting sludge

from land or water disposal, Eko also accepts yard waste from businesses and individuals. Yard and leaf waste make up a major constituent of landfills often comprising up to 40 percent of total landfill volume (Lewis 1989). Yard waste, because it converts to valuable material through composting and takes up a significant portion of most landfills, is a material well suited for diversion.

- **Composting** at home is the best way to handle leaves, grass clippings and other yard waste. A number of sources of information on backyard composting exist in Missoula, including the Missoula Urban Demonstration Project and the County Extension office. In its final report the Task Force recommended establishing a Master Composter Program similar to the Master Gardener Program run through the County Extension Office.

Community support provides another element necessary for volume-based rates to succeed (Skumatz 1990). RMI's curbside collection and the recycling survey demonstrate a strong public desire for a more comprehensive approach to reducing garbage. Our collection run proved that if you make waste reduction convenient, people will respond. Over the three years we offered curbside pickup we saw the amount of recycled materials steadily increase. We also witnessed a number of new programs following our first curbside run, including the BFI Blue Bag Program, Recycle NOW bins, and Missoula Valley Recycling. These programs responded to a public desire to recycle more.

The recycling survey results indicate that Missoulians are ready for a more comprehensive approach to solid-waste management. Seventy three percent of those asked expressed an interest in a source-separated curbside recycling program. Fifty four percent would pay at least \$1.00-\$3.00 per month for such a service. The survey did not directly ask whether individuals will support a change in the garbage fee structure, but if people are willing to pay for curbside recycling it can be assumed they will support garbage rates that provide a

financial incentive for waste reduction. The willingness to pay for curbside recycling represents the type of attitudinal change required in order for more-comprehensive solid-waste-reduction schemes to succeed.

In addition to community support, we need the ability and willingness of the local government to implement VBRs. State law allows municipalities to regulate the disposal of waste within their jurisdiction. Under M.C.A. 75-10-112(16) "a local government may control the disposition of solid waste generated within the jurisdiction." Using this code the city council can pass an ordinance requiring any waste hauler in Missoula to provide volume-based rates.

While the law is there for the city to use, passing an ordinance will be more difficult than it appears. BFI will oppose attempts to establish volume-based rates in Missoula. BFI has argued against volume-based rates both in Task Force discussions and on the State Solid Waste Plan Advisory Committee(SWPAC).

BFI has argued against a volume-based rate as a costly, burdensome system to implement and as a public health hazard. According to BFI, individuals respond to VBRs by dumping their waste illegally rather than paying higher rates. This argument has merit; other parts of the country have documented an increase in illegal dumping in response to instituting VBRs(Alderden,1990). Missoula County, even with our low disposal fees, is home to many illegal dumpsites. Although a serious concern, both the city and county have enforceable laws that can help curb illegal dumping. Besides enforcement, public education campaigns can help to alleviate potential illegal dumping problems. Furthermore, failing to implement a potentially beneficial program because people may do the wrong thing constitutes poor public policy..

I speculate BFI's real motivation in opposing VBRs in Missoula may be a fear of revenue losses. High landfill costs in many areas of the country, dictate

that waste managers, whether public or private, save money when consumers curb their flow of garbage. The Missoula landfill has relatively abundant space, allowing BFI to charge low collection rates. For BFI Missoula, the more garbage they bury the more money they make. If residents decrease the amount of garbage they produce BFI may lose revenue.

With BFI's proven opposition to VBR's we need to summon the political will required to pass such a measure. The challenge in guiding a volume-based rate ordinance through the city council will be to avoid pointless arguments with BFI and convince local officials that Missoulians support a proactive approach to solid waste. The survey results will give us an invaluable resource to convince politicians of this willingness.

While much of the nation has required a crisis in order to face up to the need for waste reduction, Missoula faces no such crisis. A landfill with abundant capacity has allowed Missoulians the luxury of ignoring solid-waste issues. Do we need a solid-waste crisis in Missoula to recognize the need for more comprehensive strategies to reduce waste?

For Missoula to adopt policies that reduce waste we need to look at waste issues from a different angle. Too often the cornerstone argument for reducing garbage is landfill space—we must recycle and reduce in order to save landfill space. In Missoula landfill space is not the issue. As BFI points out, over fifty years of "life" remain in the Missoula Landfill with much room for expansion. Even with increased importation of waste from other communities, Missoula likely has a long time before it runs out of landfill space.

Landfill arguments only distract from the real issue. Garbage is a resource and consumption issue. The materials we generate and then discard represent wasted resources and energy. Like consumers everywhere else, Missoulians dispose of vast amounts of waste: 5500 tons per month. Making landfill space the

issue upon which we argue the need for reduction only allows us to ignore our ⁵⁰ responsibility to future generations to conserve resources and energy. Also embodied in all our waste is the pollution created and energy lost in the extraction, transportation, and manufacture involved in the transformation from resource to product

Missoula has an opportunity to pursue real waste reduction. The results of the recycling survey I conducted demonstrate community support for more proactive approaches to solid-waste management. The survey introduces a foreign concept, the need in Missoula to pay for comprehensive recycling measures. Despite no prior education, Missoulians indicated they would pay for curbside recycling. This indicates a desire and willingness to bear the responsibility of waste reduction even if it comes with a price tag.

APPENDIX A:
Survey Questionnaire

1) Do you recycle? [Recycling is separating certain materials from the household garbage, setting them out for collection, or transporting them to a redemption center in order that these materials can be used to make new materials for consumer or industrial use] REPEAT QUESTION ...Do you recycle?
 YES continue to #2 NO go to #7 (yellow sheet)

2.) How often do you recycle, meaning how often do you transport recycleables to a collection center or set them out to be collected?

(READ) A. once a week D. every two months
 B. twice a week E. once every six months
 C. once a month F. once a year

3.) What materials do you recycle? (mark with a number #1)
(LET RESPONDENT NAME ITEMS)

<input type="checkbox"/> ALU (aluminum)	<input type="checkbox"/> OIL
<input type="checkbox"/> TIN (tin cans)	<input type="checkbox"/> SCR (scrap metals)
<input type="checkbox"/> GLA (glass)	<input type="checkbox"/> BAT (car batteries)
<input type="checkbox"/> NEW (newspaper)	<input type="checkbox"/> LED (writing paper)
<input type="checkbox"/> PLA (plastic)	<input type="checkbox"/> CPO (computer paper)
<input type="checkbox"/> OCC (cardboard)	

4.) You named a number of items, do you also recycle any of the following?

(CALLER: REPEAT THOSE MATERIALS FROM ABOVE THAT THE RESPONDENT DID NOT IDENTIFY. IF THEY ANSWER YES, THEY DO RECYCLE THESE ITEMS, THEN MARK WITH A NUMBER #2)

5.) Why do you recycle? (NUMBER IN ORDER THE PERSON MENTIONS)

<input type="checkbox"/> A. save resources/energy	<input type="checkbox"/> B. support a local organization
<input type="checkbox"/> C. environmental	<input type="checkbox"/> D. for \$
<input type="checkbox"/> E. litter concerns	<input type="checkbox"/> F. save landfill space
<input type="checkbox"/> G. responsible citizen	

6.) What is the primary method or service you use to recycle?

(CALLER: PROMPT WITH THE FOLLOWING THREE OPTIONS IF THE RESPONDENT DOES NOT ANSWER) For example....

<input type="checkbox"/> Recycle Missoula!	go to #29 (green sheet)
<input type="checkbox"/> BFI Blue Bag Program	go to #47 (blue sheet)
<input type="checkbox"/> On my own\takes to a collection center	go to #66 (purple sheet)
<input type="checkbox"/> Through a local charity	go to #66 (purple sheet)

YELLOW -DOESN'T RECYCLE

7. Can you name ways in Missoula that people can recycle?

NO RM! BFI Blue Bag Montana Recycling
 Pacific Hide

drop off bins in front of local businesses

OTHER:

8. Do you see any benefit in recycling?

YES NO/none (go to #10)

9. What are those benefits?

(DON'T READ, NUMBER IN ORDER PERSON MENTIONS)

- A. environmental
- B. save resources/energy
- C. make \$
- D. save landfill space
- E. right thing to do
- F. littering

OTHER:

10. Why don't you recycle now? (NUMBER IN ORDER OF PREFERENCE)

- A. too much hassle
- B. lack of convenient service
- C. haven't got around to it
- D. no interest
- E. unaware of a program/or way
- F. lack of storage

11. Would you recycle if it was more convenient for you?

YES NO

12. Would you participate in a recycling program in which you took your recyclables to a neighborhood dropoff box?

YES NO

13. Would you recycle if it required separating your cardboard, aluminum, glass, newspaper, tin cans

YES NO

14. Would you participate in a voluntary curbside recycling program where you put your separated recyclables out at the curb/alley for pickup on a weekly or monthly basis.

YES Depends on \$ NO (GO TO #15)

15. Why not?

- A. too much hassle
- B. won't separate trash
- C. not interested
- D. not enough to recycle
- E. like current situation
- F. probably cost \$
- E. don't like big bus/govt

OTHER:

(GO TO #19 ON BACK)

(GO TO #16 ON BACK)

GREEN-RECYCLE MISSOULA

29.) Why do you participate in the RM! program?

(NUMBER IN ORDER OF PREFERENCE)

- A. convenience
 B. range of materials accepted
 C. free service
 D. support ~~BFI~~ *BFI*
 other:

30.) What materials does RM! take?

cardboard aluminum newspaper tin cans plastics
 glass computer paper paper bags writing paper
 car batteries

31.) Are there any other items you feel they should take?

NO oil
 clothes

(WRITE IN)

—
 —

32.) Is there any other recycling service or method you use besides Recycle Missoula!?

BFI Blue Bag Montana Recycling Pacific Hide
 NO drop off bin local charity
 name of charity _____

33.) Recycle Missoula! started picking up recyclables in neighborhoods to provide a model of how such a program might work in Missoula. However its original intent was to be eventually replaced by a curbside recycling program run by a private business or government. Knowing this would you support such a program?

YES Depends \$ NO (go to #33)

33. Why not?

- A. probably cost \$
 B. too much hassle
 C. like things the way they are
 D. don't like big business/gov/indus
 E. not interested

other:

(GO TO #37)

(GO TO #34)

GREEN

34. Some communities provide bins at cost for residents to use in recycling programs, while others let residents put out materials in paper bags or boxes. Which of these methods, if either, do you prefer?

- A.containers provided at cost
 B.own bags or boxes
 C.neither

35. As in many communities a curbside recycling program may not be possible in Missoula unless individuals pay for the service. What would be the maximum you would pay per month for this service? I will now read a list of categories.[READ]

- A.NO/0 B.1-3\$ C.3-4\$ D.up to 5\$ E.over 5\$

36. If a curbside recycling service, that charged everyone a flat rate regardless of participation kept rates lower would you support this program at or below the monthly fee you just identified? YES NO

NOW I WILL ASK QUESTIONS ON A SLIGHTLY DIFFERENT TOPIC...

37. Can you name any products in your home which might be classified as hazardous?

we offer	they offer	other:
<input type="checkbox"/> paint	<input type="checkbox"/>	
<input type="checkbox"/> cleaners	<input type="checkbox"/>	
<input type="checkbox"/> solvents	<input type="checkbox"/>	
<input type="checkbox"/> thinners	<input type="checkbox"/>	
<input type="checkbox"/> oil	<input type="checkbox"/>	<input type="checkbox"/> NONE
<input type="checkbox"/> pesticides	<input type="checkbox"/>	
<input type="checkbox"/> fuels	<input type="checkbox"/>	

38. Do you know of ways to dispose of these products properly?

- YES NO
 DON'T KNOW

39. Do you buy products made from recycled materials?

- YES [go to #41] NO
 DON'T KNOW

40. Would you buy products made from recycled materials if they were available? YES NO

DON'T KNOW

41. Are you willing to pay more for these recycled products?

- YES NO
 DON'T KNOW

42. Do you recycle your used motor oil?

- YES NO
 DON'T KNOW

43. Are you aware of BFI's collection of used motor oil?

- YES NO
 DON'T KNOW

44. Are you aware BFI has a one can rate for garbage collection?

- YES NO
 DON'T KNOW [GO TO #83 WHITE SHEET]

BLUE

47. Why do you participate in the BFI Blue Bag program?
(NUMBER IN ORDER OF PREFERENCE)
- A.convenience
 B.range of materials accepted
 C.free service
 D.support BFI
 other:
48. What materials does BFI collect with its Blue Bag program?
 tin cans aluminum newspapers
 glass cardboard writing paper plastic
49. Are there any other materials you feel they should take?
 tin cans aluminum newspaper plastic glass
 cardboard ledger/typing paper computer paper oil
 car batteries
50. Is there another service or method you use to recycle besides the BFI blue bag program?
- | | |
|--|--|
| <input type="checkbox"/> Recycle Missoula! | <input type="checkbox"/> Montana Recycling |
| <input type="checkbox"/> drop off bin | <input type="checkbox"/> Pacific Hide |
| <input type="checkbox"/> NO | <input type="checkbox"/> local charity |
| | name of charity___ |
51. The BFI BB program has been characterized as a first step recycling program, to be replaced by a more comprehensive citywide recycling program if the community supported such a switch. Knowing this would you be interested in a voluntary citywide collection program where individuals separate materials such as alu, glass, news, tin, and crdbrd at home and then set them out at the curb or alley for a weekly or monthly pickup by private business or government?
- | | | |
|------------------------------|--|--|
| <input type="checkbox"/> YES | <input type="checkbox"/> Depends on \$ | <input type="checkbox"/> NO(GO TO #52) |
|------------------------------|--|--|
- (GO TO #53 ON BACK)
52. Why not?
- | |
|---|
| <input type="checkbox"/> A.won't separate |
| <input type="checkbox"/> B.probably cost \$ |
| <input type="checkbox"/> C.too much hassle |
| <input type="checkbox"/> D.like current situation |
| <input type="checkbox"/> E.don't like big bus. or govt. |
| <input type="checkbox"/> F.not interested |
- other:
- (GO TO #56 ON BACK)

BLUE

53. Some communities provide bins at cost for residents to use in recycling programs, while others let residents put out materials in paper bags or boxes. Which of these methods, if either, do you prefer?

- A. containers provided at cost
 [READ] B. own bags or boxes
 C. neither

54. As in many communities a curbside recycling program may not be possible in Missoula unless individuals pay for the service. What would be the maximum you would pay per month for this service. I will now read a list of categories. [READ]

- A. NO/0 B. 1-3\$ C. 3-4\$ D. up to 5\$ E. over 5\$

55. If a curbside recycling service that charged everyone a flat rate regardless of participation kept rates lower, would you support this program at or below the monthly fee you just identified? YES NO

NOW I WILL ASK QUESTIONS ON A SLIGHTLY DIFFERENT TOPIC...

56. Can you name any products in your home which might be classified as hazardous?

they offer	we offer	other:
<input type="checkbox"/> paint	<input type="checkbox"/>	
<input type="checkbox"/> cleaners	<input type="checkbox"/>	
<input type="checkbox"/> solvents	<input type="checkbox"/>	
<input type="checkbox"/> thinners	<input type="checkbox"/>	
<input type="checkbox"/> oil	<input type="checkbox"/>	<input type="checkbox"/> NONE
<input type="checkbox"/> pesticides	<input type="checkbox"/>	
<input type="checkbox"/> fuels	<input type="checkbox"/>	

57. Do you know of ways to dispose of these products properly?

- YES NO
 DON'T KNOW

58. Do you buy products made from recycled materials?

- YES [go to #60] NO
 DON'T KNOW

59. Would you buy products made from recycled materials if they were available? YES NO

DON'T KNOW

60. Are you willing to pay more for these recycled products?

- YES NO
 DON'T KNOW

61. Do you recycle your used motor oil?

- YES NO
 DON'T KNOW

62. Are you aware of BFI's collection of used motor oil?

- YES NO
 DON'T KNOW

63. Are you aware BFI has a one can rate for garbage collection?

- YES NO
 DON'T KNOW [GO TO #83 WHITE SHEET]

PURPLE-ON MY OWN

66. Where do you take your recyclables?

Montana Recycling
 favorite charity name _____
 Pacific Hide and Fur
 another Recycling center name _____
 picked up by whom _____
 drop off bin by local business where _____

67. Is there a secondary service or method you use to recycle?

Recycle Missoula! BFI Blue Bag dropoff bin
 Montana Recycling Pacific Hide Charity
 NO name _____

68. Would you be interested in a program in which individuals separate their recyclables such as newspaper, cardboard, aluminum, tin cans, and glass, at home to later set out at the curb or alley for a weekly or monthly pickup ... a voluntary curbside recycling program?

YES Depends on \$ NO (GO TO #69)

(GO TO #70 ON BACK)

69. Why not?

A. won't separate
 B. probably cost \$
 C. too much hassle
 D. like current situation
 E. dislike big bus./govt.
 F. not interested
 other:

(GO TO #73 ON BACK)

PURPLE

70. Some communities provide bins at cost for residents to use in recycling programs, while others let residents put out materials in paper bags or boxes. Which of these methods, if either, do you prefer?

- A.containers provided at cost
 [READ] B.own bags or boxes
 C.neither

71. As in many communities a curbside recycling program may not be possible in Missoula unless individuals pay for the service. What would be the maximum you would pay per month for this service. I will now list five categories....[READ]

- A.NO/0 B.1-3\$ C.3-4\$ D.up to 5\$ E.over 5\$

72. If a curbside recycling service that charged everyone a flat rate regardless of participation kept rates lower, would you support this program at or below the monthly fee you just identified? YES NO

NOW I WILL ASK QUESTIONS ON A SLIGHTLY DIFFERENT TOPIC...

73. Can you name any products in your home which might be classified as hazardous?

they offer	we offer	other:
<input type="checkbox"/> paint	<input type="checkbox"/>	
<input type="checkbox"/> cleaners	<input type="checkbox"/>	
<input type="checkbox"/> solvents	<input type="checkbox"/>	
<input type="checkbox"/> thinners	<input type="checkbox"/>	
<input type="checkbox"/> oil	<input type="checkbox"/>	<input type="checkbox"/> NONE
<input type="checkbox"/> pesticides	<input type="checkbox"/>	
<input type="checkbox"/> fuels	<input type="checkbox"/>	

74. Do you know of ways to dispose of these products properly?

- YES NO
 DON'T KNOW

75. Do you buy products made from recycled materials?

- YES[go to #77] NO
 DON'T KNOW

76. Would you buy products made from recycled materials if they were available? YES NO

DON'T KNOW

77. Are you willing to pay more for these recycled products?

- YES NO
 DON'T KNOW

78. Do you recycle your used motor oil?

- YES NO
 DON'T KNOW

79. Are you aware of BFI's collection of used motor oil?

- YES NO
 DON'T KNOW

80. Are you aware BFI has a one can rate for garbage collection?

- YES NO
 DON'T KNOW [GO TO #83 WHITE SHEET]

The following few questions deal with demographic information. As with the other questions in this survey your answers will be kept confidential...

83. Do you receive a monthly bill for garbage collection?
 YES NO

84. Do you rent or own your home?
 RENT OWN

85. How many people do you live with? _____

86. Are you related to those you live with? YES NO

87. Are you married? YES NO

88. Do you have children? YES NO

89. Is your age....?

A. 18 to 21 E. 41 to 50

B. 22 to 25 F. 51 to 60

C. 26 to 30 G. 61 to 70

D. 31 to 40 H. over 70

[READ]

90. Is your level of education best described as.....?

A. less than high school grad

B. high school graduate

C. some college

D. college graduate

E. have done graduate work

[READ]

91. Which of the following best describes your income?

A. not employed

B. \$5000 to \$10,000/year

C. \$10,000 to \$15,000/year

D. \$15,000 to \$20,000/year

E. \$20,000 to \$50,000/year

F. \$50,000 or more

[READ]

92. May I ask your occupation?

Thanks for your time and cooperation!

APPENDIX B:

A Report on Missoulians' Attitudes
on
Source Separated Curbside
Recycling
and
Other Solid Waste Issues

by Steve Carroll
March 1992

MontPIRG

Montana Public Interest Research Group



PRINTED ON
RECYCLED PAPER

INTRODUCTION

This survey examines public attitudes toward recycling and other solid waste issues, and analyzes whether Missoulians will support a source separated curbside recycling program. Currently three ways exist in Missoula for people to recycle: Browning Ferris Industry's (BFI) modified curbside or "blue bag program," the curbside program offered by Recycle Missoula!, and taking recyclables to one of the local recycling centers or drop-off bins.

Concern over the direction of solid waste management and interest in increasing opportunities for citizen input led to the formation of the Missoula Solid Waste Task Force in January 1991. Through Task Force discussions it became evident that prospects for a curbside recycling program in Missoula hinged on citizen support for such a program. Disagreement about the degree of citizen support for a curbside program led many to believe that a public opinion survey was required. In the summer of 1991 the Montana Public Interest Research Group (MontPIRG), a non-partisan consumer and conservation group based in Missoula, began designing such a survey.

We designed this survey to find out whether Missoulians will support a source separated curbside recycling program. This program is one in which people separate materials such as aluminum, glass, newspaper, plastic, tin, and cardboard and set them out at the curb or alley for a regularly scheduled pickup. In order to determine support for such a program we analyzed responses to three key questions. To begin with we asked people whether they were willing to participate in a curbside recycling program in which they separated their recyclables. We then asked those who indicated they would participate if they would pay for such a service. After determining whether they would pay we asked people if they were willing to support a recycling service which charged everyone a flat rate regardless of participation. Additional questions concerning household hazardous waste, oil recycling, and buying recycled products, were also asked.

This phone survey included all residents in the Missoula urban area with listed phone numbers. Volunteers recorded responses from 390 Missoulians using randomly selected numbers. The survey was conducted on November 21, 23, 25, 27, and December 2. The sample size of 390 falls within the 95% confidence interval with a standard error of +/- 5%.

Many people assisted with the design, implementation, and analysis of this survey. Special thanks to Dr. Paul Miller of the University of Montana Department of Sociology and Dr. William Chaloupka of the Department of Political Science for their invaluable help and guidance with design and methodology of this survey. Brad Martin of MontPIRG lent constant support and guidance at every step of the survey design and implementation. Shannon McNew edited, critiqued and helped implement the project. Carter Calle and Tony Tweedale provided computer assistance. Theresa Ferraro and Beth Berringer designed materials for use by phone callers conducting the survey. Members of the Missoula Solid Waste Task force gave ideas and support. The Missoula City County Health Department provided facilities for conducting the survey. Volunteer callers spent many hours on the phone and made this survey a reality. While the help I received was invaluable, I take full responsibility for the report of results and any errors that may have occurred.

Steve Carroll
Missoula, March 1992

EXECUTIVE SUMMARY

Will Missoula support a source separated curbside recycling program? This MontPIRG sponsored survey was designed to answer this question and get responses to other related solid waste issues. Volunteers called 390 randomly selected Missoulians. This sample population falls within the 95% confidence interval with a sampling error of +/-5%. Callers asked a variety of questions to determine current recycling habits, willingness to support and pay for curbside recycling, and support for a flat rate fee system.

Results indicate the majority of Missoulians will participate in and pay for a source separated curbside recycling program. The majority of the community also believes everyone should share the cost for recycling through a flat rate fee system.

- 73% of Missoulians are interested in participation in a source separated curbside recycling service.
- 54% will pay at least \$1-3/month for curbside recycling.
- 35% will pay at least \$3-4/month.
- 25% will pay up to \$5/month.
- 56% support a flat rate fee system.

Subpopulations of the survey sample were also analyzed for differing attitudes toward recycling. Subpopulations included people who take recyclables to a collection center or drop-off bin, who recycle with Recycle Missoula's program, who recycle through BFI's modified curbside or blue bag program, who don't currently recycle, and who pay a regular garbage bill. We found strong support for a more institutionalized approach to recycling in all subpopulations of the survey sample. Results included:

- 88% (345) of Missoulians recycle: with 82% recycling on their own, 10% with Recycle Missoula!, and 8% with the BFI modified curbside or blue bag program.

The 345 people who recycle responded in the following way to the primary survey questions.

- 73% would participate in a source separated curbside recycling program.
- 54% would pay at least \$1-3/month for this program.
- 34% would pay at least \$3-4/month.
- 24% would pay up to \$5/month.
- 56% support a flat rate fee system.

For the three subpopulations of people who recycle on their own, with Recycle Missoula, and with the BFI modified curbside or blue bag program the results follow the same general trend of majority support for curbside recycling. Interestingly, while willingness to participate was high for all categories of recyclers, we found participants in Recycle Missoula! and BFI's recycling programs had the highest interest level for participation at 85% and 82% respectively.

We also examined results from the forty five people who indicated they do not currently recycle, and the 206 who indicated they pay a garbage bill.

- 89% of non recyclers would recycle if it was more convenient, 93% said they recognized recycling as beneficial.
- 71% would participate in a source separated curbside recycling program.
- 53% would pay at least \$1-3/month for this program, 33% would pay at least \$3-4/month, 24% would pay up to \$5/month.
- 51% would support a flat rate fee system.

Of the 206 people who indicated they pay a regular garbage bill:

- 75% would participate in a source separated curbside recycling program.
- 57% would pay at least \$1-3/month for this program, 33% would pay at least \$3-4/month, 21% would pay up to \$5/month.
- 55% would support a flat rate fee system.

The survey results show a strong desire in the community for a more institutionalized approach to recycling. This report will soon be shared with the Missoula Solid Waste Task Force. The challenge before the community and the Task Force is to decide on an effective mechanism that will allow citizens, citizen groups, business and local government to negotiate as equal partners with those best able to provide the type of recycling programs the community desires.

In addition to the questions concerning curbside recycling, we asked people their opinions and knowledge of other solid waste issues. Significant results included:

- 23% of respondents were aware of BFI's one can rate for garbage collection.
- 43% of respondents were not aware of proper ways to dispose of household hazardous waste.
- 41% of respondents indicated they did not recycle their used motor oil.
- 38% of respondents were aware of BFI's collection of used motor oil.

Respondents also expressed a strong interest in purchasing recycled products.

- 86% indicated they buy recycled products
- 84% of people who do not currently buy recycled products said they would if they were more widely available.
- 53% were willing to pay more for recycled products

Results indicate that more education is needed concerning household hazardous waste disposal, and oil recycling. Missoulians willingness to purchase recycled products clearly shows a desire to make consumer based decisions that work to protect the environment.

SURVEY RESULTS AND CONCLUSIONS

Survey results are reported in two sections. Section A deals with the primary focus of the survey, measuring public desire for a source separated curbside recycling program. Section B addresses questions concerning other solid waste issues, including BFI's one can rate, household hazardous waste, oil recycling, and recycled products. Each section ends with commentary and conclusions.

A. Separated Curbside Recycling

There are three primary questions in this survey:

- Are Missoulians willing to participate in a source separated curbside recycling program?
- Will people pay for such a program?
- Will people support a flat rate fee system that charges everyone the same regardless of participation?

The overall results to these three questions are reported in sections 1, 2, and 3.

We further analyzed the data for different subpopulations of the sample population. We wanted to determine whether significant difference existed in these group's responses. We used the following categories to define nine different subpopulations:

- whether or not a person recycles (reported in sections 4 and 5)
- if a person recycles:
 - on their own (section 4a)
 - with Recycle Missoula! (section 4b)
 - or the BFI blue bag program (section 4c)
- if a person pays a regular garbage bill (section 6)
- education, age, and income (sections 8a ,b, and c)

We have listed the primary results as percentages and where useful included the actual numbers in parentheses. In addition two graphs are presented in section 7 which will allow readers to visually examine the results, first according to specific questions and secondly according to subpopulations. Overall survey results and questions are detailed in Appendix B.

1. Overall, Missoulians will participate in a source separated curbside recycling program.

The sample population of 390 people were asked whether or not they would participate in a source separated curbside recycling program. We found strong support for such a program among Missoulians.

- 73% of Missoulians surveyed would participate in a source separated curbside recycling program, 4% said it would depend on the cost, and 23% were not interested.

2. Overall, Missoulians will pay for a source separated curbside recycling program.

The critical question in this survey is whether or not individuals will pay for a source separated curbside recycling program. A significant percentage of the population will pay a monthly fee.

- 54% (212) of Missoulians will pay at least \$1-3/month for a source separated curbside recycling program.
- 35% (133) will pay at least \$3-4/month.
- 25% (96) will pay up to \$5/month.

3. Overall, Missoulians support a flat rate system.

We asked people whether they would support a source separated curbside recycling program that charged everyone a flat rate regardless of participation. The majority of Missoulians responded they are in favor of a system in which everyone pays.

- 56% (217) of Missoula citizens are in favor of a flat rate fee system.

4. Recyclers

The majority of Missoulians indicated that they do recycle.

- 88% (345) of Missoulians recycle.

The following is a summary of responses to the three primary survey questions by all those who indicated that they currently recycle. What is particularly significant is that although 88% of Missoulians already recycle, the majority of people are willing to participate in and pay for a separated curbside recycling program, as well as support a flat rate fee system.

- 73% are willing to support a source separated curbside recycling program.
- 53% would pay at least \$1-3 per month for this program.
- 34% would pay at least \$3-4/month.
- 24% would pay up to \$5/month.
- 56% would support a flat rate fee system.

Respondents who indicated that they recycle were asked what method or service they use to recycle.

- 82% (283) recycle on their own, either using a local redemption center, a drop-off box, or donating to a local charity.
- 10% (34) participate in the Recycle Missoula! program.
- 8% (28) participate in the BFI blue bag recycling program.

The following sections (4a, b, c) report results for the three subpopulations of people who recycle, on their own, using Recycle Missoula!, or the BFI modified curbside or blue bag program.

a. "I recycle on my own"

The following results are based on the 283 people who indicated they recycle by their own means. They either take recyclables to a collection center, local charity, or drop-off bin.

- 70% would support a source separated curbside recycling program.
- 53% would pay at least \$1-3/month for a separated curbside recycling program.
- 34% would pay at least \$3-4/month for this program.
- 25% would pay up to \$5/month.
- 55% would support a flat rate fee system.

b. Recycle Missoula!

The following results are based on the thirty four people who indicated they participate in the Recycle Missoula! curbside recycling program.

- 85% of Recycle Missoula! recyclers support a source separated curbside recycling program.
- 65% would pay at least \$1-3/month for this program.
- 48% would pay at least \$3-4/month.
- 30% would pay up to \$5/month.
- 56% would support a flat rate system.

c. BFI modified curbside or blue bag recycling

The following results are based on the twenty eight individuals who indicated they use the BFI recycling program.

- 82% of BFI recyclers would support a source separated curbside recycling program.
- 61% would pay at least \$1-3/month for this program.
- 25% would pay at least \$3-4/month.
- 18% would pay up to \$5/month.
- 64% would support a flat rate fee system.

5. Non recyclers

Forty five people indicated they do not currently recycle. As part of the survey we asked non recyclers about their attitudes toward recycling. Significant results for non recyclers included:

- 89% would recycle if it was more convenient.
- 93% of non recyclers recycling indicated that they see a benefit in recycling.

As with the other subpopulations in the survey non recyclers were asked the three primary questions.

- 71% would participate in a source separated curbside recycling program.
- 53% would pay at least \$1-3/month for this program.
- 33% would pay at least \$3-4/month.
- 24% would pay up to \$5/month.
- 51% would support a flat rate fee system.

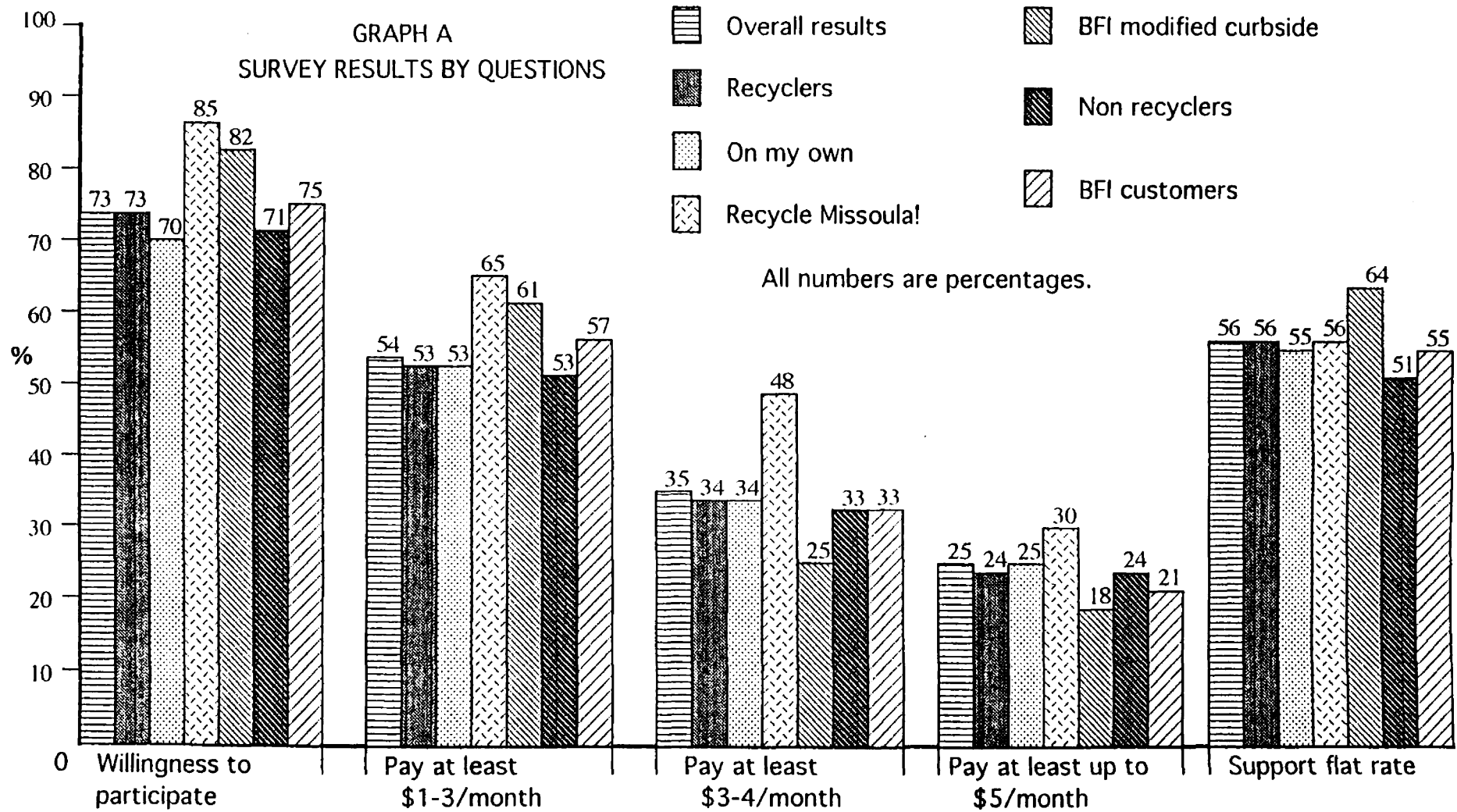
6. BFI customers

Respondents were asked if they pay a regular garbage collection bill. Because BFI is the only licensed garbage hauler in Missoula County we assume the 206 individuals who answered they pay a regular garbage bill are BFI customers. The following summary analyzes the responses of BFI customers.

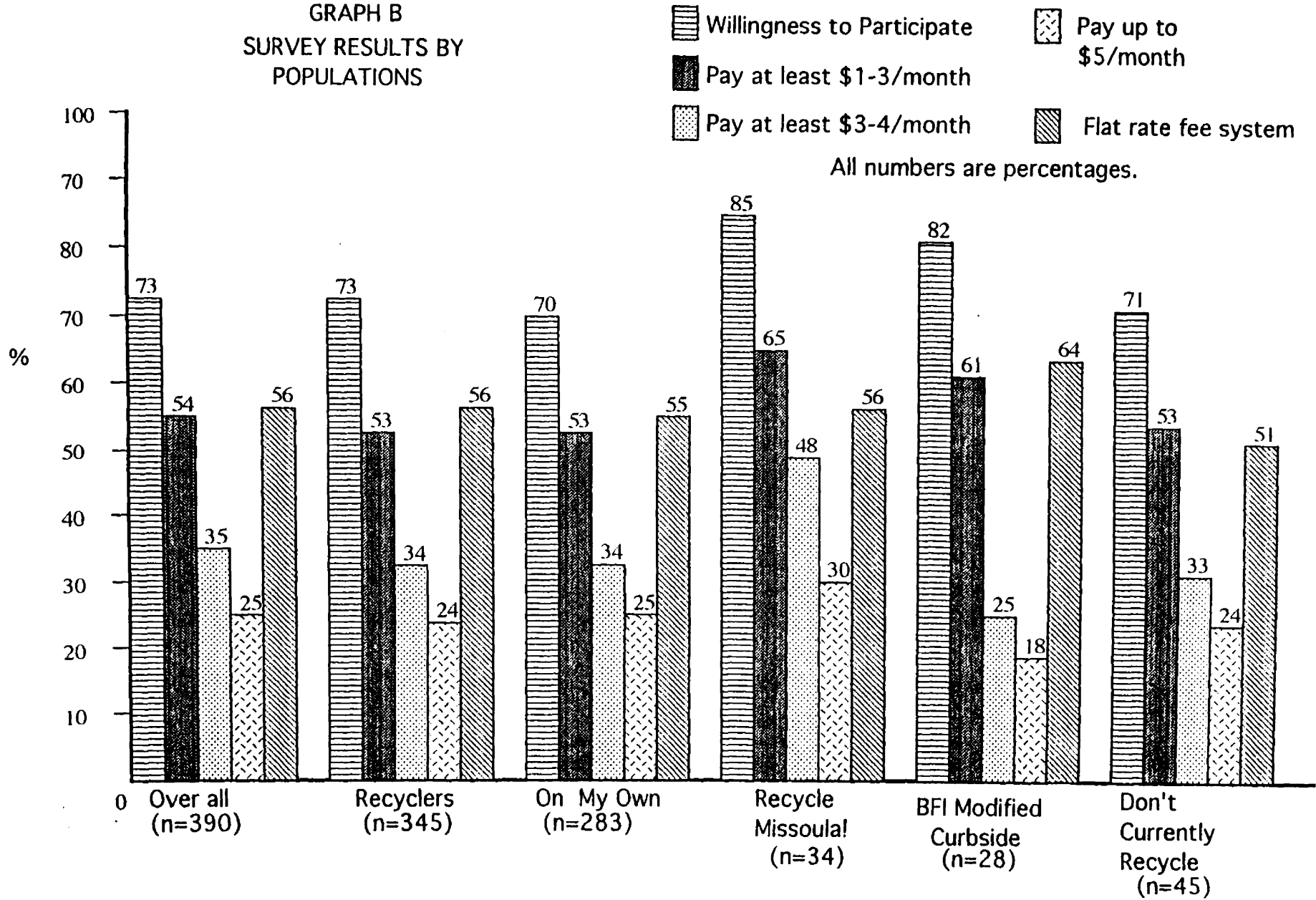
- 91% of BFI customers recycle.
- 75% of BFI customers would participate in a source separated curbside recycling program.
- 57% would pay at least \$1-3/month for this program.
- 33% would pay at least \$3-4/month.
- 21% would pay up to \$5/month.
- 55% would support a flat rate fee system.

7. Graphs A and B

The graphs on the following pages are presented to allow readers to visually examine the results, first according to responses for the three primary questions, and secondly according to subpopulations.



GRAPH B
SURVEY RESULTS BY
POPULATIONS



8. Other Comparisons

We gathered information concerning respondents' education, age, and income. This demographic information let us further analyze the sample population's willingness to participate and pay for curbside recycling.

a. Education

We asked participants to describe their level of education as one of six options. Analysis showed strong willingness to participate and pay for curbside recycling in all groups.

Willingness to participate in a source separated curbside recycling program:

- 45% of those with less than a high school education
- 54% of high school graduates
- 77% of those with some college education
- 78% of college graduates
- 83% of those who have done some graduate work

Willingness to pay at least \$1-3/month breaks down the following way:

- 27% of those with less than a high school education
- 33% of high school graduates
- 61% of those with some college education
- 63% of college graduates
- 64% of those who have done some graduate work

b. Age

We asked people their age and then placed them in one of eight age categories. We found willingness to participate in a source separated curbside recycling program strong in all age levels. Willingness to pay for curbside recycling is strongest among those aged 18 to 60 and drops off after age 60.

- 78% of those between the ages of 18 and 30 were willing to participate in a curbside recycling program, 76% for those between 31 and 60, 50% for 61 and over.
- 69% of those between the ages of 18 to 30 would pay at least \$1-3/month for curbside. (56% for 31 to 60, and 23% for 61 and over).
- 52% of those between the ages of 18 to 30 year olds would pay at least \$3-4/month. (33% for 31 to 60 year olds, and 5% for 61 and over).

c. Income

Interestingly, majority support for willingness to participate and pay were fairly evenly distributed among income levels. The range existed between a 85% willingness to participate in the over \$50,000/year group to 67% in the \$15,000 to 20,000 group. As far as paying at least \$1-3/month for curbside recycling the highest percentage(69%) was in the over \$50,000/year group and the lowest percentage(54%) in the \$15,000 to \$20,000/year group.

9. Conclusions and Commentary

This survey showed there is widespread support for a separated curbside recycling program in Missoula. The majority of Missoulians are willing to participate in such a program and pay a monthly fee for the service. This support held true for all categories we measured whether based on current recycling habits, whether a person pays a regular garbage bill, or demographics. The survey also showed support for a flat rate fee system where everyone pays for curbside recycling regardless of participation. It is significant that not only does the majority of Missoulians support curbside recycling but they also feel it is important that their neighbors share in the cost of a program. These results: willingness to participate, willingness to pay, and support for a flat rate system clearly points to the need for a more institutionalized approach to recycling in Missoula.

The willingness to pay for curbside recycling in Missoula represents the type of attitudinal change required in order for community recycling programs to be successful. Recycling must be viewed not as a hobby that we are reimbursed for, but as a responsibility for which we need to pay. This is not a new concept, we already pay for many services that society deems necessary and beneficial. Fire protection and sewage treatment are two services that as a community we pay for because we recognize the public benefit in so doing. Recycling which saves valuable landfill space and uses resources more efficiently, must also be recognized as a benefit worthy of public support.

Many groups involved in recycling in Missoula notably BFI; Montana Recycling; Pacific Steel, Hides, and Recycling; MontPIRG; and Recycle Missoula!, have all expressed interest in developing new strategies for recycling in Missoula. The unknown has been whether or not the public will support a switch to a more comprehensive and potentially more expensive recycling program. The significance of this survey is that it clearly shows the community will support such a switch. What remains unclear is how to move on to the next step.

The intention of this survey was not to serve as marketing report for any group or business. The survey was designed to gauge the communities desire for curbside recycling. The survey has demonstrated that Missoula is willing to support a change in the way recyclable materials are handled. The challenge for Missoula is to develop ways to negotiate between the community's desire for curbside recycling and those who could provide the service.

The Missoula Solid Waste Task Force was created to develop a ten year plan to address solid waste management issues in Missoula County. This plan is for eventual approval and implementation by the Missoula City and County Government. We believe the survey shows the attitude essential for building a successful curbside program is present in the community. The challenge for the Task Force is to decide on an effective mechanism that will allow citizens, citizen groups, business and local government to work and negotiate as equal partners with those best able to provide a curbside program.

B. Other Solid Waste Issues

In addition to questions concerning recycling, we also asked a series of questions dealing with related solid waste issues. These questions were included because they relate to issues the Solid Waste Task Force has encountered over the last year. Respondents were asked:

- Were they aware of BFI's one can rate for garbage collection?
- Did they know proper disposal methods for household hazardous waste?
- Do they recycle their used motor oil?
- Were they aware of BFI's free curbside collection of used motor oil?
- Were they willing to buy products made from recycled products, and possibly pay more for those products?

The results of these questions is reported below.

1. "One can" rate

Respondents were asked if they were aware of BFI's one can rate for garbage collection. We asked this question because the Solid Waste Task Force has explored ways of connecting garbage collection costs to the true environmental cost of excessive waste. Currently BFI offers a reduced collection rate for people who only use one can. We were interested in how many people were aware of this option.

- 23% of respondents were aware of the one can rate

2. Household hazardous waste

Respondents were asked to name any products in their home which might be classified as hazardous. In addition they were asked if they knew of ways to dispose of these products properly. The degree of citizen awareness of household hazardous products and their proper disposal is vitally important to a community that relies on a sole source of drinking water.

- 43% of respondents did not know how to dispose of household hazardous products properly

3. Oil recycling

Respondents were asked whether they recycled their used motor oil, and if they were aware of BFI's used motor oil collection program. If disposed of improperly, used motor oil may threaten and contaminate the aquifer. The community's knowledge of how to deal with used motor oil is a serious concern.

- 41% of respondents said they did not recycle their used motor oil, 38% indicated that they did recycle oil, and 21% did not know.
- 38% were aware of BFI's free curbside collection of used motor oil.

4. Recycled Products

It is widely recognized that in order to develop markets for recyclables, we need to "close the loop" and buy products made from recycled materials. We wanted to see how willing Missoulians are to buy recycled products. People were asked three questions concerning the purchase of recycled products. The first question asked if they currently buy products made from recycled materials. Those that answered they did not buy recycled products, were asked

if they would buy these products if more available to them. Finally, people were asked if they were willing to pay more for recycled products.

- 86% indicated that they buy recycled products.
- 84% of those who do not currently buy recycled products, said they would if they were more available.
- 53% were willing to pay more for recycled products, 34.5% were not willing, 12% did not know.

5. Conclusions and Commentary

There is limited awareness of BFI's one can rate garbage collection program. We can assume that with time and increased publicity the public will become more aware of this potentially beneficial program.

Results from household hazardous waste questions are somewhat confusing. Of those responding to the question 41% said they knew how to dispose of household hazardous waste. It is important to note that there is no way of verifying whether a person really knows how to dispose of a hazardous product properly through this question. It may be that fewer people know how to dispose of these products than answered yes.

Less than half of Missoulians said they recycle their used motor oil. This statistic may be less troubling than it appears. Many people indicated to callers that they take their vehicles to a service station for oil changes. Most people who had their oil changed by someone else did not know if the oil was being recycled. It is still a concern though that so many people either do not recycle their oil or do not know if it is recycled. For a relatively new program, a significant percentage of the sample population (38%) were aware of BFI's used motor oil collection. As with the one can rate we can assume the public's familiarity with this program will increase with time.

Results indicate that there is a strong interest in the purchase of recycled products. Of those responding to the question 86%, said they do buy materials made from recycled materials. Of those who do not buy recycled products, 84% would buy those products if they were more available, and over half of respondents will pay more for recycled products.

These are all issues of which the community needs to be more aware. The survey has shown that there is much room for improvement, particularly in educating people concerning disposal of household hazardous waste and oil recycling. Despite some low numbers there is evidence that people are willing to change habits for environmental reasons. Missoulians willingness to purchase recycled products is encouraging because it clearly shows a desire to make consumer based decisions that work to protect the environment.

METHODOLOGY

The survey was conducted over five days, November 21, 23, 25, 27, and December 2 and was conducted over the phone by volunteer callers. Each volunteer was required to attend a forty minute training session on non-biased interviewing.

The sample population was drawn from all people in the Missoula urban area who have listed phone numbers. Phone numbers were selected randomly. Numbers with prefixes from Lolo, Florence, or Milltown were not called, and students living in University dorms were also excluded from the survey.

The sample size of 390 people falls within the 95% confidence interval, with a standard error of plus or minus 5%.

In addition the survey was reviewed for accuracy by Dr. Paul Miller of the University of Montana Department of Sociology, and Dr. William Chaloupka of the University of Montana Department of Political Science. Letters of review are presented in Appendix A1 and A2.

DEMOGRAPHICS

To help determine the validity of the survey, and to aid in the analysis, a variety of demographic data was collected. Information was collected concerning age, education, and income. The sample characteristics are listed in appendix B, survey results. Data on age and income is compared to existing data from the US Census Bureau for Missoula. This comparison is provided to demonstrate the close similarity between the survey data and that collected by the Census Bureau.

Sample Size: 390

1. Age

(389 respondents)

Survey			US Census/Missoula(1990)	
age	#	%	age	%
18-21	26	7%	18-21	10%
22-25	41	10%	22-24	9%
26-30	47	12%	25-29	12%
31-40	111	29%	30-39	23%
41-50	67	17%	40-49	15%
51-60	37	10%	50-59	9%
61-70	23	6%	60-69	8%
over 70	37	10%	70+	12%

2. Income* (308 respondents)

Survey Results

US Census/Missoula (1980)
(income by household)

income	#	%	%
\$5000 to \$10,000/year	54	15%	20%
\$10,000 to \$15,000/year	48	14%	17%
\$15,000 to \$20,000/year	46	13%	15%
\$20,000 to \$50,000/year	134	38%	30%
\$50,000/year	26	7%	3%

* This is not a direct comparison. In our survey we asked for the individual's income, the census reports on household income. It can be assumed there is a great deal of overlap as many people in the MontPIRG survey answered for their total family or household income. It is also important to note that our survey probably under represented the poor because we only included households with phones.

University of
Montana

Department of Sociology
Social Science Building, Room 333
University of Montana
Missoula, Montana 59812-1047
(406) 243-5281

February 29, 1992

To Whom It May Concern:

I have worked with Steve Carroll on all phases of this study of public attitudes toward recycling. Mr. Carroll conducted the study under the auspices of the Montana Public Interest Research Group (MontPIRG). Mr. Carroll followed appropriate research procedures in conducting this study and I believe the results obtained are accurate.

Sincerely,



Paul Miller, Professor
Department of Sociology
University of Montana

The University of
Montana

Department of Political Science
The University of Montana
Missoula, Montana 59812-1040
(406) 243-5202

2/29/92

To Whom It May Concern:

I supervised Steve Carroll in the design, result calculation, and conclusions drawn from his survey of Missoula citizens' recycling attitudes and preferences.

I have every confidence in Steve's survey and believe the results are true and accurate.

Sincerely,



Bill Chaloupka

(406) 243-5202

ACTUAL SURVEY RESULTS

Results are presented as percentages with actual numbers in parentheses (.). In this appendix percentages are given to represent a portion of the total number of people who answered each question. In the preceding report responses were given as percentages of the entire population or subpopulation to which the question was asked.

Do you recycle? (n=390)

YES.....88.5% (345)

NO.....11.5% (45)

How often do you recycle? (n=339)

once a week	16% (53)
twice a week	2% (7)
once a month	42% (141)
twice a month	3% (11)
every two months	24% (81)
every three months	1.5% (5)
every four months	3% (1)
every six months	9% (29)
once a year	2% (8)
random	9% (3)

Why do you recycle? (n=345) (frequency of #1,#2,#3 choices)

	<u>#1</u>	<u>#2</u>	<u>#3</u>
environmental reasons	121	34	4
responsible citizen	63	23	7
for the \$\$	55	14	3
save resources and energy	52	31	8
save landfill space	22	12	6
litter concerns	11	14	4
to support a local organization	4	3	2

(all other responses had 2 or less)

What is the primary method or service you use to recycle? (n=345)

On my own/takes to a recycling center.....	79% (272)
Recycle Missoula!.....	10% (34)
BFI Blue Bag Program.....	8% (28)
Local charity.....	3% (11)

DO NOT RECYCLE

Can you name ways in Missoula that people can recycle?

NO.....45% (20)
 Montana Recycling.....23% (10)
 Pacific Hide and Fur.....5% (2)
 BFI Blue Bag.....14% (6)
 Recycle Missoula!.....7% (3)
 Drop-off Bins.....7% (3)

Do you see any benefit in recycling? YES 93% (42)

What are those benefits? (#1 answer given)

environmental.....24% (11)
 save resources and energy.....22% (10)
 save landfill space.....15% (7)
 litter concerns.....9% (4)
 make \$.....4% (2)
 right thing to do.....4% (2)

Why don't you recycle now? (number #1 answer given)

(percentages not provided)

too much hassle.....(21)
 lack of convenient service.....(5)
 not enough to recycle.....(5)
 unaware of a program or way.....(4)
 no interest.....(3)
 lack of time.....(3)
 haven't got around to it.....(2)
 lack of storage.....(1)

Would you recycle if it was more convenient for you?

YES 88.9% (40) NO 8.9% (4) Don't Know 2.2% (1)

Would you participate in a recycling program in which you take your recyclables to a neighborhood drop-off box?

YES 80% (36) NO 17.8% (8) Don't Know 2.2% (1)

Would you recycle if it required separating your cardboard, aluminum, glass, newspaper, and tin cans?

YES 62.2% (28) NO 31.1%(14)

Would you participate in a voluntary curbside recycling program where you put your separated recyclables out at the curb or alley for a weekly or monthly pickup?

YES 71% (32) NO 24.4% (11) Depends on \$ 4% (2)

For those who said no, why not?

most frequent response: not enough to recycle (3)
not interested (2)

Some recycling programs provide bins at cost for residents, while others let residents put out materials in paper bags or boxes. Which of these methods, if either, do you prefer?

(percentages not provided)

containers provided at cost.....(12)
own bags or boxes.....(20)
neither.....(2)
either.....(1)

As in many communities a curbside recycling program may not be possible in Missoula unless individuals pay for the service. What would be the maximum you would pay per month for this service? (percentage of those answering n=35)

NO 31%(11) \$1-3 25.7%(9) \$3-4 11%(4) up to \$5 28.5%(10)
over \$5 2.8%(1)

If a curbside recycling service that charged everyone a flat rate regardless of participation, kept rates lower would you support this program at or below the monthly fee you just identified?

(percentage of those answering n=34)

YES....67.6% (23) NO....32.3% (11)

Do you know of ways to dispose of these products properly? (n=42)

YES....26%(11) Don't Know....21%(9)

NO....52%(22)

Do you buy products made from recycled products? (n=45)

YES....82%(37) Don't Know....9%(4)

NO....9%(4)

Would you buy products made from recycled materials if they were available?

YES....66.6% (6) Don't Know....33.3%(3) NO....0 (n=9)

Are you willing to pay more for these recycled products? (n=45)

YES....44%(20) Don't Know....11%(5) NO....44%(20)

Do you recycle your used motor oil? (n=45)

YES....24% (11) Don't Know....16% (7) NO....60% (27)

Are you aware of BFI's collection of used motor oil? (n=45)

YES....16% (7) Don't Know....7% (3) NO....78% (35)

Are you aware BFI has a one can rate for garbage collection? (n=45)

YES....20% (9) Don't Know....4% (2) NO....76% (34)

RECYCLE MISSOULA!

The following are the results of those questions asked of respondents that identified Recycle Missoula as their primary method of recycling.

Why do you participate in the Recycle Missoula! program? (n=30)

	<u>#1</u>	<u>#2</u>
convenience	20	
free service	5	1
support Recycle Missoula!	1	1
range of materials accepted	1	1

Recycle Missoula! began picking up recyclables in neighborhoods to provide a model of how such a program might work in Missoula.

However its original intent was to be eventually replaced by a curbside recycling program run by private business or government.

Knowing this would you support such a program? (n=34)

YES....85.3% (29) Depends on \$\$....8.8% (3)

NO....5.9% (2)

Why not?

most common response: probably cost \$\$ (2)

Some communities provide bins at cost for residents to use in recycling programs, while others let residents put out materials in paper bags or boxes. Which of these methods if either, do you prefer? (n=32)

containers provided at cost.....	34.4%	(11)
own bags or boxes.....	59.9%	(19)
neither.....	3.1%	(1)
either.....	3.1%	(1)

What would be the maximum you would pay for a curbside recycling service? NO..31.2%(10) \$1-3...18.8%(6) \$3-4...18.8%(6)
up to \$5...28.1%(9) over \$5..3.1%(1)

Support a program that charged a flat rate fee regardless of participation? (n=31)

YES.....	61.3%	(19)	NO.....	38.7%	(12)
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Do you know of ways to dispose of these products properly? (n=33)

YES....	45.5%	(15)	Don't Know....	3%	(1)
NO....	51.5%	(17)			

Do you buy products made from recycled products? (n=34)

YES....	94%	(32)	Don't Know....	3%	(1)	NO.....	3%	(1)
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Would you buy products made from recycled materials if they were available? (n=6)

YES....	100%	(6)
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Are you willing to pay more for these recycled products? (n=33)

YES.....	66.7%	(22)	Don't Know....	9.1%	(3)	NO....	24.2%	(8)
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Do you recycle your used motor oil? (n=34)

YES....	44.1%	(15)	Don't Know....	26.5%	(9)	NO.....	29.4%	(10)
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Are you aware of BFI's collection of used motor oil? (n=34)

YES.....	32.4%	(11)	Don't Know....	0	NO.....	67.6%	(23)
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Are you aware BFI has a one can rate for garbage collection? (n=33)

YES....	9.1%	(3)	Don't Know....	3%	(1)	NO.....	87.9%	(29)
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BFI BLUE BAG

The following are the results of those questions asked of respondents who identified the BFI blue bag program as their primary method of recycling.

Why do you participate in the BFI Blue Bag program?

	<u>#1</u>	<u>#2</u>
convenience	23	1
free service	2	1
good idea	1	0

What materials does BFI collect with its blue bag program?

answered incorrectly

(included items not collected in program).....66.6% (18)

answered correctly (ALU,TIN,NEW).....33.3% (9)

Would you participate in a curbside pickup program, where individuals separated their recyclables for collection by private business or government

YES.....82.1% (23) Depends on \$\$....0 NO.....17.9% (5)

Why not?

Most frequent response:

too much hassle(4)

Some communities provide bins at cost for residents to use in recycling programs, while others let residents put out materials in paper bags or boxes. Which of these methods, if either, do you prefer? (n=25)

containers provided at cost.....32% (8)

own bags or boxes.....48% (12)

neither.....20% (5)

What would be the maximum you would pay per month for a curbside recycling service? (n=25)

NO...32% (8) \$1-3...40% (10) \$3-4...8% (2) up to \$5..12% (3)
over \$5...8% (2)

Support a program that charged a flat rate regardless of participation? (n=24)

YES.....75% (18)

NO.....25% (6)

Do you know of ways to dispose of these products properly? (n=28)

YES...39.3% (11) Don't Know....21.4% (6) NO....39.3% (11)

Do you buy products made from recycled materials? (n=28)

YES...89.3% (25) Don't Know....7.14% (2) NO.....3.57% (1)

Would you buy products made from recycled materials if they were available?

YES...75% (3) Don't Know....25% (1)

Are you willing to pay more for these recycled products? (n=28)

YES....57.1% (16) Don't Know....10.7% (3) NO....32.1% (9)

Do you recycle your used motor oil? (n=27)

YES....37% (10) Don't Know....37% (10) NO.....25.9% (7)

Are you aware of BFI's collection of used motor oil? (n=28)

YES....42.9% (12) Don't Know....7.14% (2) NO.....50% (14)

Are you aware BFI has a one can rate for garbage collection? (n=27)

YES....14.8% (4) Don't Know.....11.1% (3) NO.....74.1% (20)

On My Own

The following are the results of those questions asked of respondents who indicated they either take their recyclables on their own to a recycling center, or donate the materials to a local charity.

Where do you take your recyclables? (n=275)

Montana Recycling.....61% (167)
 Drop-off bins.....17% (47)
 Pacific Hide and Fur.....10% (27)
 local charity.....4% (10)
 picked up by friend or relative.....4% (10)
 (remaining responses less than 3%)

Secondary service? (n=249)

none.....	71% (178)
drop-off bins.....	10% (24)
Pacific Hide and Fur.....	7% (17)
BFI blue bag.....	4% (9)
local charity.....	4% (9)
Montana Recycling.....	3% (8)
Recycle Missoula!.....	1% (3)

Would you be interested in a voluntary curbside recycling program, in which residents put out their separated recyclables for collection by private business or government? (n=283)

YES....	70.3% (199)	Depends on \$\$....	4.2% (12)
NO....	25.4% (72)		

Why not?

most frequent responses: too much hassle(34)
like current situation(20)
not interested(12)

Some communities provide bins at cost for residents to use in recycling programs, while others let residents put out materials in paper bags or boxes. Which of these methods, if either, do you prefer? (n=205)

containers provided at cost.....	37.1% (75)
own bags or boxes.....	52.2% (107)
neither.....	6.3% (13)
either.....	3.4% (7)

What is the maximum you would pay per month for a curbside recycling program?

NO..	28%(58)	\$1-3..	26%(54)	\$3-4..	12%(25)	up to \$5..	28.5%(59)
over \$5..	5.3%(11)						

Support a program that charged a flat rate regardless of participation? (n=200)

YES...78.5% (157)	NO...21.5% (43)
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Do you know of ways to dispose of these products properly? (n=278)

YES...42.4% (118)	NO...41.7% (116)	Don't Know....15.8% (44)
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Do you buy products made from recycled materials? (n=282)

YES...85% (240)	NO....7.5% (21)	Don't Know....7.5% (21)
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Would you buy products made from recycled materials if they were available? (n=52) YES...84.6% (44) NO...4% (2)
Don't Know...11.5% (6)

Are you willing to pay more for these recycled products? (n=277)
YES...52.3% (145) NO...34.3% (95) Don't Know...13% (36)

Do you recycle you used motor oil? (n=271)
YES...40.2% (109) NO...40.6% (110) Don't Know...19.2% (52)

Are you aware of BFI's collection of used motor oil? (n=277)
YES...40.4% (112) NO...58.5% (162) Don't Know...1.1% (3)

Are you aware BFI has a one can rate for garbage collection? (n=278)
YES...19.1% (53) NO...76.6% (213) Don't Know...4.3% (12)

DEMOGRAPHIC PROFILE OF SAMPLE POPULATION

Percentage of sample population receiving a regular garbage collection bill. 53% (206)

Percentage of sample population that own their own home. 62% (240)

% related to those they live with. 74% (262)

% married 58% (216)

% with children 60% (219)

AGE
(n=389)

Survey			US Census/Missoula(1990)	
age	f	%	age	%
18-21	26	7%	18-21	10%
22-25	41	10%	22-24	9%
26-30	47	12%	25-29	12%
31-40	111	29%	30-39	23%
41-50	67	17%	40-49	15%
51-60	37	10%	50-59	9%
61-70	23	6%	60-69	8%
over 70	37	10%	70+	12%

EDUCATION (n=386)

	f	%
less than high school	22	5.7%
high school graduate	78	20.2%
some college	135	35%
college graduate	68	17.6%
graduate work	83	21.5%

INCOME (n=308)

Survey Results

	f	%
\$5000 to \$10,000/yr	54	15%
\$10,000 to \$15,000/yr	48	14%
\$15,000 to \$20,000/yr	46	13%
\$20,000 to \$50,000/yr	134	38%
\$50,000 or more a year	26	7%

US Census/Missoula (1980)
(income by household)*

%
20%
17%
15%
30%
3%

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